

TOSHIBA

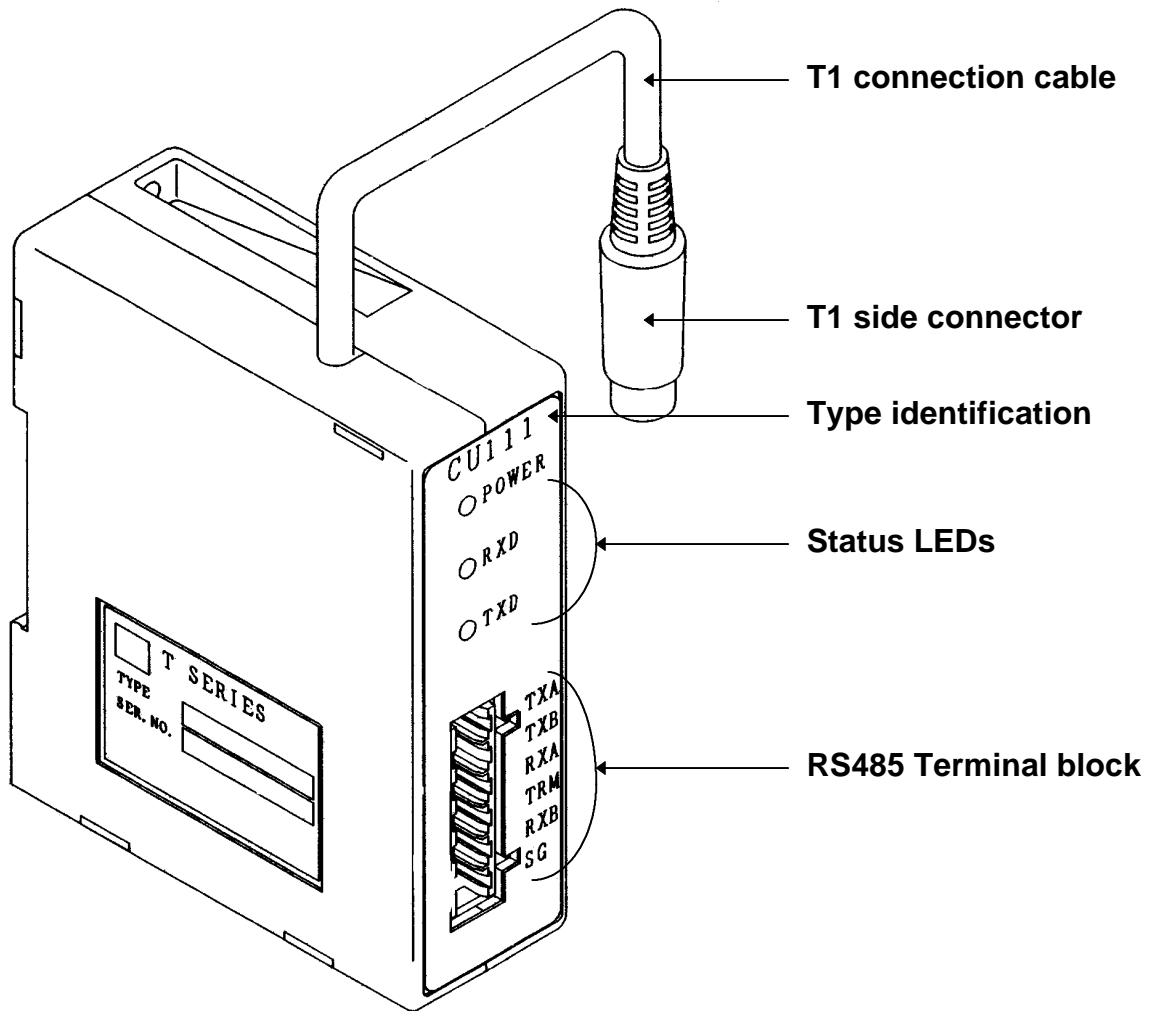
PROGRAMMABLE CONTROLLER

PROSEC **T1**

RS232C/RS485 MULTI-DROP ADAPTER

CU111

■ **USER'S MANUAL**



Thank you for purchasing a TOSHIBA product.
Please confirm the product has arrived in good condition and use it according to this guide.
This guide has been prepared for users who have general knowledge of the programmable controllers and control systems. If any parts of this guide are not clear to you, contact TOSHIBA agent.

CAUTION

1. Use the multi-drop adapter in the environment specified in the T1 user's manual. Using the multi-drop adapter in the illegal environment may lead to electric shock, fire, failure, or malfunction.
2. Neither disassemble nor modify the multi-drop adapter. Otherwise, it may get fired, failed, or malfunctioned.
3. The multi-drop adapter CU111 is designed for the T1. Do not use it for other purposes.
4. Turn off the power of the T1 main unit before connecting the cable.
5. Do not pull the T1 connection cable without grasping the connector. It can cause cable disconnection.
6. Do not extend the T1 connection cable.

■ Unpacking confirmation

Check the product matches the type notation on the packing case.
Also, check the followings are in the packing case.

Multi-drop adapter (CU111)	1
Metal fitting for screw	1
Terminal block (attached)	1
Guide (this document)	1

■ Product identification

Product type : CU111
Part number : TCU111**S

■ Handling precautions

The multi-drop adapter specification confirm to the T1 main unit.
Please read the following documents.

T1 USER'S GUIDE	(UG-TS07***-E007)
T1 USER'S MANUAL - Basic Hardware and Function -	(UM-TS01***-E001)
T1 USER'S MANUAL - Option Cards and I/O Modules -	(UM-TS01***-E002)
T1 USER'S MANUAL - Computer Link Function -	(UM-TS01***-E003)

Also, keep this guide and related manuals so that you can read them anytime while the T1 is in operation.

CU111 Specifications

1. Overview

Connecting the RS232C/RS485 multi-drop adapter (CU111) to the T1's programmer port, you can use the RS485 computer link function.

By this function, long-distance and one -to- N communications become available.

2. Specifications

(1) Function specification

Item		Specification
Connection	RS232C	DIN - 8pin (T1 programmer port connector)
	RS485	Removable terminal block 6pin
Length of T1 connection cable		30cm
Status LEDs		3 (Refer to the following table)
Isolation		Non isolation between RS232C and RS485
Power Supply		5Vdc from T1 main unit
Current consumption		75mA
Size		30mm(W) × 90mm(H) × 75mm(D) (except cable)

(2) Transmission specification

Item		Specification
Interface		Conforms to RS232C (T1 side)
		Conforms to RS485 (Host side)
Transmission distance		30cm (between T1 and adapter)
		Max. 1km (RS485)
Transmission speed		9600 bps
Framing	Start bit	1bit (Fixed)
	Data bit	8bits (Fixed)
	Parity	Odd parity/ Non (automatic detection)
	Stop bit	1bit (Fixed)
Number of stations		Max. 32

(3) RS485 transmission cable

Shielded twisted cable which conforms to the RS485, should be used for communication cable. It's recommended that 0.9mm diameter or more, 3 pairs or more cables are used.

(4) Operation Status LEDs

Name (color)	Direction	LED Status	
		Lit	Not Lit
POWER (green)		5V power is normal and connected to T1	5V power is not normal.
RXD (green)	Host → T1	Data receiving (RXD = 0)	Data not receiving (RXD = 1)
TXD (green)	T1 → Host	Data transmitting (TXD = 0)	Data not transmitting (TXD = 1)

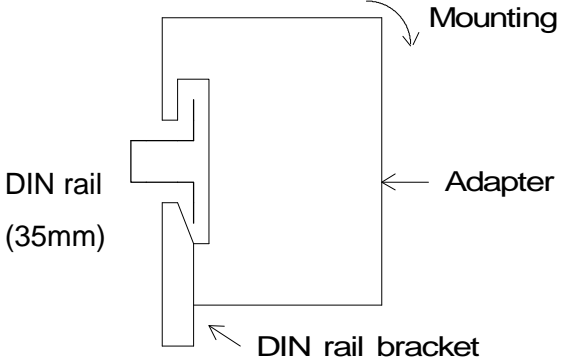
3.Installation

1.Installing the adapter

Either DIN rail or screw mounting is available.
The length of the T1 connection cable is 30cm. Consider the cable length when installing the multi-drop adapter.
Please read the installation section of the T1 user's manual.

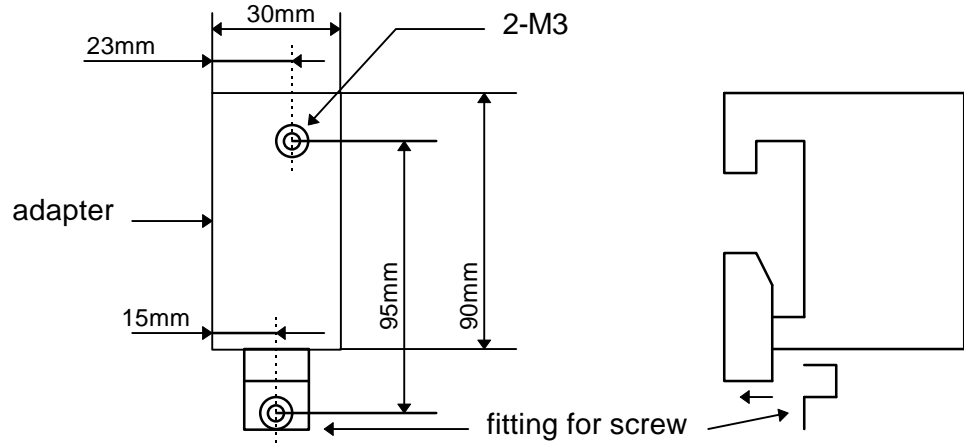
(Mounting on a DIN rail)

- (1) Hang the adapter on the DIN rail at first.
Next, push the adapter and hook the DIN rail.
- (2) Please check that the DIN rail bracket hooks the DIN rail.



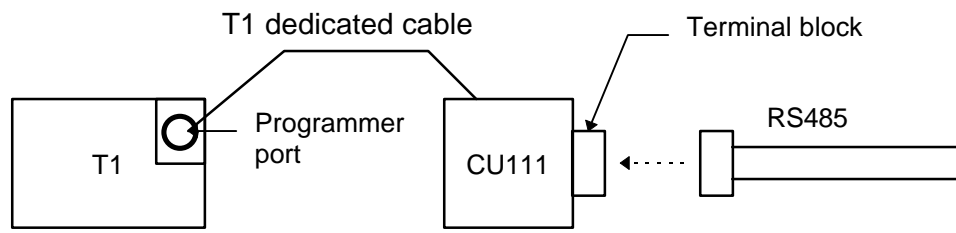
(Screw mounting)

Attach the metal fittings for screw to the DIN rail bracket and screw securely using the M3 screws.



2.Connecting the dedicated cable

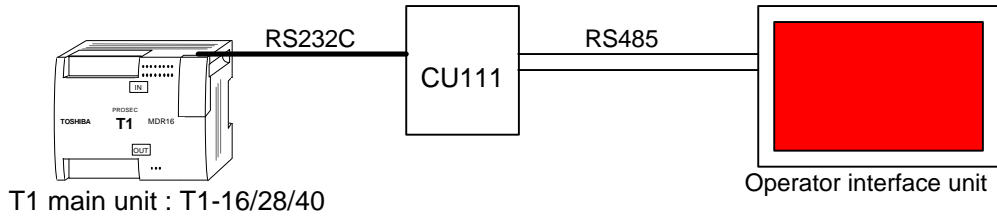
Turn off the power of the T1 main unit. Connect the T1 side connector to the T1's programmer port and RS485 cables to the terminal block.
Do not connect or remove the cables while power to the T1 is on.



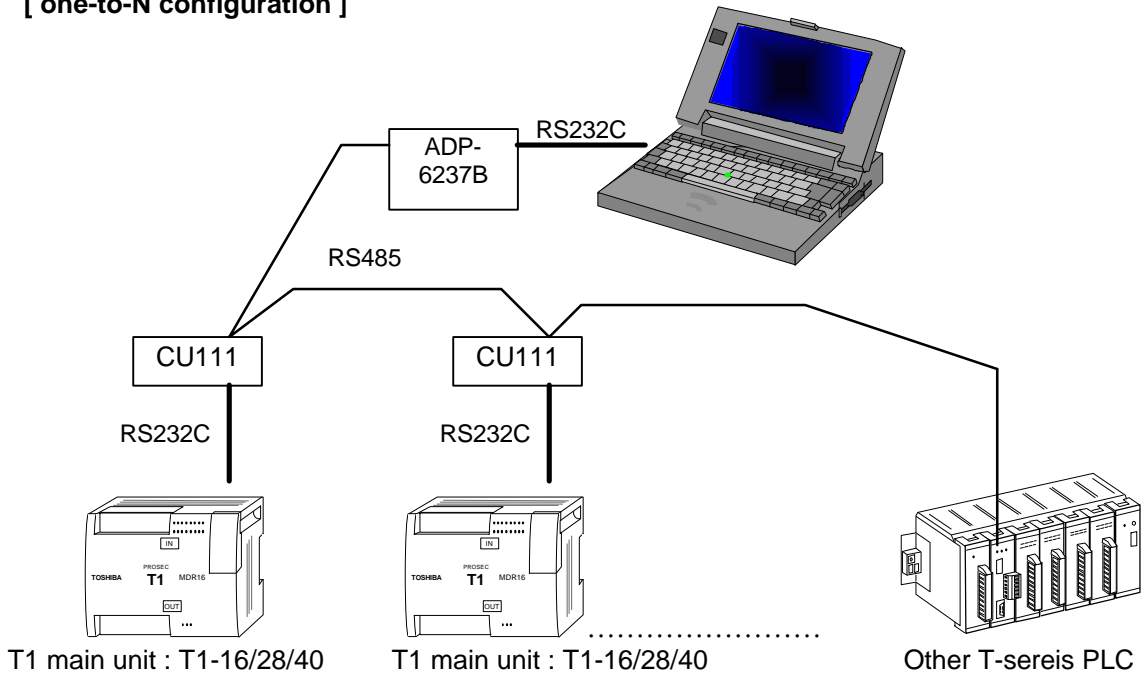
CU111 Configuration

4. System configuration example

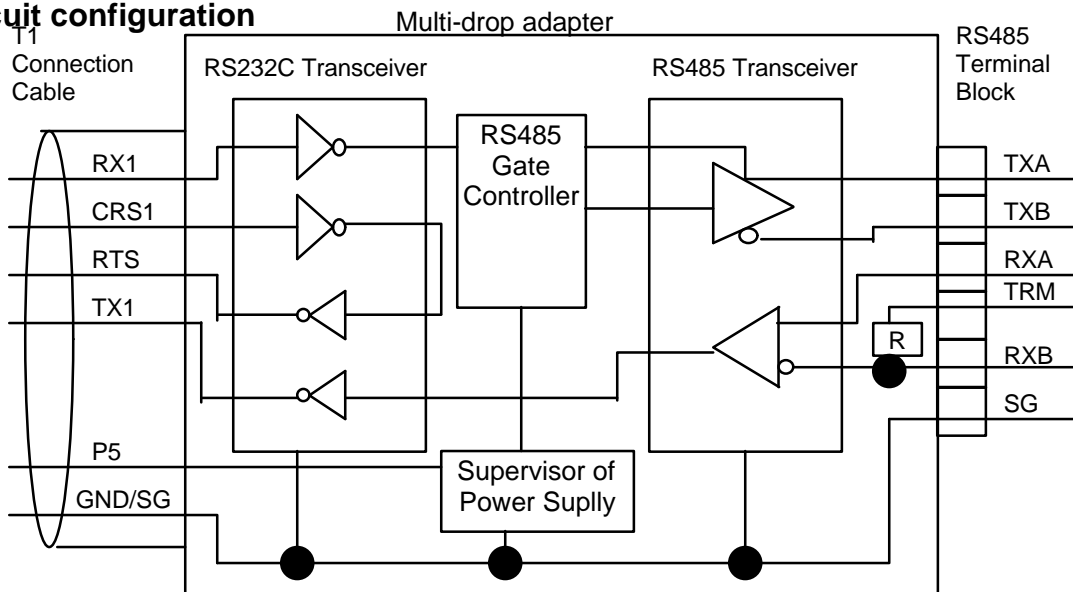
[one-to-one configuration]



[one-to-N configuration]



5. Circuit configuration



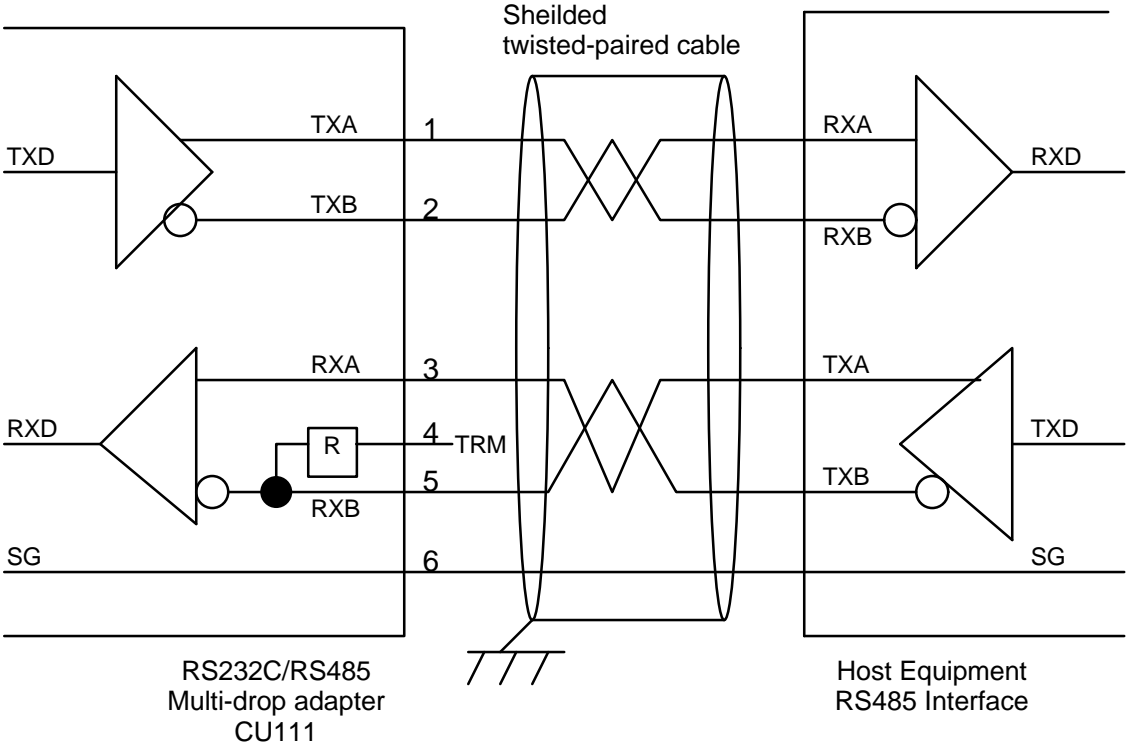
*Termination registers : 1/2W 120Ω

6.Computer Link (RS485) interface

(1)Computer Link (RS485) signal name and pin assignment

Pin No.	Signal Name	Function
1	TXA	CU111→RS485 (In phase signal)
2	TXB	CU111→RS485 (Reverse signal)
3	RXA	CU111←RS485 (In phase signal)
4	TRM	Termination
5	RXB	CU111←RS485 (Reverse signal)
6	SG	Signal Ground

(2)Computer Link (RS485) interface connection



Short between RXA(Pin No.3) and TRM(Pin No.4) for termination of one-to-one configuration at CU111. Refer to the next page.

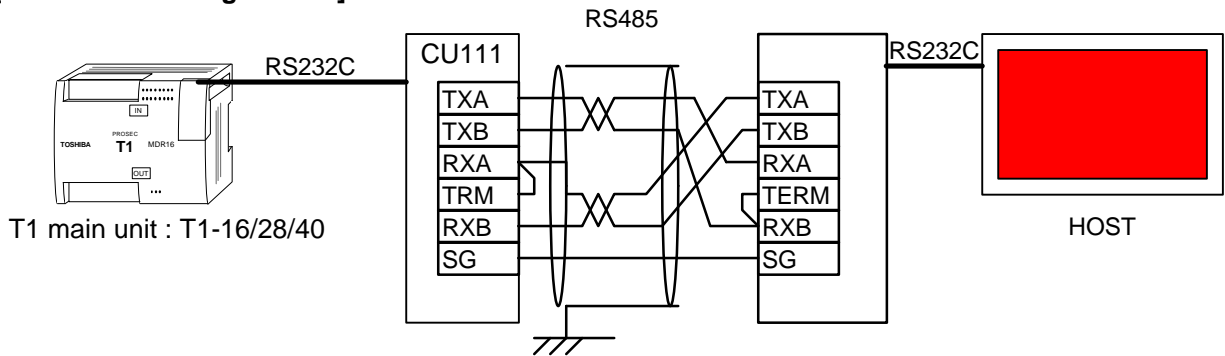
Note

- ① Use the shielded twisted-paired cable for noise immunity and ground the cable shield at one end.
- ② Connect SG (Signal Ground) each other.
- ③ The adapter does not have the frame ground (FG) terminal, so please ground directly.
- ④ Please make the program transmitting again.

CU111 Connection

(3) Computer Link signal and connect termination registers

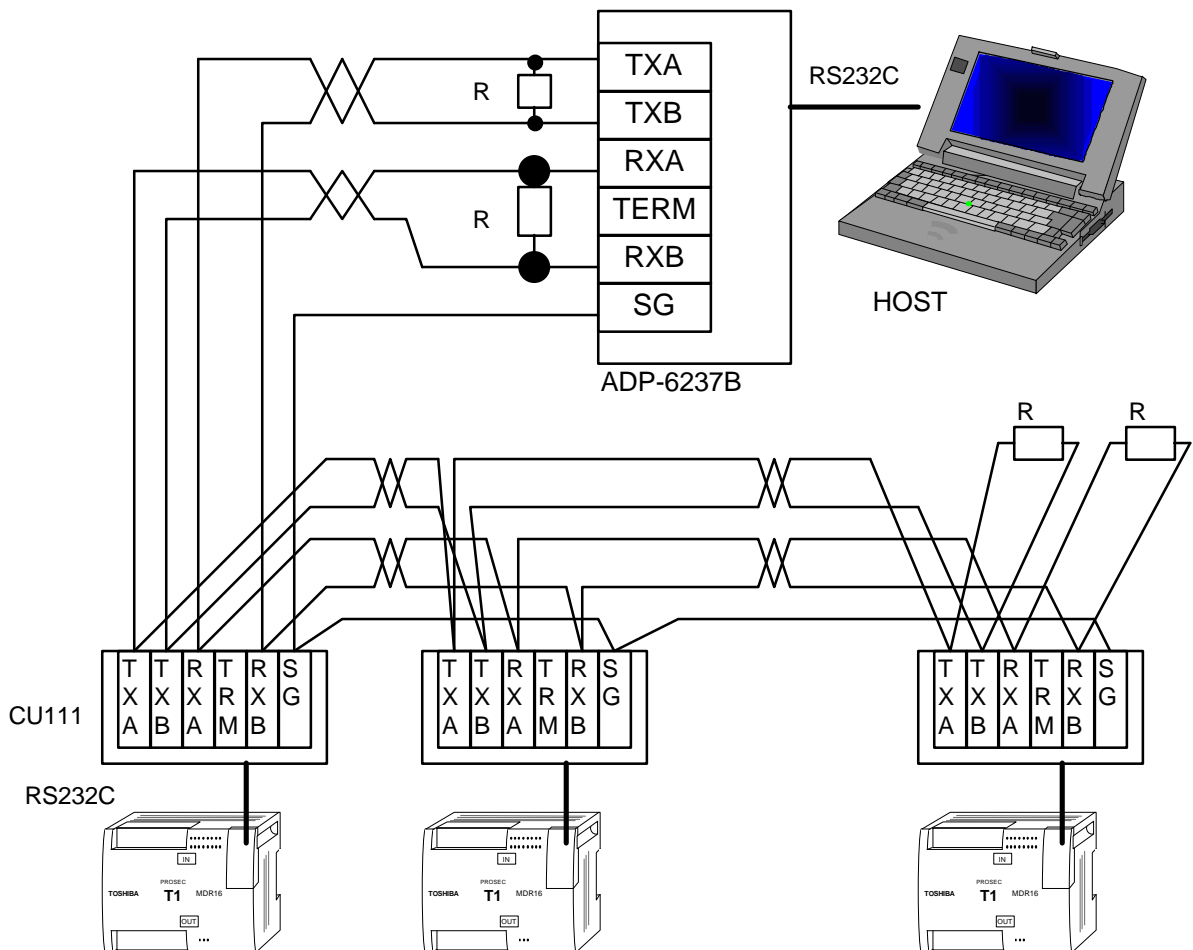
[one-to-one configuration]



Connect cables according to the above diagram.

Short between RXA and TRM(TERM) for termination at the end of both CU111 and ADP-6237B.

[one-to-N configuration]



Connect cables according to the above diagram.

Connect termination resistor 1/2W-220Ω between RXA and TXB, and between TXA and TXB at both terminal stations.

TOSHIBA

TOSHIBA INTERNATIONAL (EUROPE) LTD.

1 Roundwood Avenue
Stockley Park, Uxbridge
Middlesex, ENGLAND UB11 1AR
Tel: 0181-756-6000 Fax: 0181-848 4969

TOSHIBA INTERNATIONAL CORPORATION Industrial Division

13131 West Little York Road
Houston, TX. 77041, U.S.A.
Tel: 713-466-0277 Fax: 713-466-8773

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1997-02(2)

TOSHIBA INTERNATIONAL CORPORATION PTY. LTD.

2 Morton Street, Parramatta
N.S.W. 2150, AUSTRALIA
Tel: 02-9768-6600 Fax: 02-9890-7542

TOSHIBA CORPORATION Industrial Equipment Department

1-1, Shibaura 1-chome, Minato-ku
Tokyo 105, JAPAN
Tel: 03-3457-4900