

## 4.7. RS-232/422/485 to Fiber Optic Converter

### I-2541

RS-232/422/485 to Multi-Mode Fiber optic converter

### I-2542 series *Available soon*

RS-232/422/485 to Single-Mode Fiber optic converter



### Features ▶▶▶

- Automatic RS-485 Direction Control
- Avoids lightning strikes and EMI/RFI interference
- Supports +10 V<sub>DC</sub> ~ +30 V<sub>DC</sub>
- DIN-Rail Mounting
- Optical fibers enable transmission of 2 km for I-2541 and 15 km for I-2542-A/I-2542-B
- ESD Protection for the RS-232/422/485 Data Line
- Supports operating temperatures from -25 °C ~ +75 °C

### Introduction

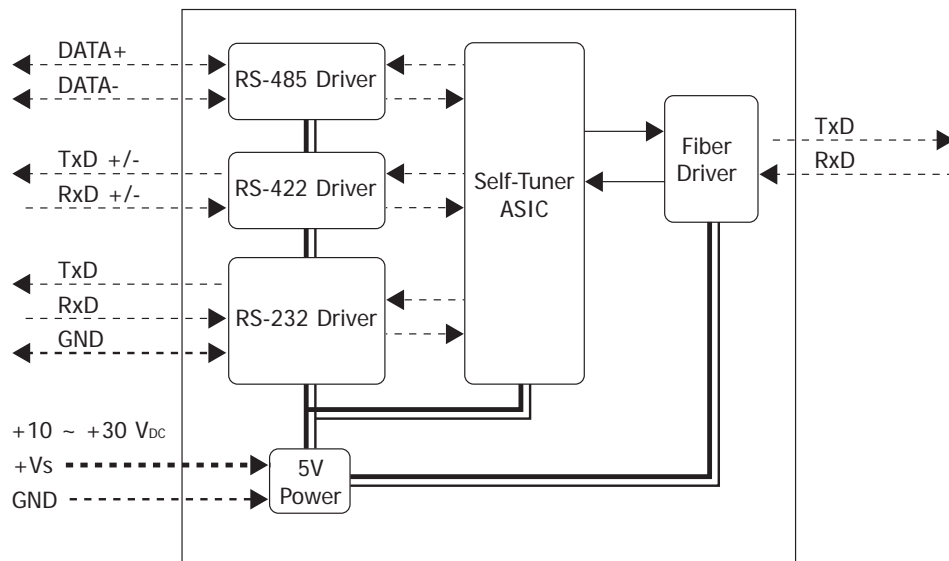
The I-2541 is an RS-232/422/485 to fiber optic converter that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference. The I-2541 is used for RS-232/422 point-to-point connections and RS-485 multi-drop applications for transmitting a signal up to 2 km and is the perfect solution for applications where transmission must be protected from electrical exposure, surges or chemical corrosion.

The I-2542 series of Single-Strand Fiber Converters supports Wavelength Division Multiplexing (WDM) technology that allows two independent data communication channels to transmit and receive over one standard, single mode, fiber optic line. This not only doubles your existing bandwidth, but also effectively reduces the cost of creating a new fiber optic infrastructure.

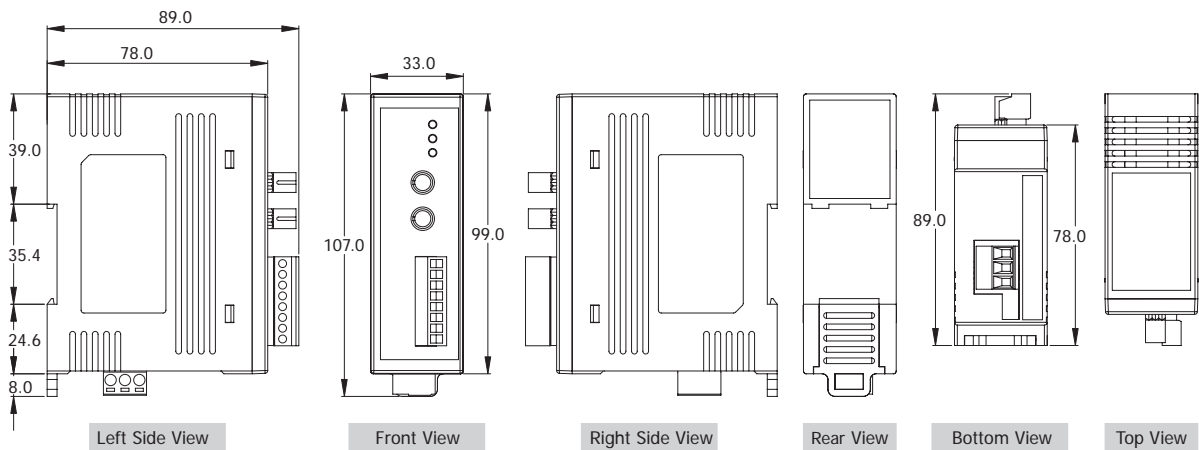
### System Specifications

Models		I-2541	I-2542 series
<b>Interface</b>			
Fiber Interface	Fiber Port	Multi Mode; ST connector	Single-Mode; SC connector
	Wavelength	850 nm	TX: 1310, RX: 1550 nm for I-2542-A TX: 1550, RX: 1310 nm for I-2542-B
	Fiber Cable	50/125, 62.5/125, 100/140 μm	8.3/125, 8.7/125, 9/125 or 10/125 μm
	Distance	2 km, (62.5/125 μm recommended)	15 km, (9/125 μm recommended)
Serial Interface	RS-232	The RS-232, RS-422 and RS-485 cannot be used simultaneously	TxD, RxD, GND
	RS-422		TxD+, TxD-, RxD+, RxD-
	RS-485		Data+, Data-
RS-422/485 Transmission Distance		Max. 1,200 m at 9.6 kbps; Max. 400 m at 115.2 kbps (Belden 9841 2P twisted-pair cable, if different cables are used, the transmission distance may change)	
Self-Tuner Asic Inside		Yes	
Speed		300 ~ 115200 bps	4800 ~ 115200 bps
ESD Protection		Yes	
RS-232/422/485 Connector		Removable 8-Pin Terminal Block	
<b>LED Indicators</b>			
Power		Yes	
<b>Power</b>			
Input Voltage Range		+10 V <sub>DC</sub> ~ +30 V <sub>DC</sub> (Non-isolated)	
Power Consumption		1.5 W	2 W
<b>Mechanical</b>			
Casing		Plastic	
Flammability		Fire-Retardant Materials (UL94-V0 Level)	
Dimensions (W x L x H)		33 mm x 89 mm x 107 mm	
Installation		DIN-Rail Mounting	
<b>Environment</b>			
Operating Temperature		-25 °C ~ +75 °C	
Storage Temperature		-30 °C ~ +75 °C	
Humidity		10 ~ 90% RH, non-condensing	

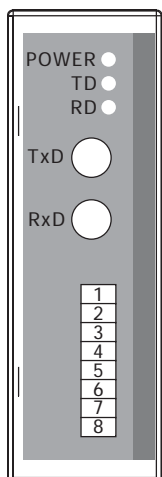
## Internal I/O Structure



## Dimensions (Unit: mm)



## Pin Assignments



Terminal No.	Pin Assignment
TxD	Fiber TxD
RxD	Fiber RxD
01	TxD+/DATA+
02	TxD-/DATA-
03	RxD+
04	RxD-
05	NC
06	GND
07	TxD
08	RxD

## Ordering Information

I-2541 CR	RS-232/422/485 to Multi-Mode 2 Km, ST Fiber optic converter
I-2542-A CR	RS-232/422/485 to Single-Mode 15 Km, SC Fiber optic converter, TX 1310 nm, RX 1550 nm (RoHS)
I-2542-B CR	RS-232/422/485 to Single-Mode 15 Km, SC Fiber optic converter, TX 1550 nm, RX 1310 nm (RoHS)

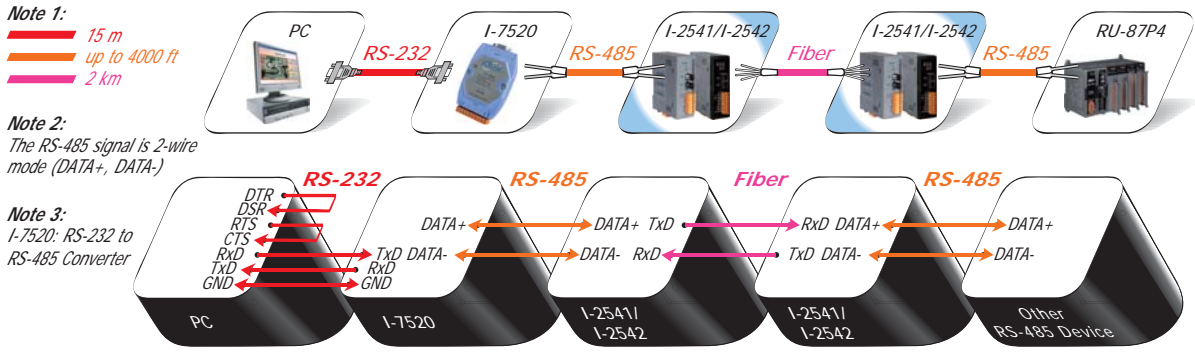
**Important Note:**  
You must purchase both I-2542-A and I-2542-B since these products work as a pair.

## Accessories

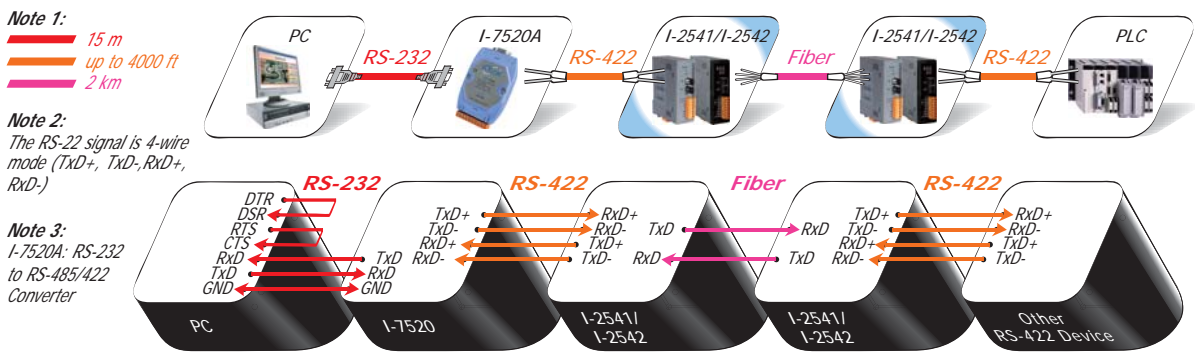
GPSU06U-6	24 Vdc/0.25 A, 6 W Power Supply
DIN-KA52F	24 Vdc/1.04 A, 25 W Power Supply with DIN-Rail Mounting

Applications

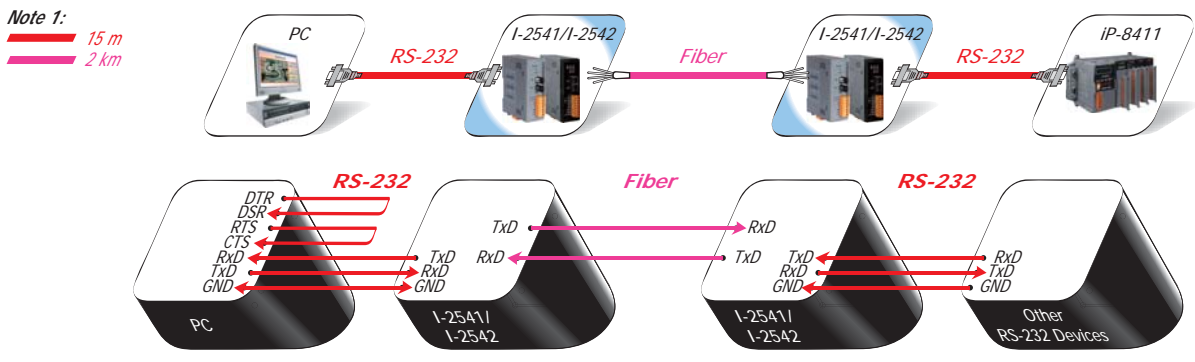
An illustration of the I-2541/I-2542 for RS-485 Devices



An illustration of the I-2541/I-2542 for RS-422 Devices



An illustration of the I-2541/I-2542 for RS-232 Devices



An illustration of the I-2541/I-2542 for RS-232/422/485 Devices

