UØTEK®

High-Speed RS-232/RS-485/RS-422 Multi-Mode Fiber Optic Modem Operating Manual for UT-2788 Fiber Optic Modem

I. Overview

UT-2788 is a fiber optic modem with multiple functions, supporting asynchronous RS-232, RS-485 and RS-422 communication interfaces; it's the optimum selection for connecting remote terminal unit (RTU) to host (HOST) or supervisory control and data acquisition (SCADA) controller. UT-2788 supports RS-232, RS-485 and RS-422 multiple asynchronous communication protocols and can simultaneously mix and use two RS-232, RS-485 or RS-422 interface and supports 2-wire (half duplex) RS-485 and 4-wire (full duplex) RS-422 working mode. The RS-485 mode of UT-2788 supports data (TXD or SD) send control, so the adaptability to different kinds of software is improved and the control mode is simplified. The optic fiber MODEM supports multiple connection modes between asynchronous serial ports and supports full duplex or half duplex communication of two asynchronous serial port equipment via optic fiber, with the communication distance reaching up to 4 kilometers at most for multimode and 20 kilometers for single mode. The transmission rate of RS-232 signal is max. 115.2Kbos and that of RS-485/RS-422 signal reaches up to 460Kbps in maximum. The interfaces under different electrical standards can be used in mixture; the RS-232 equipment can be used to connect RS-485/RS-422 equipment and the RS-232 can be replaced for RS-485/422 interface converter or optoelectronic isolator, providing excellent EMI/RFT characteristics

UT-2788 supports transmission of two data signals: send data and receive data, and also provides RS-485/RS-422 data transmission automatic enabled control circuit. Zero delay transfer time; all the serial ports are connected by binding posts and two ST interfaces are used for optic fiber connection.

II. Performance Parameters

1. Support RS-232/RS-485/RS-422 interface
2. Asynchronous transmission: point to point application, the rate reaches up to 460Kbps
3. Transmission distance: 4,000 meters of multimode, 20,000 of single mode
4. Working temperature: -40℃~+85℃, relative humidity is 5%~95%
5. Working wavelength: 1310nm (multimode), 1310nm (single mode)
6. Electrical interface: RS-232: apply binding post connector
RS-485/422: apply binding post connector
Fiber interface: ST interface (SC/FC interface available)

7. RS-232 interface characteristics: standard RS-232 three-wire interface +/-15KV (anti-static) ESD protection, support maximum 115.2Kbps rate
8. Input voltage AC100-240V 1W
9. RS-485/422 interface characteristics: apply port self-adaption technology to realize adjustment self-adaption from port to rate, without switch settings. ±15KV (anti-static) ESD protection, support 32 poll environment at most

III. Connector and Signal:

Pin distribution of terminal blocks

Terminal blocks (PIN)	Signal definition	RS-422 full duplex wiring	RS-485 half duplex wiring
1	T/R+	Send(A+)	RS-485 (A+)
2	T/R-	Send(B-)	RS-485 (B-)
3	RXD+	Receive(A+)	Empty
4	RXD-	Receive(B-)	Empty
5	TXD	RS-232(Send)	
6	RXD	RS-232(Receive)	
7	GND	RS-232(Ground wire)	

IV: Technical Standards

Index parameters		Technical parameters	
		Multimode	Single mode
Optical property	Emission wavelength nm	1310	1310
	Transmission distance km	4	20
	Transmit power dBm	-3 ~ -10	-3 ~ -7
	Receiving sensitivity dBm(≤)	-18	-18
	Optical saturation dBm	-3	-3
	Optical loss dBm/km	0.35	0.35
	Fiber interface type	SC, FC, ST interfaces available	
Other requirements	Data transceiving rate	460Kbps	
	Working mode	Full duplex/half duplex modes	
	Power supply requirements	AC100 ~ 240V/1W	
	Working temperature	-40 ~ 85℃	
	Storage temperature	-50 ~ 110℃	
	Relative humidity	5% ~ 90%	
	Overall dimension	110mm × 96mm × 35mm	

2. Fiber connection parameters
① Transmission fiber
Multimode: 50/125，62.5/125，100/140μm
Single mode: 8.3/125，8.7/125，9/125，10/125μm
② Transmission distance
Multimode: 4km
Single mode: 20km, 40km, 60km; it can surpass 120km as required by user
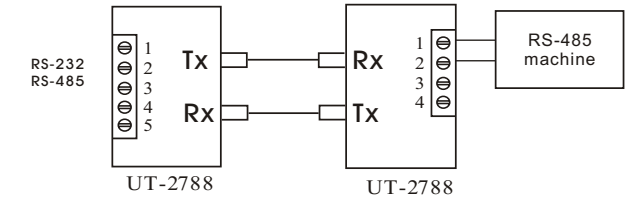
V. Signal and Power Light

TXD: transmit data indication at fiber interface
RXD: data receiving indication at fiber interface
PWR: power indicator

VI. Application and Connection Schematic Diagram

1. Point to point half duplex mode

2. Point to point full duplex mode