

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Ribbon / Performance Technologies / Network Equipment Technologies PRCII/TMCP PRMAP* at our website: *Click HERE*

Primary Rate Card (PRC) (1)

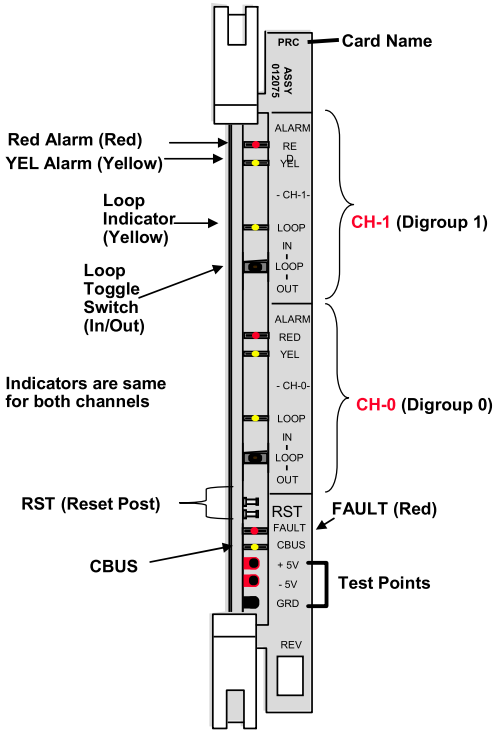
VF module which is a two-digroup, clear channel interface

Consists of a PRC front card and a DS1 interface card

Supports digital voice interfaces used primarily in North America

Provides D3/D4 superframes or ESF, zero suppression, aggregate circuits, and clear channel operation

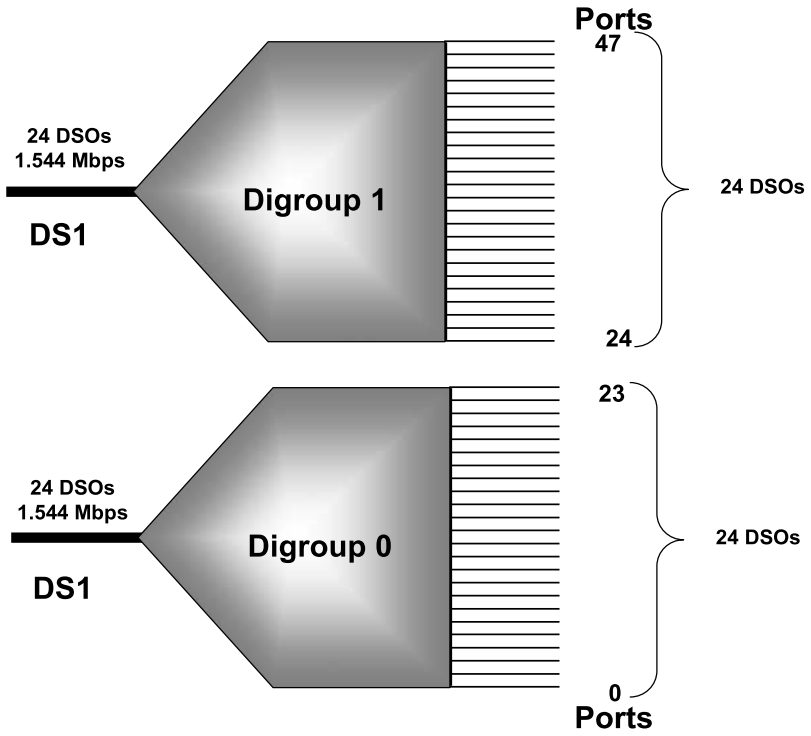
Allows interfacing with channel bank equipment



The **Primary Rate Card (PRC)** voice module is a two-digroup, clear-channel interface. The PRC module consists of a PRC front card and a DS-1 interface card that supports the T1 digital voice interface used primarily in North America.

The PRC module provides a T1 link with either D3/D4 super framing or extended super framing (ESF), zero suppression for transparent operation, aggregate circuits, and clear channel operation.

Primary Rate Card (PRC) (2)



PRC (PRIMARY RATE CARD):

- PRC with DS-1 rear interface contains two connectors, each provide a DS-1 bipolar signal interface.
- Each connector supports one digroup (1.544 Mbps) or 24 DS-0s.
- Each card supports a total of 48 DS-0 ports.
- Each T1 functions independently
- Ports are numbered 0 - 47, with 0 - 23 located in digroup 0 (bottom connection).
- PRC Cards are 1:1 redundant.
- 24 DS0's = 1 DS1 = 1.544Mbs = 1 T1

Install Card PRC (1)

```
                    < ins card, c21

*** SLOT N1C21 CONTAINS CARD TYPE PRC.

DO YOU WANT TO INSTALL CARD N1C21?  [YES]
YES OR NO =

*** INSTALLABLE CARD TYPES ***
[ 0]  TRK            [21]  HSD-2          [42]  E3-TRK
[ 1]  LDCELP12       [22]  TMCP           [43]  VCFAX-24
[ 2]  LDCELP24       [23]  T3-TRK         [44]  VCFAX-12
[ 3]  CX             [24]  QXP            [45]  PX-3
[ 4]  URD            [25]  TK64           [46]  TRK-3
[ 5]  QSD            [26]  I422-TRK       [47]  ECHOX
[ 6]  INTU-560       [27]  QASD           [48]  APX
[ 7]  TRK-2          [28]  HDVC24         [49]  SX-2
[ 8]  HSD            [29]  HDVC12         [50]  PLM
[ 9]  DS-1           [30]  QAVP           [51]  PPM
[10]  USD            [31]  BX             [52]  LDCELP6
[11]  MEM            [32]  SX             [53]  HLC
[12]  QSD-2          [33]  HPC            [54]  PVEC
[13]  TK56           [34]  DS0B           [55]  PVE24
[14]* PRC            [35]  PX             [56]  HINTU
[15]  DS0A           [36]  PX-2           [57]  SCLX
[16]  VC31           [37]  PVAC           [58]  TWC
[17]  VC62           [38]  PVA            [59]  IP-TRK
[18]  DMD            [39]  LS-TRK
[19]  INTU-558       [40]  SATRK
[20]  X50            [41]  PX PLUS

NOTE: '*' MARKS DEFAULT SELECTION.
ENTER CARD TYPE FOR CARD N1C21?  [PRC]
CARD TYPE =
```

```
*** PRC CARD N1C21 CONFIGURATION PARAMETERS ***
[ 2]  REDUNDANT CARD = NONE
[ 4]  DIGROUP 0 FRAMING = ESF
[ 6]  DIGROUP 0 ZERO SUPPRESSION = B8ZS
[ 8]  REFERENCE CLOCK = NONE
[10]  DIGROUP 0 NUMBER OF PORTS PER BUSYOUT = 24
[12]  DIGROUP 0 IN SERVICE TIMEOUT = 0 SEC
[14]  DIGROUP 0 HUNT GROUP OPTION = ENABLED
[20]  DIGROUP 0 LOOP TIMING OPTION = DISABLED
[22]  DIGROUP 0 NUMBER OF PORTS PER UNBUSY = 24
[24]  DIGROUP 0 F.A. SIGNALING (CH.23) = DISABLED
[28]  DIGROUP 0 PRI INTERFACE OPTION = DISABLED
[30]  DIGROUP 0 SLOW RESPONSE BUSYOUT OPTION = DISABLED
[32]  DIGROUP 0 COMPANDING METHOD = MU_LAW
[34]  DIGROUP 0 ECHO CANCELLER REQUIREMENTS
      ERL=6 DB   TAIL=32 MS  RES.EC.SUP.=YES  COMF.NOISE=YES
[38]  DIGROUP 0 WIRE LINE MODE = DISABLED
[44]  DG0 ALARMGUARDTIME = 16000

ENTER PARAMETER INDEX (OR HIT RETURN TO CONTINUE)
PARAMETER INDEX =

ARE ALL PARAMETERS CORRECT?  [YES]
YES OR NO =
```

Configuration of DIGROUP 1 will follow after configuring DIGROUP 0

[0/1] Not Used

[2] Redundant Card
Value is a ***valid Card ID or 0 (None).***
This parameter specifies the slot number of the backup module. The backup module is used when one of the primary card's digroups fails. The redundant card is installed in the configuration database automatically, but the redundant digroups must be activated using the **Activate Card** command. The Redundant Card feature is mutually exclusive with Leased Line Emulation Mode.

[3] Not Used

[4/5] Digroup 0/1 Framing
Values are ***ESF or D3/D4 (default).***
Each digroup is specified as either extended super frame (*ESF*) or *D3/D4*. *ESF* allows for bit-error detection. The card stores bit-error information for a digroup that is configured for ESF framing to include failed seconds statistics, eroded seconds statistics, and error event totals. Framing must be set to *ESF* for PRC tandeming.

[6/7] Digroup 0/1 Zero Suppression Options
The following menu is presented. The default is BIT7.

[0]* BIT7
[1] B8ZS
[2] TRANSPARENT

B8ZS uses bipolar violations to suppress zeros without corrupting data.
[0] B8ZS Select *B8ZS* for clear-channel operation such as PRC tandeming.
B8ZS uses bipolar violations to suppress zeros without corrupting data.
[1] Bit 7 Select Bit 7 for nonclear-channel operation (forced bit signaling).
Bit 7 takes a byte that contains all zeros in the first seven bits and forces the eighth (highest) bit to a one. Do Not select Bit 7 when any port in the digroup is in a permanent circuit with a data module or when building an aggregate group.
[2] Transparent Select *Transparent* to turn off zero suppression.

[8] Reference Clock
Options are ***0, 1,*** **and** ***None*** **(default).**
These values control the digroup connection to the external timing source, which determines timing for the entire node. PRC cards can supply Reference 0 on digroup 0, Reference 1 on digroup 1, or no reference. They cannot supply two references.

[9] Not Used.

[10/11] Digroup 0/1 Number of Ports per Busy Out
Values are ***1 to 24 (default).***
This digroup parameter specifies the number of ports that will be busied out because of certain network conditions. The polling can range from 60 to 300 seconds.

[12/13] Digroup 0/1 In Service Timeout
Value is ***0 (default) to 5 seconds.***
This parameter indicates the number of seconds DS1 software waits in the enabled-inactive state following a No Alarm condition before bringing the specified digroup to enabled-active. This parameter enables the operator to ensure compatibility with PBXs manufactured by different vendors.

[14/15] Digroup 0/1 Hunt Group Option
Values are **Enabled or Disabled.**
When ports in a hunt group span two or more digroups, and hunting is disabled for ports in one of those digroups, hunting is still enabled for the remaining ports.

[16/17] Digroup 0/1 TLink Mode

[16-19] Not Used
This parameter specifies the type of interface being used on the TMCP card. For proper operation, the jumpers on the Dual AMI interface card must be set to the proper value (120-ohm or 75-ohm). You must also revise the ground reference jumpers for optimal signal quality.

[20/21] Digroup 0/1 Loop Timing Option
Values are ***Enabled*** **and** ***Disabled (default)*****.**
When the Digroup Loop Timing Option is set to *Disabled*, the digroup is synchronized to the node's timing reference. If the attached equipment is not synchronized to the same clock source, controlled frame slips can occur, resulting in poor modem, fax, and echo canceller operation.

[22/23] Digroup 0/1 Number of Ports Per Unbusy
Values are **1 to 24 (default).**
This digroup parameter specifies the number of ports unbusied as busyout conditions are cleared. The default is *30* for TMCP cards. The polling cycle can range from 60 to 300 seconds.

[24/25] Digroup 0/1 F.A. Signaling (Ch. 23)
Values are ***Disabled*** **(default)** ***or Enabled.***
This digroup parameter allows the PRC card to send a yellow alarm to ISDN equipment. The ISDN equipment attached to the card uses the last channel of either digroup as an ISDN D-channel (port 23 in digroup 0 or port 47 in digroup 1).

[28/29] Digroup 0/1 PRI Interface Option
Options are ***Enabled*** **and** ***Disabled*** **(default).**
Each digroup that will be part of a PrimeSwitch network must be PRI-enabled. This forces the zero suppression for the digroup to B8ZS, the framing for the digroup to ESF, and asks for an associated D-Channel. The associated DChannel is the node-card-port number of the PRC D-Channel port (Port 23 for digroup 0 and Port 47 for digroup 1) TMCP D-Channel port (Port 16 for Digroup 0 and Port 48 for Digroup 1).

[30/31] Digroup 0/1 Slow Response Busyout Option
Values are ***Enabled*** **and** ***Disabled*** **(default).**
When *Enabled*, the SRB option busies out a demand port if the call is not built through the Promina network in approximately 4.9 seconds. This allows devices such as automatic call diverters (ACDs) to respond efficiently to Promina resource overloading problems. Ports busied out because of the SRB option will be unbusied depending upon the value set in the Minimum Bandwidth to Unbusy parameter using the **Modify Call Manager** command

[32/33] Digroup 0/1 Companding Method
Values are ***Mu-Law*** **or** ***A-Law*****.**
If compression mode is not being used, the *Companding Method* must be set consistently at both the origination end and destination end of the connection.

The companding method should be specified for each digroup when the TMCP PRC module is configured. Compressed calls using both companding types can terminate on the same destination node.

[34/35] Digroup 0/1 Echo Canceller Requirements
Values are shown in the following menu:

*** PRC digroup N10C24G0 Echo Canceller Parameters ***
[1] Min Echo Return Loss = 6 DB
[2] Max Tail Circuit Length = 32 MS
[3] Residual Echo Suppress = YES
[4] Comfort Noise = YES

These parameter settings only apply to those ports in the digroup that are configured as *Echo Cancellation Preferred* or *Echo Cancellation Required*.

[36-37] Not Used

[38/39] DiGroup 0/1 Wire Line Mode
Values are ***Disabled*** **(default) and** ***Enabled.***
This parameter appears on the PRC/TMCP Card Install/Modify and Query displays, which makes it possible to relay Alarms to the designated remote Digroup.

[40/41] DiGroup 0/1 Yellow Alarm Busyout
Values are ***Disabled*** **(default) and** ***Enabled*****.**
This parameter appears once you enable [38/39] Wire Line Mode. If this parameter is enabled, the Yellow Alarms relayed to the remote digroup specified by the Wire Line Mode parameter will be busied out if the free bandwidth available falls below the percentage specified by [42/43]. If [38/39] Wire Line Mode is enabled and [40/41] Yellow Alarm Busyout is disabled, the busyout feature described by parameters [10/11], and [22/23] is applied to the digroup. When [40/41] is enabled, [10/11] and [22/23] are not displayed.

[42/43] Y_Alarm Unbusy Free BW%
Values are ***from 5 to 100 %(default) in increments of 5%.***
This parameter appears once you enable [40/41] Yellow Alarm Busyout.

[44] AlarmGuardTimer
Values are from ***0 to 20,000 milliseconds in steps of 8***. Default is 16000.
This parameter configures the AlarmGuardTimer interval. See Wire line mode.

The remote alarm is not generated unless the alarm is persistent for the AlarmGuardTime interval. The AlarmGuardTimer is used when the node releases the Yellow Alarm to the attached switch. This parameter is necessary because of the constant AB seizure signal presented by the attached switch during the Yellow Alarm / Busy-Out cycle. When the node releases the Yellow Alarm to the attached switch, the switch leaves the AB seizure signals present for a few seconds (usually less than 4 seconds). The AlarmGuardTimer prevents the node from placing unnecessary calls during the seizure signal.

Install Card PRC (2)

```
*** PRC DIGROUP N1C21G0 CONFIGURATION (CPU: NONE) ***
   SLOT TYPE: PRC (REV M)   REDUNDANT CARD: NONE
   CLOCK REF: NONE          MODE: NATIVE
                DIGROUP #0
   DB STATUS:       DISABLED
   INSTALLED PORTS: 0
   STATE:           OFFLINE
   PORTS/BO CYCLE:  24
   PORTS/UNBUSY:    24
   INSERVICE DELAY: 0
   HUNT GROUPS:     ENABLED
   FRAMING:         ESF
   ZERO SUPP:       B8ZS
   BIPOLAR VIOL:    0
   FRAME SLIPS RCV: 0
   FRAME SLIPS XMT: 0
   INTERVAL:        0
   LOOP TIMING:     DISABLED
   F.A.SIG.(CH.23): DISABLED
   PRI INTERFACE:   DISABLED
*** HIT RETURN TO CONTINUE (ESCAPE TO QUIT) ***

   SLOW RSPNSE BUSY:DISABLED
   COMPANDING METHOD:MU LAW
   MIN ERL:         6 DB
   MAX TAIL LENGTH: 32 MS
   RES. ECHO SUPPR: YES
   COMFORT NOISE:   YES
   WIRE LINE MODE:  DISABLED              DISABLED
   DEST DIGROUP:    NOT APPLY             NOT APPLY
   Y_ALARM BUSYOUT: NOT APPLY             NOT APPLY
   UNBUSY BW :      NOT APPLY             NOT APPLY
   ALARMGUARDTIME : 16000                 16000
```

```
DO YOU WANT TO ACTIVATE DIGROUP N1C21G0?  [YES]
YES OR NO =

*** PRC DIGROUP N1C21G0 HAS BEEN ENABLED.

*** PRC DIGROUP N1C21G0 HAS BEEN ACTIVATED.
```

Configuration of DIGROUP 1 will follow after configuring DIGROUP 0

Query Card PRC

```
< q car, c21

ENTER DISPLAY MODE (DETAIL OR SUMMARY)  [D]
DISPLAY MODE (D OR S) =

*** PRC CARD N1C21 CONFIGURATION (CPU: C11) ***
   SLOT TYPE: PRC (REV M)   REDUNDANT CARD: NONE
   CLOCK REF: DIGROUP 0     MODE: NATIVE
                DIGROUP #0            DIGROUP #1
   DB STATUS:       ACTIVE                ACTIVE
   INSTALLED PORTS: 2                     0
   STATE:           ACTIVE/UP             ACTIVE/UP
   PORTS/BO CYCLE:  24                    24
   PORTS/UNBUSY:    24                    24
   INSERVICE DELAY: 0                     0
   HUNT GROUPS:     ENABLED               ENABLED
   FRAMING:         ESF                   D3/D4
   ZERO SUPP:       B8ZS                  BIT7
   BIPOLAR VIOL:    0                     0
   FRAME SLIPS RCV: 0                     0
   FRAME SLIPS XMT: 0                     0
   INTERVAL:        1728                  1721
   LOOP TIMING:     DISABLED              DISABLED
   XMITONLINE:      YES                   YES
   ALARMS:                          LOS
   LOOPS:
   ERRD SEC TOT:    0
   FAILD SEC TOT:   0
   RECORDING INT:   858
   F.A.SIG.(CH.23): DISABLED              DISABLED
   PRI INTERFACE:   DISABLED              DISABLED
*** HIT RETURN TO CONTINUE (ESCAPE TO QUIT) ***

SLOW RSPNSE BUSY:DISABLED              DISABLED
   COMPANDING METHOD:MU LAW              MU LAW
   MIN ERL:         6 DB                  6 DB
   MAX TAIL LENGTH: 32 MS                 32 MS
   RES. ECHO SUPPR: YES                   YES
   COMFORT NOISE:   YES                   YES
   WIRE LINE MODE:  DISABLED              DISABLED
   DEST DIGROUP:    NOT APPLY             NOT APPLY
   Y_ALARM BUSYOUT: NOT APPLY             NOT APPLY
   UNBUSY BW :      NOT APPLY             NOT APPLY
   ALARMGUARDTIME : 16000                 16000

*** HIT RETURN TO CONTINUE (ESCAPE TO QUIT) ***


*** COMMAND COMPLETE ***
```

Highlighted above are certain things to look for when querying this card, this query will aid you in troubleshooting.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP