T O T A L   C O N T R O L™

Quad V.34 Modem Card
Version 3.5/3.6

R E L E A S E   N O T E S

NOTICE: If You Are Upgrading:

Link Security Users: The software download program clears all Link Security values from NVRAM when upgrading to this version of modem code. These values must be re-entered after performing the upgrade.

ANI and DNIS Users: ~~This applies ONLY if you are upgrading from version 1.5.~~ The software download program resets the *Digits in Incoming ANI based calls* (Register S62) and *Digits in Incoming DNIS based calls* (Register S63) parameters when upgrading from version 1.5.

NOTE: If you are using *Total Control Manager/SNMP* (TCM), these values can be saved in a .WHB file before upgrading and restored after the upgrade is complete. See *Chassis Configuration* in your TCM manual.

New Features for 3.5/3.6

Versions 3.5 and 3.6 are concurrent releases of modem code—all features are identical for both versions. The different versions are required for different modem board architectures: 3.5 modem code should be used with double-sided modem cards, while 3.6 is used for single-sided modem cards.

Full Support for AT Commands from Gateway Cards

The modems now support the complete use of AT commands from across a gateway card, including the following:

- Command mode local echo

- Use of escape code (+++) to enter online command mode

- Any key press aborts a call during modem training

> **NOTE:** If you reset the modem using the ATZ command, the modem will drop the packet bus connection with the gateway card. The following new parameter has been added to the modem to prevent this.

ATZ Handling over Packet Bus
AT Command: S72=*n*
MIB Object: mdmCcAtzPbHandling

This setting allows you to determine how the modem will respond to an ATZ (reset) command sent via gateway cards over the packet bus.

n=0   Normal—modem resets and packet bus connection is broken
n=1   Ignore—modem ignores the ATZ command and sends OK
n=2   Load NVRAM—modem loads settings from NVRAM, but does not reset

Default: 0 (Normal)

Rtelnet Call Progress and Connect Messages

When dialing from a telnet terminal connection (ATDT...), the modem now returns call progress and connect messages, such as RINGING, BUSY, NO ANSWER, and CONNECT.

> **NOTE:** Call progress and connect messages for incoming calls are also supported through the NETServer for reverse telnet sessions and use in dial scripts.

T1 Idle/Disconnect Pattern Value

AT Command: S71=n
MIB Object: mdmCcIdleDiscPatt

Allows you to change the idle/disconnect pattern used over the chassis TDM bus between the modem and a T1 card during call setup and teardown.

This setting should not be changed except in situations where the modem is misinterpreting stray in-band characters as the idle/disconnect pattern, causing unexpected modem disconnects. Please consult U.S. Robotics technical support before changing this setting.

WARNING: The T1 card must be set for the same value. Do not change this value without also setting the T1 card for the same value. Requires a T1 card compatible with this feature.

Reserved Patterns: 0, 2, 3, 4, 5, 6, 121, 128, 129, 130, 133, 134, and 255

Range: 0..255

Default: 1

MI/MIC

AT Command: S34.5=1
MIB Object: mdmCcMiMic

Modem Indicate/Modem Indicate Closure (MI/MIC) support. This feature only applies to installations using an external dialer on a PBX. Requires a Quad Analog/Digital NIC.

Default: S34.5=0 (Disabled)

Additional NMC Support for Modem Parameters

The following modem settings can now be set using SNMP management:

Phone Exclusion Delay
AT Command: S51.7
MIB Object: mdmScPhExclusionDel

DTR Recognition Time
AT Command: S25
MIB Object: mdmDiDtrRecognitionTime

Selective Reject
AT Command: S51.6
MIB Object: mdmScSelectiveReject

New Cellular Features

For modems with cellular support only. If you are interested in purchasing cellular support, please contact your distributor or U.S. Robotics sales representative for more information.

MNP10EC

MNP10 *Enhanced Cellular* (MNP10EC) provides more robust data transmission over adverse cellular conditions than MNP10. MNP10EC is automatically negotiated when MNP10 is enabled (S60.0=1) and the modem receives an MNP10EC call.

Originate V.34

When set for MNP10 Negotiation (S60.0=1), the modems answer MNP10EC calls, but originate using V.34.

(Previously, when MNP10 was enabled all calls originated using MNP10.)

To originate MNP10 or MNP10EC calls, set the modem with either of the following settings:

Originate MNP10
AT Command: S61.4=1
MIB Object: mdmCcMnp10

Originates using MNP10.

NOTE: S61.5 must be set to 0, otherwise the modem originates MNP10EC.

Originate MNP10EC
AT Command: S61.5=1
MIB Object: mdmCcMnp10Ec

Originates using MNP10EC. Falls back to MNP10 if answering modem does not support MNP10EC.

For More Information

If you have purchased a cellular modem or just want to know more about cellular settings and usage, see the cellular guide that came with your modem, or download the following file from the U.S. Robotics BBS:

1024495B.PDF

New Features as of Release 3.0

PRI Support

Primary Rate ISDN (PRI) support is for chassis with T1/PRI cards. A new setting in the modems allows analog calls coming in through the PRI card to be channeled to a gateway card or out the Quad Analog NIC RS-232 port. Modems support PRI in answer mode only. They can not originate calls across PRI lines.
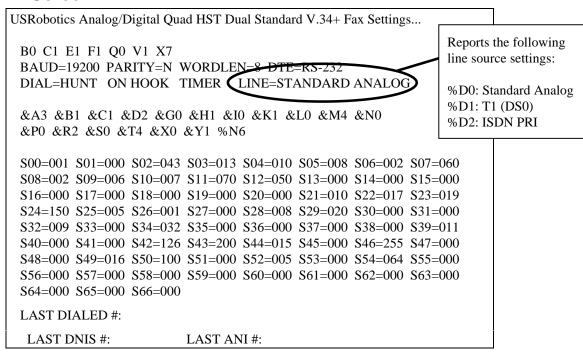
Setting Line Source for PRI
AT Command: %D2
MIB Extension: mdmLiSrc

For PRI based chassis, change the modems' line source to ISDN PRI using one of the above methods. You must then store settings to the modem's NVRAM and reset the modem for it to take effect.
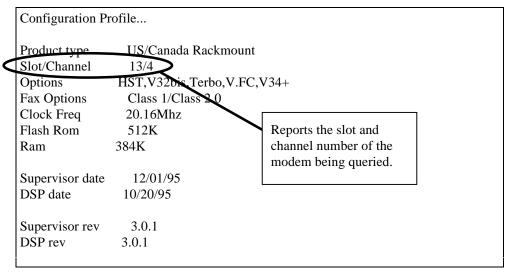
Inquiry Screen Changes

The following inquiry screen changes have been made:

i4 Screen

```
USRobotics Analog/Digital Quad HST Dual Standard V.34+ Fax Settings...

 B0  C1  E1  F1  Q0  V1  X7
 BAUD=19200  PARITY=N  WORDLEN=8  DTE=RS-232
 DIAL=HUNT   ON HOOK   TIMER   LINE=STANDARD ANALOG

 &A3  &B1  &C1  &D2  &G0  &H1  &I0  &K1  &L0  &M4  &N0
 &P0  &R2  &S0  &T4  &X0  &Y1  %N6

 S00=001  S01=000  S02=043  S03=013  S04=010  S05=008  S06=002  S07=060
 S08=002  S09=006  S10=007  S11=070  S12=050  S13=000  S14=000  S15=000
 S16=000  S17=000  S18=000  S19=000  S20=000  S21=010  S22=017  S23=019
 S24=150  S25=005  S26=001  S27=000  S28=008  S29=020  S30=000  S31=000
 S32=009  S33=000  S34=032  S35=000  S36=000  S37=000  S38=000  S39=011
 S40=000  S41=000  S42=126  S43=200  S44=015  S45=000  S46=255  S47=000
 S48=000  S49=016  S50=100  S51=000  S52=005  S53=000  S54=064  S55=000
 S56=000  S57=000  S58=000  S59=000  S60=000  S61=000  S62=000  S63=000
 S64=000  S65=000  S66=000

 LAST DIALED #:

  LAST DNIS #:              LAST ANI #:
```

Reports the following line source settings:

%D0: Standard Analog
%D1: T1 (DS0)
%D2: ISDN PRI

i7 Screen

```
Configuration Profile...

Product type        US/Canada Rackmount
Slot/Channel        13/4
Options             HST,V32bis Terbo,V.FC,V34+
Fax Options         Class 1/Class 2.0
Clock Freq          20.16Mhz
Flash Rom           512K
Ram                 384K

Supervisor date     12/01/95
DSP date            10/20/95

Supervisor rev      3.0.1
DSP rev             3.0.1
```

Reports the slot and channel number of the modem being queried.

Features as of Release 2.0

Transmitter Level Adjustment

AT Command: S39=*n*
MIB Object: mdmLiTransmitLevel

This function allows you to set the decibel level of the modem's transmitter.

Transmitter level has a possible range of -9 to -20 dBm for analog line sources and -3 to -30 dBm for digital T1 line sources. The default setting of -11 dBm (S39=11) provides optimal performance for most analog line sources. A setting of -13 dBm (S39=13) is recommended for calls over digital T1 or PRI lines.

Default: 11

V.34 Extended Link Rates

Enhanced V.34 software offers two new link rates: 31.2 Kbps and 33.6 Kbps. While line conditions may not always allow for 33.6 connections, the new V.34 software can improve your average connection rate, making it more likely to achieve and maintain 28.8 connections.

Requirements

33.6 Kbps connections are only possible with compatible 33.6 Kbps modems.

New Parameters for V.34 Extended Link Rates

Link Rate Speed Select
Added 31.2 Kbps and 33.6 Kbps settings (&N15 and &N16) for fixed connection rates.

V.34 Extended Link Rates Disable
AT Command: S56.5=1
MIB Object: mdmScV34pModeEnable

Disables the modem's capability to connect at 31.2 Kbps and 33.6 Kbps.

Default: S56.5=0 (Extended Link Rates Enabled)

Result Codes

If you have enabled result codes, 31.2 and 33.6 Kbps connections report the following verbal connect messages and numeric result codes to the DTE.

Verbal	Numeric
CONNECT 31200	151
CONNECT 31200/ARQ	152
CONNECT 31200/V34	153
CONNECT 31200/ARQ/V34	154
CONNECT 33600	155
CONNECT 33600/ARQ	156
CONNECT 33600/V34	157
CONNECT 33600/ARQ/V34	158

Inquiry Displays

The ATI6 diagnostic screen has an extended protocol field that displays the actual block and window sizes, and indicates when selective reject has been negotiated. The I11 screen displays "V34+" for connections with other U.S. Robotics modems using the new V.34 software.

Selective Reject

This feature works under V.42 error control and offers significant throughput improvements over noisy lines. Selective reject reduces the number of retransmitted blocks due to block errors (blers).

Selective Reject Disable
AT Command: S51.6=1
MIB Object: mdmScSelectiveReject

Disables Selective Reject.

Default: S51.6=0 (Enabled)