



Technical Assistance Centre Service Information Bulletin

XEN IPK II PRT(1)-U23 ETU Firmware V1.19

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Introduction

This Service Information Bulletin applies to XEN IPK II Key Telephone Systems.

The PRT(1)-U23 ETU is compatible only with Xen IPK II Key Telephone systems. Note that the PRT(1)-U13 ETU is compatible only with Xen Axis/Master and Xen IPK systems.

Application firmware is stored in Non-volatile Flash Memory and a firmware upgrade is performed through the RS-232 DB9 male connector on the ETU. This will be covered later in this Service Information Bulletin.

An ISDN Trace if required is performed via the LAN Port of the IPK II CPU II. This will also be covered later in this document.

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Release Summary

The previous PRT(1)-U23 ETU production release firmware version 1.18, is now replaced with version 1.19. Firmware version 1.19 (incorporating all previous modifications) has resolved the following issue's identified in the field:

- PRT interface messaging issues between Layer 2, and Layer 3 protocol.
- PRT Layer 3 messaging received unexpected data length causing the ISDN calls in progress to be disconnected.

PRT firmware version 1.19 is available for download from the KISS website.

The following programming changes are no longer required, after upgrading both the PRT card to v1.19 and the CPUII to either v2.01E & v2.51E or above. This will depend on what is currently installed on the customer site.

PRG 20-09-03: Sub Address Identification.

PRG 20-25-08: Low Layer Compatibility (LLC).

PRG 20-25-09: High Layer Compatibility (HLC).

PRG 99-01-45: ISDN Layer 2 Reset.

Ensure that the CPUII()-U23 ETU is installed with **FPGA V6438** or above. If FPGA V5A07 is installed, you will need to request a warranty exchange CPUII via NEC KTS Spare Parts Dept. This will affect Phase 1 field trial sites and a small number of early sales.

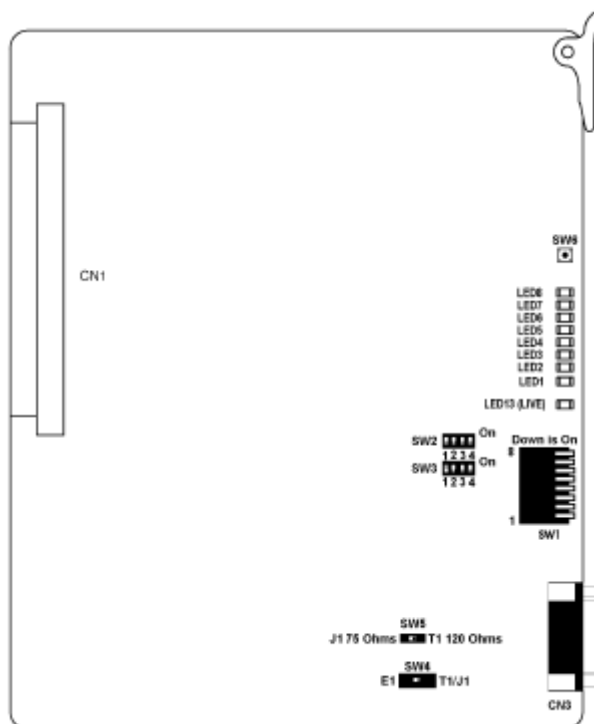
To check the FPGA version, refer to the Card Configuration screen of either PCPRO or WEBPRO.

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Description

The Primary Rate Trunk Interface (PRT) ETU terminates one Primary Rate Trunk lines complying with the ETSI standard. This card supports up to 30 voice channels which can be used for CO trunks with DTMF signalling.



PRT(1)-U23 ETU

Connectors

The following connectors are located on the PRT(1)-U23 ETU.

- CN1 Connects to the backboard
- CN3 Firmware Upload Port (DB-9 Male)
- CN3 Logging Port (DB-9 Male)

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Installation

Note: When a PRT(1)-U23 ETU is installed, **NO CLKG-U13** Unit is required.

IPK II Basic Configuration

- A maximum of one PRT(1)-U23 ETU can be installed in any interface slot. This PRT card consumes 32 system trunks, regardless of the number of channels provided by the carrier service.
- The maximum number of PRT(1)-U23 ETU depends on other trunk cards installed. This ETU shares the total number of 64 CO/PBX lines that are allowed in the system.

Expanded Port Package

- A maximum of ten PRT(1)-U23 ETU's can be installed in any interface slot within the system with the following restrictions. The first two PRT cards support up to 30 B-Channels (consume 32 system trunks), while the next eight PRT cards support up to 16 B-Channels (consume 16 system trunks).
- The maximum number of PRT(1)-U23 ETU's depends on other trunk cards installed. This ETU shares the total number of 188 trunks CO/PBX lines in the system.

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LED Indication and Switch Settings

PRT LED and DIP Switch Settings

Normal Operation

Switch SW 1 = All off

Switch SW 2 = All off

Switch SW 3 = All off

Switch SW 4 = E1

Switch SW 5 = T1 (120 Ω)

SW1								LED 1 ~ LED 8							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
off	-	-	-	-	-	-	-	F1				F2			F3
on	off	off	-	-	-	-	-	B1	B2	B3	B4	B5	B6	B7	B8
on	on	off	-	-	-	-	-	B9	B10	B11	B12	B13	B14	B15	B16
on	off	on	-	-	-	-	-	B17	B18	B19	B20	B21	B22	B23	B24
on	on	on	-	-	-	-	-	B25	B26	B27	B28	B29	B30		

F1 Layer 1 Status — ON: layer 1 up. OFF: layer 1 down.
 F2 Flashing during PRT — program running.
 F3 B-ch status — ON: at least one B-ch is busy. OFF: All B-ch are idle.
 Bn Each B-ch status — ON: busy. OFF: idle.

SW2				
1	2	3	4	
off	off	off	off	Normal use
off	on	off	off	Program Download
on	on	off	off	Test Program

SW3				
1	2	3	4	
off	off	off	off	IPKII-PRT(AUS)

SW4	SW5	Terminating Resistor	Line Speed	Country
E1	T1 (120)	120 ohm	2.0 Mbps	Australia (Default)
E1	J1 (75)	75 ohm	2.0 Mbps	Australia (Coaxial)
T1/J1	T1 (120)	100 ohm	1.5 Mbps	US
T1/J1	J1 (75)	110 ohm	1.5 Mbps	US

Switch SW 6 : Press to Reset PRT ETU

LIVE LED 9: ON = Operation Stopped (Power On)

Flashing = Normal Operation

OFF = No Power

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Firmware Upgrade Procedure

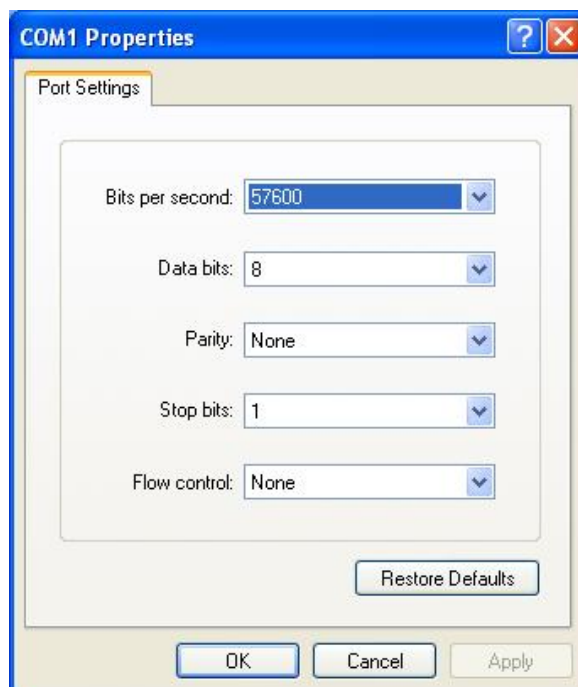
Application firmware is stored in Non-volatile Flash Memory, and the firmware upgrade is performed through the RS-232 DB9 Male connector on the PRT(1)-U23 ETU. To upgrade the firmware on the PRT(1)-U23 ETU ensure that the following procedure is implemented correctly.

- Remove the PRT(1)-U23 ETU from the KSU.
- Ensure that DIP Switch 2 of DSW2 is set to the **ON** position. By default all PRT cards are shipped with DSW 2 -2 set for the **OFF** position.
- Insert the PRT(1)-U23 ETU back into the KSU.
- Connect a straight through serial DB9 Female – Female cable from an available COM port on your PC to the DB9 Male Connector (CN3) of the PRT ETU.

Note: That while performing the upgrade process on the PRT(1)-U23 ETU, the PRT ISDN services will be out of service.

Hyper-terminal Connection

- Go to **Start -> Accessories -> Communications -> Hyper-Terminal**.
- Type in a name to identify the connection type. For example, “**PRT Connection**”.
- Select a COM port. For example **COM 1**.
- Select the Connection properties as shown below and click **OK**.



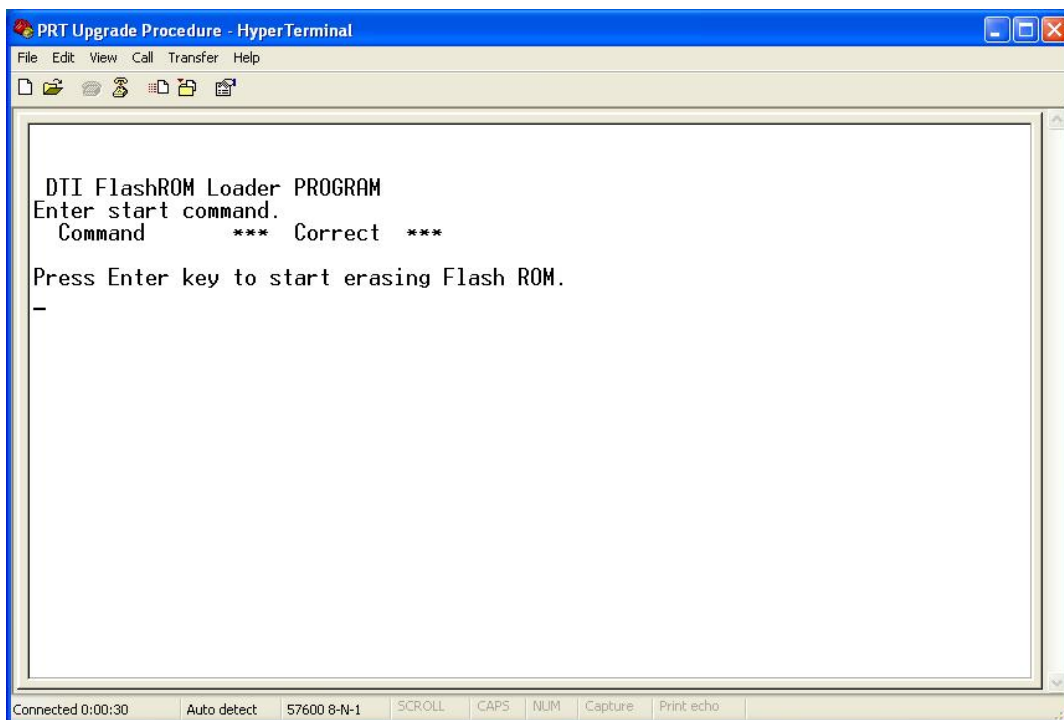
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Now press the **RESET** button on the PRT card, and the following window will be displayed.



Type **“solute”** on the keyboard and press **Enter**. Note the command will not be echoed back to the screen. The following window will be displayed.

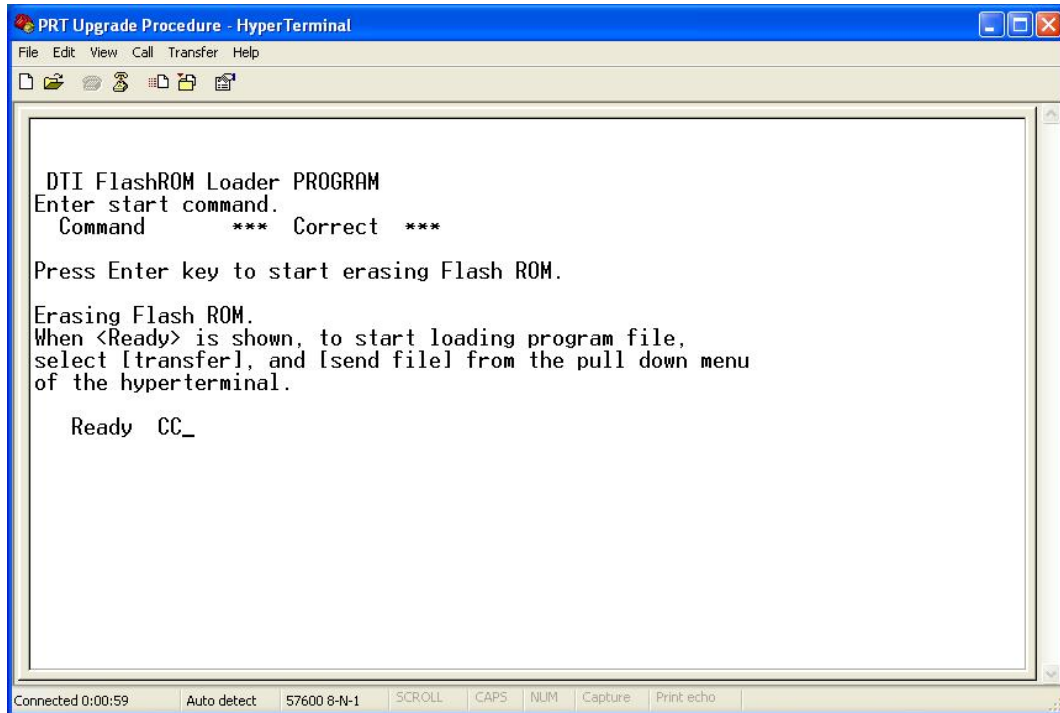


Press **Enter** to erase the Flash ROM.

When the Flash ROM has finished erasing **“Ready”** will be displayed on the screen as shown below.

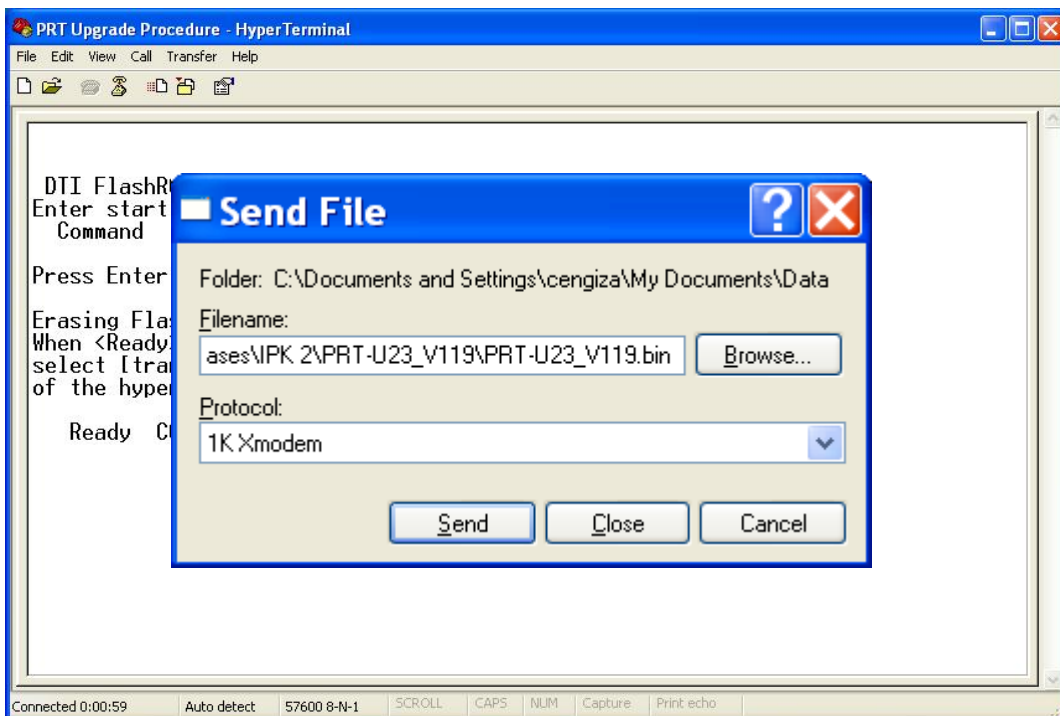
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Now Select **Transfer - > Send File**

Choose **1K Xmodem** as the Protocol, and locate the firmware file from your local directory.

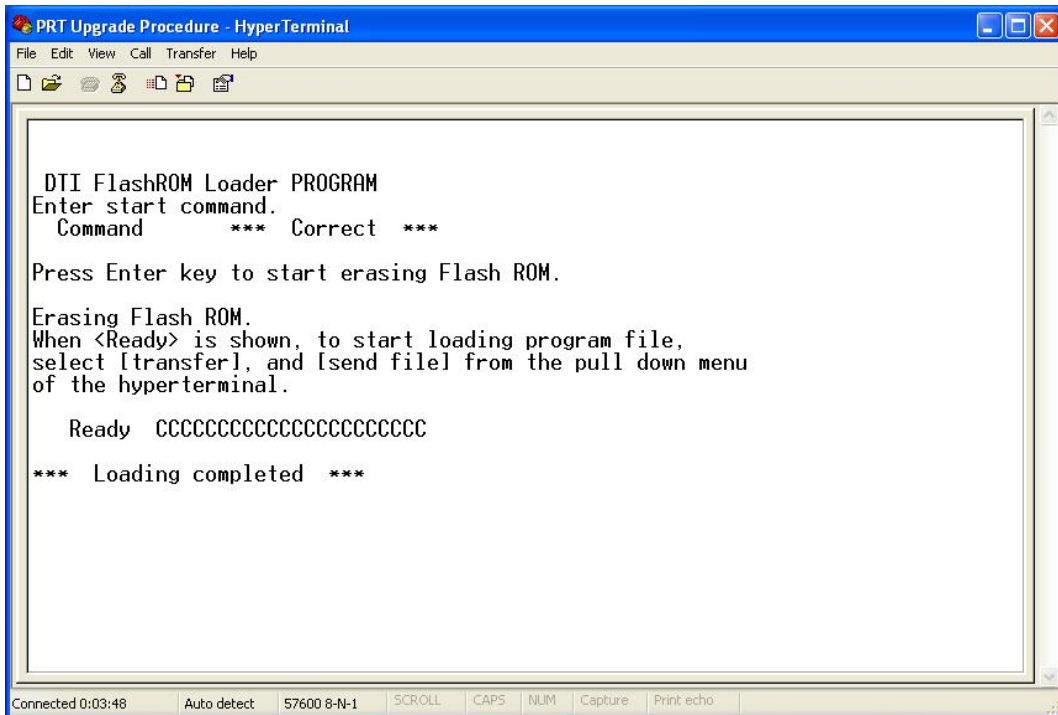


Press **Send**.

Hyper-terminal will start sending the file to the PRT(1)-U23 ETU. When the process is complete "*** Loading completed ***" will be displayed as shown below.

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```
PRT Upgrade Procedure - HyperTerminal
File Edit View Call Transfer Help
DTI FlashROM Loader PROGRAM
Enter start command.
Command      *** Correct ***
Press Enter key to start erasing Flash ROM.
Erasing Flash ROM.
When <Ready> is shown, to start loading program file,
select [transfer], and [send file] from the pull down menu
of the hyperterminal.
Ready CCCCCCCCCCCCCCCCCCCCCC
*** Loading completed ***
Connected 0:03:48 Auto detect 57600 8-N-1 SCROLL CAPS NUM Capture Print echo
```

Remove the PRT card from the KSU, and change DIP Switch 2 back to the **OFF** position on DSW2 and then re-insert the PRT card back into the KSU.

To ensure that the upgrade procedure was successfully implemented, performed the following check to ensure that the firmware has been upgraded.

To access system programming using the Multiline Telephone:

- Press **Speaker # * # *** from any port, then enter the password **12345678**.
- Dial **90 34 01**, then enter the slot of the PRT(1)-U23 ETU, then press **Redial, Transfer** to view the installed firmware version.

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CPU Trace Logging Procedure

This document provides information on how to capture debug information from the CPUII ETU to aid in identifying the cause of ISDN related problems. There are 2 methods to obtain the required information from the IPK II CPUII, as detailed below.

CPU II Trace via LAN Port:

1. Connect your PC to the LAN port on the front of the CPUII card.
2. Run the IPK II Debug Terminal – Start, Programs, Xen IPK II PCPro, Debug Terminal (or from within PCPro).
3. Enter the IP address of the CPUII and click Connect.
4. Specify a Log File Name and check the box Enable Log File.
5. Enter User ID: monimoni
6. Enter Password: hihi
7. Type the following debug commands:
mail in 0 0 0 0 <enter>
mail in 0 0 1 2 <enter>
mail i 0 6 0 0 <enter>
8. The capture begins.

CPUII Trace via COM Port:

1. On the CPUII card, set SW3-1=ON and SW3-2=OFF (to enable debug mode using COM1).
2. Connect to COM1 on the side of the KSU using a straight serial cable.
3. Run HyperTerminal, TeraTerm or such program and configure as 38400, 8, 1, None.
4. Specify the log capture file with the chosen application.
5. Type the commands for debugging:
mail in 0 0 0 0 <enter>
mail in 0 0 1 2 <enter>
mail i 0 6 0 0 <enter>
6. The capture begins.

Availability

The new PRT(1)-U23 ETU firmware version 1.19 has been made available for downloading from the KISS website.

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