Appendix B   RS232C interface

RS232C interface can be used to communicate with PC and PLC for build an automatic test system, or multi-sets test system through RS485. The instrument provides multiple commands, by RS232 interface, all function in instrument can be operated in PC.

B1 Interface

RS-232 standard, also called as asynchronous serial communication standard, has already been widely used for data communication between computers, computer and external equipment. RS is the English abbreviation of Recommended Standard; 232, the standard number. This standard is issued by EIA in 1969, which rules to send one bit in a data line every time.

Configurations of most serial interfaces are not strictly based on RS-232 standard. A 25 pin connector is used on each terminal (IMBAT uses a 9 pin connector). The most frequently-used RS-232 signals are as follows:

Signal	Code	Pin number of 25-pin connector	Pin number of 9-pin connector
Request to send	RTS	4	7
Clear to send	CTS	5	8
Data set ready	DSR	6	6
Data carrier detect	DCD	8	1
Data terminal ready	DTR	20	4
Transimitted data	TXD	2	2
Received data	RXD	3	3
Signal ground common	GND	7	5

As most serial interfaces worldwide, the serial interface of our instrument is also not strictly based on RS-232 standard but only uses the smallest subset of this standard. The signals are listed in the following table.

Signal	Code	Connetor pin number
Transmitted data	TXD	2
Received data	RXD	3
Signal ground common	GND	5
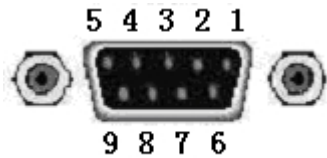
（side view）

Use standard 9-pin DB plug to connect the connector.

Warning: Before connecting or disconnecting the connector, please power off the instrument to avoid electrical shock hazard.

Warning: Do not short the output terminal or case so as to avoid damage to the DUT.

B2 Communication

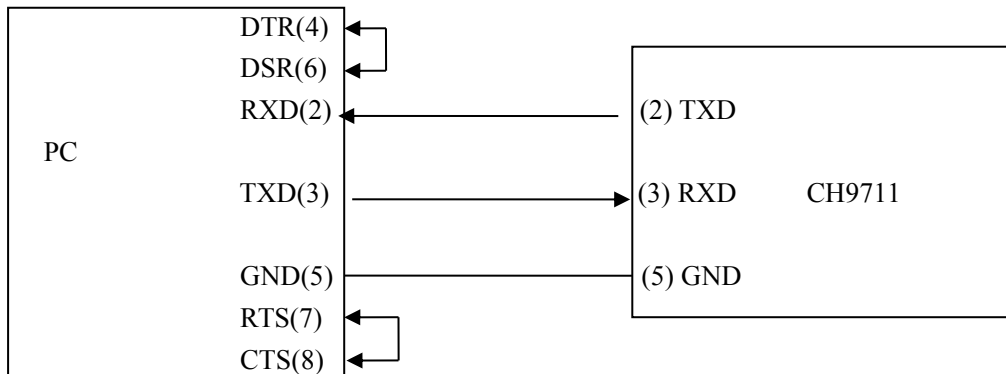The connection of the instrument with PC is shown：

Figure above shows that the serial interface pin definition of this instrument is different from that of 9 pin connector used in IMB AT compatible computer. User can make three-wire connection cable by using double-core shielding lines or purchase the serial interface cable from our company.

⚠ **Warning：After connecting with** RS232，negative input terminal is grounded, if negative terminal can't be grounded, then RS232 can't be used unless connect ungrounded isolator！

When connecting with PC, firstly, set up the interface including communication mode, baud rate, and local address, Details in 3.4.1 System setting.

The main parameter

Transmitted mode	Asynchronous serial communication including start and stop bits
Baud rate	4800 bps，9600 bps，11520 bps，12800 bps，14400 bps，19200 bps，28800 bps，38400 bps
Data bits	8 BIT

Stop bits	1 BIT
Calibration	None
End code	CR、LF、CR+LF
Contact mode	None
Connector	DB9 core

Command and data between instrument and PC is transmitted by, instrument can explain and 仪 operate the command string only after receiving a complete one which is ended as CR or LF or CR+LF. Where：

CR   Carriage return

LF   Line feed

Detailed command is in appendix C

B3 RS485 multi-set communication

If build multi-set communication system, RS485 bus needs expanding, and RS232-RS485 converter can be used to connect multiple sets to RS484 bus, which can realize that one PC controls multiple sets　（127 sets at most）of electronic load.

Set the device in RS485 bus to multi-set communication mode, the called device can operate 只 the command string by *ADR.

RS485 bus
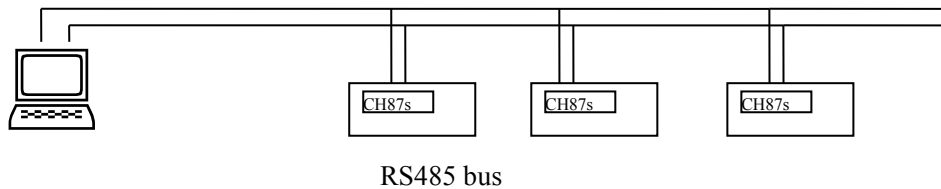
A kind of RS485converter is as below：