RADIOMETRIX

DX series remote control boards

These simple application boards use the firmware and signalling protocols of the existing CXTCXR odule products, interfaced with a choice of SIL package radio modules. A single relay output is provided, controlled by a pair of logic (or switch) inputs on the transmitter. Latched or momentary operation is selectable.

The data format employed has a 16 bit address, which can be user programmed via an RS232 compatible input

Figure 1: DX series remote control boards

Range of Features

- Programmable 16 bit address
- 1 relay to control mains powered devices rated up to 8A, 250VAC/30VDC
- Visual indication of valid code received and active relays
- RF module range testing
- Momentary, Latched outputs
- Setup is simple as Plug-and-Play
- RF Remote Control Demonstration
- Can be used with any Radiometrix SIL pinout transmitters and receivers

Applications

- Security and Alarm systems
- Emergency assistance call system
- Status reporting and monitoring systems
- RF Remote control systems
- Industrial controls
- HVAC controls
- Simple On/Off switching
- Long range telecontrol with Narrow Band FM radios

Common features:

Interfaces	
Input/output	3.5mm pitch 3 way terminal block
Power	3.5mm pitch 3 way terminal block (third pin is the PGM input)
RF	5mm pitch 2 pin way terminal block for Helical coil or ¼ wave monopole antenna (or optional soldered-in aerial)
Indicators	
	receiver LED
DTX/DRX IC	
	Clock 3.58MHz (ceramic resonator)
	Data rate 500bps Biphase coded burst lasting 150ms
	Addressing User programmable 16 bit address
Operating temperature	
	-20 to +70 degrees centigrade (some radios may be limited to -10/+55)
	(Storage -30 to +70 degrees)

Figure 2: DXT2, DXR2 interfaces

DTX board

Inputs	Active low logic inputs ('set' and 'reset/momentary') Pullups to 3V, and protection diodes, provided Compatible with Normally Open volt-free closing contact (push-buttons)
Supply	4 –15VDC
idle current:	<1uA
transmit current	(depends upon radio module fitted)
	20mA with NTX2-434.650-10 fitted
Radio modules	Any low power SIL pinout transmitter (TX1, NTX2B, TX2A, TX3B)
Size	71 x 32 x 16mm (3.3mm diameter mounting holes are provided)

DRX board

Outputs	5A 30VDC or 8A 250VAC mains rated Single Pole Double Throw (SPDT) changeover relay. Normally Open (NO), Normally Closed (NC), Common (COM)
	LED indicator for 'relay energised'
Supply	12V (10-15V)
receive/idle current	(depends upon radio module fitted)
	20mA with NRX2-434.650-5 fitted
relay current	+20mA when activated
Radio modules	Any SIL pinout receiver (NRX1B, NRX2B, WRX2C, RX2A, RX2G, RX3A, RX3G)
Size	98 x 32 x 16mm (3.3mm diameter mounting holes are provided)

Operating modes

Device operation is set up by a 3 pin jumper on the receiver board, selecting latched on/off or momentary 'push button' operation
In Momentary mode, DXR relay is activated for 300ms.
In Latched mode, DXR relay once activated remains activated until reset by DXT.

Two inputs are provided on the DXT transmitter, which must be grounded for at least 30us.
Response time from grounding input to relay activation is about 150ms.

Grounding SET input, sends a coded datastream, which commands DXR to Latch Relay output if Latch Mode is selected.
Grounding RST input, sends a coded datastream, which resets the DXR Relay back to its deactivated state.

Also, for the duration of the RST transmission, the DXR Relay is activated when Momentary Mode is selected. The minimum duration of a Momentary Relay activation is 300ms.

Programming the address

These units employ a sub-set of the programming commands used by standard CTX2/CRX2 modules.
Address is set with the command AVALUE

As the PGM pin is dedicated to serial communication only, the 'ENABLESERIALMODE' command string is NOT required.

PGM input is a 2400 baud, 1 start bit, 8 data bits, 1 or 2 stop bits, no parity at true RS232 format (inverted UART).

Commands	Function
AVALUE bbbbb	set value for unit address (Default 00000)
<cr>	Enter Key / Carriage Return to process entry (0x0D)
/	clear all buffers
bbbbb = address (up to 65535, in decimal)	

To successfully program the unit it must be in active state
A receiver board must simply be powered
A transmitter board must be powered, with BOTH inputs grounded
(in this state it will listen to the serial pin, but will not transmit)

Each command sequence must end with a carriage return (ascii 13)

Ordering Information

Part No.	Version	Frequency band
DXR-173.250-RX1	RX1 fitted decoder	173.250MHz
DXT-173.250-TX1	TX1 fitted encoder	173.250MHz
DXR-434.650-NRX2B	NRX2B fitted decoder	434.650MHz
DXT-434.650-NTX2B	NTX2B fitted encoder	434.650MHz
DXR-433-RX2A	RX2A fitted decoder	433.92MHz
DXT-433-TX2A	TX2A fitted encoder	433.92MHz
DXR-869-RX3A	RX3A fitted decoder	869.85MHz
DXT-869-TX3B	TX3B fitted encoder	869.85MHz
DX series encoder and decoder boards can be supplied with any SIL pinout transmitters (TX1, NTX2, TX2A, TX3A, TX3B etc.) and receivers (NRX1, NRX2, RX2A, RX2G, RX3A, RX3G, WRX2, RX2B)		

Figure 3: DXT2 schematics

Figure 4: DXR2 schematics

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The Intrastat commodity code for all our modules is: 8542 6000

R&TTE Directive

After 7 April 2001 the manufacturer can only place finished product on the market under the provisions of the R&TTE Directive. Equipment within the scope of the R&TTE Directive may demonstrate compliance to the essential requirements specified in Article 3 of the Directive, as appropriate to the particular equipment.

Further details are available on The Office of Communications (Ofcom) web site:

http://www.ofcom.org.uk/

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