

365-353-003

**DACS II RELEASES 3 THROUGH 6.0, PDS QUICK REFERENCE
GUIDE - AT&T 365-353-003 - ISSUE 1**

Refer to Chapter 17

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1. Simplified Digital Access and Cross-Connect System II (DACS II) Block Diagram

See Figure 1.

2. Unit and NPC Information

2.1 Unit Numbering

In original interface bays, units 1 through 4 are facility terminating units (FTUs) and units 5 and 6 can be either digital signal processing units (DSPUs) or DS3 units (DS3Us). In flexible interface bays, the units can have varied assignments. The integrated FTU (IFTU), which includes power packs, was introduced in Release 4.1 to allow full flexibility (IFTU/DSPU/DS3U) in any unit.

The capacity expansion frame (CEF) has expanded main controller (MC) and expanded cross-connect network (ECCN) plug-ins and allows the use of 16 peripheral units. This capacity requires the use of 2-digit unit numbers (starting at unit 10) and 4-digit extended network processing circuit (NPC) numbers (starting at unit 7 and NPC 1000).

See Tables A and B.

3. Unit Growth Commands (FTU and DSPU)

1. GRTH::UNIT [q]q[,TYPE mnxyz]!
 [q]q = Unit number. TYPE = FT100 or DP100.
2. For ECCN plug-ins, continue:

 RST::CCI s! Side = 0 or 1

 (Both BTs will also be restored.)

 RST::ETSI sqq! qq = Unit number

 (RST::ETSI, ECCN s, ALL! to restore all ETSIs per side)

 (RMV::ETSI, ECCN s, ALL! to remove all ETSIs per side)
3. RST::UNIT [q]q, UC!
4. GRTH::UNIT [q]q, FTMI b, EQL(1,r)!
5. RST::UNIT [q]q, {FTMI b|DSPI}!
 b = FTMI No. (1-4).
6. RST::UNIT [q]q, FC sf! (both sides)
 s = Side No. (0 or 1) f = Pack No. (1-4).
7. GRTH::NPC <npc No.>[-<range>], TYPE mnxyz!

 <npc No.> = NPC number.
 <range> = Last NPC in a range.
 TYPE = DE, DS, or IU (in FTU), or MB, MJ, or SR (in DSPU) and xyz specification.
8. RST::NPC <npc No.>[,SIDE s]!
 s = Side (0 or 1) for duplicated TYPE MB, MJ, SR.

4. ECCN Network

4.1 General

See Figure 2.

4.2 Cable Tests (For Added Peripheral Unit)

4.2.1 For Cabling to EMC

DGN::UNIT [q]q,UC!

4.2.2 For Cabling to ECCN

DGN::UNIT [q]q,FC sf!	(for FTU)
DGN::UNIT [q]q,FMT s!	(for DS3U)
DGN::NPC <npc No.>,SIDE s!	(for DSPU)

5. SYNC Growth Commands

5.1 General

To add TLI, proceed to Step 8:

1. GRTH::SYNC,TB,TYPE TBpqr!
2. CFR::SYNC,{MASTER,SLAVED}!
3. RST::SYNC 0! and RST::SYNC 1!

If MASTER, do Steps 4 through 7:

4. GRTH::SYNC,TLI 1,TYPE TDpqr!
5. RST::SYNC 0,TLI 1! and
RST::SYNC 1,TLI 1!
6. GRTH::SYNC,TLI 3,TYPE TBpqr!
7. RST::SYNC,TLI 3,CRO!

If SLAVED, do Steps 8 through 12:

8. GRTH::SYNC,TLI n,TYPE tepqr,SSP 0,
SRC p!

n = TLI No. (1-4) p = priority; 1 (highest) to 8 (lowest)

9. RST::SYNC 0,TLI n,SSP 0! and
RST::SYNC 1,TLI n,SSP 0!
10. GRTH::SYNC,TLI n,TYPE tepqr,SSP 1,SRC p!
11. RST::SYNC 0,TLI n,SSP 1! and
RST::SYNC 1,TLI n,SSP 1!
12. CHG::SYNC,{TLI n,SSP b,TYPE tepqr |
TLI,SRC(i|a,b)[,j|(c,d)...,l|(g,h)]}!

i, j or l = TLI No. (a,b),(g,h) = SSP priorities

5.2 Time Base (TB) Types

pqr = 000 for domestic stratum 3
100 for international - local exchange
200 for international - toll exchange
300 for domestic stratum 2

5.3 Timing Link Interface (TLI) Types

te = TE for DS1 timing extractor (pqr same as timing NPC type field)
= TP for 2.048 Mb/s timing extractor (specialized pqr field)
= TC for composite clock timing extractor (pqr not defined, 000-999)
= TU for unipolar timing extractor (pqr not defined, 000-999)
= TD1 for composite clock distributor (qr not defined, 00-99)
= TD2 for sine wave clock distributor (qr not defined, 00-99)

5.4 SYNC Plug-Ins

TG60 Time base, Stratum 3

TG61 Time base, local 2.048-Mb/s Interface

TG62 Time base, toll 2.048-Mb/s Interface

TG63 Time base, Stratum 2

TG64 DS1 timing extractor (TE)

TG65 Primary block extractor (TP)

TG66 64 kb/s clock extractor (TC)

TG67(B) Unipolar clock extractor (TU)

TG68 BSRF extractor (TR)

TG70 64 kb/s clock distributor (TD)

TG71(B) 2.048 Mb/s timing distributor (TD)

TG75 Primary block extractor, coax (TP)

6. Utility Query Commands

6.1 General

```

UTL::QRY,EQD,UNITS!
UTL::QRY,EQD,{TSIS|ETISIS}!
UTL::QRY,EQD,NPCS!
UTL::QRY,SYNC,TYPE!   UTL::QRY,FPKG!
UTL::QRY,<subject>[,UNIT [q]q]!
    <subject> = EQD, OOS, FAIL, PEST, or ALL
    [q]q = Unit number, see Section 2.

```

```
UTL::QRY,UNIT [q]q,FTMI b,EQL!
```

b = FTMI number (1-4)

```
UTL::QRY,STATE,SYNC!
```

```

SOURCE: {HOLDOVER|TLI|CRO}; other side = MATE
IN SERVICE: DPLL, TB, SOURCE <side 0> <side 1>
    (1 = in-service)
ACTIVE LINK: TLI number and SSP side

```

```
UTL::QRY,ALMS!
```

Output message:

- a. For common equipment line, see output messages below.
- b. PWR line converter positions 1 through 10 (or 20) as follows:

```

1 through 6 for unit converters           7 and 8 for SPU0 and SPU1
9 and 10 for CCN/ECCN sides 0 and 1     11 through 20 for units 7
                                          through 16.

```

```
UTL::LOC,<entity>!
```

entity = pack name and number; UNIT [q]q
or SYNC a prefix as needed

```
UTL::QRY,ERR,{HWER|SWER},{INT mn|TOD hrmmnc}!
```

```
UTL::QRY,<subject>,COMMON!
```

6.2 Output Messages for COMMON and ALMS

```
M ...UTL COMMON g h i j k l m n o p EOM
```

```

M ...UTL ALMS a b c d e f g h i j k l m n o p q r s EOM
a = MC          g = Link 1      m = CCN/ECCN 0
b = MP          h = Link 2      n = CCN/ECCN 1
c = CI          i = Link 3      o = CCNI/CCI 0
d = SSC        j = Link 4      p = CCNI/CCI 1

```



```
fryatlvxz = FFER, RED, YELLOW, AIS,  
           CONTR, (DIU|UC|MC), TEST|LOOP SIG,  
           LFVR, LOCAL ALMS, REMOTE ALMS.
```

6.7 Channel Information

```
UTL::QRY,CMAP <npc No.>[-<range>!]  
UTL::QRY,DMAP!  
UTL::QRY,TO <npc No.>jjj[-kkk]!  
UTL::QRY,FROM <npc No.1>ddd[-eee]!  
UTL::QRY,BCAST,ALL!  
UTL::QRY,BCAST,FROM <npc No.1>ddd!  
UTL::QRY,TPS!  
UTL::QRY,MARK,NPC <npc No.>[-range]!
```

6.8 Time-of-Day (TOD) Utilities

```
UTL::TOD hrmnsc!  
UTL::DATE moda yr[,FMT a][[,INT bb]!  
  
bb = display interval 01,02,04,06,08,12, or 24 hours  
UTL::TOD hrmnsc,CFA!  
UTL::TOD hrmnsc,FAC X'abcdef!  
UTL::QRY,TOD,BMTR!
```

7. Backup Memory Transfers

See Figure 3.

```
UTL::BMTR, FROM DISK, TO TAPE[, {EXCT|INCL}]!
```

```
EXCT = To transfer executables  
INCL = To transfer data base without  
       release journal files
```

```
UTL::BMTR, FROM TAPE, TO DISK[, EXCT]!
```

```
UTL::BMTR, FROM RAM, TO DISK!
```

```
UTL::BOOT, FRAME!  
UTL::QRY, TOD, BMTR!  
UTL::TOD hrmnsc, BMTR!  
UTL::CLR, BMTR!
```

8. DS0 Cross-Connect Commands

8.1 General

NOTE:

For terminated connections, substitute TCNT and OCNT for verbs in TCON and OCON commands.

8.2 Two-Point

```
TCON::FROM <npc No.1>ddd[-eee],TO <npc No.2>jjj[-kkk],
<tc>[,AIS][,RDC][,CUS|INCL]!
```

```
OCON::FROM <npc No.1>ddd[-eee],TO <npc No.2>jjj[-kkk],
<tc>[,AIS][,RDC][,CUS|INCL]!
```

```
TDIS::FROM <npc No.1>ddd[-eee],TO <npc No.2>jjj[-kkk]
[,INCL][,OOS][,DCC]!
```

```
ODIS::FROM <npc No.1>ddd[-eee],TO <npc No.2>jjj[-kkk]
[,INCL][,OOS][,DCC]!
```

<tc> = Trunk conditioning; use dashes in TC(ijkl, mnop) for FROM-side of OCON.

AIS = Optional, for all 1s insertion downstream.

CUS/RDC = Special circuit designation.

INCL = Optional, to remove previous CUS designation.

OOS = Optional, to disconnect circuits while NPC is OOS.

DCC = Optional, to specify <tc> and IW of previous cross-connection.

8.3 Termination State

```
CHG::FROM <npc No.1>ddd[-eee],TO <npc No.2>jjj[-kkk]
[,NOT rstvvv]{,TLA|TLR} F|T|B|L|G|A[,INCL]!
```

F = From-side L = All legs toward facilities

T = To-side G = All legs toward bridge

B = Both sides A = All legs, both sides

8.4 Multipoint Mode (MPM)

See Figures 4 and 5.

```
TCON::FROM <npc No.1>ddd,TO <npc No.2>jjj,MPM(fmd,tmd),
<tc>[,NTR n][,RDC][,CUS|INCL]!
```

```
OCON::FROM <npc No.1>ddd,TO <npc No.2>jjj,MPM(fmd,tmd),
<tc>[,RDC][,INCL]!
```

See Table C.

Note: DSPUs are limited to units 5 and 6 of original interface bays.

8.5 Broadcast (BCON)

BCON::FROM <npc No.1>ddd[-eee],TOX (<npc No.2>jjj, <npc No.3>nnn,
...),<tc>[,NTR|LPD|CONV][,CUS|INCL][,RDC]!

BDIS::FROM <npc No.>ddd[-eee],TO <npc No.2>jjj[-kkk][,CONV]!

CHG::SWCH,TOX(<npc No.1>ddd,<npc No.2>, ...)!

CONV = Optional, to convert last circuit to TCON.

TOX = For several BCON return legs; or use
TO to change one BCON return leg.

8.6 ACON

ACON:[FRM xy,SEQ ww]:OLD <npc No.1>ddd[-eee],
NEW <npc No.2>-jjj,[-kkk][,INCL]!

None of the involved NPCs can be: 2.048-Mb/s Interface types PB or
PC, SLC(R) carrier type DS, interface unit types
IU or TI, or clear-DS1 types (xyz=9-9).

8.7 Test Access

GRTH::NPC <npc NO.>,NPCTP n!

GRTH::TP kkk[,<tc>]!

TTST::MON,TO <npc No.2>jjj[,<tc>],TP kkk!

TTST::SPL,TP kkk! or TTST::TPR,TP kkk!

TTST::{TLA|TLR}m,TP kkk! See Figure 4.

See Figure 5 and Table D.

9. Clear-Channel DS1 Feature

9.1 NPC Growth

```
GRTH::NPC <npc No.>,TYPE {DE|TE}xyz[,OPTS(rr|l,ss|m, ...tt|n)!
```

x = 9 for no framing

y = 1 or 2

z = 9 for no channels

rr,ss,tt = Options 01-04 in FTUs and 01,
02 for DS3 embedded.

9.2 Clear-DS1 Cross-Connections

9.2.1 Restrictions

(1) No multipoint (MPM) commands; only 2-point and BCON types, and (2) no channel numbers or <tc> specified; see following example.

9.2.2 Example for 2-Way

```
TCON::FROM <npc No.1>,TO <npc No.2>[,RDLD][,{CUS|INCL}]!
```

9.3 Clear-DS1 Test Access

9.3.1 To Establish

```
CTST::<tmode>,FAD <npc No.>,FROM <npc No.1>  
[,TO <npc No.2>][,AIS][,INCL]!
```

<tmode> = connection mode; see Table E.

<npc No.1> = E-end NPC or BCON backbone

<npc No.2> = F-end NPC or BCON tributary

AIS = idle signal to disconnected side.

9.3.2 To Change Mode

```
CTST::<tmode>,FAD <npc No.>[,AIS][,INCL]!
```

9.4 To Change Termination or Idle Signal

```
CTST::FAD <npc No.>[,FROM <npc No.1>[,TO <npc No.2>]  
[,EMODE y][,FMODE y][,INCL]!
```

y = E-end or F-end mode (NORM,TERM,AIS, or QRSS).

9.5 To Loop Back FAD

```
CTST::LPBKT,FAD <npc No.>[,INCL]!
```

9.6 To Release

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CTST::TNR,{FAD <npc No.>|ALL}[,OOS]!

See Table E.

10. Subrate Data Feature

10.1 Establish Channels

10.1.1 General

NOTE:

SEC is subrate error correction and PCH is parity channel EC.

10.1.2 DS0A

```
SECH::TO <npc No.>ddd[-eee],DS0A rr[,SEC]!
```

rr = 24, 48, 96

10.1.3 DS0B

```
SECH::TO <npc No.>ddd[-eee],DS0B nn[,PCH[ppp]]!
```

nn = 05, 10, 20

10.1.4 56 kb/s

```
SECH::TO <npc No.>ddd[-eee],DS0A 56[,PCH ppp]!
```

(DACS/SRDC Format Equivalents)

```
SECH::TO <npc No.>ddd[-eee],RATE rr,DP!
```

```
SECH::TO <npc No.>ddd[-eee],RATE 56!
```

```
SECH::TO <npc No.>ddd[-eee],RATE rr [,DP,PCH[ppp]]!
```

```
SECH::TO <npc No.>ddd,RATE 56[,DP,PCH[ppp]]!
```

rr = 24, 48, 96

10.1.5 Change and Disestablish

```
CHG::SECH,OLD <npc No.1>ddd[-eee],NEW <npc No.2>jjj[-kkk]  
[,PCH ppp][,DCC]!
```

PCH = parity channel error correction

DCC = inserts the DDS unassigned multiplexer channel
(UMC) code on old digroup channels.

```
SDCH::TO <npc No.>ddd[-eee][,PCH[ppp]][,DCC]!
```

10.2 Test Access and Queries

10.2.1 Test Access

```
STST::{MON|SPL},[TO <npc No.>ddd[/ff]][,MJU ssss[,BRi]],
```

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TP kkk!

STST::TPR,{TP kkk|ALL|LINKS}!

STST::{TLA|TLR} m,TP kkk!

TLA = termination active TLR = termination released

10.2.2 Utility Queries

UTL::QRY,SECH,TO <npc No.>ddd[-eee]!
(for DS0 channel information)

UTL::QRY,SCON,TO <npc No.>ddd[/ff]!
(for circuit trace)

UTL::QRY,SCON,CH,TO <npc No.>ddd[-eee]!
(for far-end customer information)

UTL::QRY,SRHDW,TO <npc No.>ddd[/ff]!
(for hardware trace)

UTL::QRY,SROOF,{TO <npc No.>ddd[-eee]|ALL}!
(for SRM framing status)

UTL::QRY,ECLOC! (for EC location)

UTL::QRY,HUBID! (for hub identification number)

10.2.3 Basic Frame Queries

UTL::QRY,STATE,NPC <npc No.>!

UTL::QRY,CMAP <npc No.>[-range]!

UTL::QRY,TO <npc No.>ddd[-eee]!

UTL::QRY,DMAP!

UTL::QRY,ESR,NPC <npc No.>[,SIDE s]!

UTL::QRY,ESR,UNIT [q]q,DSPI!

10.3 Establish Channels and Connect Subrate Customers (2-Point)

See Figure 6.

10.4 Establish Channels and Multipoint Junction Unit (MJU)

See Figure 7.

10.5 Customer Connections

10.5.1 General

NOTE:

Although not shown, channel ranges [-eee,-kkk] are allowed if the channels have been established as DS0A (no customer number required).

10.5.2 Two-Point

```
SCON::RATE rr, FROM <npc No.>ddd[/ff[-mm]], TO <npc No.2>jjj  
[/ll[-nn]]!
```

(SCNT verb for terminated)

rr = 24, 48, 96, 56
ff, ll = customer numbers
mm, nn = range

```
SDIS::FROM <npc No.1>ddd[/ff[-mm]], TO <npc No.2>jjj  
[/ll[-nn]][, RATE rr]!
```

10.5.3 Multipoint

```
SCON::RATE rr, MPTM <npc No.>ddd[/ff], MJU 1!  
SCON::MPTM <npc No.1>ddd[/ff], MJU ssss[, MA(tttt, u)]  
[, BR1 <npc No.2>jjj[/mm]][, BR2 <npc No.3>jjj[/mm]]  
[, BR3 <npc No.4>jjj[/mm]][, BR4 <npc No.5>jjj[/mm]]!  
(SCNT verb for terminated; not valid for master.)
```

ff, mm = customer Nos.; 01 for DS0A
rr = rate 24, 48, 96, or 56
sss = subject MJU No. (1-9999)
tttt = master MJU No.
u = master MJU branch connection to subject MJU

```
CHG::SCON, OLD <npc No.1>ddd[/ff], NEW <npc No.2>jjj[/ll]  
[, MPTM]! <npc No.2> = new external facility termination.
```

```
SDIS::MPTM <npc No.1>ddd[/ff], MJU ssss, BR1  
<npc No.2>jjj[/mm]  
  
[, BR2 <npc No.3>jjj[/mm]][, BR3 <npc No.4>jjj[/mm]]  
[, BR4 <npc No.5>jjj[/mm]]!
```

```
SDIS::MPTM <npc No.1>ddd[/ff], MJU ssss[, ALL]!
```

10.6 Termination State

```
CHG::{TLA|TLR} m, TO <npc No.>ddd[/ff]!
```

```
CHG::{TLA|TLR} m, TO <npc No.>ddd[/ff], MJU ssss[, BRi]!
```

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Where m = F (from), T (to), or B (both) side(s)

10.7 Customer Channels for SCOns

See Table F.

output l = LOS (0,1), o = OOF (0,1),
field b = BER (0,1), and a = AIS (0,1).

RMV::UNIT [q]q,MMFG c[-d][,FRC][,INCL]!

FRC = forces remove without switch to
protection (may cause loss of service);
needed to remove multiple MMFGs.

11.3 MMFG Protection Switching

SW::UNIT [q]q,MMFG c,{TOPRTN|TOSRVC}!

RMV::UNIT [q]q,MMFG c[-d][,INCL]!
(causes switch and removes associated NPCs)

RST::UNIT [q]q,MMFG c[-d][,INCL]!
(causes unswitch and restores associated NPCs)

UTL::QRY,PSTATE,UNIT [q]q!

UTL::QRY,STATE,UNIT [q]q,DS3 c!

See Table H.

12. FRADTS FRCMP Messages

NOTE:

Generally, you do not need to respond to a frame audits (FRADTS) message unless it recurs. The second action in Tables I, J, K and L is only needed if the primary action is ineffective.

NOTE:

When an NPC is removed from service, all 24 channels are out of service.

13. Security Login

13.1 Link

13.1.1 General

Also see link commands under other headings below.

13.1.2 Asynchronous

```
ADD::LINK j, PTCOL S[,BAUD bb][,ALM k]
[,BS e][,ENQ q][,XON x][,INIT]!
```

13.1.3 Synchronous

```
ADD::LINK j[mm],PTCOL X[,ALM k][,INIT]!
```

```
ADD::LINK j[mm][,<param> <value>][,{FRMAD <A|B>|
VC(ppss,gghh)}]!
```

<param> = N2,K,W,P,R20-25,T1 k = 2 (major), 1 (minor)

<value> = Size or timer value j = Link number 1-6 (5 or 6 for synchronous)

bb = 03,06,12,24,48,96 e = 1 (underscore), 0 (backspace)

13.2 User

```
ADD::USER id[,PASSWD <pswd>],NEW!
(password for synchronous link)
DLT::USER id!
CHG::{USER id|LINK l[mm]},SCR n[,GR (a,b,c,d,e,f)]
[,,{MCOFF|MCON}]!
CHG::{MACRO|MAP},SPACE nnn!
DLT::{MACRO|MAP} name,USER id!
LOGIN::USER id! LOGOFF::USER id!
```

13.3 Language and NPC Numbering

```
ADD::USER <user id>|LINK l[mm][,INCL]|ALL[,LANG M|P|T]
[,NPCAD E|H|X][,LEV(a,b,c,d,e,f)][,RMON|RMOFF]
[,RLK A|I]!
```

13.4 Queries

```
UTL::QRY,LOG[,ALL]!
```

```
UTL::QRY,SCR,{LINK l[mm]|USER id|LINKS|USERS}!
```

```
UTL::QRY,{MACRO|MAP},ATTR[,USER id|ALL]!
```

```
UTL::QRY,LIST,MACRO|MAP <name>[,USER id]!
```


14. Macros/Maps

14.1 Macros

1. Enter ED::CRET,MACRO <filename>! or
ED::OPEN,MACRO <filename>!.
 2. Enter component command lines to macro.
 3. If OK is received after entries, proceed. If not, respond to denials; NOT ALLOWED means command is not allowed or not authorized.
 4. Enter next line. To terminate without writing in data base, enter QTEND. To write and quit, enter ENTER.
 5. To execute macro, enter the following:
EXC::MACRO <filename> [(,p1,p2,p3,...p10)]!

p1,p2,p3 = Values for variables (numbers) used in macro commands.

14.2 Alternate maps

1. Notice functions and commands:

FUNCTION	RELEASE 3	RELEASES 4, 5 AND 6
Create Map	ED::CRET,MAP <name>!	ED::MAP <name>!
Edit Map	ED::OPEN,MAP <name>!	ED::MAP <name>!
Use Picture	ED::MAP <name>, PIC <refmap>!	ED::MAP <name>, PIC <refmap>!

2. See example on next page. Enter appropriate command to start session and enter component TCON command lines to file.
3. When editing to remove TCONs, either delete using
TCON::FROM <npc No.1>,TO <npc No.2>,DEL! commands or
DLT::NPC <listing|range>! commands.
4. To terminate without writing in data base, enter QTEND. To write and quit, enter END.
5. To activate, enter ACT::MAP <filename>[,CLR]!.

14.3 Macro Example

14.3.1 Values Entered

```

TDIS::FROM 00101,TO 00301,STOP!
TCON::FROM 00101,TO 00501,TRSP!
TCON::FROM 00102,TO 00502,TRSP!
TCON::FROM 00103,TO 00503,TRSP!

```

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```
UTL::QRY,CMAP 001!  
END!
```

14.3.2 Values Defined in EXC Command

```
TSIS::FROM #0101,TO 00301,STOP!  
TCON::FROM #0101,TO #0201,#03!  
TCON::FROM #0102,TO #0202,#03!  
TCON::FROM #0103,TO #0203,#03!  
UTL::QRY,MAP #01!  
END!
```

14.3.3 EXC Command for Macro B

```
EXC::MACRO QWKCON,(001,005,TRSP)!
```

14.4 Alternate Map Example

```
ED::CRET,MAP,NEWMAP!  
TCON::FROM 001001,TO 002001,TRSP,TRB!  
TCON::FROM 003001,TO 004001,TRSP,RDC,INCL!  
TCON::FROM 005001-24,TO 006001-24,TRSP,TRB!  
END!
```

15. Denial Codes

NOTE:

The same denial codes can have different meanings in Tables M; if one meaning does not apply, check remaining tables for active software and features.

16. Feedback Form

How Are We Doing?

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List of Tables

Table A: NPC Types

Type	Name	Hardware
DE	DDC (DS1)	TG-80/TG-80B
IU	DIU	TG-180
DS/DE	S96D	TG-183
DS/DE	SS5D	TG-184
DE	ZDC	TG-186
DA	EDDC	TG-191
MB	DMB (bridge)	TM-665
MJ	MJU (subrate)	TM-740
SR	SRM (subrate)	TM-739
MB	DMB (bridge)	TM-665

Table B: NPC Extended Numbering

Unit	Range	
No.	FTU (Note 1)	DSPU (Note 2)
1	001-160	001/002, 021/022, ...,141/142
2	161-320	161/162, 181/182, ...,301/302
3	321-480	321/322, 341/342, ...,461/462
4	481-640	481/482, 501/502, ...,621/
5	641-800	641/642, 661/662, ...,781/782
6	801-960	801/802, 821/822, ...,941/942
7	961-1120	961/962, 981/982, ...,1101/1102
8	1121-1280	1121/1122, 1141/1142, ...,1261/1262
9	1281-1440	1281/1282, 1301/1302, ...,1421/1422
10	1441-1600	1441/1442, 1461/1462, ...,1581/1582
11	1601-1760	1601/1602, 1621/1622, ...,1741/1742
12	1761-1920	1761/1762, 1781/1782, ...,1901/1902
13	1921-2080	1921/1922, 1941/1942, ...,2061/2062
14	2081-2240	2081/2082, 2101/2102, ...,2221/2222
15	2241-2400	2241/2242, 2261/2262, ...,2381/2382
16	2401-2560	2401/2402, 2421/2422, ...,2541/2542

Notes:

1. For DS3U type, use letter suffix (A-H) for 8 additional NPCs (for example, 16A through 16H).
2. There are 8 DSPs (2 NPCs) per DSPU. The numbering in DSPUs proceeds by adding 20 (to the previous DSP NPC) for each consecutive DSP.

Table C: DSPU NPCs In Units 5 And 6 (Note)

Unit	NPC Numbers
5	641-642,661-662,681-682,701-702, 721-722,741-742,761-762,781-782
6	801-802,821-822,841,842,861-862, 881-882,901-902,921-922,941-942

Table D: Multipoint NPC and Channel Numbers

Command Field	Leg End NPC	Bridge End DMB NPC	Bridge End Virtual NPC
<npc No.>	Any facility NPC*	DMB NPC (Type MB)*	961,962 (or [9]961 - [9]966)*
Channel No. (ddd/jjj)	01-24 (01-96 for SLC(R) carrier)	01-85	001-500
Mode (fmd,tmd)	LEG	SYM,BBL,BRD	BBL,BRD

* Up to 2560 NPCs and 6 virtual NPCs (9961-9966) can be used in the CEF.

Table E: Test Access Modes

Mode	Meaning
MONE	Monitor Equip (E) End of Idle Port or Cross-Connection
MONF	Monitor FAC (F) END of Idle Port or Cross-Connection
MONEF	Monitor Both Ends
SPLTA	Splits E-to-F Connection to Test E-to-F Direction
SPLTB	Splits F-to-E Connection to Test F-to-E Direction
SPLTE	Splits E-to-F Connection to Test E End
SPLTF	Splits F-to-E Connection to Test F End
SPLTEF	Splits Both Directions to Test E and F Ends
LOOPE	Loops E End and Monitors Signal; on 2-Way Circuit, F End Is Disconnected
LOOPF	Loops F End and Monitors Signal; on 2-Way Circuit, F End Is Disconnected

Table F: Customer Numbers

DS0A		DS0B Customer
Rate	Numbers (Note 1)	Numbers (Note 2)
2.4	01	01-20
4.8	01	01-10
9.6	01	01-05
56	01	01

Notes:

1. Channel range with DS0A
2. Customer number range with DS0B.

Table G: DS3U NPC Numbers

Unit No. (Note)	NPC Numbers
1	001-160,16A-16H
2	161-320,32A-32H
3	321-480,48A-48H
4	481-640,64A-64H
5	641-800,80A-80H
6	801,960,96A-96H

Note: Only 6 units are listed, but the same numbering continues in 7 through 16 in the CEF.

Table H: Protection Keywords

Keyword	Meaning
SLT	FLI selected
USLT	FLI unselected
SALW	MMFG in service, switch allowed
SINH	MMFG in service, switch inhibited
MPALW	Manual switch active, switchback allowed
APALW	Auto switch active, switchback allowed
MPINH	Manual switch active, switchback inhibited
APINH	Auto switch active, switchback inhibited
AVL	Available for switching
NVL	Not available for switching
(dashes)	MMFG not equipped or not selected for service

Table I: FRADTS FRCMP Messages

ttt =	Pack	Data Bytes	Corrective Action
002	FTMI	d5=unit No.(01-16)	Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC!
003	FC	d4=pack No. (01-06)	
007	UNIT		
032	DSPI		
008	ECCN	d4=ECCN side (0,1)	Enter RMV::CCI s! 7RST::CCI s!
011	NPC	d5=unit No. d4=NPC No. (HEX 01-A0)*	Enter RMV::NPC <npc No.>! and RST::NPC <npc No.>!
021	CCN	d5=side (00 or 01)	(1) Remove and restore any pack on subject side (2) Enter UTL::BOOT,FRAME!
022	CCNI	d4=pack No. (01-06)	
023	CCB		
024	TSI	TSI=d5,d4,d3	
025	CCN	d5=side (00 or 01)	Enter UTL::BOOT,FRAME!
205	FTMI	d5=unit No.	(1) Enter RMV and RST commands for subject pack (2) Look for DGN-STF (3) If recurs, enter RMV::UNIT [q]q,UC!, and RST::UNIT [q]q,UC!
207	FC	d4=pack No. (01-04)	
208	NPC	(NPCs=HEX 01-A0)*	
209	NPC		
210	FC	d3=side, d4=FTMI d5=unit No.	RMV::UNIT [q]q,FC sf! and RST::UNIT [q]q,FC sf!
301	CCN Group	d5=side	Remove and restore any pack on side. If side is active, go to other side first (CFR::XC a!).
302	TSI	TSI=d5,d4,d3	Enter commands to RMV and RST subject pack
303	CCB	d5=side, d4=CCB No.	
308	LINK	d5=link No. (01-06)	Enter commands to remove and restore link
004,005,006		d5=Unit No. d4=FTMI No. (01-04)	(1) Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC! (2) If recurs, enter UTL::BOOT,FRAME!
012,013,014, 015,016,017 018		d5=Unit No. d4=NPC No. (HEX 01-A0)*	(1) Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC! (2) Enter RMV::NPC <npc No.>! and RST::NPC <npc No.>!
026-029		d5=ECCN side (0,1)	Enter RMV::ETSI sqq! and RST::ETSI sqq!
211,215, 216,217, 218		d5=Unit No. d4=NPC No.	(1) Enter RMV::NPC <npc No.>! and RST::NPC <npc No.>! (2) If recurs, remove 2 NPCs, reseat pack, and restore
102,103,104, 105,106,112, 113,114,115,			Enter UTL::BOOT,FRAME!

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116,125,126,
127,128,135,
136,154,155
156,157

121,122,123, 131,132,133, 150,151,152, 160,161,162, 163,164,165, 166,167,168	d5=Unit No. d4=NPC No.	Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC!
---------------------------------------------------------------------------------------------	---------------------------	----------------------------------------------------

305,306,307, 310,311,312, 313,314,315	d5=SYNC side (0,1) d4=TLI No. (01-04) (except for ttt=305, 312,313,314)	(1) If TLI is named, remove and restore SYNC TLI (2) Enter UTL::QRY,STATE,SYNC!, look for SOURCE TLI,MATE (3) Enter RMV::SYNC a! and RST::SYNC a! (byte d5=sync side)
---------------------------------------------	----------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

316,317	d5=ECCN side (0,1)	Enter RMV::CCI s! and RST::CCI s!
---------	--------------------	--------------------------------------

* To obtain NPC number, convert HEX digits to decimal; the left digit is 16s place (x16) and A=10, B=11, C=12, D=13, E=14, F=15. Add 160 to get NPC No. in Unit 2, add 320 for Unit 3, and add 480 for Unit 4, etc.

Table J: Facility Error Thresholds

ttt =	Data Bytes	Corrective Action
171,172,173,174	d5=Unit No. d4=NPC No.	(1) Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC! (2) Enter RMV::NPC <npc No.>! and RST::NPC <npc No.>!
019,01A,01B,01C, 01D	d5=Unit No. d4=NPC No.*	Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC!
220,221,222,223,224, 225,226,227,228,229, 230,231,232,233,234, 235,236,237,238,239	d5=Unit No. d4=NPC No.*	(1) Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC! (2) Enter RMV::NPC <npc No.>! and RST::NPC <npc No.>!
<p>* To obtain NPC number, convert HEX digits to decimal; the left digit is 16s place (x16) and A=10, B=11, C=12, D=13, E=14, F=15. Add 160 to get NPC No. in Unit 2, add 320 for Unit 3, and add 480 for Unit 4, etc.</p>		

Table K: SLC(R) Carrier and Substrate Data

ttt=	Data Bytes	Corrective Action
033,034,035, 036,037,038, 039,040,050, 052,250,251	d5=Unit No. d4=NPC (for 251)	Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC!
055,056,057, 058,059,060, 061,062,063, 064,065,066 086,089-093 095	d5=Unit No. d4=RT DL (coded- internal number)	Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC!
05A	d0=Unit No.	RMV::UNIT [q]q,UC! RST::UNIT [q]q,UC!
05B	d0-1(frame), 2(unit) 3(channel) or 4(time slot) d3=NPC No. (if applicable) d4=Unit No. (if applicable)	RMV::UNIT [q]q,UC!
05C	d0-d5=not used	UTL::BOOT,FRAME!
069-074, 076-081, 084	d4=MJU, SRM, or channel No. d1=NPC No.	Enter RMV::NPC <npc No.>,SIDE s! and RST::NPC <npc No.>,SIDE s!
240,241,242	d5=Unit No. d4=NPC No.	(1) Enter RMV::UNIT [q]q,UC! and RST::UNIT [q]q,UC! (2) Enter RMV::NPC <npc No.>! and RST::NPC <npc No.>!

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Table L: DS3 Feature

ttt=	Data Bytes	Corrective Action
009,00A, 00B,00C	d4=Entity No. d5=Unit No.	RMV::UNIT [q]q,UC! RST::UNIT [q]q,UC!
03B,03C,03D, 03E,03F	d4=Entity No. d5=Unit No.	RMV::UNIT [q]q,UC! RST::UNIT [q]q,UC!
040,041,042, 043,044,045, 046,047	d4=Entity No. d5=Unit No.	RMV::UNIT [q]q,UC! RST::UNIT [q]q,UC!
253,254,255, 256,257,258, 259,25A,25B, 25C,25D,25E, 25F	d4=Entity No. d5=Unit No.	RMV::UNIT [q]q,UC! RST::UNIT [q]q,UC!
048,049,04A, 04B,04C,04D, 260,261,262, 263,264,265	d5=Unit No.	RMV::UNIT [q]q,UC! RST::UNIT [q]q,UC!
323,324,325, 326,327,328, 329,32A,	d4=MXR No. d5=Unit No.	RMV::UNIT [q]q,UC! RST::UNIT [q]q,UC!
320,321,322, 32B,32C,33D, 32E,32F,330, 331,332,333 334,335,336	d4=NPC No. d5=Unit No.	RMV::UNIT [q]q,UC! RST::UNIT [q]q,UC!

Table M: Common Frame Denials

00	All test ports released No conditions
01	Assignment of single priority to multiple SSPs Backup required before executing this command CCI pack is not present CEC bit on PRISM not cleared Invalid range for specified NPC type No test ports were active by link n Subject entity is equipped
02	Can't communicate to CCI pack(incorrect version number) Firmware error Invalid NPC type for AIS insertion Manual Pending is Active One or more test ports could not be released Subject entity is not equipped
03	CCI pack's summary is set but has no errors DS3U NPC already In-Service No RDL or CUS circuits and INCL keyword used Subject entity is in service This NPC type does not allow unframed Clear-DS1 Transmit underrun threshold exceeded
04	Bad EMXR Acknowledgement CCIERR bit is stuck in system status reg Invalid acknowledgement from MXR No NPC's out of service and OOS keyword used Subject entity is out of service This NPC type does not allow Payload
05	Invalid parameter combination Invalid use of CONV keyword No acknowledgement from MXR Subject entity is pested TSIERR bit is stuck in system status reg Timeout while waiting for msg from EMXR Subject entity is pested
06	Device failed to format Invalid range for specified FROM NPC type Mismatch between MXR and MIU HDW types PUERR bit is stuck in system status reg RAM data error
07	Bus Terminator pack is not present Device failed to initialize Invalid code checksum Invalid range for specified TO NPC type Mismatch between MXR and NPC types
08	Cannot remove own link Error in PRISM register

	<p>FDL HSCC register error Invalid FROM NPC type for AIS insertion Mismatch between service MXR and protection MXR types The 32 MHz clock is out of lock</p>
09	<p>CCI 240 sync is misaligned with frame sync Error in HSCC register Invalid TO NPC type for AIS insertion Last link in service MXR HSCC register error New MXR same as existing one Wrong MXR type grown for this MIU</p>
0A	<p>All CBTYPE NPCs out of service or failed CCI loss of 240 Frame Sync DGN on subject entity failed EPROM checksum error Minor Slip threshold disabled before Major Slip threshold</p>
0B	<p>Another signal already active prevents this signal from being sent BOOT on subject entity failed OR Timing Dist. & TLI not in-service CCI loss of 8 KHz Frame Sync Invalid CEPT NPC Timer 1 error</p>
0C	<p>CCI detected Address Parity error DGN on subject entity denied PM scheduling report is already inhibited for this entity Timer 2 error</p>
0D	<p>CCI detected low byte data parity error DUART error PM scheduling report is already allowed for this entity Unpesteing error registers for subj. entity failed</p>
0E	<p>CCI detected high byte data parity error MIU access error No equalization for CEPT FTMI Only one parameter is allowed The specified parameter is not applicable to operation mode of the RT</p>
0F	<p>CCI -5.2 power supply has failed CPU internal bus error Frame time is not set Side specified for non-duplicated NPC</p>
10	<p>CCI detected Bus Status Parity error CPU parallel bus parity error NPC out of service or failed Unit is not equipped</p>
11	<p>CCI Peripheral Unit Alarm CPU serial bus parity error NPC not equipped UC is out of service</p>
12	<p>Active CCN side not IS or failed or pested or hardware OOS FLI register bit stuck First and Last NPCs are outside unit boundary SYNC summary is set on CCI circuit pack UC is in service but failed</p>

13	<p>FLI lock and key alarm FTMI is not equipped First and Last NPCs are outside a module boundary UNIT not equipped, not in service, or failed</p>
14	<p>1 hr >= 24 hr for DM opt CCB not eqd, not IS, or failed or inactive side CCB not eqd or not IS FTMI is out of service MXR DS3 loss of signal OFFSET range is invalid</p>
15	<p>15 min >= 24 hr for SERS opt FTMI not equipped, not in service, or failed MXR unknown error NPC is unequipped</p>
16	<p>15 min >= 24 hr for ERS opt FC not eqd, not IS, or failed or inactive side FC not eqd or not IS FC not eqd, not IS, or failed or inactive side FC not eqd or not IS Only up to 4 historical data registers are allowed SYNC TB is not equipped</p>
17	<p>15 min >= 24 hr for US opt Command did not execute for any of the entities specified in the range SYNC is out of service TSI not eqd, not IS, or failed or inactive side TSI not eqd or not IS</p>
18	<p>15 min >= 24 hr for SLIP opt CCNI is out of service DSPI not equipped, not in service, or failed Exceeded allowed limit of reports with accum. interval of 15 min. or less</p>
19	<p>Exceeded maximum limit of PM reports Mate CCN side is out of service NPC was grown as NSA; test ports must be CAS</p>
1A	<p>Mate SYNC is out of service Report already exists Required FLI not equipped, not in service, or failed The facility parameter not programmable for specified x or z parameter</p>
1B	<p>CCN side s is in service Historical data can not be specified Only a single monitored date/or monitored time may be specified Required MXR not equipped, not in service, or failed Two digroups from same bank added to different FTMI's</p>
1C	<p>CCN side s is out of service Monitoring Location field is missing Reqd FMT not eqd,not IS,or failed,or inact side FMT not eqd, or not SI</p>
1D	<p>Level field is not allowed Required MIU not equipped, not in service, or failed</p>
1E	<p>Customer control or red circuit exists Monitored Date field is not allowed</p>
1F	<p>FTMI is in service but failed Scheduled reporting for this npc is inhibited</p>

20	BX Access Error ETSI pack is not present Line format types are incompatible Only DAILY for accumulation interval is allowed Option rr/m has not been set up on 2nd database Software Identification Block is not readable
21	BX Ram Parity Over Low Byte Can't communicate to ETSI pack (incorrect version number) Minor >= major for SLIP opt Only 15MIN for accumulation interval is allowed Software Identification Block failed comparison Trunk conditioning is invalid
22	BX Ram Parity Over High Byte ETSI pack's summary is set on CCI but has no errors FMC cannot be cross-connected in this format FTMI is PESTED Integral part of Release number mismatch Minor <= major for BER opt
23	Decimal part of Release number mismatch ETSI loss of 32.768 MHz clock Fan Bank Zero Error Flag Minor >= major for COFA opt
24	D5 Spare Bit Error ETSI loss of 240 frame sync Issue number mismatch Monitored Time field is not allowed Unit type error
25	Accumulation Interval field is missing ETSI Rcv MDX summary stuck bit Fan Bank One Error Flag Ftmi type error Invalid FPI value
26	Accumulation Interval field is not allowed D7 Spare Bit Error ETSI control RAM summary stuck bit Feature deactivation would leave system with core software NPC type error SPC type error
27	BX stuck summary bit Disable not allowed - supports another feature ETSI TX MDX summary stuck bit Historical data can not be specified Illegal connectivity specified Only historical data can be specified
28	Connectivity contains unequipped units ETSI loss of Vdd (3.3v) power Feature is active Scheduling report could not be found Unknown interrupt from BX
29	Error from side 0 bus extension Feature not enabled IW is UMUX (18) but NPC not type DE4yz Peripheral unit port alarm (RCV MDX)

	This signal is already being sent
2A	DMI combined with T1DM Database not loaded Error from side 1 bus extension Incorrect pack type in slot Receive MDX data source time slot parity error
2B	Bit c not settable Maj Min BER threshold is 7, but not in T1DM or Fe mode Reading Feature Package Id from disk failed Receive MDX sync error Unknown interrupt from MTC
2C	MTC stuck summary bit Receive MDX address parity error Write to CPR failed Writing Feature Package Id to disk failed
2D	RTF keyword is used without DGA Receive MDX write data parity error Unused bits on MTC pack
2E	Error due to unused bit RTF keyword and the operation mode does not match
2F	Channels assigned, cannot be grown as test port Error due unknown reasons Receive MDX can't be accessed (incorrect chip Id The RT id entered is not a retrofit one
30	NPC not provisioned for CAS No signals active Power Failure Termination is already assigned Transmit MDX data parity error Unit is not FTU type
31	Failed to switch SYNC side NPC not provisioned for NSA Sanity Time-out Transmit MDX data source time slot parity error
32	BX stuck CCNI summary bit Bit 3 provisioned for use as RAI3 Termination is under test Threshold value is out of range Transmit MDX sync error
33	Bit 4 provisioned for use as RAIS FMT TF control bus error NPC not DA or TA type. Termination is a test port Transmit MDX address parity error Wrong TLI type
34	MXR M23 summary stuck error NPC type option xyz is unassigned PC type option xyz is unassigned Termination is in process of being rolled Termination is under customer control (CUS) Transmit MDX write data parity error

35	FMT multiple TF network data error NPC has active circuit Termination is protected (RDL D) The mate FLI is OOS and Protection MIU is equipped Transmit MDX can't be accessed (incorrect chip ID)
36	DSPI not equipped FMT single TF network data error INCL keyword needed when restricted Insertion Word specified TD on one(both) sync(s) is not equipped or not in-service Termination is not connected as indicated The mate FLI is OOS and Protection MXR is IS
37	Control RAM parity error DSPI out-of-service FMT TF device or clock receiver error Major/Minor BER threshold value is invalid for SLC NPCs Selected FLI has LOC with at least one inservice MXR The mate FLI is OOS and at least one Service MXR is equipped
38	Control RAM sync alarm FC not equipped FMT multiple TF clock error The selected FLI is IS and Pested and at least 1 Service MXR is eqd Unselected FLI has LOS with at least one inservice MXR
39	An autonomous switch is in progress Control RAM port alarm FMT single TF sync error MXR LOS with unselected FLI Not enough TSIs for CCB test
3A	Bit 4 provisioned for use as RBER Control RAM BIST flag is set FMT multiple TF sync error No unmapped slots on a bus
3B	Bit 5 provisioned for use as SFI Data RAM BIST flag is set FLI access error
3C	Bits 3 through 8 are provisioned for Transmic 1G Control RAM address parity error FLI communication link error
3D	Alarm bits cannot be passed through Control RAM write data parity error DPC ROM error NPC in use for test access No mapped slots on a tsi
3E	Control RAM device can't be accessed (incorrect chip Id) DPC loss of timing DSPI failed Mapped slots exist on a tsi
3F	Conference exists in a DMB Control RAM circuit pack parity G4 to G4.1 retrofit failed OOS RAM test ran while IS
40	Bus Error Alarm

	CCN denied request Control RAM device is in reset state FC out of service Only one channel allowed to have this language The service FLI is out of service or pested (TOSRVC option)
41	CIA Device Error Control RAM port alarm summary is stuck FTU1 denied request Language "F" provisioned for this channel The protection FLI is out of service or pested (TOPRTN option)
42	CIB Device Error ETSI TRD3ST exercise bit is set FTU2 denied request RST failed to boot program Subject BMTRALM to be cleared is not failed The service FLI is already selected (TOSRVC option)
43	(NPC) Hardware mismatch CIC Device Error ETSI ready high error on CCI FTU3 denied request RST failed to boot DB The protection FLI is already selected (TOPRTN option)
44	ETSI ready time-out error on CCI(ETSI can't be accessed) FTU4 denied request NPC not IU/TI type Pack can't be accessed Service MXR is not equipped
45	A DMB on the UNIT is OOS Control RAM stuck bit error DSPU1 denied request IU/TI type NPC failed Loss of timing alarm Service MXR is out of service
46	Chip ID Comparison DSPU2 denied request Failed to boot CONF file NPC Failed or Out of Service Service MIU is out of service
47	Data Strobe Signal Failed to boot DB IU/TI type NPC Protection MXR is out of service
48	Address Parity Error Failed to boot journal Protection MIU is not equipped
49	FAC keyword is invalid for this feature FC Stuck Bit on FTMI Failed to boot unit Protection MIU is out of service
4A	DDC Stuck Bit on FTMI Red circuit, INCL not entered Tape error, boot from disk The protection MMFG is serving another facility

4B	Customer controlled circuit, INCL not entered Disk error, boot from tape FTMI lost clock The Service MMFG is already under protection The common bit(s) is(are) not set in both FAC & PRIM
4C	FC can't be accessed Failed to boot CI The Service MMFG is not under protection
4D	DSPI is in service MP database not consistent with Configuration file The switch is allowed (not inhibited) Timer Error
4E	Circuit ID Error IW option is not allowed for new type of Clear-DS1 NPC The switch is already inhibited
4F	BER must not be less than 4 for Clear DS1 NPC is not part of a one-way connection Transmit Formatter Error
50	CPR in buffer overflow condition Can't run test on active side Invalid MXR type specified Receiver Formatter Error Trunk conditioning doesn't match that of conference
51	C-bit modify function is disabled CUS flag doesn't match that of conference General boot failure (vanilla flavor) Sanity Timer Interrupt The pair MXR is not equipped
52	CPR is not equipped RDLD flag doesn't match that of conference RF bus error
53	CPR is out of service NPC bus error TO side of two-way to be converted is not an FTU NPC The associated MMFG is under protection (for Service MIUs)
54	Conversion leg is terminated Cross-connect to CPR is required NPC can not be accessed The MIU is already equipped
55	Invalid CFT code NPC is alarming on FC Some associated NPCs are equipped Width of existing two way does not match conference width
56	FROM is a two-way and no CONV specified Facility Processor Sanity Error The MXR is in service Unrunnable CFT code
57	FROM is not a backbone leg SIDE must be specified for subrate NPC

	SYNC Error
58	Channel controller loss of clock DSPU is not equipped SLC 96 MD 1 RT DGP requires mate NPC to be unequipped Specified width does not match existing conference width
59	Channel controller frame sync error DSPU unit controller is out of service NTR invalid since existing conference is not already NTR The limit on the maximum number of DGPs has been reached
5A	CC configuration register error DSPU unit controller is failed LPD invalid since existing conference is not already LPD NPC not in service or failed
5B	C-bit modify function is active CC instruction ram error TO is not a leg of this/any conference
5C	CC parity error Can't disconnect return leg unless entire conference disconnected NPC providing timing to inservice SSP
5D	CC transmit data error Sync source NPC is not inservice TO is the backbone leg of a conference
5E	CC receiver data error Sync source NPC is not equipped TO is a part of the same conference as a previous TO
5F	CC exercise error Conference is NTR
60	CC summary bit error Conference is LPD Selectable AIS not valid for DS type NPC(s) User macro/map space is full
61	All NPC(s) are either not valid or not grown Hard RAM error System macro/map space is full TO is already the return leg
62	File is being accessed Hard ROM check error IU type NPC(s) cannot be provisioned for Minor Alarm Invalid channel number
63	File already exists Hard Error stuck bit NPC is a DGP
64	File doesn't exist/can't be accessed Frame is not in MCOND NPC is already grown and added as SLC digroup Transceiver A stuck bit
65	Another NPC is grown and added as this digroup Command invalid while backup in progress

	Link being used is not Link 1 Transceiver A transmit slip
66	DGP designated to bank without data link Map/macro file write deferred until backup is completed Transceiver A Error User login-id is not DAX
67	DGA is not added Improper roll flag settings NPC(s) actual type incompatible with TYPE keyword and/or alarm type Transceiver B stuck bit User logged off during session
68	Incorrect language/addressing mode NDL option is used without DGA Transceiver B transmit slip
69	Incorrect number of parameters Mapped parity channel(s) on new Transceiver B Error Use of this NPC is RESERVED for SLC 96 MD 1
6A	Circuit ID Error Insufficient parameters NPC type is not DS type New in CGA No macro is currently executing
6B	Facility errors Invalid line number No mapped channel on old Operation mode and digroup name don't match
6C	File is empty Framing format, digroup name & operational mode don't match NPC address parity error Not same unit FADs Old and new chan on same NPC and within the range
6D	Counting sequence and operational mode don't match DSPI access error (e.g. pack not there) Invalid FPA state One NPC is a clear DS1 type and the other is not
6E	DGA with NDL option is not provisioned with D4 or ESF framing format DSPI bus data parity error Old or new is a clear DS1 type in a DS0 command
6F	Adding two digroups from one bank on same DDC DSPI bus address parity error Roll status flags not clear The session is terminated due to maintenance operation
70	DMB access error (e.g. pack not there) Digroups from same bank have different modes Far roll status flags not clear NPC invalid type Some circuits not activated,cleared or pictured Try to add a BBL to VC,but the VC already has backbone
71	DMB serial access error (pack not there)

```

| Digroups from same bank have different counting sequence
| NPC is a Facility Access Digroup
| The reference map does not exist
| Try to delete a BBL leg from VC;however, VC has no BBL leg
| Unmapped channel(s) on old
|-----
72 | DMB parallel access error
| Digroups from same bank are added to two different FTUs
| Invalid test mode for an unmapped test session
| One of the far NPC(s) is SLC
| The NPC of VC BBL leg doesn't match that in the input command
| The map is not valid
|-----
73 | Both sides of CCN are OOS
| Channel has a FAR, which is within the range
| DMB bits stuck in exercise register
| Invalid PWR/MISC alarm level
| Invalid test mode for a one-way test session
| The first channel of VC BBL leg doesn't match that in the input command
|-----
74 | At least one UC is OOS or At least one UC is failed
| DMB data processing error
| Invalid test mode for broadcast test session without full tributary
| Old and new are the same NPC in a DS1 command
| PWR/MISC alarm is specified to a digroup other than DGA
| Try to delete a BRD leg from VC; however, VC has no BRD leg
|-----
75 | At least one UC is not FTU type
| Multiple data parity error, CCB problem
| Old and new are not mates
| Test session already exists
| The input BRD leg is not in VC
|-----
76 | AIS not entered and QRSS not provisioned or inservice
| Alarm option and bank mode don't match
| DMB clock error
| Old has no mate
| The first channel of VC BRD leg doesn't match that in the input command
|-----
77 | Multiple clock errors, CCB/SYNC problem
| Obsolete circuit type
| Tried to disconnect a nonexisting VC
| Unassigned operational mode
|-----
78 | DMB FIFO error
| One or more NPCs could not be released
| Protection switch process failed
| Ranges of old and new do not match
| Try to operate a ONE-WAY conference with a TWO-WAY input command
|-----
79 | DCTN conference channel cannot be rolled
| DGA/DGP of RT/DL Mode I must be assigned to one DDC
| NPC is not a Facility Access Digroup
| Possible power failure on side
| Try to operate a TWO-WAY conference with an ONE-WAY input command
|-----
7A | DMB control memory error 0 (used for trans)
| Mode I RT/DL IDs don't match for DGA/DGP on same DDC
| NPC is not an E-end
| Testport/testgroup channel cannot be rolled
|-----
7B | Channel out of bound in a bcon/v.c

```

	DMB control memory error 1 (used for trans) Invalid change from previous mode Other NPC on this DDC not the same digroup for Mode I DGA/DGP
7C	Control Memory 0 control ram parity error Different DSxyz types are used for DGA/DGP on same DDC for Mode I Logical conflicts found in the map NPC is not a F-end Parity channel out of bound on new
7D	Can't start new session - previous session still verifying Control Memory 1 control ram parity error Not first channel in a bcon/virtual conf The NDL options are different for DGA's on the same DDC for Mode I
7E	Bank id number not found Control Memory 0 control interface error Insufficient data for setting up a conference
7F	Control Memory 1 control interface error NPC is not added No OOS keyword is given for out-of-service NPC
80	Control Memory 0 loss of sync error Database conference width does not match the range in input command Inconsistent channel range width NPC number and bank id don't match Some TSIs to degrow are in service
81	Conference Port is currently registered to a different channel Control Memory 1 loss of sync error Frame ID is protected Invalid input BBL as fmd in ONE-WAY command NPC number and digroup name don't match
82	Control Memory 0 DMB input data parity error DL ffff is used w/ operational mode other than Mode I Grow TP 12 while in T1DM or DMI mode Invalid input BRD as tmd in ONE-WAY command
83	Conference Port is already registered to the same group of channels Control Memory 1 DMB input data parity error Invalid input BBL in CRS/CRS1 TERM command Language is not allowed NPC type is inconsistent with FTMI type Option not programmable for this NPC type
84	Channel(s) is already registered DMB conference error 0 (used for trans) Incompatible types of NPCs in a DDC Mate NPC is not equipped Problem occurred while accessing TAPE Trying to add or delete a leg when a conference is test
85	DMB conference error 1 (used for trans) Input BRD (BBL) has same NPC and channel as BBL (BRD) NPC has been designated as test port group New bank id is an assigned one Problem occurred while accessing DISK Using the 24th channel of a T1DM NPC
86	Attempt to remove DGA w/o INCL keyword or prior prot. sw. request

	Conference 0 control interface error Source does not contain requested information Using the 24th channel of a DMI NPC
87	Conference 1 control interface error Copy source NPC is not equipped DGP is protecting a primary digroup
88	Conference 0 control ram parity error Conference port is not registered NPC is not a NPCTP Report interval is not an integral number of accumulation interval
89	Can't delete because not all associated NPCs of the RT are entered Conference 1 control ram parity error Conference port is currently connected Interval is not valid/not available NPC is not designated for this test port group
8A	Conference 0 DMB input data parity error Test port group is not grown x & z parameters on DSxyz are inconsistent
8B	Channels and conference port do not match Conference 1 DMB input data parity error Digroup name and bank id don't match Test port is not idle or frame is not inservice
8C	Conference 0 DMB device (chip) error DB MP or units ram error Digroup is protected The two FADS entered are not associated with one another.
8D	Clear gateway test access disallowed. Conference 1 DMB device (chip) error DB disk error OP-CL-RD-WR-SK RT/DL has unrestored DGA
8E	Attempt to add to a null transmitting port Bad Ram Data in DMB device (bits alarms) DB can't send or receive mail DGA protected; use INCL to remove, or unswitch protection No mapped circuit under test; emode/fmode can't be changed.
8F	Bad Ram Data in DMB device (bits alarms) Can't lock or unlock ram database NPC not deleted Number of transmitting ports does not match existing conference One-way circuit under test; emode can't be changed.
90	CCNI access error (cannot access pack) DB can't get the slave mail box Invalid change parameter combinations NDL option is specified for DGA The total number of receiving ports specified exceeds the max. emode/fmode can't be changed under current test mode.
91	Can't mount or unmount tape Duplicate ports specified High data byte bus parity error SR NPC was specified - not allowed Sync is not configured yet

92	Boot TLI failed Can't mount or unmount disk Low data byte bus parity error Transmitting port cannot be dropped
93	Address bus parity error All digroups not out of service TAPE is not present TB type in hardware mismatches DB The conference does not exist
94	Autonomous switch enable error Conference port is not in conference circuit Mate RT/DL mode is different TAPE unit is not restored Invalid option, mailbox or flag Range overlapping between FROM and TO or between two TOs
96	CCNI stuck register bit, summary set, no other alarms Conference already exists Subject PWR to be cleared is not failed Unit is OOS and journal file exists Unit(s) OOS, and/or additional backup required
97	Conference port cannot be dropped out of conference by switch command Entity can't be addressed in this configuration MXR communication link error User quit the menu
98	CPR serial access error Checksums verification failed Error in input Test Port release failed Unable to verify Configuration file since MP DB not loaded
99	CPR clock error No Facility Line Interface (FLI) is In Service The tape contains previous release journal files, not retrofitable Unit type (xyz) not supported
9A	CPR processor interface failure Formatter (FMT) on active CCN side is Out-Of-Service hub id not set when MJU pack grown
9B	CPR input data interface error INCL must be specified for SRDC ckts The MXR is not grown
9C	CPR D-Bit interface parity error SRDC timeslots are allocated on this NPC The MMFG is already In-Service
9D	Attempt to remove a Service MIU which is under protection CPR control memory failure current hub id specified in command
9E	CPR control memory or state machine failure CPR FIFO FRDY/FFULL stuck bit current error corrector pack type specified in command
A0	CCB packid error, wrong pack, can't read pack

	Illegal LEG LEG combination No SAFE alarm for DGP Not a CRO TLI The selected MXR associated with the NPC is Out-Of-Service
a0	Illegal LEG LEG combination
A1	CCB sync pulse error CRO type TLI (SSP portion not required) Illegal BBL BBL combination Loop back inhibited for digroup The parameter specified does not match with the NPC type The selected MXR associated with the NPC is In-Service but failed
a1	Illegal BBL BBL combination
A2	CCB clock error Illegal BRD BRD combination SSP number is illegal The requested digroup is carrying service The selected MIU associated with the NPC is Out-Of-Service
a2	Illegal BRD BRD combination
A3	CCB input port alarm error Illegal SYM BRD combination LLB not initiated SSP number required The selected MIU associated with the NPC is In-Service but failed Transmic 1G NPC designated as SYNC source invalid
a3	Illegal SYM BRD combination
A4	Both syncs are in-service CCB zero bit is stuck at 1 Illegal BRD SYM combination The MXR diagnostics failed
a4	Illegal BRD SYM combination
A5	(Timing Distributor) TLI is not equipped AIS keyword incompatible with NPC type Autonomous loopback is active on DGA Corresponding CCNI bit is stuck FPI on tape does not match one on disk Illegal BBL SYM combination
a5	Illegal BBL SYM combination
A6	Deny SLC for Alternate maps Illegal SYM BBL combination Invalid switch request for DCLU MXR channel controller transmit data error The MIU diagnostics failed
a6	Illegal SYM BBL combination
A7	Deny Clear-DS1 for Alternate Maps LEG mode was assigned to a DSPU-type NPC on the input MXR channel controller receiver data error Sync 0 is not in-service The MIU boot failed

A8	A DMB mode was assigned to a FTU-type NPC on the input MXR channel controller exercise error Sync 1 is not in-service The MMFG is Out Of Service
A9	Both syncs are out-of-service INCL not specified and at least one NPC In Service MXR channel controller stuck bit error No unmapped time slot Trying to add a BBL to a DMB conference that already has one
AA	MXR transceiver framer error Range entered without FRC keyword Syncs are equipped Trying to add a broadcast leg to a conference set up as SYM
AB	Bad sync mode FRC specified for protection, and service MMFG is In Service MXR transceiver receive sync error Trying to add a SYM leg to conference set up as broadcast
AC	MXR transceiver transmitter error No protection is available for the Service MMFG Timing Extractor type TLI (need SSP info) Trying to add a BBL leg to a conference set up as SYM
AD	MXR M23 device error Not Timing Extractor type TLI (not SSP) The Protection MMFG is selected, and auto. switchback is unavailable
AE	A substrate circuit pack is specified in the command line MXR M12 device error MXR is failed Wrong TLI type (need CRO grow command)
AF	3 Timing Distributor type TLIs are equipped Delete or change a leg from a conference that has no leg MIU is failed MXR M12 summary stuck error Number of SLC RT's on each unit is limited
af	Delete or change a leg from a conference that has no
B0	Bad use of INCL, cannot override the current state of the conference Combination of bit g (b7) and h (b8) is invalid FLI is out of service Pack id error, can't read pack
B1	Bad use of INCL, cannot use keyword on conf.-to-conf. connection FMT is out of service Illegal priority value TSI stuck bit, summary bit set, no devices alarming
B2	Illegal SSP type (not same as other SSPs) MXR is out of service SXR is out of service TSI device error Transmission parameters in command will not change existing settings
B3	MIU is already in service TSI device id error, cannot read device

	Trying to change level out on BRD leg X option is illegal
B4	Illegal exercise bits set NPC is not clear DS1 type Trying to change level in on BBL leg Y option is illegal
B5	Bus address error CPR circuit pack specified in the command NPC is a test port Trying to change in NTR direction Z option is illegal
B6	C-bit operations are enabled Device clock error Sync architecture is same TO side is not a DMB type NPC The MXR boot failed
B7	Cannot perform DMB CHG on input direction F Device control ram parity error No DSP unit equipped Some TLIs are still equipped The associated MXR is In-Service but pested
B8	CRO is still equipped Cannot perform DMB CHG on input direction T No CBTYPE NPC equipped Output data parity error (from an FTM)
B9	Cannot perform DMB CHG on input direction B Corresponding CCNI bit is stuck No CBTYPE NPC capacity remaining Timing Extractor type TLIs are present
BA	FLI loss of clock Inactive side NPC out of service and inactive side in service TLI 3 or 4 still equipped
BB	FLI loss of signal Timeslot channel numbering not allowed with CAS
BC	DGA and DGB must be specified together in the command FLI circuit id error SSP with 0 priority present
BD	DGC and DGD must be specified together in the command FLI frame sync or internal error Looped Circuit Access not allowed SSP with non 0 priority present
BE	FLI address bus parity error Hardware mismatch or not present NPC type option Y is invalid for SLC-96 NPC
BF	MIU is not equipped MJU serial access error Sync mode is same
C0	Cannot perform DMB CHG on input direction L MJU clock error

	NPC addressing scheme selected is not allowed in the configuration file Sync stratum is same
C1	Cannot perform DMB CHG on input direction G MJU processor interface failure Stratum not allowed
C2	Cannot perform DMB CHG on input direction A MJU input data interface failure SSP type(options) same
C3	Can't perform DMB CHG because NTR flag set on FROM side MJU error correction circuitry failure Wrong SSP type(Timing Extractor type) XMIT continuity test won't be run
C4	Can't perform DMB CHG because NTR flag set on TO side MJU control memory failure Sync architecture different XMIT continuity test won't be run
C5	MJU output block failure Option NOT leg can not appear with F, T, or B RCV continuity test won't be run Some priority values required
C6	MJU sampling circuitry failure No available timeslots on any of the inservice NPCS associated with FC/FMT Option NOT leg is not a FTU leg Some priority values not required
C7	MJU control memory or state machine failure Option NOT leg is not in conference Priority values are same RCV continuity test won't be run
C8	Exceeded depth limit of 6 on broadcast conference concatenation RCV continuity test won't be run SRM serial access error Sync pack denied command
C9	CATP due to skipping continuity test for FMT In-service NPC change not allowed SRM clock error Syncs failed to cross couple The INCL keyword is needed for DGA
CA	Mate sync pack denied command New NPC same as existing one No protection switch is currently active SRM processor interface failure
CB	NPC parameter only valid with TU type TLI Protection entity out of service or failed SKIP ERROR SUMMARY SINCE ADJACENT PACK NOT INSERVICE OR PESTED SRM input data interface failure Sync not completely reset
CC	NPC is still provisioned to provide sync timing

	Protection entity is unequipped RCV continuity test won't be run SRM error correction block failure
CD	Data link failed NPC not designated as sync timing source SRM control memory failure Subject NPC does not support CEPT BER feature
CE	CCI is out of service Far end failed to respond NPC already allocated as sync timing source SRM multiplexor block failure
CF	MIU is out of service NPC already grown as non-synchronization source SRM output block failure SYNC is inservice but failed
D0	CPU RAM Parity error Command is Frame administrator (DAX) only. FROM NPC is not provisioned as DGA
D1	CCI is not present Cannot create any more users Protection switch existing is autonomous Source of error is unknown TO NPC is not provisioned as DGA
D2	ETSI is not present Protection switching is already inhibited Source of error was not found User has been created
D3	CCNI is inservice but failed Corresponding NPC for FROM virtual channel is not provisioned Protection switching is already allowed Stuck bit in register User does not exist
D4	A user is already logged in on the link/vc Active CCN side is out of service Bad UBX pack CCI is inservice but failed Corresponding NPC for TO virtual channel is not provisioned
D5	Boot in progress, can't service request CCB is not equipped Illegal/unknown condition code No user is logged in on the link/vc
D6	CCB is out of service Incorrect or missing password Invalid FROM channel number MIU communication link error
D7	CCB is inservice but failed Cannot execute privileged command FMT communication link error Invalid TO channel number
D8	Cannot remove Frame administrator

	ETSI is not equipped MXR ROM error
D9	ETSI is out of service Invalid FROM channel number range MXR LCA error
DA	ETSI is inservice but failed Invalid TO channel number range MXR queue overflow User is not logged in
DB	FC is inservice but failed MXR channel controller loss of clock
DC	A loopback is active on the FROM termination MXR channel controller frame sync error
DD	A loopback is active on the TO termination FMT is in service but failed MXR channel controller configuration register error Tape is not READ-only
DE	MXR channel controller instruction ram error
DF	Command and protocol are inconsistent FLI is inservice but failed MXR channel controller parity error Unmatched channel range
E0	Bad FAC value entered ETSI not equipped, not in service, or failed Hardware database mismatch Unmatched channel range involving SLC Mode III termination
E1	A locally switched channel is specified as BBL, LEG, or BRD Hardware Failure MXR access error (can't access pack) No Memory Backup Has Been Scheduled Virtual circuit is not specified for X.25 link
E2	Attempt to one way cross-connect a locally switched channel Hardware Boot Failed Invalid link number specified MXR hard error stuck bit
E3	Attempt to broadcast a locally switched channel Can't access link Invalid keyword(s) combination specified MXR facility error stuck bit One way unassigned channel/NPC in QRY,TO
E4	Broadcast unassigned channel/NPC in QRY,TO Invalid NPC addressing scheme specified MXR pack is in reset state RT-DCLU cross-connect with different ids Transmit Time-out
E5	Adding DL DGP forbidden for SLC 96 MD 1 MXR PIF Bus Parity Error No user/link is using NPCAD E RT-DCLU cross-connect with different channel number

	Receiver Time-out
E6	Cross-connect a non Mode I channel to DCLU MXR loss of clock from unselected FLI No DL digroups can be added until the associated RT bank is created softerr failure which forces link removal
E7	Cross-connect a non SLC channel to DCLU MXR 45MHz is not phase locked to system clock Unit could not be reset
E8	MXR firmware error SC invalid for cross-connection specified Unit failed sanity check
E9	MUX or TRB invalid for cross-connection specified MXR HSCC device error failure to insert TCC
EA	AIS invalid for cross-connection specified MXR PIF I/O device error XON/XOFF flow control is supported only on Snider link failure to remove TCC
EB	ENQ/ACK flow control is supported only on Snider link MXR M13 summary stuck bit error NAM invalid for cross-connection specified failed to switch CCN sides
EC	Invalid channel 000 cross-connection specified MXR transceiver summary stuck bit error NPC's facility queue overflow condition
ED	Duplex entity failed diagnostics Invalid channel 031 cross-connection specified MXR program error
EE	Lost Clear-To-Send signal on X.25 links Frame Audit reboot DDC failure MXR RAM error Software does not contain Enhanced CEPT feature
F0	EMXR Timer error FMT access error
F1	EMXR DUART error FMT timing error File has already been cleared Parameter only valid with PB or PC type NPCs
F2	FMT link id error Invalid NPC number specified MIU got reset
F3	FMT bus timeout Maximum number of CPRs have already been grown for this unit Timeout for Yellow Inhibit/Enable Request
F4	FMT serial address parity error Queue overflow error
F5	FMT 0-4TF timing error

	INCL keyword needed to perform this command
F6	FMT 0-4TF timing error T1DM or DMI mode and channel 24 is connected
F7	Corresponding NPC for virtual channel is not provisioned FMT error summary 1 stuck bit
F8	FMT timing error, RF data parity
F9	FMT error summary 2 stuck bit Mate NPC (DGA/DGP) is in service
FA	FMT lock override, active select or kill parity The mode of the RT is not applicable
FB	FMT FIFO or control PROM error
FC	FMT RF control bus error ZBTSI option is only valid with the ESF mode
FD	FMT RF port and monitor alarms Line Loop Back is active NPC range crosses unit boundary
FE	Change to non-ESF digroup with 16-state cross-connect FMT RF port alarm; no monitor alarms
FF	Change to T1DM digroup with cross-connect that is not TRSP

List of Figures

Figure 1: Simplified Digital Access and Cross-Connect System II (DACS II) Block Diagram

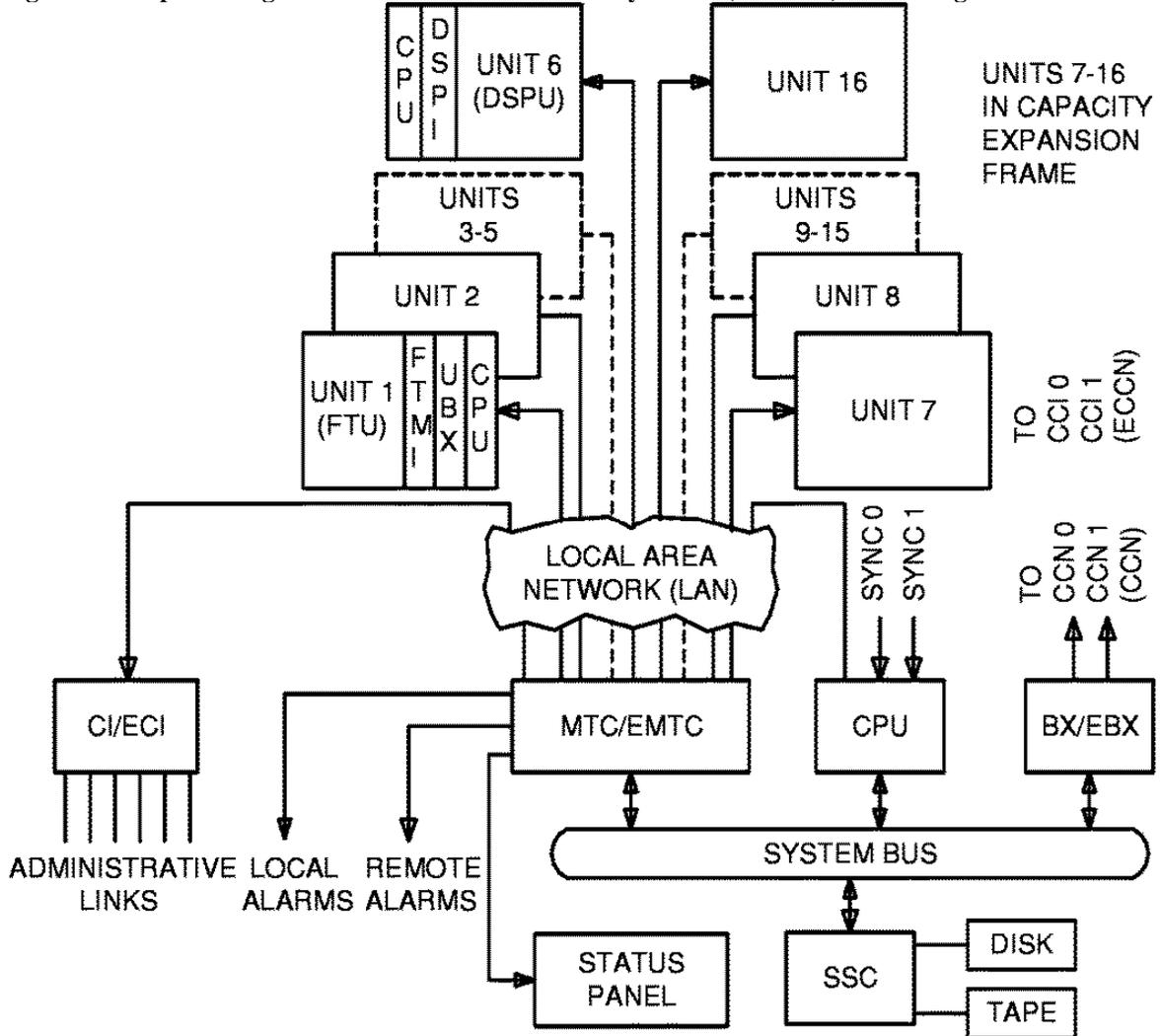


Figure 2: ECCN Network

BT 1
ETSI 01
ETSI 02
ETSI 05
ETSI 07
ETSI 08
ETSI 11
ETSI 13
ETSI 14
CCI
ETSI 16
ETSI 15
ETSI 12
ETSI 10
ETSI 09
ETSI 06
ETSI 04
ETSI 03
BT 2

Figure 3: Backup Memory Transfers
MAIN CONTROLLER
MEMORIES

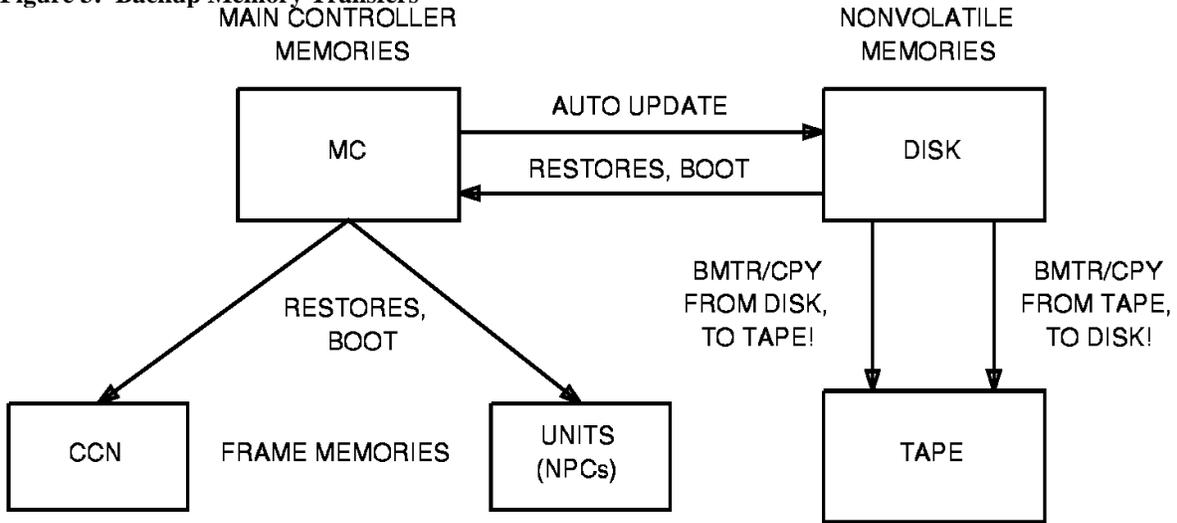


Figure 4: Pure Broadcast (Virtual NPC with Non-CEF)

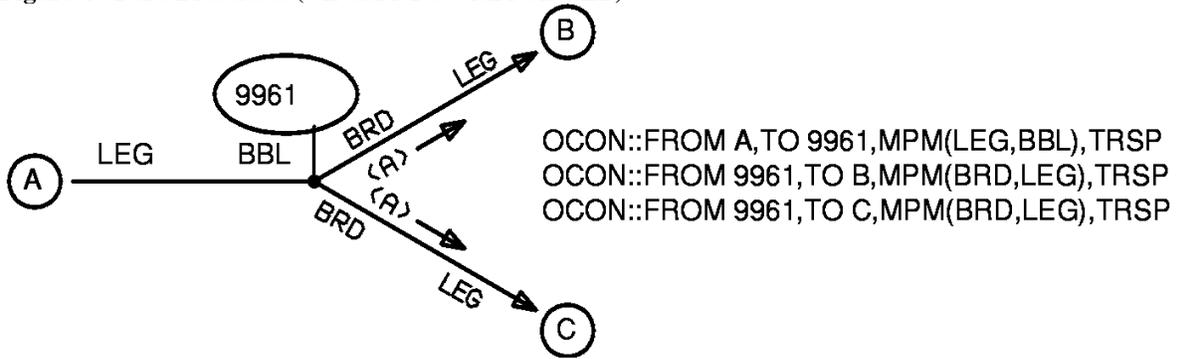
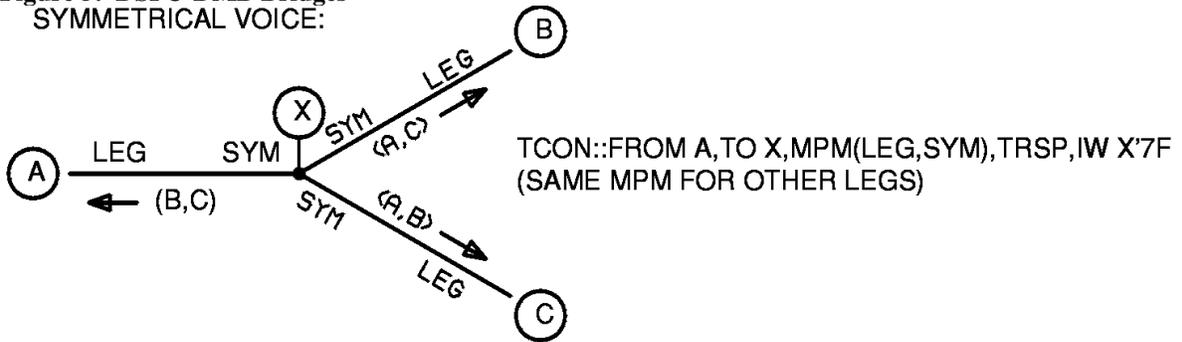


Figure 5: DSPU-DMB Bridges
 SYMMETRICAL VOICE:



RECEIVE POLLING:

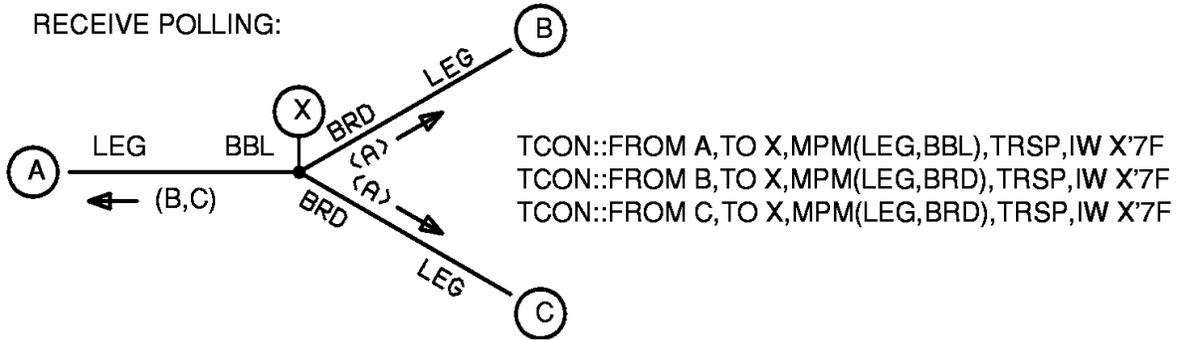


Figure 6: Establish Channels and Connect Subrate Customers (2-Point)

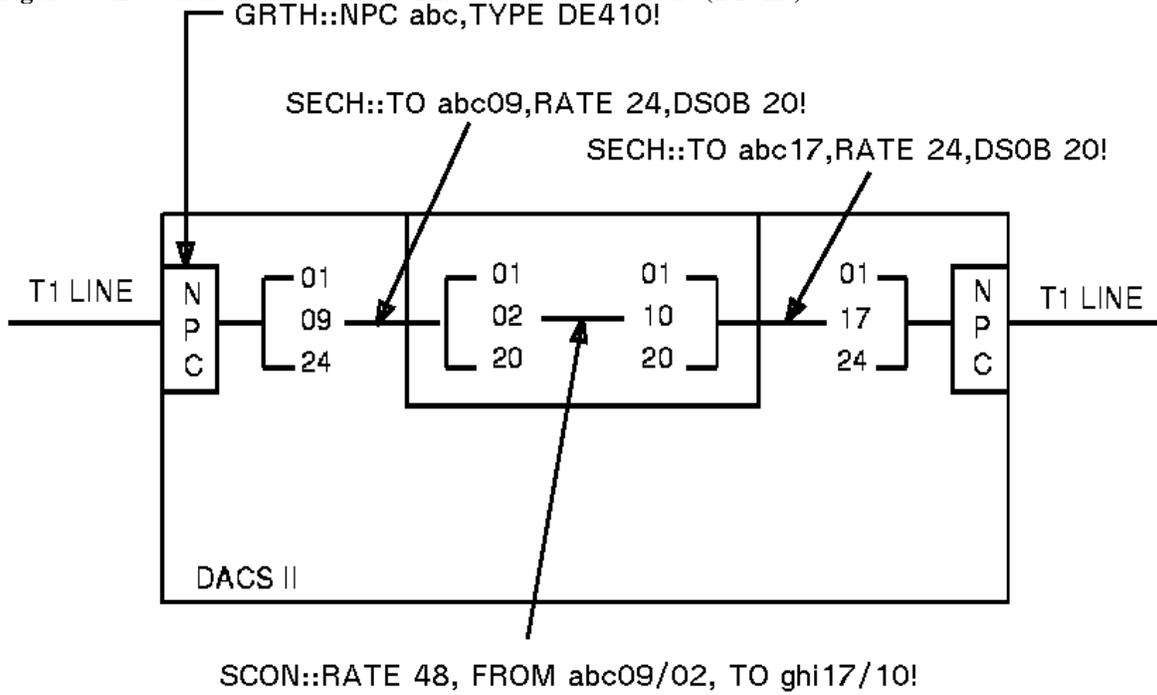
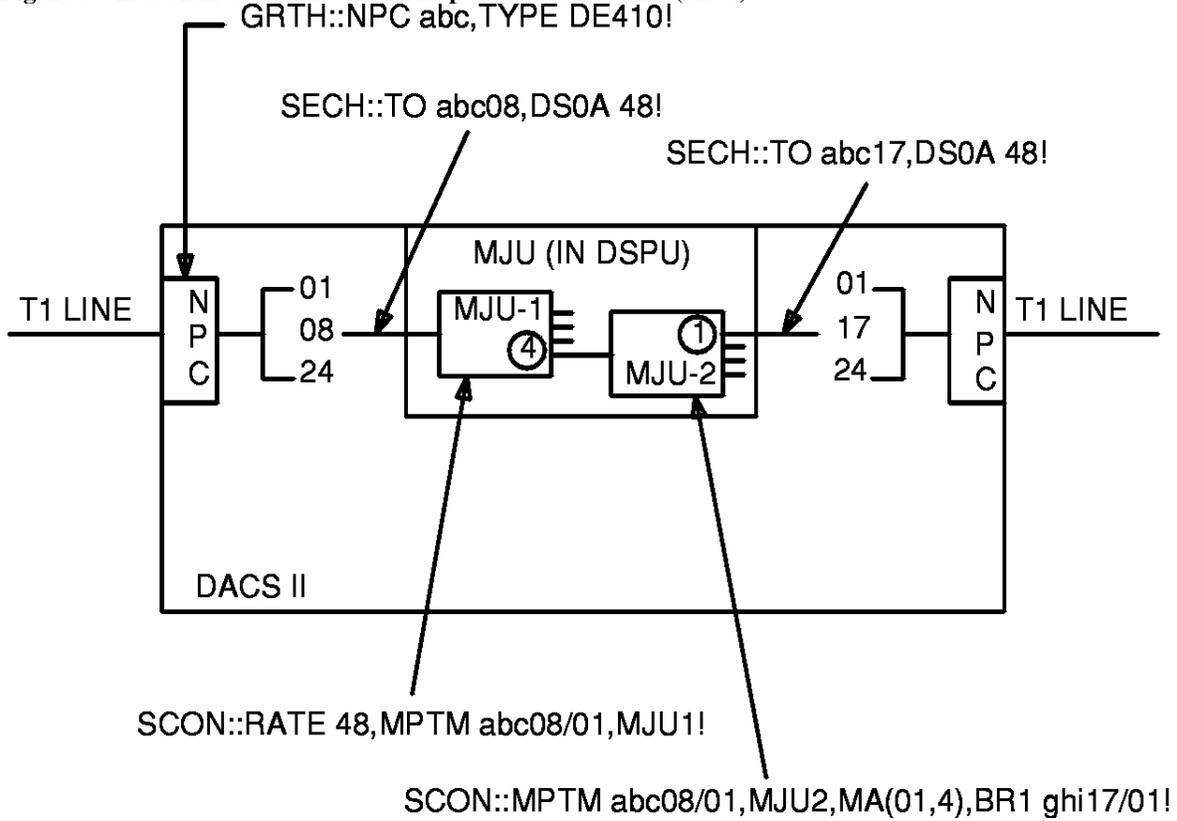


Figure 7: Establish Channels and Multipoint Junction Unit (MJU)



Glossary: Acronyms

CEF — Capacity Expansion Frame
DACS II — Digital Access and Cross-Connect System II
DSPU — Digital Signal Processing Unit
ECCN — Expanded Cross-Connect Network
FRADTS — Frame Audits
FTU — Facility Terminating Unit
MC — Main Controller
MJU — Multipoint Junction Unit
NPC — Network Processing Circuit
RTAC — Regional Technical Assistance Center
TB — Time Base
TD — Timing Distributor
TE — Timing Extractor
TLI — Timing Link Interface
TOD — Time-of-Day