



ELCOMMTECH Corporation

ECT1000 Multichannel Digital Multiplexer

Operation & Installation Manual

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I. ECT1000 BASE UNIT

Power Connector:

Type: 6 position screw terminal block

Location: Center bottom on the back of the ECT1000 Base Unit

Pinouts:

PIN No	Label	Facility
1	12V/1 “-“	Common (negative) power source 1 (main PSU)
2	12V/1 “+”	+12VDC power source 1 (main PSU)
3	12V/2 “-“	Common (negative) power source 2 (backup PSU)
4	12V/2 “+”	+12VDC power source 2 (backup PSU)
5	Bat “-“	Common (negative) power source 3 (backup battery)
6	Bat “+”	+12VDC power source 3 (backup battery)

External Alarm Connector:

Type: 8 position screw terminal block

Location: Bottom right side on the back of the ECT1000 Base Unit

Pinouts:

PIN No	Label	Output Type	Facility
1	Major SRN	Dry contact Norm Open	Siren control for major (red) alarm audible alert
2			
3	Major ALM	Dry contact Norm Open	External signal light control for major (red) alarm visual alert
4			
5	Minor SRN	Dry contact Norm Open	Siren control for major (yellow) alarm audible alert
6			
7	Minor ALM	Dry contact Norm Open	External signal light control for minor (yellow) alarm visual alert
8			

Ethernet Connector:

10/100 Base-T network port for the optional diagnostic module

Type: RJ-45

Location: Bottom right side on the back of the ECT1000 Base Unit

RS-232 Connector:

Console RS-232 port for the optional diagnostic module

Type: DB-9 Female

Location: Center bottom on the back of the ECT1000 Base Unit

PIN No	Label	Facility
1	PGND	Protective Ground
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signaling Ground
6	NC	Not Connected
7	RTS	Ready To Send
8	CTS	Clear To Send
9	NC	Not Connected

Factory Diagnostic Port:

Factory use only!!!

Type: DB-25 Female

Location: Center bottom on the back of the ECT1000 Base Unit

Base Unit Indicators:

Location: All indicators are located on the front bottom of the unit.

Label		LED	Functional Description
Mode	6-bit	green	Operating in 6-bit mode (see product specs for details)
	8-bit	green	Operating in 8-bit mode (see product specs for details)
Alarm	Min	red	Minor alarm is present
	Maj	red	Major alarm is present
	1	red	Alarm condition is present in interface slot 1
	2	red	Alarm condition is present in interface slot 2
	3	red	Alarm condition is present in interface slot 3
	4	red	Alarm condition is present in interface slot 4
	5	red	Alarm condition is present in interface slot 5
	6	red	Alarm condition is present in interface slot 6
	7	red	Alarm condition is present in interface slot 7
	8	red	Alarm condition is present in interface slot 8
	9	red	Alarm condition is present in interface slot 9
	10	red	Alarm condition is present in interface slot 10
	11	red	Alarm condition is present in interface slot 11
	12	red	Alarm condition is present in interface slot 12
	13	red	Alarm condition is present in interface slot 13
	14	red	Alarm condition is present in interface slot 14
	15	red	Alarm condition is present in interface slot 15
	16	red	Alarm condition is present in interface slot 16

	17	red	Alarm condition is present in interface slot 17
	18	red	Alarm condition is present in interface slot 18
	19	red	Alarm condition is present in interface slot 19
	20	red	Alarm condition is present in interface slot 20
	Tx	red	Alarm condition is present in transmitter module
	Rx	red	Alarm condition is present in receiver module
Power	+5V 1-10	green	+5VDC power is present on interface slots 1 - 10
		off	No +5VDC power is present on interface slots 1 - 10
	+5V 11-20	green	+5VDC power is present on interface slots 11 – 20
		off	No +5VDC power is present on interface slots 11 – 20
	+8V	green	+8VDC power is present on the motherboard
		off	No +8VDC power is present on the motherboard
	-8V	green	+8VDC power is present on the motherboard
		off	No +8VDC power is present on the motherboard
	Bat	green	Backup battery is connected and powered
		off	Backup battery is not powered
12V “<”	red	Input line voltage is too high (more than 13.8VDC)	
12V “N”	green	Input line voltage is in the normal operating range (10.8–13.8VDC)	
12V “>”	yellow	Input line voltage is too low (less than 10.8VDC)	

Base Unit Controls :

Location: All controls are located on the front bottom of the unit.

Label	Control Type	Facility
Rst	Push button	Reset major and minor audible alarms. Once reset audible alarms remain inactive until the next problem is detected. Both major and minor visual alarms remain activate while problem persists.
Minor 1-20	dual 10 pos dip-switch	Lever down = Enable, Lever up = Disable Enable/disable minor alarms generated by individual interface cards.
Major 1-20	dual 10 pos dip-switch	Lever down = Enable, Lever up = Disable Enable/disable major alarms generated by individual interface cards.
On	Push button	Turn the unit on Note: units are automatically powered on once power is presented on any of three DC line inputs.
Off	Recessed push button	Turn the unit off

II. ECT1000RXO RECEIVER MODULE CARD

Receiver Module Indicators:

Location: All indicators are located on the front panel of the module

Label	LED	Functional Description
Ready	green	Receiver is in sync and detected valid data stream
	red	No valid stream detected
Optical Port 1	green	Optical signal received
	red	No received optical signal present
Optical Port 2 (for "-R" version only)	green	Optical signal received
	red	No received optical signal present
Channel 1	green	Optical port 1 is in use
	red	Optical port 1 is not in use
Channel 2 (for "-R" version only)	green	Optical port 2 is in use
	red	Optical port 2 is not in use

Receiver Module Controls :

Location: All controls are located on the front bottom of the module.

Label	Control Type	Facility
Channel Select	Push button	Toggles active channel from port 1 to port 2. This button is used only in ECT1000RXO-R redundant receiver.

III. ECT1000TXO-320/220 TRANSMITTER MODULE CARD

Transmitter Module Indicators:

Location: All indicators are located on the front panel of the module

Label	LED	Functional Description	
Sync	External	green	Transmitter is synchronized by remote unit (daisy chain operation)
		off	No external clock is detected
	Local	green	Transmitter is synchronized by local clock (point-to-point operation or master node in the daisy chain)
		off	Local clock is inactive
Ready	green	Transmitter is in sync and provides valid data stream	
	red	Transmitter is not sync (fault condition)	
Laser 1	green	Optical power is present on port 1	
	red	No optical power is present on port 1	
Laser 2 (for "-R" version only)	green	Optical power is present on port 2	
	red	No optical power is present on port 2	

IV. ECT1000TXV VIDEO TRANSMITTER INTERFACE CARD

“TEST” Connector:

Factory use only!!!

Type: RCA female connector

Location: Top of the front panel of the interface card

“VIDEO IN” Connector:

Analog composite balanced video input. Each video input is also hardwired to the duplicate connector on the back of the unit so that connections can be made either on the front or on the back of the chassis.

Type: BNC female.

Note: Use either front or back port for connecting video signal source.

Location: Bottom of the front panel of the interface card

“DATA OUT +/-” Connector:

Unidirectional return path data port output connector. The type of output signaling is determined by the switch settings on the circuit board (see below.) Data port operates only when return path optical transmitter and receiver modules are installed in corresponding base units. Otherwise the data line is set to logical “0” state. Each data port is also hardwired to the duplicate connector on the back of the unit so that connections can be made either on the front or on the back of the chassis.

Type: 2-wire 3.81mm detachable terminal plug (phoenix type)

Location: Bottom of the front panel of the interface card

Video Transmitter Interface Indicators:

Location: All indicators are located on the front panel of the interface card

Label	LED	Functional Description
Video	green	Video signal is present on the input
	red	No video signal is present on the input
Data	red	Data line is in logical “1” state
	off	Data line is in logical “0” state

Video Transmitter Interface Controls :

Location: All video related controls are located on the front panel of the interface card. All data port related controls are located on the main circuit board.

Label	Control Type	Facility
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Equalizer	Multi-turn potentiometer	Control for the equalizer to compensate for the signal distortions caused by the long coaxial cable on the input. The equalizer is capable of compensating cables with length up to 1000 feet.
75 Ohm	Sliding dip-switch	Enables or disables internal 75 Ohm termination for the analog video input

Data Protocol Setup:

Location: Circuit Board SW1, SW2

SW1 position	SW2 Position	Data Protocol
RS-422	N/A	RS-422
RS-232 Pelco	RS-232	RS-232
RS-232 Pelco	Pelco	Pelco up-the-coax Pan/Tilt/Zoom control. Distance limitations to the length of the fiber optic link will apply. Consult factory if necessary.

V. ECT1000RXV VIDEO RECEIVER INTERFACE CARD

TEST Connector:

Factory use only!!!

Type: RCA female connector

Location: Top of the front panel of the interface card

“VIDEO OUT” Connector:

Analog composite balanced video output

Type: BNC female

Note: Each video output is also hardwired to the duplicate connector on the back of the base unit so that connections can be made either on the front or on the back of the chassis.

Warning: *Front and back video ports are not designed for simultaneous operation as dual independent video outputs. Both ports are wired together to a single video driver circuit which is designed specifically to drive standard 75 Ohm load. Use either front or back side connector per video channel. Connecting both ports may cause double termination of the video signal and therefore may result in signal quality degradation.*

Location: Bottom of the front panel of the interface card

“DATA IN +/-” Connector:

Unidirectional return path data port input connector. The type of input signaling is determined by the switch settings on the circuit board (see below.) Data port operates only when return path optical transmitter and receiver modules are

installed in corresponding base units. Otherwise the data line is set to logical “0” state. Each data port is also hardwired to the duplicate connector on the back of the unit so that connections can be made either on the front or on the back of the chassis.

Type: 2-wire 3.81mm detachable terminal plug (phoenix type)

Location: Bottom of the front panel of the interface card

Video Receiver Interface Indicators:

Location: All indicators are located on the front panel of the interface card

Label	LED	Functional Description
Video	green	Video signal is present on the output
	red	No video signal is present on the output
Data	red	Data line is in logical “1” state
	off	Data line is in logical “0” state

Video Receiver Interface Controls :

Location: All video related controls are located on the front panel of the interface card. All data port related controls are located on the circuit board.

Label	Control Type	Facility
Equalizer	Multi-turn potentiometer	Control for the equalizer to compensate for the signal distortions caused by the long coaxial cable on the input. The equalizer is capable of compensating cables with length up to 1000 feet.

Data Protocol Setup:

Location: Circuit Board SW1, SW2

SW1 position	SW2 Position	Data Protocol
RS-422	N/A	RS-422
RS-232 Pelco	RS-232	RS-232
RS-232 Pelco	Pelco	Pelco up-the-coax Pan/Tilt/Zoom control. Distance limitations to the length of the fiber optic link will apply. Consult factory if necessary.

VI. ECT1000TRXD-003 RS-232 DATA TRANSCEIVER INTERFACE CARD

RS-232 Data Connector:

Type: AMP 787170-4/40 PIN

Location: Front panel of the interface card

For the connector pinout see connection diagram in the appendix

RS-232 Data Transceiver Interface Controls :

Type: 8 position dip-switches

Location: All controls are located on the circuit board.

Label	State	Functional Description
Sw1-1	On	Enable local loopback for port 1
	Off	Disable local loopback for port 1
Sw1-2	On	Enable local loopback for port 2
	Off	Disable local loopback for port 2
Sw1-3	On	Enable local loopback for port 3
	Off	Disable local loopback for port 3
Sw1-4	On	Enable local loopback for port 4
	Off	Disable local loopback for port 4
Sw1-5	On	Enable local loopback for port 5
	Off	Disable local loopback for port 5
Sw1-6	On	Enable local loopback for port 6
	Off	Disable local loopback for port 6
Sw1-7	On	Enable local loopback for port 7
	Off	Disable local loopback for port 7
Sw1-8	On	Enable local loopback for port 8
	Off	Disable local loopback for port 8

Sw2-1	On	Enable remote loopback (passthru) for port 1
	Off	Disable remote loopback (passthru) for port 1
Sw2-2	On	Enable remote loopback (passthru) for port 2
	Off	Disable remote loopback (passthru) for port 2
Sw2-3	On	Enable remote loopback (passthru) for port 3
	Off	Disable remote loopback (passthru) for port 3
Sw2-4	On	Enable remote loopback (passthru) for port 4
	Off	Disable remote loopback (passthru) for port 4
Sw2-5	On	Enable remote loopback (passthru) for port 5
	Off	Disable remote loopback (passthru) for port 5
Sw2-6	On	Enable remote loopback (passthru) for port 6
	Off	Disable remote loopback (passthru) for port 6
Sw2-7	On	Enable remote loopback (passthru) for port 7
	Off	Disable remote loopback (passthru) for port 7
Sw2-8	On	Enable remote loopback (passthru) for port 8
	Off	Disable remote loopback (passthru) for port 8