EY-C3012-RB-001

PDP-11/44 Processor Maintenance

Supplementary Listings

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Supplementary Listings

Course Number
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U 0040, 0120,3045,0001,4140,2700,3033,4000,0422,017     ;1248   040:    7-U:    R13_RS,J/7-A,BUT DEST
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U 0377, 1367,6145,0373,4141,2540,3033,4000,0422,017     ;1250   377:    7-W:    BA_R12,DATIP,R12 B_(UDATA),MAINT,ID SPACE,J/7-T
                                                                                ;1251
U 0160, 0000,2645,4000,2140,3640,3033,4000,0422,017     ;1252   160:    8-A:    T_RD OP B,LOAD CC,BUT NOSERV,J/1-A
                                                                                ;1253
U 0161, 0265,6145,0171,4141,2440,3033,4000,0422,017     ;1254   161:    8-B:    BA_RD,DATI,R12_(UDATA),MAINT,J/6-H,ID SPACE
                                                                                ;1255
U 0164, 0161,3265,0031,0142,3640,3033,4000,0422,017     ;1256   164:    8-C:    RD_RD-(2),ENAB STOV,J/8-B,SR1 L
                                                                                ;1257
U 0162, 0306,6145,0171,4141,2440,3033,4000,0422,017     ;1258   162:    8-D:    BA_RD,DATI,R12_(UDATA),MAINT,J/8-E,ID SPACE
                                                                                ;1259
U 0306, 0265,2064,0031,0142,3640,3033,4000,0422,017     ;1260   306:    8-E:    RD_RD+(2),J/6-H,SR1 L
                                                                                ;1261
U 0163, 0516,6145,0101,4141,2440,3033,4000,0422,017     ;1262   163:    8-F:    BA_RD,DATI,R12_UDATA,J/8-G,ID SPACE
                                                                                ;1263
U 0516, 0311,2064,0001,0142,3640,3033,4000,0422,017     ;1264   516:    8-G:    RD_RD+2,J/8-J,SR1 L
                                                                                ;1265
U 0165, 0111,3265,0001,0142,3640,3033,4000,0422,017     ;1266   165:    8-H:    RD_RD-2,ENAB STOV,J/8-I,SR1 L
                                                                                ;1267
U 0111, 0311,6145,0101,4141,2440,3033,4000,0422,017     ;1268   111:    8-I:    BA_RD,DATI,R12_UDATA,J/8-J,ID SPACE
                                                                                ;1269
U 0311, 0265,6145,0171,4141,2540,3033,4000,0422,017     ;1270   311:    8-J:    BA_R12,DATI,R12_(UDATA),MAINT,J/6-H,ID SPACE
                                                                                ;1271
U 0166, 0312,6145,0300,0140,1740,3033,4000,0422,017     ;1272   166:    8-K:    BA_PC,DATI,B_UDATA,J/8-L,I SPACE
                                                                                ;1273
U 0312, 0313,2064,0001,4140,1740,3033,4000,0422,017     ;1274   312:    8-L:    PC_PC+2,J/8-M
                                                                                ;1275
U 0313, 0311,2050,0001,4140,2440,3033,4000,0422,017     ;1276   313:    8-M:    R12_RD+B,J/8-J
                                                                                ;1277
U 0167, 0314,6145,0300,0140,1740,3033,4000,0422,017     ;1278   167:    8-N:    BA_PC,DATI,B_UDATA,J/8-O,I SPACE
                                                                                ;1279
U 0314, 0315,2064,0001,4140,1740,3033,4000,0422,017     ;1280   314:    8-O:    PC_PC+2,J/8-P
                                                                                ;1281
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U 0315, 0316,2050,0001,4140,2440,3033,4000,0422,017     ;1282   315:    8-P:    R12_RD+B,J/8-Q
                                                        ;1283
U 0316, 0311,6145,0101,4141,2540,3033,4000,0422,017     ;1284   316:    8-Q:    BA_R12,DATI,R12_UDATA,J/8-J,ID SPACE
                                                        ;1285
U 0021, 0000,2045,0001,6140,1640,3033,4000,0422,017     ;1286   021:    9-A:    PC_RD,BUT NOSERV,J/1-A
                                                        ;1287
U 0024, 0021,3265,0001,0142,3640,3033,4000,0422,017     ;1288   024:    9-B:    RD_RD-2,ENAB STOV,J/9-A,SR1 L
                                                        ;1289
U 0022, 0517,2045,0200,0140,3640,3033,4000,0422,017     ;1290   022:    9-C:    B_RD,J/9-E
                                                        ;1291
U 0023, 0517,6145,0300,0141,3640,3033,4000,0422,017     ;1292   023:    9-D:    BA_RD,DATI,B_UDATA,J/9-E,ID SPACE
                                                        ;1293
U 0517, 0112,2064,0001,0142,3640,3033,4000,0422,017     ;1294   517:    9-E:    RD_RD+2,J/9-F,SR1 L
                                                        ;1295
U 0112, 0000,2046,0001,6140,1740,3033,4000,0422,017     ;1296   112:    9-F:    PC_B,BUT NOSERV,J/1-A
                                                        ;1297
U 0025, 0321,3265,0001,0142,3640,3033,4000,0422,017     ;1298   025:    9-G:    RD_RD-2,ENAB STOV,J/9-H,SR1 L
                                                        ;1299
U 0321, 0112,6145,0300,0141,3640,3033,4000,0422,017     ;1300   321:    9-H:    BA_RD,DATI,B_UDATA,J/9-F,ID SPACE
                                                        ;1301
U 0026, 0322,6145,0300,0140,1740,3033,4000,0422,017     ;1302   026:    9-I:    BA_PC,DATI,B_UDATA,J/9-J,I SPACE
                                                        ;1303
U 0322, 0323,2064,0001,4140,1740,3033,4000,0422,017     ;1304   322:    9-J:    PC_PC+2,J/9-K
                                                        ;1305
U 0323, 0000,2050,0001,6140,1640,3033,4000,0422,017     ;1306   323:    9-K:    PC_RD+B,BUT NOSERV,J/1-A
                                                        ;1307
U 0027, 0324,6145,0300,0140,1740,3033,4000,0422,017     ;1308   027:    9-L:    BA_PC,DATI,B_UDATA,J/9-M,I SPACE
                                                        ;1309
U 0324, 0325,2064,0001,4140,1740,3033,4000,0422,017     ;1310   324:    9-M:    PC_PC+2,J/9-N
                                                        ;1311
U 0325, 0326,2050,0001,4140,2440,3033,4000,0422,017     ;1312   325:    9-N:    R12_RD+B,J/9-O
                                                        ;1313
U 0326, 0112,6145,0300,0141,2540,3033,4000,0422,017     ;1314   326:    9-O:    BA_R12,DATI,B_UDATA,J/9-F,ID SPACE
                                                        ;1315
U 0151, 0336,2045,0200,0140,3640,3033,4000,0422,017     ;1316   151:    10-A:   B_RD,J/10-O
                                                        ;1317
U 0154, 0336,3265,0201,0142,3640,3033,4000,0422,017     ;1318   154:    10-B:   B RD_RD-2,ENAB STOV,J/10-O,SR1 L
                                                        ;1319
U 0152, 0327,2045,0200,0140,3640,3033,4000,0422,017     ;1320   152:    10-C:   B_RD,J/10-E
                                                        ;1321
U 0153, 0327,6145,0300,0141,3640,3033,4000,0422,017     ;1322   153:    10-D:   BA_RD,DATI,B_UDATA,J/10-E,ID SPACE
                                                        ;1323
U 0327, 0336,2064,0001,0142,3640,3033,4000,0422,017     ;1324   327:    10-E:   RD_RD+2,J/10-O,SR1 L
                                                        ;1325
U 0155, 0113,3265,0001,0142,3640,3033,4000,0422,017     ;1326   155:    10-F:   RD_RD-2,ENAB STOV,J/10-G,SR1 L
                                                        ;1327
U 0113, 0336,6145,0300,0141,3640,3033,4000,0422,017     ;1328   113:    10-G:   BA_RD,DATI,B_UDATA,J/10-O,ID SPACE
                                                        ;1329
U 0156, 0331,6145,0300,0140,1740,3033,4000,0422,017     ;1330   156:    10-H:   BA_PC,DATI,B_UDATA,J/10-I,I SPACE
                                                        ;1331
U 0331, 0332,2064,0001,4140,1740,3033,4000,0422,017     ;1332   331:    10-I:   PC_PC+2,J/10-J
                                                        ;1333
U 0332, 0336,2050,0200,0140,3640,3033,4000,0422,017     ;1334   332:    10-J:   B_RD+B,J/10-O
                                                        ;1335
U 0157, 0333,6145,0300,0140,1740,3033,4000,0422,017     ;1336   157:    10-K:   BA_PC,DATI,B_UDATA,J/10-L,I SPACE
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                                                                    ;1337
U 0333, 0334,2064,0001,4140,1740,3033,4000,0422,017                 ;1338   333:    10-L:   PC_PC+2,J/10-M
                                                                    ;1339
U 0334, 0335,2050,0001,4140,2440,3033,4000,0422,017                 ;1340   334:    10-M:   R12_RD+B,J/10-N
                                                                    ;1341
U 0335, 0336,6145,0300,0141,2540,3033,4000,0422,017                 ;1342   335:    10-N:   BA_R12,DATI,B_UDATA,J/10-O,ID SPACE
                                                                    ;1343
U 0336, 0713,3265,0001,4144,1540,3033,4000,0422,017                 ;1344   336:    10-O:   R6_R6-2,ENAB STOV,J/10-P,SR1 H
                                                                    ;1345
U 0713, 0114,2145,0000,0141,1540,3033,4000,0422,017                 ;1346   713:    10-P:   BA_R6,J/10-Q,ID SPACE
                                                                    ;1347
U 0114, 0651,2005,0104,0140,3700,3033,4000,0422,017                 ;1348   114:    10-Q:   DATO,UDATA_RS,J/10-R
                                                                    ;1349
U 0651, 0112,2045,0000,4140,1740,3033,4000,0422,017                 ;1350   651:    10-R:   RS_PC,J/9-F
                                                                    ;1351
U 0030, 0343,2045,0021,4140,2440,3033,4000,0422,017                 ;1352   030:    11-A:   R12_RD,SWAB,J/11-B
                                                                    ;1353
U 0343, 0000,2645,4001,2140,2540,3033,4000,0422,017                 ;1354   343:    11-B:   RD_R12 OP B,LOAD CC,BUT NOSERV,J/1-A
                                                                    ;1355
U 0031, 0355,6145,0123,4141,2440,3033,4000,0422,017                 ;1356   031:    11-C:   BA_RD,DATIP,R12_UDATA,SWAB,J/11-S,ID SPACE
                                                                    ;1357
U 0034, 0031,3265,0001,0142,3640,3033,4000,0422,017                 ;1358   034:    11-D:   RD_RD-2,ENAB STOV,J/11-C,SR1 L
                                                                    ;1359
U 0032, 0344,6145,0163,4141,2440,3033,4000,0422,017                 ;1360   032:    11-E:   BA_RD,DATIP,R12_UDATA,SWAB,MAINT,J/11-F,ID SPACE
                                                                    ;1361
U 0344, 0355,2064,0001,0142,3640,3033,4000,0422,017                 ;1362   344:    11-F:   RD_RD+2,J/11-S,SR1 L
                                                                    ;1363
U 0033, 0345,6145,0101,4141,2440,3033,4000,0422,017                 ;1364   033:    11-G:   BA_RD,DATI,R12_UDATA,J/11-H,ID SPACE
                                                                    ;1365
U 0345, 0354,2064,0001,0142,3640,3033,4000,0422,017                 ;1366   345:    11-H:   RD_RD+2,J/11-R,SR1 L
                                                                    ;1367
U 0035, 0346,3265,0001,0142,3640,3033,4000,0422,017                 ;1368   035:    11-I:   RD_RD-2,ENAB STOV,J/11-J,SR1 L
                                                                    ;1369
U 0346, 0354,6145,0101,4141,2440,3033,4000,0422,017                 ;1370   346:    11-J:   BA_RD,DATI,R12_UDATA,J/11-R,ID SPACE
                                                                    ;1371
U 0036, 0347,6145,0300,0140,1740,3033,4000,0422,017                 ;1372   036:    11-K:   BA_PC,DATI,B_UDATA,J/11-L,I SPACE
                                                                    ;1373
U 0347, 0115,2064,0001,4140,1740,3033,4000,0422,017                 ;1374   347:    11-L:   PC_PC+2,J/11-M
                                                                    ;1375
U 0115, 0354,2050,0001,4140,2440,3033,4000,0422,017                 ;1376   115:    11-M:   R12_RD+B,J/11-R
                                                                    ;1377
U 0037, 0351,6145,0300,0140,1740,3033,4000,0422,017                 ;1378   037:    11-N:   BA_PC,DATI,B_UDATA,J/11-O,I SPACE
                                                                    ;1379
U 0351, 0352,2064,0001,4140,1740,3033,4000,0422,017                 ;1380   351:    11-O:   PC_PC+2,J/11-P
                                                                    ;1381
U 0352, 0353,2050,0001,4140,2440,3033,4000,0422,017                 ;1382   352:    11-P:   R12_RD+B,J/11-Q
                                                                    ;1383
U 0353, 0354,6145,0101,4141,2540,3033,4000,0422,017                 ;1384   353:    11-Q:   BA_R12,DATI,R12_UDATA,J/11-R,ID SPACE
                                                                    ;1385
U 0354, 0355,6145,0163,4141,2540,3033,4000,0422,017                 ;1386   354:    11-R:   BA_R12,DATIP,R12_UDATA,SWAB,MAINT,J/11-S,ID SPACE
                                                                    ;1387
U 0355, 0000,2605,4144,2140,2540,3033,4000,0422,017                 ;1388   355:    11-S:   DATO,MAINT,UDATA_R12 OP B,LOAD CC,BUT NOSERV,J/1-A
                                                                    ;1389
U 0170, 0356,2045,0200,0140,3640,3033,4000,0422,017                 ;1390   170:    12-A:   B_RD,J/12-B
                                                                    ;1391
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U 0356, 0600,2046,4200,0140,3740,3033,4000,0422,017     ;1392   356:    12-B:   B_(B),J/4-A
                                                        ;1393
U 0171, 0117,6145,0373,4141,2440,3033,4000,0422,017     ;1394   171:    12-C:   BA_RD,DATIP,R12 B_(UDATA),MAINT,J/12-S,ID SPACE
                                                        ;1395
U 0174, 0171,3265,0031,0142,3640,3033,4000,0422,017     ;1396   174:    12-D:   RD_RD-(2),ENAB STOV,J/12-C,SR1 L
                                                        ;1397
U 0172, 0357,6145,0373,4141,2440,3033,4000,0422,017     ;1398   172:    12-E:   BA_RD,DATIP,R12 B_(UDATA),MAINT,J/12-F,ID SPACE
                                                        ;1399
U 0357, 0117,2064,0031,0142,3640,3033,4000,0422,017     ;1400   357:    12-F:   RD_RD+(2),J/12-S,SR1 L
                                                        ;1401
U 0173, 0116,6145,0101,4141,2440,3033,4000,0422,017     ;1402   173:    12-G:   BA_RD,DATI,R12_UDATA,J/12-H,ID SPACE
                                                        ;1403
U 0116, 0655,2064,0001,0142,3640,3033,4000,0422,017     ;1404   116:    12-H:   RD_RD+2,J/12-K,SR1 L
                                                        ;1405
U 0175, 0721,3265,0001,0142,3640,3033,4000,0422,017     ;1406   175:    12-I:   RD_RD-2,ENAB STOV,J/12-J,SR1 L
                                                        ;1407
U 0721, 0655,6145,0101,4141,2440,3033,4000,0422,017     ;1408   721:    12-J:   BA_RD,DATI,R12_UDATA,J/12-K,ID SPACE
                                                        ;1409
U 0655, 0117,6145,0373,4141,2540,3033,4000,0422,017     ;1410   655:    12-K:   BA_R12,DATIP,R12 B_(UDATA),MAINT,J/12-S,ID SPACE
                                                        ;1411
U 0176, 0363,6145,0300,0140,1740,3033,4000,0422,017     ;1412   176:    12-L:   BA_PC,DATI,B_UDATA,J/12-M,I SPACE
                                                        ;1413
U 0363, 0364,2064,0001,4140,1740,3033,4000,0422,017     ;1414   363:    12-M:   PC_PC+2,J/12-N
                                                        ;1415
U 0364, 0655,2050,0001,4140,2440,3033,4000,0422,017     ;1416   364:    12-N:   R12_RD+B,J/12-K
                                                        ;1417
U 0177, 0365,6145,0300,0140,1740,3033,4000,0422,017     ;1418   177:    12-O:   BA_PC,DATI,B_UDATA,J/12-P,I SPACE
                                                        ;1419
U 0365, 0366,2064,0001,4140,1740,3033,4000,0422,017     ;1420   365:    12-P:   PC_PC+2,J/12-Q
                                                        ;1421
U 0366, 0367,2050,0001,4140,2440,3033,4000,0422,017     ;1422   366:    12-Q:   R12_RD+B,J/12-R
                                                        ;1423
U 0367, 0655,6145,0101,4141,2540,3033,4000,0422,017     ;1424   367:    12-R:   BA_R12,DATI,R12_UDATA,J/12-K,ID SPACE
                                                        ;1425
U 0117, 1267,2046,4200,0140,3740,3033,4000,0422,017     ;1426   117:    12-S:   B_(B),J/4-E
                                                        ;1427
U 0100, 0463,2045,0001,4100,2440,3033,4000,0422,017     ;1428   100:    13-A:   R12_RD,PREVIOUS,J/13-S
                                                        ;1429
U 0101, 0075,2045,0001,4140,2440,3033,4000,0422,017     ;1430   101:    13-B:   R12_RD,J/13-V
                                                        ;1431
U 0104, 0101,3265,0001,0142,3640,3033,4000,0422,017     ;1432   104:    13-C:   RD_RD-2,ENAB STOV,J/13-B,SR1 L
                                                        ;1433
U 0102, 0371,2045,0001,4140,2440,3033,4000,0422,017     ;1434   102:    13-D:   R12_RD,J/13-F
                                                        ;1435
U 0371, 0075,2064,0001,0142,3640,3033,4000,0422,017     ;1436   371:    13-F:   RD_RD+2,J/13-V,SR1 L
                                                        ;1437
U 0103, 0372,6145,0101,4141,2440,3033,4000,0422,017     ;1438   103:    13-G:   BA_RD,DATI,ID SPACE,R12_UDATA,J/13-H
                                                        ;1439
U 0372, 0075,2064,0001,0142,3640,3033,4000,0422,017     ;1440   372:    13-H:   RD_RD+2,J/13-V,SR1 L
                                                        ;1441
U 0105, 0373,3265,0001,0142,3640,3033,4000,0422,017     ;1442   105:    13-I:   RD_RD-2,ENAB STOV,J/13-J,SR1 L
                                                        ;1443
U 0373, 0075,6145,0101,4141,2440,3033,4000,0422,017     ;1444   373:    13-J:   BA_RD,DATI,R12_UDATA,J/13-V,ID SPACE
                                                        ;1445
U 0106, 0374,6145,0300,0140,1740,3033,4000,0422,017     ;1446   106:    13-K:   BA_PC,DATI,B_UDATA,J/13-L,I SPACE
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                                                                ;1447
U 0374, 0375,2064,0001,4140,1740,3033,4000,0422,017             ;1448   374:    13-L:   PC_PC+2,J/13-M
                                                                ;1449
U 0375, 0075,2050,0001,4140,2440,3033,4000,0422,017             ;1450   375:    13-M:   R12_RD+B,J/13-V
                                                                ;1451
U 0107, 0376,6145,0300,0140,1740,3033,4000,0422,017             ;1452   107:    13-N:   BA_PC,DATI,B_UDATA,J/13-O,I SPACE
                                                                ;1453
U 0376, 1400,2064,0001,4140,1740,3033,4000,0422,017             ;1454   376:    13-O:   PC_PC+2,J/13-P
                                                                ;1455
U 1400, 0652,2050,0001,4140,2440,3033,4000,0422,017             ;1456   1400:   13-P:   R12_RD+B,J/13-Q
                                                                ;1457
U 0652, 0075,6145,0101,4141,2540,3033,4000,0422,017             ;1458   652:    13-Q:   BA_R12,DATI,R12_UDATA,J/13-V,ID SPACE
                                                                ;1459
U 0067, 0463,6145,0301,4100,2540,3033,4000,0422,017             ;1460   067:    13-R:   BA_R12,DATI,R12 B_UDATA,PREVIOUS,J/13-S,I SPACE
                                                                ;1461
U 0463, 0472,3265,0001,4144,1540,3033,4000,0422,017             ;1462   463:    13-S:   R6_R6-2,ENAB STOV,J/13-T,SR1 H
                                                                ;1463
U 0472, 1267,2145,0040,0141,1540,3033,4000,0422,017             ;1464   472:    13-T:   BA_R6,MAINT,J/4-E,ID SPACE
                                                                ;1465
U 0077, 0463,6145,0301,4101,2540,3033,4000,0422,017             ;1466   077:    13-U:   BA_R12,DATI,R12 B_UDATA,PREVIOUS,J/13-S,ID SPACE
                                                                ;1467
U 0075, 0067,3045,0000,0100,3740,3033,4000,0422,017             ;1468   075:    13-V:   PREVIOUS,BUT DEST,J/13-R
                                                                ;1469
U 0250, 0003,2645,4001,0100,2540,3033,4000,0422,017             ;1470   250:    14-A:   RD_R12 OP B,LOAD CC,PREVIOUS,J/15-O
                                                                ;1471
U 0251, 0073,2045,0001,4140,2640,3033,4000,0422,017             ;1472   251:    14-B:   R13_RD,J/14-Y
                                                                ;1473
U 0254, 0251,3265,0001,0144,3640,3033,4000,0422,017             ;1474   254:    14-C:   RD_RD-2,ENAB STOV,J/14-B,SR1 H
                                                                ;1475
U 0110, 0644,6145,0300,0141,1540,3033,4000,0422,017             ;1476   110:    14-D:   BA_R6,DATI,B_UDATA,J/14-T,ID SPACE
                                                                ;1477
U 0644, 0642,2046,0001,4140,2540,3033,4000,0422,017             ;1478   644:    14-T:   R12_B,J/14-E
                                                                ;1479
U 0642, 0250,3064,0001,4142,1540,3033,4000,0422,017             ;1480   642:    14-E:   R6_R6+2,BUT DEST,J/14-A,SR1 L
                                                                ;1481
U 0252, 0513,2045,0001,4140,2640,3033,4000,0422,017             ;1482   252:    14-F:   R13_RD,J/14-G
                                                                ;1483
U 0513, 0073,2064,0001,0144,3640,3033,4000,0422,017             ;1484   513:    14-G:   RD_RD+2,J/14-Y,SR1 H
                                                                ;1485
U 0253, 0513,6145,0101,4141,2640,3033,4000,0422,017             ;1486   253:    14-H:   BA_RD,DATI,R13_UDATA,ID SPACE,J/14-G
                                                                ;1487
U 0255, 0475,3265,0001,0144,3640,3033,4000,0422,017             ;1488   255:    14-I:   RD_RD-2,ENAB STOV,J/14-J,SR1 H
                                                                ;1489
U 0475, 0073,6145,0101,4141,2640,3033,4000,0422,017             ;1490   475:    14-J:   BA_RD,DATI,R13_UDATA,J/14-Y,ID SPACE
                                                                ;1491
U 0256, 0476,6145,0300,0140,1740,3033,4000,0422,017             ;1492   256:    14-K:   BA_PC,DATI,B_UDATA,J/14-L,I SPACE
                                                                ;1493
U 0476, 0552,2064,0001,4140,1740,3033,4000,0422,017             ;1494   476:    14-L:   PC_PC+2,J/14-M
                                                                ;1495
U 0552, 0073,2050,0001,4140,2640,3033,4000,0422,017             ;1496   552:    14-M:   R13_RD+B,J/14-Y
                                                                ;1497
U 0257, 0506,6145,0300,0140,1740,3033,4000,0422,017             ;1498   257:    14-N:   BA_PC,DATI,B_UDATA,J/14-O,I SPACE
                                                                ;1499
U 0506, 0510,2064,0001,4140,1740,3033,4000,0422,017             ;1500   506:    14-O:   PC_PC+2,J/14-P
                                                                ;1501
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U 0510, 0514,2050,0001,4140,2640,3033,4000,0422,017     ;1502   510:    14-P:   R13_RD+B,J/14-Q
                                                        ;1503
U 0514, 0073,6145,0101,4141,2740,3033,4000,0422,017     ;1504   514:    14-Q:   BA_R13,DATI,R13_UDATA,J/14-Y,ID SPACE
                                                        ;1505
U 0307, 0520,2145,0040,0100,2740,3033,4000,0422,017     ;1506   307:    14-R:   BA_R13,MAINT,PREVIOUS,J/14-S,I SPACE
                                                        ;1507
U 0520, 0003,2605,4144,0100,2540,3033,4000,0422,017     ;1508   520:    14-S:   DATO,UDATA_R12 OP B,LOAD CC,MAINT,PREVIOUS,J/15-D
                                                        ;1509
U 0317, 0520,2145,0040,0101,2740,3033,4000,0422,017     ;1510   317:    14-V:   BA_R13,MAINT,PREVIOUS,J/14-S,ID SPACE
                                                        ;1511
                                                        ;1512
                                                        ;1513
U 0073, 0307,3045,0000,0100,3740,3033,4000,0422,017     ;1514   073:    14-Y:   PREVIOUS,BUT DEST,J/14-R
                                                        ;1515
U 0210, 0522,2046,0210,0140,3740,3033,4000,0422,017     ;1516   210:    15-A:   B_B,SEX,J/15-B
                                                        ;1517
U 0522, 0523,2046,1400,0140,3740,3033,4000,0422,017     ;1518   522:    15-B:   T_B,ASL B,J/15-C
                                                        ;1519
U 0523, 0000,2050,0001,6140,1740,3033,4000,0422,017     ;1520   523:    15-C:   PC_PC+B,BUT NOSERV,J/1-A
                                                        ;1521
U 0004, 0435,2045,0001,4140,1640,3033,4000,0422,017     ;1522   004:    15-D:   PC_RD,J/15-E
                                                        ;1523
U 0435, 0527,6145,0300,0141,1540,3033,4000,0422,017     ;1524   435:    15-E:   BA_R6,DATI,B_UDATA,J/15-F,ID SPACE
                                                        ;1525
U 0527, 0533,2064,0001,4142,1540,3033,4000,0422,017     ;1526   527:    15-F:   R6_R6+2,J/15-G,SR1 L
                                                        ;1527
U 0533, 0000,2046,0001,2140,3740,3033,4000,0422,017     ;1528   533:    15-G:   RD_B,BUT NOSERV,J/1-A
                                                        ;1529
U 0016, 0645,6145,0300,0141,1540,3033,4000,0422,017     ;1530   016:    15-H:   BA_R6,DATI,B_UDATA,J/15-T,ID SPACE
                                                        ;1531
U 0535, 0537,2064,0001,4142,1540,3033,4000,0422,017     ;1532   535:    15-I:   R6_R6+2,J/15-J,SR1 L
                                                        ;1533
U 0537, 0401,6145,0300,0141,1540,3033,4000,0422,017     ;1534   537:    15-J:   BA_R6,DATI,B_UDATA,J/15-K,ID SPACE
                                                        ;1535
U 0401, 0474,2064,0001,4144,1540,3033,4000,0422,017     ;1536   401:    15-K:   R6_R6+2,J/15-U,SR1 H
                                                        ;1537
U 0014, 0012,6045,0001,4160,3340,3033,4000,0422,017     ;1538   014:    15-L:   R15_UDATA,BUT SERVICE,J/15-M
                                                        ;1539
U 0012, 0014,2045,0000,0140,3740,3033,4000,0422,017     ;1540   012:    15-M:   NOP,J/15-L
                                                        ;1541
U 0013, 0011,2045,0000,0140,3740,3033,4000,0422,017     ;1542   013:    15-N:   NOP,J/17-A
                                                        ;1543
U 0003, 0000,2045,0000,2140,3740,3033,4000,0422,017     ;1544   003:    15-O:   J/1-A,BUT NOSERV
                                                        ;1545
U 0006, 0541,0045,0001,4140,2540,3033,4000,0422,017     ;1546   006:    15-P:   R12_PSW,J/15-Q
                                                        ;1547
U 0541, 0000,2655,0000,2140,2540,3033,4000,0422,017     ;1548   541:    15-Q:   CC_R12,BBAR,BUT NOSERV,J/1-A
                                                        ;1549
U 0007, 0542,0045,0001,4140,2540,3033,4000,0422,017     ;1550   007:    15-R:   R12_PSW,J/15-S
                                                        ;1551
U 0542, 0000,2653,0000,2140,2540,3033,4000,0422,017     ;1552   542:    15-S:   CC_R12 V B,BUT NOSERV,J/1-A
                                                        ;1553
U 0645, 0535,2046,0001,4140,1740,3033,4000,0422,017     ;1554   645:    15-T:   PC_B,J/15-I
                                                        ;1555
U 0474, 0500,0045,0001,4140,2140,3033,4000,0422,017     ;1556   474:    15-U:   R10_PSW,J/15-W
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U 0500, 0561,4045,0420,0140,3770,3033,4000,0422,017     ;1558   500:    15-W:   BX_366,SWAB,J/15-X
                                                                                ;1559
U 0561, 0412,2057,0001,6140,2140,3033,4000,0422,017     ;1560   561:    15-X:   R10_BX.R10,BUT NOSERV,J/15-Y
                                                                                ;1561
U 0412, 0000,2453,0000,0140,2140,3033,4000,0422,017     ;1562   412:    15-Y:   PSW_R10.OR.B,J/1-A
                                                                                ;1563
U 0005, 0611,6145,0300,0141,1540,3033,4000,0422,017     ;1564   005:    15-Z:   BA_R6,DATI,B_UDATA,ID SPACE,J/15-EE
                                                                                ;1565
U 0611, 0616,2046,0001,4140,1740,3033,4000,0422,017     ;1566   611:    15-EE:  PC_B,J/15-AA
                                                                                ;1567
U 0616, 0617,2064,0001,4142,1540,3033,4000,0422,017     ;1568   616:    15-AA:  R6_R6+2,SR1 L,J/15-BB
                                                                                ;1569
U 0617, 1667,6145,0300,0141,1540,3033,4000,0422,017     ;1570   617:    15-BB:  BA_R6,DATI,B_UDATA,ID SPACE,J/15-CC
                                                                                ;1571
U 1667, 1004,2064,0001,4144,1540,3033,4000,0422,017     ;1572   1667:   15-CC:  R6_R6+2,SR1 H,J/15-DD
                                                                                ;1573
U 1004, 0000,2446,0000,0140,3740,3033,4000,0422,017     ;1574   1004:   15-DD:  PSW_B,J/1-A
U 0260, 0134,2003,0000,4542,3700,3033,4000,0422,017     ;1575   260:    16-A:   RS_RS-1,BUT ZBIT,J/16-B,SR1 L
                                                                                ;1576
U 0134, 0546,2046,1421,4140,2140,3033,4000,0422,017     ;1577   134:    16-B:   R10_B,SWAB,ASL B,J/16-C
                                                                                ;1578
U 0546, 0547,2051,0210,0140,2140,3033,4000,0422,017     ;1579   546:    16-C:   B_(R10.B),SEX,J/16-D
                                                                                ;1580
U 0547, 0000,2044,0001,6140,1740,3033,4000,0422,017     ;1581   547:    16-D:   PC_PC-B,BUT NOSERV,J/1-A
                                                                                ;1582
U 0730, 0556,2046,0001,4140,1340,3033,4000,0422,017     ;1583   730:    16-E:   R5_B,J/16-J
                                                                                ;1584
U 0136, 0000,2045,0000,2140,3740,3033,4000,0422,017     ;1585   136:    16-F:   BUT NOSERV,J/1-A
                                                                                ;1586
U 0020, 0553,2046,0210,0140,3740,3033,4000,0422,017     ;1587   020:    16-G:   B_B,SEX,J/16-H
                                                                                ;1588
U 0553, 0540,2045,1600,0140,1340,3033,4000,0422,017     ;1589   553:    16-H:   BX_R5 ASL B,J/16-I
                                                                                ;1590
U 0540, 0436,2050,0200,0140,1740,3033,4000,0422,017     ;1591   540:    16-I:   B_PC+B,J/16-M
                                                                                ;1592
U 0556, 0041,2067,0001,4140,1740,3033,4000,0422,017     ;1593   556:    16-J:   PC_BX,J/16-N
                                                                                ;1594
U 0557, 0730,6145,0300,0141,2140,3033,4000,0422,017     ;1595   557:    16-K:   BA_R10,DATI,B_UDATA,J/16-E,ID SPACE
                                                                                ;1596
U 0436, 0557,2046,0001,4140,2140,3033,4000,0422,017     ;1597   436:    16-M:   R10_B,J/16-K
                                                                                ;1598
U 0041, 0042,2064,0200,0140,2140,3033,4000,0422,017     ;1599   041:    16-N:   B_R10+2,J/16-O
                                                                                ;1600
U 0042, 0000,2046,0001,6140,1540,3033,4000,0422,017     ;1601   042:    16-O:   R6_B,BUT NOSERV,J/1-A
                                                                                ;1602
                                                                                ;1603
U 0011, 0044,0045,0200,0140,3740,3033,4000,0422,017     ;1604   011:    17-A:   B_PSW,J/17-C
                                                                                ;1605
U 0044, 0504,2064,0001,4150,3340,3033,4000,0422,017     ;1606   044:    17-C:   R15_R15+2,J/17-D,KERNEL
                                                                                ;1607
U 0504, 0560,6545,3700,0151,3340,3033,4000,0422,017     ;1608   504:    17-D:   BA_R15,DATI,PSW_UDATA,KERNEL,ENAB DBE,J/17-E,ID SPAC
E
                                                                                ;1609
U 0560, 0562,3265,0001,4140,1540,3033,4000,0422,017     ;1610   560:    17-E:   R6_R6-2,ENAB STOV,J/17-F
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U 0562, 0566,3365,0001,4141,1540,3033,4000,0422,017     ;1612   562:    17-F:   BA_R6,SP_SP-2,ENAB STOV,J/17-G,ID SPACE
                                                        ;1613
U 0566, 0052,2006,3704,0140,3740,3033,4000,0422,017     ;1614   566:    17-G:   DATO,UDATA_B,ENAB DBE,J/17-I
                                                        ;1615
U 0052, 0053,2145,0000,0141,1540,3033,4000,0422,017     ;1616   052:    17-I:   BA_R6,J/17-J,ID SPACE
                                                        ;1617
U 0053, 0202,2005,3704,0140,1740,3033,4000,0422,017     ;1618   053:    17-J:   DATO,UDATA_PC,ENAB DBE,J/17-K
                                                        ;1619
U 0202, 0646,2065,0001,4150,3340,3033,4000,0422,017     ;1620   202:    17-K:   R15_R15-2,J/17-L,KERNEL
                                                        ;1621
U 0646, 0734,6145,0300,0151,3340,3033,4000,0422,017     ;1622   646:    17-L:   BA_R15,DATI,B_UDATA,KERNEL,J/17-U,ID SPACE
                                                        ;1623
U 0733, 0647,4045,0001,4150,3366,7673,4200,2562,177     ;1624   733:    17-M:   R15_K26,FPS_0,J/17-N,KERNEL
                                                        ;1625
U 0647, 0202,6545,0100,1151,3340,3033,4000,0422,017     ;1626   647:    17-N:   BA_R15,DATI,PSW_UDATA,KERNEL,ID SPACE,BUT BOOT,J/17-
K
                                                        ;1627
U 0654, 0656,4045,0220,0140,3770,3033,4000,0422,017     ;1628   654:    17-O:   B_K366,SWAB,J/17-P
                                                        ;1629
U 0656, 0057,2050,0001,4150,3340,3033,4000,0422,017     ;1630   656:    17-P:   R15_B+R15,J/17-Q,KERNEL
                                                        ;1631
U 0057, 0202,6545,0100,0151,3340,3033,4000,0422,017     ;1632   057:    17-Q:   BA_R15,DATI,PSW_UDATA,KERNEL,ID SPACE,J/17-K
                                                        ;1633
U 0203, 0654,2440,0000,0140,3740,3033,4000,0422,017     ;1634   203:    17-R:   PSW_0,J/17-O
                                                        ;1635
U 0001, 0432,2045,0200,0140,1740,3033,4000,0422,017     ;1636   001:    17-S:   B_PC,J/17-T
                                                        ;1637
U 0432, 0733,2046,0001,4140,1340,3033,4000,0422,017     ;1638   432:    17-T:   R5_B,J/17-M
                                                        ;1639
U 0734, 0000,2046,0001,4140,1740,3033,4000,0422,017     ;1640   734:    17-U:   PC_B,J/1-A
                                                        ;1641
                                                        ;1642
U 0220, 0441,3445,0401,4140,2440,3033,4000,0422,017     ;1643   220:    18-A:   C R12 BX_RD,J/18-U
                                                        ;1644
U 0221, 0441,7545,0501,4141,2440,3033,4000,0422,017     ;1645   221:    18-B:   BA_RD,DATI,C R12 BX_UDATA,J/18-U,ID SPACE
                                                        ;1646
U 0224, 0221,3265,0001,0142,3640,3033,4000,0422,017     ;1647   224:    18-C:   RD_RD-2,ENAB STOV,J/18-B,SR1 L
                                                        ;1648
U 0222, 0563,7545,0501,4141,2440,3033,4000,0422,017     ;1649   222:    18-D:   BA_RD,DATI,C R12 BX_UDATA,J/18-E,ID SPACE
                                                        ;1650
U 0563, 0441,2064,0001,0142,3640,3033,4000,0422,017     ;1651   563:    18-E:   RD_RD+2,J/18-U,SR1 L
                                                        ;1652
U 0223, 0565,6145,0101,4141,2440,3033,4000,0422,017     ;1653   223:    18-F:   BA_RD,DATI,R12_UDATA,J/18-G,ID SPACE
                                                        ;1654
U 0565, 0571,2064,0001,0142,3640,3033,4000,0422,017     ;1655   565:    18-G:   RD_RD+2,J/18-Q,SR1 L
                                                        ;1656
U 0225, 0567,3265,0001,0142,3640,3033,4000,0422,017     ;1657   225:    18-H:   RD_RD-2,ENAB STOV,J/18-I,SR1 L
                                                        ;1658
U 0567, 0571,6145,0101,4141,2440,3033,4000,0422,017     ;1659   567:    18-I:   BA_RD,DATI,R12_UDATA,J/18-Q,ID SPACE
                                                        ;1660
U 0226, 0051,6145,0300,0140,1740,3033,4000,0422,017     ;1661   226:    18-J:   BA_PC,DATI,B_UDATA,J/18-K,I SPACE
                                                        ;1662
U 0051, 0054,2064,0001,4140,1740,3033,4000,0422,017     ;1663   051:    18-K:   PC_PC+2,J/18-L
                                                        ;1664
U 0054, 0571,2050,0001,4140,2440,3033,4000,0422,017     ;1665   054:    18-L:   R12_RD+B,J/18-Q
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U 0227, 0055,6145,0300,0140,1740,3033,4000,0422,017     ;1667   227:    18-M:   BA_PC,DATI,B_UDATA,J/18-N,I SPACE
                                                        ;1668
U 0055, 0056,2064,0001,4140,1740,3033,4000,0422,017     ;1669   055:    18-N:   PC_PC+2,J/18-O
                                                        ;1670
U 0056, 0570,2050,0001,4140,2440,3033,4000,0422,017     ;1671   056:    18-O:   R12_RD+B,J/18-P
                                                        ;1672
U 0570, 0571,6145,0101,4141,2540,3033,4000,0422,017     ;1673   570:    18-P:   BA_R12,DATI,R12_UDATA,J/18-Q,ID SPACE
                                                        ;1674
U 0571, 0441,7545,0501,4141,2540,3033,4000,0422,017     ;1675   571:    18-Q:   BA_R12,DATI,C R12 BX_UDATA,J/18-U,ID SPACE
                                                        ;1676
U 0460, 0572,5445,0000,0140,3750,3033,4000,0422,017     ;1677   460:    18-R:   C_16,J/18-S
                                                        ;1678
U 0572, 0402,2031,0001,4340,2740,3033,4000,0422,017     ;1679   572:    18-S:   R13_BXBAR,BUT NBIT,J/19-A
                                                        ;1680
U 0045, 0404,4027,0001,4540,2140,3033,4000,0422,017     ;1681   045:    18-T:   R10_0,T_BX,BUT ZBIT,J/21-A
                                                        ;1682
U 0441, 0400,3045,0000,0140,3740,3033,4000,0422,017     ;1683   441:    18-U:   BUT DEST,J/18-W
                                                        ;1684
U 0470, 0045,5445,0000,0140,3750,3033,4000,0422,017     ;1685   470:    18-V:   C_16,J/18-T
                                                        ;1686
U 0400, 0430,3645,0000,0740,3740,3033,4000,0422,017     ;1687   400:    18-W:   COUNT,BUT C05,J/25-A
                                                        ;1688
U 0410, 0430,3645,0000,0740,3740,3033,4000,0422,017     ;1689   410:    18-X:   COUNT,BUT C05,J/25-A
                                                        ;1690
U 0237, 0000,2045,0000,0140,3740,3033,4000,0422,017     ;1691   237:    18-Y:   J/1-A
                                                        ;1692
U 0402, 0403,4002,0200,0340,2740,3033,4000,0422,017     ;1693   402:    19-A:   B_0,T_R13+1,BUT NBIT,J/19-J
                                                        ;1694
U 0503, 0405,2005,0001,4340,2500,3033,4000,0422,017     ;1695   503:    19-B:   R12_RS,BUT NBIT,J/19-D
                                                        ;1696
U 0505, 0573,2041,0001,4140,2700,3033,4000,0422,017     ;1697   505:    19-C:   R13_RSBAR,J/19-E
                                                        ;1698
U 0405, 0407,2041,0001,4140,2700,3033,4000,0422,017     ;1699   405:    19-D:   R13_RSBAR,J/19-U
                                                        ;1700
U 0573, 0407,2002,0000,0340,2740,3033,4000,0422,017     ;1701   573:    19-E:   T_R13+1,BUT NBIT,J/19-U
                                                        ;1702
U 0507, 0574,2046,3400,0140,3740,3033,4000,0422,017     ;1703   507:    19-F:   T_B,SR(B15-B-BX),J/19-G
                                                        ;1704
U 0574, 0575,2067,0200,4140,3740,3033,4000,0422,017     ;1705   574:    19-G:   B RS_BX,J/19-H
                                                        ;1706
U 0575, 0610,4045,0000,4040,3740,3033,4000,0422,017     ;1707   575:    19-H:   RSV1_0,J/20-B
                                                        ;1708
U 0502, 0403,4045,0200,0140,3740,3033,4000,0422,017     ;1709   502:    19-I:   B_0,J/19-J
                                                        ;1710
U 0403, 0576,2045,0400,0140,3700,3033,4000,0422,017     ;1711   403:    19-J:   BX_RS,J/19-K
                                                        ;1712
U 0576, 0407,2067,0000,1340,3740,3033,4000,0422,017     ;1713   576:    19-K:   T_BX,BUT BX00,J/19-U
                                                        ;1714
U 0427, 0407,2060,0200,0140,2740,3033,4000,0422,017     ;1715   427:    19-L:   B_R13+B+1,J/19-U
                                                        ;1716
U 0413, 0413,3667,3400,3140,3740,3033,4000,0422,017     ;1717   413:    19-M:   T_BX,SR(B15-B-BX),COUNT,BUT C05 BX01 BX00,J/19-M
                                                        ;1718
U 0473, 0413,3667,3400,3140,3740,3033,4000,0422,017     ;1719   473:    19-N:   T_BX,SR(B15-B-BX),COUNT,BUT C05 BX01 BX00,J/19-M
                                                        ;1720
U 0453, 0413,2060,0200,0140,2740,3033,4000,0422,017     ;1721   453:    19-O:   B_R13+B+1,J/19-M
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U 0437, 0577,2046,0000,4140,3740,3033,4000,0422,017                 ;1725   437:    19-Q:   RS_B,J/20-A
                                                                    ;1726
U 0457, 0577,2046,0000,4140,3740,3033,4000,0422,017                 ;1727   457:    19-R:   RS_B,J/20-A
                                                                    ;1728
U 0477, 0577,2046,0000,4140,3740,3033,4000,0422,017                 ;1729   477:    19-S:   RS_B,J/20-A
                                                                    ;1730
U 0433, 0473,2050,0200,0140,2540,3033,4000,0422,017                 ;1731   433:    19-T:   B_R12+B,J/19-N
                                                                    ;1732
U 0407, 0413,3667,3400,3140,3740,3033,4000,0422,017                 ;1733   407:    19-U:   T_BX,SR(B15-B-BX),COUNT,BUT C05 BX01 BX00,J/19-M
                                                                    ;1734
U 0577, 0610,2067,0000,4040,3740,3033,4000,0422,017                 ;1735   577:    20-A:   RSV1_BX,J/20-B
                                                                    ;1736
U 0610, 0725,4066,3001,4140,2100,3033,4000,0422,017                 ;1737   610:    20-B:   R10_0,T_RS+RS,SL(BX-COUT),J/20-N
                                                                    ;1738
U 0074, 0420,2030,2200,0540,3740,3033,4000,0422,017                 ;1739   074:    20-C:   T_BBAR,SL(BX-0),BUT ZBIT,J/20-E
                                                                    ;1740
U 0422, 0415,2005,2200,0240,3700,3033,4000,0422,017                 ;1741   422:    20-D:   T_RSV1,SL(BX-0),BUT NBIT,J/20-G
                                                                    ;1742
U 0420, 0415,2067,2200,0140,3740,3033,4000,0422,017                 ;1743   420:    20-E:   T_BX,SL(BX-0),J/20-G
                                                                    ;1744
U 0515, 0641,2067,2200,0140,3740,3033,4000,0422,017                 ;1745   515:    20-F:   T_BX,SL(BX-0),J/24-N
                                                                    ;1746
U 0415, 0641,2067,2400,0140,3740,3033,4000,0422,017                 ;1747   415:    20-G:   T_BX,SL(BX-1),J/24-N
                                                                    ;1748
U 0076, 0414,2005,2200,0440,3700,3033,4000,0422,017                 ;1749   076:    20-H:   T_RSV1,SL(BX-0),BUT ZBIT,J/20-J
                                                                    ;1750
U 0416, 0414,2063,0400,0140,2140,3033,4000,0422,017                 ;1751   416:    20-I:   BX_R10+BX+1,J/20-J
                                                                    ;1752
U 0414, 0454,2005,2200,0240,3700,3033,4000,0422,017                 ;1753   414:    20-J:   T_RSV1,SL(BX-0),BUT NBIT,J/24-K
                                                                    ;1754
U 0725, 0074,2006,0000,0540,3740,3033,4000,0422,017                 ;1755   725:    20-N:   T_B,BUT ZBIT,J/20-C
                                                                    ;1756
U 0404, 0612,2071,0001,4140,2740,3033,4000,0422,017                 ;1757   404:    21-A:   R13_BXBAR,J/21-B
                                                                    ;1758
U 0612, 0421,2005,0200,0340,3700,3033,4000,0422,017                 ;1759   612:    21-B:   B_RS,BUT NBIT,J/21-L
                                                                    ;1760
U 0521, 0613,2045,0400,0040,3700,3033,4000,0422,017                 ;1761   521:    21-C:   BX_RSV1
                                                                    ;1762
U 0613, 0423,2022,0400,1740,2140,3033,4000,0422,017                 ;1763   613:    21-D:   BX_R10-BX,BUT COUT,J/21-F
                                                                    ;1764
U 0623, 0424,2004,0200,0340,2140,3033,4000,0422,017                 ;1765   623:    21-E:   B_R10-B,BUT NBIT,J/21-M
                                                                    ;1766
U 0423, 0424,2070,0200,0140,3740,3033,4000,0422,017                 ;1767   423:    21-F:   B_BBAR,J/21-M
                                                                    ;1768
U 0442, 0242,3605,2000,2540,2540,3033,4000,0422,017                 ;1769   442:    21-G:   T_R12,SL(B-BX15),COUNT,BUT BX00 NBIT,J/21-J
                                                                    ;1770
U 0262, 0442,2060,1000,0740,2740,3033,4000,0422,017                 ;1771   262:    21-H:   SL(BX-COUT) B_R13+B+1,BUT C05,J/21-G
                                                                    ;1772
U 0362, 0442,2050,1000,0740,2540,3033,4000,0422,017                 ;1773   362:    21-I:   SL(BX-COUT) B_R12+B,BUT C05,J/21-G
                                                                    ;1774
U 0242, 0442,2050,1000,0740,2540,3033,4000,0422,017                 ;1775   242:    21-J:   SL(BX-COUT) B_R12+B,BUT C05,J/21-G
                                                                    ;1776
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U 0342, 0442,2060,1000,0740,2740,3033,4000,0422,017     ;1777   342:    21-K:   SL(BX-COUT) B_R13+B+1,BUT C05,J/21-G
                                                        ;1778
U 0421, 0424,2045,0400,0040,3700,3033,4000,0422,017     ;1779   421:    21-L:   BX_RSV1,J/21-M
                                                        ;1780
U 0424, 0425,2005,2000,0340,2540,3033,4000,0422,017     ;1781   424:    21-M:   T_R12,SL(B-BX15),BUT NBIT,J/21-O
                                                        ;1782
U 0525, 0440,2010,1000,0540,2540,3033,4000,0422,017     ;1783   525:    21-N:   SL(BX-COUT) B_R12+B,BUT ZBIT,J/21-P
                                                        ;1784
U 0425, 0440,2020,1000,0540,2740,3033,4000,0422,017     ;1785   425:    21-O:   SL(BX-COUT) B_R13+B+1,BUT ZBIT,J/21-P
                                                        ;1786
U 0440, 0442,2067,0000,1340,3740,3033,4000,0422,017     ;1787   440:    21-P:   T_BX,BUT BX00,J/21-G
                                                        ;1788
U 0446, 0241,2005,0000,2540,2540,3033,4000,0422,017     ;1789   446:    22-A:   T_R12,BUT BX00 NBIT,J/22-B
                                                        ;1790
U 0241, 0261,2050,0200,0140,2540,3033,4000,0422,017     ;1791   241:    22-B:   B_R12+B,J/22-C
                                                        ;1792
U 0261, 0444,2005,0000,0340,3700,3033,4000,0422,017     ;1793   261:    22-C:   T_RS,BUT NBIT,J/22-D
                                                        ;1794
U 0444, 0614,2046,0000,4040,3740,3033,4000,0422,017     ;1795   444:    22-D:   RSV1_B,J/22-F
                                                        ;1796
U 0544, 0615,2044,0000,4040,2140,3033,4000,0422,017     ;1797   544:    22-E:   RSV1_R10-B,J/22-O
                                                        ;1798
U 0614, 0530,2027,2200,4540,3740,3033,4000,0422,017     ;1799   614:    22-F:   RS_BX,SL(BX-0),BUT ZBIT,J/22-G
                                                        ;1800
U 0530, 0431,2005,2200,0340,3700,3033,4000,0422,017     ;1801   530:    22-G:   T_RS,SL(BX-0),BUT NBIT,J/22-J
                                                        ;1802
U 0532, 0431,2042,0400,0140,2140,3033,4000,0422,017     ;1803   532:    22-H:   BX_R10+1,J/22-J
                                                        ;1804
U 0531, 0550,2067,2400,0140,3740,3033,4000,0422,017     ;1805   531:    22-I:   T_BX,SL(BX-1),J/24-M
                                                        ;1806
U 0431, 0550,2067,2200,0140,3740,3033,4000,0422,017     ;1807   431:    22-J:   T_BX,SL(BX-0),J/24-M
                                                        ;1808
U 0341, 0361,2060,0200,0140,2740,3033,4000,0422,017     ;1809   341:    22-K:   B_R13+B+1,J/22-L
                                                        ;1810
U 0361, 0443,2005,0000,0340,3700,3033,4000,0422,017     ;1811   361:    22-L:   T_RS,BUT NBIT,J/22-N
                                                        ;1812
U 0543, 0614,2044,0000,4040,2140,3033,4000,0422,017     ;1813   543:    22-M:   RSV1_R10-B,J/22-F
                                                        ;1814
U 0443, 0615,2046,0000,4040,3740,3033,4000,0422,017     ;1815   443:    22-N:   RSV1_B,J/22-O
                                                        ;1816
U 0615, 0534,2022,2400,4540,2140,3033,4000,0422,017     ;1817   615:    22-O:   RS_R10-BX,SL(BX-1),BUT ZBIT,J/22-Q
                                                        ;1818
U 0536, 0526,2042,0400,0140,2140,3033,4000,0422,017     ;1819   536:    22-P:   BX_R10+1,J/22-R
                                                        ;1820
U 0534, 0426,2005,2200,0340,3700,3033,4000,0422,017     ;1821   534:    22-Q:   T_RS,SL(BX-0),BUT NBIT,J/22-S
                                                        ;1822
U 0526, 0550,2067,2200,0140,3740,3033,4000,0422,017     ;1823   526:    22-R:   T_BX,SL(BX-0),J/24-M
                                                        ;1824
U 0426, 0550,2067,2400,0140,3740,3033,4000,0422,017     ;1825   426:    22-S:   T_BX,SL(BX-1),J/24-M
                                                        ;1826
U 0524, 0000,2664,0000,2140,2140,3033,4000,0422,017     ;1827   524:    22-V:   CC_R10+2,BUT NOSERV,J/1-A
                                                        ;1828
U 0406, 0620,2064,0001,4140,2140,3033,4000,0422,017     ;1829   406:    22-W:   R10_R10+2,J/22-X
                                                        ;1830
U 0620, 0000,2642,0000,2140,2140,3033,4000,0422,017     ;1831   620:    22-X:   CC_R10+1,BUT NOSERV,J/1-A
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                                                                    ;1832
U 0462, 0000,2664,0000,2140,2140,3033,4000,0422,017     ;1833   462:    22-Y:   CC_R10+2,BUT NOSERV,J/1-A
                                                                    ;1834
U 0017, 0735,2046,0220,0140,3740,3033,4000,0422,017     ;1835   017:    23-A:   B_B SWAB,J/23-B
                                                                    ;1836
U 0735, 0715,0045,3401,4140,2540,3033,4000,0422,017     ;1837   735:    23-B:   SR(B15-B-BX),R12_PSW,J/23-C
                                                                    ;1838
U 0715, 0712,4045,3401,4140,2770,3033,4000,0422,017     ;1839   715:    23-C:   SR(B15-B-BX),R13_366,J/23-D
                                                                    ;1840
U 0712, 0626,2045,3400,0140,3740,3033,4000,0422,017     ;1841   712:    23-D:   SR(B15-B-BX),J/23-G
                                                                    ;1842
U 0626, 0625,4045,0400,0140,3760,3033,4000,0422,017     ;1843   626:    23-G:   BX_26,J/23-H
                                                                    ;1844
U 0625, 0624,2062,0400,0140,2740,3033,4000,0422,017     ;1845   625:    23-H:   BX_R13-BX,J/23-I
                                                                    ;1846
U 0624, 0622,2046,0001,4140,2740,3033,4000,0422,017     ;1847   624:    23-I:   R13_B,J/23-J
                                                                    ;1848
U 0622, 0621,2057,0200,0140,2740,3033,4000,0422,017     ;1849   622:    23-J:   B_R13.BX,J/23-K
                                                                    ;1850
U 0621, 0471,2056,0001,4140,2540,3033,4000,0422,017     ;1851   621:    23-K:   R12_R12.BXBAR,J/23-L
                                                                    ;1852
U 0471, 0000,2453,0000,2140,2540,3033,4000,0422,017     ;1853   471:    23-L:   PSW_R12.OR.B,BUT NOSERV,J/1-A
                                                                    ;1854
U 0450, 0337,4045,0001,4140,2750,3033,4000,0422,017     ;1855   450:    23-M:   R13_16,J/23-N
                                                                    ;1856
U 0337, 0236,2042,0401,4140,2740,3033,4000,0422,017     ;1857   337:    23-N:   R13 BX_R13+1,J/23-O
                                                                    ;1858
U 0236, 0235,2047,0200,0140,3740,3033,4000,0422,017     ;1859   236:    23-O:   B_MINUS 1,J/23-P
                                                                    ;1860
U 0235, 0234,2045,4200,0140,3740,3033,4000,0422,017     ;1861   235:    23-P:   B_SR(0-B),J/23-Q
                                                                    ;1862
U 0234, 0233,2046,0001,4140,3140,3033,4000,0422,017     ;1863   234:    23-Q:   R14_B,J/23-R
                                                                    ;1864
U 0233, 0232,2062,0001,4140,3140,3033,4000,0422,017     ;1865   233:    23-R:   R14_R14-BX,J/23-S
                                                                    ;1866
U 0232, 0231,2043,0200,0140,3140,3033,4000,0422,017     ;1867   232:    23-S:   B_R14-1,J/23-T
                                                                    ;1868
U 0231, 0230,0045,0001,4140,3140,3033,4000,0422,017     ;1869   231:    23-T:   R14_PSW,J/23-U
                                                                    ;1870
U 0230, 0217,2045,0400,0140,1540,3033,4000,0422,017     ;1871   230:    23-U:   BX_SP,J/23-W
                                                                    ;1872
U 0217, 0137,2451,0000,0150,3140,3033,4000,0422,017     ;1873   217:    23-W:   PSW_B.AND.R14,KERNEL,J/23-X
                                                                    ;1874
U 0137, 0070,2067,0201,4140,1540,3033,4000,0422,017     ;1875   137:    23-X:   SP B_BX,J/23-XX
                                                                    ;1876
U 0070, 0267,2045,0200,0140,2740,3033,4000,0422,017     ;1877   070:    23-XX:  B_R13,J/23-YY
                                                                    ;1878
U 0267, 0071,2065,0001,4140,1540,3033,4000,0422,017     ;1879   267:    23-YY:  SP_SP-2,J/23-Y
                                                                    ;1880
U 0071, 0066,3365,0001,4141,1540,3033,4000,0422,017     ;1881   071:    23-Y:   BA_R6 SP_SP-2,ENAB STOV,ID SPACE,J/23-Z
                                                                    ;1882
U 0066, 0065,2015,0104,0140,3140,3033,4000,0422,017     ;1883   066:    23-Z:   DATO,UDATA_R14.AND.BBAR,J/23-AA
                                                                    ;1884
U 0065, 0064,3365,0001,4141,1540,3033,4000,0422,017     ;1885   065:    23-AA:  BA_R6 SP_SP-2,ENAB STOV,ID SPACE,J/23-BB
                                                                    ;1886
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U 0064, 0063,2005,0104,0140,1740,3033,4000,0422,017     ;1887   064:    23-BB:  DATO,UDATA_PC,J/23-CC
                                                        ;1888
U 0063, 0062,3345,0000,0141,1540,3033,4000,0422,017     ;1889   063:    23-CC:  BA_R6,ENAB STOV,ID SPACE,J/23-DD
                                                        ;1890
U 0062, 0060,2005,0104,0140,2540,3033,4000,0422,017     ;1891   062:    23-DD:  DATO,UDATA_R12,J/23-FF
                                                        ;1892
U 0060, 0061,4045,0200,0140,3750,3033,4000,0422,017     ;1893   060:    23-FF:  B_16,J/23-II
                                                        ;1894
U 0061, 0047,4045,0001,4140,1760,3033,4000,0422,017     ;1895   061:    23-II:  R7_26,J/23-GG
                                                        ;1896
U 0047, 0046,2044,0001,4140,1740,3033,4000,0422,017     ;1897   047:    23-GG:  R7_R7-B,J/23-HH
                                                        ;1898
U 0046, 0000,6145,0101,6140,1740,3033,4000,0422,017     ;1899   046:    23-HH:  BA_PC,DATI,R7_UDATA,I SPACE,BUT NOSERV,J/1-A
                                                        ;1900
U 0434, 0706,3045,0200,0140,3700,3033,4000,0422,017     ;1901   434:    24-A:   B_RS,BUT DEST,J/24-B
                                                        ;1902
U 0706, 0702,3667,3400,0740,3740,3033,4000,0422,017     ;1903   706:    24-B:   T_BX,SR(B15-B-BX),COUNT,BUT C05,J/24-C
                                                        ;1904
U 0702, 0445,2006,0000,6340,3740,3033,4000,0422,017     ;1905   702:    24-C:   RS_B,BUT NBIT ZBIT,J/24-E
                                                        ;1906
U 0447, 0135,2067,0600,0140,3740,3033,4000,0422,017     ;1907   447:    24-D:   B_BX SL(BX-0),J/24-G
                                                        ;1908
U 0445, 0133,2067,0600,0140,3740,3033,4000,0422,017     ;1909   445:    24-E:   B_BX SL(BX-0),J/24-H
                                                        ;1910
U 0545, 0133,2067,1200,0140,3740,3033,4000,0422,017     ;1911   545:    24-F:   B_BX SL(BX-1),J/24-H
                                                        ;1912
U 0135, 0132,2067,2400,0140,3740,3033,4000,0422,017     ;1913   135:    24-G:   T_BX,SL(BX-1),J/24-I
                                                        ;1914
U 0133, 0132,2067,2200,0140,3740,3033,4000,0422,017     ;1915   133:    24-H:   T_BX,SL(BX-0),J/24-I
                                                        ;1916
U 0132, 0454,2006,2600,0340,3740,3033,4000,0422,017     ;1917   132:    24-I:   T_B,SL(BX-OVX),BUT NBIT,J/24-K
                                                        ;1918
U 0131, 0550,2067,2600,0740,3740,3033,4000,0422,017     ;1919   131:    24-J:   T_BX,SL(BX-OVX),BUT C05,J/24-M
                                                        ;1920
U 0454, 0641,2067,2200,0140,3740,3033,4000,0422,017     ;1921   454:    24-K:   T_BX,SL(BX-0),J/24-N
                                                        ;1922
U 0554, 0641,2067,2400,0140,3740,3033,4000,0422,017     ;1923   554:    24-L:   T_BX,SL(BX-1),J/24-N
                                                        ;1924
U 0550, 0641,2067,2200,0140,3740,3033,4000,0422,017     ;1925   550:    24-M:   T_BX,SL(BX-0),J/24-N
                                                        ;1926
U 0641, 0000,2667,0000,2140,3740,3033,4000,0422,017     ;1927   641:    24-N:   CC_BX,BUT NOSERV,J/1-A
                                                        ;1928
U 0716, 0707,2045,0400,0040,3700,3033,4000,0422,017     ;1929   716:    24-O:   BX_RSV1,J/24-Q
                                                        ;1930
U 0727, 0703,3667,3400,3540,3740,3033,4000,0422,017     ;1931   727:    24-P:   T_BX,SR(B15-B-BX),COUNT,BUT BX00 C05,J/24-R
                                                        ;1932
U 0707, 0703,3667,3400,3540,3740,3033,4000,0422,017     ;1933   707:    24-Q:   T_BX,SR(B15-B-BX),COUNT,BUT BX00 C05,J/24-R
                                                        ;1934
U 0703, 0723,3667,0000,0140,3740,3033,4000,0422,017     ;1935   703:    24-R:   T_BX,COUNT,J/24-S
                                                        ;1936
U 0723, 0464,2006,0000,6340,3740,3033,4000,0422,017     ;1937   723:    24-S:   RS_B,BUT NBIT ZBIT,J/24-U
                                                        ;1938
U 0466, 0465,2027,2200,4440,3740,3033,4000,0422,017     ;1939   466:    24-T:   RSV1_BX,SL(BX-0),BUT ZBIT,J/24-X
                                                        ;1940
U 0464, 0465,2067,2200,4040,3740,3033,4000,0422,017     ;1941   464:    24-U:   RSV1_BX,SL(BX-0),J/24-X
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                                                                ;1942
U 0564, 0465,2067,2400,4040,3740,3033,4000,0422,017             ;1943   564:    24-V:   RSV1_BX,SL(BX-1),J/24-X
                                                                ;1944
U 0467, 0131,2067,2400,0140,3740,3033,4000,0422,017             ;1945   467:    24-W:   T_BX,SL(BX-1),J/24-J
                                                                ;1946
U 0465, 0131,2067,2200,0140,3740,3033,4000,0422,017             ;1947   465:    24-X:   T_BX,SL(BX-0),J/24-J
                                                                ;1948
U 0430, 0452,3645,0200,0740,3700,3033,4000,0422,017             ;1949   430:    25-A:   B_RS,COUNT,BUT C05,J/25-D
                                                                ;1950
U 0456, 0726,3045,0400,0040,3700,3033,4000,0422,017             ;1951   456:    25-B:   BX_RSV1,BUT DEST,J/25-C
                                                                ;1952
U 0726, 0702,4045,0400,0140,3740,3033,4000,0422,017             ;1953   726:    25-C:   BX_0,J/24-C
                                                                ;1954
U 0452, 0643,3045,0400,0040,3700,3033,4000,0422,017             ;1955   452:    25-D:   BX_RSV1,BUT DEST,J/25-H
                                                                ;1956
U 0653, 0653,3646,3201,4740,2140,3033,4000,0422,017             ;1957   653:    25-E:   R10_B,SL(B-BX-0),COUNT,BUT C05,J/25-E
                                                                ;1958
U 0657, 0451,2005,0000,0340,2140,3033,4000,0422,017             ;1959   657:    25-F:   T_R10,BUT NBIT,J/25-N
                                                                ;1960
U 0551, 0451,3646,0000,0140,3740,3033,4000,0422,017             ;1961   551:    25-G:   T_B,COUNT,J/25-N
                                                                ;1962
U 0643, 0720,4045,0400,0140,3740,3033,4000,0422,017             ;1963   643:    25-H:   BX_0,J/25-I
                                                                ;1964
U 0720, 0720,3646,3201,4740,2140,3033,4000,0422,017             ;1965   720:    25-I:   R10_B,SL(B-BX-0),COUNT,BUT C05,J/25-I
                                                                ;1966
U 0724, 0455,2005,0000,0340,2140,3033,4000,0422,017             ;1967   724:    25-J:   T_R10,BUT NBIT,J/25-K
                                                                ;1968
U 0455, 0702,4045,0400,0140,3740,3033,4000,0422,017             ;1969   455:    25-K:   BX_0,J/24-C
                                                                ;1970
U 0555, 0702,2047,0400,0140,3740,3033,4000,0422,017             ;1971   555:    25-L:   BX_MINUS 1,J/24-C
                                                                ;1972
U 0736, 0464,2006,0000,6340,3740,3033,4000,0422,017             ;1973   736:    25-M:   RS_B,BUT NBIT ZBIT,J/24-U
                                                                ;1974
U 0451, 0464,2006,0000,6340,3740,3033,4000,0422,017             ;1975   451:    25-N:   RS_B,BUT NBIT ZBIT,J/24-U
                                                                ;1976
U 0660, 0000,2645,4031,2140,3640,3033,4000,0422,017             ;1977   660:    26-A:   RD_(RD OF B),LOAD CC,BUT NOSERV,J/1-A
                                                                ;1978
U 0661, 1267,6145,0173,4141,2440,3033,4000,0422,017             ;1979   661:    26-B:   BA_RD,DATIP,R12_(UDATA),MAINT,J/4-E,ID SPACE
                                                                ;1980
U 0664, 0661,3265,0031,0144,3640,3033,4000,0422,017             ;1981   664:    26-C:   RD_RD-(2),ENAB STOV,J/26-B,SR1 H
                                                                ;1982
U 0662, 0701,6145,0173,4141,2440,3033,4000,0422,017             ;1983   662:    26-D:   BA_RD,DATIP,R12_(UDATA),MAINT,J/26-E,ID SPACE
                                                                ;1984
U 0701, 1267,2064,0031,0144,3640,3033,4000,0422,017             ;1985   701:    26-E:   RD_RD+(2),J/4-E,SR1 H
                                                                ;1986
U 0663, 0722,6145,0101,4141,2440,3033,4000,0422,017             ;1987   663:    26-F:   BA_RD,DATI,R12_UDATA,J/26-G,ID SPACE
                                                                ;1988
U 0722, 0277,2064,0001,0144,3640,3033,4000,0422,017             ;1989   722:    26-G:   RD_RD+2,J/7-J,SR1 H
                                                                ;1990
U 0665, 0512,3265,0001,0144,3640,3033,4000,0422,017             ;1991   665:    26-H:   RD_RD-2,ENAB STOV,J/7-I,SR1 H
                                                                ;1992
U 0666, 0301,6145,0500,0140,1740,3033,4000,0422,017             ;1993   666:    26-K:   BA_PC,DATI,BX_UDATA,J/7-L,I SPACE
                                                                ;1994
U 0667, 0303,6145,0500,0140,1740,3033,4000,0422,017             ;1995   667:    26-N:   BA_PC,DATI,BX_UDATA,J/7-O,I SPACE
                                                                ;1996
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U 0777, 0000,2045,0000,3340,3740,3033,4000,0422,017     ;1997   777:    27-S:   BUT ALL,J/1-A
                                                        ;1998
U 0740, 0000,2045,0001,4140,2540,3033,4000,0422,017     ;1999   740:    29-A:   R12_R12,J/1-A
                                                        ;2000
U 0741, 0000,2005,0001,4140,0140,3033,4000,0422,017     ;2001   741:    29-B:   R0L_R0L,J/1-A
                                                        ;2002
U 0742, 0000,2005,0001,4140,0340,3033,4000,0422,017     ;2003   742:    29-C:   R1L_R1L,J/1-A
                                                        ;2004
U 0743, 0000,2005,0001,4140,0540,3033,4000,0422,017     ;2005   743:    29-D:   R2L_R2L,J/1-A
                                                        ;2006
U 0744, 0000,2005,0001,4140,0740,3033,4000,0422,017     ;2007   744:    29-E:   R3L_R3L,J/1-A
                                                        ;2008
U 0745, 0000,2005,0001,4140,1140,3033,4000,0422,017     ;2009   745:    29-F:   R4L_R4L,J/1-A
                                                        ;2010
U 0746, 0000,2005,0001,4140,1340,3033,4000,0422,017     ;2011   746:    29-G:   R5L_R5L,J/1-A
                                                        ;2012
U 0747, 0000,3205,0001,4140,1540,3033,4000,0422,017     ;2013   747:    29-H:   R6L_R6L,J/1-A,ENAB STOV
                                                        ;2014
U 0750, 0000,2005,0001,4140,1740,3033,4000,0422,017     ;2015   750:    29-I:   R7L_R7L,J/1-A
                                                        ;2016
U 0751, 0000,3325,0001,4141,1540,3033,4000,0422,017     ;2017   751:    29-K:   BA R6L_R6L-2,J/1-A,ENAB STOV,ID SPACE
                                                        ;2018
U 0752, 0000,3324,0001,4141,1540,3033,4000,0422,017     ;2019   752:    29-L:   BA R6L_R6L+2,J/1-A,ENAB STOV,ID SPACE
                                                        ;2020
U 0753, 0000,2045,0001,4140,3140,3033,4000,0422,017     ;2021   753:    29-M:   R14_R14,J/1-A
                                                        ;2022
U 0754, 0000,2045,0001,4140,2140,3033,4000,0422,017     ;2023   754:    29-N:   R10_R10,J/1-A
                                                        ;2024
U 0755, 0000,3245,0001,4140,1540,3033,4000,0422,017     ;2025   755:    29-O:   R6_R6,J/1-A,ENAB STOV
                                                        ;2026
U 0756, 0000,2045,0001,4140,1740,3033,4000,0422,017     ;2027   756:    29-Q:   R7_R7,J/1-A
                                                        ;2028
U 0757, 0000,2005,0001,4140,2540,3033,4000,0422,017     ;2029   757:    29-R:   R12L_R12L,J/1-A
                                                        ;2030
U 0760, 0000,2005,0001,4140,2740,3033,4000,0422,017     ;2031   760:    29-S:   R13L_R13L,J/1-A
                                                        ;2032
U 0761, 0000,2005,0001,4140,3140,3033,4000,0422,017     ;2033   761:    29-T:   R14L_R14L,J/1-A
                                                        ;2034
U 0762, 0000,2005,0001,4140,2140,3033,4000,0422,017     ;2035   762:    29-U:   R10L_R10L,J/1-A
                                                        ;2036
U 0763, 0000,0445,0000,0140,3740,3033,4000,0422,017     ;2037   763:    29-V:   PSW_PSW,J/1-A
                                                        ;2038
U 0764, 0000,6145,0300,0141,1540,3033,4000,0422,017     ;2039   764:    29-W:   BA_R6,DATI,B_UDATA,J/1-A,ID SPACE
                                                        ;2040
U 0765, 0000,6145,0130,0141,2740,3033,4000,0422,017     ;2041   765:    29-X:   BA_R13,DATI,EXTRNL_UDATA,J/1-A,ID SPACE
                                                        ;2042
U 0766, 0000,6145,0130,0141,3140,3033,4000,0422,017     ;2043   766:    29-Y:   BA_R14,DATI,EXTRNL_UDATA,J/1-A,ID SPACE
                                                        ;2044
U 0767, 0000,6145,0130,0141,2140,3033,4000,0422,017     ;2045   767:    29-Z:   BA_R10,DATI,EXTRNL_UDATA,J/1-A,ID SPACE
                                                        ;2046
U 0770, 0000,6145,0300,0141,2140,3033,4000,0422,017     ;2047   770:    29-AA:  BA_R10,DATI,B_UDATA,J/1-A,ID SPACE
                                                        ;2048
U 0771, 0000,6145,0300,0140,2140,3033,4000,0422,017     ;2049   771:    29-BB:  BA_R10,DATI,B_UDATA,J/1-A,I SPACE
                                                        ;2050
U 0772, 0000,2145,0000,0141,1540,3033,4000,0422,017     ;2051   772:    29-CC:  BA_R6,J/1-A,ID SPACE
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                                                                ;2052
U 0773, 0000,2145,0000,0141,2140,3033,4000,0422,017             ;2053   773:    29-DD:  BA_R10,J/1-A,ID SPACE
                                                                ;2054
U 0774, 0000,2006,0104,0141,3740,3033,4000,0422,017             ;2055   774:    29-EE:  DATO,UDATA_B,J/1-A,ID SPACE
                                                                ;2056
U 0775, 0000,2006,0136,0141,3740,3033,4000,0422,017             ;2057   775:    29-FF:  DATOB,UDATA_EXTRNL,J/1-A,ID SPACE
                                                                ;2058
U 0776, 0000,2105,0000,0141,2140,3033,4000,0422,017             ;2059   776:    29-HH:  BA_R10L,J/1-A,ID SPACE
                                                                ;2060
                                                                ;2061   X01:
                                                                ;2062   X02:
                                                                ;2063   X03:
                                                                ;2064   X04:
                                                                ;2065   X05:
                                                                ;2066   X06:
                                                                ;2067   X07:
                                                                ;2068   X08:
                                                                ;2069   X09:
                                                                ;2070   X10:
                                                                ;2071   ;FLOATING POINT    44 FUNCTIONALITY FLOWS 1ST PASS
                                                                ;2072   ;       REV G COMBINED FP AND BASE FLOWS  5 DEC 78
                                                                ;2073           ;REVC 17 NOV 78
                                                                ;2074   ;REV B    25 AUG 78
                                                                ;2075   ;       2-OCT-78 DELETE ABORT STATUS TO FIT IN 512 WORDS
                                                                ;2076           ;4-OCT-78 REPLACE R17 WITH R14
                                                                ;2077           ;17 NOV 78 CHANGE R17 SCRATCH REG TO R10
                                                                ;2078
U 0050, 1760,2045,0200,0140,3746,4643,2214,7222,037             ;2079   050:    FP1-A:          B_(10.4.2),X11_AC,BUT BREAKOUT,J/FP2-A
                                                                ;2080
U 1236, 1365,2067,0001,4140,2346,7673,4200,2162,137             ;2081   1236:   FP10-A:         R11_BX,FEC_04,J/FP37-B
                                                                ;2082
U 1036, 1365,2067,0001,4140,2346,7673,4200,2162,137             ;2083   1036:   FP10-B:         R11_BX,FEC_04,J/FP37-B
                                                                ;2084
U 1226, 1424,2045,0000,0140,3740,3033,4015,2156,017             ;2085   1226:   FP10-C:         FCC_04(FZ),BUT FD,J/FP36-F
                                                                ;2086
U 1026, 1461,2045,0001,4140,3141,1117,6200,2763,077             ;2087   1026:   FP10-D:         X13_X13-X14,R14_(72.32),J/FP10-E
                                                                ;2088
U 1461, 1462,2005,0000,0140,3740,5053,4200,3022,677             ;2089   1461:   FP10-E:         X13_X13+200,J/FP10-I
                                                                ;2090
U 1464, 1466,2045,0000,0140,3746,3423,5200,0422,057             ;2091   1464:   FP10-F:         F12_SR1(F12) E12_ZERO,J/FP10-G
                                                                ;2092
U 1466, 1436,2005,0000,0140,3746,3633,4726,4422,057             ;2093   1466:   FP10-G:         X12_SR0(X12),BUT BR.OR.PFAIL,J/FP10-H
                                                                ;2094
U 1436, 1175,2045,0000,0140,3744,2613,0400,0422,017             ;2095   1436:   FP10-H:         X10_ROTL(ZERO*(EAC.XOR.E10),J/FP11-A
                                                                ;2096
U 1462, 1464,2045,0000,0140,3744,2423,4300,0422,017             ;2097   1462:   FP10-I:         Q_ZERO,J/FP10-F
                                                                ;2098
U 1536, 1750,2065,0001,4140,1740,3033,4035,0422,017             ;2099   1536:   FP10-J:         PC_PC-2,BUT SRC,J/FP20-A
                                                                ;2100
U 1175, 1171,2003,0001,4540,3141,1117,5530,4422,437             ;2101   1175:   FP11-A:         X11_SL0(X11-X12) Q_SLC63(Q),R14_R14-1,BUT CO
UT63 ZBIT,J/FP11-B
                                                                ;2102
U 1171, 1171,2003,0001,4540,3140,1013,5530,4422,437             ;2103   1171:   FP11-B:         X11_SL0(X12+X11) Q_SLC63(Q),R14_R14-1,BUT CO
UT63 ZBIT,J/FP11-B
                                                                ;2104
U 1177, 1006,2005,0000,0140,3746,2623,4622,0362,057             ;2105   1177:   FP11-C:         X12_SL0(Q),BUT Y61;J/FP11-F
                                                                ;2106
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U 1173, 1006,2005,0000,0140,3746,2623,4622,0362,057     ;2107   1173:   FP11-D:        X12_SL0(Q),BUT Y61,J/FP11-F
                                                        ;2108
U 1206, 1113,2005,0000,0140,3740,3037,4222,0002,077     ;2109   1206:   FP11-E:        X13_X13+1,TBUS_BUF,BUT FT,J/FP34-A
                                                        ;2110
U 1006, 1113,2005,0000,0140,3746,3633,4622,0002,057     ;2111   1006:   FP11-F:        X12_SL0(X12),TBUS_BUF,BUT FT,J/FP34-A
                                                        ;2112
U 1234, 1424,2045,0000,0140,3740,3033,4015,2156,017     ;2113   1234:   FP12-A:        FCC_04(FZ),BUT FD,J/FP36-F
                                                        ;2114
U 1232, 1424,2045,0000,0140,3740,3033,4015,2156,017     ;2115   1232:   FP12-B:        FCC_04(FZ),BUT FD,J/FP36-F
                                                        ;2116
U 1034, 1075,2005,0000,0140,3746,3632,4026,0422,017     ;2117   1034:   FP12-C:        F_AC,BUT ENBT,J/FP36-B
                                                        ;2118
U 1032, 1075,2005,0000,0140,3746,3632,4026,0422,017     ;2119   1032:   FP12-D:        F_AC,BUT ENBT,J/FP36-B
                                                        ;2120
U 1224, 1003,2005,0000,0140,3746,3653,4226,3022,017     ;2121   1224:   FP12-E:        F10_F10 E10_E10.XOR.200,BUT ENBT,J/FP6-H
                                                        ;2122
U 1222, 1003,2005,0000,0140,3746,3633,4026,0422,017     ;2123   1222:   FP12-F:        F_X10,BUT ENBT,J/FP6-H
                                                        ;2124
U 1024, 1472,2045,0000,0140,3746,3653,4200,3022,017     ;2125   1024:   FP12-G:        F10_F10 E10_E10.XOR.200,J/FP12-H
                                                        ;2126
U 1472, 1022,2045,0000,0140,3746,4643,4400,0422,057     ;2127   1472:   FP12-H:        X12_ROTL(X10),J/FP12-I
                                                        ;2128
U 1022, 1474,2045,0001,4140,2146,4632,6300,2722,417     ;2129   1022:   FP12-I:        Q_(F12*EAC),R10_(71.31),J/FP12-J
                                                        ;2130
U 1474, 1476,2005,0220,0140,3741,1117,6026,4462,717     ;2131   1474:   FP12-J:        B_X14-X13 SWAB,BUT BR.OR.PFAIL,J/FP12-K
                                                        ;2132
U 1476, 1011,2006,0001,6340,3146,3423,5200,0422,057     ;2133   1476:   FP12-K:        F12_SR1(F12) E12_ZERO,R14_B,BUT NBIT ZBIT,J/
FP13-I
                                                        ;2134
U 1576, 1151,2045,0200,0140,3740,3033,6000,3222,017     ;2135   1576:   FP12-L:        B_(10.4.2),J/FP19-J
                                                        ;2136
U 1013, 1216,2045,0000,0140,3746,3633,4700,0422,057     ;2137   1013:   FP13-A:        X12_SR0(X12),J/FP13-F
                                                        ;2138
U 1114, 1075,2005,0000,0140,3746,3632,4026,0422,017     ;2139   1114:   FP13-B:        F_AC,BUT ENBT,J/FP36-B
                                                        ;2140
U 1111, 1014,2010,0000,2340,2146,3633,4700,0422,057     ;2141   1111:   FP13-D:        X12_SR0(X12),T_R10+B,BUT NBIT ZBIT,J/FP13-E
                                                        ;2142
U 1014, 1214,2002,0001,4540,3146,3633,4700,0422,057     ;2143   1014:   FP13-E:        X12_SR0(X12),R14_R14+1,BUT ZBIT,J/FP13-G
                                                        ;2144
U 1216, 1040,2005,0000,0140,3746,2623,4032,0462,017     ;2145   1216:   FP13-F:        F_Q,BUT ENBT Y8,J/FP14-K
                                                        ;2146
U 1214, 1214,2002,0001,4540,3146,3633,4700,0422,057     ;2147   1214:   FP13-G:        X12_SR0(X12),R14_R14+1,BUT ZBIT,J/FP13-G
                                                        ;2148
U 1015, 1003,2005,0000,0140,3746,3633,4026,0422,017     ;2149   1015:   FP13-H:        F_X10,BUT ENBT,J/FP6-H
                                                        ;2150
U 1011, 1316,2045,0200,0140,2146,4643,4200,0423,077     ;2151   1011:   FP13-I:        X13_X14,B_R10,J/FP13-L
                                                        ;2152
U 1115, 1115,2003,0001,4540,3146,3633,4700,0422,037     ;2153   1115:   FP13-J:        X11_SR0(X11),R14_R14-1,BUT ZBIT,J/FP13-J
                                                        ;2154
U 1117, 1040,2005,0000,0140,3746,2623,4032,0462,017     ;2155   1117:   FP13-K:        F_Q,BUT ENBT Y8,J/FP14-K
                                                        ;2156
U 1316, 1015,2004,0000,0340,3146,3633,4700,0422,057     ;2157   1316:   FP13-L:        X12_SR0(X12),T_R14-B,BUT NBIT,J/FP13-H
                                                        ;2158
U 1016, 1075,2005,0000,0140,3746,3632,4026,0422,017     ;2159   1016:   FP13-M:        F_AC,BUT ENBT,J/FP36-B
                                                        ;2160
U 1440, 1364,2005,0000,0140,3741,1117,4200,0422,257     ;2161   1440:   FP14-A:        X12_X12-X11,J/FP14-Q
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                                                                ;2162
U 1042, 1364,2005,0000,0140,3742,1217,4200,0422,257             ;2163   1042:   FP14-B:         X12_X11-X12,J/FP14-Q
                                                                ;2164
U 1121, 1424,2045,0000,0140,3740,3033,4015,2156,017             ;2165   1121:   FP14-C:         FCC_04(FZ),BUT FD,J/FP36-F
                                                                ;2166
U 1101, 1102,2005,0000,0140,3744,2423,4121,4362,417             ;2167   1101:   FP14-D:         CLEAR SIGN T_X12,BUT Y62,J/FP14-G
                                                                ;2168
U 1141, 1477,2045,0000,0140,3744,2673,4600,3022,017             ;2169   1141:   FP14-E:         SET SIGN,J/FP14-F
                                                                ;2170
U 1477, 1563,2005,0000,0140,3742,3237,4200,0422,057             ;2171   1477:   FP14-F:         X12_-X12,J/FP14-R
                                                                ;2172
U 1102, 1102,2003,0001,4140,3146,3633,4622,0362,057             ;2173   1102:   FP14-G:         X12_SL0(X12),R14_R14-1,BUT Y61,J/FP14-G
                                                                ;2174
U 1302, 1533,2045,0021,4140,3140,3033,4000,0422,017             ;2175   1302:   FP14-H:         R14_R14 SWAB,J/FP14-P
                                                                ;2176
U 1534, 1113,2005,0000,0140,3740,1013,4222,0003,077             ;2177   1534:   FP14-I:         X13_X13+X14,TBUS_BUF,BUT FT,J/FP34-A
                                                                ;2178
U 1442, 1500,2045,0000,0140,3744,2673,4600,3022,017             ;2179   1442:   FP14-J:         SET SIGN,J/FP14-L
                                                                ;2180
U 1040, 1500,2045,0000,0140,3744,2423,4200,0422,017             ;2181   1040:   FP14-K:         CLEAR SIGN,J/FP14-L
                                                                ;2182
U 1500, 1527,2005,0000,0140,3740,1013,4200,0422,257             ;2183   1500:   FP14-L:         X12_X12+X11,J/FP14-S
                                                                ;2184
U 1502, 1113,2005,0000,0140,3740,3033,4022,0002,017             ;2185   1502:   FP14-M:         TBUS_BUF,BUT FT,J/FP34-A
                                                                ;2186
U 1542, 1665,2045,0000,0140,3746,3633,4700,0422,057             ;2187   1542:   FP14-N:         X12_SR0(X12),J/FP14-O
                                                                ;2188
U 1665, 1113,2005,0000,0140,3740,3037,4222,0002,077             ;2189   1665:   FP14-O:         X13_X13+1,TBUS_BUF,BUT FT,J/FP34-A
                                                                ;2190
U 1533, 1534,2005,0000,0140,3146,7673,4200,0000,117             ;2191   1533:   FP14-P:         X14_R14,J/FP14-I
                                                                ;2192
U 1364, 1101,2005,0000,0140,3746,3633,4033,0422,057             ;2193   1364:   FP14-Q:         F_X12,BUT XNBT XZBT,J/FP14-D
                                                                ;2194
U 1563, 1102,2005,0000,0140,3746,3633,4021,4362,057             ;2195   1563:   FP14-R:         F_X12,BUT Y62,J/FP14-G
                                                                ;2196
U 1527, 1502,2005,0000,0140,3746,3633,4027,0422,057             ;2197   1527:   FP14-S:         F_X12,BUT XNBT,J/FP14-M
                                                                ;2198
U 1231, 1142,2045,0000,0140,3740,3033,4015,2156,017             ;2199   1231:   FP15-A:         FCC_04(FZ),BUT FD,J/FP15-E
                                                                ;2200
U 1031, 1142,2045,0000,0140,3740,3033,4015,2156,017             ;2201   1031:   FP15-B:         FCC_04(FZ),BUT FD,J/FP15-E
                                                                ;2202
U 1221, 1142,2045,0000,0140,3740,3033,4015,2156,017             ;2203   1221:   FP15-C:         FCC_04(FZ),BUT FD,J/FP15-E
                                                                ;2204
U 1143, 1425,2045,0000,0140,3744,2420,4200,0422,017             ;2205   1143:   FP15-D:         AC.OR.1_ZERO,J/FP36-E
                                                                ;2206
U 1142, 1424,2045,0000,0140,3744,2420,4200,0422,014             ;2207   1142:   FP15-E:         AC.OR.1(32)_ZERO,J/FP36-F
                                                                ;2208
U 1021, 1506,2045,0001,4140,3140,1013,6200,2663,077             ;2209   1021:   FP15-F:         X13_X13+X14,R14_(70.30),J/FP16-E
                                                                ;2210
U 1230, 1424,2045,0000,0140,3740,3033,4015,2156,017             ;2211   1230:   FP16-A:         FCC_04(FZ),BUT FD,J/FP36-F
                                                                ;2212
U 1030, 1424,2045,0000,0140,3740,3033,4015,2156,017             ;2213   1030:   FP16-B:         FCC_04(FZ),BUT FD,J/FP36-F
                                                                ;2214
U 1220, 1424,2045,0000,0140,3740,3033,4015,2156,017             ;2215   1220:   FP16-C:         FCC_04(FZ),BUT FD,J/FP36-F
                                                                ;2216
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U 1020, 1506,2045,0001,4140,3140,1013,6200,2663,077     ;2217  1020:  FP16-D:     X13_X13+X14,R14_(70.30),J/FP16-E
                                                        ;2218
U 1506, 1507,2005,0000,0140,3741,5157,4200,3022,677     ;2219  1506:  FP16-E:     X13_X13-200,J/FP16-F
                                                        ;2220
U 1507, 1154,2045,0000,0140,3746,3423,5200,0422,057     ;2221  1507:  FP16-F:     F12_SR1(F12) E12_ZERO,J/FP16-G
                                                        ;2222
U 1154, 1511,2045,0000,0140,3746,3633,4300,0422,057     ;2223  1154:  FP16-G:     Q_X12,J/FP16-H
                                                        ;2224
U 1511, 1270,2005,0000,0140,3744,2613,0426,4422,017     ;2225  1511:  FP16-H:     X10_ROTL(ZERO*(EAC.XOR.E10),BUT BR.OR.PFAIL,
J/FP16-I
                                                        ;2226
U 1270, 1513,2045,0000,0140,3744,2423,4200,0422,057     ;2227  1270:  FP16-I:     X12_ZERO,J/FP17-K
                                                        ;2228
U 1370, 1750,2065,0001,4140,1740,3033,4035,0422,017     ;2229  1370:  FP16-J:     PC_PC-2,BUT SRC,J/FP20-A
                                                        ;2230
U 1240, 1240,2003,0001,4540,3146,3633,5430,0422,057     ;2231  1240:  FP17-A:     X12_SR0(X12) Q_SR0(Q),R14_R14-1,BUT (Q8.Q40)
 ZBIT,J/FP17-A
                                                        ;2232
U 1250, 1240,2003,0001,4540,3140,1013,5430,0422,257     ;2233  1250:  FP17-B:     X12_SR0(X11+X12) Q_SR0(Q),R14_R14-1,BUT (Q8.
Q40) ZBIT,J/FP17-A
                                                        ;2234
U 1242, 1044,2005,0000,0140,3746,3633,4001,4362,057     ;2235  1242:  FP17-D:     F_X12,BUT Y62 OP1A,J/FP17-F
                                                        ;2236
U 1045, 1215,2045,0000,0140,3746,3633,4600,0422,057     ;2237  1045:  FP17-E:     X12_SL0(X12),J/FP17-G
                                                        ;2238
U 1044, 1514,2045,0000,0140,3746,3633,4600,0422,057     ;2239  1044:  FP17-F:     X12_SL0(X12),J/FP17-H
                                                        ;2240
U 1215, 1445,2045,0000,0140,3741,3133,4200,0422,077     ;2241  1215:  FP17-G:     X13_X13-1,J/FP17-I
                                                        ;2242
U 1514, 1444,2045,0000,0140,3741,3133,4200,0422,077     ;2243  1514:  FP17-H:     X13_X13-1,J/FP17-J
                                                        ;2244
U 1445, 1041,2005,0000,0140,3746,3633,4031,0462,077     ;2245  1445:  FP17-I:     F_X13,BUT EZBT Y9 Y8,J/FP18-P
                                                        ;2246
U 1444, 1113,2005,0000,0140,3740,3033,4022,0002,017     ;2247  1444:  FP17-J:     TBUS_BUF,BUT FT,J/FP34-A
                                                        ;2248
U 1513, 1240,2005,0000,0140,3746,3633,5430,0422,057     ;2249  1513:  FP17-K:     X12_SR0(X12) Q_SR0(Q),BUT (Q8.Q40),J/FP17-A
                                                        ;2250
U 1047, 1126,2045,0000,0140,3740,3033,4015,0422,017     ;2251  1047:  FP18-A:     BUT FD,J/FP18-D
                                                        ;2252
U 1127, 1113,2005,0000,0140,3744,2420,4222,0002,017     ;2253  1127:  FP18-C:     AC.OR.1_ZERO,TBUS_BUF,BUT FT,J/FP34-A
                                                        ;2254
U 1126, 1113,2005,0000,0140,3744,2420,4222,0002,014     ;2255  1126:  FP18-D:     AC.OR.1(32)_ZERO,TBUS_BUF,BUT FT,J/FP34-A
                                                        ;2256
U 1043, 1516,2045,0000,0140,3746,3633,4600,0422,057     ;2257  1043:  FP18-E:     X12_SL0(X12),J/FP18-G
                                                        ;2258
U 1243, 1516,2045,0000,0140,3746,3633,4600,0422,057     ;2259  1243:  FP18-F:     X12_SL0(X12),J/FP18-G
                                                        ;2260
U 1516, 1517,2045,0000,0140,3746,3643,5100,0422,657     ;2261  1516:  FP18-G:     F12_SL0(F12) E12_E13,J/FP18-H
                                                        ;2262
U 1517, 1557,2045,0000,0140,3743,1633,4500,2216,057     ;2263  1517:  FP18-H:     X12_ROTR(F10.OR.F12)*E12),FCC_06(FZFV),J/FP1
8-I
                                                        ;2264
U 1557, 1142,2005,0000,0140,3746,7673,4201,0002,177     ;2265  1557:  FP18-I:     FPS_BUF,BUT FIV FD,J/FP15-E
                                                        ;2266
U 1163, 1247,2045,0000,0140,3746,4640,4200,0422,417     ;2267  1163:  FP18-J:     AC.OR.1_X12,J/FP18-L
                                                        ;2268
U 1162, 1164,2045,0000,0140,3746,4640,4200,0422,414     ;2269  1162:  FP18-K:     AC.OR.1(32)_X12,J/FP18-M
                                                        ;2270
U 1247, 1523,2045,0000,0140,3744,2422,4200,0422,017     ;2271  1247:  FP18-L:     AC_ZERO,J/FP18-N
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                                                                                ;2272
U 1164, 1523,2045,0000,0140,3744,2422,4200,0422,014     ;2273   1164:   FP18-M:        AC(32)_ZERO,J/FP18-N
                                                                                ;2274
U 1523, 1365,2067,0001,4140,2346,7673,4200,2262,137     ;2275   1523:   FP18-N:        R11_BX,FEC_10,J/FP37-B
                                                                                ;2276
U 1241, 1126,2045,0000,0140,3740,3033,4015,0422,017     ;2277   1241:   FP18-O:        BUT FD,J/FP18-D
                                                                                ;2278
U 1041, 1046,2005,0000,0140,3746,5653,4233,7022,717     ;2279   1041:   FP18-P:        X14_X13.XOR.200,BUT ENBT EZBT,J/FP18-S
                                                                                ;2280
U 1446, 1126,2045,0000,0140,3740,3033,4015,0422,017     ;2281   1446:   FP18-Q:        BUT FD,J/FP18-D
                                                                                ;2282
U 1246, 1126,2045,0000,0140,3740,3033,4015,0422,017     ;2283   1246:   FP18-R:        BUT FD,J/FP18-D
                                                                                ;2284
U 1046, 1401,2005,0000,0140,3742,5257,4200,3423,037     ;2285   1046:   FP18-S:        X11_(70.30)-X14,J/FP19-A
                                                                                ;2286
U 1401, 1525,2005,0021,4140,3146,3633,6000,0462,037     ;2287   1401:   FP19-A:        R14_X11 SWAB,J/FP19-C
                                                                                ;2288
U 1525, 1050,2005,0000,0340,3146,3633,4600,0422,057     ;2289   1525:   FP19-C:        X12_SL0(X12),T_R14,BUT NBIT,J/FP19-H
                                                                                ;2290
U 1150, 1526,2045,0000,0140,3746,3643,5100,0422,657     ;2291   1150:   FP19-D:        F12_SL0(F12) E12_E13,J/FP19-E
                                                                                ;2292
U 1526, 1134,2045,0000,0140,3743,1633,4515,2156,057     ;2293   1526:   FP19-E:        X12_ROTR(F10.OR.F12)*E12),FCC_04(FZ),BUT FD,
J/FP19-G
                                                                                ;2294
U 1135, 1425,2045,0000,0140,3746,4640,4200,0422,417     ;2295   1135:   FP19-F:        AC.OR.1_X12,J/FP36-E
                                                                                ;2296
U 1134, 1424,2045,0000,0140,3746,4640,4200,0422,414     ;2297   1134:   FP19-G:        AC.OR.1(32)_X12,J/FP36-F
                                                                                ;2298
U 1050, 1051,2005,0000,0140,3744,2423,4226,4422,037     ;2299   1050:   FP19-H:        X11_ZERO,BUT BR.OR.PFAIL,J/FP19-I
                                                                                ;2300
U 1051, 1130,2005,0021,4140,3146,3633,6000,0462,117     ;2301   1051:   FP19-I:        R14_X14 SWAB,J/FP19-K
                                                                                ;2302
U 1151, 1750,2065,0001,4140,1740,3033,4035,0422,017     ;2303   1151:   FP19-J:        PC_PC-2,BUT SRC,J/FP20-A
                                                                                ;2304
U 1130, 1130,2003,0001,4540,3146,3633,5000,0422,037     ;2305   1130:   FP19-K:        X11_SR1(X11),R14_R14-1,BUT ZBIT,J/FP19-K
                                                                                ;2306
U 1132, 1210,2045,0000,0140,3746,4643,4200,0422,517     ;2307   1132:   FP19-L:        X14_X12,J/FP19-M
                                                                                ;2308
U 1210, 1530,2045,0000,0140,3744,1413,4200,0422,317     ;2309   1210:   FP19-M:        X14_X11.AND.X14,J/FP19-N
                                                                                ;2310
U 1530, 1633,2005,0000,0140,3746,3643,5126,4422,717     ;2311   1530:   FP19-N:        F14_SL0(F14) E14_E13,BUT BR.OR.PFAIL,J/FP19-
0
                                                                                ;2312
U 1633, 1156,2045,0000,0140,3743,1633,4515,0422,117     ;2313   1633:   FP19-O:        X14_ROTR(F10.OR.F14)*E14),BUT FD,J/FP19-Q
                                                                                ;2314
U 1157, 1532,2045,0000,0140,3746,4640,4200,0423,017     ;2315   1157:   FP19-P:        AC.OR.1_X14,J/FP19-R
                                                                                ;2316
U 1156, 1532,2045,0000,0140,3746,4640,4200,0423,014     ;2317   1156:   FP19-Q:        AC.OR.1(32)_X14,J/FP19-R
                                                                                ;2318
U 1532, 1433,2045,0000,0140,3745,1513,4700,0422,257     ;2319   1532:   FP19-R:        X12_SR0(X11BAR.AND.X12),J/FP19-U
                                                                                ;2320
U 1122, 1424,2045,0000,0140,3740,3033,4015,2156,017     ;2321   1122:   FP19-S:        FCC_04(FZ),BUT FD,J/FP36-F
                                                                                ;2322
U 1733, 1750,2065,0001,4140,1740,3033,4035,0422,017     ;2323   1733:   FP19-T:        PC_PC-2,BUT SRC,J/FP20-A
                                                                                ;2324
U 1433, 1102,2005,0000,0140,3746,3453,4227,7462,457     ;2325   1433:   FP19-U:        F12_F12 E12_E12.AND.360,BUT XZBT,J/FP14-G
                                                                                ;2326
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U 1760, 1200,2045,0000,0140,3740,3033,4037,4422,017     ;2327   1760:   FP2-A:          BUT OP2A,J/FP2-B
                                                        ;2328
U 1200, 1702,2067,0001,4140,2346,7673,4200,2062,137     ;2329   1200:   FP2-B:          R11_BX,FEC_02,J/FP37-A
                                                        ;2330
U 1201, 0000,2645,0000,2140,3746,3633,6000,0162,177     ;2331   1201:   FP2-C:          CC_FCC(FPS),BUT NOSERV,J/1-A
                                                        ;2332
U 1202, 1413,2045,0000,0140,3745,5553,4200,2463,777     ;2333   1202:   FP2-D:          CLEAR FD(FPS),J/FP2-H
                                                        ;2334
U 1203, 1413,2045,0000,0140,3743,5353,4200,2463,777     ;2335   1203:   FP2-E:          SET FD(FPS),J/FP2-H
                                                        ;2336
U 1204, 1413,2045,0000,0140,3745,5553,4200,2423,777     ;2337   1204:   FP2-F:          CLEAR FL(FPS),J/FP2-H
                                                        ;2338
U 1205, 1413,2045,0000,0140,3743,5353,4200,2423,777     ;2339   1205:   FP2-G:          SET FL(FPS),J/FP2-H
                                                        ;2340
U 1413, 0000,2045,0000,2140,3746,3633,4000,0166,177     ;2341   1413:   FP2-H:          FDFL,BUF_FPS,BUT NOSERV,J/1-A
                                                        ;2342
U 1750, 1535,2045,0000,0140,3740,3033,4000,0420,017     ;2343   1750:   FP20-A:         SERV(BR,OR,PFAIL),J/FP20-Q
                                                        ;2344
U 1754, 1751,2050,0001,0146,3640,3033,4000,0422,017     ;2345   1754:   FP20-B:         RD_RD+B,J/FP20-P,SR1 Z
                                                        ;2346
U 1752, 1751,2044,0001,0146,3640,3033,4000,0422,017     ;2347   1752:   FP20-G:         RD_RD-B,J/FP20-P,SR1 Z
                                                        ;2348
U 1753, 1535,2065,0001,0146,3640,3033,4000,0420,017     ;2349   1753:   FP20-L:         RD_RD-2,SERV(BR,OR,PFAIL),J/FP20-Q,SR1 Z
                                                        ;2350
U 1755, 1535,2064,0001,0146,3640,3033,4000,0420,017     ;2351   1755:   FP20-M:         RD_RD+2,SERV(BR,OR,PFAIL),J/FP20-Q,SR1 Z
                                                        ;2352
U 1756, 1535,2065,0001,4140,1740,3033,4000,0420,017     ;2353   1756:   FP20-N:         PC_PC-2,SERV(BR,OR,PFAIL),J/FP20-Q
                                                        ;2354
U 1757, 1535,2065,0001,4140,1740,3033,4000,0420,017     ;2355   1757:   FP20-O:         PC_PC-2,SERV(BR,OR,PFAIL),J/FP20-Q
                                                        ;2356
U 1751, 1535,2045,0000,0140,3740,3033,4000,0420,017     ;2357   1751:   FP20-P:         SERV(BR,OR,PFAIL),J/FP20-Q
                                                        ;2358
U 1535, 0010,6045,0001,4160,3340,3033,4000,0420,017     ;2359   1535:   FP20-Q:         R15_UDATA,BUT SERV(BR,OR,PFAIL),J/1-B
                                                        ;2360
U 1770, 1607,3440,0000,0140,3744,2423,4234,4422,037     ;2361   1770:   FP21-A:         X11_ZERO,CLEAR FLAG,BUT FDST,J/FP21-Y
                                                        ;2362
U 1252, 1541,6045,0140,0140,3740,3033,4000,0012,017     ;2363   1252:   FP21-AA:        DATI,BUF_UDATA,MAINT,J/FP21-M
                                                        ;2364
U 1771, 1720,2045,0001,4140,2140,3033,6034,6062,017     ;2365   1771:   FP21-B:         R10_2,BUT FDST,J/FP21-F
                                                        ;2366
U 1730, 1702,2067,0001,4140,2346,7673,4200,2062,137     ;2367   1730:   FP21-C:         R11_BX,FEC_02,J/FP37-A
                                                        ;2368
U 1721, 1252,2145,0001,4141,2440,3033,4000,0422,017     ;2369   1721:   FP21-D:         BA R12_RD,J/FP21-AA,ID SPACE
                                                        ;2370
U 1722, 1252,2145,0001,4141,2446,7673,4200,0002,177     ;2371   1722:   FP21-E:         BA R12_RD,FPS_BUF,J/FP21-AA,ID SPACE
                                                        ;2372
U 1724, 1362,2044,0001,4140,2440,3033,4000,0422,017     ;2373   1724:   FP21-G:         R12_RD-B,J/FP21-L
                                                        ;2374
U 1362, 1541,6145,0140,0141,2540,3033,4000,0012,017     ;2375   1362:   FP21-L:         BA_R12,DATI,BUF_UDATA,MAINT,J/FP21-M,ID SPAC
E
                                                        ;2376
U 1541, 1552,2045,0000,0140,3746,7673,4200,0002,010     ;2377   1541:   FP21-M:         X10(3)_BUF,J/FP22-C
                                                        ;2378
U 1723, 1362,6145,0101,4141,2440,3033,4000,0422,017     ;2379   1723:   FP21-N:         BA_RD,DATI,R12_UDATA,J/FP21-L,ID SPACE
                                                        ;2380
U 1725, 1546,2065,0001,4140,2440,3033,4000,0422,017     ;2381   1725:   FP21-O:         R12_RD-2,J/FP21-U
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                                                                ;2382
U 1617, 1702,2067,0001,4140,2346,7673,4200,2062,137             ;2383   1617:   FP21-P:        R11_BX,FEC_02,J/FP37-A
                                                                ;2384
U 1726, 1734,6145,0300,0140,1740,3033,4035,4422,017             ;2385   1726:   FP21-Q:        BA_PC,DATI,B_UDATA,BUT GR7,J/FP21-R,I SPACE
                                                                ;2386
U 1734, 1362,2050,0001,4140,2440,3033,4000,0422,017             ;2387   1734:   FP21-R:        R12_RD+B,J/FP21-L
                                                                ;2388
U 1727, 1545,6145,0300,0140,1740,3033,4035,4422,017             ;2389   1727:   FP21-S:        BA_PC,DATI,B_UDATA,BUT GR7,J/FP21-T,I SPACE
                                                                ;2390
U 1545, 1546,2050,0001,4140,2440,3033,4000,0422,017             ;2391   1545:   FP21-T:        R12_RD+B,J/FP21-U
                                                                ;2392
U 1546, 1362,6145,0101,4141,2540,3033,4000,0422,017             ;2393   1546:   FP21-U:        BA_R12,DATI,R12_UDATA,J/FP21-L,ID SPACE
                                                                ;2394
U 1337, 1550,2045,0000,0140,3746,2623,4200,0422,017             ;2395   1337:   FP21-V:        X10_Q,J/FP22-A
                                                                ;2396
U 1736, 1734,2050,0201,4140,2140,3033,4000,0422,017             ;2397   1736:   FP21-W:        B_B+R10,J/FP21-R
                                                                ;2398
U 1547, 1545,2050,0201,4140,2140,3033,4000,0422,017             ;2399   1547:   FP21-X:        B_B+R10,J/FP21-T
                                                                ;2400
U 1607, 1640,2045,0000,0140,3740,3033,4034,6156,017             ;2401   1607:   FP21-Y:        FCC_04(FZ),BUT FDST,J/FP27-B
                                                                ;2402
U 1720, 1337,2045,0000,0140,3746,3631,4300,0422,017             ;2403   1720:   FP21-F:        Q_FDST,J/FP21-V
                                                                ;2404
U 1550, 1551,2045,0200,0140,3746,4643,6400,3222,057             ;2405   1550:   FP22-A:        B_(10.4.2),X12_ROTL(X10),J/FP22-B
                                                                ;2406
U 1551, 1055,3400,0000,0140,3746,3633,4025,0422,057             ;2407   1551:   FP22-B:        F_X12,CLEAR FLAG,BUT EZBT,J/FP22-F
                                                                ;2408
U 1552, 1402,2045,0200,0140,3746,4643,6400,3222,057             ;2409   1552:   FP22-C:        B_(10.4.2),X12_ROTL(X10),J/FP22-D
                                                                ;2410
U 1402, 1055,3400,0000,0140,3746,3633,4031,4462,057             ;2411   1402:   FP22-D:        F_X12,CLEAR FLAG,BUT EZBT Y8,J/FP22-F
                                                                ;2412
U 1057, 1334,2045,0000,0140,3746,3633,4016,0150,177             ;2413   1057:   FP22-E:        BUF_FPS,BUT OP1B,J/FP23-F
                                                                ;2414
U 1055, 1334,2045,0000,0140,3746,3633,4016,0150,177             ;2415   1055:   FP22-F:        BUF_FPS,BUT OP1B,J/FP23-F
                                                                ;2416
U 1255, 1310,2045,0000,0140,3746,3633,4016,0150,177             ;2417   1255:   FP22-G:        BUF_FPS,BUT OP1B,J/FP22-K
                                                                ;2418
U 1257, 1255,2005,0000,0140,3746,3633,4023,0150,177             ;2419   1257:   FP22-H:        BUF_FPS,BUT FIUV,J/FP22-G
                                                                ;2420
U 1355, 1255,3667,0001,4140,2346,7673,4200,2362,137             ;2421   1355:   FP22-I:        R11_BX,FEC_14,SET FLAG,J/FP22-G
                                                                ;2422
U 1312, 1640,2045,0000,0140,3744,2423,4234,6156,037             ;2423   1312:   FP22-J:        X11_ZERO,FCC_04(FZ),BUT FDST,J/FP27-B
                                                                ;2424
U 1310, 1153,2005,0000,0140,3746,3633,4026,0422,017             ;2425   1310:   FP22-K:        F_X10,BUT ENBT,J/FP22-M
                                                                ;2426
U 1553, 1740,2045,0000,0140,3740,3033,4034,6356,017             ;2427   1553:   FP22-L:        FCC_14(FNFZ),BUT FDST,J/FP24-A
                                                                ;2428
U 1153, 1740,2045,0000,0140,3740,3033,4034,6156,017             ;2429   1153:   FP22-M:        FCC_04(FZ),BUT FDST,J/FP24-A
                                                                ;2430
U 1311, 1640,2045,0000,0140,3744,2423,4234,6156,037             ;2431   1311:   FP22-N:        X11_ZERO,FCC_04(FZ),BUT FDST,J/FP27-B
                                                                ;2432
U 1335, 1053,2045,0000,0140,3746,3553,4200,3022,017             ;2433   1335:   FP23-A:        F10_F10 E10_E10.AND.177,J/FP23-D
                                                                ;2434
U 1336, 1053,2005,0000,0140,3746,3653,4226,3022,017             ;2435   1336:   FP23-C:        F10_F10 E10_E10.XOR.200,BUT ENBT,J/FP23-D
                                                                ;2436
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U 1053, 1740,2045,0000,0140,3740,3033,4034,6556,017     ;2437   1053:   FP23-D:         FCC_00,BUT FDST,J/FP24-A
                                                        ;2438
U 1453, 1740,2045,0000,0140,3740,3033,4034,6256,017     ;2439   1453:   FP23-E:         FCC_10(FN),BUT FDST,J/FP24-A
                                                        ;2440
U 1334, 1053,2005,0000,0140,3746,3633,4026,0422,017     ;2441   1334:   FP23-F:         F_X10,BUT ENBT,J/FP23-D
                                                        ;2442
U 1740, 1276,2045,0000,0140,3746,4641,4200,0422,010     ;2443   1740:   FP24-A:         FDST(3)_X10,J/FP36-I
                                                        ;2444
U 1744, 1520,2044,0001,0142,3640,3033,4016,0422,017     ;2445   1744:   FP24-B:         RD_RD-B,BUT OP1B,J/FP24-U,SR1 L
                                                        ;2446
U 1741, 1520,2045,0000,0140,3740,3033,4016,0422,017     ;2447   1741:   FP24-C:         BUT OP1B,J/FP24-U
                                                        ;2448
U 1742, 1520,2050,0001,0142,3640,3033,4016,0422,017     ;2449   1742:   FP24-G:         RD_RD+B,BUT OP1B,J/FP24-U,SR1 L
                                                        ;2450
U 1341, 0000,2005,0144,2140,3746,3633,6000,0422,017     ;2451   1341:   FP24-M:         DATO,MAINT,UDATA_X10(3),BUT NOSERV,J/1-A
                                                        ;2452
U 1345, 1365,2005,0144,0140,3746,3633,6000,0422,017     ;2453   1345:   FP24-N:         DATO,MAINT,UDATA_X10(3),J/FP37-B
                                                        ;2454
U 1743, 1520,2064,0001,0142,3640,3033,4016,0422,017     ;2455   1743:   FP24-O:         RD_RD+2,BUT OP1B,J/FP24-U,SR1 L
                                                        ;2456
U 1745, 1520,2065,0001,0142,3640,3033,4016,0422,017     ;2457   1745:   FP24-P:         RD_RD-2,BUT OP1B,J/FP24-U,SR1 L
                                                        ;2458
U 1746, 1520,2064,0001,4140,1740,3033,4016,0422,017     ;2459   1746:   FP24-Q:         PC_PC+2,BUT OP1B,J/FP24-U
                                                        ;2460
U 1747, 1520,2064,0001,4140,1740,3033,4016,0422,017     ;2461   1747:   FP24-R:         PC_PC+2,BUT OP1B,J/FP24-U
                                                        ;2462
U 1522, 1341,2045,0000,0740,3746,7673,4200,0002,177     ;2463   1522:   FP24-S:         FPS_BUF,BUT FLAG,J/FP24-M
                                                        ;2464
U 1521, 1341,2045,0000,0740,3746,7673,4200,0002,177     ;2465   1521:   FP24-T:         FPS_BUF,BUT FLAG,J/FP24-M
                                                        ;2466
U 1520, 1361,2045,0000,0740,3746,7673,4200,0002,177     ;2467   1520:   FP24-U:         FPS_BUF,BUT FLAG,J/FP37-H
                                                        ;2468
U 1765, 1640,3440,0000,0140,3740,3033,4034,4422,017     ;2469   1765:   FP25-A:         CLEAR FLAG,BUT FDST,J/FP27-B
                                                        ;2470
U 1766, 1767,2045,0000,0140,3744,2423,4200,0422,023     ;2471   1766:   FP25-B:         X11(10)_ZERO,J/FP25-C
                                                        ;2472
U 1767, 1567,3440,0000,0140,3740,3033,4034,7314,017     ;2473   1767:   FP25-C:         FDFL_FDFLBAR,CLEAR FLAG,BUT FDST,J/FP25-E
                                                        ;2474
U 1577, 1702,2067,0001,4140,2346,7673,4200,2062,137     ;2475   1577:   FP25-D:         R11_BX,FEC_02,J/FP37-A
                                                        ;2476
U 1567, 1060,2005,0200,0140,3746,4643,6426,3222,257     ;2477   1567:   FP25-E:         B_(10,4,2),X12_ROTL(X11),BUT ENBT,J/FP25-G
                                                        ;2478
U 1460, 1556,2045,0000,0140,3744,2673,4600,3022,017     ;2479   1460:   FP25-F:         SET SIGN,J/FP25-L
                                                        ;2480
U 1060, 1556,2045,0000,0140,3744,2423,4200,0422,017     ;2481   1060:   FP25-G:         CLEAR SIGN,J/FP25-L
                                                        ;2482
U 1560, 1061,2005,0000,0140,3744,2643,4225,0422,477     ;2483   1560:   FP25-H:         F13_ZERO E13_E12,BUT EZBT,J/FP25-J
                                                        ;2484
U 1261, 1640,2045,0000,0140,3744,2423,4234,6156,037     ;2485   1261:   FP25-I:         X11_ZERO,FCC_04(FZ),BUT FDST,J/FP27-B
                                                        ;2486
U 1061, 1561,2045,0000,0140,3746,3423,5200,0422,057     ;2487   1061:   FP25-J:         F12_SR1(F12) E12_ZERO,J/FP25-K
                                                        ;2488
U 1561, 1113,2005,0000,0140,3746,3633,4722,0002,057     ;2489   1561:   FP25-K:         X12_SR0(X12),TBUS_BUF,BUT FT,J/FP34-A
                                                        ;2490
U 1556, 1560,2045,0000,0140,3746,3633,4000,0150,177     ;2491   1556:   FP25-L:         BUF_FPS,J/FP25-H
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                                                                                ;2492
U 1262, 1103,2005,0000,0140,3740,3033,4021,0002,017     ;2493   1262:   FP26-A:         TBUS_BUF,BUT FIV,J/FP26-B
                                                                                ;2494
U 1103, 1640,2045,0000,0140,3744,2423,4234,6216,037     ;2495   1103:   FP26-B:         X11_ZERO,FCC_06(FZFV),BUT FDST,J/FP27-B
                                                                                ;2496
U 1123, 1562,3645,0000,0140,3743,5353,4200,2063,557     ;2497   1123:   FP26-C:         FCCR_FCCR.OR.02,SET FLAG,J/FP26-D
                                                                                ;2498
U 1562, 1167,2045,0000,0140,3746,3633,4000,0156,157     ;2499   1562:   FP26-D:         FCC_FCCR,J/FP26-E
                                                                                ;2500
U 1167, 1062,2067,0001,4140,2346,7673,4200,2262,137     ;2501   1167:   FP26-E:         R11_BX,FEC_10,J/FP26-F
                                                                                ;2502
U 1062, 1640,2045,0000,0140,3746,4643,4534,4422,437     ;2503   1062:   FP26-F:         X11_ROTR(X12),BUT FDST,J/FP27-B
                                                                                ;2504
U 1650, 1702,2067,0001,4140,2346,7673,4200,2062,137     ;2505   1650:   FP27-A:         R11_BX,FEC_02,J/FP37-A
                                                                                ;2506
U 1600, 1601,2005,0144,0140,3746,3633,6000,0222,037     ;2507   1600:   FP27-AA:        DATO,MAINT,UDATA_X11(1),J/FP27-BB
                                                                                ;2508
U 1640, 1160,2045,0000,0140,3746,7673,4215,0002,177     ;2509   1640:   FP27-B:         FPS_BUF,BUT FD,J/FP27-D
                                                                                ;2510
U 1601, 1602,2145,0040,0141,2540,3033,4000,0422,017     ;2511   1601:   FP27-BB:        BA_R12,MAINT,J/FP27-CC,ID SPACE
                                                                                ;2512
U 1161, 1361,2045,0000,0740,3746,4641,4200,0422,217     ;2513   1161:   FP27-C:         FSRC_X11,BUT FLAG,J/FP37-H
                                                                                ;2514
U 1602, 1361,2005,0144,0740,3746,3633,6000,0162,037     ;2515   1602:   FP27-CC:        DATO,MAINT,UDATA_X11(0),BUT FLAG,J/FP37-H
                                                                                ;2516
U 1160, 1361,2045,0000,0740,3746,4641,4200,0422,214     ;2517   1160:   FP27-D:         FSRC(32)_X11,BUT FLAG,J/FP37-H
                                                                                ;2518
U 1646, 1571,6145,0300,0140,1746,7673,4200,0002,177     ;2519   1646:   FP27-DD:        BA_PC,DATI,B_UDATA,FPS_BUF,J/FP27-EE,I SPACE
                                                                                ;2520
U 1644, 1641,2044,0001,0142,3640,3033,4000,0422,017     ;2521   1644:   FP27-E:         RD_RD-B,J/FP27-KK,SR1 L
                                                                                ;2522
U 1571, 1572,2064,0001,4140,1740,3033,4000,0422,017     ;2523   1571:   FP27-EE:        PC_PC+2,J/FP27-FF
                                                                                ;2524
U 1572, 1537,2050,0001,4140,2440,3033,4000,0422,017     ;2525   1572:   FP27-FF:        R12_RD+B,J/FP27-T
                                                                                ;2526
U 1647, 1573,6145,0300,0140,1746,7673,4200,0002,177     ;2527   1647:   FP27-GG:        BA_PC,DATI,B_UDATA,FPS_BUF,J/FP27-HH,I SPACE
                                                                                ;2528
U 1573, 1574,2064,0001,4140,1740,3033,4000,0422,017     ;2529   1573:   FP27-HH:        PC_PC+2,J/FP27-II
                                                                                ;2530
U 1574, 1575,2050,0001,4140,2440,3033,4000,0422,017     ;2531   1574:   FP27-II:        R12_RD+B,J/FP27-JJ
                                                                                ;2532
U 1147, 1361,2005,0144,0740,3746,3633,6000,0422,037     ;2533   1147:   FP27-J:         DATO,MAINT,UDATA_X11(3),BUT FLAG,J/FP37-H
                                                                                ;2534
U 1575, 1537,6145,0101,4141,2540,3033,4000,0422,017     ;2535   1575:   FP27-JJ:        BA_R12,DATI,R12_UDATA,J/FP27-T,ID SPACE
                                                                                ;2536
U 1412, 1145,2064,0041,4140,2540,3033,4035,4422,017     ;2537   1412:   FP27-K:         R12_R12+2,MAINT,BUT GR7,J/FP27-Q
                                                                                ;2538
U 1641, 1412,2145,0001,4141,2446,7673,4200,0002,177     ;2539   1641:   FP27-KK:        BA R12_RD,FPS_BUF,J/FP27-K,ID SPACE
                                                                                ;2540
U 1642, 1565,2145,0001,4141,2446,7673,4200,0002,177     ;2541   1642:   FP27-L:         BA R12_RD,FPS_BUF,J/FP27-M,ID SPACE
                                                                                ;2542
U 1307, 1145,2064,0041,4140,2540,3033,4035,4422,017     ;2543   1307:   FP27-LL:        R12_R12+2,MAINT,BUT GR7,J/FP27-Q
                                                                                ;2544
U 1565, 1307,2050,0001,0142,3640,3033,4000,0422,017     ;2545   1565:   FP27-M:         RD_RD+B,J/FP27-LL,SR1 L
                                                                                ;2546
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U 1145, 1707,2005,0144,0140,3746,3633,6000,0422,037     ;2547   1145:   FP27-Q:        DATO,MAINT,UDATA_X11(3),J/FP27-R
                                                        ;2548
U 1707, 1244,2164,0041,4141,2540,3033,4015,0422,017     ;2549   1707:   FP27-R:        BA_R12 R12_R12+2,MAINT,BUT FD,J/FP27-S,ID SP
ACE
                                                        ;2550
U 1244, 1361,2005,0144,0740,3746,3633,6000,0322,037     ;2551   1244:   FP27-S:        DATO,MAINT,UDATA_X11(2),BUT FLAG,J/FP37-H
                                                        ;2552
U 1537, 1145,2164,0041,4141,2540,3033,4000,0422,017     ;2553   1537:   FP27-T:        BA_R12 R12_R12+2,MAINT,J/FP27-Q,ID SPACE
                                                        ;2554
U 1643, 1213,6145,0101,4141,2446,7673,4200,0002,177     ;2555   1643:   FP27-U:        BA_RD,DATI,R12_UDATA,FPS_BUF,J/FP27-V,ID SPA
CE
                                                        ;2556
U 1213, 1537,2064,0001,0142,3640,3033,4000,0422,017     ;2557   1213:   FP27-V:        RD_RD+2,J/FP27-T,SR1 L
                                                        ;2558
U 1645, 1570,2065,0001,0142,3646,7673,4200,0002,177     ;2559   1645:   FP27-W:        RD_RD-2,FPS_BUF,J/FP27-X,SR1 L
                                                        ;2560
U 1570, 1537,6145,0101,4141,2440,3033,4000,0422,017     ;2561   1570:   FP27-X:        BA_RD,DATI,R12_UDATA,J/FP27-T,ID SPACE
                                                        ;2562
U 1245, 1172,2005,0144,0140,3746,3633,6000,0322,037     ;2563   1245:   FP27-Y:        DATO,MAINT,UDATA_X11(2),J/FP27-Z
                                                        ;2564
U 1172, 1600,2164,0041,4141,2540,3033,4000,0422,017     ;2565   1172:   FP27-Z:        BA_R12 R12_R12+2,MAINT,J/FP27-AA,ID SPACE
                                                        ;2566
U 1670, 1301,2045,0200,0140,3644,2423,4200,0012,057     ;2567   1670:   FP28-A:        X12_ZERO,BUF_RD B_RD,J/FP28-G
                                                        ;2568
U 1772, 1604,2045,0000,0140,3740,3033,4017,4422,017     ;2569   1772:   FP28-AA:       BUT OP1E,J/FP28-CC
                                                        ;2570
U 1350, 0000,2045,0000,2140,3746,7673,4200,0024,177     ;2571   1350:   FP28-B:        FDFL,FPS_BUF,BUT NOSERV,J/1-A
                                                        ;2572
U 1671, 1277,2145,0001,4141,2444,2423,4200,0422,057     ;2573   1671:   FP28-BB:       X12_ZERO,BA R12_RD,J/FP28-F,ID SPACE
                                                        ;2574
U 1674, 1671,2044,0001,0142,3640,3033,4000,0422,017     ;2575   1674:   FP28-C:        RD_RD-B,J/FP28-BB,SR1 L
                                                        ;2576
U 1604, 1670,2045,0200,0140,3740,3033,6035,2054,017     ;2577   1604:   FP28-CC:       B_2 CLEAR FDFL,BUT DST,J/FP28-A
                                                        ;2578
U 1404, 1300,6045,0300,0140,3740,3033,4036,0012,017     ;2579   1404:   FP28-D:        DATI,B_UDATA BUF_UDATA,BUT GR7.OR.FLBAR,J/FP
28-O
                                                        ;2580
U 1605, 1670,2045,0200,0140,3740,3033,6035,2054,017     ;2581   1605:   FP28-DD:       B_2 CLEAR FDFL,BUT DST,J/FP28-A
                                                        ;2582
U 1606, 1670,2045,0200,0140,3740,3033,6035,3262,017     ;2583   1606:   FP28-EE:       B_(4.2),BUT DST,J/FP28-A
                                                        ;2584
U 1277, 1300,6045,0300,0140,3740,3033,4036,0012,017     ;2585   1277:   FP28-F:        DATI,B_UDATA BUF_UDATA,BUT GR7.OR.FLBAR,J/FP
28-O
                                                        ;2586
U 1301, 1350,2045,0000,0140,3746,7673,4217,4002,044     ;2587   1301:   FP28-G:        X12(2)_BUF,BUT OP1E,J/FP28-B
                                                        ;2588
U 1672, 1603,2145,0001,4141,2444,2423,4200,0422,057     ;2589   1672:   FP28-I:        X12_ZERO,BA R12_RD,J/FP28-J,ID SPACE
                                                        ;2590
U 1603, 1404,2050,0001,0142,3640,3033,4000,0422,017     ;2591   1603:   FP28-J:        RD_RD+B,J/FP28-D,SR1 L
                                                        ;2592
U 1673, 1314,6145,0101,4141,2440,3033,4000,0422,017     ;2593   1673:   FP28-L:        BA_RD,DATI,R12_UDATA,J/FP28-M,ID SPACE
                                                        ;2594
U 1314, 1616,2064,0001,0142,3644,2423,4200,0422,057     ;2595   1314:   FP28-M:        RD_RD+2,X12_ZERO,J/FP28-N,SR1 L
                                                        ;2596
U 1616, 1300,6145,0300,0141,2540,3033,4037,0012,017     ;2597   1616:   FP28-N:        BA_R12,DATI,B_UDATA BUF_UDATA,BUT FLBAR,J/FP
28-O,ID SPACE
                                                        ;2598
U 1300, 1620,2064,0001,4140,2546,7673,4200,0002,044     ;2599   1300:   FP28-O:        X12(2)_BUF,R12_R12+2,J/FP28-P
                                                        ;2600
U 1620, 1621,6145,0100,0141,2540,3033,4000,0012,017     ;2601   1620:   FP28-P:        BA_R12,DATI,BUF_UDATA,J/FP28-Q,ID SPACE
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                                                                ;2602
U 1621, 1350,2045,0000,0140,3746,7673,4217,4002,042             ;2603   1621:   FP28-Q:        X12(1)_BUF,BUT OP1E,J/FP28-B
                                                                ;2604
U 1675, 1610,2065,0001,0142,3644,2423,4200,0422,057             ;2605   1675:   FP28-R:        X12_ZERO,RD_RD-2,J/FP28-S,SR1 L
                                                                ;2606
U 1610, 1616,6145,0101,4141,2440,3033,4000,0422,017             ;2607   1610:   FP28-S:        BA_RD,R12_UDATA,DATI,J/FP28-N,ID SPACE
                                                                ;2608
U 1676, 1611,6145,0300,0140,1740,3033,4000,0422,017             ;2609   1676:   FP28-T:        BA_PC,DATI,B_UDATA,J/FP28-U,I SPACE
                                                                ;2610
U 1611, 1612,2064,0001,4140,1744,2423,4200,0422,057             ;2611   1611:   FP28-U:        X12_ZERO,PC_PC+2,J/FP28-V
                                                                ;2612
U 1612, 1616,2050,0001,4140,2440,3033,4000,0422,017             ;2613   1612:   FP28-V:        R12_RD+B,J/FP28-N
                                                                ;2614
U 1677, 1613,6145,0300,0140,1740,3033,4000,0422,017             ;2615   1677:   FP28-W:        BA_PC,DATI,B_UDATA,J/FP28-X,I SPACE
                                                                ;2616
U 1613, 1614,2064,0001,4140,1744,2423,4200,0422,057             ;2617   1613:   FP28-X:        X12_ZERO,PC_PC+2,J/FP28-Y
                                                                ;2618
U 1614, 1615,2050,0001,4140,2440,3033,4000,0422,017             ;2619   1614:   FP28-Y:        R12_RD+B,J/FP28-Z
                                                                ;2620
U 1615, 1616,6145,0101,4141,2540,3033,4000,0422,017             ;2621   1615:   FP28-Z:        BA_R12,DATI,R12_UDATA,J/FP28-N,ID SPACE
                                                                ;2622
U 1351, 1622,2046,0220,0140,3746,7673,4200,0002,010             ;2623   1351:   FP29-A:        X10(3)_BUF,B_B SWAB,J/FP29-B
                                                                ;2624
U 1622, 1623,2045,0000,0140,3746,4643,4400,0422,257             ;2625   1622:   FP29-B:        X12_ROTL(X11),J/FP29-E
                                                                ;2626
U 1503, 1625,2045,0000,0140,3746,7673,4200,2256,157             ;2627   1503:   FP29-C:        FCC_10 FCCR_10,J/FP29-G
                                                                ;2628
U 1501, 1625,2045,0000,0140,3746,7673,4200,2556,157             ;2629   1501:   FP29-D:        FCC_00 FCCR_00,J/FP29-G
                                                                ;2630
U 1623, 1624,2046,0000,0140,3746,3673,4200,0000,057             ;2631   1623:   FP29-E:        F12_F12 E12_B,J/FP29-F
                                                                ;2632
U 1624, 1063,2005,0000,0140,3746,3053,4200,3022,457             ;2633   1624:   FP29-F:        F12_F12 E12_E12+200,J/FP29-S
                                                                ;2634
U 1625, 1104,2005,0000,0140,3746,3633,4132,4173,617             ;2635   1625:   FP29-G:        FDFL.BUFH_FPS X10_X10,BUT ENBT EZBT XNBT,J/F
P29-J
                                                                ;2636
U 1144, 1116,2005,0000,0140,3746,4643,4521,0002,417             ;2637   1144:   FP29-H:        X10_ROTR(X12),TBUS_BUF,BUT FIV,J/FP35-J
                                                                ;2638
U 1344, 1116,2005,0000,0140,3746,4643,4521,0002,417             ;2639   1344:   FP29-I:        X10_ROTR(X12),TBUS_BUF,BUT FIV,J/FP35-J
                                                                ;2640
U 1104, 1116,2005,0000,0140,3746,4643,4521,0002,417             ;2641   1104:   FP29-J:        X10_ROTR(X12),TBUS_BUF,BUT FIV,J/FP35-J
                                                                ;2642
U 1504, 1515,2005,0000,0140,3746,4643,4522,4002,417             ;2643   1504:   FP29-K:        X10_ROTR(X12),TBUS_BUF,BUT FIU,J/FP35-D
                                                                ;2644
U 1544, 1504,2005,0000,0140,3747,3733,4025,0422,017             ;2645   1544:   FP29-L:        F_X10BAR,BUT EZBT,J/FP29-K
                                                                ;2646
U 1704, 1064,2005,0000,0140,3746,3633,4025,0422,057             ;2647   1704:   FP29-M:        F_X12,BUT EZBT,J/FP29-O
                                                                ;2648
U 1264, 1515,2005,0000,0140,3746,4643,4522,4002,417             ;2649   1264:   FP29-N:        X10_ROTR(X12),TBUS_BUF,BUT FIU,J/FP35-D
                                                                ;2650
U 1064, 1422,2045,0000,0140,3746,4643,4515,0422,417             ;2651   1064:   FP29-O:        X10_ROTR(X12),BUT FD,J/FP36-D
                                                                ;2652
U 1304, 1422,2045,0000,0140,3746,4643,4515,0422,417             ;2653   1304:   FP29-P:        X10_ROTR(X12),BUT FD,J/FP36-D
                                                                ;2654
U 1703, 1625,2045,0000,0140,3746,7673,4200,2356,157             ;2655   1703:   FP29-Q:        FCC_14 FCCR_14,J/FP29-G
                                                                ;2656
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U 1701, 1625,2045,0000,0140,3746,7673,4200,2156,157     ;2657   1701:   FP29-R:         FCC_04 FCCR_04,J/FP29-G
                                                        ;2658
U 1063, 1501,2005,0000,0140,3746,3633,4031,4462,057     ;2659   1063:   FP29-S:         F_X12,BUT EZBT Y8,J/FP29-D
                                                        ;2660
U 1761, 1217,2045,0200,0140,3740,3033,6000,3362,017     ;2661   1761:   FP3-A:          B_(4,10,2),J/FP3-E
                                                        ;2662
U 1017, 1410,2045,0000,0140,3744,2643,4200,0422,277     ;2663   1017:   FP3-B:          F13_ZERO E13_E11,J/FP3-F
                                                        ;2664
U 1762, 1627,2045,0000,0140,3740,3033,4034,4422,017     ;2665   1762:   FP3-C:          BUT FSRC,J/FP3-J
                                                        ;2666
U 1763, 1017,2045,0000,0140,3746,3633,4400,0422,037     ;2667   1763:   FP3-D:          X11_ROTL(X11),J/FP3-B
                                                        ;2668
U 1217, 1627,2045,0000,0140,3740,3033,4034,7314,017     ;2669   1217:   FP3-E:          FDFL_FDFLBAR,BUT FSRC,J/FP3-J
                                                        ;2670
U 1410, 1155,2045,0000,0140,3746,3423,5200,0422,037     ;2671   1410:   FP3-F:          F11_SR1(F11) E11_ZERO,J/FP3-G
                                                        ;2672
U 1155, 1320,2045,0000,0140,3746,3633,4734,4422,037     ;2673   1155:   FP3-G:          X11_SR0(X11),BUT FSRC,J/FP4-B
                                                        ;2674
U 1764, 1763,2045,0000,0140,3744,2423,4200,0422,023     ;2675   1764:   FP3-I:          X11(10)_ZERO,J/FP3-D
                                                        ;2676
U 1627, 1320,2045,0000,0140,3743,5353,4234,6363,777     ;2677   1627:   FP3-J:          FPS_FPS.OR.14,BUT FSRC,J/FP4-B
                                                        ;2678
U 1637, 1702,2067,0001,4140,2346,7673,4200,2062,137     ;2679   1637:   FP3-K:          R11_BX,FEC_02,J/FP37-A
                                                        ;2680
U 1352, 1626,2045,0000,0140,3746,3633,4000,0150,177     ;2681   1352:   FP30-A:         BUF_FPS,J/FP30-F
                                                        ;2682
U 1146, 1566,2045,0000,0140,3744,2673,4600,3022,017     ;2683   1146:   FP30-B:         SET SIGN,J/FP30-C
                                                        ;2684
U 1566, 1372,2005,0000,0140,3742,3237,4200,0422,057     ;2685   1566:   FP30-C:         X12_-X12,J/FP30-P
                                                        ;2686
U 1152, 1630,2045,0000,0140,3746,3633,4700,0422,057     ;2687   1152:   FP30-D:         X12_SR0(X12),J/FP30-E
                                                        ;2688
U 1630, 1631,2042,0021,4140,3140,3033,4000,0422,017     ;2689   1630:   FP30-E:         R14_R14+1 SWAB,J/FP30-N
                                                        ;2690
U 1626, 1105,2005,0001,4140,3146,3633,6027,6162,057     ;2691   1626:   FP30-F:         F_X12,R14_4,BUT XZBT,J/FP30-G
                                                        ;2692
U 1105, 1105,2003,0001,4540,3140,1013,4600,0422,457     ;2693   1105:   FP30-G:         X12_SL00(X12),R14_R14-1,BUT ZBIT,J/FP30-G
                                                        ;2694
U 1107, 1106,2005,0001,4140,3146,3633,6027,3122,057     ;2695   1107:   FP30-H:         R14_(237,217),F_X12,BUT XNBT,J/FP30-J
                                                        ;2696
U 1125, 1424,2045,0000,0140,3740,3033,4015,2156,017     ;2697   1125:   FP30-I:         FCC_04(FZ),BUT FD,J/FP36-F
                                                        ;2698
U 1106, 1112,2045,0000,0140,3744,2423,4200,0422,017     ;2699   1106:   FP30-J:         CLEAR SIGN,J/FP30-K
                                                        ;2700
U 1112, 1065,2005,0000,0140,3746,3633,4021,4362,057     ;2701   1112:   FP30-K:         F_X12,BUT Y62,J/FP30-L
                                                        ;2702
U 1065, 1065,2003,0001,4140,3146,3633,4622,0362,057     ;2703   1065:   FP30-L:         X12_SL0(X12),R14_R14-1,BUT Y61,J/FP30-L
                                                        ;2704
U 1465, 1631,2045,0021,4140,3140,3033,4000,0422,017     ;2705   1465:   FP30-M:         R14_R14 SWAB,J/FP30-N
                                                        ;2706
U 1631, 1444,2005,0000,0140,3146,7673,4200,0000,077     ;2707   1631:   FP30-N:         X13_R14,J/FP17-J
                                                        ;2708
U 1265, 1631,2045,0021,4140,3140,3033,4000,0422,017     ;2709   1265:   FP30-O:         R14_R14 SWAB,J/FP30-N
                                                        ;2710
U 1372, 1112,2005,0000,0140,3746,3633,4027,0422,057     ;2711   1372:   FP30-P:         F_X12,BUT XNBT,J/FP30-K
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                                                                ;2712
U 1347, 1317,2045,0000,0140,3744,2643,4200,2554,277             ;2713   1347:   FP31-A:        F13_ZERO E13_E11,CLEAR FDFL,J/FP31-B
                                                                ;2714
U 1166, 1305,2005,0000,0140,3740,3033,4023,4002,017             ;2715   1166:   FP31-AA:       TBUS_BUF,BUT FIC,J/FP32-N
                                                                ;2716
U 1317, 1376,2005,0000,0140,3741,5157,4200,3022,677             ;2717   1317:   FP31-B:        X13_X13-200,J/FP31-EE
                                                                ;2718
U 1052, 1305,2005,0000,0140,3740,3033,4023,4002,017             ;2719   1052:   FP31-BB:       TBUS_BUF,BUT FIC,J/FP32-N
                                                                ;2720
U 1471, 1001,2005,0021,4140,2146,3633,6000,0462,077             ;2721   1471:   FP31-C:        R10_X13 SWAB,J/FP33-K
                                                                ;2722
U 1071, 1072,2005,0021,4140,2146,3633,6025,0462,077             ;2723   1071:   FP31-D:        R10_X13 SWAB,BUT EZBT,J/FP31-E
                                                                ;2724
U 1374, 1067,2005,0000,0140,3746,3633,4026,0422,077             ;2725   1374:   FP31-DD:       F_X13,BUT ENBT,J/FP31-S
                                                                ;2726
U 1072, 1001,2045,0000,0140,3740,3033,4000,2556,017             ;2727   1072:   FP31-E:        FCC_00,J/FP33-K
                                                                ;2728
U 1376, 1071,2005,0000,0140,3746,3633,4026,0422,077             ;2729   1376:   FP31-EE:       F_X13,BUT ENBT,J/FP31-D
                                                                ;2730
U 1266, 1554,2040,0400,0140,3740,3033,4000,2156,017             ;2731   1266:   FP31-F:        BX_ZERO,FCC_04(FZ),J/FP33-BB
                                                                ;2732
U 1377, 1166,2005,0000,0140,3746,3633,4025,0422,077             ;2733   1377:   FP31-FF:       F_X13,BUT EZBT,J/FP31-AA
                                                                ;2734
U 1000, 1346,3440,0001,4140,2146,3633,4417,2256,037             ;2735   1000:   FP31-G:        X11_ROTL(X11),FCC_10(FN),R10_ZERO,CLEAR FLAG
,BUT OP1D,J/FP31-H
                                                                ;2736
U 1774, 1000,2045,0000,0140,3746,3633,4000,0150,177             ;2737   1774:   FP31-GG:       BUF_FPS,J/FP31-G
                                                                ;2738
U 1346, 1266,2005,0000,0140,3746,3633,5226,0422,037             ;2739   1346:   FP31-H:        F11_SR1(F11) E11_E11,BUT ENBT,J/FP31-F
                                                                ;2740
U 1666, 1066,2005,0000,0140,3744,2653,4225,3022,277             ;2741   1666:   FP31-I:        F13_ZERO E13_E11.XOR.200,BUT EZBT,J/FP31-J
                                                                ;2742
U 1066, 1374,2005,0000,0140,3742,5257,4200,2622,677             ;2743   1066:   FP31-J:        X13_(37,17)-X13,J/FP31-DD
                                                                ;2744
U 1070, 1070,2003,0001,4340,3146,3633,4700,0422,037             ;2745   1070:   FP31-K:        X11_SR0(X11),R14_R14-1,BUT NBIT,J/FP31-K
                                                                ;2746
U 1170, 1632,2045,0220,0140,3746,3633,6000,0362,037             ;2747   1170:   FP31-L:        B_X11(H) SWAB,J/FP31-M
                                                                ;2748
U 1632, 1073,2005,0420,0140,3746,3643,2026,0262,037             ;2749   1632:   FP31-M:        BX_X11(L) SWAB F_EAC,BUT ENBT,J/FP32-J
                                                                ;2750
U 1773, 1774,2045,0000,0140,3744,2423,4200,0422,023             ;2751   1773:   FP31-N:        X11(10)_ZERO,J/FP31-GG
                                                                ;2752
U 1467, 1052,2005,0220,0140,3746,3643,2026,0362,037             ;2753   1467:   FP31-O:        B_X11(H) SWAB F_EAC,BUT ENBT,J/FP31-BB
                                                                ;2754
U 1272, 1001,2045,0000,0140,3740,3033,4000,2156,017             ;2755   1272:   FP31-R:        FCC_04(FZ),J/FP33-K
                                                                ;2756
U 1067, 1070,2005,0021,4140,3146,3633,6000,0462,077             ;2757   1067:   FP31-S:        R14_X13 SWAB,J/FP31-K
                                                                ;2758
U 1452, 1377,2045,0000,0140,3740,3037,4200,0422,077             ;2759   1452:   FP31-U:        X13_X13+1,J/FP31-FF
                                                                ;2760
U 1366, 1654,2067,0001,4140,3140,3033,4036,4422,017             ;2761   1366:   FP31-V:        R14_BX,BUT FL,J/FP31-Z
                                                                ;2762
U 1655, 1360,2045,0420,0140,3746,3633,6000,0262,037             ;2763   1655:   FP31-W:        BX_X11(L) SWAB,J/FP31-X
                                                                ;2764
U 1360, 1454,2022,0400,1740,2140,3033,4000,0422,017             ;2765   1360:   FP31-X:        BX_R10-BX,BUT COUT15,J/FP31-Y
                                                                ;2766
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U 1454, 1305,2005,0400,0140,3140,3033,4023,4002,017     ;2767   1454:   FP31-Y:        BX_R14,TBUS_BUF,BUT FIC,J/FP32-N
                                                        ;2768
U 1654, 1454,2004,0001,4340,2140,3033,4000,0422,017     ;2769   1654:   FP31-Z:        R10_R10-B,BUT NBIT,J/FP31-Y
                                                        ;2770
U 1775, 1431,3440,0000,0140,3740,3033,4000,2554,017     ;2771   1775:   FP32-A:        CLEAR FDFL,CLEAR FLAG,J/FP32-P
                                                        ;2772
U 1634, 1710,2005,0001,4140,2146,3633,6035,0162,177     ;2773   1634:   FP32-B:        R10_FPS,BUT DST,J/FP33-A
                                                        ;2774
U 1776, 1635,3440,0000,0140,3740,3033,4000,0422,017     ;2775   1776:   FP32-C:        CLEAR FLAG,J/FP32-D
                                                        ;2776
U 1635, 1636,2005,0001,4140,2146,3633,6000,0162,137     ;2777   1635:   FP32-D:        R10_FEC,J/FP32-E
                                                        ;2778
U 1636, 1540,2045,0400,0140,2340,3033,4000,2014,017     ;2779   1636:   FP32-E:        SET FDFL,BX_R11,J/FP32-Q
                                                        ;2780
U 1473, 1274,2045,0000,0140,3740,3033,4036,4422,017     ;2781   1473:   FP32-F:        BUT FL,J/FP32-I
                                                        ;2782
U 1275, 1074,2022,0400,1740,2140,3033,4000,0422,017     ;2783   1275:   FP32-G:        BX_R10-BX,BUT COUT15,J/FP32-H
                                                        ;2784
U 1074, 1554,2070,0001,4140,2140,3033,4000,0422,017     ;2785   1074:   FP32-H:        R10_BBAR,J/FP33-BB
                                                        ;2786
U 1274, 1554,2044,0001,4140,2140,3033,4000,0422,017     ;2787   1274:   FP32-I:        R10_R10-B,J/FP33-BB
                                                        ;2788
U 1073, 1554,2046,0001,4140,2140,3033,4000,2556,017     ;2789   1073:   FP32-J:        FCC_00,R10_B,J/FP33-BB
                                                        ;2790
                                                        ;2791
U 1564, 1634,2045,0000,0140,3744,5453,4200,3163,777     ;2792   1564:   FP32-L:        FPS_FPS.AND.147757,J/FP32-B
                                                        ;2793
U 1305, 1554,2040,0401,4140,2140,3033,4000,2116,017     ;2794   1305:   FP32-N:        BX_ZERO,R10_ZERO,FCC_05(FZFC),J/FP33-BB
                                                        ;2795
U 1431, 1564,2045,0200,0140,3740,3033,6000,2062,017     ;2796   1431:   FP32-P:        B_2,J/FP32-L
                                                        ;2797
U 1540, 1710,2045,0200,0140,3740,3033,6035,3262,017     ;2798   1540:   FP32-Q:        B_(4.2),BUT DST,J/FP33-A
                                                        ;2799
U 1315, 1305,3667,0001,4140,2346,7673,4200,2222,137     ;2800   1315:   FP32-O:        R11_BX,SET FLAG,FEC_06,J/FP32-N
                                                        ;2801
U 1710, 1361,2045,0001,0740,2140,3033,4000,0422,017     ;2802   1710:   FP33-A:        RD_R10,BUT FLAG,J/FP37-H
                                                        ;2803
U 1711, 1357,2145,0001,4141,2440,3033,4000,0422,017     ;2804   1711:   FP-33AA:       BA R12_RD,J/FP33-E,ID SPACE
                                                        ;2805
U 1714, 1306,2044,0001,0142,3640,3033,4000,0422,017     ;2806   1714:   FP33-B:        RD_RD-B,J/FP33-D,SR1 L
                                                        ;2807
U 1554, 1001,2045,0200,0140,3740,3033,6000,3262,017     ;2808   1554:   FP33-BB:       B_(4.2),J/FP33-K
                                                        ;2809
U 1306, 1357,2145,0001,4141,2440,3033,4000,0422,017     ;2810   1306:   FP33-D:        BA R12_RD,J/FP33-E,ID SPACE
                                                        ;2811
U 1357, 1416,2064,0041,4140,2540,3033,4036,0422,017     ;2812   1357:   FP33-E:        R12_R12+2,MAINT,BUT GR7.OR.FLBAR,J/FP33-O
                                                        ;2813
U 1417, 1361,2005,0144,0740,2140,3033,4000,0422,017     ;2814   1417:   FP33-G:        DATO,MAINT,UDATA_R10,BUT FLAG,J/FP37-H
                                                        ;2815
U 1712, 1731,2145,0001,4141,2440,3033,4000,0422,017     ;2816   1712:   FP33-H:        BA R12_RD,J/FP33-I,ID SPACE
                                                        ;2817
U 1731, 1356,2050,0001,0142,3640,3033,4036,0422,017     ;2818   1731:   FP33-I:        RD_RD+B,BUT GR7.OR.FLBAR,J/FP33-J,SR1 L
                                                        ;2819
U 1356, 1416,2064,0041,4140,2540,3033,4036,0422,017     ;2820   1356:   FP33-J:        R12_R12+2,MAINT,BUT GR7.OR.FLBAR,J/FP33-O
                                                        ;2821
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U 1001, 1710,2645,0000,0140,3746,7673,6235,0002,177     ;2822   1001:   FP33-K:        FPS_BUF CC_BUF,BUT DST,J/FP33-A
                                                        ;2823
U 1713, 1651,6145,0101,4141,2440,3033,4000,0422,017     ;2824   1713:   FP33-L:        BA_RD,DATI,R12_UDATA,J/FP33-M,ID SPACE
                                                        ;2825
U 1651, 1660,2064,0001,0142,3640,3033,4000,0422,017     ;2826   1651:   FP33-M:        RD_RD+2,J/FP33-N,SR1 L
                                                        ;2827
U 1660, 1416,2164,0041,4141,2540,3033,4037,0422,017     ;2828   1660:   FP33-N:        BA_R12 R12_R12+2,MAINT,BUT FLBAR,J/FP33-O,ID
 SPACE
                                                        ;2829
U 1416, 1661,2005,0144,0140,2140,3033,4000,0422,017     ;2830   1416:   FP33-O:        DATO,MAINT,UDATA_R10,J/FP33-P
                                                        ;2831
U 1661, 1662,2145,0040,0141,2540,3033,4000,0422,017     ;2832   1661:   FP33-P:        BA_R12,MAINT,J/FP33-Q,ID SPACE
                                                        ;2833
U 1662, 1361,2027,0144,0740,3740,3033,4000,0422,017     ;2834   1662:   FP33-Q:        DATO,MAINT,UDATA_BX,BUT FLAG,J/FP37-H
                                                        ;2835
U 1715, 1652,2065,0001,0142,3640,3033,4000,0422,017     ;2836   1715:   FP33-R:        RD_RD-2,J/FP33-S,SR1 L
                                                        ;2837
U 1652, 1660,6145,0101,4141,2440,3033,4000,0422,017     ;2838   1652:   FP33-S:        BA_RD,DATI,R12_UDATA,J/FP33-N,ID SPACE
                                                        ;2839
U 1716, 1653,6145,0300,0140,1740,3033,4000,0422,017     ;2840   1716:   FP33-T:        BA_PC,DATI,B_UDATA,J/FP33-U,I SPACE
                                                        ;2841
U 1653, 1342,2064,0001,4140,1740,3033,4000,0422,017     ;2842   1653:   FP33-U:        PC_PC+2,J/FP33-V
                                                        ;2843
U 1342, 1660,2050,0001,4140,2440,3033,4000,0422,017     ;2844   1342:   FP33-V:        R12_RD+B,J/FP33-N
                                                        ;2845
U 1717, 1343,6145,0300,0140,1740,3033,4000,0422,017     ;2846   1717:   FP33-W:        BA_PC,DATI,B_UDATA,J/FP33-X,I SPACE
                                                        ;2847
U 1343, 1656,2064,0001,4140,1740,3033,4000,0422,017     ;2848   1343:   FP33-X:        PC_PC+2,J/FP33-Y
                                                        ;2849
U 1656, 1657,2050,0001,4140,2440,3033,4000,0422,017     ;2850   1656:   FP33-Y:        R12_RD+B,J/FP33-Z
                                                        ;2851
U 1657, 1660,6145,0101,4141,2540,3033,4000,0422,017     ;2852   1657:   FP33-Z:        BA_R12,DATI,R12_UDATA,J/FP33-N,ID SPACE
                                                        ;2853
U 1113, 1414,2045,0000,0140,3744,2423,4215,0422,117     ;2854   1113:   FP34-A:        X14_ZERO,BUT FD,J/FP34-C
                                                        ;2855
U 1415, 1663,2045,0000,0140,3746,7673,4200,3062,110     ;2856   1415:   FP34-B:        X14(3)_40000,J/FP34-D
                                                        ;2857
U 1414, 1663,2045,0000,0140,3746,7673,4200,3062,102     ;2858   1414:   FP34-C:        X14(1)_40000,J/FP34-D
                                                        ;2859
U 1663, 1373,2005,0000,0140,3740,1013,4200,0423,057     ;2860   1663:   FP34-D:        X12_X12+X14,J/FP34-P
                                                        ;2861
U 1353, 1664,2045,0000,0140,3740,3037,4200,0422,077     ;2862   1353:   FP34-E:        X13_X13+1,J/FP34-G
                                                        ;2863
U 1313, 1664,2045,0000,0140,3746,3633,4600,0422,057     ;2864   1313:   FP34-F:        X12_SL0(X12),J/FP34-G
                                                        ;2865
U 1664, 1505,2005,0000,0140,3746,3643,5125,0422,657     ;2866   1664:   FP34-G:        F12_SL0(F12) E12_E13,BUT EZBT,J/FP34-H
                                                        ;2867
U 1505, 1251,2005,0000,0140,3743,1633,4224,0162,057     ;2868   1505:   FP34-H:        F12_F12.OR.F10 E12_E12,BUT Y8,J/FP34-J
                                                        ;2869
U 1253, 1420,2045,0000,0140,3746,7673,4216,6256,157     ;2870   1253:   FP34-I:        FCC_10 FCCR_10,BUT OP1C,J/FP34-K
                                                        ;2871
U 1251, 1420,2045,0000,0140,3746,7673,4216,6556,157     ;2872   1251:   FP34-J:        FCC_00 FCCR_00,BUT OP1C,J/FP34-K
                                                        ;2873
U 1420, 1131,2005,0000,0140,3746,3633,4031,0462,077     ;2874   1420:   FP34-K:        F_X13,BUT EZBT Y9 Y8,J/FP35-L
                                                        ;2875
U 1421, 1062,2005,0000,0140,3746,3633,4025,0422,077     ;2876   1421:   FP34-L:        F_X13,BUT EZBT,J/FP26-F
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                                                                ;2877
U 1705, 1735,2005,0000,0140,3743,1633,4224,0162,057             ;2878   1705:   FP34-M:        F12_F12.OR.F10 E12_E12,BUT Y8,J/FP34-O
                                                                ;2879
U 1737, 1420,2045,0000,0140,3746,7673,4216,6356,157             ;2880   1737:   FP34-N:        FCC_14 FCCR_14,BUT OP1C,J/FP34-K
                                                                ;2881
U 1735, 1420,2045,0000,0140,3746,7673,4216,6156,157             ;2882   1735:   FP34-O:        FCC_04 FCCR_04,BUT OP1C,J/FP34-K
                                                                ;2883
U 1373, 1313,2005,0000,0140,3746,3633,4027,0422,057             ;2884   1373:   FP34-P:        F_X12,BUT XNBT,J/FP34-F
                                                                ;2885
U 1137, 1515,2005,0000,0140,3746,4643,4522,4002,417             ;2886   1137:   FP35-A:        X10_ROTR(X12),TBUS_BUF,BUT FIU,J/FP35-D
                                                                ;2887
U 1555, 1426,2067,0001,4140,2346,7673,4215,2322,137             ;2888   1555:   FP35-B:        R11_BX,FEC_12,BUT FD,J/FP36-H
                                                                ;2889
U 1515, 1424,2045,0000,0140,3740,3033,4015,2156,017             ;2890   1515:   FP35-D:        FCC_04(FZ),BUT FD,J/FP36-F
                                                                ;2891
U 1133, 1116,2005,0000,0140,3746,4643,4521,0002,417             ;2892   1133:   FP35-E:        X10_ROTR(X12),TBUS_BUF,BUT FIV,J/FP35-J
                                                                ;2893
U 1136, 0737,2045,0000,0140,3743,5353,4200,2063,557             ;2894   1136:   FP35-F:        FCCR_FCCR.OR.02,J/FP35-G
                                                                ;2895
U 0737, 1700,2045,0000,0140,3746,3633,4000,0156,157             ;2896   737:    FP35-G:        FCC_FCCR,J/FP35-H
                                                                ;2897
U 1700, 1426,2067,0001,4140,2346,7673,4215,2262,137             ;2898   1700:   FP35-H:        R11_BX,FEC_10,BUT FD,J/FP36-H
                                                                ;2899
U 1333, 1116,2005,0000,0140,3746,4643,4521,0002,417             ;2900   1333:   FP35-I:        X10_ROTR(X12),TBUS_BUF,BUT FIV,J/FP35-J
                                                                ;2901
U 1116, 1424,2045,0000,0140,3740,3033,4015,2216,017             ;2902   1116:   FP35-J:        FCC_06(FZFV),BUT FD,J/FP36-F
                                                                ;2903
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U 0460	1677:	1062:	1833:	1462:	1941:	1947:	1939:	1945:
U 0470	1685:	1853:	1464:	1719:	1556:	1490:	1494:	1729:
U 0500	1558:	1192:	1709:	1695:	1608:	1697:	1500:	1703:
U 0510	1502:		1224:	1484:	1504:	1745:	1264:	1294:
U 0520	1508:	1761:	1518:	1520:	1827:	1783:	1823:	1526:
U 0530	1801:	1805:	1803:	1528:	1821:	1532:	1819:	1534:
U 0540	1591:	1548:	1552:	1813:	1797:	1911:	1579:	1581:
U 0550	1925:	1961:	1496:	1589:	1923:	1971:	1593:	1595:
U 0560	1610:	1560:	1612:	1651:	1943:	1655:	1614:	1659:
U 0570	1673:	1675:	1679:	1701:	1705:	1707:	1713:	1735:
U 0600	1104:	1106:	1110:	1114:	1108:	1118:	1122:	1128:
U 0610	1737:	1566:	1759:	1763:	1799:	1817:	1568:	1570:
U 0620	1831:	1851:	1849:	1765:	1847:	1845:	1843:	
U 0630	1138:	1140:	1144:	1148:	1142:	1152:	1158:	1164:
U 0640	1146:	1927:	1480:	1963:	1478:	1554:	1622:	1626:
U 0650		1350:	1458:	1957:	1628:	1410:	1630:	1959:
U 0660	1977:	1979:	1983:	1987:	1981:	1991:	1993:	1995:

; Location / Line Number Index

U 1550 2405: 2407: 2409: 2427: 2808: 2888: 2491: 2265:
U 1560 2483: 2489: 2499: 2195: 2792: 2545: 2685: 2477:
U 1570 2561: 2523: 2525: 2529: 2531: 2535: 2135: 2475:
U 1600 2507: 2511: 2515: 2591: 2577: 2581: 2583: 2401:
U 1610 2607: 2611: 2613: 2617: 2619: 2621: 2597: 2383:
U 1620 2601: 2603: 2625: 2631: 2633: 2635: 2691: 2677:
U 1630 2689: 2707: 2749: 2313: 2773: 2777: 2779: 2679:
U 1640 2509: 2539: 2541: 2555: 2521: 2559: 2519: 2527:
U 1650 2505: 2826: 2838: 2842: 2769: 2763: 2850: 2852:
U 1660 2828: 2832: 2834: 2860: 2866: 2189: 2741: 1572:
U 1670 2567: 2573: 2589: 2593: 2575: 2605: 2609: 2615:
U 1700 2898: 2657: 2926: 2655: 2647: 2878: 3078: 2549:
U 1710 2802: 2804: 2816: 2824: 2806: 2836: 2840: 2846:
U 1720 2403: 2369: 2371: 2379: 2373: 2381: 2385: 2389:
U 1730 2367: 2818: 2936: 2323: 2387: 2882: 2397: 2880:
U 1740 2443: 2447: 2449: 2455: 2445: 2457: 2459: 2461:
U 1750 2343: 2357: 2347: 2349: 2345: 2351: 2353: 2355:
U 1760 2327: 2661: 2665: 2667: 2675: 2469: 2471: 2473:
U 1770 2361: 2365: 2569: 2751: 2737: 2771: 2775: 3080:

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U 0720 1965: 1408: 1989: 1937: 1967: 1755: 1953: 1931:
U 0730 1583: 1134: 1064: 1624: 1640: 1837: 1973: 2896:
U 0740 1999: 2001: 2003: 2005: 2007: 2009: 2011: 2013:
U 0750 2015: 2017: 2019: 2021: 2023: 2025: 2027: 2029:
U 0760 2031: 2033: 2035: 2037: 2039: 2041: 2043: 2045:
U 0770 2047: 2049: 2051: 2053: 2055: 2057: 2059: 1997:
U 1000 2735: 2822: 2984: 3036: 1574: 3058: 2111: 3074:
U 1010 3094: 2151: 3084: 2137: 2143: 2149: 2159: 2663:
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U 1030 2213: 2201: 2119: 3024: 2117: 3056: 2083: 3040:
U 1040 2181: 2279: 2163: 2257: 2239: 2237: 2285: 2251:
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U 1060 2481: 2487: 2503: 2659: 2651: 2703: 2743: 2757:
U 1070 2745: 2723: 2727: 2789: 2785: 2910: 2958: 3002:
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U 1110 3092: 2141: 2701: 2854: 2139: 2153: 2902: 2155:
U 1120 3088: 2165: 2321: 2497: 3028: 2697: 2255: 2253:
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U 1210 2309: 2988: 2966: 2557: 2147: 2241: 2145: 2669:
U 1220 2215: 2203: 2123: 3030: 2121: 3072: 2085: 3042:
U 1230 2211: 2199: 2115: 3022: 2113: 3054: 2081: 3038:
U 1240 2231: 2277: 2235: 2259: 2551: 2563: 2283: 2271:
U 1250 2233: 2872: 2363: 2870: 3016: 2417: 3018: 2419:
U 1260 2990: 2485: 2493: 2992: 2649: 2709: 2731: 1112:
U 1270 2227: 2948: 2755: 2972: 2787: 2783: 2924: 2585:
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U 1330 2940: 2904: 2962: 2900: 2441: 2433: 2435: 2395:
U 1340 3066: 2451: 2844: 2848: 2639: 2453: 2739: 2713:
U 1350 2571: 2623: 2681: 2862: 3020: 2421: 2820: 2812:
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U 1470 3006: 2721: 2127: 2781: 2131: 2908: 2133: 2171:
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U 1510 3048: 2225: 3046: 2249: 2243: 2890: 2261: 2263:
U 1520 2467: 2465: 2463: 2275: 3026: 2289: 2293: 2197:
U 1530 2311: 2930: 2319: 2191: 2177: 2359: 2099: 2553:
U 1540 2798: 2377: 2187: 2976: 2645: 2391: 2393: 2399:

****

11/44 PROM/PLA FILES AND READING THEM

****

1.GENERAL

11/44 PROMS AND PLAS ARE CODED USING PLATO ASSEMBLER FORMAT. WHILE THE MECHANICS OF ASSEMBLY ARE UNIMPORTANT HERE,THE LOGICAL ORGAN-
-IZATION OF INPUTS,OUTPUTS AND THEIR RELATIONSHIPS IN A MNEMONIC FORM IS VALUABLE. USING FIVE SIMPLE CONSTRUCTS,THE PROGRAM ASSIGNS MNEMONIC NAMES TO INPUTS,OUTPUTS OR SELECTED COMBINATIONS AND SHOWS THE ACTUAL FUNCTION OF A DEVICE. THOUGH THE TERMINOLOGY MAY SEEM ARCANE AT FIRST,IT IS EASY TO COMPREHEND AND ALLOWS THE USER TO UNDERSTAND A DEVICE AS IT OPERATES ON THE MACHINE LEVEL-NOT SIMPLY AS A MASS OF ONE'S AND ZERO'S.

2.CONSTRUCTS

EQUATION FILES ARE ORGANIZED INTO FIVE CONSTRUCTS-INPUTS,OUTPUTS,BINDS, DATAPATHS AND OUTPUTS-AND FOUR BOOLEAN OPERATORS-AND(.),OR(+),NOT(-) AND EQUIVALENCE(=). THE LATTER CAN BE READ AS "IS TRUE IF ";E.G. THE STATEMENT

A=B+C.D+E.-F

CAN BE READ "A IS TRUE IF B IS TRUE OR IF C AND D ARE TRUE OR IF E AND NOT F ARE TRUE. WE THUS HAVE A MAPPING OF INPUTS TO OUTPUTS.

NOTE A.-B+C.D = (A.(-B)) + (C.D)

INPUTS THE INPUTS DECLARATION LISTS THE MNEMONIC NAMES ASSOCIATED WITH THE DEVICE. THESE APPEAR LATER ON THE RIGHT SIDE OF EQUATIONS STATEMENTS OR AS ARGUMENTS IN THE BIND DECLARATION (SEE BELOW). INPUTS ARE L TO R STARTING WITH THE DEVICE'S PHYSICAL MSB,I.E. THE FIRST ENTRY IS THE MSB, AND THE LAST ENTRY IS THE LSB. ALL INPUTS ARE ASSUMED ACTIVE HIGH.

OUTPUTS OUTPUTS ARE LISTED IN A SIMILAR FASHION TO INPUTS, A LIST OF MNEMONICS GOING FROM PHYSICAL MSB TO PHYSICAL LSB OF THE DEVICE. OUTPUTS CAN BE ACTIVE HIGH OR LOW, I.E.,WHEN THEY APPEAR ON THE LEFT SIDE OF AN EQUATION STATEMENT,THEIR "TRUENESS" CAN BE HIGH OR LOW.

BIND BIND DECLARATIONS APPLY A BIT MASK TO THE INPUT VARIABLE NAMES IN A STRING-LIKE FORMAT FROM LEFT TO RIGHT. THE MASK SAYS SELECTIVELY RECOGNIZE THE THE INPUT BIT (1) OR IGNORE IT (0). OTHER MNEMONICS CAN THEN BE DEFINED AS COMBINATIONS OF SELECTED INPUTS. FOR EX.,WITH THE FOLLOWING INPUT DECLARATION

```
INPUTS 'IR4,IR3,IR2,I1,IR0'

THE BIND

BIND '00111'
MUL=01
DIV=02
END
```

SAYS TO IGNORE THE IST TWO INPUT BITS. THEN WHEN THE COMBINATION OF IR2,IR1,AND IR0 IS EQUAL TO OCTAL 1,MUL IS RECOGNIZED -REGARDLESS OF THE STATE OF IR4 AND IR3.

DATAPATHS THE DATAPATHS DECLARATION ALLOWS YOU TO GROUP OUTPUTS TOGETHER AND ASSIGN A VALUE TO THAT SET OF OUTPUTS WHEN CERTAIN INPUT CONDITIONS ARE RECOGNIZED. THIS IS INDICATED BY A BACKSLASH FOLLOWED BY AN OCTAL VALUE. AS AN EXAMPLE THE STATEMENT

```
DATAPATHS
MPC=MPC01,MPC02,MPC03,MPC04
END
```

ALLOWS AN EQUATION TO BE WRITTEN

```
MPC\03=A.B.-C+E
```

WHERE MPC04 AND MPC03 ARE TRUE IF A AND B AND NOT C ARE TRUE OR IF E IS TRUE.

EQUATIONS THE EQUATIONS STATEMENTS CONTAIN AN OUTPUT (OR GROUP OF OUTPUTS IN THE CASE OF A DATAPATH DECLARATION) ON THE LEFT SIDE OF AN EQUALS SIGN ALONG WITH DISCREET INPUTS AND BOUND MNEMONICS FROM BIND DECLARATIONS ON THE RIGHT SIDE. THE OUTPUT IS MADE ACTIVE WHEN THE RIGHT SIDE IS TRUE-FROM AN APPEARANCE OF A RECOGNIZED TERM.

3. NOMENCLATURE

EXCEPT FOR THE BIND STATEMENT BIT MASKS WHICH ARE IN BINARY,ALL NUMBERING IS IN OCTAL FORM.

ANY UNUSED INPUTS ARE DESIGNATED BY AN 'X'. ANY UNUSED OUTPUTS ARE DESIGNATED BY 'BL'. THESE SYMBOLS APPEAR IN THE INPUTS/OUTPUTS DECLARATION.

SINCE THE INPUTS ARE ASSUMED TRUE HIGH,A TRUE LOW INPUT IS SHOWN BY 'NOT ING' THE MNEMONIC. FOR EXAMPLE:

BUT DEST L IS SHOWN ACTIVE AS -BUT DEST L

AN OUTPUT THAT IS TRUE LOW IS MENTIONED IN THE INITIAL HEADER BLOCK OF EACH FILE.

TO FIND A PARTICULAR DEC PART NUMBER PROM/PLA,STRIP OFF THE '23' AND THE DASH VARIATION FROM THE PART NUMBER DESCRIPTION AND SUBSTITUTE THE FOLLOWING LETTER DEPENDING ON THE MODULE. THEN TURN TO THE APPROPRIATE FILE NAME.

LETTER	***MODULE***
X	M7095
Y	M7094
Z	M7098
A	M7096

EX. TO FIND 23-0024C6-00 ON THE M7094,STRIP OFF THE 23 AND PLACE A Y IN FRONT,YIELDING Y024C6. THEN LOOK IN THE TABLE OF CONTENTS AND TURN TO THE FILE.

```
DSKB:   [160,1311]
X026C6  EQN     X028C6  EQN     X029C6  EQN     X030C6  EQN
X046B1  EQN     X055B1  EQN     X163A2  EQN     X257A1  EQN
X258A1  EQN     X259A1  EQN     X260A1  EQN     X449F1  EQN
X450F1  EQN     X493A2  EQN     X494A2  EQN     X568A2  EQN
X846A9  EQN
Y023C6  EQN     Y024C6  EQN     Y025C6  EQN     Y164A2  EQN
Y444F1  EQN
Z032C6  EQN     Z033C6  EQN     Z034C6  EQN
A261A1  EQN     A847A9  EQN     A848A9  EQN

  Total of 28 files
```

```
"SERVICE DECODING PLA,#23-026C6-00,E99,K2-2,82S100 OR EQUIV"
"ALL INPUTS AND OUTPUTS ACTIVE HIGH-X INDICATES AN UNUSED INPUT
"THIS DEVICE PLACES CONSTANTS ON THE OUTPUT LINES WHEN NOT IN"
"SERVICE,DEFAULTING TO THE PIRQ ADDRESS [240] . WHEN IN SERVICE,IT"
"ENABLES/DISABLES GRANTS AND SERVICE LINES ACCORDING TO THE CLASS"
"OF INSTRUCTION BEING DECODED AND THE ERROR CONDITION PRESENT."

INVERTIN 0
INVERTOUT 0

INPUTS 'X,X,SERV,X,BE,PE,KTE,PFAIL,IRC2,IRC1,IRC0,CONS1,CONS0,TBIT,HAL
T,STOV'
OUTPUTS 'GRANTS,C2,C3,C4,C6,C5ANDC7,STOVSRV,PFAILSRV'

RADIX OCTAL

BIND '0000000011100000'
"IR CODES 0-7"
IHLT=000000
TRAP=000040
EMT=000100
IOT=000140
BPT=000200
ILG=000240
RES=000300
OKAY=000340
END

BIND '0000000000011000'
"UWORD CONSTANTS"
CON000=000000
CON016=000020
CON026=000010
CON366=000030
END

DATAPATHS
OUT=C2,C3,C4,C6,C5ANDC7
END

EQUATIONS
OUT\00=CON000.-SERV
OUT\20=IHLT.-PE.-KTE.-BE.-HALT.SERV
OUT\20=STOV.-PE.-KTE.-BE.-TBIT.OKAY.SERV
OUT\20=BE.-HALT.SERV
OUT\10=RES.-PE.-KTE.-BE.-HALT.SERV
OUT\10=ILG.-PE.-KTE.-BE.-HALT.SERV
OUT\30=BPT.-PE.-KTE.-BE.-HALT.SERV
OUT\30=TBIT.-PE.-KTE.-BE.-HALT.OKAY.SERV
OUT\30=CON016.-SERV
OUT\04=IOT.-PE.-KTE.-BE.-HALT.SERV
OUT\24=PFAIL.-PE.-KTE.-BE.-TBIT.-STOV.OKAY.SERV
OUT\24=CON026.-SERV
OUT\14=EMT.-PE.-KTE.-BE.-HALT.SERV
OUT\34=TRAP.-PE.-KTE.-BE.-HALT.SERV
OUT\32=PE.-KTE.-BE.-HALT.SERV
OUT\01=-PFAIL.-PE.-KTE.-BE.-TBIT.-STOV.OKAY.SERV
OUT\11=KTE.-BE.-HALT.SERV
OUT\27=CON366.-SERV
```

```
PFAILSRV=PFAIL,-PE,-KTE,-BE,-TBIT,-STOV,OKAY,SERV
STOVSRV=STOV,SERV
GRANTS=HALT,SERV+-PE,-BE,-KTE,-TBIT,-STOV,-PFAIL,OKAY,SERV
END


OPTIMIZE -2
PUNCHTAPE
)OUT X026C6,OUT
PRINTTABS
STATISTICS
)OUT


"%END OF X026C6 PLA SOURCE"
```

```
"DOUBLE OP AND BRANCH DECODING PLA,K2-5,E116,#23-028C6-00,82S101"
"ALL INPUTS ARE ACTIVE HIGH;ALL OUTPUTS ARE ACTIVE LOW"
"DURING IRDEC OR B DEST L,UVECTORS ARE GENERATED TO STEER"
"THE UADDRESS TO THE PROPER DESTINATION"
"SOME MPC BRANCHES ARE SPLIT W/X029C6"


INVERTIN 0
INVERTOUT 776000000000

INPUTS 'DM0,IRDEC,BDEST L,IR15,IR14,IR13,IR12,IR11,IR10,IR9,IR8,NBIT,Z
BIT,VBIT,CBIT,FP11F'

OUTPUTS 'DEST,IRCODE0,MOVE,MPC3,MPC4,MPC5,MPC6,MPC7'

RADIX OCTAL

BIND '0001111111000000'
MUL=007000
DIV=007100
ASH=007200
ASHC=007300
XOR=007400
SOB=007700
END

BIND '0001111111100000'
CSM=000700
END

BIND '0001111000000000'
ADD=006000
SUB=016000
FPP=017000
END

BIND '0000111000000000'
MOV(B)=001000
CMP(B)=002000
BIT(B)=003000
BIC(B)=004000
BIS(B)=005000
END


BIND '1100000111000000'
SM0-DM0IRD=040000
SM0DM0IRD=140000
END

BIND '0100000111000000'
SM1IRD=040100
SM2IRD=040200
SM3IRD=040300
SM4IRD=040400
SM5IRD=040500
SM6IRD=040600
SM7IRD=040700
END
```

```
BIND '0101111111100000'
BR=040040
BNE=040100
BEQ=040140
BGE=040200
BLT=040240
BGT=040300
BLE=040340
BPL=050000
BMI=050040
BHI=050100
BLOS=050140
BVC=050200
BVS=050240
BCC=050300
BCS=050340
END


DATAPATHS
MPC=MPC3,MPC4,MPC5,MPC6,MPC7
END

EQUATIONS
MPC\24=FPP.-FP11F.IRDEC                    ;"MPC 050"
MPC\11=MUL.IRDEC+DIV.IRDEC                 ;"MPC 220"
MPC\11=ASH.IRDEC+ASHC.IRDEC+CSM.IRDEC      ;"MPC 220"
MPC\15=SOB.IRDEC                           ;"MPC 260"
MPC\04=XOR.IRDEC                           ;"MPC 040"
MPC\14=MUL.-BDEST L                        ;"MPC 060"
MPC\34=DIV.-BDEST L                        ;"MPC 070"
MPC\20=ASHC.-BDEST L                       ;"MPC 010"
MPC\12=XOR.-BDEST L.-DMO                   ;"MPC 120"
MPC\32=XOR.-BDEST L.DMO                    ;"MPC 130"
MPC\21=BR+BNE.-ZBIT+BEQ.ZBIT               ;"MPC 210"
MPC\21=BGE.-NBIT.-VBIT+BGE.NBIT.VBIT
MPC\21=BLT.-NBIT.VBIT+BLT.NBIT.-VBIT
MPC\21=BGT.-ZBIT.-NBIT.-VBIT+BGT.-ZBIT.NBIT.VBIT
MPC\21=BLE.ZBIT+BLE.-NBIT.VBIT+BLE.NBIT.-VBIT
MPC\21=BPL.-NBIT+BMI.NBIT+BHI.-CBIT.-ZBIT+BLOS.ZBIT+BLOS.CBIT
MPC\21=BVC.-VBIT+BVS.VBIT+BCS.CBIT+BCC.-CBIT
MPC\03=MOV(B).SMO-DMOIRD+CMP(B).SMO-DMOIRD+BIT(B).SMO-DMOIRD     ;"MPC
300"
MPC\03=BIC(B).SMO-DMOIRD+BIS(B).SMO-DMOIRD+ADD.SMO-DMOIRD+SUB.SMO-DMOI
RD
MPC\23=MOV(B).SM1IRD+CMP(B).SM1IRD+BIT(B).SM1IRD          ;"MPC 310"
MPC\23=BIC(B).SM1IRD+BIS(B).SM1IRD+ADD.SM1IRD+SUB.SM1IRD
MPC\13=MOV(B).SM2IRD+CMP(B).SM2IRD+BIT(B).SM2IRD          ;"MPC 320"
MPC\13=BIC(B).SM2IRD+BIS(B).SM2IRD+ADD.SM2IRD+SUB.SM2IRD
MPC\33=MOV(B).SM3IRD+CMP(B).SM3IRD+BIT(B).SM3IRD          ;"MPC 330"
MPC\33=BIC(B).SM3IRD+BIS(B).SM3IRD+ADD.SM3IRD+SUB.SM3IRD
MPC\07=MOV(B).SM4IRD+CMP(B).SM4IRD+BIT(B).SM4IRD          ;"MPC 340"
MPC\07=BIC(B).SM4IRD+BIS(B).SM4IRD+ADD.SM4IRD+SUB.SM4IRD
MPC\27=MOV(B).SM5IRD+CMP(B).SM5IRD+BIT(B).SM5IRD          ;"MPC 350"
MPC\27=BIC(B).SM5IRD+BIS(B).SM5IRD+ADD.SM5IRD+SUB.SM5IRD
MPC\17=MOV(B).SM6IRD+CMP(B).SM6IRD+BIT(B).SM6IRD          ;"MPC 360'
MPC\17=BIC(B).SM6IRD+BIS(B).SM6IRD+ADD.SM6IRD+SUB.SM6IRD
MPC\37=MOV(B).SM7IRD+CMP(B).SM7IRD+BIT(B).SM7IRD          ;"MPC 370"
MPC\37=BIC(B).SM7IRD+BIS(B).SM7IRD+ADD.SM7IRD+SUB.SM7IRD
MPC\01=MOV(B).SMODMOIRD                                   ;"MPC 200"
MPC\35=CMP(B).SMODMOIRD+BIT(B).SMODMOIRD                  ;"MPC 270"
MPC\05=SUB.SMODMOIRD                                      ;"MPC 240"
```

```
MOVE=MOV(B)
IRCODEO=FPP,FP11F
DEST=XOR,-BDEST L,-DMO
DEST=MUL,IRDEC+DIV,IRDEC+ASH,IRDEC+ASHC,IRDEC
END


OPTIMIZE -2
PUNCHTAPE
)OUTPUT X028C6,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF X028C6 PLA SOURCE'
```

```
"SINGLE OPERAND DECODING PLA,#23-029C6-00,K2-5,E115,82S101"
'ALL INPUTS ACTIVE HIGH,BDEST L IS TRUE LOW,ALL OUTPUTS ACTIVE LOW"
'EXCEPT FOR BRNBUT WHICH IS ACTIVE HIGH FOR ANY BRANCH DETECTED."
'MOST DESTS ARE DECODED HERE. SOME MPC'S ARE SPLIT WITH X028C6."

INVERTIN 0
INVERTOUT 676000000000

INPUTS 'PANDC H,IRDEC,BDEST L,IR15,IR14,IR13,IR12,IR11,IR10,IR09,IR08,
IR07,IR06,IR05,IR04,IR03'

OUTPUTS 'IRC0,IRC1,BRNBUT,MPC3,MPC4,MPC5,MPC6,DEST'

RADIX OCTAL


BIND '0001111111000000'
JSR=000400
RES1=007500
RES2=007600
END

BIND '0001111111111000'
CSM=000700
JMP=000010
SWAB=000030
MARK=000640
MFPI=000650
MTPI=000660
SXT=000670
MTPS=010640
MFPD=010650
MTPD=010660
MFPS=010670
END

BIND '0000111111111000'
CLR(B)=000500
COM(B) =000510
INC(B) =000520
DEC(B) =000530
NEG(B) =000540
ADC(B) =000550
SBC(B) =000560
TST(B) =000570
ROR(B)=000600
ROL(B)=000610
ASR(B)=000620
ASL(B)=000630
END


BIND '0001111111111000'
"LOCK INSTRUCTION"
ASRB=010620
END
```

```
BIND '0001111000000000'
ADD=006000
SUB=016000
END

BIND '0000111000000000'
MOV(B)=001000
CMP(B)=002000
BIT(B)=003000
BIC(B)=004000
BIS(B)=005000
END

BIND '0000000000000111'
DM0=000000
END

BIND '0100000111000111'
SMODM0IRD=040000
END

"THE NEXT 3 BINDS DETECT 'NOT DEST MODE 0'."
BIND '0000000000000100'
N1DM0=000004
END

BIND '0000000000000010'
N2DM0=000002
END

BIND '0000000000000001'
N3DM0=000001
END

"THE NEXT TWO BINDS DECODE ALL BRANCHES"
BIND '0101111111100000'
BR=040040
BNE=040100
BEQ=040140
BGE=040200
BLT=040240
BGT=040300
BLE=040340
END

BIND '0101111100000000'
BEX=050000
END

DATAPATHS
MPC=MPC3,MPC4,MPC5,MPC6
END
```

```
EQUATIONS
MPC\12=CSM.-BDEST L                                          ;"MPC 050"
MPC\10=MFPI.PANDC H.-BDEST L                                 ;"MPC 010
MPC\10=MFPD.-BDEST L+MTPD.-BDEST L
MPC\03=BIC(B).SMODMOIRD                                      ;"MPC 140
MPC\03=BIS(B).SMODMOIRD+ADD.SMODMOIRD
MPC\11=MTPI.IRDEC+MTPD.IRDEC                                 ;"MPC 110"
MPC\01=MFPI.IRDEC+MFPD.IRDEC                                 ;"MPC 100"
MPC\04=JMP.N1DMO.IRDEC+JMP.N2DMO.IRDEC                       ;"MPC 020
MPC\04=JMP.N3DMO.IRDEC+MARK.IRDEC
MPC\14=SWAB.IRDEC+BIC(B).-BDEST L+BIS(B).-BDEST L            ;"MPC 030"
MPC\14=ADD.-BDEST L
MPC\06=SUB.-BDEST L                                          ;"MPC 060"
MPC\16=CMP(B).SMODMOIRD+BIT(B).SMODMOIRD                     ;"MPC 070"
MPC\16=CMP(B).-BDEST L+BIT(B).-BDEST L
MPC\13=JSR.N1DMO.IRDEC+JSR.N2DMO.IRDEC+JSR.N3DMO.IRDEC       ;"MPC 150"
MPC\13=NEG(B).IRDEC
MPC\05=CLR(B).IRDEC+COM(B).IRDEC+INC(B).IRDEC                ;"MPC 120"
MPC\05=DEC(B).IRDEC+ADC(B).IRDEC+SBC(B).IRDEC+SXT.IRDEC
MPC\05=NEG(B).-BDEST L.N1DMO+NEG(B).-BDEST L.N2DMO
MPC\05=NEG(B).-BDEST L.N3DMO
MPC\07=TST(B).IRDEC                                          ;"MPC 160"
MPC\17=ROR(B).IRDEC+ROL(B).IRDEC+ASR(B).IRDEC                ;"MPC 170"
MPC\17=ASL(B).IRDEC
MPC\15=NEG(B).DMO.-BDEST L                                   ;"MPC 130"
DEST=JMP.N1DMO.IRDEC+JMP.N2DMO.IRDEC+JMP.N3DMO.IRDEC+JSR.N1DMO.IRDEC
DEST=JSR.N2DMO.IRDEC+JSR.N3DMO.IRDEC+SWAB.IRDEC
DEST=CLR(B).IRDEC+COM(B).IRDEC+INC(B).IRDEC+DEC(B).IRDEC
DEST=ADC(B).IRDEC+SBC(B).IRDEC+TST(B).IRDEC+ROR(B).IRDEC+ROL(B).IRDEC
DEST=ASR(B).IRDEC+ASRB.-IRDEC.BDEST L+ASL(B).IRDEC
DEST=MFPI.IRDEC+MFPD.IRDEC
DEST=MTPI.-BDEST L+MTPD.-BDEST L
DEST=SXT.IRDEC
DEST=NEG(B).-BDEST L.N1DMO+NEG(B).-BDEST L.N2DMO+NEG(B).-BDEST L.N3DMO
DEST=ADD.-BDEST L+SUB.-BDEST L+MOV(B).-BDEST L+CMP(B).-BDEST L
DEST=BIT(B).-BDEST L+BIC(B).-BDEST L+BIS(B).-BDESTL+CSM.IRDEC
IRCO=RES1+RES2
BRNBUT=BR+BNE+BEQ+BGE+BLT+BGT+BLE+BEX
END


OPTIMIZE -2
PUNCHTAPE
)OUTPUT X029C6,OUT
PRINTTABS
STATISTICS
)OUTPUT


'%END OF X029C6 PLA SOURCE'
```

```
"LOWER OF DECODING PLA,#23-030C6-00,K2-6,E100,82S101"
"ALL INPUTS ACTIVE HIGH,ALL OUTPUTS ACTIVE LOW"
"ALMOST ALL IR CODES ARE GENERATED IN THIS PLA. ALSO"
"WACKO INST,TRAPS DECODED HERE;CSM IS SPLIT WITH X028C6"
"RTI,RTT VECTOR TO 005 IN KERNEL,016 OTHERWISE"

INVERTIN 0
INVERTOUT 776000000000

INPUTS 'IR DEC (1)H,U OR S,EN CALL SUP,IR 15(1)H,IR 11(1)H,IR 10(1)H,I
R 09(1),IR 08(1)H,IR 07(1)H,IR 06(1)H,IR 05(1)H,IR 04(1)H,IR 03(1)H,IR
 02(1)H,IR 01(1)H,IR 00(1)H'

OUTPUTS 'IRC 00L,IRC 01L,IRC 02L,MPC 00L,MPC 01L,MPC 02L,MPC 03L,HALT'

RADIX OCTAL

BIND '0001111111111111'
HLT=000000
WAIT=000001
RTI=000002
BPT=000003
IOT=000004
RESET=000005
RTT=000006
MFPT=000007
END

BIND '0001111111000000'
CSM=007000
ICSM1=007100
ICSM2=007200
ICSM3=007300
JMP=000100
MTPS=016400
MFPS=016700
END

BIND '0001111100000000'
EMT=014000
TRAP=014400
END

BIND '0001111000000000'
JSR=004000
RES 00=017000
END

BIND '0001111111000000'
RES 01=007100
RES 02=007200
RES 03=007300
RES 04=007400
RES 05=007500
RES 06=007600
RES 07=007700
END
```

```
BIND '0000000000111000'
DM0=000000
END

BIND '0001111111111000'
RES 21=000010
RES 22=000020
RES 23=000030
RES 24=000040
RES 25=000050
RES 26=000060
RES 27=000070
RTS=000200
RES 30=000210
RES 31=000220
SPL=000230
END

BIND '0001111111110000'
CCC=000240
SCC=000260
END

DATAPATHS
MPC=MPC 00L,MPC 01L,MPC 02L,MPC 03L
IRC=IRC 00L,IRC 01L,IRC 02L
END

EQUATIONS
MPC\04=MFPT.IR DEC (1)H                    ;"MPC 002"
MPC\03=WAIT.IR DEC (1)H                    ;"MPC 140"
MPC\07=RTI.IR DEC (1)H.U OR S              ;"MPC 016"
MPC\07=RTT.IR DEC (1)H.U OR S
MPC\12=RTI.IR DEC (1)H.-U OR S             ;"MPC 005"
MPC\12=RTT.IR DEC (1)H.-U OR S
MPC\17=CSM.IR DEC (1)H.-U OR S             ;"MPC 017"
MPC\17=SPL.IR DEC (1)H.-U OR S
MPC\17=CSM.IR DEC (1)H.-EN CALL SUP
MPC\17=ICSM1.IR DEC (1)H+ICSM2.IR DEC (1)H
MPC\17=ICSM3.IR DEC (1)H
MPC\14=RESET.IR DEC (1)H                   ;"MPC 003"
MPC\14=SPL.IR DEC (1)H.U OR S
MPC\02=RTS.IR DEC (1)H                     ;"MPC 004"
MPC\06=CCC.IR DEC (1)H                     ;"MPC 006"
MPC\16=SCC.IR DEC (1)H                     ;"MPC 007"
IRC\0=HLT.-U OR S
IRC\2=JMP.DM0+JSR.DM0
IRC\5=EMT
IRC\3=TRAP
IRC\7=HLT.U OR S
IRC\4=MTPS+MFPS+CSM.-U OR S
IRC\4=CSM.-EN CALL SUP+ICSM1+ICSM2+ICSM3
IRC\4=RES 00+RES 01+RES 02+RES 03+RES 04
IRC\4=RES 05+RES 06+RES 07
IRC\4=RES 21+RES 22+RES 23+RES 24
IRC\4=RES 25+RES 26+RES 27+RES 30+RES 31
IRC\1=IOT
IRC\6=BPT
```

```
HALT=HLT.-U OR S
END

OPTIMIZE -2
PUNCHTAPE
)OUTPUT X030C6,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF X030C6  PLA SOURCE'
```

```
"SOP AUX PROM,#23-046B1-00,K2-4,E46,74S471 OR EQUIV"
"ALL INPUTS AND OUTPUTS ACTIVE HIGH"
"CONTROLS ALU WHEN AUX CONTROL ASSERTED FOR SOP INST"

INVERTIN 0
INVERTOUT 0

INPUTS 'IR 06(1)H,IR 07(1)H,IR 08(1)H,IR 09(1)H,IR 10(1)H,
IR 15(1)H,CBIT,NBIT'

OUTPUTS 'D07,D06,D05,D04,D03,D02,D01,D00'

RADIX OCTAL

BIND '11111100'
SWAB=300
MARK=050
SXT=350
MTPS=054
MFPS=354
END

BIND '11111000'
CLR(B)=020
COM(B)=220
INC(B)=120
DEC(B)=320
NEG(B)=060
ADC(B)=260
SBC(B)=160
TST(B)=300
ROR(B)=010
ROL(B)=210
ASR(B)=110
ASL(B)=310
MFPI(B)=250
MTPI(B)=150
END

DATAPATHS
OUT=D07,D06,D05,D04,D03,D02,D01,D00
END

EQUATIONS
OUT\012=SWAB+ADC(B).-CBIT+SBC(B).-CBIT+TST(B)+MFPI(B)+MTPI(B)+MTPS+MFP
S
OUT\312=CLR(B)+MARK+SXT.-NBIT
OUT\372=COM(B)
OUT\362=INC(B)+ADC(B).CBIT
OUT\006=DEC(B)+SBC(B).CBIT
OUT\220=NEG(B)
OUT\130=ROR(B)+ROL(B)+ASR(B)+ASL(B)
OUT\072=SXT.NBIT
END
```

```
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DEFAULTROM 0
MAKEROM
)OUT X046B1,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF X046B1 PROM SOURCE'


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"SR1 ENCODING PROM,#23-055B1-00,K2-10,E72,74S471 OR EQUIV"
"ALL INPUTS AND OUTPUTS ARE ACTIVE HIGH."
"THIS PROM PASSES THE AMT A GEN REG IS AUTOINC/DEC TO SR1 AND "
"CONTROLS LOADING HIGH AND LOW BYTES OF SAME."
"SR1C1,SR1C0 COME FROM THE UCODE,BMUX BITS COME FROM"
"THE DATA PATH TO PASS THE AMOUNT ACTUALLY CHANGED."

INVERTIN 0
INVERTOUT 0

INPUTS 'SR1C1(1)H,SR1C0(1)H,ALUS3H,ALUCINL,BMUX03H,BMUX02H,BMUX01H,BMU
X00H'

OUTPUTS 'BL,LOADSR1HL,LOADSR1LL,D5,D4,D3,D2,D1'

RADIX OCTAL

BIND '11000000'
SR1ZR=300
SR1HL=200
SR1LL=100
END

BIND '1000000'
"NOP OR LOAD LOW BYTE"
X=000
END

BIND '01000000'
"LOAD HIGH BYTE OR ZERO SR1"
Y=000
END

BIND '00110000'
"INCREMENT OR DECREMENT WITH/WITHOUT CARRY"
INCC=040
INCB=060
DECC=000
DECB=020
END


BIND '00001111'
"VALUE OF INCREMENT/DECREMENT"
ZE=000
ONE=001
TWO=002
FOUR=004
TEN=010
END
```

```
DATAPATHS
OUT=D5,D4,D3,D2,D1
END


EQUATIONS
LOADSR1HL=SR1HL+SR1ZR
LOADSR1LL=SR1LL+SR1ZR
OUT\0=SR1ZR
OUT\1=INCC.ZE.X+INCC.ZE.Y+INCB.ONE.X+INCB.ONE.Y
OUT\2=INCC.ONE.X+INCC.ONE.Y+INCB.TWO.X+INCB.TWO.Y
OUT\4=INCB.FOUR.X+INCB.FOUR.Y
OUT\10=INCB.TEN.X+INCB.TEN.Y
OUT\37=DECC.ONE.X+DECC.ONE.Y+DECB.ZE.X+DECB.ZE.Y
OUT\36=DECC.TWO.X+DECC.TWO.Y+DECB.ONE.X+DECB.ONE.Y
OUT\34=DECB.FOUR.X+DECB.FOUR.Y
OUT\30=DECB.TEN.X+DECB.TEN.Y
END


DEFAULTROM 0
MAKEROM
)OUT X055B1,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF X055B1 PROM SOURCE'
```

```
"SSMUX ROM,K2-7,#23-163A2-00, E92,82S129 OR EQUIV"
"ALL INPUTS ACTIVE HIGH,UPPER BYTE L IS ACTIVE LOW"
"ALL OTHER OUTPUTS ARE ACTIVE HIGH. SWAP/SEX INFO IS CREATED"
"ASSUMING A BYTE INST MAY BE CALLED FOR."


INVERTIN 0
INVERTOUT 100000000000


INPUTS 'S0,GND,S1,DAT TRAN,AUX H,MOV L,VBA 00,BYTE H'

OUTPUTS 'SWAP,SEX,BL,UPPER BYTE L'


RADIX OCTAL

BIND '10100000'
"THIS IS THE UCODE FIELD WHICH DETERMINES "
"STRAIGHT THRU,SWAP,SIGN EXTEND OR EXTERNAL CONTROL"
ST=000
SE=200
SW=040
EXT=240
END

EQUATIONS
BL=ST.DAT TRAN.VBA 00+SW.DAT TRAN.VBA 00
BL=SE.DAT TRAN.VBA 00+EXT.-DAT TRAN.BYTE H.-AUX H.-GND
BL=EXT.DAT TRAN.-BYTE H.VBA 00
SWAP=SW+EXT.DAT TRAN.BYTE H.VBA 00
SEX=SE+EXT.-DAT TRAN.BYTE H.AUX H+EXT.DAT TRAN.BYTE H.-VBA 00
UPPER BYTE L=EXT.-DAT TRAN.BYTE H.AUX H.MOV L
END

DEFAULTROM 0
MAKEROM
)OUTPUT X163A2,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF X163A2 PROM SOURCE'
```

```
"DOP AUX PROM,#23-257A1-00,K2-4,E25,82S123 OR EQUIV"
"ALL INPUTS AND OUTPUTS ACTIVE HIGH"
"ASSUMES ALU CONTROL FOR DOPS WHEN AUX CONTROL IS ASSERTED"

INVERTIN 0
INVERTOUT 0

INPUTS 'X,IR 15(1)H,IR 14(1)H,IR 13(1)H,IR 12(1)H'

OUTPUTS 'D07,D06,D05,D04,D03,D02,D01,D00'

RADIX OCTAL

BIND '10111'
MOV(B)=01
CMP(B)=02
BIT(B)=03
BIC(B)=04
BIS(B)=05
END

BIND '11111'
ADD=06
XOR=07
SUB=16
END

DATAPATHS
OUT=D07,D06,D05,D04,D03,D02,D01,D00
END

EQUATIONS
OUT\012=MOV(B)
OUT\220=CMP(B)+SUB
OUT\110=BIT(B)
OUT\330=BIC(B)
OUT\030=BIS(B)
OUT\144=ADD
OUT\230=XOR
END

DEFAULTROM 0
MAKEROM
)OUT X257A1,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF X257A1 PROM SOURCE'
```

```
"ALU FUNCTION DECODE PROM,#23-258A1-00,K2-7,E67,82S123"
"THIS PROM DECODES THE ALU UCONTROL FIELD AND DETERMINES THE"
"THE STATE OF THE BLEG MULTIPLEXER AS WELL AS THE CURRENT"
"ARITHMETIC/BOOLEAN OPERATION. ALL INPUTS ARE ACTIVE HIGH"
"BLEG 00H,BLEG 01H, AND ALUMODE H ARE ACTIVE HIGH OUTPUTS-ALL"
"OTHER OUTPUTS ARE ACTIVE LOW"

INVERTIN 0
INVERTOUT 136000000000

INPUTS 'IN4,IN3,IN2,IN1,IN0'

OUTPUTS 'BLEG 00H,BLEG 01H,ALUCIN L,ALUMODE H,ALUS0 L,
ALUS1L,ALUS2 L,ALUS3 L'

RADIX OCTAL

BIND '11111'
AANDBXBAR=16
AANDBX=17
DTCARE3=33
ZERO=00
APLS1=02
AMIN1=03
AMINB=04
A=05
B=06
APLSB=10
AMINBX=22
APLS2=24
AMIN2=25
BX=27
BBAR=30
ABAR=1
APLSBX=21
ONEBAR=07
APLSBXPLS1=23
APLSA=26
BXBAR=31
APLSAPLS1=32
AANDB=11
ABARANDB=12
AVB=13
ASTRB=14
AANDBBAR=15
APLSBPLS1=20
END

DATAPATHS
ALUSEL=ALUS0 L,ALUS1 L,ALUS2 L,ALUS3 L
BLEG=BLEG 00H,BLEG 01H
END

BIND '11100'
DTCARE4=34
END
```

```
EQUATIONS
ALUSEL\00=ABAR+APLS1
ALUSEL\03=ONEBAR+APLSA+APLSAPLS1
ALUSEL\04=ABARANDB
ALUSEL\05=B+BX
ALUSEL\06=AMINB+ASTRB+AMINBX+AMIN2
ALUSEL\07=AVB
ALUSEL\11=APLSB+APLSBPLS1+APLSBX+APLSBXPLS1+APLS2
ALUSEL\12=BBAR+BXBAR
ALUSEL\14=ZERO
ALUSEL\15=AANDB+AANDBX
ALUSEL\16=AANDBBAR+AANDBXBAR
ALUSEL\17=AMIN1+A+DTCARE3+DTCARE4
ALUMODE H=ZERO+ABAR+A+B+ONEBAR+AANDB+ABARANDB+AVB+ASTRB+AANDBBAR+BX
ALUMODE H=BBAR+BXBAR+AANDBX+AANDBXBAR
ALUCIN L=ZERO+ABAR+APLS1+AMINB+A+B+ONEBAR+AANDB
ALUCIN=ABARANDB+AVB+ASTRB+AANDBBAR+APLSBPLS1+AMINBX+APLSBXPLS1
ALUCIN L=APLS2+BX+BBAR+BXBAR+APLSAPLS1+DTCARE3+DTCARE4
BLEG\0=AMINB+B+APLSB+AANDB+ABARANDB+AVB+ASTRB
BLEG\0=AANDBBAR+BBAR+DTCARE3+DTCARE4
BLEG\1=ZERO+ABAR+APLS1+AMIN1+A+ONEBAR+APLSA+APLSAPLS1
BLEG\2=APLSBX+AMINBX+APLSBXPLS1+BX+BXBAR+AANDBX+AANDBXBAR
BLEG\3=APLS2+AMIN2
END

DEFAULTROM 0
MAKEROM
)OUT X258A1,OUT
PRINTTABS
STATISTICS
)OUT


"%END OF X258A1 FROM SOURCE"
```

```
"B,BX MODE AND SHIFT CONTROL PROM,K2-7,E54,#23-259A1-00,82S123"
"THIS PROM CONTROLS THE B AND BX SHIFT/LOAD CAPABILITIES AS WELL"
"AS DETERMINING WHAT IS SHIFTED INTO THE REGISTER."
"ALL INPUTS ARE ACTIVE HIGH,EN DBE L AND EN OVX L ARE"
"ACTIVE LOW,ALL OTHER OUTPUTS ARE ACTIVE HIGH."

INVERTIN 0
INVERTOUT 600000000000

INPUTS 'IN4,IN3,IN2,IN1,IN0'

OUTPUTS 'EN DBE L,EN OVX L,SHMUX 00L,SHMUX 01L,BXMODE 00L,
BXMODE 01L,BMODE 00H,BMODE 01H'

RADIX OCTAL

BIND '11110'
"OPERATION CALLED BY UCODE"
HOLD=00
LOADB=02
SL(BX-0)LDB=06
SL(BX-C)LDB=10
SL(BX-1)LDB=12
SL(B-0)=14
SL(B-0)LDBX=16
SL(B-BX15)=20
SL(BX-0)=22
SL(BX-1)=24
LOADBX=04
SL(BX-OVX)=26
SL(BX-C)=30
SL(B-BX-0)=32
SR(B15-B-BX)=34
ENABDBE=36
END

DATAPATHS
BMODE=BMODE 00H,BMODE 01H
BXMODE=BXMODE 00L,BXMODE 01L
SHFTMD=SHMUX 00L,SHMUX 01L
END
```

```
EQUATIONS
BMODE\0=LOADB+SL(BX-0)LDB+SL(BX-C)LDB+SL(BX-1)LDB          ;'LOAD B'
BMODE\1=SR(B15-B-BX)                                       ;'SR B'
BMODE\2=SL(B-0)+SL(B-0)LDBX+SL(B-BX15)+SL(B-BX-0)          ;'SL B'
BMODE\3=HOLD+LOADBX+SL(BX-0)+SL(BX-1)                      ;'HOLD B'
BMODE\3=SL(BX-OVX)+SL(BX-C)+ENABDBE
BXMODE\0=HOLD+LOADB+SL(B-0)+SL(B-BX15)+ENABDBE             ;'HOLD BX'
BXMODE\1=SL(BX-0)LDB+SL(BX-C)LDB+SL(BX-1)LDB               ;'SL BX'
BXMODE\1=SL(BX-0)+SL(BX-1)+SL(BX-OVX)+SL(BX-C)+SL(B-BX-0)
BXMODE\2=SR(B15-B-BX)                                      ;'SR BX'
BXMODE\3=LOADBX+SL(B-0)LDBX                                ;'LOAD BX'
SHFTMD\0=LOADBX+SL(BX-C)LDB+SL(BX-C)+ENABDBE+SR(B15-B-BX)
SHFTMD\1=SL(BX-1)LDB+SL(B-0)+SL(B-0)LDBX+SL(BX-1)
SHFTMD\2=LOADB+SL(BX-OVX)
SHFTMD\3=SL(BX-0)LDB+SL(B-BX15)+SL(BX-0)+SL(B-BX-0)
EN OVX L=SL(B-BX-0)
EN DBE L=ENABDBE
END

DEFAULTROM 0
MAKEROM
)OUT X259A1,OUT
PRINTTABS
STATISTICS
)OUT


"%END OF X259A1 FROM SOURCE"
```

```
"BUT EXPANSION PROM,K2-8,E103,23-260A1-00,82S123 OR EQUIV"
"THIS DEVICE EXPANDS THE UWORD BUT FIELD INTO THE APPROPRIATE"
"CONTROL SIGNALS TO VECTOR THE UDESTINATION."
"ALL INPUTS AND OUTPUTS ARE ACTIVE HIGH."

INVERTIN 0
INVERTOUT 0

INPUTS 'IN4,IN3,IN2,IN1,IN0'

OUTPUTS 'Z,BOOT,NSRV,CNT05,RBX00,RBX01,CCN,ALUCOUT'

RADIX OCTAL

BIND '11111'
"BUT ALL IS USED IN GR TEST ONLY,NOT IN NORMAL OPERATION"
NOP=00
NBIT=01
ALL=15
ZBIT=02
C05=03
NZ=11
NOSERV=10
BOOT=04
BX00=05
BX01=06
COUT=07
BX00NBIT=12
C05BX01BX00=14
BX00C05=16
END

EQUATIONS
ALUCOUT=COUT+ALL
CCN=NBIT+NZ+BX00NBIT+ALL
RBX01=BX01+C05BX01BX00+ALL
RBX00=BX00+BX00NBIT+C05BX01BX00+BX00C05+ALL
CNT05=C05+C05BX01BX00+BX00C05+ALL
NSRV=NOSERV+ALL
BOOT=BOOT+ALL
Z=ZBIT+NZ+ALL
END

DEFAULTROM 0
MAKEROM
)OUT X260A1,OUT
PRINTTABS
STATISTICS
)OUT


"%END OF X260A1 PROM SOURCE"
```

```
"INSTRUCTION CATEGORIZING PROM,#23-449F1-00,K2-4,E108,82S137 OR EQUIV"
"ALL INPUTS ACTIVE HIGH,BYTE L IS ACTIVE LOW,ALL OTHER OUTPUTS"
"ARE ACTIVE HIGH. INST ARE GROUPED ACCORDING TO THEIR"
"EFFECT ON THE CONDITION CODES."

INVERTIN 0
INVERTOUT 400000000000

INPUTS 'IR06,IR07,IR08,IR09,IR10,IR11,IR12,IR13,IR14,IR15'

OUTPUTS 'BYTE,CODE2,CODE1,CODE0'

RADIX OCTAL

BIND '1111111111'
SWAB=1400
MARK=0260
MFPI=1260
MTPI=0660
SXT=1660
MTPS=0261
MFPD=1261
MTPD=0661
MFPS=1661
END

BIND '1111111110'
CLR(B)=0120
COM(B)=1120
INC(B)=0520
DEC(B)=1520
NEG(B)=0320
ADC(B)=1320
SBC(B)=0720
TST(B)=1720
ROR(B)=0060
ROL(B)=1060
ASR(B)=0460
ASL(B)=1460
END

BIND '0000001110'
MOV(B)=0010
CMP(B)=0004
BIT(B)=0014
BIC(B)=0002
BIS(B)=0012
END

BIND '0000001111'
ADD=0006
SUB=0007
END
```

```
BIND '0001111111'
"OP CODES 105XXX"
BSOP1=0121
END

BIND '0011111111'
"OP CODES 106XXX AND 107XXX"
BSOP2=0061
END

BIND '0001111111'
XOR=0036
CIS=0076
END

DATAPATHS
CODE=CODE2,CODE1,CODE0
END


EQUATIONS
BYTE=SWAB+BSOP1+BSOP2+MTPS+MFPS
BYTE=IR15.MOV(B)+IR15.CMP(B)+IR15.BIT(B)
BYTE=IR15.BIC(B)+IR15.BIS(B)+CIS
CODE\0=SWAB+CLR(B)+TST(B)
CODE\1=COM(B)
CODE\2=INC(B)
CODE\3=DEC(B)
CODE\4=NEG(B)+SBC(B)+CMP(B)+SUB
CODE\5=ADC(B)+ADD
CODE\6=ROR(B)+ROL(B)+ASR(B)+ASL(B)
CODE\7=MOV(B)+BIT(B)+BIC(B)+BIS(B)+MARK
CODE\7=MFPI+MTPI+SXT+MTPS+MFPD+MTPD+MFPS+XOR
END

DEFAULTROM 0
MAKEROM
)OUTPUT X449F1,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF X449F1 PROM SOURCE'
```

```
"T-BIT PROM,#23-450F1-00,K2-6,E88,82S137 OR EQUIV"
"ALL INPUTS ACTIVE HIGH,OUTPUT DIS TBIT L IS ACTIVE LOW"
"ALL OTHERS ACTIVE HIGH. THIS PROM ENABLES RESET IN KERNEL MODE,"
"PREVENTS TBIT LOADING ON RTT,AND BLOCKS LOADING PSW PRIORITY"
"ON RTI OR RTT IF USER OR SUPERVISOR MODE."

INVERTIN 0
INVERTOUT 200000000000

INPUTS 'ENAB,IR 00(1)H,IR 01(1)H,IR 02(1)H,IR 06(1)H,
IR 07(1)H,PSW 15(1)H,PSW 14(1)H,BREG 15(1)H,BREG 14(1)H'

OUTPUTS 'DIS LD PRIO H,DIS TBIT L,RESET,BL'

RADIX OCTAL

BIND '1111110000'
RTI=0200
REST=0500
RTT=0300
END

BIND '0000001100'
"CURRENT MODE"
KER=0000
SUP=0004
ILL=0010
USR=0014
END

BIND '1110110000'
RTI(T)=0200
END

EQUATIONS
RESET=REST.KER
DIS TBIT L=RTT
DIS LD PRIO H=RTI(T).USR+RTI(T).SUP
END

DEFAULTROM 0
MAKEROM
)OUT X450F1,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF X450F1 PROM SOURCE'
```

```
"I AND D SPACE FROM,#23-493A2-00,K2-8,E104,82S129 OR EQUIV"
"ALL INPUTS AND OUTPUTS ACTIVE HIGH"
"I/D SPACE ENABLED IF SR3 BIT IS SET AND PROPER CPU MODE"
"IS PRESENTLY LOADED"


INVERTIN 0
INVERTOUT 0

INPUTS 'X,X,I/D SPACE C1,EKDS H,ESDS H,EUDS H,MODE 01 H,MODE 00 H'
OUTPUTS 'BL,BL,I/D SPACE H,BL'

RADIX OCTAL

BIND '00100000'
I/D=040
END

BIND '00000011'
KERNEL=000
SUPER=001
USER=003
END



EQUATIONS
I/D SPACE H=I/D.KERNEL.EKDS H+I/D.SUPER.ESDS H+I/D.USER.EUDS H
END

DEFAULTROM 0
MAKEROM
)OUTPUT X493A2,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF X493A2 PROM SOURCE'
```

```
"PIRQ ENCODING PROM,#23-494A2-00,K2-10,E75,82S129 OR EQUIV"
"ALL INPUTS AND OUTPUTS ARE ACTIVE HIGH."
"NOTE THAT ORDER OF INPUTS IS NOT THE MOST LOGICAL"
"AND THAT THE OUTPUTS FORM THE OCTAL VALUE OF"
"THE HIGHEST ASSERTED PIRQ INPUT;I.E. A PIA7 OVERRIDES ALL"
"OTHER REQUESTS AND PLACES '7' ON THE OUTPUTS."


INVERTIN 0
INVERTOUT 0


INPUTS 'X,PIRQ14,PIRQ13,PIRQ12,PIRQ11,PIRQ10,PIRQ09,PIRQ15'

OUTPUTS 'OPIA0,OPIA1,OPIA2,BL'

RADIX OCTAL
"THE FOLLOWING BINDS RECOGNIZE A GIVEN REQUEST TO THE "
"EXCLUSION OF THOSE LOWER IN PRIORITY."

BIND '10000001'
PIA7=001
END
BIND '11000001'
PIA6=100
END
BIND '11100001'
PIA5=040
END
BIND '11110001'
PIA4=020
END
BIND '11111001'
PIA3=010
END
BIND '11111101'
PIA2=004
END
BIND '11111111'
PIA1=002
END


DATAPATHS
OUT=OPIA0,OPIA1,OPIA2
END
EQUATIONS
OUT\7=PIA7
OUT\3=PIA6
OUT\5=PIA5
OUT\1=PIA4
OUT\6=PIA3
OUT\2=PIA2
OUT\4=PIA1
END
```

```
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DEFAULTROM 0
MAKEROM
)OUTPUT X494A2,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF X494A2 PROM SOURCE'


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"BMODE AND SHIFT MUX PROM,#23-568A2-00,K2-4,E43,82S129 OR EQUIV"
"ALL INPUTS ACTIVE HIGH,MODE BIT OUTPUTS ARE ACTIVE LOW,OTHERS"
"ARE ACTIVE HIGH.GENERATES SHIFT INFO WHEN AUX CONTROL IS INVOKED."
"USED IN ROTATE,SHIFT AND CALL TO SUPERVISOR INSTS."


INVERTIN 0
INVERTOUT 300000000000

RADIX OCTAL

INPUTS 'CC N H,C BIT H,BREG 00 H,IR10,IR09,IR08,IR07,IR06'

OUTPUTS 'ROT C BIT H,B MODE 00 L,B MODE 01 L,SER SHIFT H'

BIND '00011100'
"MASK INDICATES ASR,ASL,ROR, OR ROL IS BEING DECODED"
MASK=020
CSM=030
END

EQUATIONS
SER SHIFT H=MASK.-IR07.C BIT H+MASK.IR07.-IR06.CC N H
B MODE 00 L=MASK.IR06
B MODE 01 L=MASK.-IR06+CSM
ROT C BIT H=MASK.-CC N H.BREG 00 H.-IR09.-IR08.-IR06
ROT C BIT H=MASK.CC N H.-BREG 00 H.-IR09.-IR08.IR06
ROT C BIT H=MASK.CC N H.BREG 00 H.-IR09.-IR08
END

MAKEROM
DEFAULTROM 0
)OUT X568A2,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF X568A2 PROM SOURCE'
```

```
"SR1 ENCODING FROM,#23-846A9,K2-10,E73,82S131 OR EQUIV"
"ALL INPUTS AND OUTPUTS ARE ACTIVE HIGH. THE REAL GEN REG ADRS"
"IS PASSED TO SR1-COMPENSATING FOR 3 STACK POINTERS"


INVERTIN 0
INVERTOUT 0

RADIX OCTAL

INPUTS 'SR1 C1,SR1 C0,SPA 02,SPA 01,SPA 00,IR 06,
IR 00,SPA DST SEL 1,SPA DST SEL 0'
OUTPUTS 'BL,SR1 SPA 02,SR1 SPA 01,SR1 SPA 00'

BIND '110000000'
ZEROSR1=600
END

BIND '100000000'
N1ZSR1=000
END

BIND '010000000'
N2ZSR1=000
END

BIND '000000011'
A=000
B=001
C=002
D=003
END

EQUATIONS
SR1 SPA 00=A.SPA 00.N1ZSR1+A.SPA 00.N2ZSR1+B.IR 06.N1ZSR1
SR1 SPA 00=B.IR 06.N2ZSR1
SR1 SPA 00=C.IR 00.N1ZSR1+C.IR 00.N2ZSR1
SR1 SPA 01=SPA 01.N1ZSR1+SPA 01.N2ZSR1
SR1 SPA 02=SPA 02.N1ZSR1+SPA 02.N2ZSR1
END

MAKEROM
DEFAULTROM 0
)OUT X846A9,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF X846A9 PROM SOURCE'
```

```
"INTERNAL ADDRESS DECODING PLA,#23-023C6-00,K1-10,E114,82S100"
"THIS PLA DECODES THE PARS AND PDRS,AND DOES MUX SEL FOR K1-9"
"MUXES,AS WELL AS PROVIDING INT SSYN AND INT DATI"
"ALL INPUTS ACTIVE HIGH,TRANTOMFM(L) IS TRUE LOW;ALL OUTPUTS"
"ARE ACTIVE LOW EXCEPT PAR+PDR H AND INT SSYN H"


INVERTIN 0
INVERTOUT 754000000000

RADIX OCTAL

INPUTS 'PA02,PA01,PA00,PC01,PC00,TRANTOMFM(L),CPUMSYN(1)H,PA21-PA12 &
PA10,PA11,PA09,PA08,PA07,PA06,PA05,PA04,PA03'
OUTPUTS 'LOAD PARH L,LOAD PARL L,LOAD PDRH L,LOAD PDRL L,PAR+PDR H,KT
MUX S0 L,INT DATI L,INT SSYN H'


BIND '0000001111110100'
PAR1=001024
PDR1=001020
END


BIND '0000001111111100'
PAR2=001364
PDR2=001360
END


BIND '0000001111111110'
GR=001370
END


BIND '1100001111111111'
SR0=041357
SR1=101357
SR2=141357
SR3=141051
CPU ERR=141376
PIR=041377
PSW=141377
SREG=001357
END


BIND '0011100000000000'
DATOBL=014000
DATOBH=034000
END
```

```
BIND '0001100000000000'
DATO=010000
END

BIND '0001000000000000'
DATI(P)=000000
END


DATAPATHS
'MUX CONTROL LINES'
OUT=PAR+PDR H,KT MUX S0 L
END



EQUATIONS
LOAD PARL L=PAR1.DATO+PAR1.DATOBL+PAR2.DATO+PAR2.DATOBL
LOAD PARH L=PAR1.DATO+PAR1.DATOBH+PAR2.DATO+PAR2.DATOBH
LOAD PDRH L=PDR1.DATO+PDR1.DATOBH+PDR2.DATO+PDR2.DATOBH
LOAD PDRL L=PDR1.DATO+PDR1.DATOBL+PDR2.DATO+PDR2.DATOBL
OUT\0=SR2
OUT\1=SR0
OUT\2=PAR1+PAR2
OUT\3=PDR1+PDR2
INT DATI L=PAR1.DATI(P)+PAR2.DATI(P)+PDR1.DATI(P)+PDR2.DATI(P)
INT DATI L=GR.-TRANTOMFM(L).DATI(P)+SR2.DATI(P)+SR0.DATI(P)
INT DATI L=PSW.DATI(P)
INT SSYN H=PAR1+PAR2+PDR1+PDR2+GR.-TRANTOMFM(L)+SR0+SR1+SR2
INT SSYN H=SR3+CPU ERR+PIR+PSW+SREG
END

OPTIMIZE -2
PUNCHTAPE
)OUTPUT Y023C6,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF Y023C6 PLA SOURCE'
```

```
"ADDRESS DECODING PLA,#23-024C6-00,K1-10,E103,82S100"
"ALL INPUTS ACTIVE HIGH,ALL OUTPUTS ACTIVE LOW"
"DECODES INT REG ADDRESSES AND PRODUCES SOME LOAD SIGNALS"


INVERTIN 0
INVERTOUT 776000000000


INPUTS 'PA02,PA01,PA00,PC01,PC00,TRANTOMFM(H),CPUMSYN(1)H,PA21-PA12 &
PA10,PA11,PA09,PA08,PA07,PA06,PA05,PA04,PA03'

OUTPUTS 'ENAB INT REG L,LOAD SR3L L,PSW DATI L,STREG S1 L,STREG S0 L,R
EAD SR2 L,LOAD PIRH L,CLR ERROR L'


RADIX OCTAL


BIND '1100001111111111'
SR1=101357
SR2=141357
SR3=141051
CPU ERR=141376
PIR=041377
PSW=141377
END

BIND '0001000000000000'
DATI(P)=000000
END

DATAPATHS
OUT=STREG S1 L,STREG S0 L
END


EQUATIONS
LOAD SR3L L=SR3.PC01.-PA00
PSW DATI L=PSW.-PC01
READ SR2 L=SR2.-PC01
LOAD PIRH L=PIR.PC01
CLR ERROR L=CPU ERR.PC01
ENAB INT REG L=SR1.DATI(P)+CPU ERR.DATI(P)+PIR.DATI(P)+SR3.DATI(P)
OUT\0=CPU ERR
OUT\1=SR1
OUT\2=PIR
OUT\3=SR3
END

OPTIMIZE -2
PUNCHTAPE
)OUTPUT Y024C6,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF Y024C6 PLA SOURCE'
```

```
"INTERNAL ADDRESS DECODING PLA,#23-025C6-00,K1-10,E82,82S100"
"ALL INPUTS ACTIVE HIGH,ALL OUTPUTS(EXCEPT KT MUX H AND SP WRITE H)"
" ACTIVE LOW"


INVERTIN 0
INVERTOUT 374000000000

INPUTS 'PA02,PA01,PA00,PC01,PC00,TRANTOMEM(L),CPUMSYN(1)H,PA21-PA12 &
PA10,PA11,PA09,PA08,PA07,PA06,PA05,PA04,PA03'


OUTPUTS 'KT MUX H,SR SEL L,LOAD PSWH L,LOAD PSWL L,LOAD SR0H L,LOAD SR
0L L,GEN REG L,SP WRITE H'



RADIX OCTAL

BIND '1100001111111111'
SR0=041357
SR2=141357
PSW=141377
SREG=001357
END

BIND '0000001111111110'
GR=001370
END

BIND '0011100000000000'
DATOBL=014000
DATOBH=034000
END

BIND '0001100000000000'
DATO=010000
END

BIND '0001000000000000'
DATI(P)=000000
END

BIND '0000001111110100'
PAR1=001024
PDR1=001020
END

BIND '0000001111111100'
PAR2=001364
PDR2=001360
END
```

```
EQUATIONS
KT MUX H=PAR1.DATI(P)+PDR1.DATI(P)+PAR2.DATI(P)
KT MUX H=PDR2.DATI(P)+SR0.DATI(P)+SR2.DATI(P)
SR SEL L=SREG
LOAD PSWH L=PSW.DATO+PSW.DATOBH
LOAD PSWL L=PSW.DATO+PSW.DATOBL
LOAD SR0H L=SR0.DATO+SR0.DATOBH
LOAD SR0L L=SR0.DATO+SR0.DATOBL
GEN REG L=GR.-TRANTOMFM(L)
SP WRITE H=GR.-TRANTOMFM(L).PC01
END

OPTIMIZE -2
PUNCHTAPE
)OUTPUT Y025C6,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF Y025C6 PLA SOURCE'
```

```
"CONDITION CODE FROM K1-10  23-164A2"
"CREATES THE C AND V BITS FROM THE IR CATEGORIZATION LOGIC,"
"THE CURRENT N BIT AND THE MSB OF THE WORD OR BYTE AS NECESSARY"
"ALL INPUTS/OUTPUTS ACTIVE HIGH"

INVERTIN 0
INVERTOUT 0

INPUTS 'CC N H,SP15(1)H,SP07(1)H,ROT CBIT(1)H,CBIT(1)H,CC CODE02 H,CC
CODE01 H,CC CODE00 H'

OUTPUTS 'CC V H,CC C H,BLANK,BLANK'

RADIX OCTAL

BIND '00000111'
"CATEGORIES BY EFFECT ON CONDITION CODES (FROM IR)"
COD0=000
COD1=001
COD2=002
COD3=003
COD4=004
COD5=005
COD6=006
COD7=007
END

EQUATIONS
CC V H=COD6.-CC N H.ROT CBIT(1)H+COD6.CC N H.-ROT CBIT(1)H
CC V H=COD5.CC N H.-SP15(1)H.-SP07(1)H+COD5.-CC N H.SP15(1)H.SP07(1)H
CC V H=COD4.CC N H.-SP15(1)H.SP07(1)H+COD4.-CC N H.SP15(1)H.-SP07(1)H
CC V H=COD3.-CC N H.SP15(1)H.-SP07(1)H+COD2.CC N H.-SP15(1)H.-SP07(1)H
CC C H=COD7.CBIT (1)H+COD6.ROT CBIT(1)H+COD5.-CC N H.SP15(1)H.-SP07(1)
H
CC C H=COD5.CC N H.SP15(1)H.SP07(1)H+COD5.-CC N H.SP07(1)H
CC C H=COD4.-CC N H.-SP15(1)H.SP07(1)H+COD4.CC N H.SP15(1)H.SP07(1)H
CC C H=COD4.CC N H.-SP15(1)H+COD4.CC N H.-SP15(1)H.SP07(1)H
CC C H=COD3.CBIT (1)H+COD2.CBIT (1)H+COD1
END

DEFAULTROM 0
MAKEROM
)OUT Y164A2,OUT
PRINTTABS
STATISTICS
)OUT

'%END OF Y164A2 FROM SOURCE'
```

```
"KT FAULT FROM,#23-444F1-00,K1-8,E84,82S137 OR EQUIV"
"ALL INPUTS ACTIVE HIGH,KT FAULT L IS ACTIVE LOW-ALL OTHER"
"OUTPUTS ACTIVE HIGH.DURING A DATA TRANSFER(BUF DAT TRAN(1)H ASSERTED)
"
"NR IS HIGH FOR A NON-RESIDENT KT VIOLATION.WHEN NO DATA"
"TRANSFER OCCURS,THIS BIT IS REDEFINED AS LOW FOR A PAGE LENGTH"
"VIOLATION. BECAUSE OF ASSEMBLER LIMITS,THE CONDITIONS USED"
"ARE AS FOLLOWS:"
"DURING A CIS CHECK OF A MEMORY PAGE NR IS ASSERTED HIGH IF"
"1.A LEGAL OPERATING MODE IS USED AND"
"2.A RW PAGE IS BEING ACCESSED AND"
"3.NO BUS TRANSFER IS OCCURING AND"
"4.NO EXPANSION DIRECTION FAULT HAS OCCURRED."
"OTHERWISE SOMETHING IS WRONG AND NR IS UNASSERTED WHICH FORCES"
"A PAGE FAULT FOR THE CIS."


INVERTIN 0
INVERTOUT 040000000000


INPUTS 'BUF DAT TRAN(1)H,UBUS C1(1)H,UBUS C0(1)H,KT DISABLE MSYN L,MOD
E 01H,MODE 00H,ACF2(1)H,ACF1(1)H,COMP,ED'

OUTPUTS 'NR,PL,RO,KT FAULT L'

RADIX OCTAL

BIND '1001000000'
"DATA TRANSFER AND NOT AN ODD ADDRESS"
EN=1100
END

BIND '0001000000'
"NOT AN ODD ADDRESS"
DM=0100
END

BIND '0000110000'
KER=0000
SUP=0020
ILL=0040
USER=0060
END

BIND '0110000000'
DATI=0000
DATIP=0200
DATO=0400
DATOB=0600
END
```

```
BIND '0000001100'
"READ ONLY ACCESS CONTROL"
RDO=0004
"READ-WRITE ACCESS CONTROL FIELD"
RW=0014
END

BIND '0000000100'
"NON RESIDENT OR UNUSED ACF"
ABA=0000
END

BIND '0000000011'
E1=0001
E2=0002
"NO EXPANSION DIRECTION ERRORS"
NE1=0000
NE2=0003
END

EQUATIONS
KT FAULT L=EN.ILL+EN.ABA+EN.RDO.DATIP
KT FAULT L=EN.RDO.DATO+EN.RDO.DATOB+EN.E1+EN.E2
KT FAULT L=EN.DATI.-ACF1(1)H.NE1+EN.DATI.-ACF1(1)H.NE2
RO=EN.KER.RDO.DATIP+EN.KER.RDO.DATO+EN.KER.RDO.DATOB
RO=EN.SUP.RDO.DATIP+EN.SUP.RDO.DATO+EN.SUP.RDO.DATOB
RO=EN.USER.RDO.DATIP+EN.USER.RDO.DATO+EN.USER.RDO.DATOB
PL=E1.EN.KER+E2.EN.KER
PL=E1.EN.SUP+E2.EN.SUP
PL=E1.EN.USER+E2.EN.USER
NR=ILL.EN+-ACF1(1)H.EN
NR=KER.RW.-BUF DAT TRAN(1)H.NE1
NR=KER.RW.-BUF DAT TRAN(1)H.NE2
NR=SUP.RW.-BUF DAT TRAN(1)H.NE1
NR=SUP.RW.-BUF DAT TRAN(1)H.NE2
NR=USER.RW.-BUF DAT TRAN(1)H.NE1
NR=USER.RW.-BUF DAT TRAN(1)H.NE2
END


DEFAULTROM 0
MAKEROM
)OUTPUT Y444F1,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF Y444F1 FROM SOURCE"
```

```
"PRIORITY ARBITRATION PLA,#23-032C6-00,K2-2,E82,82S100"
"ARBITRATES AMONG BUS REQUESTS,PIR REQUESTS AND THE PROCESSOR"
"PRIORITY LEVEL. ALL INPUTS ACTIVE HIGH,ALL OUTPUTS ACTIVE HIGH"
"EXCEPT PIRQ."

INVERTIN 0
INVERTOUT 010000000000

INPUTS 'PIA2,PIA1,PIA0,PSW7,PSW6,PSW5,BR7,BR6,BR5,BR4,HLTRQST,PFAIL 1
H,PE 1 H,X,X,X'

OUTPUTS 'BG+PFAIL,BG7,BG6,BG5,BG4,PIRQ,PE+BG+HLT+PIRQ+PFAIL,BG+HLT'

RADIX OCTAL


BIND '1110000000100'
"PIRQ REQUEST LEVEL"
P7=16000
P6=14000
P5=12000
P4=10000
P3=06000
P2=04000
P1=02000
END


BIND '1000000000000'
" THESE 3 BINDS ALLOW < CONDITIONS TO BE DETECTED IN PIRQ"
" E.G.,-4 SAYS THE LEVEL IS LESS THAN THREE,4.-2"
" INDICATES THE LEVEL IS 4 OR 5,ETC.
I4=10000
END

BIND '0100000000000'
I2=04000
END

BIND '0010000000000'
I1=02000
END
```

```
BIND '0001000000000'
"DETECTS < CONDITIONS IN PSW LEVELS"
4=01000
END

BIND '0000100000000'
2=00400
END

BIND '0000010000000'
1=00200
END

BIND'0000001000100'
"THESE 4 BINDS DETECT PRESENCE OR ABSENCE OF BUS REQUESTS"
R7=00101
NR7=00000
END


BIND '0000001100100'
R6=00040
NR6=00000
END


BIND '0000001110100'
R5=00021
NR5=00000
END

BIND '0000001111100'
R4=00011
NR4=00000
END


BIND '0000000000100'
"DETECTS A HALT"
H=00004
END

BIND '0000000000010'
"DETECTS POWER FAIL"
PF=00002
END
DATAPATHS
OUT=BG+PFAIL,BG7,BG6,BG5,BG4,PIRQ,PE+BG+HLT+PIRQ+PFAIL,BG+HLT
END
```

```
EQUATIONS
OUT\303=R7.4.2.-1.I4.I2.-I1+R7.4.2.-1.I4.-I2                    ;"BR7"
OUT\303=R7.4.2.-1.-I4+R7.4.-2.I4.I2.-I1+R7.4.-2.I4.-I2
OUT\303=R7.4.-2.-I4+R7.-4.I4.I2.-I1+R7.-4.I4.-I2+R7.-4.-I4
OUT\243=R6.4.-2.I4.-I2+R6.4.-2.-I4+R6.-4.I4.-I2+R6.-4.-I4       ;"BR6"
OUT\223=R5.4.-2.-1.I4.-I2.-I1+R5.4.-2.-1.-I4                    ;"BR5"
OUT\223=R5.-4.I4.-I2.-I1+R5.-4.-I4
OUT\213=R4.-4.-I4                                               ;"BR4"
OUT\006=P7.4.2.-1+P7.4.-2+P7.-4+P6.4.-2.NR7+P6.-4.NR7           ;"PIRQ
"
OUT\006=P5.4.-2.-1.NR6+P5.-4.NR6+P4.-4.NR5
OUT\006=P3.-4.2.-1.NR4+P3.-4.-2.NR4+P2.-4.-2.NR4+P1.-4.-2.-1.NR4
OUT\003=H                                                       ;"HALT
"
OUT\202=PF                                                      ;"POWR
FAIL"
PE+BG+HLT+PIRQ+PFAIL=PE 1 H                                     ;"PARE
RROR"
END

OPTIMIZE -2
PUNCHTAPE
)OUTPUT Z032C6,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF Z032C6 PLA SOURCE'
```

```
"UNIBUS ADDRESS SPACE DECODING PLA,23-033C6-00,K4-4,82S100"
"THIS DEVICE COMPARES THE UPPER 5 UNIBUS ADDRESS BITS WITH"
"BOUNDS(JUMPER SELECTED)INDICATING THE MEMORY SPACE BAND EDGES"
"FOR UNIBUS MEMORY PRESENT IN THE SYSTEM,I.E. NOT ON THE MEMORY BUS"
"TR1 IS ASSERTED (TRUE H) IF THE LOWER LIMIT IS > THE BUS ADDRESS"
"TR2 IS ASSERTED (TRUE LOW) IF THE UPPER LIMIT IS > THE BUS ADDRESS"
"THE LOW AND OF TR1 AND TR2 SOLVES THE EQUATION LL<=BA<UL."
"IF THE EQUATION IS TRUE MSYN ISN'T SENT TO THE MEMORY BUS(EUB)."
"X16LT IS DETECTED EXTERNALLY AND IS TRUE LOW."


INVERTIN 0
INVERTOUT 004000000000

INPUTS 'X16LT,BA13,BA14,BA15,BA16,BA17,L1,L2,L4,L8,L16,U1,U2,U4,U8,U16
'

OUTPUTS 'X1,X2,X3,X4,X5,X6,TR2,TR1'

RADIX OCTAL

"THESE BINDS XOR AN ADDRESS BIT WITH A JUMPER BIT"

BIND '0000100001000000'
X8LT=004100
X8LF=000000
END


BIND '0001000010000000'
X4LT=010200
X4LF=000000
END

BIND'0010000100000000'
X2LT=020400
X2LF=000000
END


BIND '0000010000000001'
X16UT=002001
X16UF=000000
END

BIND '0000100000000010'
X8UT=004002
X8UF=000000
END


BIND '0001000000000100'
X4UT=010004
X4UF=000000
END
```

```
BIND '0010000000001000'
X2UT=020010
X2UF=000000
END

EQUATIONS
TR1=L16.-BA17+-X16LT.L8.-BA16            ;"LOWER LIMIT > BUS ADDRESS"
TR1=-X16LT.X8LT.L4.-BA15+-X16LT.X8LF.L4.-BA15
TR1=-X16LT.X8LT.X4LT.L2.-BA14+-X16LT.X8LT.X4LF.L2.-BA14
TR1=-X16LT.X8LF.X4LT.L2.-BA14+-X16LT.X8LF.X4LF.L2.-BA14
TR1=-X16LT.X8LF.X4LF.X2LF.L1.-BA13+-X16LT.X8LF.X4LF.X2LT.L1.-BA13
TR1=-X16LT.X8LF.X4LT.X2LF.L1.-BA13+-X16LT.X8LF.X4LT.X2LT.L1.-BA13
TR1=-X16LT.X8LT.X4LF.X2LF.L1.-BA13+-X16LT.X8LT.X4LF.X2LT.L1.-BA13
TR1=-X16LT.X8LT.X4LT.X2LF.L1.-BA13+-X16LT.X8LT.X4LT.X2LT.L1.-BA13
TR2=U16.-BA17+X16UT.U8.-BA16+X16UF.U8.-BA16      ;"UPPER LIMIT > BUS AD
DRESS"
TR2=X16UF.X8UF.U4.-BA15+X16UF.X8UT.U4.-BA15
TR2=X16UT.X8UF.U4.-BA15+X16UT.X8UT.U4.-BA15
TR2=X16UF.X8UF.X4UF.U2.-BA14+X16UF.X8UF.X4UT.U2.-BA14
TR2=X16UF.X8UT.X4UF.U2.-BA14+X16UF.X8UT.X4UT.U2.-BA14
TR2=X16UT.X8UF.X4UF.U2.-BA14+X16UT.X8UF.X4UT.U2.-BA14
TR2=X16UT.X8UT.X4UF.U2.-BA14+X16UT.X8UT.X4UT.U2.-BA14
TR2=X16UF.X8UF.X4UF.X2UF.U1.-BA13+X16UF.X8UF.X4UF.X2UT.U1.-BA13
TR2=X16UF.X8UF.X4UT.X2UF.U1.-BA13+X16UF.X8UF.X4UT.X2UT.U1.-BA13
TR2=X16UF.X8UT.X4UF.X2UF.U1.-BA13+X16UF.X8UT.X4UF.X2UT.U1.-BA13
TR2=X16UF.X8UT.X4UT.X2UF.U1.-BA13+X16UF.X8UT.X4UT.X2UT.U1.-BA13
TR2=X16UT.X8UF.X4UF.X2UF.U1.-BA13+X16UT.X8UF.X4UF.X2UT.U1.-BA13
TR2=X16UT.X8UF.X4UT.X2UF.U1.-BA13+X16UT.X8UF.X4UT.X2UT.U1.-BA13
TR2=X16UT.X8UT.X4UF.X2UF.U1.-BA13+X16UT.X8UT.X4UF.X2UT.U1.-BA13
TR2=X16UT.X8UT.X4UT.X2UF.U1.-BA13
END

PUNCHTAPE
)OUT Z033C6,OUT
PRINTTABS
STATISTICS
)OUT


"%END OF Z033C6 PLA SOURCE"
```

```
"BOOT AND MAP ADDRESS DECODING PLA,#23-034C6-00,K4-4,E45,82S100"
"ALL INPUTS ACTIVE HIGH(HOWEVER UIO IS TRUE LOW)"
"ALL OUTPUTS ACTIVE LOW EXCEPT BOOT READ H"
"THIS PLA ENABLES READING AND WRITING TO THE MAP REGISTERS"
"AS WELL AS DECODING THE 9312-LIKE BOOT ADDRESSES FOR THE 5"
"ROMS LOCATED ON K4-9. THE DIAGNOSTIC SPACE START ADDRESS IS 765000."
"THE BOOT START ADDRESSES ARE 773000,773200,773400 AND 773600."
"ADDRESS 773024 IS IGNORED BY THE PLA TO ALLOW THE SWITCHES"
"TO WORK. THE LOCK INPUT ALLOWS THE BOOT TO DISABLE DIAGNOSTICS"
"BY REMOVING THE JUMPER W2 ON THE M7098."

INVERTIN 0
INVERTOUT 376000000000

RADIX OCTAL

INPUTS 'BMSYN,BC1,UIO,BA01,BA02,BA03,BA04,BA05,BA06,BA07,BA08,BA09,BA1
0,BA11,BA12,LOCK'

OUTPUTS'BOOT READ H,MAP READ L,MAP WRITE L,DIAG L,BOOT4 L,BOOT3 L,BOOT
2 L,BOOT1 L'


BIND '1010000001111110'
"BOOT ROM ADDRESSES"
BT1=100032
BT2=100132
BT3=100072
BT4=100172
END

"THESE 5 BINDS DECODE ALL BOOT1 ADDRESSES EXCEPT 773024"
BIND '1010001111111110'
BT1U=100032
END

BIND '1010111111111110'
BT1V=101032
END

BIND '1011111111111110'
BT1W=115032
END

BIND '1010011111111110'
BT1X=103032
END

BIND '1010000111111110'
BT1Y=100432
END

BIND '1010000011111110'
BT1Z=100232
END
```

```
BIND '1010000000011111'
DIAG=100024
END

BIND '1010000001111110'
MAP REG=100102
END

EQUATIONS
BOOT READ H=-BC1.BT1+-BC1.BT2+-BC1.BT3+-BC1.BT4+-BC1.DIAG
MAP READ L=-BC1.MAP REG
MAP WRITE L=BC1.MAP REG
DIAG L=DIAG
BOOT4 L=BT4
BOOT3 L=BT3
BOOT2 L=BT2
BOOT1 L=BT1U+BT1V+BT1W+BT1X+BT1Y+BT1Z
END

OPTIMIZE -2
PUNCHTAPE
)OUT Z034C6,OUT
PRINTTABS
STATISTICS
)OUT


'%END OF Z034C6 PLA SOURCE'
```

```
"PRIORITY ARBITRATOR PROM TYPE A1-07,E95,K3-7"
"MFM MODULE M7096"

INVERTIN 0
INVERTOUT 776000000000

INPUTS 'NEWREQ,TU58REC,TU58XMIT,TERMREC,TERMXMIT'

OUTPUTS 'NEWGRNT,ANYREC,ANYTERM,RECTU58,XMITTU58,RECTERM,XMITTERM,ANYI
NT'


RADIX OCTAL

BIND '10000'
PRIOR0=20
END

BIND '11000'
PRIOR1=10
END

BIND '11100'
PRIOR2=04
END

BIND '11110'
PRIOR3=02
END

BIND '11111'
PRIOR4=01
END

DATAPATHS
OUT=NEWGRNT,ANYREC,ANYTERM,RECTU58,XMITTU58,RECTERM,XMITTERM,ANYINT
END

EQUATIONS
OUT\201=PRIOR0
OUT\121=PRIOR1
OUT\011=PRIOR2
OUT\145=PRIOR3
OUT\043=PRIOR4
END

DEFAULTROM 0
MAKEROM
)OUT A261A1,OUT
PRINTTABS
STATISTICS
)OUT

'ZEND OF A261A1 PROM SOURCE'
```

```
"CONSOLE ADDRESS DECODER PROM TYPE A9-01, E126, K3-2"


INVERTIN 0
INVERTOUT 040000000000


INPUTS 'IO/MBAR,CAD15H,CAD14H,CAD13H,CAD12H,CAD11H,
CAD10H,CAD09H,CAD08H'

OUTPUTS 'UPPER 2K H,LOWER 2K H,RAM ENAB H,I/O ENAB L'

RADIX HEX

BIND '111111000'
UPPER 2K=008
LOWER 2K=000
END

BIND '111111111'
RAM EN=010
END

BIND '111100001'
I/O ENAB=100
END

EQUATIONS
UPPER 2K H=UPPER 2K
LOWER 2K H=LOWER 2K
RAM ENAB H=RAM EN
I/O ENAB L=I/O ENAB
END

DEFAULTROM 0
MAKEROM
)OUT A847A9,OUT
PRINTTABS
STATISTICS
)OUT


'END OF A847A9 PROM SOURCE'
```

```
"PAX ADDRESS DECODER PROM TYPE A9-01, E91, K3-5"
INVERTIN 0
INVERTOUT 0
INPUTS 'PXC1H,NOTTU58,NOT13TO21,NOTTMORLTC,NOTLTC,NOTTERM,PXA02H,PXA01
H,NOTCOANDA0'
OUTPUTS 'XBUFREADH,LTCWRITEH,ENABSSYNH,TMORTU58H'
RADIX OCTAL

BIND '111111110'
READTERMXB=226
END
BIND '111000110'
READTU58XB=006
END
BIND '111111111'
DATOLTC=617
END
BIND '011000000'
TU58=000
END
BIND '011111000'
TERM=220
END
BIND '011111110'
LTC=216
END
BIND '111000111'
RCDATOTU58=401
END
BIND '111000101'
XDATOTU58=405
END
BIND '111000110'
RBDATITU58=002
END
BIND '111111111'
RCDATOTERM=621
END
BIND '111111101'
XDATOTERM=625
END
BIND '111111110'
RBDATITERM=222
END

EQUATIONS
XBUFREADH=READTERMXB+READTU58XB
LTCWRITEH=DATOLTC
ENABSSYNH=TU58+TERM+LTC
TMORTU58H=RCDATOTU58+XDATOTU58+RBDATITU58+RCDATOTERM+XDATOTERM+RBDATIT
ERM
END

DEFAULTROM 0
MAKEROM
)OUT A848A9,OUT
PRINTTABS
STATISTICS
)OUT
'%END OF PROM SOURCE'
```

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RUN NAME	PIN NAME
+12	A01R1
+12	A09R1
+12	A10R1
+12	A11R1
+12	A12R1
+12	
+12VB	J00111
+12VB	J00112
+12VB	J00113
+12VB	J00114
+12VB	J00115
+12VB	
+15	C14U1
+15	C13U1
+15	C12U1
+15	C06U1
+15	B01C2
+15	J00128
+15	J00126
+15	
+5	A14A2
+5	A13A2
+5	A12A2
+5	A11A2
+5	A10A2
+5	A09A2
+5	A08A2
+5	A07A2
+5	A06A2
+5	A05A2
+5	A04A2
+5	A03A2
+5	A02A2
+5	A01A2
+5	A05V1
+5	A04V1
+5	A03V1
+5	A02V1
+5	A01V1
+5	B01A2
+5	B02A2
+5	B03A2
+5	B04A2
+5	B05A2
+5	B06A2
+5	A06V1
+5	A07V1
+5	A08V1
+5	B07A2
+5	B08A2
+5	B09A2
+5	B10A2
+5	B11A2

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RUN NAME	PIN NAME
+5	B12A2
+5	B13A2
+5	B14A2
+5	C14A2
+5	C13A2
+5	C12A2
+5	C11A2
+5	C10A2
+5	C09A2
+5	C08A2
+5	C07A2
+5	C06A2
+5	C05A2
+5	C04A2
+5	C03A2
+5	C02A2
+5	C01A2
+5	C01V1
+5	C02V1
+5	C03V1
+5	C04V1
+5	C05V1
+5	C06V1
+5	C07V1
+5	C08V1
+5	J00201
+5	J00124
+5	

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RUN NAME	PIN NAME
+5-1	D14A2
+5-1	D13A2
+5-1	D12A2
+5-1	D11A2
+5-1	D10A2
+5-1	D09A2
+5-1	D08A2
+5-1	D07A2
+5-1	D06A2
+5-1	D05A2
+5-1	D04A2
+5-1	D03A2
+5-1	D02A2
+5-1	D01A2
+5-1	D02V1
+5-1	D01V1
+5-1	E01A2
+5-1	E02A2
+5-1	E03A2
+5-1	D03V1
+5-1	D04V1
+5-1	E04A2
+5-1	E05A2
+5-1	D05V1
+5-1	D06V1
+5-1	E06A2
+5-1	E07A2
+5-1	D07V1
+5-1	D08V1
+5-1	E08A2
+5-1	E09A2
+5-1	E10A2
+5-1	E11A2
+5-1	E12A2
+5-1	E13A2
+5-1	E14A2
+5-1	F14A2
+5-1	F13A2
+5-1	F12A2
+5-1	F11A2
+5-1	F10A2
+5-1	F09A2
+5-1	F08A2
+5-1	F07A2
+5-1	F06A2
+5-1	F05A2
+5-1	F04A2
+5-1	F03A2
+5-1	F02A2
+5-1	F01A2
+5-1	F01V1
+5-1	F02V1
+5-1	F03V1
+5-1	F04V1
+5-1	F05V1
+5-1	F06V1

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RUN NAME	PIN NAME
+5-1	F07V1
+5-1	F08V1
+5-1	
+5B	B01B1
+5B	B09D1
+5B	B09B1
+5B	B10B1
+5B	B10D1
+5B	B11D1
+5B	B11B1
+5B	B12B1
+5B	B12D1
+5B	
+5VB	J00101
+5VB	J00102
+5VB	J00103
+5VB	J00104
+5VB	J00105
+5VB	J00106
+5VB	J00107
+5VB	J00108
+5VB	J00109
+5VB	J00110
+5VB	
-12	A01S1
-12	A09S1
-12	A10S1
-12	A11S1
-12	A12S1
-12	
-12VB	J00117
-12VB	J00118
-12VB	
-15	F12B2
-15	F13B2
-15	F14B2
-15	E14B2
-15	E13B2
-15	E12B2
-15	D12B2
-15	D13B2
-15	D14B2
-15	C14B2
-15	C13B2
-15	C12B2
-15	B01T1
-15	J00127
-15	J00125
-15	

RUN NAME	PIN NAME
8-15=0 L	A04K1
8-15=0 L	A05K1
8-15=0 L	
ABORT H	B08F1
ABORT H	B05J1
ABORT H	C01F2
ABORT H	
ALLOW MSYN H	C05P2
ALLOW MSYN H	C08J2
ALLOW MSYN H	
ALU C OUT H	E04U2
ALU C OUT H	E05U2
ALU C OUT H	
ALU CIN L	B04S2
ALU CIN L	B05S2
ALU CIN L	
ALU MODE H	B04T2
ALU MODE H	B05T2
ALU MODE H	
ALU S0 H	B04R2
ALU S0 H	B05R2
ALU S0 H	
ALU S1 H	B04P2
ALU S1 H	B05P2
ALU S1 H	
ALU S2 H	B04N2
ALU S2 H	B05N2
ALU S2 H	
ALU S3 H	B04M2
ALU S3 H	B05M2
ALU S3 H	
AMUX 00 H	B02V2
AMUX 00 H	B03V2
AMUX 00 H	B04V2
AMUX 00 H	
AMUX 01 H	B02U1
AMUX 01 H	B03U1
AMUX 01 H	B04U1
AMUX 01 H	
AMUX 02 H	B02S1
AMUX 02 H	B03S1
AMUX 02 H	B04S1
AMUX 02 H	

RUN NAME	PIN NAME
AMUX 03 H	B02R1
AMUX 03 H	B03R1
AMUX 03 H	B04R1
AMUX 03 H	
AMUX 04 H	B02F1
AMUX 04 H	B03F1
AMUX 04 H	B04F1
AMUX 04 H	
AMUX 05 H	B02B2
AMUX 05 H	B03B2
AMUX 05 H	B04B2
AMUX 05 H	
AMUX 06 H	B02E1
AMUX 06 H	B03E1
AMUX 06 H	B04E1
AMUX 06 H	
AMUX 07 H	B02J1
AMUX 07 H	B03J1
AMUX 07 H	B04J1
AMUX 07 H	
AMUX 08 H	B02P1
AMUX 08 H	B03P1
AMUX 08 H	B04P1
AMUX 08 H	
AMUX 09 H	B02N1
AMUX 09 H	B03N1
AMUX 09 H	B04N1
AMUX 09 H	
AMUX 10 H	B02M1
AMUX 10 H	B03M1
AMUX 10 H	B04M1
AMUX 10 H	
AMUX 11 H	B02H1
AMUX 11 H	B03H1
AMUX 11 H	B04H1
AMUX 11 H	
AMUX 12 H	B02L1
AMUX 12 H	B03L1
AMUX 12 H	B04L1
AMUX 12 H	
AMUX 13 H	B02K1
AMUX 13 H	B03K1
AMUX 13 H	B04K1
AMUX 13 H	

RUN NAME	PIN NAME
AMUX 14 H	B02D2
AMUX 14 H	B03D2
AMUX 14 H	B04D2
AMUX 14 H	
AMUX 15 H	B02U2
AMUX 15 H	B03U2
AMUX 15 H	B04U2
AMUX 15 H	
AMUX S0 (1) L	A04M1
AMUX S0 (1) L	A05M1
AMUX S0 (1) L	
AMUX S1 (1) L	A04N2
AMUX S1 (1) L	A05N2
AMUX S1 (1) L	
AUX CONTROL L	D04N2
AUX CONTROL L	D05N2
AUX CONTROL L	
B LEG 00 H	B04V1
B LEG 00 H	B05V1
B LEG 00 H	
B LEG 01 H	C04C1
B LEG 01 H	C05C1
B LEG 01 H	
B MODE 00 L	A04E2
B MODE 00 L	A05E2
B MODE 00 L	
B MODE 01 L	A04F2
B MODE 01 L	A05F2
B MODE 01 L	
B REG 00 (1) H	D04T2
B REG 00 (1) H	D05T2
B REG 00 (1) H	
BA17 H	F05H2
BA17 H	F08H2
BA17 H	
BE (1) H	E05L2
BE (1) H	E08L2
BE (1) H	
BG+PIRQ+HLT+PFAIL H	E05S1
BG+PIRQ+HLT+PFAIL H	E08S1
BG+PIRQ+HLT+PFAIL H	

RUN NAME	PIN NAME
BOOT ENAB L	A12B2
BOOT ENAB L	A11B2
BOOT ENAB L	A10B2
BOOT ENAB L	A09B2
BOOT ENAB L	A05V2
BOOT ENAB L	J00121
BOOT ENAB L	
BOOT H	B01U2
BOOT H	B05U2
BOOT H	
BREG 14 (1) H	E04L1
BREG 14 (1) H	E05L1
BREG 14 (1) H	
BREG 15 (1) H	E04K1
BREG 15 (1) H	E05K1
BREG 15 (1) H	
BUF C0 (1) H	F05E1
BUF C0 (1) H	F08E1
BUF C0 (1) H	
BUF C1 (1) H	F05D2
BUF C1 (1) H	F07D2
BUF C1 (1) H	F08D2
BUF C1 (1) H	
BUF DATA TRAN (1) H	F04L1
BUF DATA TRAN (1) H	F05L1
BUF DATA TRAN (1) H	F08L1
BUF DATA TRAN (1) H	
BUS A00 L	B14H2
BUS A00 L	E14H2
BUS A00 L	E13H2
BUS A00 L	E12H2
BUS A00 L	E08H2
BUS A00 L	
BUS A01 L	B14H1
BUS A01 L	E14H1
BUS A01 L	E13H1
BUS A01 L	E12H1
BUS A01 L	E08H1
BUS A01 L	
BUS A02 L	B14J2
BUS A02 L	E14F1
BUS A02 L	E13F1
BUS A02 L	E12F1
BUS A02 L	E08F1
BUS A02 L	

RUN NAME	PIN NAME
BUS A03 L	B14J1
BUS A03 L	E14V2
BUS A03 L	E13V2
BUS A03 L	E12V2
BUS A03 L	E08V2
BUS A03 L	
BUS A04 L	B14K2
BUS A04 L	E14U2
BUS A04 L	E13U2
BUS A04 L	E12U2
BUS A04 L	E08U2
BUS A04 L	
BUS A05 L	B14K1
BUS A05 L	E14V1
BUS A05 L	E13V1
BUS A05 L	E12V1
BUS A05 L	E08V1
BUS A05 L	
BUS A06 L	B14L2
BUS A06 L	E14U1
BUS A06 L	E13U1
BUS A06 L	E12U1
BUS A06 L	E08U1
BUS A06 L	
BUS A07 L	B14L1
BUS A07 L	E14P2
BUS A07 L	E13P2
BUS A07 L	E12P2
BUS A07 L	E08P2
BUS A07 L	
BUS A08 L	B14M2
BUS A08 L	E14N2
BUS A08 L	E13N2
BUS A08 L	E12N2
BUS A08 L	E08N2
BUS A08 L	
BUS A09 L	B14M1
BUS A09 L	E14R1
BUS A09 L	E13R1
BUS A09 L	E12R1
BUS A09 L	E08R1
BUS A09 L	
BUS A10 L	B14N2
BUS A10 L	E14P1
BUS A10 L	E13P1
BUS A10 L	E12P1
BUS A10 L	E08P1
BUS A10 L	

RUN NAME	PIN NAME
BUS A11 L	B14N1
BUS A11 L	E14L1
BUS A11 L	E13L1
BUS A11 L	E12L1
BUS A11 L	E08L1
BUS A11 L	
BUS A12 L	B14P2
BUS A12 L	E14C1
BUS A12 L	E13C1
BUS A12 L	E12C1
BUS A12 L	E08C1
BUS A12 L	
BUS A13 L	B14P1
BUS A13 L	E14K2
BUS A13 L	E13K2
BUS A13 L	E12K2
BUS A13 L	E08K2
BUS A13 L	
BUS A14 L	B14R2
BUS A14 L	E14K1
BUS A14 L	E13K1
BUS A14 L	E12K1
BUS A14 L	E08K1
BUS A14 L	
BUS A15 L	B14R1
BUS A15 L	E14D2
BUS A15 L	E13D2
BUS A15 L	E12D2
BUS A15 L	E08D2
BUS A15 L	
BUS A16 L	B14S2
BUS A16 L	E14E2
BUS A16 L	E13E2
BUS A16 L	E12E2
BUS A16 L	E08E2
BUS A16 L	
BUS A17 L	B14S1
BUS A17 L	E14D1
BUS A17 L	E13D1
BUS A17 L	E12D1
BUS A17 L	E08D1
BUS A17 L	

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RUN NAME	PIN NAME
BUS ACLO L	C12V1
BUS ACLO L	C13V1
BUS ACLO L	C14V1
BUS ACLO L	B14F1
BUS ACLO L	B13F1
BUS ACLO L	B12F1
BUS ACLO L	B11F1
BUS ACLO L	B10F1
BUS ACLO L	B09F1
BUS ACLO L	B06F1
BUS ACLO L	B05F1
BUS ACLO L	J00120
BUS ACLO L	
BUS BBSY	A14P2
BUS BBSY	F14D1
BUS BBSY	F13D1
BUS BBSY	F12D1
BUS BBSY	F08D1
BUS BBSY	
BUS BG4 H	B14E2
BUS BG4 H	D14T2
BUS BG4 H	
BUS BG4A H	D13T2
BUS BG4A H	D14S2
BUS BG4A H	
BUS BG5 H	B14B1
BUS BG5 H	D14R2
BUS BG5 H	
BUS BG5A H	D13R2
BUS BG5A H	D14P2
BUS BG5A H	
BUS BG6 H	B14A1
BUS BG6 H	D14N2
BUS BG6 H	
BUS BG6A H	D13N2
BUS BG6A H	D14M2
BUS BG6A H	
BUS BG7 H	A14V1
BUS BG7 H	D14L2
BUS BG7 H	
BUS BG7A H	D13L2
BUS BG7A H	D14K2
BUS BG7A H	

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RUN NAME	PIN NAME
BUS BR4 L	B14D2
BUS BR4 L	D14H2
BUS BR4 L	D13H2
BUS BR4 L	D12H2
BUS BR4 L	D11H2
BUS BR4 L	D08H2
BUS BR4 L	D06H2
BUS BR4 L	
BUS BR5 L	B14C1
BUS BR5 L	D14F2
BUS BR5 L	D13F2
BUS BR5 L	D12F2
BUS BR5 L	D11F2
BUS BR5 L	D08F2
BUS BR5 L	
BUS BR6 L	A14U2
BUS BR6 L	D14E2
BUS BR6 L	D13E2
BUS BR6 L	D12E2
BUS BR6 L	D11E2
BUS BR6 L	D08E2
BUS BR6 L	D06E2
BUS BR6 L	
BUS BR7 L	A14T2
BUS BR7 L	D14D2
BUS BR7 L	D13D2
BUS BR7 L	D12D2
BUS BR7 L	D11D2
BUS BR7 L	D08D2
BUS BR7 L	
BUS CO L	B14U2
BUS CO L	E14J2
BUS CO L	E13J2
BUS CO L	E12J2
BUS CO L	E08J2
BUS CO L	
BUS C1 L	B14T2
BUS C1 L	E14F2
BUS C1 L	E13F2
BUS C1 L	E12F2
BUS C1 L	E08F2
BUS C1 L	

RUN NAME	PIN NAME
BUS D00 L	A08C1
BUS D00 L	A09C1
BUS D00 L	A10C1
BUS D00 L	A11C1
BUS D00 L	A12C1
BUS D00 L	A13C1
BUS D00 L	A14C1
BUS D00 L	C14S2
BUS D00 L	C13S2
BUS D00 L	C12S2
BUS D00 L	C09S2
BUS D00 L	
BUS D01 L	A08D2
BUS D01 L	A09D2
BUS D01 L	A10D2
BUS D01 L	A11D2
BUS D01 L	A12D2
BUS D01 L	A13D2
BUS D01 L	A14D2
BUS D01 L	C14R2
BUS D01 L	C13R2
BUS D01 L	C12R2
BUS D01 L	C09R2
BUS D01 L	
BUS D02 L	A14D1
BUS D02 L	A13D1
BUS D02 L	A12D1
BUS D02 L	A11D1
BUS D02 L	A10D1
BUS D02 L	A09D1
BUS D02 L	A08D1
BUS D02 L	C09U2
BUS D02 L	C12U2
BUS D02 L	C13U2
BUS D02 L	C14U2
BUS D02 L	F14E2
BUS D02 L	F13E2
BUS D02 L	
BUS D03 L	A14E2
BUS D03 L	A13E2
BUS D03 L	A12E2
BUS D03 L	A11E2
BUS D03 L	A10E2
BUS D03 L	A09E2
BUS D03 L	A08E2
BUS D03 L	C09T2
BUS D03 L	C12T2
BUS D03 L	C13T2
BUS D03 L	C14T2
BUS D03 L	F14L1
BUS D03 L	F13L1
BUS D03 L	

RUN NAME	PIN NAME
BUS D04 L	A14E1
BUS D04 L	A13E1
BUS D04 L	A12E1
BUS D04 L	A11E1
BUS D04 L	A10E1
BUS D04 L	A09E1
BUS D04 L	A08E1
BUS D04 L	C09N2
BUS D04 L	C12N2
BUS D04 L	C13N2
BUS D04 L	C14N2
BUS D04 L	F14N2
BUS D04 L	F13N2
BUS D04 L	
BUS D05 L	A14F2
BUS D05 L	A13F2
BUS D05 L	A12F2
BUS D05 L	A11F2
BUS D05 L	A10F2
BUS D05 L	A09F2
BUS D05 L	A08F2
BUS D05 L	C09P2
BUS D05 L	C12P2
BUS D05 L	C13P2
BUS D05 L	C14P2
BUS D05 L	F14F1
BUS D05 L	F13F1
BUS D05 L	
BUS D06 L	A14F1
BUS D06 L	A13F1
BUS D06 L	A12F1
BUS D06 L	A11F1
BUS D06 L	A10F1
BUS D06 L	A09F1
BUS D06 L	A08F1
BUS D06 L	C10V2
BUS D06 L	C12V2
BUS D06 L	C13V2
BUS D06 L	C14V2
BUS D06 L	F14F2
BUS D06 L	F13F2
BUS D06 L	

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RUN NAME	PIN NAME
BUS D07 L	A14H2
BUS D07 L	A13H2
BUS D07 L	A12H2
BUS D07 L	A11H2
BUS D07 L	A10H2
BUS D07 L	A09H2
BUS D07 L	A08H2
BUS D07 L	C09M2
BUS D07 L	C12M2
BUS D07 L	C13M2
BUS D07 L	C14M2
BUS D07 L	F14H1
BUS D07 L	F13H1
BUS D07 L	
BUS D08 L	A14H1
BUS D08 L	A13H1
BUS D08 L	A12H1
BUS D08 L	A11H1
BUS D08 L	A10H1
BUS D08 L	A09H1
BUS D08 L	A08H1
BUS D08 L	C09L2
BUS D08 L	C12L2
BUS D08 L	C13L2
BUS D08 L	C14L2
BUS D08 L	F14K1
BUS D08 L	F13K1
BUS D08 L	
BUS D09 L	A08J2
BUS D09 L	A09J2
BUS D09 L	A10J2
BUS D09 L	A11J2
BUS D09 L	A12J2
BUS D09 L	A13J2
BUS D09 L	A14J2
BUS D09 L	C14K2
BUS D09 L	C13K2
BUS D09 L	C12K2
BUS D09 L	C09K2
BUS D09 L	
BUS D10 L	A08J1
BUS D10 L	A09J1
BUS D10 L	A10J1
BUS D10 L	A11J1
BUS D10 L	A12J1
BUS D10 L	A13J1
BUS D10 L	A14J1
BUS D10 L	C14J2
BUS D10 L	C13J2
BUS D10 L	C12J2
BUS D10 L	C09J2
BUS D10 L	

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RUN NAME	PIN NAME
BUS D11 L	A08K2
BUS D11 L	A09K2
BUS D11 L	A10K2
BUS D11 L	A11K2
BUS D11 L	A12K2
BUS D11 L	A13K2
BUS D11 L	A14K2
BUS D11 L	C14H1
BUS D11 L	C13H1
BUS D11 L	C12H1
BUS D11 L	C09H1
BUS D11 L	
BUS D12 L	A08K1
BUS D12 L	A09K1
BUS D12 L	A10K1
BUS D12 L	A11K1
BUS D12 L	A12K1
BUS D12 L	A13K1
BUS D12 L	A14K1
BUS D12 L	C14H2
BUS D12 L	C13H2
BUS D12 L	C12H2
BUS D12 L	C09H2
BUS D12 L	
BUS D13 L	A08L2
BUS D13 L	A09L2
BUS D13 L	A10L2
BUS D13 L	A11L2
BUS D13 L	A12L2
BUS D13 L	A13L2
BUS D13 L	A14L2
BUS D13 L	C14F2
BUS D13 L	C13F2
BUS D13 L	C12F2
BUS D13 L	C09F2
BUS D13 L	
BUS D14 L	A08L1
BUS D14 L	A09L1
BUS D14 L	A10L1
BUS D14 L	A11L1
BUS D14 L	A12L1
BUS D14 L	A13L1
BUS D14 L	A14L1
BUS D14 L	C14E2
BUS D14 L	C13E2
BUS D14 L	C12E2
BUS D14 L	C09E2
BUS D14 L	

RUN NAME	PIN NAME
BUS D15 L	A08M2
BUS D15 L	A09M2
BUS D15 L	A10M2
BUS D15 L	A11M2
BUS D15 L	A12M2
BUS D15 L	A13M2
BUS D15 L	A14M2
BUS D15 L	C14D2
BUS D15 L	C13D2
BUS D15 L	C12D2
BUS D15 L	C09D2
BUS D15 L	
BUS DCLO L	C12N1
BUS DCLO L	C13N1
BUS DCLO L	C14N1
BUS DCLO L	B14F2
BUS DCLO L	B13F2
BUS DCLO L	B12F2
BUS DCLO L	B11F2
BUS DCLO L	B10F2
BUS DCLO L	B09F2
BUS DCLO L	B06E2
BUS DCLO L	B05F2
BUS DCLO L	J00122
BUS DCLO L	
BUS INIT L	A14A1
BUS INIT L	D14L1
BUS INIT L	D13L1
BUS INIT L	D12L1
BUS INIT L	D11L1
BUS INIT L	D06L1
BUS INIT L	D05L1
BUS INIT L	
BUS INTR L	A14B1
BUS INTR L	F14M1
BUS INTR L	F13M1
BUS INTR L	F12M1
BUS INTR L	F08M1
BUS INTR L	
BUS MSYN L	B14V1
BUS MSYN L	E14E1
BUS MSYN L	E13E1
BUS MSYN L	E12E1
BUS MSYN L	E08E1
BUS MSYN L	

RUN NAME	PIN NAME
BUS NPG H	A14U1
BUS NPG H	C14B1
BUS NPG H	C14A1
BUS NPG H	C13B1
BUS NPG H	C13A1
BUS NPG H	C12B1
BUS NPG H	C12A1
BUS NPG H	C08B2
BUS NPG H	
BUS NPR L	A14S2
BUS NPR L	F14J1
BUS NPR L	F13J1
BUS NPR L	F12J1
BUS NPR L	F08J1
BUS NPR L	F06J1
BUS NPR L	
BUS PA L	A14M1
BUS PA L	C14C1
BUS PA L	C13C1
BUS PA L	C12C1
BUS PA L	C08C1
BUS PA L	
BUS PB L	A07N2
BUS PB L	A08N2
BUS PB L	A09N2
BUS PB L	A10N2
BUS PB L	A11N2
BUS PB L	A12N2
BUS PB L	A13N2
BUS PB L	A14N2
BUS PB L	C14S1
BUS PB L	C13S1
BUS PB L	C12S1
BUS PB L	C11S1
BUS PB L	
BUS SACK L	A14R2
BUS SACK L	F14T2
BUS SACK L	F13T2
BUS SACK L	F12T2
BUS SACK L	F08T2
BUS SACK L	F06T2
BUS SACK L	
BUS SSYN L	B14U1
BUS SSYN L	E12J1
BUS SSYN L	E13J1
BUS SSYN L	E14J1
BUS SSYN L	F14C1
BUS SSYN L	F13C1
BUS SSYN L	F08C1
BUS SSYN L	

RUN NAME	PIN NAME
BUS STATUS ENB L	F05K2
BUS STATUS ENB L	F06K2
BUS STATUS ENB L	F08K2
BUS STATUS ENB L	
BUT SERVICE (1) H	D05P1
BUT SERVICE (1) H	F06K1
BUT SERVICE (1) H	F08K1
BUT SERVICE (1) H	
BUT Z BIT H	D05P2
BUT Z BIT H	E04T2
BUT Z BIT H	
BX MODE 00 L	A04H2
BX MODE 00 L	A05H2
BX MODE 00 L	
BX MODE 01 L	B04F2
BX MODE 01 L	B05D2
BX MODE 01 L	
BX REG 00 (1) H	D04S2
BX REG 00 (1) H	D05S2
BX REG 00 (1) H	
BX REG 01 (1) H	D04R2
BX REG 01 (1) H	D05R2
BX REG 01 (1) H	
BYTE H	F05L2
BYTE H	F08L2
BYTE H	
BYTE L	E04J1
BYTE L	E05B2
BYTE L	
C BIT (1) H	C04E2
C BIT (1) H	C05E2
C BIT (1) H	
C1 H	E04D2
C1 H	E05D2
C1 H	
C2 H	C04B1
C2 H	C05K2
C2 H	
C3 H	C04S1
C3 H	C05U2
C3 H	

RUN NAME	PIN NAME
C4 H	E04H2
C4 H	E05H2
C4 H	
C5*C7 H	E04J2
C5*C7 H	E05J2
C5*C7 H	
C6 H	E04K2
C6 H	E05K2
C6 H	
CACHE BYPASS L	A04L1
CACHE BYPASS L	A05L1
CACHE BYPASS L	A07L1
CACHE BYPASS L	
CACHE GATE H	A07B1
CACHE GATE H	A08B1
CACHE GATE H	
CACHE GR TP1	C07H2
CACHE GR TP2	C07F2
CACHE MATCH TP L	D07D2
CACHE PE INTR L	A07A1
CACHE PE INTR L	A08A1
CACHE PE INTR L	
CACHE RESTART L	A08S2
CACHE RESTART L	A07S2
CACHE RESTART L	B05L1
CACHE RESTART L	
CC CODE 00 H	E04R1
CC CODE 00 H	E05R1
CC CODE 00 H	
CC CODE 01 H	E04P2
CC CODE 01 H	E05P2
CC CODE 01 H	
CC CODE 02 H	E04P1
CC CODE 02 H	E05P1
CC CODE 02 H	
CC N H	E04D1
CC N H	E05D1
CC N H	
CIS A0 H	C01R2
CIS A0 H	C02R2
CIS A0 H	

RUN NAME	PIN NAME
CIS A1 H	C01S1
CIS A1 H	C02S1
CIS A1 H	
CIS A2 H	C01T2
CIS A2 H	C02T2
CIS A2 H	
CIS A3 H	D01S1
CIS A3 H	D02S1
CIS A3 H	
CIS ALU CIN H	D01L1
CIS ALU CIN H	D02L1
CIS ALU CIN H	
CIS B0 H	C01E1
CIS B0 H	C02E1
CIS B0 H	
CIS B1 H	C01E2
CIS B1 H	C02E2
CIS B1 H	
CIS B2 H	C01D1
CIS B2 H	C02D1
CIS B2 H	
CIS B3 H	C01D2
CIS B3 H	C02D2
CIS B3 H	
CIS BCD MUX S0 H	C01S2
CIS BCD MUX S0 H	C02S2
CIS BCD MUX S0 H	
CIS BCD MUX S1 H	C01M2
CIS BCD MUX S1 H	C02M2
CIS BCD MUX S1 H	
CIS BCD MUX S2 H	C01L1
CIS BCD MUX S2 H	C02L1
CIS BCD MUX S2 H	
CIS BCD MUX S3 H	D01A1
CIS BCD MUX S3 H	D02A1
CIS BCD MUX S3 H	
CIS BMUX S0 H	D01K1
CIS BMUX S0 H	D02K1
CIS BMUX S0 H	
CIS BMUX S1 H	C01R1
CIS BMUX S1 H	C02R1
CIS BMUX S1 H	

RUN NAME	PIN NAME
CIS BT 00 H	F01H2
CIS BT 00 H	F02H2
CIS BT 00 H	
CIS BT 01 H	F01T2
CIS BT 01 H	F02T2
CIS BT 01 H	
CIS BT 02 H	F01F1
CIS BT 02 H	F02F1
CIS BT 02 H	
CIS BT 03 H	F01K2
CIS BT 03 H	F02K2
CIS BT 03 H	
CIS BT 04 H	F01U2
CIS BT 04 H	F02U2
CIS BT 04 H	
CIS CLK L	D01L2
CIS CLK L	D02L2
CIS CLK L	
CIS CLR NONZERO H	F01J1
CIS CLR NONZERO H	F02J1
CIS CLR NONZERO H	
CIS COND BR 00 H	E01P2
CIS COND BR 00 H	E02P2
CIS COND BR 00 H	
CIS COND BR 01 H	E01P1
CIS COND BR 01 H	E02P1
CIS COND BR 01 H	
CIS COND BR 02 H	E01R2
CIS COND BR 02 H	E02R2
CIS COND BR 02 H	
CIS COND BR 03 H	E01S2
CIS COND BR 03 H	E02S2
CIS COND BR 03 H	
CIS COND BR 04 H	E01B1
CIS COND BR 04 H	E02B1
CIS COND BR 04 H	
CIS COND BR 05 H	E01C1
CIS COND BR 05 H	E02C1
CIS COND BR 05 H	
CIS COND BR 06 H	E01D2
CIS COND BR 06 H	E02D2
CIS COND BR 06 H	

RUN NAME	PIN NAME
CIS COND BR 07 H	E01D1
CIS COND BR 07 H	E02D1
CIS COND BR 07 H	
CIS CONST SEL S0 H	D01C1
CIS CONST SEL S0 H	D02C1
CIS CONST SEL S0 H	
CIS CONST SEL S1 H	C01M1
CIS CONST SEL S1 H	C02M1
CIS CONST SEL S1 H	
CIS CONST SEL S2 H	C01F1
CIS CONST SEL S2 H	C02F1
CIS CONST SEL S2 H	
CIS CPC 00 L	E01L1
CIS CPC 00 L	E02L1
CIS CPC 00 L	
CIS CPC 01 L	E01L2
CIS CPC 01 L	E02L2
CIS CPC 01 L	
CIS CPC 02 L	E01J1
CIS CPC 02 L	E02J1
CIS CPC 02 L	
CIS CPC 03 L	E01J2
CIS CPC 03 L	E02J2
CIS CPC 03 L	
CIS CPC 04 L	E01K1
CIS CPC 04 L	E02K1
CIS CPC 04 L	
CIS CPC 05 L	E01K2
CIS CPC 05 L	E02K2
CIS CPC 05 L	
CIS CPC 06 L	E01M1
CIS CPC 06 L	E02M1
CIS CPC 06 L	
CIS CPC 07 L	E01N1
CIS CPC 07 L	E02N1
CIS CPC 07 L	
CIS CPC 08 L	D01B1
CIS CPC 08 L	D02B1
CIS CPC 08 L	
CIS CPC 09 L	D01J2
CIS CPC 09 L	D02J2
CIS CPC 09 L	

RUN NAME	PIN NAME
CIS CPC 10 L	D01H2
CIS CPC 10 L	D02H2
CIS CPC 10 L	
CIS CPC 11 L	C01B1
CIS CPC 11 L	C02B1
CIS CPC 11 L	
CIS DISAB IBUF H	D01M2
CIS DISAB IBUF H	D02M2
CIS DISAB IBUF H	
CIS DST TRAN H	D01H1
CIS DST TRAN H	D02H1
CIS DST TRAN H	
CIS ENAB CB H	F01L2
CIS ENAB CB H	F02L2
CIS ENAB CB H	
CIS ENAB CIS H	D01N2
CIS ENAB CIS H	D02N2
CIS ENAB CIS H	
CIS ENAB CISS L	E01U2
CIS ENAB CISS L	E02U2
CIS ENAB CISS L	
CIS ENAB CONST L	C01V2
CIS ENAB CONST L	C02V2
CIS ENAB CONST L	
CIS ENAB CPC L	D01F2
CIS ENAB CPC L	D02F2
CIS ENAB CPC L	
CIS ENAB DST ADR H	F01B1
CIS ENAB DST ADR H	F02B1
CIS ENAB DST ADR H	
CIS ENAB L	B02V1
CIS ENAB L	B05V2
CIS ENAB L	B08V2
CIS ENAB L	
CIS ENAB NONZERO A H	F01M1
CIS ENAB NONZERO A H	F02M1
CIS ENAB NONZERO A H	
CIS ENAB NONZERO B H	F01L1
CIS ENAB NONZERO B H	F02L1
CIS ENAB NONZERO B H	
CIS ENAB NONZERO C H	F01V2
CIS ENAB NONZERO C H	F02V2
CIS ENAB NONZERO C H	

RUN NAME	PIN NAME
CIS ENAB OBUF H	E01V2
CIS ENAB OBUF H	E02V2
CIS ENAB OBUF H	
CIS ENAB SCR 1 ADR H	F01B2
CIS ENAB SCR 1 ADR H	F02B2
CIS ENAB SCR 1 ADR H	
CIS ENAB SCR 2 ADR H	F01E2
CIS ENAB SCR 2 ADR H	F02E2
CIS ENAB SCR 2 ADR H	
CIS ENAB SIGN 1 H	F01D1
CIS ENAB SIGN 1 H	F02D1
CIS ENAB SIGN 1 H	
CIS ENAB SIGN 2 H	F01H1
CIS ENAB SIGN 2 H	F02H1
CIS ENAB SIGN 2 H	
CIS ENAB SIGN TRAN H	C01U2
CIS ENAB SIGN TRAN H	C02U2
CIS ENAB SIGN TRAN H	
CIS FORCE CB H	F01K1
CIS FORCE CB H	F02K1
CIS FORCE CB H	
CIS I0 H	C01K2
CIS I0 H	C02K2
CIS I0 H	
CIS I1 H	C01J2
CIS I1 H	C02J2
CIS I1 H	
CIS I2 H	C01H2
CIS I2 H	C02H2
CIS I2 H	
CIS I3 H	C01H1
CIS I3 H	C02H1
CIS I3 H	
CIS I4 H	C01K1
CIS I4 H	C02K1
CIS I4 H	
CIS I5 H	C01J1
CIS I5 H	C02J1
CIS I5 H	
CIS I6 H	C01F2
CIS I6 H	C02F2
CIS I6 H	

RUN NAME	PIN NAME
CIS I7 H	C01N1
CIS I7 H	C02N1
CIS I7 H	
CIS I8 H	C01N2
CIS I8 H	C02N2
CIS I8 H	
CIS INIT H	D01R1
CIS INIT H	D02R1
CIS INIT H	
CIS INPUT ENAB H	C01L2
CIS INPUT ENAB H	C02L2
CIS INPUT ENAB H	
CIS INPUT SEL L	D01D1
CIS INPUT SEL L	D02D1
CIS INPUT SEL L	
CIS LNIB SEL H	E01F1
CIS LNIB SEL H	E02F1
CIS LNIB SEL H	
CIS LOAD AREG H	C01F1
CIS LOAD AREG H	C02F1
CIS LOAD AREG H	
CIS LOAD BREG H	E01E1
CIS LOAD BREG H	E02E1
CIS LOAD BREG H	
CIS LOAD CC H	C01C1
CIS LOAD CC H	C02C1
CIS LOAD CC H	
CIS LOAD CONST H	D01J1
CIS LOAD CONST H	D02J1
CIS LOAD CONST H	
CIS LOAD CPC H	D01D2
CIS LOAD CPC H	D02D2
CIS LOAD CPC H	
CIS LOW BYTE H	D01E2
CIS LOW BYTE H	D02E2
CIS LOW BYTE H	
CIS OP 00 H	D01U1
CIS OP 00 H	D02U1
CIS OP 00 H	
CIS OP 01 H	D01S2
CIS OP 01 H	D02S2
CIS OP 01 H	

RUN NAME	PIN NAME
CIS SEL ALU IN H	D01N1
CIS SEL ALU IN H	D02N1
CIS SEL ALU IN H	
CIS SEL CISS L	E01V1
CIS SEL CISS L	E02V1
CIS SEL CISS L	
CIS SEL CONST L	C01A1
CIS SEL CONST L	C02A1
CIS SEL CONST L	
CIS SEL CPC L	C01B2
CIS SEL CPC L	C02B2
CIS SEL CPC L	
CIS SERIAL SHIFT H	D01B2
CIS SERIAL SHIFT H	D02B2
CIS SERIAL SHIFT H	
CIS SET BE L	F05J2
CIS SET BE L	F08J2
CIS SET BE L	
CIS SEX H	A04S2
CIS SEX H	A05S2
CIS SEX H	
CIS SHFT S0 H	D01T2
CIS SHFT S0 H	D02T2
CIS SHFT S0 H	
CIS SHFT S1 H	D01U2
CIS SHFT S1 H	D02U2
CIS SHFT S1 H	
CIS SP HIGH WRITE H	D01E1
CIS SP HIGH WRITE H	D02E1
CIS SP HIGH WRITE H	
CIS SP WRITE H	D01F1
CIS SP WRITE H	D02F1
CIS SP WRITE H	
CIS SWAP S0 H	D01V2
CIS SWAP S0 H	D02V2
CIS SWAP S0 H	
CIS SWAP S1 H	D01R2
CIS SWAP S1 H	D02R2
CIS SWAP S1 H	

RUN NAME	PIN NAME
CLEAR ERROR L	B01V2
CLEAR ERROR L	D05J1
CLEAR ERROR L	E04N1
CLEAR ERROR L	
CLR MPC L	D03M1
CLR MPC L	D05M1
CLR MPC L	D08L1
CLR MPC L	
CPU DATO L	A04P1
CPU DATO L	A06P1
CPU DATO L	E08B2
CPU DATO L	
CPU HALT (1) H	E05J1
CPU HALT (1) H	E08J1
CPU HALT (1) H	
CPU HLT RQST L	C05B1
CPU HLT RQST L	C06B1
CPU HLT RQST L	C07B1
CPU HLT RQST L	C08B1
CPU HLT RQST L	
CPU MSYN (1) H	F04P2
CPU MSYN (1) H	F06P2
CPU MSYN (1) H	F08P2
CPU MSYN (1) H	
D SPACE H	E04U1
D SPACE H	E05U1
D SPACE H	
DC LO H	B05H1
DC LO H	B06H1
DC LO H	
DISABLE LOAD PSW H	D04E2
DISABLE LOAD PSW H	D05E2
DISABLE LOAD PSW H	
DISABLE MSYN L	F05B2
DISABLE MSYN L	F08B2
DISABLE MSYN L	
DISABLE WBIT L	F04U1
DISABLE WBIT L	F08U1
DISABLE WBIT L	
DP BLEG 00 H	A04J2
DP BLEG 00 H	A05J2
DP BLEG 00 H	

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RUN NAME	PIN NAME
DF BLEG 01 H	A04M2
DF BLEG 01 H	A05M2
DF BLEG 01 H	
DF BLEG 02 H	A04K2
DF BLEG 02 H	A05K2
DF BLEG 02 H	
DF BLEG 03 H	A04L2
DF BLEG 03 H	A05L2
DF BLEG 03 H	
E22 BITS H	E04N2
E22 BITS H	E05N2
E22 BITS H	
EMAP H	D05K2
EMAP H	F08F2
EMAP H	
ENAB ADRS H	A06M1
ENAB ADRS H	A07M1
ENAB ADRS H	A08M1
ENAB ADRS H	
ENAB GRANTS H	F05B1
ENAB GRANTS H	F08B1
ENAB GRANTS H	
ENAB INT REG L	D05J2
ENAB INT REG L	E04R2
ENAB INT REG L	
ENAB MAINT (1) H	F04T2
ENAB MAINT (1) H	F05T2
ENAB MAINT (1) H	F07T2
ENAB MAINT (1) H	
ENAB OVX L	A04U1
ENAB OVX L	B05E1
ENAB OVX L	
END TRAN TO MEM L	E04B1
END TRAN TO MEM L	E05B1
END TRAN TO MEM L	E06B1
END TRAN TO MEM L	E08B1
END TRAN TO MEM L	
ERROR H	A04H1
ERROR H	A05H1
ERROR H	

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RUN NAME	PIN NAME
EUB A00 L	B07H2
EUB A00 L	B08H2
EUB A00 L	B09H2
EUB A00 L	B10H2
EUB A00 L	B11H2
EUB A00 L	B12H2
EUB A00 L	B13H2
EUB A00 L	
EUB A01 L	B07H1
EUB A01 L	B08H1
EUB A01 L	B09H1
EUB A01 L	B10H1
EUB A01 L	B11H1
EUB A01 L	B12H1
EUB A01 L	B13H1
EUB A01 L	
EUB A02 L	B07J2
EUB A02 L	B08J2
EUB A02 L	B09J2
EUB A02 L	B10J2
EUB A02 L	B11J2
EUB A02 L	B12J2
EUB A02 L	B13J2
EUB A02 L	
EUB A03 L	B07J1
EUB A03 L	B08J1
EUB A03 L	B09J1
EUB A03 L	B10J1
EUB A03 L	B11J1
EUB A03 L	B12J1
EUB A03 L	B13J1
EUB A03 L	
EUB A04 L	B07K2
EUB A04 L	B08K2
EUB A04 L	B09K2
EUB A04 L	B10K2
EUB A04 L	B11K2
EUB A04 L	B12K2
EUB A04 L	B13K2
EUB A04 L	
EUB A05 L	B07K1
EUB A05 L	B08K1
EUB A05 L	B09K1
EUB A05 L	B10K1
EUB A05 L	B11K1
EUB A05 L	B12K1
EUB A05 L	B13K1
EUB A05 L	

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RUN NAME	PIN NAME
EUB A06 L	B07L2
EUB A06 L	B08L2
EUB A06 L	B09L2
EUB A06 L	B10L2
EUB A06 L	B11L2
EUB A06 L	B12L2
EUB A06 L	B13L2
EUB A06 L	
EUB A07 L	B07L1
EUB A07 L	B08L1
EUB A07 L	B09L1
EUB A07 L	B10L1
EUB A07 L	B11L1
EUB A07 L	B12L1
EUB A07 L	B13L1
EUB A07 L	
EUB A08 L	B07M2
EUB A08 L	B08M2
EUB A08 L	B09M2
EUB A08 L	B10M2
EUB A08 L	B11M2
EUB A08 L	B12M2
EUB A08 L	B13M2
EUB A08 L	
EUB A09 L	B07M1
EUB A09 L	B08M1
EUB A09 L	B09M1
EUB A09 L	B10M1
EUB A09 L	B11M1
EUB A09 L	B12M1
EUB A09 L	B13M1
EUB A09 L	
EUB A10 L	B07N2
EUB A10 L	B08N2
EUB A10 L	B09N2
EUB A10 L	B10N2
EUB A10 L	B11N2
EUB A10 L	B12N2
EUB A10 L	B13N2
EUB A10 L	
EUB A11 L	B07N1
EUB A11 L	B08N1
EUB A11 L	B09N1
EUB A11 L	B10N1
EUB A11 L	B11N1
EUB A11 L	B12N1
EUB A11 L	B13N1
EUB A11 L	

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RUN NAME	PIN NAME
EUB A12 L	B07P2
EUB A12 L	B08P2
EUB A12 L	B09P2
EUB A12 L	B10P2
EUB A12 L	B11P2
EUB A12 L	B12P2
EUB A12 L	B13P2
EUB A12 L	
EUB A13 L	B07P1
EUB A13 L	B08P1
EUB A13 L	B09P1
EUB A13 L	B10P1
EUB A13 L	B11P1
EUB A13 L	B12P1
EUB A13 L	B13P1
EUB A13 L	
EUB A14 L	B07R2
EUB A14 L	B08R2
EUB A14 L	B09R2
EUB A14 L	B10R2
EUB A14 L	B11R2
EUB A14 L	B12R2
EUB A14 L	B13R2
EUB A14 L	
EUB A15 L	B07R1
EUB A15 L	B08R1
EUB A15 L	B09R1
EUB A15 L	B10R1
EUB A15 L	B11R1
EUB A15 L	B12R1
EUB A15 L	B13R1
EUB A15 L	
EUB A16 L	B07S2
EUB A16 L	B08S2
EUB A16 L	B09S2
EUB A16 L	B10S2
EUB A16 L	B11S2
EUB A16 L	B12S2
EUB A16 L	B13S2
EUB A16 L	
EUB A17 L	B07S1
EUB A17 L	B08S1
EUB A17 L	B09S1
EUB A17 L	B10S1
EUB A17 L	B11S1
EUB A17 L	B12S1
EUB A17 L	B13S1
EUB A17 L	

RUN NAME	PIN NAME
EUB A18 L	B07E2
EUB A18 L	B08E2
EUB A18 L	B09E2
EUB A18 L	B10E2
EUB A18 L	B11E2
EUB A18 L	B12E2
EUB A18 L	B13E2
EUB A18 L	
EUB A19 L	B07E1
EUB A19 L	B08E1
EUB A19 L	B09E1
EUB A19 L	B10E1
EUB A19 L	B11E1
EUB A19 L	B12E1
EUB A19 L	B13E1
EUB A19 L	
EUB A20 L	A07F1
EUB A20 L	A08F1
EUB A20 L	A09F1
EUB A20 L	A10F1
EUB A20 L	A11F1
EUB A20 L	A12F1
EUB A20 L	A13F1
EUB A20 L	
EUB A21 L	A07N1
EUB A21 L	A08N1
EUB A21 L	A09N1
EUB A21 L	A10N1
EUB A21 L	A11N1
EUB A21 L	A12N1
EUB A21 L	A13N1
EUB A21 L	
EUB C0 L	B07U2
EUB C0 L	B08U2
EUB C0 L	B09U2
EUB C0 L	B10U2
EUB C0 L	B11U2
EUB C0 L	B12U2
EUB C0 L	B13U2
EUB C0 L	
EUB C1 L	B07T2
EUB C1 L	B08T2
EUB C1 L	B09T2
EUB C1 L	B10T2
EUB C1 L	B11T2
EUB C1 L	B12T2
EUB C1 L	B13T2
EUB C1 L	

RUN NAME	PIN NAME
EUB INIT L	A05A1
EUB INIT L	A09A1
EUB INIT L	A10A1
EUB INIT L	A11A1
EUB INIT L	A12A1
EUB INIT L	A13A1
EUB INIT L	
EUB MSYN L	B07V1
EUB MSYN L	B08V1
EUB MSYN L	B09V1
EUB MSYN L	B10V1
EUB MSYN L	B11V1
EUB MSYN L	B12V1
EUB MSYN L	B13V1
EUB MSYN L	
EUB SSYN L	B07U1
EUB SSYN L	B08U1
EUB SSYN L	B09U1
EUB SSYN L	B10U1
EUB SSYN L	B11U1
EUB SSYN L	B12U1
EUB SSYN L	B13U1
EUB SSYN L	
EXIT CONSOLE L	B05M1
EXIT CONSOLE L	B06M1
EXIT CONSOLE L	
EXT CLK A L	A02B1
EXT CLK A L	A03B1
EXT CLK A L	A05B1
EXT CLK A L	
EXT CLK B L	A04B2
EXT CLK B L	A05B2
EXT CLK B L	
EXT CLK C L	A05J1
EXT CLK C L	B06B2
EXT CLK C L	B07B2
EXT CLK C L	B08B2
EXT CLK C L	
EXT TAP 30 H	B04C1
EXT TAP 30 H	B05C1
EXT TAP 30 H	B06C1
EXT TAP 30 H	B08C1
EXT TAP 30 H	
EXT TAP 90 L	A03V2
EXT TAP 90 L	B05E2
EXT TAP 90 L	

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RUN NAME	PIN NAME
F13L2	F13L2
F13L2	F13R1
F13L2	
F13M2	F13M2
F13M2	F13S1
F13M2	
F13N1	F13D2
F13N1	F13N1
F13N1	F13R2
F13N1	
F13P2	F13P2
F13P2	F13S2
F13P2	
F13V2	F13E1
F13V2	F13V2
F13V2	
F14L2	F14L2
F14L2	F14R1
F14L2	
F14M2	F14M2
F14M2	F14S1
F14M2	
F14N1	F14D2
F14N1	F14N1
F14N1	F14R2
F14N1	
F14P2	F14P2
F14P2	F14S2
F14P2	
F14V2	F14E1
F14V2	F14V2
F14V2	
FAULT H	D07S2
FAULT H	D08S2
FAULT H	
FORCE BUS DATA L	F06P1
FORCE BUS DATA L	F08P1
FORCE BUS DATA L	
FORCE CACHE DATA L	A06B2
FORCE CACHE DATA L	A07B2
FORCE CACHE DATA L	

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RUN NAME	PIN NAME
FORCE CIS DATA L	A02U2
FORCE CIS DATA L	A06U2
FORCE CIS DATA L	
FORCE CPC L	A02V2
FORCE CPC L	A06V2
FORCE CPC L	
FORCE CPU DATA L	F04R1
FORCE CPU DATA L	F06R1
FORCE CPU DATA L	
FORCE CPU MPC L	C06P2
FORCE CPU MPC L	D05S1
FORCE CPU MPC L	
FORCE FPP DATA L	F03K2
FORCE FPP DATA L	F06J2
FORCE FPP DATA L	
FORCE KERNEL (1) H	F04D1
FORCE KERNEL (1) H	F05D1
FORCE KERNEL (1) H	
FORCE SS DATA L	F04M1
FORCE SS DATA L	F06M1
FORCE SS DATA L	
FP11-F ATTACHED L	F03F2
FP11-F ATTACHED L	F05F2
FP11-F ATTACHED L	
FREE BUS H	F02M2
FREE BUS H	F03M2
FREE BUS H	F04M2
FREE BUS H	F05M2
FREE BUS H	F06M2
FREE BUS H	F07M2
FREE BUS H	F08M2
FREE BUS H	
GND 01	F01T1
GND 01	F01C2
GND 01	E01T1
GND 01	E01C2
GND 01	D01T1
GND 01	D01C2
GND 01	C01T1
GND 01	C01C2
GND 01	B01T2
GND 01	B01C1
GND 01	A01T1
GND 01	A01C2
GND 01	J00123
GND 01	

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RUN NAME	PIN NAME
GND 02	A02C2
GND 02	A02T1
GND 02	B02C2
GND 02	B02T1
GND 02	C02C2
GND 02	C02T1
GND 02	D02C2
GND 02	D02T1
GND 02	E02C2
GND 02	E02T1
GND 02	F02C2
GND 02	F02T1
GND 02	
GND 03	F03T1
GND 03	F03C2
GND 03	E03T1
GND 03	E03C2
GND 03	D03T1
GND 03	D03C2
GND 03	C03T1
GND 03	C03C2
GND 03	B03T1
GND 03	B03C2
GND 03	A03T1
GND 03	A03C2
GND 03	J00301
GND 03	
GND 04	A04C2
GND 04	A04T1
GND 04	B04C2
GND 04	B04T1
GND 04	C04C2
GND 04	C04T1
GND 04	D04C2
GND 04	D04T1
GND 04	E04C2
GND 04	E04T1
GND 04	F04C2
GND 04	F04T1
GND 04	
GND 05	A05C2
GND 05	A05T1
GND 05	B05C2
GND 05	B05T1
GND 05	C05C2
GND 05	C05T1
GND 05	D05C2
GND 05	D05T1
GND 05	E05C2
GND 05	E05T1
GND 05	F05C2
GND 05	F05T1
GND 05	

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RUN NAME	PIN NAME
GND 06	A06C2
GND 06	A06T1
GND 06	B06C2
GND 06	B06T1
GND 06	C06C2
GND 06	C06T1
GND 06	D06C2
GND 06	D06T1
GND 06	E06C2
GND 06	E06T1
GND 06	F06C2
GND 06	F06T1
GND 06	
GND 07	A07C2
GND 07	A07T1
GND 07	B07C2
GND 07	B07T1
GND 07	C07C2
GND 07	C07T1
GND 07	D07C2
GND 07	D07T1
GND 07	E07C2
GND 07	E07T1
GND 07	F07C2
GND 07	F07T1
GND 07	
GND 08	A08C2
GND 08	A08T1
GND 08	B08C2
GND 08	B08T1
GND 08	C08C2
GND 08	C08T1
GND 08	D08C2
GND 08	D08T1
GND 08	E08C2
GND 08	E08T1
GND 08	F08C2
GND 08	F08T1
GND 08	
GND 09	A09C2
GND 09	A09T1
GND 09	B09C2
GND 09	B09T1
GND 09	C09C2
GND 09	C09T1
GND 09	D09C2
GND 09	D09T1
GND 09	E09C2
GND 09	E09T1
GND 09	F09C2
GND 09	F09T1
GND 09	

RUN NAME	PIN NAME
GND 10	A10C2
GND 10	A10T1
GND 10	B10C2
GND 10	B10T1
GND 10	C10C2
GND 10	C10T1
GND 10	D10C2
GND 10	D10T1
GND 10	E10C2
GND 10	E10T1
GND 10	F10C2
GND 10	F10T1
GND 10	
GND 11	A11C2
GND 11	A11T1
GND 11	B11C2
GND 11	B11T1
GND 11	C11C2
GND 11	C11T1
GND 11	D11C2
GND 11	D11T1
GND 11	E11C2
GND 11	E11T1
GND 11	F11C2
GND 11	F11T1
GND 11	
GND 12	A12C2
GND 12	A12T1
GND 12	B12C2
GND 12	B12T1
GND 12	C12C2
GND 12	C12T1
GND 12	D12C2
GND 12	D12T1
GND 12	E12C2
GND 12	E12T1
GND 12	F12C2
GND 12	F12T1
GND 12	

RUN NAME	PIN NAME
GND 13	E13A1
GND 13	E13C2
GND 13	A13C2
GND 13	A13T1
GND 13	B13C2
GND 13	B13T1
GND 13	C13C2
GND 13	C13T1
GND 13	D13C2
GND 13	D13T1
GND 13	E13T1
GND 13	F13C2
GND 13	F13T1
GND 13	F13J2
GND 13	
GND 14	E14A1
GND 14	E14C2
GND 14	A14B2
GND 14	A14C2
GND 14	A14N1
GND 14	A14P1
GND 14	A14R1
GND 14	A14S1
GND 14	A14T1
GND 14	A14V2
GND 14	B14B2
GND 14	B14C2
GND 14	B14D1
GND 14	B14E1
GND 14	B14T1
GND 14	B14V2
GND 14	C14C2
GND 14	C14T1
GND 14	D14C2
GND 14	D14T1
GND 14	E14T1
GND 14	F14C2
GND 14	F14T1
GND 14	F14J2
GND 14	
HALT H	B01F2
HALT H	B06F2
HALT H	
HEX A BG IN	D13U2
HEX A BG IN	F13B1
HEX A BG IN	
HEX A BG OUT	D13V2
HEX A BG OUT	F13A1
HEX A BG OUT	

RUN NAME	PIN NAME
HEX A BR OUT	D13J2
HEX A BR OUT	F13P1
HEX A BR OUT	F13U2
HEX A BR OUT	
HEX A IN	D13H1
HEX A IN	E13M1
HEX A IN	
HEX A INT A	D13N1
HEX A INT A	F13U1
HEX A INT A	
HEX A INT B	C13J1
HEX A INT B	F13K2
HEX A INT B	
HEX A INT ENB A	D13M1
HEX A INT ENB A	F13V1
HEX A INT ENB A	
HEX A INT ENB B	C13L1
HEX A INT ENB B	F13H2
HEX A INT ENB B	
HEX A OUT H	D13K1
HEX A OUT H	E13M2
HEX A OUT H	
HEX A OUT LOW	D13D1
HEX A OUT LOW	E13N1
HEX A OUT LOW	
HEX A SSYN IN H	D13V1
HEX A SSYN IN H	E13B1
HEX A SSYN IN H	
HEX SEL 0	D13F1
HEX SEL 0	E13S2
HEX SEL 0	
HEX SEL 2	D13J1
HEX SEL 2	E13T2
HEX SEL 2	
HEX SEL 4	D13E1
HEX SEL 4	E13R2
HEX SEL 4	
HEX SEL 6	D13C1
HEX SEL 6	E13S1
HEX SEL 6	
HLT GRANT H	E06S2
HLT GRANT H	E08S2
HLT GRANT H	

RUN NAME	PIN NAME
INH L	C05S1
INH L	C08S1
INH L	
INHIBIT CONSOLE L	B01P2
INHIBIT CONSOLE L	B06P2
INHIBIT CONSOLE L	
INT VECTOR L	E04M1
INT VECTOR L	E05A1
INT VECTOR L	
INTR H	D05V2
INTR H	E04S1
INTR H	
K2-4 SERIAL SHIFT H	A04F1
K2-4 SERIAL SHIFT H	A05F1
K2-4 SERIAL SHIFT H	
KT DISABLE MSYN L	F04J1
KT DISABLE MSYN L	F05J1
KT DISABLE MSYN L	
KT FAULT L	F04S1
KT FAULT L	F08S1
KT FAULT L	
KTE (1) H	E05M2
KTE (1) H	E08M2
KTE (1) H	
LOAD BAR H	A04E1
LOAD BAR H	A05E1
LOAD BAR H	
LOAD CC L	D04H2
LOAD CC L	D05H2
LOAD CC L	
LOAD IR L	A02D2
LOAD IR L	A03D2
LOAD IR L	A04D2
LOAD IR L	A05D2
LOAD IR L	
LOAD PIR H L	D05H1
LOAD PIR H L	E04M2
LOAD PIR H L	
LOAD PSW L	D04F2
LOAD PSW L	D05F2
LOAD PSW L	

RUN NAME	PIN NAME
LOAD SR 3L L	D05F1
LOAD SR 3L L	E04L2
LOAD SR 3L L	
LOAD VBA H	A04N1
LOAD VBA H	A05N1
LOAD VBA H	
LTC	C14D1
LTC	C13D1
LTC	C12D1
LTC	C06C1
LTC	J00119
LTC	
MAN CLK ENAB L	F05C1
MAN CLK ENAB L	F06C1
MAN CLK ENAB L	F07C1
MAN CLK ENAB L	
MAN CLK L	D05M2
MAN CLK L	D06L2
MAN CLK L	
MFM BG4 OUT H	D06S2
MFM BG4 OUT H	D09S2
MFM BG4 OUT H	D12S2
MFM BG4 OUT H	D12T2
MFM BG4 OUT H	D13S2
MFM BG4 OUT H	
MFM BG6 OUT H	D06N2
MFM BG6 OUT H	D09N2
MFM BG6 OUT H	D12M2
MFM BG6 OUT H	D12N2
MFM BG6 OUT H	D13M2
MFM BG6 OUT H	
MFM CLK INH L	F06N2
MFM CLK INH L	F08N2
MFM CLK INH L	
MFM HLT RQST L	F06N1
MFM HLT RQST L	F08N1
MFM HLT RQST L	
MFM LOAD MPC L	C06N2
MFM LOAD MPC L	D05R1
MFM LOAD MPC L	
MFM SER IN H	B01J2
MFM SER IN H	B06J2
MFM SER IN H	

RUN NAME	PIN NAME
MFM SER OUT H	B01K2
MFM SER OUT H	B06K2
MFM SER OUT H	
MODE 00 H	E04V2
MODE 00 H	E05V2
MODE 00 H	
MODE 01 H	E04V1
MODE 01 H	E05V1
MODE 01 H	
MPC 00	F02N1
MPC 00	F03N1
MPC 00	F05N1
MPC 00	
MPC 01	F02N2
MPC 01	F03N2
MPC 01	F04N2
MPC 01	F05N2
MPC 01	
MPC 02	F02P1
MPC 02	F03P1
MPC 02	F05P1
MPC 02	
MPC 03	F02P2
MPC 03	F03P2
MPC 03	F05P2
MPC 03	
MPC 04	F02R1
MPC 04	F03R1
MPC 04	F05R1
MPC 04	
MPC 05	F02R2
MPC 05	F03R2
MPC 05	F05R2
MPC 05	
MPC 06	F02S1
MPC 06	F03S1
MPC 06	F05S1
MPC 06	
MPC 07	F02S2
MPC 07	F03S2
MPC 07	F05S2
MPC 07	

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RUN NAME	PIN NAME
MPC 08	F02U1
MPC 08	F03U1
MPC 08	F05U1
MPC 08	
MPC 09	F03U2
MPC 09	F05U2
MPC 09	
MPC 10	F03V2
MPC 10	F05V2
MPC 10	
N BIT (1) H	C04J2
N BIT (1) H	C05J2
N BIT (1) H	
P FAIL (1) H	E05N1
P FAIL (1) H	E08N1
P FAIL (1) H	
P FAIL H	C05N2
P FAIL H	C08H2
P FAIL H	
P,C USER H	D04D2
P,C USER H	D05D2
P,C USER H	
PAGE FAULT H	F02F2
PAGE FAULT H	F04F2
PAGE FAULT H	
PAX A00 H	D04A1
PAX A00 H	D05A1
PAX A00 H	D06A1
PAX A00 H	D07A1
PAX A00 H	D08A1
PAX A00 H	
PAX A01 H	D04B1
PAX A01 H	D05B1
PAX A01 H	D06B1
PAX A01 H	D07B1
PAX A01 H	D08B1
PAX A01 H	
PAX A02 H	D04C1
PAX A02 H	D05C1
PAX A02 H	D06C1
PAX A02 H	D07C1
PAX A02 H	D08C1
PAX A02 H	

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RUN NAME	PIN NAME
PAX A03 H	D04D1
PAX A03 H	D05D1
PAX A03 H	D06D1
PAX A03 H	D07D1
PAX A03 H	D08D1
PAX A03 H	
PAX A04 H	D04E1
PAX A04 H	D06E1
PAX A04 H	D07E1
PAX A04 H	D08E1
PAX A04 H	
PAX A05 H	D04F1
PAX A05 H	D06F1
PAX A05 H	D07F1
PAX A05 H	D08F1
PAX A05 H	
PAX A06 H	D04H1
PAX A06 H	D06H1
PAX A06 H	D07H1
PAX A06 H	D08H1
PAX A06 H	
PAX A07 H	D04J1
PAX A07 H	D06J1
PAX A07 H	D07J1
PAX A07 H	D08J1
PAX A07 H	
PAX A08 H	D04K1
PAX A08 H	D06K1
PAX A08 H	D07K1
PAX A08 H	D08K1
PAX A08 H	
PAX A09 H	D04K2
PAX A09 H	D06K2
PAX A09 H	D07K2
PAX A09 H	D08K2
PAX A09 H	
PAX A10 H	D04J2
PAX A10 H	D06J2
PAX A10 H	D07J2
PAX A10 H	D08J2
PAX A10 H	
PAX A11 H	D04M1
PAX A11 H	D06M1
PAX A11 H	D07M1
PAX A11 H	D08M1
PAX A11 H	

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RUN NAME	PIN NAME
PAX A12 H	D04M2
PAX A12 H	D06M2
PAX A12 H	D07M2
PAX A12 H	D08M2
PAX A12 H	
PAX A13 H	D04P2
PAX A13 H	D06P2
PAX A13 H	D07P2
PAX A13 H	D08P2
PAX A13 H	
PAX A14 H	D04V2
PAX A14 H	D06V2
PAX A14 H	D07V2
PAX A14 H	D08V2
PAX A14 H	
PAX A15 H	D04U2
PAX A15 H	D06U2
PAX A15 H	D07U2
PAX A15 H	D08U2
PAX A15 H	
PAX A16 H	D04N1
PAX A16 H	D06N1
PAX A16 H	D07N1
PAX A16 H	D08N1
PAX A16 H	
PAX A17 H	D04P1
PAX A17 H	D06P1
PAX A17 H	D07P1
PAX A17 H	D08P1
PAX A17 H	
PAX A18 H	D04R1
PAX A18 H	D06R1
PAX A18 H	D07R1
PAX A18 H	D08R1
PAX A18 H	
PAX A19 H	D04S1
PAX A19 H	D06S1
PAX A19 H	D07S1
PAX A19 H	D08S1
PAX A19 H	
PAX A20 H	D04U1
PAX A20 H	D06U1
PAX A20 H	D07U1
PAX A20 H	D08U1
PAX A20 H	

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RUN NAME	PIN NAME
PAX A21 H	E04A1
PAX A21 H	E06A1
PAX A21 H	E07A1
PAX A21 H	E08A1
PAX A21 H	
PAX C0 H	C04U2
PAX C0 H	C06U2
PAX C0 H	C07U2
PAX C0 H	C08U2
PAX C0 H	
PAX C1 H	C04V2
PAX C1 H	C06V2
PAX C1 H	C07V2
PAX C1 H	C08V2
PAX C1 H	
PAX D00 H	C04T2
PAX D00 H	C05T2
PAX D00 H	C06T2
PAX D00 H	C07T2
PAX D00 H	C08T2
PAX D00 H	
PAX D01 H	C04S2
PAX D01 H	C05S2
PAX D01 H	C06S2
PAX D01 H	C07S2
PAX D01 H	C08S2
PAX D01 H	
PAX D02 H	C04R2
PAX D02 H	C05R2
PAX D02 H	C06R2
PAX D02 H	C07R2
PAX D02 H	C08R2
PAX D02 H	
PAX D03 H	C04R1
PAX D03 H	C05R1
PAX D03 H	C06R1
PAX D03 H	C07R1
PAX D03 H	C08R1
PAX D03 H	
PAX D04 H	C04A1
PAX D04 H	C05A1
PAX D04 H	C06A1
PAX D04 H	C07A1
PAX D04 H	C08A1
PAX D04 H	

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RUN NAME	PIN NAME
PAX D05 H	C04D1
PAX D05 H	C05D1
PAX D05 H	C06D1
PAX D05 H	C07D1
PAX D05 H	C08D1
PAX D05 H	
PAX D06 H	C04E1
PAX D06 H	C05E1
PAX D06 H	C06E1
PAX D06 H	C07E1
PAX D06 H	C08E1
PAX D06 H	
PAX D07 H	C04D2
PAX D07 H	C05D2
PAX D07 H	C06D2
PAX D07 H	C07D2
PAX D07 H	C08D2
PAX D07 H	
PAX D08 H	C04F1
PAX D08 H	C05F1
PAX D08 H	C06F1
PAX D08 H	C07F1
PAX D08 H	C08F1
PAX D08 H	
PAX D09 H	C04N1
PAX D09 H	C05N1
PAX D09 H	C06N1
PAX D09 H	C07N1
PAX D09 H	C08N1
PAX D09 H	
PAX D10 H	C04M1
PAX D10 H	C05M1
PAX D10 H	C06M1
PAX D10 H	C07M1
PAX D10 H	C08M1
PAX D10 H	
PAX D11 H	C04L1
PAX D11 H	C05L1
PAX D11 H	C06L1
PAX D11 H	C07L1
PAX D11 H	C08L1
PAX D11 H	
PAX D12 H	C04K1
PAX D12 H	C05K1
PAX D12 H	C06K1
PAX D12 H	C07K1
PAX D12 H	C08K1
PAX D12 H	

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RUN NAME	PIN NAME
PAX D13 H	C04J1
PAX D13 H	C05J1
PAX D13 H	C06J1
PAX D13 H	C07J1
PAX D13 H	C08J1
PAX D13 H	
PAX D14 H	C04H1
PAX D14 H	C05H1
PAX D14 H	C06H1
PAX D14 H	C07H1
PAX D14 H	C08H1
PAX D14 H	
PAX D15 H	C04F1
PAX D15 H	C05F1
PAX D15 H	C06F1
PAX D15 H	C07F1
PAX D15 H	C08F1
PAX D15 H	
PAX INTR L	B05A1
PAX INTR L	B06A1
PAX INTR L	B08A1
PAX INTR L	
PAX SSYN L	F04A1
PAX SSYN L	F06A1
PAX SSYN L	F07A1
PAX SSYN L	F08A1
PAX SSYN L	
PE (1) H	E05M1
PE (1) H	E08M1
PE (1) H	
PFAIL BR PEND H	B02F2
PFAIL BR PEND H	B03F2
PFAIL BR PEND H	B08F2
PFAIL BR PEND H	
PIA 0 H	C05V2
PIA 0 H	F08R2
PIA 0 H	
PIA 1 H	C05L2
PIA 1 H	C08E2
PIA 1 H	
PIA 2 H	C05M2
PIA 2 H	C08F2
PIA 2 H	
PIRQ GRANT L	E05R2
PIRQ GRANT L	E08R2
PIRQ GRANT L	

RUN NAME	PIN NAME
PLUS ONE H	D04L2
PLUS ONE H	D05L2
PLUS ONE H	
POWER FAILURE H	B01U1
POWER FAILURE H	B05U1
POWER FAILURE H	
PREVIOUS MODE (1) L	F04B2
PREVIOUS MODE (1) L	F05A1
PREVIOUS MODE (1) L	
PROC INIT L	A01P2
PROC INIT L	A02P2
PROC INIT L	A03P2
PROC INIT L	A04P2
PROC INIT L	A08P2
PROC INIT L	A07P2
PROC INIT L	A05P2
PROC INIT L	A06N1
PROC INIT L	
PSW 05 (1) H	C04K2
PSW 05 (1) H	C08K2
PSW 05 (1) H	
PSW 06 (1) H	C04L2
PSW 06 (1) H	C08L2
PSW 06 (1) H	
PSW 07 (1) H	C04M2
PSW 07 (1) H	C08M2
PSW 07 (1) H	
PSW 14 (1) H	E04H1
PSW 14 (1) H	E05H1
PSW 14 (1) H	
PSW 15 (1) H	E04F1
PSW 15 (1) H	E05F1
PSW 15 (1) H	
QUAD A BG IN	D14U2
QUAD A BG IN	F14B1
QUAD A BG IN	
QUAD A BG OUT	D14V2
QUAD A BG OUT	F14A1
QUAD A BG OUT	
QUAD A BR OUT	D14J2
QUAD A BR OUT	F14P1
QUAD A BR OUT	F14U2
QUAD A BR OUT	

RUN NAME	PIN NAME
QUAD A IN	D14H1
QUAD A IN	E14M1
QUAD A IN	
QUAD A INT A	D14N1
QUAD A INT A	F14U1
QUAD A INT A	
QUAD A INT B	C14J1
QUAD A INT B	F14K2
QUAD A INT B	
QUAD A INT ENB A	D14M1
QUAD A INT ENB A	F14V1
QUAD A INT ENB A	
QUAD A INT ENB B	C14L1
QUAD A INT ENB B	F14H2
QUAD A INT ENB B	
QUAD A OUT H	D14K1
QUAD A OUT H	E14M2
QUAD A OUT H	
QUAD A OUT LOW	D14D1
QUAD A OUT LOW	E14N1
QUAD A OUT LOW	
QUAD A SSYN IN H	D14V1
QUAD A SSYN IN H	E14B1
QUAD A SSYN IN H	
QUAD SEL 0	D14F1
QUAD SEL 0	E14S2
QUAD SEL 0	
QUAD SEL 2	D14J1
QUAD SEL 2	E14T2
QUAD SEL 2	
QUAD SEL 4	D14E1
QUAD SEL 4	E14R2
QUAD SEL 4	
QUAD SEL 6	D14C1
QUAD SEL 6	E14S1
QUAD SEL 6	
RCD INIT L	A04U2
RCD INIT L	A05U2
RCD INIT L	A08U2
RCD INIT L	
RELOCATE H	D05U2
RELOCATE H	E04S2
RELOCATE H	

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RUN NAME	PIN NAME
REMOTE H	B01R2
REMOTE H	B06R2
REMOTE H	
RESET (1) H	A05U1
RESET (1) H	A08U1
RESET (1) H	
RESET INST (1) H	A05C1
RESET INST (1) H	A08B2
RESET INST (1) H	
ROT CBIT (1) H	F04K2
ROT CBIT (1) H	F05K1
ROT CBIT (1) H	
RUN H	B01N2
RUN H	B06N2
RUN H	
SHIFT MUX 00 L	A04C1
SHIFT MUX 00 L	A05F1
SHIFT MUX 00 L	
SHIFT MUX 01 L	A04J1
SHIFT MUX 01 L	B05K1
SHIFT MUX 01 L	
SP WRITE H	B04E2
SP WRITE H	B05B2
SP WRITE H	
SPA 00 H	B04H2
SPA 00 H	B05H2
SPA 00 H	
SPA 01 H	B04J2
SPA 01 H	B05J2
SPA 01 H	
SPA 02 H	B04K2
SPA 02 H	B05K2
SPA 02 H	
SPA 03 H	B04L2
SPA 03 H	B05L2
SPA 03 H	
SR SEL L	E04B2
SR SEL L	E06B2
SR SEL L	
START RESET H	F05E2
START RESET H	F08E2
START RESET H	

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RUN NAME	PIN NAME
START TRAN H	D05N1
START TRAN H	F08R1
START TRAN H	
START TRAN L	A04V2
START TRAN L	A07V2
START TRAN L	A08V2
START TRAN L	
STATUS REG S0 L	E04F2
STATUS REG S0 L	E05F2
STATUS REG S0 L	
STATUS REG S1 L	E04E2
STATUS REG S1 L	E05E2
STATUS REG S1 L	
STROBE CACHE H	A07R2
STROBE CACHE H	A08R2
STROBE CACHE H	
SWAP H	A04R2
SWAP H	A05R2
SWAP H	
TAKE BUS H	F05F1
TAKE BUS H	F08F1
TAKE BUS H	
TBIT (1) H	C04B2
TBIT (1) H	C05B2
TBIT (1) H	
TO (1) L	F05H1
TO (1) L	F08H1
TO (1) L	
TRAN TO MFM L	E04C1
TRAN TO MFM L	E05C1
TRAN TO MFM L	E06C1
TRAN TO MFM L	
TRI STATE AMUX L	B02A1
TRI STATE AMUX L	B03A1
TRI STATE AMUX L	B04A1
TRI STATE AMUX L	
TU58 SER IN H	B01L2
TU58 SER IN H	B06L2
TU58 SER IN H	
TU58 SER OUT H	B01M2
TU58 SER OUT H	B06M2
TU58 SER OUT H	

RUN NAME	PIN NAME
U BUS C0 (1) H	C04N2
U BUS C0 (1) H	C08N2
U BUS C0 (1) H	
U BUS C1 (1) H	C04P2
U BUS C1 (1) H	C08P2
U BUS C1 (1) H	
UBA BG4 OUT H	D06T2
UBA BG4 OUT H	D08T2
UBA BG4 OUT H	
UBA BG5 OUT H	D08R2
UBA BG5 OUT H	D12P2
UBA BG5 OUT H	D12R2
UBA BG5 OUT H	D13P2
UBA BG5 OUT H	
UBA BG6 OUT H	D06R2
UBA BG6 OUT H	D08N2
UBA BG6 OUT H	
UBA BG7 OUT H	D08L2
UBA BG7 OUT H	D12K2
UBA BG7 OUT H	D12L2
UBA BG7 OUT H	D13K2
UBA BG7 OUT H	
UPPER 128K L	A04T2
UPPER 128K L	A05T2
UPPER 128K L	A07T2
UPPER 128K L	A08T2
UPPER 128K L	
UPPER BYTE L	A04D1
UPPER BYTE L	A05D1
UPPER BYTE L	
V BIT (1) H	C04F2
V BIT (1) H	C05F2
V BIT (1) H	
VBA 00 (1) H	D04L1
VBA 00 (1) H	D05K1
VBA 00 (1) H	
Z BIT (1) H	C04H2
Z BIT (1) H	C05H2
Z BIT (1) H	

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