



# RS-232 Photoelectric Isolation Line Booster User Manual Model No. GM-1012-B

## I. Summary

GM-1012-B serial RS-232 photo electric isolation line booster, also called long line transceiver or long-distance transmitter, can extend the communication distance between two RS-232 devices performing a synchronic communication to a maximum of 12 kilometers with optical isolation.

As the electric and grounding loop between the two ends of RS 232 devices are completely blocked by the advanced isolation technology adopted by us, therefore, the communication devices are well protected from the interference and damages possibly caused by power grounding loop or surge, therefore, obvious improvement of their liability and stability of the communication system are achieved. And at the same time, the previous SR-232 interface single-end transmission mode has been changed to double-line balance transmission, the communication distance has been increased sharply. For all those RS-232 asynchronous point-to-point communication are as using dedicated self-owned line, GM-1012-B can be used to meet the demand for interface protection or communication distance extension.

Without special requirements for cable and no need of exterior power supply, the small-sized GM-1012-B can be simply connected to the RS-232 interface of your devices directly.

Our GM-1012-B product is now being widely used in the applications of point-to-point RS-232 communication, connection between multi-user terminals to host, RS-232 remote control system, program control exchanger charging terminal, satellite receiver, etc.

## II. Product features

Communication distance between serial interface RS-232 extended to 12 kilometers.

Balanced electricity transmission with strong ability of anti-interference.

Optical-isolation technology to eliminate grounding loop surge and device damages.

Isolated voltage: 2,500Vrms or 500 VDC on a continuous basis. RS-232 asynchronous communication standard supported.

Direct plug in RS-232 interface, easy to use.

No exterior power supply required.

Both dedicated cable and common cable supported.

Transmission rate as high as 57.6KBPS.

Full duplex or half duplex, small-sized.

## III. Technical parameters:

Interface: one end conforming to eIA RS-232 and CCITT V2.4 asychronic protocol, and the other end dedicated 4-cored copper wire.

Connector: DB9 hole (female) connector for one end of RS-232 device and DB9 pin (male) connector for the other.

Transmission mode: asychronic, full duplex or simplex.

Distance: 24AWG cable @9,600BPS for 12KM.

24AWG cable @38.4KBPS for 1KM.

24AWG cable @57.6KBPS for 100M.

Isolation voltage: 2,500 Vrms impulse or 500 VDC on a continuous basis.

Rate: maximum asynchronous 57.6 KBPS.

Power: serial self-powered.

Measurements: 63mm\*33mm\*17mm

Weight: 30g

Working environment: -40 degrees to 85 degrees, relative humidity 5% to 95%.

## IV. Application areas:

Point-to-point RS-232 communications.

Multi-user system.

Remote terminal.

Connection between multi-user terminal to host. RS-232 remote control system.

Program control exchanger charging terminal.

Satellite receiver.

Remote paging system

Connection between RS-232 devices without public grounding

## V. GM-1012-B function descriptions:

### 1. GM-1012-B Line Booster function descriptions:

RS-232C interface: DB9 hole (female) connector(DTR to DCD and RTS to CTS).

Long-distance transmission cable interface: DB9 pin(male) connector.

Terminal type: RS-232C near side to be connected to DTE devices.

Transmission cable: 4-core copper wire.

Connection method: between the two DB9 connectors, 2 to 3, 3 to 2, 4 to 5 and 5 to 4.

Far side DB9 definition: 3 for T-, 4 for T+, 2 for R- and 5 for R+. Note it is symmetrical for connection between two products.

Power supply: to be supplied by one of TXD, RTS or DTR.

Transmission signal: TXD and RXD bi-directional transmission.

### 2. GM-1012-B Line Booster function descriptions:

RS-232C interface: DB25 pin (male) connector.

Terminal type: RS-232C (DB25 hole side) to be connected to DTE devices directly.

Transmission cable: 4-core copper wire.

Connection method: between the two DB25 pin(male) connectors, 2 to 3, 3 to 2, 7 to 20 and 20 to 7.

Far side DB25 definition: 3 for T-, 7 for T+, 2 for R- and 20 for R+. Note it is symmetrical for connection between two products.

Power supply: to be supplied by one of TXD, RTS or DTR. Even only TXD available it is still working.

Transmission signal: TXD and RXD bi-directional transmission.

## VI. Connection sketches

GM-1012-B(DB9 pin)                      GM-1012-B(DB9 pin)

PIN2 >>>>> PIN 3

PIN3 >>>>> PIN2

PIN4 <<<<< PIN5

PIN5 <<<<< PIN4

GM-1012-B(DB25 pin)                      GM-1012-B(DB25 pin)

PIN2 >>>>> PIN 3

PIN3 >>>>> PIN2

PIN7 <<<<< PIN20

PIN20 <<<<< PIN7