

NC-4232

Multi RS-232 Module

User's Manual

(Version 3.2)

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Chapter 0

Packing List

Function	Function	Package
NC-4232	Multi RS-232 Module	● NC-4232 Multi RS-232 PC/104 Module

Chapter 1

Specifications

Features	NC-4232
Chipset	16550 UART
Serial Port	4 (10 pin box header)
Baudrate	Up to 115.2 Kbps
Bus Interface	PC/104 standard compliant
Board Weight	80g
Board Size	96mm X 90 mm
Power Requirements	+5V @ 250mA
Operating Temperature	-20 ~ +55°C

Description

The NC-4232 provides four PC compatible asynchronous serial ports, each of which can be configured for RS-232 operation. Addresses and interrupts are jumper selectable, and more than one NC-4232 can be used in any PC/104 system.

The card is based on the 4 Goldstar chips. These chips each contain a UART (Universal Asynchronous Receiver/Transmitter).

- 4 RS-232C asynchronous ports
- 4 x 16550 UARTs
- Supports: TxD, RxD, RTS, CTS DTR, DSR, DCD, GND
- Interrupt select: 2, 3, 4, 5, 7, 10, 11, 12, 14, 15
- RS-232 modem control signals
- I/O address: 100h to 300h

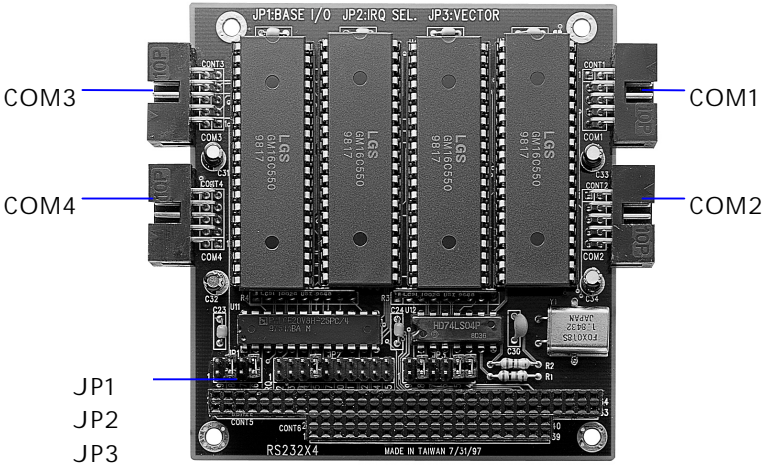
Power requirements:

- Single +5V

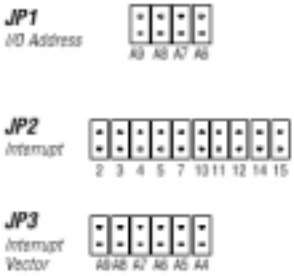
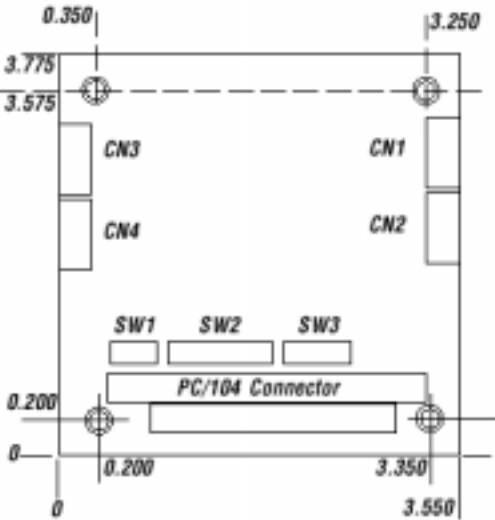
Physical and Environmental

- Dimensions: 96 x 90 mm
- Weight: 80 g
- Operating temperature: -20 ~ +55°C
- Storage temperature: -25 ~ +80°C
- Relative humidity: 0 ~ 90% non-condensing

Component Location



Board Layout



CN1 : COM1
 CN2 : COM2
 CN3 : COM3
 CN4 : COM4

Chapter 2

Jumper Setting

JP1 is used for setting the global base address for all four COM ports. The PIA assigns equal portions of the total I/O windows to each port separately.

Port 1: base address NNN + 00h, IRQ M

Port 2: base address NNN + 08h, IRQ M

Port 3: base address NNN + 10h, IRQ M

Port 4: base address NNN + 18h, IRQ M

Where NNN is the base I/O address set by **JP1**, and M is the interrupt set by **JP2**.

BASE I/O (JP1) -- default (280h)

JP1	A6	A7	A8	A9
100h	close	close	open	close
140h	open	close	open	close
180h	close	open	open	close
1C0h	open	open	open	close
200h	close	close	close	open
240h	open	close	close	open
280h *	close	open	close	open
2C0h	open	open	close	open
300h	close	close	open	open
340h	open	close	open	open
380h	close	open	open	open
3C0h	open	open	open	open

IRQ Select (JP2) -- default (IRQ 5)

JP2 is used to assign a single interrupt line that is shared by all four ports.

	JP2									
IRQ	2	3	4	5	7	10	11	12	14	15
2	close	open	open	open	open	open	open	open	open	open
3	open	close	open	open	open	open	open	open	open	open
4	open	open	close	open	open	open	open	open	open	open
5 *	open	open	open	close	open	open	open	open	open	open
7	open	open	open	open	close	open	open	open	open	open
10	open	open	open	open	open	close	open	open	open	open
11	open	open	open	open	open	open	close	open	open	open
12	open	open	open	open	open	open	open	close	open	open
14	open	open	open	open	open	open	open	open	close	open
15	open	open	open	open	open	open	open	open	open	close

Interrupt VECTOR (JP3) -- default (2C0h)

The interrupt vector is an I/O address range that indicates which serial port generated the interrupt.

JP3	A4	A5	A6	A7	A8	A9
000h	close	close	close	close	close	close
010h	open	close	close	close	close	close
020h	close	open	close	close	close	close
030h	open	open	close	close	close	close
040h	close	close	open	close	close	close
050h	open	close	open	close	close	close
060h	close	open	open	close	close	close
070h	open	open	open	close	close	close
080h	close	close	close	open	close	close
090h	open	close	close	open	close	close
0A0h	close	open	close	open	close	close
0B0h	open	open	close	open	close	close
0C0h	close	close	open	open	close	close
0D0h	open	close	open	open	close	close
0E0h	close	open	open	open	close	close
0F0h	open	open	open	open	close	close
100h	close	close	close	close	open	close
110h	open	close	close	close	open	close
120h	close	open	close	close	open	close
130h	open	open	close	close	open	close
140h	close	close	open	close	open	close

150h	open	close	open	close	open	close
160h	close	open	open	close	open	close
170h	open	open	open	close	open	close
180h	close	close	close	open	open	close
190h	open	close	close	open	open	close
1A0h	close	open	close	open	open	close
1B0h	open	open	close	open	open	close
1C0h	close	close	open	open	open	close
1D0h	open	close	open	open	open	close
1E0h	close	open	open	open	open	close
1F0h	open	open	open	open	open	close
200h	close	close	close	close	close	open
210h	open	close	close	close	close	open
220h	close	open	close	close	close	open
230h	open	open	close	close	close	open
240h	close	close	open	close	close	open
250h	open	close	open	close	close	open
260h	close	open	open	close	close	open
270h	open	open	open	close	close	open
280h	close	close	close	open	close	open
290h	open	close	close	open	close	open
2A0h	close	open	close	open	close	open
2B0h	open	open	close	open	close	open
2C0h *	close	close	open	open	close	open
2D0h	open	close	open	open	close	open
2E0h	close	open	open	open	close	open
2F0h	open	open	open	open	close	open

300h	close	close	close	close	open	open
310h	open	close	close	close	open	open
320h	close	open	close	close	open	open
330h	open	open	close	close	open	open
340h	close	close	open	close	open	open
350h	open	close	open	close	open	open
360h	close	open	open	close	open	open
370h	open	open	open	close	open	open
380h	close	close	close	open	open	open
390h	open	close	close	open	open	open
3A0h	close	open	close	open	open	open
3B0h	open	open	close	open	open	open
3C0h	close	close	open	open	open	open
3D0h	open	close	open	open	open	open
3E0h	close	open	open	open	open	open
3F0h	open	open	open	open	open	open

Chapter 3

Pin Assignment

Serial Port Interface

10- Pin	D-Type	Description
1	1	Data Carrier Detect (DCD)/5V/12V
2	2	Receive Data (RXD)
3	3	Transmit Data (TXD)
4	4	Data Terminal Ready (DTR)
5	5	Ground (GND)
6	6	Data Set Ready (DSR)
7	7	Request to Send (RTS)
8	8	Clear to Send (CTS)
9	9	Ring Indicator (RI)/5V/12V
10	X	NC

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PC/104 Connectors

64-Pin Long Connector

PIN No.	PIN Name	PIN No.	PIN Name
1	IOCHCHK *	2	0V
3	SD7	4	RESETDRV
5	SD6	6	+5V
7	SD5	8	IRQ9
9	SD4	10	-5V
11	SD3	12	DRQ2
13	SD2	14	-12V
15	SD1	16	ENDXFR *
17	SD0	18	+12V
19	IOCHRDY	20	(KEY)
21	AEN	22	SMEMW *
23	SA19	24	SMEMR *
25	SA18	26	IOW *
27	SA17	28	IOR *
29	SA16	30	DACK3 *
31	SA15	32	DRQ3
33	SA14	34	DACK1 *
35	SA13	36	DRQ1
37	SA12	38	REFRESH *
39	SA11	40	SYSCLK
41	SA10	42	IRQ7
43	SA9	44	IRQ6
45	SA8	46	IRQ5
47	SA7	48	IRQ4
49	SA6	50	IRQ3
51	SA5	52	DACK2 *
53	SA4	54	TC
55	SA3	56	SALE
57	SA2	58	+5V

59	SA1	60	OSC
61	SA0	62	0V
63	0V	64	0V

40-Pin Short Connector

PIN No.	PIN Name	PIN No.	PIN Name
1	0V	2	0V
3	MEMCS16 *	4	SBHE *
5	IOCS16 *	6	LA23
7	IRQ10	8	LA22
9	IRQ11	10	LA21
11	IRQ12	12	LA20
13	IRQ15	14	LA19
15	IRQ14	16	LA18
17	DACK0 *	18	LA17
19	DRQ0	20	MEMR *
21	DACK5 *	22	MEMW *
23	DRQ5	24	SD8
25	DACK6 *	26	SD9
27	DRQ6	28	SD10
29	DACK7 *	30	SD11
31	DRQ7	32	SD12
33	+5V	34	SD13
35	MASTER *	36	SD14
37	0V	38	SD15
39	0V	40	(KEY)

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster. Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party. Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.