PIN Assignment

Dimension

Default COM port configuration:

	Baudrate	Dtatbit	Parity	Stopbit
COM1	9600	8	N(none)	1
COM2	9600	8	N(none)	1
COM3	9600	8	N(none)	1
COM4	57600	8	N(none)	1
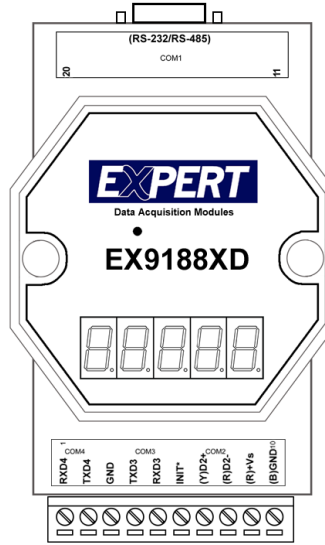
PIN assignment of 10-pin screw terminal block

Pin	Name	Description
1	RXD4	RXD pin of COM4 (RS-232)
2	TXD4	TXD pin of COM4 (RS-232)
3	GND	GND pin of COM4 & COM3
4	TXD3	TXD pin of COM3 (RS-232)
5	RXD3	RXD pin of COM3 (RS-232)
6	INIT*	Initial pin for ROM-DISK download
7	D2+	DATA+ pin of COM2 (RS-485)
8	D2-	DATA- pin of COM2 (RS-485)
9	+VS	V+ of power supply (+10 to +30V DC unregulated)
10	GND	GND pin of power supply

Note 1: COM2=(D2+, D2-)
Note 2: COM3=(TXD3, RXD3, GND)
Note 3: COM4=(TXD4, RXD4, GND)
Note 4: COM3&COM4 share the same GND-pin

Pin assignment of COM1 connector (DB-9 Male):

| Pin	Name	Description
1	DCD	Data Carrier Detect
2	RXD	Receive Data　　　(JP5,JP6,JP7 select RS-232)
	D1+	DATA+ of RS-485 (JP5,JP6,JP7 select RS-232)
3	TXD	Transmit Data　　　(JP5,JP6,JP7 select RS-232)
	D1-	DATA- of RS-485 (JP5,JP6,JP7 select RS-232)
4	DTR	Data Terminal Ready
5	GND	Signal ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator

Note 1: The COM1 can be used as RS-232 or RS-485 port selected by Jumper.
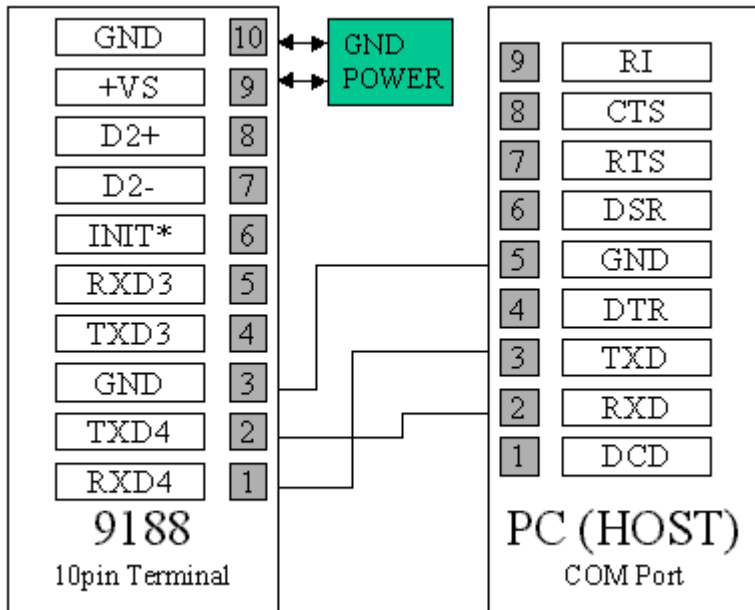Note 2: The connector of COM1 is the same as the DB-9 RS-232 connector of PC.

Jumper

COM1 for RS232 port:　　　COM1 for RS485 port:
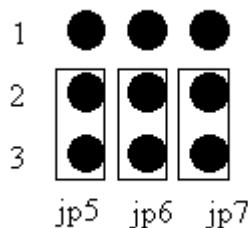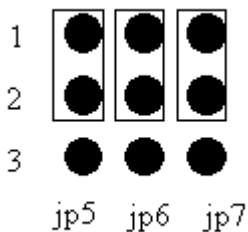
EX9188 module's COM4 is a communication interface between system and host (PC side) Figure:


Use Hyper Terminal program under Windows 9X or 2000. After
9188 is powered on, a command prompt will be shown in the
window of hyper terminal.

Use COM4 for downloading program
Power on the system when EX9188 module's INIT* pin is wired to ground and COM4 is connected to PC. The disk image can be downloaded
from PC to flash ROM of 9188 module under Hyper-Terminal by clicking "transfer", "receive file", then choose Xmodem as the protocol and key
in the file name and path. If the update is not successful, then repeat the process. If users want to debug the system from COM4, just power on the
system with INIT* floating. **Note: INIT* must be disconnected from ground immediately before the updating disk image completes,
otherwise the system will hang.**

Use COM 3 for RS232 port.
Connect COM3 to DCE.   Wiring Diagram:
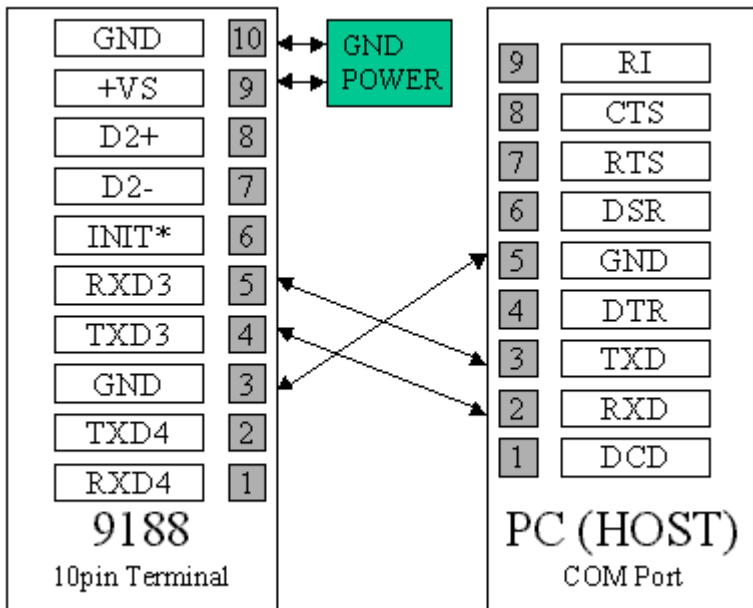
Connect COM3 to DTE.   Wiring diagram:
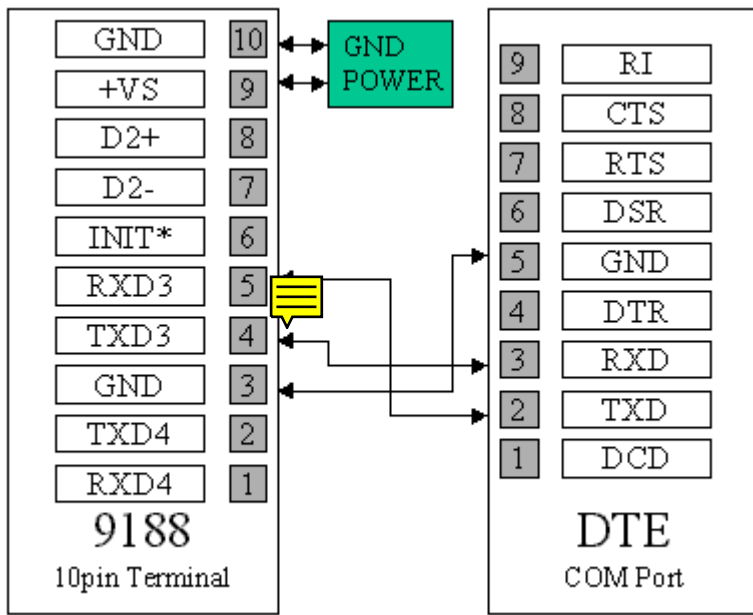
The 9188 library functions can be used to control COM3. "InstallCom3{}" is used to initialize the baud rate of the format of COM3. An interrupt driven driver will be loaded and 1KB of queue buffer is given. "ToCom(3,data)" can be used to send data to COM port. Use "IsCom(3)" to know if there is any data received and "ReadCom(3)" can get the first data from queue.
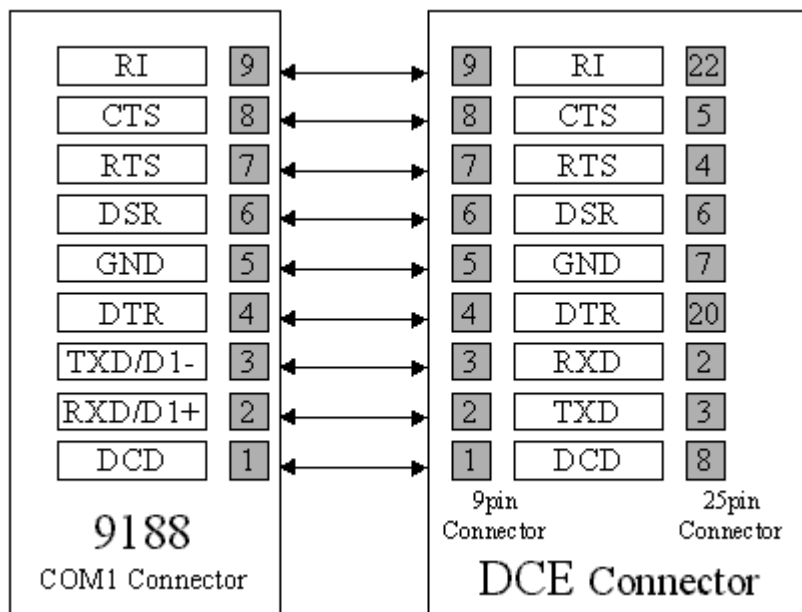
Use COM2 for RS485 port.

COM2 is a 2-wire RS-485 port. D+ and D- should connect to Data+ and Data- of RS485 network. "InstallCom2{}" is used to initialize the baud rate of the format of COM2. An interrupt driven driver will be loaded and 1KB of queue buffer is given. In order to transmit data, "Set485DirToTransmit(2)" must be called to set the proper direction of data flow. Then "ToCom(2,data)" is used to send data. After transmission is finished, COM2 should be set to receive mode by calling "WaitTransmitOver(2)" and "Set485DirToReceive(2)". Use "IsCom(2)" to know if there is any data received and "ReadCom(2)" can get the first data from queue.

Use COM1 for RS232 port

Refer to Sec. 3.4.   connect COM1(9 pin male connector)to DCE.
Wiring diagram:

If COM1(9pin male connector) is to connect to DTE, just swap pin 2&3.
The 9188 library functions can be used to control COM1. "InstallCom1{}" is used to initialize the baud rate of the format of COM1. An interrupt driven driver will be loaded and 1KB of queue buffer is given. "ToCom(1,data)" can be used to send data to COM port. Use "IsCom(1)" to know if there is any data received and "ReadCom(1)" can get the first data from queue.

Use COM1 for RS485 port

Refer to Sec. 3.4 pin2 and 3 of jp5, 6 and 7 must be connected to have RS485 interface. D+ and D- of COM1 should connect to Data+ and Data- of RS485 network. "InstallCom1{}" is used to initialize the baud rate of the format of COM1. An interrupt driven driver will be loaded and 1KB of queue buffer is given. "Set485DirToTransmit(1)" must be called to set the proper direction of data flow in order to transmit data. Then "ToCom(1,data)" is used to send data. After transmission is finished, COM1 should be set to receive mode by calling "WaitTransmitOver(1)" and "Set485DirToReceive(1)". Use "IsCom(1)" to know if there is any data received and "ReadCom(1)" can get the first data from queue.

Quick start

1. Please refer EX9188 H/W manual for wire connection
2. Connect COM4 of EX9188 to com1(2) of PC
3. Under Hyperterminal of PC **(Com port setting: 57600,8.N.1)**
4. Power On EX9188
5. HyperTerminal of PC will show the boot message of EX9188 and DOS prompt (a:\>)
6. DOS command can be executed at command prompt as dir a:\; dir b:
7. For file transfer or downloading file, please refer to P.22
8. For updating the contents of ROM DISK, please refer to P.23&P.24(ROMDISK.EXE & TOROM.EXE)
9. Please refer to the S/W manual to get others function & operation as RAMDISK, VDI
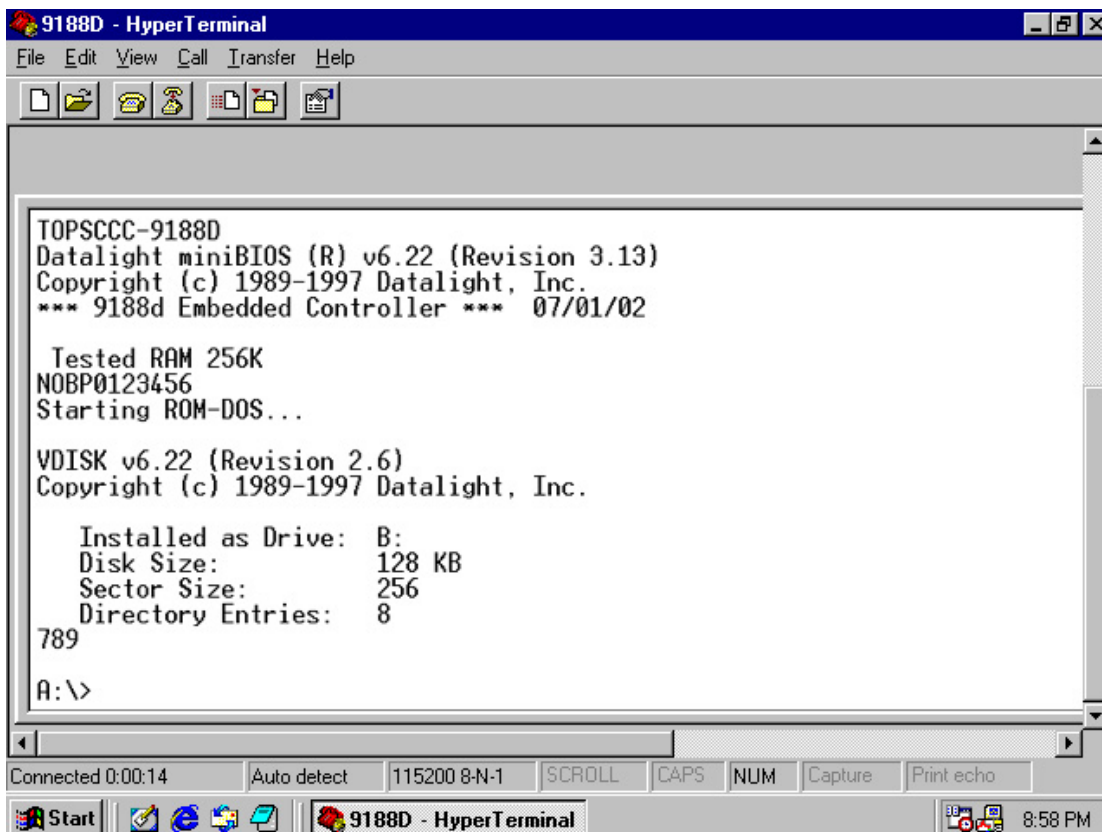
Hyper Terminal

After H/W installation (refer to H/W manual), Hyper Terminal can be used to control the EX9188 module. COMM.exe can be executed under

DOS of 9188 by using Hyper Terminal.

Start→Program→Accessories→Comunication→HyperTerminal

Select the correct COM port, baud rate(57600), Databit(8), parity(none), stop bit(1) and choose "none" for flow control. Then select

File→Properties(modify if needed)→OK.

After power-on the system, HyperTerminal will show the DOS prompt as the following figure:

Xm.exe

1. Download a file from 9188:
    a. Type "xm.exe /s <filename>" and <enter> at DOS prompt -- <filename> is the file you want to send.
    b. Under HyperTerminal Select: Transfer →Receive file→Use Xmodem as receiving protocol→Place receive file in chosen folder (point to the file which is going to be downloaded)→OK
    c. Wait until download file transmission completed.
2. Upload a file to 9188:
    a. Type "xm.exe /r <filename>" and <enter> at DOS prompt.
    b. Under Hyper Terminal select: Transfer→Send file→Protocol (Xmodem)→file name(the file which will be sent)→OK. (within 60Sec)
    c. Wait until upload file transmission completed

ROMDISK.EXE

ROMDISK.EXE is a utility of ROM-DOS. It is for making a ROM-DOS image file. The steps to create a ROM-DISK image file are listed below:

1. Create a sub-directory called ROM.
2. Copy all the files needed for Romdisk.
3. run "ROMDISK.EXE" (romdisk.exe will put all files in the directory ROM into a file named Rom.img
4. Download file to EX9188 via TOROM.EXE (see "Using torom.exe")
5. Reboot EX9188, you will see disk A in EX9188 contains all the files of directory ROM.

TOROM.EXE

TOROM.EXE is used to transfer the ROMDISK image file to Flash ROM of EX9188 module and the contents of Flash ROM of

ROM disk will then be updated. The steps are listed below:

1. Connect EX9188 module to PC. Use HyperTerminal as terminal.
2. run TOROM/E.EXE
3. Under HyperTerminal, select: Transfer→Send file→Protocal(Xmodem)→File name→OK.(Use Xmodem protocal & key in Rom image file name then execute file transfer function).
4. When ROM image file transmission is completed, reboot EX9188 module.
    Note: When execute the TOROM.EXE on EX9188 module, the process of step3 must be finished under 60 seconds otherwise timeout will occur. If timeout is the case, INIT* pin will have to be used to download the program to Flash ROM. Please refer to sec. 5.2 of H/W manual.
5. You will see a updated ROM disk.