BLACK BOX®
NETWORK SERVICES

	AUGUST 1998
MT240A-R2	**EHN092-V35M**
MT240A-48V-R2	**EHN092-V35F**
EHN092-530M	**EHN092-X21M**
EHN092-530F	**EHN092-X21F**

MicroNTU G.703 (AC)
MicroNTU G.703 (VDC)
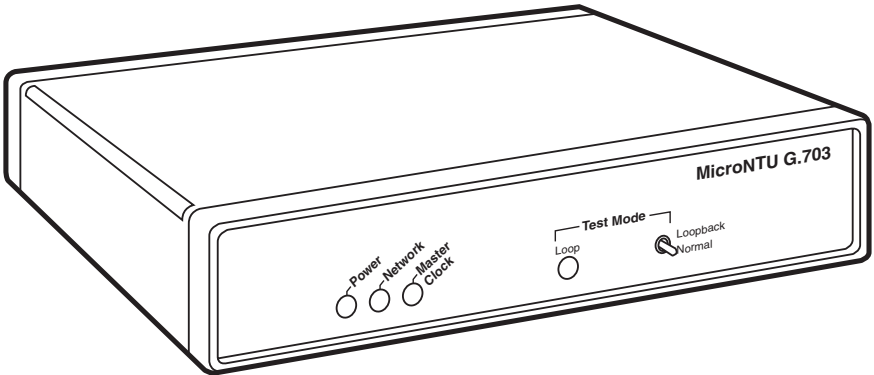
FEDERAL COMMUNICATIONS COMMISSION
AND
CANADIAN DEPARTMENT OF COMMUNICATIONS
RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

This unit is $C\,E$ certified.

The CE symbol on your MicroNTU G.703 indicates that it is in compliance with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the Union European (EU).

NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.

2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.

3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.

4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..

6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.

7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.

8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.

9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

    A: El cable de poder o el contacto ha sido dañado; u

    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

    C: El aparato ha sido expuesto a la lluvia; o

    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

    E: El aparato ha sido tirado o su cubierta ha sido dañada.

Contents

1. Specifications

Network Interface	G.703
Network Rate	2.048 Mbps
Network Connectors	Two BNC (75-ohm) and one modular RJ-45 connector (120-ohm)
Terminal Interface	EIA RS-530 (RS-422), X.21, V.35 on UD-26 using cables EHN092
Terminal Rate	2.048 Mbps (all models); 1.024 Mbps, 512 Kbps, 256 Kbps (standalone only)
Terminal Connector	UD-26F
Diagnostics	Loopback Test
Indicators	LEDs for power, network, master clock, and loopback test
Clocking	G.703: Internal, external, network (receive loop); DTE interface: Internal only
Power	MT240A-R2: 115/230 VAC (switch-selectable), 50/60 Hz; MT240A-48V-R2: 48 VDC
Receiver Sensitivity	-10 dB (0 dB = 2.4V)
Operating Temperature	32° to 140°F (0° to 60°C)
Humidity	5 to 95%, noncondensing
Altitude	Up to 15,000 feet (4570 m)
Size	1.6"H x 7.3"W x 6.6"D (4.1 x 18.6 x 16.8 cm)
Weight	2 lb. (0.9 kg)

2. Introduction

The MicroNTU G.703 performs the tasks of three separate devices:

1. As a modem, the MicroNTU G.703 receives unstructured, synchronous 2.048-Mbps data from a G.703 network and sends it out of its DTE port (configured as DCE).

2. As an interface converter, the MicroNTU G.703 accepts 120-ohm twisted-pair or 75-ohm dual coax connections (both types of interfaces provided). Then it converts the signals to EIA-530 (RS-422), V.35, or X.21 format (switchable) on a UD-26 connector.

3. As a rate adapter, the MicroNTU G.703 lets a lower-bandwidth device—256 Kbps, 512 Kbps, or 1.024 Mbps—connect to a 2.048-Mbps G.703 link.

The MicroNTU G.703 supports internal, external, or network (receive loop) clocking on its G.703 interface. Loopback test is built-in, and front-panel LEDs monitor power, network, master clock, and test loop. Several power-supply options are available:

MT240A-R2   115/230 VAC (switch-selectable)

MT240A-48V-R2 48 VDC

MT245ARackmount Card

MT246ARackmount Card

RM202, 204, 208, 216   Racks for cards 115/230 VAC (switch-selectable)

3. Configuration

The MicroNTU G.703 is equipped with three sets of eight DIP switches (externally accessible), as well as seven jumpers (internal). These DIP switches and jumpers allow configuration of clocking, data rate, test and terminal-interface options. The MicroNTU G.703 (AC) is also equipped with an internal switch that allows selection of 115- or 230-VAC power inputs. (This switch is not present in the MT240A-48V-R2.)

3.1 External DIP-Switch Settings

The MicroNTU G.703's DIP switches are located on the underside of the unit (see Figure 3-1). Figure 3-2 shows the orientation of the switch set. The switches are grouped into two eight-switch sets, and are externally accessible from the underside of the MicroNTU G.703. All possible settings for the MicroNTU G.703's DIP switches are presented in the summary table and descriptions on the following pages. If you have any questions about configuration, call for technical support.
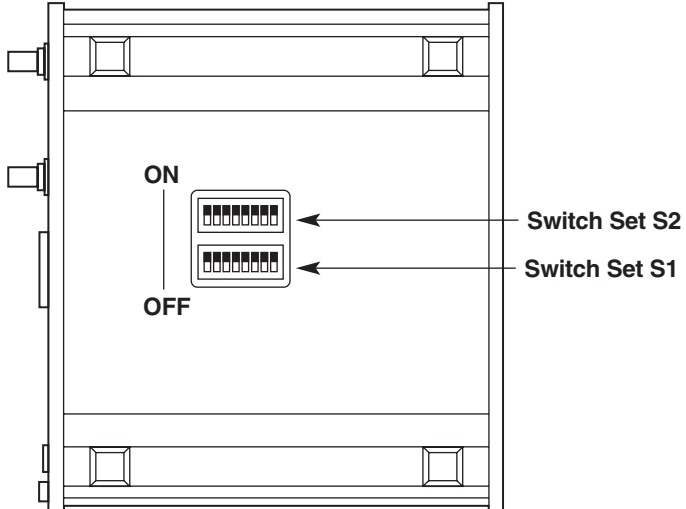
Figure 3-1. DIP-switch locations.
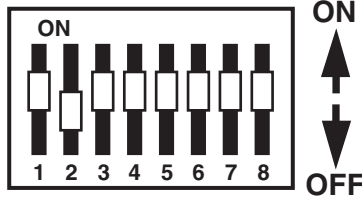
Figure 3-2. Closeup of configuration switches.

Table 3-1. Summary of DIP-switch default settings for set S1

S1 Summary Table			
Position	**Function**	**Factory Default**	
S1-1	X.21/EIA-530	Off	EIA-530 or V.35*
		On	X.21*
S1-2	Not Used	Off	
S1-3	Not Used	Off	
S1-4	Rate Adaptation	Off	2.048 Mbps
S1-5	Rate Adaptation	Off	
S1-6	Data Inversion	Off	Not Inverted
S1-7	Clock Master/Slave	On	Master
S1-8	Test Enable	Off	Front Panel
*Used with S2-1 and S2-2. See the table on page 10.			

SWITCH SET S1

The configuration switches on S1 set clocking, rate adaptation, loopback enable, data invert, and interface (see also Switch S2). The default settings are summarized in Table 3-1.

S1-1: Terminal Interface (works in conjunction with Switch S2)

Set Switch S1-1 (as well as S2-1 and S2-2) to determine whether the signals passed between the MicroNTU G.703 and the terminal device will follow the EIA-530 (RS-422), CCITT X.21, or CCITT V.35 standard. If S2-1 and S2-2 are set for "EIA-530/X.21," then the setting for S1-1 determines which of those two interfaces is selected. Note: If S2-1 and S2-2 are set for "V.35," switch S1-1 must be set to "Off." Regardless of the pinout standard chosen, the physical connector is a female UD-26.

S1-1	Setting
Off	EIA-530 (RS-422) interface
On	X.21 interface

S1-2 and S1-3: Not Used

S1-2 and S1-3 are not used.

S1-4 and S1-5: Rate Adaptation

Set Switches S1-4 and S1-5 together to allow the MicroNTU G.703 to adapt to terminal devices that run at data rates less than 2.048 Mbps. (The network rate remains 2.048 Mbps regardless of the terminal-rate adaptation setting.) The setting you select must match the data rate of your terminal device.

S1-4	S1-5	Setting
Off	Off	2.048 Mbps
On	Off	1.024 Mbps
Off	On	512 Kbps
On	On	256 Kbps

S1-6: Data Inversion

Set Switch S1-6 to determine whether or not the data stream from the local DTE is inverted within the MicroNTU G.703 before being passed to the G.703 network. Inverting the data stream may be necessary when the MicroNTU G.703 is being used with an embedded G.703 device that inverts the data on the remote end. Normally, data inversion is not necessary.

S1-6	Setting
On	Data inverted
Off	Data not inverted

S1-7: Master/Slave Clock

Set Switch S1-7 to allow the MicroNTU G.703 to provide the master clock, or recover the clock from an external source.

S1-7	Setting
On	MicroNTU G.703 is master
Off	MicroNTU is slave (clock is recovered from the network)

S1-8: Loopback Test Enable

Depending upon the setting of Switch S1-8, either the MicroNTU G.703 will be continually in loopback mode, or loopback mode will be enabled by pressing and holding the front-panel switch. Since the front-panel switch is spring-loaded—it returns to "Normal" operation when pressure is released—this DIP switch provides a way of leaving the MicroNTU G.703 in "unattended" loopback mode for remote test purposes.

S1-8	Setting
On	Continual "unattended" loopback mode
Off	Loopback activation by front-panel switch

SWITCH SET S2 (to be used in conjunction with S1-1)

Set DIP-Switches 2-1 and S2-2 in unison to determine the terminal interface on the MicroNTU G.703. The alternatives are V.35 or EIA-530/X.21.

NOTE

If you select the EIA-530/X.21 scheme, you must also set Switch S1-1 to determine whether the actual interface to be used will be EIA-530 or X.21. Regardless of the pinout standard chosen, the physical connector is a female UD-26. Switches S2-3 through S2-8 are reserved for future use.

S2-1	S2-2	S1-1	Setting
On	On	Off	V.35 Interface
Off	Off	Off	EIA-530 Interface
Off	Off	On	X.21 interface

3.2 Internal Jumper Settings

The MicroNTU G.703's seven jumpers are located on the PC board inside the unit. (If you have an AC model, this is also the location of the power-input switch.) To access the jumpers:

1) Turn the power switch off.

2) Remove the power cord from the unit.

WARNING!

Always turn the power switch off and remove the power cord before opening the unit.

3) Insert a flat-head screwdriver into an open slot on either side of the case, as seen in Figure 3-3. Twist the screwdriver head slightly and the top half of the case will separate from the lower half, as in Figure 3-4.
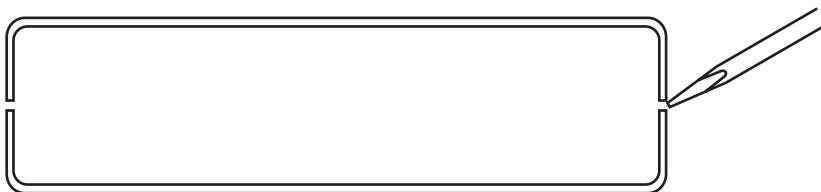
**Figure 3-3. Inserting the screwdriver
in the side of the MicroNTU G.703.**
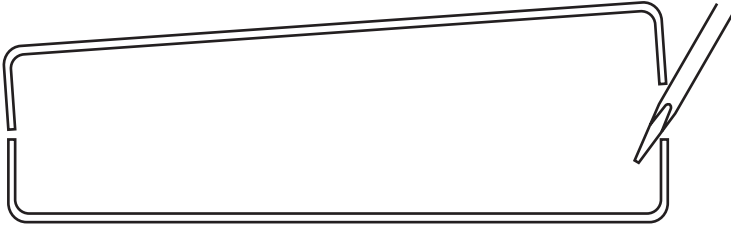
Figure 3-4. Opening the MicroNTU G.703's case.

4) Remove the Network Interface Module by lifting it gently upward until it comes free from the MicroNTU G.703's main PC board.

5) Slide out the Network Interface Module and locate the jumpers on the bottom side of the board.

6) Configure the jumpers according to the information on the next page and return the Network Interface Module and cover to their proper positions.

The internal jumpers mounted on the MicroNTU G.703's PC board (labeled LK1 through LK7) are used to configure the 75- or 120-ohm network link parameters. Figure 3-5 shows the location of the MicroNTU G.703's jumpers on the internal PC board.
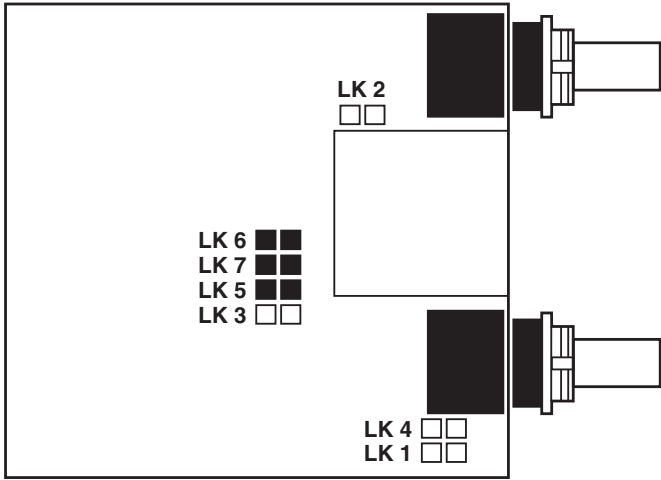
Figure 3-5. Jumper locations.

Table 3-2 shows the factory-default jumper settings. Note that one combination of jumper settings is required for 75-ohm operation, and another combination is required for 120-ohm operation. The MicroNTU G.703 is factory-configured for 75-ohm operation.

Table 3-2. Summary of default jumper settings

Jumper	Function	75 ohm	120 ohm	Factory Default
LK1	75-Ohm TX Shield-to-GND	On	Off	On (connect)
LK2	75-Ohm RX Shield-to-GND	Opt.*	Off	Off (disconnect)
LK3	Reserved	Off	Off	Off
LK4	120-Ohm Shield-to-GND	Off	Opt.*	Off (disconnect)
LK5	Configuration Auto-Sense	On	Opt.*	On (enabled)
LK6	75-Ohm Input Impedance	On	Off	} On (75 ohm)
LK7	75-Ohm Input Impedance	On	Off	
*Opt.= optional setting. All others are required for proper operation.				

Listed below are each jumper's function and possible settings. When configuring the jumpers, take care not to lose the individual straps.

LK1: 75-Ohm Transmit Shield-to-Ground Connection

This setting determines whether the shield of the 75-ohm (coax) transmit cable is connected to earth ground. This connection must be made when operating in 75-ohm (unbalanced) mode. Conversely, this connection must not be made when operating in 120-ohm (balanced) mode.

LK1	Setting
Strap On	75-ohm TX Shield-to-GND Connection Made
Strap Off	75-ohm TX Shield-to-GND Connection Broken

LK2: 75-Ohm Receive Shield-to-Ground Connection

This setting determines whether the shield of the 75-ohm (coax) receive cable is connected to earth ground. This connection is optional when operating in 75-ohm (unbalanced) mode. This connection must not be made when operating in 120-ohm (balanced) mode.

LK2	Setting
Strap On	75-ohm RX Shield-to-GND Connection Made
Strap Off	75-ohm RX Shield-to-GND Connection Broken

LK3: Reserved for future use

This strap is reserved for future use and must remain off.

LK3	Setting
Strap On	Not a valid setting
Strap Off	Normal operation

LK4: 120-Ohm Shield-to-Ground Connection

This setting determines whether the shield of the 120-ohm (modular) cable is connected to earth ground. This connection is optional when operating in 120-ohm (balanced) mode. This connection must not be made when operating in 75-ohm (unbalanced) mode.

LK4	Setting
Strap On	120-ohm RX Shield-to-GND Connection Made
Strap Off	120-ohm RX Shield-to-GND Connection Broken

LK5: Configuration Auto-Sense

This setting determines whether the host can automatically sense the configuration of the MicroNTU. The operation of the MicroNTU is not affected by this jumper setting. Auto-sense should be enabled when operating in 75-ohm (unbalanced) mode. Current interface standards do not list this feature for 120-ohm (balanced) mode.

LK5	Setting
Strap On	Auto-sense enabled
Strap Off	Auto-sense disabled

LK6 and LK7: 75-Ohm Termination Impedance

These jumpers set the termination impedance correctly for 75-ohm operation. Both jumpers must be in place when operating in 75-ohm (unbalanced) mode. Conversely, both jumpers must be removed when operating in 120-ohm (balanced) mode.

| LK6	LK7	Setting
On	On	75-ohm operation
Off	Off	120-ohm operation

4. Installation

Once the MicroNTU G.703 is properly configured, it is ready to connect to your system. This section tells you how to connect the MicroNTU G.703 to the G.703 network and terminal-device interfaces.

4.1 Connection to the G.703 Network

The MicroNTU G.703 supports 2.048-Mbps communication over an unstructured G.703 network. Both 120-ohm twisted-pair and 75-ohm coax interfaces are provided on the MicroNTU G.703's rear panel (see Figure 4-1). Be sure the unit is configured properly to operate in either 120- or 75-ohm mode, and that the network connection is grounded appropriately (see **Chapter 3**).
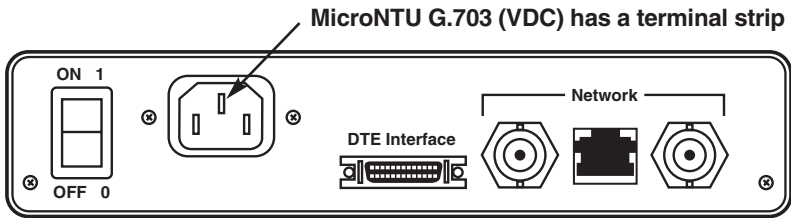
Figure 4-1. MicroNTU G.703 (AC) rear panel.

4.1.1 TWISTED-PAIR (120-OHM) CONNECTION

The MicroNTU G.703 is equipped with a single RJ-45 jack for connection to a 120-ohm (modular) twisted-pair G.703 network interface. The pinout of this jack is as follows:

RJ-45 Pins	Signal
1 and 2	Receive pair (from network)
3	Shield reference point
4 and 5	Transmit pair (to network)
6	Shield reference point
7	Not used
8	Not used

4.1.2 DUAL COAX BNC (75-OHM) CONNECTION

In addition to the 120-ohm twisted-pair connection, the MicroNTU G.703 is equipped with dual female BNCs (TX and RX) for connection to a 75-ohm dual coax G.703 network interface. The outer conductor of the coax cable is isolated from system earth ground.

4.2 Connection to the Terminal Device

The MicroNTU G.703 is wired as a DCE, and—when configured properly—supports communication with a variety of terminal (DTE) devices. Compatible interface standards include EIA-530 (RS-422), CCITT X.21, and CCITT V.35.

All interfaces are supported on a female UD-26 connector (a subminiature 26-pin "D" connector designated the "alt A" in the EIA-232 Standard). The various physical/electrical connections mentioned above are achieved by changing the MicroNTU G.703's DIP-switch settings and attaching different adapter cables.

If you want to construct your own terminal-adapter cable, consult the pinout diagrams in **Appendix A**. If you want to purchase a terminal-adapter cable specifically designed to work with the MicroNTU G.703, refer to **Appendix B**.

4.3 Connection to the Power Source

As described in **Section 3.3**, the MicroNTU G.703 is available with two power-supply options. The AC power-supply option (MT240A-R2) uses a female IEC power-cord interface, for which you can use various domestic and international power cords. (Refer to **Appendix B.**) The DC power-supply option (MT240A-48V-R2) operates in 48-VDC environments and is equipped with a 3-pin terminal-strip style DC power cord.

5. Operation

Once the MicroNTU G.703 is configured and installed, it should operate transparently.

5.1 Power-Up

To apply power to the MicroNTU G.703, first be sure that you have read **Section 3.3**, and that the unit has the proper voltage setting and fuse. The wrong setting or fuse could result in damage to the unit and connected equipment, and may constitute a fire hazard. Having checked the voltage setting, plug the AC power cord into both the MicroNTU G.703 and the AC outlet. Then power up the unit using the rear Power switch.

NOTE
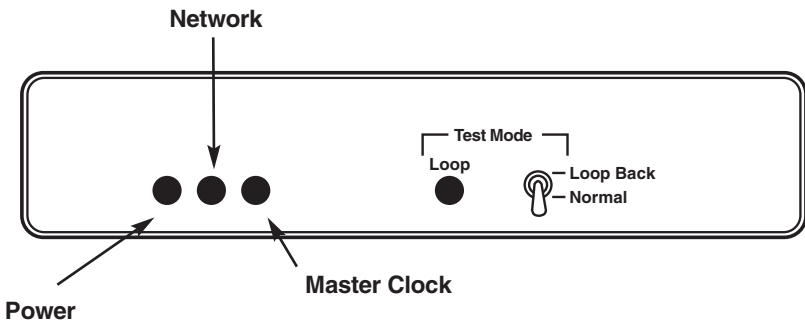**The PWR LED should glow when power is applied to the unit.**

Figure 5-1. The front panel.

5.2 LEDs

The MicroNTU G.703 features four front-panel LEDs that indicate the status of power, network connection, master clock, and loopback test. Figure 5-1 shows the location of each LED. Following Figure 5-1 is a description of each LED's function.

Power   Glows red when the MicroNTU G.703 is powered up.

Network   Glows green when the MicroNTU G.703 is receiving
                       correctly encoded data from the line-interface equipment.

Master Clock   Glows green when the MicroNTU G.703 is configured as
                       the master-clock unit.

Loop   Glows green when the MicroNTU G.703 is in loopback
                       mode.

5.3 Loopback Test (LAL)

The MicroNTU G.703 is equipped with a Local Analog Loopback (LAL) mode to
assist in evaluating the operation of the local MicroNTU G.703. Any data sent to
the local MicroNTU G.703 in this test mode will be echoed back (returned) to the
user device. For example, characters typed on the keyboard of a terminal will
appear on the terminal screen. To perform an LAL test:

a.)   Activate LAL by moving the front-panel toggle switch up and holding it in
      the "Loopback" mode. The "Loop" LED should glow. Once LAL is
      activated, the MicroNTU G.703 transmit output is connected to its own
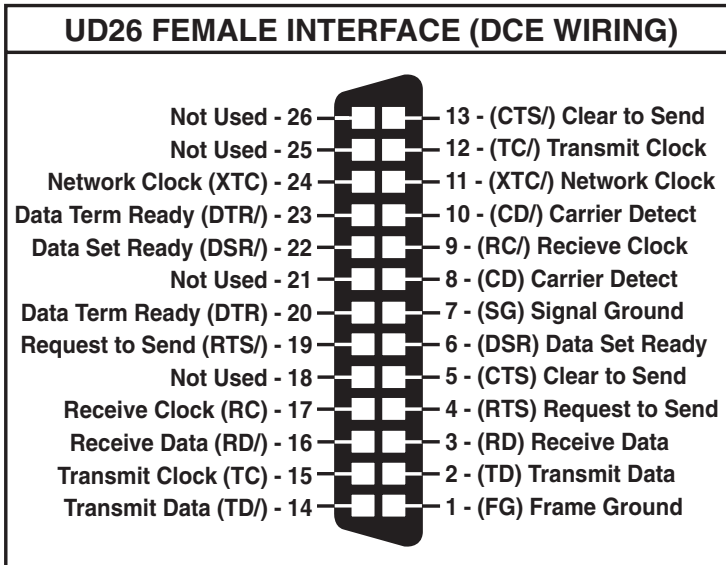   receiver.

NOTE
**The front-panel switch is spring-loaded, so it will return to "Normal"
operating mode when pressure is released. To put the MicroNTU G.703
in *continual* loopback mode, for the purpose of performing a BER test,
move DIP switch S1-8 to the "ON" position (see Section 3.1).**

b.)   Verify that the data-terminal equipment is operating properly and can be
      used for a test. If a fault is indicated, call your supplier for technical support
      or replace the unit.

c.)   Perform a BER (bit error rate) test on each unit. If the BER test equipment
      indicates no faults, but the data terminal indicates a fault, follow the
      manufacturer's checkout procedures for the data terminal. Also, check
      th interface cable between the terminal and the MicroNTU G.703.

NOTE

You must set the MicroNTU G.703 to Master Clock mode to operate the LAL test.

Appendix A: Pin Configurations

UD26 FEMALE INTERFACE (DCE WIRING)

Not Used - 26	13 - (CTS/) Clear to Send
Not Used - 25	12 - (TC/) Transmit Clock
Network Clock (XTC) - 24	11 - (XTC/) Network Clock
Data Term Ready (DTR/) - 23	10 - (CD/) Carrier Detect
Data Set Ready (DSR/) - 22	9 - (RC/) Recieve Clock
Not Used - 21	8 - (CD) Carrier Detect
Data Term Ready (DTR) - 20	7 - (SG) Signal Ground
Request to Send (RTS/) - 19	6 - (DSR) Data Set Ready
Not Used - 18	5 - (CTS) Clear to Send
Receive Clock (RC) - 17	4 - (RTS) Request to Send
Receive Data (RD/) - 16	3 - (RD) Receive Data
Transmit Clock (TC) - 15	2 - (TD) Transmit Data
Transmit Data (TD/) - 14	1 - (FG) Frame Ground

Appendix B: Factory Parts and Accessories

B.1 Basic Standalone Units

The MicroNTU G.703 standalone digital modem is available in two versions, depending upon the power supply installed. The AC version is supplied *with* a power cord. The DC version is supplied *without* a power cord.

All versions of the MicroNTU are supplied *without* a terminal (DTE) interface cable. This cable may be ordered separately (see **Section B.2**), or may be supplied by the user.

AC power-supply option,
switchable between 115 and 230 VAC..MT240A-R2

DC power-supply option,
operates in 48-VDC environments, equipped with
a 3-pin "terminal strip" for DC power connection MT240A-48V-R2

B.2 Terminal (DTE) Interface Cables

No terminal (DTE) cable is supplied with the MicroNTU G.703. You may construct your own cable using the pinout diagrams in **Appendix A**, or purchase one of the standard adapter cables listed below. Custom lengths are available through special order.

Part Number	Cable Description (Interface)
EHN092-V35M	UD26M/M34M Adapter Cable (6 ft.)
EHN092-V35F	UD26M/M34F Adapter Cable (6 ft.)
EHN092-X21M	UD26M/DB15M Adapter Cable (6 ft.)
EHN092-X21F	UD26M/DB15F Adapter Cable (6 ft.)
EHN092-530M	UD26M/DB25M Adapter Cable (6 ft.)
EHN092-530F	UD26M/DB25F Adapter Cable (6 ft.)

Appendix C: Safety Warnings and Requirements for UK Users

If you use the MicroNTU in the United Kingdom, these warning notices apply to the Input Port, the port marked "Network."

WARNING!

The port marked "SAFETY WARNING: see instructions for use" does not provide isolation sufficient to satisfy the requirements of BS6301; apparatus connected directly to this port should either have been approved to BS6301 or have previously been evaluated against British Telecommunications plc (Post Office) Technical Guides 2 or 26 and given permission to attach. Any other usage will invalidate the approval of the Interface Module.

Interconnection of the Interface Module (the port marked "Network") directly, or by way of any other apparatus, with ports on other apparatus (marked or not so marked) may produce hazardous conditions on the network. Users should seek advice from a competent engineer before such a connection is made.

The Interface Module is approved as a Host Independent. As such the Interface Module is only approved for use with a host, and with host attachments, that are either type approved in their own right, or, if supplied after March, 1989, are covered by terms of the General Approval number NS/G/1234/J/100003. A Host supplied under the terms of the General Approval number NS/G/1234/J/100003 satisfies the conditions of the paragraph above.

The Interface Module must not be modified in any way.

The terms of approval require that there must be a minimum distance (5 mm) between the Interface Module and any other part of the host, including other Interface Modules. This condition is met by default when the Interface Module is installed in an enclosure in accordance with the instructions. If voltages greater than 250V are present in the host, users should refer to a competent safety engineer for advice.

It is a condition of the approval that a copy of these user instructions and safety warnings must be supplied with the host. Failure to provide the Interface Module user instructions with the host will invalidate the Interface Module approval.

Failure to install the Interface Module in accordance with these instructions will invalidate the approval. If you experience difficulties, or are in any doubt, contact your supplier.

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