EXHIBIT C

User Manual

TAINET

DT-128

High-Speed Network Termination Unit

USER'S MANUAL

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CHAPTER 1
THE TAINET DT-128 SERIES NTU

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CHAPTER 1 : THE TAINET DT-128 Series NTU

1.1 Description

- TAINET DT-128 and DT-128N are high speed, synchronous and asynchronous, full duplex Network Termination Unit (NTU). The DT-128 is a stand-alone type for desk-top use. However, the DT-128N is designed as a rack-mounted type allowing you to install up to 16 NTU cards in one TRS32 shelf.
- DT-128 and DT-128N fully comply with ANSI T1.601 using 2B1Q line coding and echo cancellation technique for full duplex operation at synchronous 2400bps to 128Kbps or asynchronous 300bps to 38.4Kbps transmission rate over a 2/4-wire unconditioned unloaded twisted line.
- DT-128 and DT-128N provide an operating range of up to 6.0 Km over a 26 gauge wire or up to 9.0 Km over a 24 gauge wire in 2-wire mode, and up to 6.15 Km over 26 gauge wire or up to 9.0 Km over 24 gauge wire in 4-wire mode.
- DT-128 and DT-128N provide internal or external clock flexible use in different applications option in LT mode.
- DT-128 and DT-128N also provide diagnostic capability including Analog loopback, Digital loopback (Local and Remote), and BER TEST for troubleshooting both NTU and the line.
- Support remote configuration function via D channel.
- Front panel configuration, monitoring via a 2x16 characters LCD and six pieces of rubber switches.
- DT-128 and DT-128N front panel LED indicators provide indication for PWR, DTR, DSR, RTS, CTS, TXD, DCD, RXD, ACT and TST.
- DT-128N is also associated with TAINET MANAGER for Windows NMS, a standard feature, which commands pass forward to control unit.

1.2 Technical Specifications

- DT-128 and DT-128N NTU fully comply with ANSI T1.601.

- DTE Speed
  (1) Synchronous : 128K/64K/38.4K/19.2K/9600/4800/2400 bps
  (2) Asynchronous : 38.4K/19.2K/9600/4800/2400/1200/600/300 bps

- Line Requirement : 2 wire or 4 wire unconditioned unloaded twisted Line

- Operating Range

  2-wired Mode

  (1) Up to 6.0 Km over 26 gauge wire
  (2) Up to 9.0 Km over 24 gauge wire

  4-wired Mode

  (1) Up to 6.15 Km over 26 gauge wire
  (2) Up to 9.0 Km over 24 gauge wire

- Line Coding : 2B1Q

- Output Level : 13 or -3 dBm

- Line Impedance : Balanced 135Ω

- Line Interface : RJ11 Connector

- Equlization : Adaptive Equalizer

- Diagnostic Capability
  (1) Analog Loopback
  (2) Digital Loopback (Local or Remote)
  (3) Remote Configuration
  (4) BERT - Bit Error Rate Test with Test Pattern and Error Count

- Timing
  LT : Internal or External clock
  NT : Loopback clock

- Power Requirement : 90 ~ 260 VAC auto range, 47 ~ 63 Hz
  DC Source : -36 ~ -60 VDC option (for Rack)
  Dual Redundant AC or DC Power Supply option (for Rack)
  Consumption : Less than 7 Watts (Stand Alone Type)
  Less than 6.5 Watts (Rack Mount Type)
  Less than 110 Watts (Full Shelf Equipped)

- Operating Temperature: 0 °C ~ 50 °C
  Storage Temperature: -25 °C ~ 70 °C
  Relative Humidity : up to 95 % (non-condensing)

- Physical Size
  (1) Stand-alone Type (DT-128) - 194 W x 60 H x 316 D mm, Weight 1.5kg
  (2) Rack-mounted Type (DT-128N) - 220 W x 26 H x 328 D mm,Weight 0.6kg
  (3) Shelf (TRS32 RACK) - W - 19", H - 5RU, D - 380 mm, Weight 8 kg

- DTE Interface
  (1) EIA RS-232D, ITU-T V.28, EIA RS-530, 25pin D type, female
  (2) V.35 - 34 pin, female
  (3) X.21/V.11 - 15pin, female
  (4) G.703 64Kbps co-directional
  (5) V.36/RS-449 - 37pin, female

1.3 Ordering Information

• DT-128	High speed 128Kbps NTU (stand alone type)
• DT-128N	Rack mount type DT-128
• NMC32	NMS Control unit
• TRS32	19" width rack for up to 16 DT-128N cards
• PW-132A	90 ~ 260 VAC 130W power unit for rack
• PW-132D	-36 ~ -60 VDC 130W power unit for rack
• TAINET MANAGER for Windows	Network Management System for DT-128N
• Interface option	V.35, V.24/RS-232, RS-530, X.21/V.11, V.36/RS-449, G.703 64Kbps co-directional

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CHAPTER 2
INSTALLATION

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CHAPTER 2 : INSTALLATION

2.1 Description

This chapter provides the information needed to install the DT-128 NTU and to ensure that it is working properly. You may obtain more information about this subject for the DT-128N from the User's Manual of the TAINET TRS32 Shelf.

2.2 Unpacking

Save the carton and protective packing material in which your DT-128 NTU was shipped; you might need them for repackaging if you have to store or ship the NTU in the future. The following items are shipped with your DT-128 NTU:

* One DT-128 NTU User's Manual.
* One 7-feet (2.13m) modular telephone cable for connection to an RJ11 4-pin jack.
* One 6-pin box for twisted line application.

Rough handling during shipping causes most early NTU failure; after you unpack the NTU, check carefully for shipping damage. Contact the shipper if you notice any damage.
Direct any additional questions about damaged or missing parts to the nearest sales representative, or contact:

2.3 Site Requirements

The FCC requires telecommunications equipment to withstand electrical surges which may result from lightning strikes; TAINET NTUs meet the requirements set forth by the FCC. The following procedure outlines some common practices which can minimize the risk of damage to computer equipment from electrical surges.

1) Make sure the electrical service in your building is properly grounded as described in article 250 of the National Electrical Code (NEC) handbook.

2) Verify that a good copper wire of the appropriate gauge, as described in Tables 250-94/95 of the NEC Handbook, is permanently connected between the electrical service panel in the building and a proper grounding device such as:
   - ☞ A ground rod buried outside the building at least 8 feet (2.44 meters) deep in the earth.
   - ☞ Several ground rods, connected together, buried outside the building at least 8 feet (2.44 meters) deep in the earth.
   - ☞ A wire (see tables 250-94/95 of the NEC handbook for gauge) that surrounds the outside of the building and is buried at least 2.5 feet (.76 meters) deep in the earth. Note: The three grounding devices described above should be firmly placed in the earth. Soil conditions should not be dry where the device is buried.
   - ☞ A metal water-supply pipe connected to the water main in the street or a metal cased well. The water pipe used must not have plastic piping between the ground connection and the water main (or the well). The connection should be made where the pipe enters the building. The water meter must be shunted by a copper strap.

3) If you are unsure whether the electrical service in your building is properly grounded, have it examined by your municipal electrical inspector.

4) Install a surge protector between the NTU and AC power outlet. Any additional computer equipment you have connected to the NTU (directly or through another device), such as a terminal or printer, should also be plugged into the same surge protector. Make sure that the surge protector is properly rated for the devices you have connected to it.

2.4 Site Selection

Locate the DT-128 NTU no farther than 50 feet (15.24 meters) from your data terminal equipment (DTE) and within 6 feet (1.83 meters) of a grounded AC outlet furnishing the required power.

Install the modem in a clean area that is free from environmental extremes. Allow at least 6 inch (15.24 cm) in front of the modem for access to the front panel, and at least 4 inch (10.2 cm) in back for cable clearance. Position the modem so you can easily see the front panel. Do not stack the DT-128 on top of another NTU.

*CAUTION: To avoid overheating the DT-128, do not place anything within 1 inch (2.54 cm) of either side of the NTU, and do not place the NTU on its side.

2.5 AC Electrical Outlet Connection

Check the label on the bottom of the modem for the unit's power requirements. Once you are certain the power requirements specified on the label match those of your electrical outlet, plug the DT-128 NTU into the outlet.

Once the DT-128 NTU is installed as described in the previous sections, you may turn the power on. The NTU performs a self-test before DT-128 NTU greeting message appears on the liquid crystal display (LCD) on the NTU front panel.

2.6 Connecting with 2-wire/4-wire Line

To connect your NTU to a permissive RJ11 voice jack in 2/4 wire-line, follow this procedure:

1) Connect the 4-pin modular to 4-pin modular cable provided to connect your NTU to the line set via an RJ11 jack.
2) Change 2W/4W dip switch from (1,2) pins ON and (3,4) pins OFF to (3,4) pins ON and (1,2) pins OFF in the rear panel.
3) The newest version (H/W:V4.3, S/W:V3.0) of DT-128 was improved allowing 2W/4W selection through LCD menu-driven under CONFIG NTU MENU.

The pin layout of the connector for RJ11 operation is as follows:

Pin No.	Color	2-Wire	4-Wire
1	N/A		
2	Black		RX
3	Red	TX/RX	TX
4	Green	TX/RX	TX
5	Yellow		RX
6	N/A		

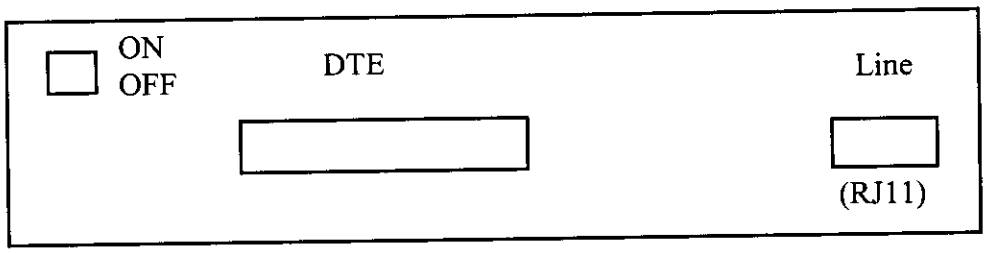

Fig 2-1 : 2-wire/4-wire Line Connection

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CHAPTER 3
FRONT PANEL LCD AND MENU-DRIVEN

CONTENT

CHAPTER 3 : FRONT PANEL LCD AND MENU-DRIVEN

3.1 The Front And Rear Panels

The front panel of TAINET DT-128 modem contains five touch switches (HOME Key, Right Key, Left Key, ENTER Key and EXIT Key) for direct operation, one 2 x 16 characters LCD displays and ten LED indicator lights providing a visual check of the modem's status, as illustrated blew.

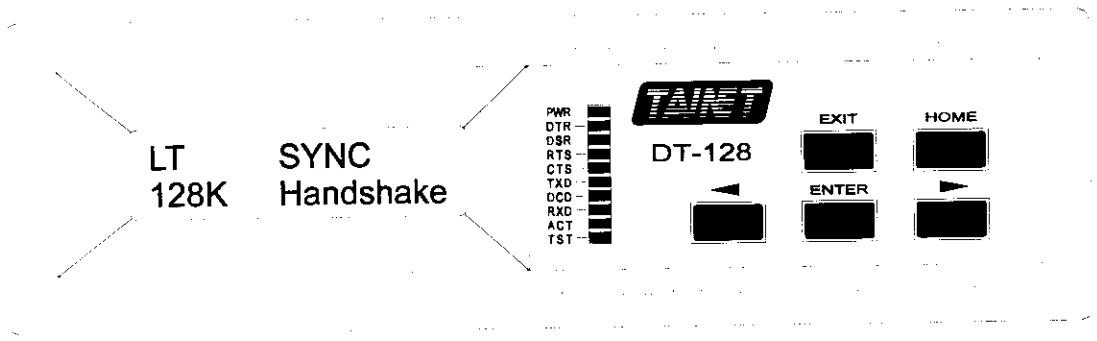


Figure 3-1 TAINET DT-128 front panel

The rear panel of TAINET DT-128 NTU contains an IEC 320 AC Power Inlet Connector, a Power On/Off switch, a RS-232 connector (connected to DTE Equipment), and one RJ11 telephone jack (connected to 2-wire or 4-wire twisted line), as illustrated below. For more detailed description, please refer to Chapter 2 "Installation" of this manual. In some applications may you need DTE interface, such as RS-232, EIA-530, X.21, V.35, and G.703 64Kbps co-directional interfaces. All of them are designed in our platform,and user can choose one of them by order (which location refers to Figure 3-3.).

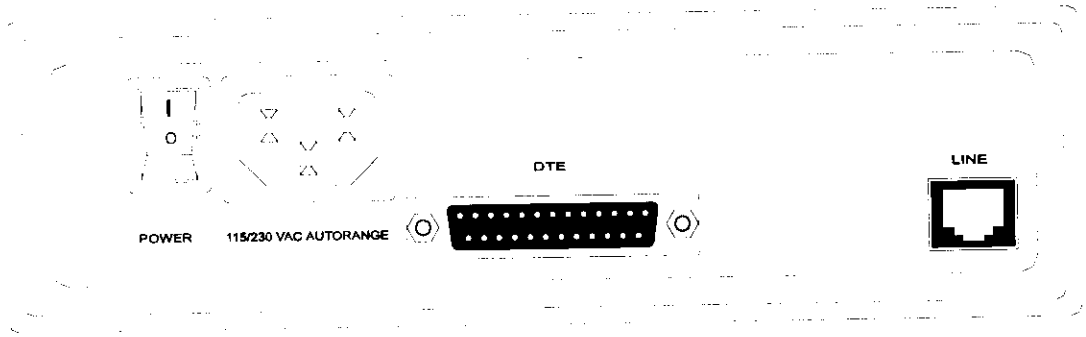


Figure 3-2 TAINET DT-128 rear panel

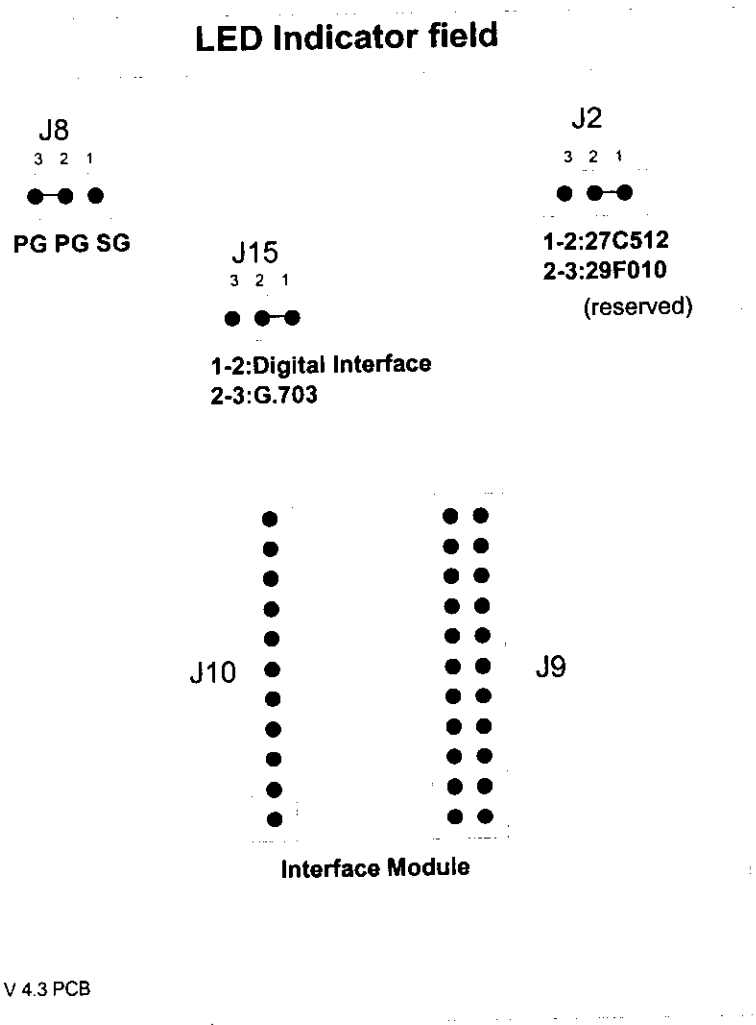


Figure 3-3 TAINET DT-128 Jumpers Location

3.2 Operating The DT-128

1. Keypads : It consists of 5 touch switches.

HOME	It is used as the, Restart function for U-interface linking up, or "HOME" key for set-up menu to go back to the home menu.
◀	Left key ; It is used to shift to left field.
▶	Right key; It is used to shift to right field.
ENTER	Enter key; It is used to enter the next lower level menu or confirm selections.
EXIT	Exit key; use it to go back to the upper level menu.

2. LED Indicator : 10 LED bar

PWR	--	On for power supply ok.
DTR	--	On for DTR signal present.
DSR	--	On for DSR signal present.
RTS	--	On for RTS signal present.
CTS	--	On for CTS signal present.

TXD -- On for "0", off for "1" TXD signal present.
DCD -- On for DCD signal present.
RXD -- On for "0", off for "1", RXD signal present.
ACT -- On for NTU activated.
TST -- On for test mode active.

3. LCD Display :

The DT-128 has a 2 by 16 characters LCD with auto backlight control. Some different pictures of the LCD display are shown below.

A. Top Menu

Example:

LT SYNC
128K CONNECT

Description:

1) Mode: LT Mode, NT Mode.
2) Status: Handshake, Activate, Connect.
3) Data Format: SYNC, ASYNC.
4) Speed: DTE speed=DCE speed=128Kbps

B. Menu Select

Example 1 :

L MENU SELECT
STATUS

Example 2 :

L MENU SELECT
TEST

Description:

1) In top menu, press "ENTER" key to enter this menu.
2) Select "LOCAL"or "REMOTE" first if connected.
3) The character "L" on the upper left corner stands for local.
4) You may use "▶" and "◀" keys to select menu.
5) Press "ENTER " key to enter the "MENU".
6) Press "EXIT" key to quit from this menu.
7) Note that status menu is not available before connection.

C. Menu Screen

Example 1 :

L STATUS retries = xxx

Example 2 :

R CONFIG NTU LT/NT Mode

Example 3 :

L TEST AL

Example 4 :

L CONFIG DTE Data Rate / Format

Description :

1) L-Local, R-Remote.
2) Menu name: STATUS, TEST, ...
3) Status : retries
4) Use "▶" or "◀" keys to shift among field; press "ENTER" key to enter the selected menu.

D. Set-up Menu

Example 1 :

LT/NT mode LT-Internal ←

Example 2 :

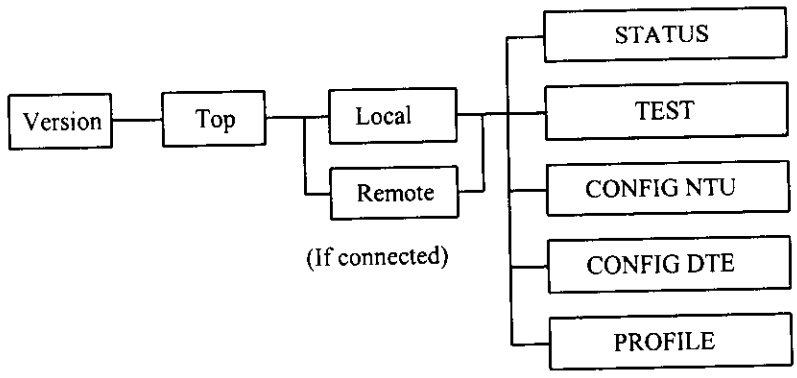
Data Rate / Form SYNC ←

Description :

1) Use "▶" or "◀" keys to shift among field, then press "ENTER" key to confirm and wait for ← appears on the LCD screen.
2) Press "EXIT" key to quit from this menu.

3.3 The Menu Tree

Main Menu



A. STATUS MENU

STATUS :	➡	Retries	= 0....16383

B. TEST MENU

	➡	Clear All	Has Been Done
	➡	AL	Off\On
	➡	DL	Off\On
	➡	RDL	Off\On
	➡	Test Pattern	Off\On
TEST :	➡	RDL Grant	Off\On
	➡	Error Count	0.....16383

C. CONFIG NTU MENU

CONFIG : NTU	➡	LT/NT Mode	LT-internal /LT-external /NT-Loopback
	➡	Line Type	2W/4W/4W Atten. 16dB

D. CONFIG DTE MENU

	➡	Data Rate/Format	Sync-128K /Sync-64K /Sync-38.4K /Sync-19.2K /Sync-9.6K /Sync-4.8K /Sync-2.4K /Async-38.4K /Async-19.2K /Async-9.6K /Async-4.8K /Async-2.4K /Async-1.2K /Async-0.6K /Async-0.3K
CONFIG : DTE	➡	DSR Control	Normal\Force on
	➡	CTS Control	Normal\Force on
	➡	DCD Control	Normal\Force on

E. PROFILE MENU

PROFILE :	➡	Load	Factory Profiles \0:LT-SYNC-128K \1:NT-SYNC-128K \2:LT-SYNC-64K \3:NT-SYNC-64K \4:LT-ASYNC-38.4K \5:NT-ASYNC-38.4K

3.4 Detailed Description of the menu tree

3.4.1 Test Menu

ITEM NAME	DESCRIPTION
CLEAR ALL	Clear all the tests in one time, and a prompt "Has been done" shall be shown.
AL	Local analog loop test (ON/OFF).This test is normally used to certify if the NTU is in normal operation condition.
♦ ON	
♦ OFF	
RDL	For remote digital loop test (ON/OFF). This test can control remote NTU to perform digital loop for finding out if the NTU and line of both ends are in normal condition.
♦ ON	
♦ OFF	
RDL Grant	Set for accepting remote digital loop (RDL) test.
♦ ON	/Enable
♦ OFF	/Disable
DL	For digital loop test (ON/OFF). This test enable the received digital data deframed and send back to match with the far end test.
♦ ON	
♦ OFF	
TP TYPE	Test patterns selection (CCITT V.52 Rec.)
♦ ON	/"511" pattern.
♦ OFF	/Turn off this function.
ERROR COUNT	Bit error count display function.
♦ 0....16383	/Press Left or Right shift key to insert error. /Press NTER key to clear.error count

3.4.2 Config NTU Menu

ITEM NAME	DESCRIPTION
LT/NT MODE	Select LT(Line Termination) or NT(Network Termination) Mode.
♦ LT-internal	/Select LT mode for activating request by sending 10k Hz tone & internal clock source.
♦ LT-external	/Select LT mode for activating request by sending 10k Hz tone & external clock source.
♦ NT-loopback	/Select NT mode for waiting 10kHz tone & loopback clock source.
Line Type	Select Line Requirement
♦ 2W	/2-Wire leased line (TX power:13dBm)
♦ 4W	/4-Wire leased line (TX power:13dBm)
♦ 4W Atten. 16dB	/4-Wire leased line with 16dB attenuation (TX power:-3dBm) for back to back short distance connection

3.4.3 Config DTE Menu

ITEM NAME	DESCRIPTION
Data Rate/Format	Select data speed & format.
♦ Sync-128K	Sync from 2400bps to 128kbps.
♦ Sync-64K	Async from 300bps to 38.4kbps.
♦ Sync-38.4K	
♦ Sync-19.2K	
♦ Sync-9600	
♦ Sync-4800	
♦ Sync-2400	
♦ Async-38.4K	
♦ Async-19.2K	
♦ Async-9600	
♦ Async-4800	Asynchronous data format is 1 start bit,8 data bits,and 1 stop bit. Actually, this kind of format could apply with 1 start bit,7 data bits,1 parity bit,and 1 stop bit data stream.
♦ Async-2400	
♦ Async-1200	
♦ Async-600	
♦ Async-300	
It always DTE Speed = NTU speed	
DSR CONTROL	DSR signal control selection.
♦ NORMAL	/Follow DTR signal from DTE.
♦ FORCE ON	/Force DSR in ON position.
DCD CONTROL	DCD signal control selection.
♦ NORMAL	/DCD signal follow ACT signal.
♦ FORCE ON	/Force DCD in ON position.
CTS CONTROL	CTS signal control selection.
♦ NORMAL	/Follow RTS signal from DTE.
♦ FORCE ON	/Force CTS in ON position.

3.4.4 Profile Menu

ITEM NAME	DESCRIPTION
LOAD	This machine provides 6 groups of load configuration profile. Among them cover most required applications for normal use. Others are set by the user when user wants to store favorated configuration.
FACTORY PROFILES	Load factory profile #0..#5
♦ #0 LT-SYNC-128K	/LT mode, SYNC, 128K
♦ #1 NT-SYNC-128K	/NT mode, SYNC, 128K
♦ #2 LT-SYNC-64K	/LT mode, SYNC, 64K
♦ #3 NT-SYNC-64K	/NT mode, SYNC, 64K
♦ #4 LT-ASYNC-38.4K	/LT mode, ASYNC, 38.4K
♦ #5 NT-ASYNC-38.4K	/NT mode, ASYNC, 38.4K

Item / Load	Config NTU mode	Config DTE mode			
	LT/NT Mode	Data Rate/Format	DSR	CTS	DCD
factory profile 0	LT-internal	SYNC-128K	force on	normal	normal
factory profile 1	NT-loopback	SYNC-128K	force on	normal	normal
factory profile 2	LT-internal	SYNC-64K	force on	normal	normal
factory profile 3	NT-loopback	SYNC-64K	force on	normal	normal
factory profile 4	LT-internal	ASYNC-38.4K	force on	normal	normal
factory profile 5	NT-loopback	ASYNC-38.4K	force on	normal	normal

3.5 Operating The DT-128N

The DT-128N shown in Figure 4 is a card type of DT-128.The card associated with TRS-32 has the same layout as the DT-128.The operation of DT-128N is similar to DT-128,and user can refer to TRS-32 manual to get more information.

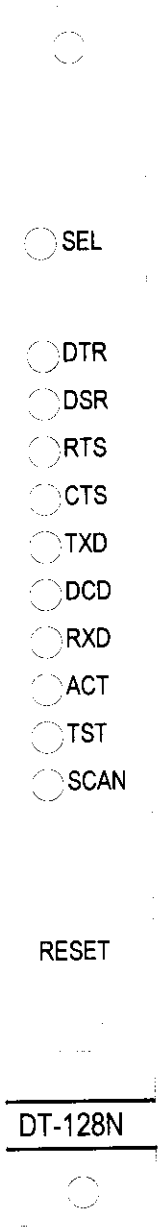


Figure 3-4 TAINET DT-128N Card

CHAPTER 4
GENERAL INFORMATION AND FEATURES

CONTENT

CHAPTER 4 : GENERAL INFORMATION AND FEATURES

4.1 Preview

In order to help you to get familiar with TAINET DT-128 NTU, this chapter introduces you some common applications. For most applications, the materials of this chapter will be enough.

4.2 2W/4W Uncondition Twisted Line

There is nothing but line application in DT-128 series NTU. Not only do hardware and recommendation limit, but also the environment and application field confine.

There are two-wire lined and four-wire line in NTU application.2W line achieves full duplex with only a pair of lines.4W line offers two independently unilateral transmission channel, therefore, it can achieve full duplex communication with less interference.

Obviously, the line quality of 4W line is better than that of 2W line. However, the DT-128 does an excellent job with both 2W and 4W twisted lines.

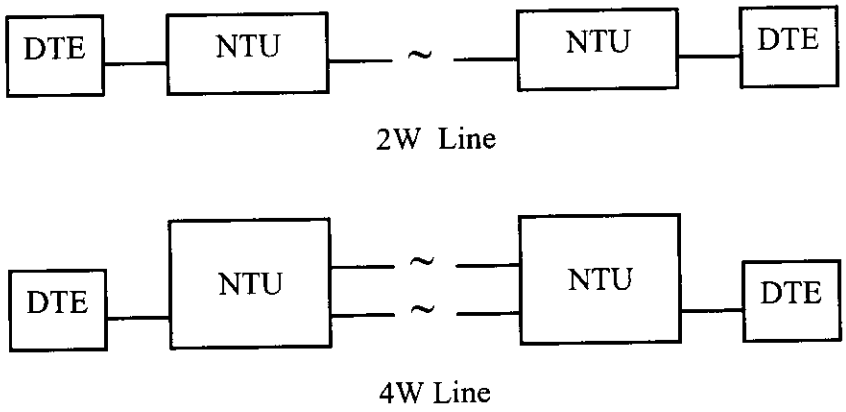


FIG. 4-1: 2W/4W line.

4.3 LT Mode VS. NT Mode

You may find the information of LT/NT settings in the "LT/NT MODE" column of "CONFIG NTU" MENU.

LT means NTU plays as a LT role running under internal clock or external clock option and actively sending a 10kHz tone to activate NT. NT,under loopback clock,is passively waiting an incoming 10kHz wake-up tone link up with LT. If two NTU units desire to connect each other, undoubtfully, they need to setup one unit to LT, and the other is NT.

4.4 Synchronous VS. Asynchronous

The data formats of both connecting NTUs must be exactly the same in order to exchange data with each other. Choosing various data formats in two NTUs still could connect each other, but they won' t transmit or receive data exactly.

There are synchronous and asynchronous data formats. The common personal computers and terminals are asynchronous. Whereas, the host computers and their terminals are often synchronous.

For most multiplexes and routers, the connecting NTUs should be synchronous. However, the user should know the type of the data terminal equipment (DTE) to get proper operation.

4.5 Configuration Profile Set-Up

The DT-128 has various operating modes. To save your energy, it provides 6 sets of factory default settings. Users may choose the most similar factory default setting; by pressing key properly in the front panel, make some modifications and the modified setting save to a user profile automatically. From then on, once the NTU is turned on, it will use the user profile as default.

Below is the profile setting procedure.

(1) With the main menu (MENU), press " ENTER " key to get " MENU SELECT " screen.
(2) Press "←" to move to " PROFILE " column, then press "ENTER" to enter "PROFILE" menu.
(3) Press "←" to move to "LOAD" column, then press "ENTER" key " to various sets of profile.

4.5.1 Factory Profile

#0	LT-SYNC-128K	LT mode, Sync, 128k
#1	NT-SYNC-128K	NT mode, Sync, 128k
#2	LT-SYNC-64K	LT mode, Sync, 64k
#3	NT-SYNC-64K	NT mode, Sync, 64k
#4	LT-ASYNC-38.4K	LT mode, Async, 38.4k
#5	NT-ASYNC-38.4K	NT mode, Async, 38.4k

4.6 Remote Configuration

The DT-128 is equipped with remote configuration functions. You may use it to get the remote working status and change the operation mode and parameters of the remote site TAINET NTU. It offers you the conveniences of installation and maintenance. Note that both NTUs should be offering by TAINET, and these functions are not effective before NTU activated.

If you are using the front panel, press "ENTER" key in the main menu to enter "Remote/Local" selection. Use "←" or "→" keys to select "Romote"; then press "ENTER" key to activate remote functions. About 1 second later, the screen shows "Remote ←" message in the second row and the NTU is completely working in the remote mode. At this moment, what you see on the local NTU is exactly the same as that of the remote NTU, In other words, there is no difference for you to operate the front panel of the local NTU from the remote one except that all keys on the remote NTU are disabled.

Especially we should mention that in our device,we separate the ISDN 2B+D mainstream to two groups of data stream.One is 2B channel for data transmission channel,and the other is D channel for remote operation channel.As we know,in this way,the remote operation will not interrupt normal data transfer activity in the 2B channel.The remote function mainly dedicated to send remote LCD screens back,and also user can alter parameters,parts of which maybe cause two devices from "connect state" to "handshake state", from local site.For example,If users change some settings involved in link state to cause link failed,such as AL TEST and DL TEST,and so on,the linking to retry will disable.Anyway,we really want to emphesize that remote function can be concurred with data transmission,and it will help you to get more information from remote site if you can use it with caution

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CHAPTER 5
MAINTENANCE

CONTENT

CHAPTER 5 : MAINTENANCE

5.1 Description

This chapter gives you the information of maintenance and the required instruments in order to let you recover the troubles quickly.

5.2 Instruments

The only instrument you need is a multi-meter, due to the embedded digital and analog test abilities.

5.3 Periodic Maintenance

For every three months, you should do the following jobs.

(a) Turn the power off, open top cap, clean the NTU, check the plugs, make sure all the connectors are connected firmly.

(b) Be sure that the indicator functions are well.

5.4 Troubleshooting

Once the DT-128 failure, please check and record the indicators at the moment , and then turn the power off. Consequently, make sure the IC's on printed circuit board are firmly sited. Try to turn the power on again, if the trouble still exists, please follow the procedures below.

1) Power Unit

* Make sure you get a proper power source. If no indicator is lighted, probably the problem is the power unit.
* Check the power fuse; if it is broken, replace it.

2) Digital Interface

* Do the AL (local analog loopback) test, feed some data into the NTU and check if they were returned.
* Please makes sure the interface is connected firmly; also check if the cable is in good condition.

5.5 Return Procedure

We suggest the individuals who hold a failed DT-128 would contact with your local representative or distributor of Tainet, or just directly access our customer service department as soon as possible in order not to cause catastrophe. You may locate the contact address and phone number in the cover sheet of this manual.

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Appendix : Parameter Table

ENTRY	DEFAULT	UNIT	FUNCTION		
Reserved	0	byte	Counter of reactivation		
Speed	0	byte	DTE speed = DCE speed		
			0	128000 bps	
			1	64000 bps	
			2	38400 bps	
			3	19200 bps	
			4	9600 bps	
			5	4800 bps	
			6	2400 bps	
			7	1200 bps	
			8	600 bps	
			9	300 bps	
Test	0	bit	bit 0	0	AL off
				1	AL on
			bit 1	0	DL off
				1	DL on
			bit 2	0	RDL off
				1	RDL on
			bit 3	0	Loop1 off
				1	Loop1 on
			bit 4	0	IDL off
				1	IDL on
			bit 5	0	Test pattern off
				1	Test pattern 511
			bit 7,6		Reserved
Ntu	0	bit	bit 0	0	Sync data mode
				1	Async data mode
			bit 1	0	LT
				1	NT

ENTRY	DEFAULT	UNIT	FUNCTION		
			bit 3,2	00	Internal clock
				01	External clock
				10	Loopback clock
			bit 7,6,5,4		Reserved
Lead	0	bit	bit 0	0	DSR normal
				1	DSR forced on
			bit 1	0	DTR normal
				1	DTR forced on
			bit 2	0	RTS normal
				1	RTS Force on
			bit 3	0	CTS normal
				1	CTS force on
			bit 4	0	DCD normal
				1	DCD force on
			bit 7,6,5		reserved

Appendix: DT-128 DTE Interface DB-25 DIP Assignment Table

		RS-232 (V.24)		V.35		RS-530		X.21	
ISO 2110 CONNECTOR PIN NOS.		(1) CIRCUITS \SIGNALS	(2) DCE DTE	(3) CIRCUITS /SIGNALS	(4) DCE DTE	(5) CIRCUITS /SIGNALS	(6) DCE DTE	(7) CIRCUITS /SIGNALS	(8) DCE DTE
01									
02	TD	103	←	103a	←	103a	←	103a	←
03	RD	104	→	104a	→	104a	→	104a	→
04	RTS	105	←	105	←	105a	←	105a	←
05	CTS	106	→	106	→	106a	→		
06	DSR	107	→	107	→	107a	→		
07	SG	102		102		102		102	
08	DCD	109	→	109	→	109a	→	109a	→
09				115b	→	115b	→		
10						109b	→	109b	→
11				113b	←	113b	←		
12				114b	→	114b		114b	→
13						106b	→	106b	→
14				103b	←	103b	←	103b	←
15	TC	114	→	114a	→	114a	→	114a	→
16				104b	→	104b	→	104b	→
17	RC	115	→	115a	→	115a	→		
18									
19						105b	←	105b	←
20	DTR	108	←	108	←	108a	←		
21									
22						107b	→		
23						108b	←		
24	EXC	113	←	113a	←	113a	←		
25									

Appendix: G.703 64Kbps Co-directional Interface Application

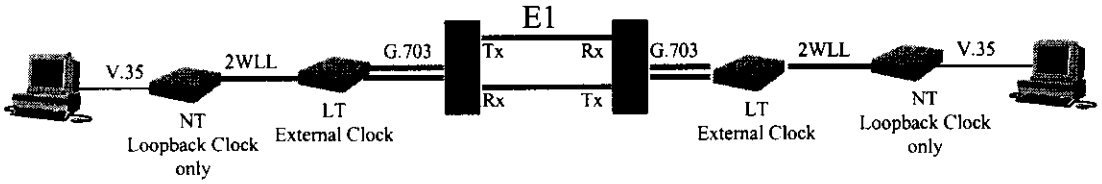


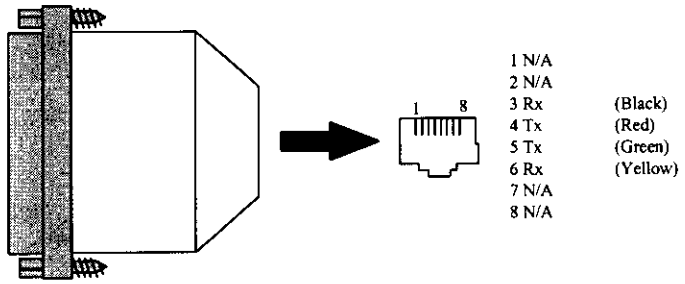
Fig.1 System Diagram

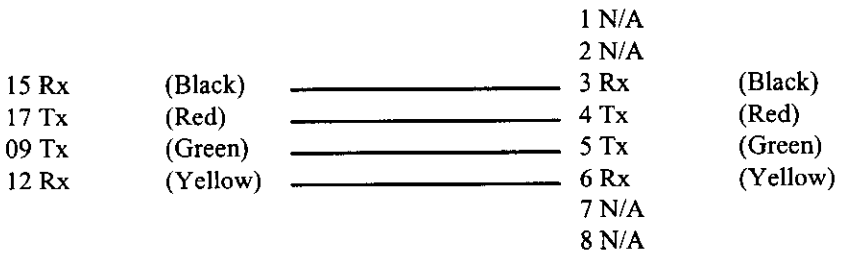
1. G.703 interface support maximum length from LT to PCM site:
   500m on 26 AWG
   600m on 24 AWG

2. Internal G.703 module configuration:
   J1 Short → for 128Kbps (Proprietary)
   J1 Open → for 64Kbps (Standard)

3. Mother Board Configuration:
   J15 2-3 Short → G.703

4. Include a DB-25 to RJ-45 adapter for G.703 :





INFORMATION TO THE USER

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device. Pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and if not installed and used in accordance with the instructions may cause harmful interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

This booklet is available from the US government Printing Office, Washington, DC 20402, Stock NO. 004-000-00345-4.

The shielded RS-232 cable is to be used in order to ensure compliance with FCC Part 15, and it is the responsibility of the user to provide and use shielded RS-232 cable from NTU to personal computer.

CAUTION: Any changes of modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

INFORMATION TO THE USER

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device. Pursant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception. Which can be determined by turning the equipment off and on the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

__Consult the dealer or an experienced radio/TV technician for help.

This booklet is available from the US government Printing Office *washington, DC 20402, Stock NO. 004-000-00345-4.

CAUTION: Any changes of modifications not expressly approved by the grantee of this device could void the users authority to operate the equipment.

The shielded RS-232 cabel are to be used in order to ensure compliance with FCC Part 15, and it is the responsibility of theuser to provide and use shielded RS-232 cabel from modem to personal computer.