

User's Manual

DSCF-100

Two Port RS-232 Serial CompactFlash Card



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DSCF-100 CompactFlash Card
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Feedback

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1. Overview

The DSCF-100 is a two port isolated RS-232 Serial CompactFlash card with the following features:

- Type II CompactFlash form factor for CF+ equipped PDAs, Handheld, Laptop, & Tablet PCs
Windows 95/98/Me/2000/XP/CE, PocketPC compatible using O.S. standard drivers
- Industry standard 16550 register set
- RS-232 interfaces are isolated from the host computer by up to +/-50V at DC to 60Hz relative to the host's 0V.
- Data rates up to 115.2K Baud.
- Works at 3.3V, saves power
- Hardware modem control line support (CTS and RTS)
- Compatible with all standard serial communication software
- Compatible with standard PCMCIA slots using CompactFlash Adapter (not included)
- Standard PC I/O port decode for COM1 to COMn
- "Any" IO port and interrupt decode option for best PNP flexibility
- Low power consumption.
- Supplied with 300mm dual DB9-male terminated cable with "standard" COM port pin-outs.

2. About the DSCF-100

The DSCF-100 card is an isolated dual RS-232 serial card implemented with 16550 compatible UART ASIC devices. The serial data and control lines are buffered using isolated RS-232 drivers that allow the RS-232 interfaces to be offset from the host computer's 0V by up to +/-50V DC to 60Hz. This is ideal for industrial applications where the connection to remote equipment may be over several meters of cable, which can induce significant offset voltages and cause loss of data or unreliable transfers. The ports behave just like standard RS-232 interfaces in all other respects. Each port has TX, RX, CTS and RTS signals, and there is a common ISOGND connection shared by the two ports.

Industry standard baud rates up to 115.2K baud are supported, together with 16-byte deep TX and RX FIFOs.

The DSCF-100 conforms to the industry standard CompactFlash+ interface that allows connection of peripherals to the system bus of a laptop, handheld PC or PDA. The CF+ specification extends the earlier memory-only CompactFlash interface to allow I/O devices and extra power for the card. The DSCF-100 is an I/O type device and therefore requires a CF+ capable slot.

3. Installing the DSCF-100

3.1 Windows CE, PocketPC (ARM, MIPS & SH3 processors)

Before inserting the card, execute the ELSERIALSETUP_POCKETPC.EXE program provided on the Quatech Data Communication CD in the *Serial Port Adapters \ Drivers \ Windows CE for CompactFlash* directory. After syncing, insert the DSCF-100 card and two entries will appear in a list when you go to set up a "Connection".

3.2 Windows 95, 98, 98SE, Me, 2000, XP

The "generic" serial drivers in these Operating Systems support the DSCF-100. Before inserting the card, however, execute the SERIALSETUP.EXE program provided on the Quatech Data Communication CD in the *Serial Port Adapters \ Drivers \ Windows 95, 98, Me, 2000, XP for CompactFlash* directory.

After installation, each of the ports will appear as a COM port under the device manager. In Windows XP, you can adjust the COM port numbering using the <Port Settings><Advanced> control in the Device Manager by double clicking entries for the "First DSCF-100 Com Port" and "Second DSCF-100 Com Port".

🔥 Under Windows XP SP1 or Windows 2000 SP4, you will need to apply a "hot fix" from Microsoft to correct a bug that causes the ports to appear OK when they are actually non-functional. Please visit www.quatech.com in order to obtain the hot fix and for the latest installation instructions.

4. DSCF-100 Register Interface

The DSCF-100 behaves as a 3.3V multi-function card. There are two UART devices in the card that will each be allocated its own I/O space and a shared IRQ. The card conforms to the PC Card Multi Function Standard, having two sets of card configuration registers and IO BASE registers to decode incoming I/O space "hits". The card also fully implements the PC Card Standard defined method for IRQ sharing, using *Intr* and *IntrAck* bits in the card's CSRs in attribute space.

5. Hardware Specification

5.1 PINOUT

The DSCF-100 is supplied with a 300mm long Type49 cable that terminates with two DB9 male connectors with female screwlocks (to match the port at the back of a PC)

The pin-out below applies to the DB9 male connectors on the supplied cable, the cables are marked Port1 and Port2.

PORT1

PIN	NAME	FUNCTION
1	no connect	-
2	RX1	Receive Data input 1
3	TX1	Transmit Data output 1
4	no connect	-
5	ISOGND	ISOLATED GROUND
6	no connect	-
7	RTS1	Request To Send output 1
8	CTS1	Clear To Send input 1
9	no connect	-
Shell	no connect	-

PORT2

PIN	NAME	FUNCTION
1	no connect	-
2	RX2	Receive Data input 2
3	TX2	Transmit Data output 2
4	no connect	-
5	ISOGND	ISOLATED GROUND
6	no connect	-
7	RTS2	Request To Send output 2
8	CTS2	Clear To Send input 2
9	no connect	-
Shell	no connect	-

5.2 ELECTRICAL

All figures quoted are typical parameters @ 25°C

RS-232 SIGNALS:	Typical output level $\pm 5.5V$ (open circuit voltages). TX, RX, CTS and RTS are supported on each port.
UART CLOCK SPEED:	1.8432MHz, max baud rate 115.2Kbaud
ISOLATION:	Isolation is defined between ISO GND and host 0V supply (metal case of card and cable shield braid) and can be up to $\pm 50V$, DC to 60Hz. The two ports share a common ground (ISO GND): no isolation exists between the two ports.
SCAVENGED POWER:	The isolation driver circuit will only supply enough power to guarantee correct RS-232 signal operation into 3Kohm loads on TX and RTS. Using terminal equipment that scavenges power from the RS-232 signals may not work.
UNUSED SIGNALS:	If RX or CTS inputs are not used, make sure they are looped back into TX and RTS respectively to prevent them from floating.

5.3 POWER CONSUMPTION

All figures quoted are typical parameters @ 25°C

VCC CURRENT:	35mA typical @ 3.3V
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5.4 MECHANICAL

MASS:	15g typical.
FORM FACTOR:	36.4mm x 42.8mm x 5.0 mm overall size

5.5 ENVIRONMENTAL

HUMIDITY:	<80% non-condensing
TEMP:	0-50°C ambient

6. Warranty Information

Quatech, Inc. warrants the DSCF-100 to be free of defects for five (5) years from the date of purchase. Quatech, Inc. will repair or replace any board that fails to perform under normal operating conditions and in accordance with the procedures outlined in this document during the warranty period. Any damage that results from improper installation, operation, or general misuse voids all warranty rights. No representation is made regarding the suitability of this product for any particular purpose.

Please complete the following information and retain for your records.

DATE OF PURCHASE: _____
MODEL NUMBER: DSCF-100
PRODUCT DESCRIPTION: Two Port RS-232 CompactFlash Card
SERIAL NUMBER: _____

All products returned to Quatech for either warranty or non-warranty repair **MUST** be assigned a Returned Material Authorization (RMA) number prior to shipment. This RMA number must be clearly marked on the exterior of the product's return packaging and in any correspondence to ensure proper routing and prompt attention. To obtain an RMA number, contact Quatech Technical Support Department at 1-800-553-1170 or (330) 655-9000 or submit the RMA request form available on the Quatech website. In order to prevent damage to returned merchandise during shipment, please package electronic components in anti-static/shock proof materials.

For **warranty** repair/returns, please have the following information available when contacting the Technical Support department:

1. Model number and serial number of the product under warranty
2. Repair instructions and/or specific description of the problem

For **non-warranty** repairs or upgrades, contact the Technical Support department for current repair charges and please have the following information available:

1. Purchase order number to cover the cost of the service
2. Model number and serial number of the product
3. Repair or upgrade instructions relative to the product