User Manual

ET100A [ver2.1]

Synchronous WAN Ethernet Bridge

10/100Base-TX Ethernet over

V.35, X.21, RS-232/530/449

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ET100A Ethernet WAN Bridge, User Manual
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This manual supports the following models:
ET100A Ethernet WAN Bridge (V2.1)
(manufactured after February 2017)

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Overview

The **ET100A** Network Bridge is a high performance, remote, self-learning Ethernet bridge. Its compact size and low cost make it ideal for cost-sensitive bridging applications, or as a LAN extender or segmenter over bit stream type infrastructures. Several selectable synchronous data interfaces, including V.35, RS-530, RS-449, X.21, and RS-232, make this Ethernet Bridge's connection between 10Base-T and 100Base-TX LAN and various SYNC data port interfaces convenient.

Features

- Supports raw HDLC, Cisco® HDLC, and PPP encapsulation
- 10BASE-T/100BASE-TX, Full Duplex or Half Duplex
- HP Auto-MDI/MDIX detects and corrects crossed cable
- Automatic address learning, aging and deletion after 5 minutes
- Forwarding and filtering rate at wire speed with through put latency of 1 frame.
- Auto padding of undersized packets to meet the minimum Ethernet packet size requirement
- 1763 packet buffer
- Ethernet interface has automatic Twisted Pair polarity correction
- Built-in nx64K / nx56K timing clock generator for WAN link for speeds up to 10mbps
- 256 MAC Table
- Ethernet flow control per IEEE802.3x

Specifications

- **LAN**

Standard	Fully compliant with IEEE 802.3/802.3u, 802.3x
Connector	Shielded RJ-45
Speeds	10BASE-T/100BASE-TX, Full or Half Duplex
MTU	1536 bytes
MAC Table	256 addresses

- **WAN**

Interface	Selectable RS-232(SYNC), V.35, RS-449/530, and X.21
Protocol	Synchronous HDLC, PPP or Cisco® HDLC
Buffer	1763 Packets
Connector	DB25 Male
Type	DTE port
Data Rates	n x 64(56)Kbps, up to 10Mbps
Clock Source	Internal or External, RxC non-invert or invert

- **General**

Power	AC Adapter; EUP 100~240VAC / 12VDC-1A
	Unit; DC9~12V/300mA
Environment	Temperature: 0~50° C
	Humidity: <90% non-condensing
Dimensions	135(L) x 80(W) x 25(H) mm
Weight	150g

- **LED INDICATORS**

SYNC (green)	ON=WAN Protocol Up
LINK (green)	ON=receiving CTS and DSR signal
Rx (green)	ON=WAN receive data (blinking)
Tx (green)	ON=WAN transmit data (blinking)
PWR (green)	ON=Power OK
ERROR (red)	OFF=system OK,
	2 pulse=configuration error; 3 pulse=WAN CRC
ACT (green)	OFF=No link; Blinking=receiving data
LINK (green)	ON=LAN linked; OFF=no link

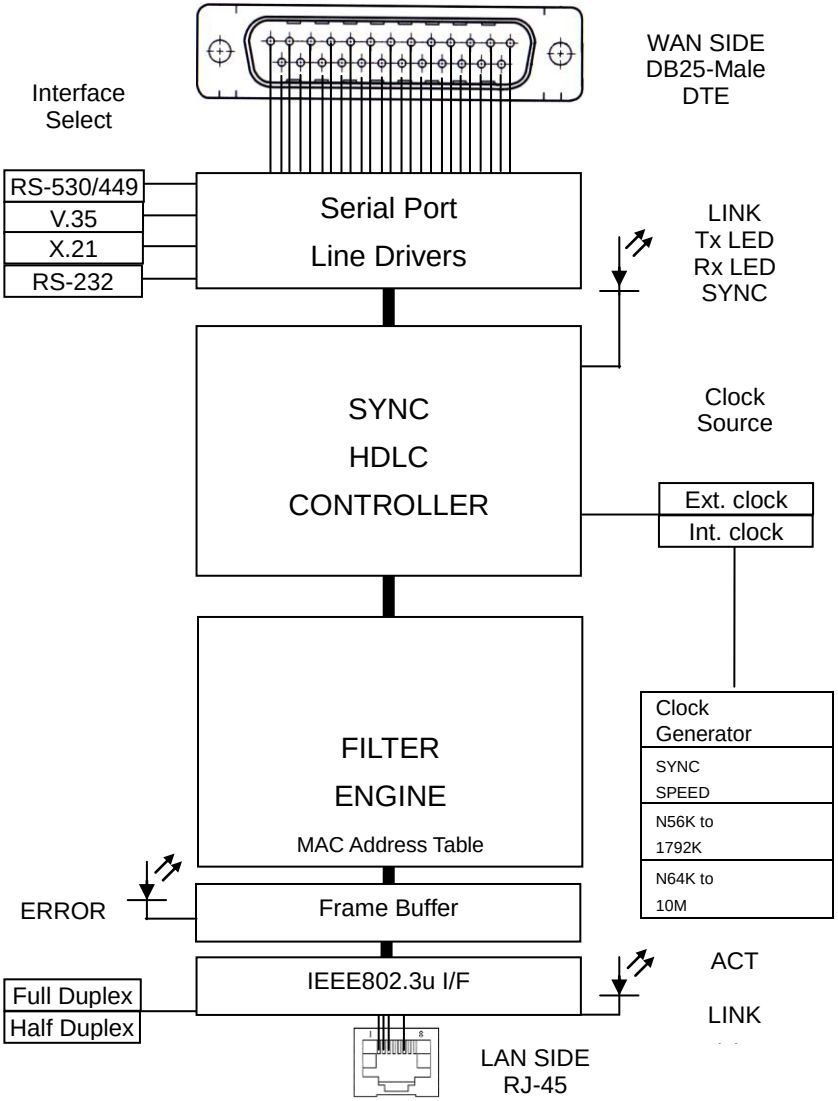

Figure 1: ET100A Functional Block Diagram

Unit Detail

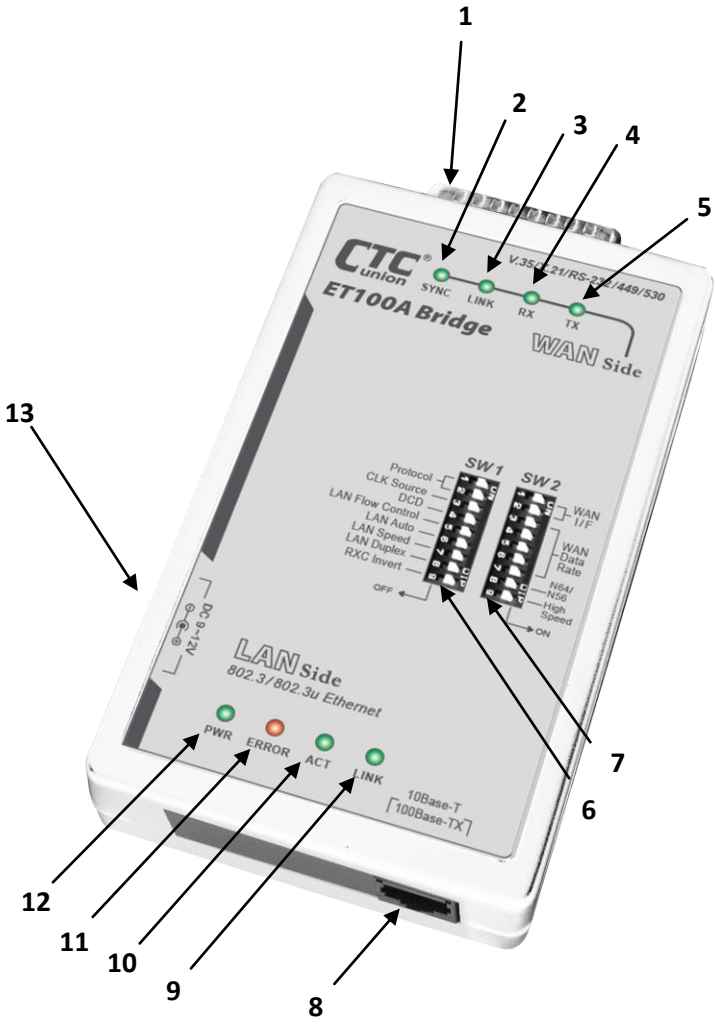

Figure 2. ET100A Unit Detail

(1) DB25 Male Connector:

This connector connects to the appropriate adapter cable for connection to the various supported data interfaces. The **ET100A** performs in DTE mode and its WAN port connector may be connected directly to a DCE device (such as a modem or DSU/CSU).

(2) SYNC LED:

Green, where ON indicates protocol is up. If OFF, first make sure physical link is up, then make sure protocol settings match.

(3) LINK LED:

Green, where ON indicates the presence of CTS / DSR signal on WAN connection.

(4) RX LED:

Green, on or flashing indicates receiving data on the WAN interface.

(5) TX LED:

Green, on or flashing indicates transmitting data on the WAN interface.

(6) SW1:

Configuration setting for the bridge. (Please refer to DIP SW setting table.)

(7) SW2:

Configuration setting for the bridge. (Please refer to DIP SW setting table.)

(8) RJ-45 Ethernet LAN Port:

This is an auto-MDI/MDIX port for connection to the LAN.

(9) LINK LED: (LAN)

Green, indicates the Ethernet has a link to an external device.

(10) ACT LED: (LAN)

Green, indicates data being received from the LAN connection.

(11) ERROR LED:

Red, indicates an error condition as follows:

ON - System Error

Pulse 2 - Configuration error

Pulse 3 - WAN receive has CRC errors

(12) PWR LED:

Green on, when external power adapter is plugged in and AC power is supplied to it.

(13) DC 9~12V

This jack receives power from the external DC 12V AC power switching adapter. The center pin is positive voltage.

Theory of Operation

A bridge is used to connect networks locally or remotely such that they appear to the user to be the same network. An Ethernet LAN bridge will connect two LAN segments at the Data Link Layer (ISO Layer 2). At this layer, the MAC (Media Access Control) addresses, are used for low level addressing to send information to devices. The bridge builds tables of MAC addresses for each network segment based on the source and destination addresses of the packets it receives and forwards, then filters the traffic not destined for the remote network.

The Ethernet-WAN bridge will connect two remote Ethernet networks over bit stream interfaces such as that of synchronous modems or DSU/CSUs. One method to do this is to use HDLC, an international standard set by the ISO, a set of protocols for carrying data over a link with error and flow control. Another method uses PPP and a third uses Cisco® HDLC.

The **ET100A** utilizes both Ethernet Bridging and encapsulation to provide a connection between LANs over bit stream architectures. The LAN side of the **ET100A** receives an Ethernet packet and examines its destination MAC address. If it knows the MAC is on the local network then it simply drops the packet. Otherwise, if it knows the packet destination is on the remote side, or if it cannot be determined because its MAC cannot be found in the table, then it forwards it. During forwarding, the packet is processed for transmission across the WAN link. Here is where the Ethernet packet in encapsulated.

When the HDLC or PPP packet is received on the remote side unit's data port, the packet is checked for transmission errors, then the original Ethernet packet(s) is recovered and sent out the remote's LAN port completing the transmission. Here is the typical application of the **ET100A**.

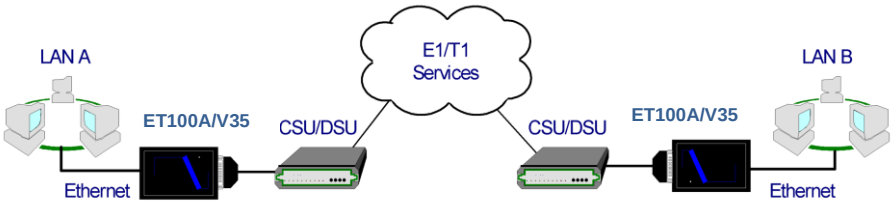

Figure 3. Typical application of ET100A LAN-WAN Bridge.

Many times the **ET100A** is commonly referred to as an Ethernet to V.35, Ethernet to X.21, or Ethernet to Datacom 'converter'. As a sales/marketing term or non-technical reference, the term is OK. However, from a technical standpoint, the term is a misnomer. The Ethernet is not "converted" to V.35, it is run "over" the V.35 link. Conversion also implies that the interface can work both ways. This is NOT the case for the LAN-WAN Bridge as the following application shows.

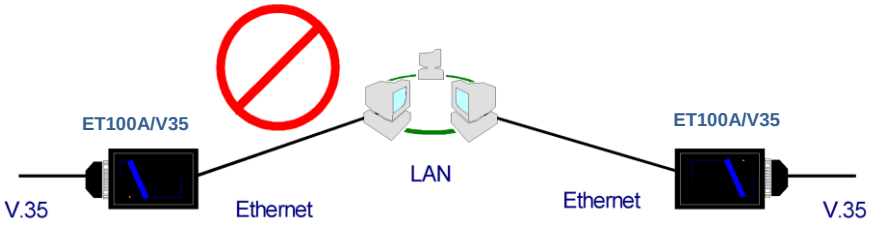

Figure 4. Application NOT ALLOWED for ET100A.

Why does the previous application not work? It won't work because the application requires a bit stream to be encapsulated into Ethernet packets, or into TCP/IP and then Ethernet, for transmission across the LAN. This requires more than just manipulation at the Data Link layer (ISO Layer 2), it requires programming to include all seven layers including the Application layer. Transmitting bit stream or TDM (time division multiplexed) data over Ethernet requires a device such as an IP-Multiplexer.

Please refer to the "Applications" section at the end of this manual for additional application examples.

DIP Switch Operation Settings

SW1 Operation Settings

SW1									Function
1	2	3	4	5	6	7	8	9	
OFF	ON								HDLC
ON	OFF								Cisco® HDLC
OFF	OFF								PPP
		OFF							External WAN clock
		ON							Internal WAN clock
			OFF						DTR follows DSR. RTS follows CTS.
			ON						DTR & RTS always ON
				OFF					LAN IEEE802.3x Enable
				ON					LAN IEEE802.3x Disable
					OFF				LAN Auto-Negotiation Enable
					ON	OFF	OFF		100M/Full Duplex
					ON	OFF	ON		100M/Half Duplex
					ON	ON	OFF		10M/Full
					ON	ON	ON		10M/Half
								OFF	RxC non-inverted
								ON	RxC inverted

Table 1: SW1 Operation Settings

SW2 WAN Interface Settings

SW2 DIP		WAN INTERFACE TYPE
1	2	
OFF	OFF	V.35
ON	OFF	RS-530/RS-449/X.21
ON	ON	RS-232

Table 2: SW2 WAN Interface Type

SW2 WAN Speed Type

SW2 DIP		WAN SPEED TYPE
8	9	
OFF	OFF	64K~2048K (N 64K)
ON	OFF	56K~1792K (N 56K)
OFF	ON	2176K~6144K (HS-1)
ON	ON	6272K~10240K (HS-2)

Table 3: SW2 WAN Speed Type

SW2 WAN Clock Baud Rate

RATE NO.	SW2 DIP					BAUD RATE			
	3	4	5	6	7	N 64K	N 56K	HS-1	HS-2
1	OFF	OFF	OFF	OFF	OFF	64K	56K	2176K	6272K
2	ON	OFF	OFF	OFF	OFF	128K	112K	2304K	6400K
3	OFF	ON	OFF	OFF	OFF	192K	168K	2432K	6528K
4	ON	ON	OFF	OFF	OFF	256K	224K	2560K	6656K
5	OFF	OFF	ON	OFF	OFF	320K	280K	2688K	6784K
6	ON	OFF	ON	OFF	OFF	384K	336K	2816K	6912K
7	OFF	ON	ON	OFF	OFF	448K	392K	2944K	7040K
8	ON	ON	ON	OFF	OFF	512K	448K	3072K	7168K
9	OFF	OFF	OFF	ON	OFF	576K	504K	3200K	7296K
10	ON	OFF	OFF	ON	OFF	640K	560K	3328K	7424K
11	OFF	ON	OFF	ON	OFF	704K	616K	3456K	7552K
12	ON	ON	OFF	ON	OFF	768K	672K	3584K	7680K
13	OFF	OFF	ON	ON	OFF	832K	728K	3712K	7808K
14	ON	OFF	ON	ON	OFF	896K	784K	3840K	7936K
15	OFF	ON	ON	ON	OFF	960K	840K	3968K	8064K
16	ON	ON	ON	ON	OFF	1024K	896K	4096K	8192K
17	OFF	OFF	OFF	OFF	ON	1088K	952K	4224K	8320K
18	ON	OFF	OFF	OFF	ON	1152K	1008K	4352K	8448K
19	OFF	ON	OFF	OFF	ON	1216K	1064K	4480K	8576K
20	ON	ON	OFF	OFF	ON	1280K	1120K	4608K	8704K
21	OFF	OFF	ON	OFF	ON	1344K	1176K	4736K	8832K
22	ON	OFF	ON	OFF	ON	1408K	1232K	4864K	8960K
23	OFF	ON	ON	OFF	ON	1472K	1288K	4992K	9088K
24	ON	ON	ON	OFF	ON	1536K	1344K	5120K	9216K
25	OFF	OFF	OFF	ON	ON	1600K	1400K	5248K	9344K
26	ON	OFF	OFF	ON	ON	1664K	1456K	5376K	9472K
27	OFF	ON	OFF	ON	ON	1728K	1512K	5504K	9600K
28	ON	ON	OFF	ON	ON	1792K	1568K	5632K	9728K
29	OFF	OFF	ON	ON	ON	1856K	1624K	5760K	9856K
30	ON	OFF	ON	ON	ON	1920K	1680K	5888K	9984K
31	OFF	ON	ON	ON	ON	1984K	1736K	6016K	10112K
32	ON	ON	ON	ON	ON	2048K	1792K	6144K	10240K

Table 4: SW2 WAN Clock Baud Rate

NOTE 1: When the ET100A is set to internal WAN clock, SW2-3 to SW2-9 provision the baud rate. If WAN clock is set external, these are ignored.
NOTE 2: After changing the DIP switch setting, you must restart the device to activate the setting.

When the **ET100A** leaves the factory, all DIP switch settings are set to the OFF position.

Auto-negotiation:

When this feature is enabled (SW1-6=OFF), the Speed (SW1-7) and Duplex (SW1-8) settings are ignored and are automatically determined from the LAN connection. When this feature is disabled (SW1-6=ON), the Duplex and Speed settings of the LAN follow the settings of SW1-7 and SW1-8. Use forced mode with caution to avoid Duplex Mismatch.

Protocol Selection:

The **ET100A** supports selecting one of three encapsulation protocols. When selecting HDLC, the encapsulation is per ISO 13239. The cHDLC encapsulation is compatible with Cisco® modified HDLC. The PPP encapsulation follows RFC1661 and is also a very popular encapsulation protocol. The protocol selection is controlled by the setting of DIP switches SW1-1 and SW1-2.

Clock Selection:

The **ET100A** inherently acts as a DTE device. A 1:1 cable is used to connect to a DCE device such as a modem, CSU/DSU or data multiplexer. Clock source comes from the DCE so the clock setting is usually external (SW1-4 OFF). The **ET100A** is also capable of acting as a DCE.

In this case a crossover cable is required and clock setting (SW1-4 ON) is internal. Data rate is then set by SW2, 3~9 and **ET100A** provides clock source. The **ET100A** can also invert the polarity of the receive clock (DTE or DCE) by using SW1-9.

LAN Flow Control:

The **ET100A** LAN port supports IEEE802.3x flow control, which can help to regulate the higher speed LAN traffic that hits the bottle neck of the slower WAN speed. Without flow control, the LAN packets that exceed the WAN speed will be dropped and the resulting timeout caused must be handled by the application layer.

LAN Auto Negotiation:

The **ET100A** LAN port supports auto-negotiation per IEEE802.3u. When auto negotiation is enabled and the LAN port connects to another auto negotiation compliant port, the LAN speed will be auto detected while the Duplex should be negotiated to Full Duplex.

When connecting to legacy equipment, it may be necessary to 'force' the speed and Duplex on the LAN port. Care must be taken here to avoid a Duplex Mismatch condition when a 'forced' port connects to an 'auto' port. Without negotiation, an 'auto' port will revert to Half Duplex per the IEEE802.3u standard. A Duplex Mismatch condition could result in extremely poor network performance.

WAN Interface Selection:

The **ET100A** has selectable hardware interface circuits. When set to X.21/RS-530/RS-449, the logic, clock and handshaking signals all follow RS-422 electrical (balanced signals). When set to RS-232, all signals become single ended and follow RS-232D signal levels. When configured as V.35, the logic and clock signals follow RS-422 electrical, while handshaking signals are RS-232 electrical.

WAN Port Pin Assignment

The following tables give the pin, circuit, function and signal direction as seen on the ET100A's DB25M connector for each of the selectable interfaces. RS-232 and RS-530 connections may be made directly. Adapter cables are required to match the physical connectors for V.35 (MB34), X.21 (DB15) and RS-449 (DB37).

a. RS-232 INTERFACE PIN ASSIGNMENT (SYNC)

PIN	CIRCUIT	FUNCTION	DIRECTION	EIA
2	TD	Transmit data	OUT	BA
3	RD	Receive data	IN	BB
4	RTS	Request to send	OUT	CA
5	CTS	Clear to send	IN	CB
6	DSR	Data set ready	IN	CC
7	GND	Signal ground		AB
8	DCD	Carrier detect	IN	CF
15	TC	Transmit clock	IN	DB
17	RC	Receive clock	IN	DD
20	DTR	Data term ready	OUT	CD
24	XTC	DTE xmit clock	OUT	DA

Table 5: RS-232 Interface Pin Assignment

SW2-1/2 ON/ON

b. V.35 INTERFACE PIN ASSIGNMENT

PIN	CIRCUIT	FUNCTION	DIRECTION	CCITT
1	FGND	Protective GND		101
2	TD(A)	Xmit data A	OUT	103
3	RD(A)	Receive data A	IN	104
4	RTS	Request to send	OUT	105
5	CTS	Clear to send	IN	106
6	DSR	Data set ready	IN	107
7	GND	Signal ground		102
8	DCD	Data carrier detect	IN	109
9	RC(B)	Receive clock B	IN	115
11	XTC(B)	DTE Xmit clock B	OUT	113
12	TC(B)	Xmit clock B	IN	114
14	TD(B)	Xmit data B	OUT	103
15	TC(A)	Xmit clock A	IN	114
16	RD(B)	Receive data B	IN	104
17	RC(A)	Receive clock A	IN	115
20	DTR	Data terminal ready	OUT	108
24	XTC(A)	DTE Xmit clock A	OUT	113

Table 6: V.35 Interface Pin Assignment

SW2-1/2 OFF/OFF

c. RS-449/RS-530 INTERFACE PIN ASSIGNMENT

PIN	CIRCUIT	FUNCTION	DIRECTION	CCITT
1	FGND	Protective GND		101
2	SD(A)	Xmit data A	OUT	103
3	RD(A)	Receive data A	IN	104
4	RS(A)	Request to send A	OUT	105
5	CS(A)	Clear to send A	IN	106
6	DM(A)	Data set ready A	IN	107
7	GND	Signal ground		102
8	RR(A)	Data carrier detect A	IN	109
9	RT(B)	Receive clock B	IN	115
10	RR(B)	Data carrier detect B	IN	109
11	TT(B)	DTE Xmit clock B	OUT	113
12	ST(B)	Xmit clock B	IN	114
13	CS(B)	Clear to send B	IN	106
14	SD(B)	Xmit data B	OUT	103
15	ST(A)	Xmit clock A	IN	114
16	RD(B)	Receive data B	IN	104
17	RT(A)	Receive clock A	IN	115
19	RS(B)	Request to send B	OUT	105
20	TR(A)	Data terminal ready A	OUT	108
22	DM(B)	Data set ready B	IN	107
23	TR(B)	Data terminal ready B	OUT	108
24	TT(A)	DTE Xmit clock A	OUT	113

Table 7: RS-449/RS-530 INTERFACE PIN ASSIGNMENT

SW2-1/2 ON/OFF

d. X.21 INTERFACE PIN ASSIGNMENT

PIN	CIRCUIT	FUNCTION	DIRECTION	CCITT
1	FGND	Protective GND		101
2	T(A)	Xmit data A	OUT	103
3	R(A)	Receive data A	IN	104
4	C(A)	Request to send A	OUT	105
7	GND	Signal ground		102
8	I(A)	Data carrier detect A	IN	109
9	S(B)	Receive clock B	IN	115
10	I(B)	Data carrier detect B	IN	109
14	T(B)	Xmit data B	OUT	103
16	R(B)	Receive data B	IN	104
17	S(A)	Receive clock A	IN	115
19	C(B)	Request to send B	OUT	105

Table 8: X.21 INTERFACE PIN ASSIGNMENT

SW2-1/2 ON/OFF

Cable Pin Assignments:

RS-530 Cable, 25 conductor round, 1 to 1, 1m.

(This cable may be used for RS-232 applications as well.)
Part#:58-D2FD2M007, RS-530 Cable, DB25 Female <=> DB25 Male, 1 Meter

DB25(Female) PIN		DB25(Male-DTE) PIN	Circuit Name
1	<==========>	1	Shield
7	<==========>	7	Signal Gnd
2	<==========>	2	BA - TD(A)
14	<==========>	14	BA - TD(B)
3	<==========>	3	BB - RD(A)
16	<==========>	16	BB - RD(B)
4	<==========>	4	CA - RTS(A)
19	<==========>	19	CA - RTS(B)
5	<==========>	5	CB - CTS(A)
13	<==========>	13	CB - CTS(B)
6	<==========>	6	CC - DSR(A)
22	<==========>	22	CC - DSR(B)
20	<==========>	20	CD - DTR(A)
23	<==========>	23	CD - DTR(B)
8	<==========>	8	CF - DCD(A)
10	<==========>	10	CF - DCD(B)
15	<==========>	15	DB - TC(A)
12	<==========>	12	DB - TC(B)
17	<==========>	17	DD - RC(A)
9	<==========>	9	DD - RC(B)
24	<==========>	24	DA - XTC(A)
11	<==========>	11	DA - XTC(B)
21	<==========>	21	RL
18	<==========>	18	LL
25	<==========>	25	TM

NOTE: "A" and "B" signals must be twisted pair

RS-232 Cable, 12 conductor round, 1m.

(Use this cable for pure RS-232 applications.)
Part#:58-xxxxxxxx, RS-232 Cable, DB25 Female <=> DB25 Male, 1 Meter

DB25(Female)		DB25(Male-DTE)	
PIN		PIN	Circuit Name
1	<==========>	1	Shield (AA)
7	<==========>	7	Signal Gnd (AB)
2	<==========>	2	TD (BA)
3	<==========>	3	RD (BB)
4	<==========>	4	RTS (CA)
5	<==========>	5	CTS (CB)
6	<==========>	6	DSR (CC)
8	<==========>	8	DCD (CF)
20	<==========>	20	DTR (CD)
15	<==========>	15	TC (DB)
17	<==========>	17	RC (DD)
24	<==========>	24	XTC (DA)

V.35 Cable, multi-conductor round, 1m.

Part#:58-D2FM3M001, V.35 Cable, DB25 Female – MB34 Male, 1 Meter

DB25(Female) PIN		MB34(Male-DTE) PIN	Circuit Name
2	<==========>	P	TD(A)
14	<==========>	S	TD(B)
3	<==========>	R	RD(A)
16	<==========>	T	RD(B)
4	<==========>	C	RTS
5	<==========>	D	CTS
6	<==========>	E	DSR
20	<==========>	H	DTR
8	<==========>	F	DCD
24	<==========>	U	XTC(A)
11	<==========>	W	XTC(B)
15	<==========>	Y	TC(A)
12	<==========>	AA	TC(B)
17	<==========>	V	RC(A)
9	<==========>	X	RC(B)
1	<==========>	A	Shield
7	<==========>	B	Signal Gnd
22	<==========>	J	RI

NOTE: TWISTED PAIRS;

P,S
R,T
U,W
Y,AA
V,X

RS-449 Cables, multi-conductor round, 1m.

Part#:58-D2FD3M003, RS-449 Cable, DB25 Female – DB37 Male, 1M

DB25(Female) PIN		DB37(Male-DTE) PIN	Circuit Name
1	<==========>	1	Shield
7	<==========>	19,37,20	Signal Gnd
(the following are all twisted pairs)			
2	<==========>	4	SD(A)
14	<==========>	22	SD(B)
3	<==========>	6	RD(A)
16	<==========>	24	RD(B)
4	<==========>	7	RS(A)
19	<==========>	25	RS(B)
5	<==========>	9	CS(A)
13	<==========>	27	CS(B)
6	<==========>	11	DM(A)
22	<==========>	29	DM(B)
20	<==========>	12	TR(A)
23	<==========>	30	TR(B)
8	<==========>	13	RR(A)
10	<==========>	31	RR(B)
24	<==========>	17	TT(A)
11	<==========>	35	TT(B)
15	<==========>	5	ST(A)
12	<==========>	23	ST(B)
17	<==========>	8	RT(A)
9	<==========>	26	RT(B)

NOTE: "A" and "B" signals must be twisted pair

X.21 Cables, multi-conductor round, 1m.

Part#:58-xxxxxxxx, X.21 Cable, DB25 Female – DB15 Male, 1M

DB25(Female) PIN		DB15(Male-DTE) PIN	Circuit Name
1	<==========>	1	Shield
7	<==========>	8	Ground
2	<==========>	2	T(A)
14	<==========>	9	T(B)
3	<==========>	4	R(A)
16	<==========>	11	R(B)
4	<==========>	3	C(A)
19	<==========>	10	C(B)
5,6	<==========>	5	I(A)
13,22	<==========>	12	I(B)
15,17	<==========>	6	S(A)
12,9	<==========>	13	S(B)

NOTE: "A" and "B" signals must be twisted pair

Application Examples

In the following example, the **ET100A** is configured for bridging over an E1 (or T1) carrier provider's network. The **ET100A**'s interface is set to V.35 to match the CSU/DSU unit. The CSU/DSU may be set unframed or may be set to use a fraction (n x 56 or n x 64) of the E1 (or T1) line. The CSU/DSU timing is received from the carrier provider's network so the **ET100A**'s timings for Tx and Rx clocks should be set to external. In this configuration, the rate DIP settings of the **ET100A** are ignored.

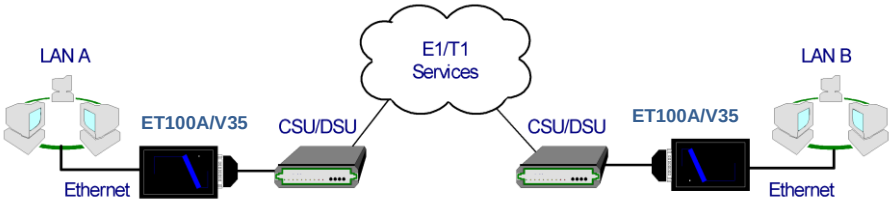

Figure 5: Bridging over E1 services

APPLICATIONS

In the next example, the **ET100A** is setup to bridge over a PSTN's leased line. The **ET100A'**s speed settings depend upon the speed of the leased line and the settings of the modems. The timing scheme recommended is this application is for the Tx and Rx Clocks of each unit to be set to External while the clocks of the modems are set to Internal for both or Internal for one and Loop for the other.

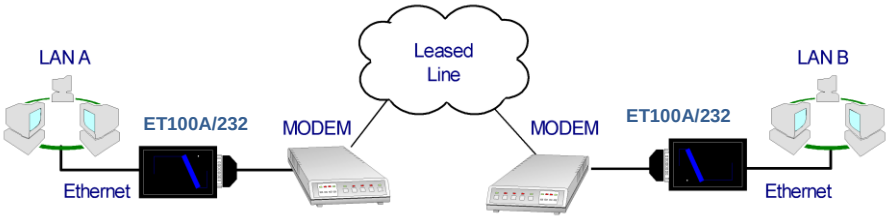

Figure 6: Bridging over Synchronous leased line.

APPLICATIONS

In the following example, the **ET100A** is paired with a G703/64K interface converter to provide connection over G.703 64Kbps services. If the G.703 transmit and receive clocks are provided by the central carrier, each G703/64K converter will be set to centra-directional line timing. Both **ET100A**'s will have their Tx / Rx clocks set external.

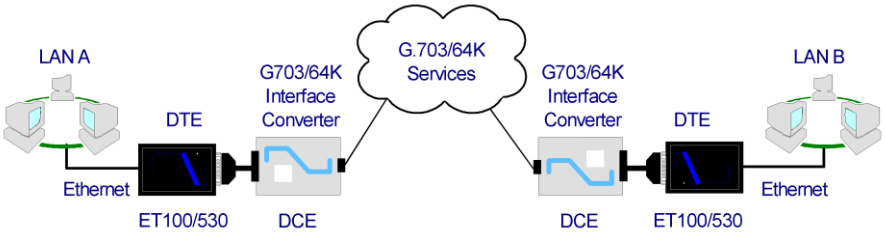

Figure 7: ET100A bridge over G.703 64K services.

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CTC Union Technologies Inc

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Attn : Technical Support Department

From Company: _____

Name: _____

Tel: ( ) _____

Fax:( ) _____

■ **MODEL:** ☐ **ET100A**

■ **ACTIVITY: As attached in DIP switch setting table**

■ **SYS CONFIGURATION:**

■ **Question**

Technical Inquiry Form

MODEL No.: ☐ ET100A

Please fill in the DIP switches configuration with '✓' marks into the following table.

Send it to us by fax, and we will reply to you immediately.

SW NO.	DIP	FUNCTION	Your Setting		CTC Suggestion	
			ON	OFF	ON	OFF
SW1	1	Protocol Selection				
	2	Protocol Selection				
	3	WAN Clock Source				
	4	CTS/DSR - DCD				
	5	LAN Flow Control (802.3x)				
	6	Auto / Forced				
	7	10M / 100M				
	8	Full / Half Duplex (manual)				
	9	NA (reserved)				
SW2	1	WAN I/F Type				
	2	WAN I/F Type				
	3	WAN Clock Rate (Internal)				
	4	WAN Clock Rate (Internal)				
	5	WAN Clock Rate (Internal)				
	6	WAN Clock Rate (Internal)				
	7	WAN Clock Rate (Internal)				
	8	WAN Clock Rate (Internal)				
	9	WAN Clock Rate (Internal)				

Additional comments/questions: