

I/A Series[®] Remote Terminal Unit (RTU) C50 CONITEL Test Set



The C50 Test Set is a diagnostic tool that allows monitoring and simulation of data communications within a SCADA system.

The C50 Test Set has been designed as a portable unit, primarily for field diagnostic work. It can be operated from the built-in battery, or from the main supply.

The Test Set consists of a power supply, Electrobus interface, communications module and relevant software. It provides a high speed connection from the printer port of an IBM PC or compatible, to an appropriate C50 RTU Communications Module, allowing software on the PC direct access to the communications lines of the SCADA system.

FEATURES:

- Utility program that allows monitoring and simulation of SCADA communications
- Master Station emulation
- RTU emulation
- · Message history details
- Eavesdrop filters for inclusion and exclusion of messages
- Built-in communications module
- Supports Conitel, LN57, DNP



MAIN MENU

At start-up, the system attempts to set up the two communications channels of the dual communications board (DCB) installed in the test set (see Figure 1). If the setup is successful, messages "DCB Channel 1 started" and then "DCB Channel 2 started" appear in turn on the screen. If setup is unsuccessful, the message "Electrobus failure" appears, indicating the DCB could not be found. If successful, the main menu (see Figure 2) appears and the user can select options using the function keys.

Screen Types

Trap Data Screen

The Trap Data Screen is the first screen of the Master Emulation, RTU Emulation and Eavesdrop screens. This screen is the base screen from which filters (Bit Masks) for trapping data are set and monitored in all modes. Summary information about each message is displayed continuously.

History Screen

History Screens provide a display of the message history. The history buffer is 1000 messages deep and only messages that match one or more of the filters are copied to the history buffer. The history buffer can be saved to and restored from a disk to assist in diagnosing message problems. The entire history can be viewed and details of each message inspected.

The user is provided with a Sequence of Events (SOE) option to request a display of SOE events from the history display. All SOE responses are then displayed in chronological event order using a separate display window.

Detail Screen

The Detail, or Error Screen provides a summary of error information accumulated from the current operational mode of the C50 Conitel Test Set. The types of errors counted depend on the protocol being used.

Statistic Screen

The Statistic Screen presents the statistical information on transmitted and received communications messages.

Configuration Screen

The Configuration Screen is used to display and setup the filter parameters for all operational modes. When a configuration screen is called up, current configuration data is retrieved from disk and displayed on the screen.

Control Screen

The Control Screen allows for the execution of SCADA control commands and the testing of new SCADA functions.

Setup Screen

The Setup Screen is used to configure the C50 Conitel test set. After selecting "Setup" from the main menu, the parameters are displayed for both channels. Function keys select the required option for configuration or inspection.

Master Emulation Screen

The Master Emulation Screen emulates a SCADA Master Station, which transmits and receives messages from a maximum of eight RTUs, and displays these messages on screen.

RTU Emulation Screen

The RTU Emulation Screen emulates one or more RTUs. Communications continue running in the background of all remote emulation screens.

Eavesdrop Screen

The Eavesdrop Screen monitors the communication line between the RTU and the master station. In this mode, the two receive channels of the test set communications card are used to monitor both directions of the data link under test (LUT). Channel one of the test set is used to transmit (TX) and Channel two is used to receive (RX).



Figure 1. C50 Test Set Components

MAIN MENU									
SETUP SCREEN	MASTER EMULATION SCREEN	RTU EMULATION SCREEN	EAVESDROP SCREEN						
F1 ON LINE HELP MENU	F1 ON LINE HELP MENU	F1 ON LINE HELP MENU	F1 ON LINE HELP MENU						
F2 CONFIGURE BOTH CHANNELS	F2 HISTORY UPDATE/ INSPECT	F2 HISTORY UPDATE/ INSPECT	F2 HISTORY UPDATE/ INSPECT						
F3 READ HISTORY F4	F3 DETAIL INFORMATION SCREEN OF CURRENT FILTER	F3 DETAIL INFORMATION SCREEN OF CURRENT FILTER	F3 DETAIL INFORMATION SCREEN OF CURRENT FILTER						
WRITE HISTORY F5 SELECT COMMUNICATIONS MODE F6 EXECUTE COMMUNICATIONS MODE	F4 STATISTIC SCREEN	F4 STATISTIC SCREEN	F4 STATISTIC SCREEN						
	F5 CONFIGURATION SCREEN OF CURRENT	F5 CONFIGURATION SCREEN OF CURRENT	F5 CONFIGURATION SCREEN OF CURRENT						
	FILTER F6 RESET MESSAGE COUNT OF ALL FILTERS	FILTER F6 RESET MESSAGE COUNT OF ALL FILTERS	FILTER F6 RESET MESSAGE COUNT OF ALL FILTERS						
F7 SELECT COMPUTER TYPE	F7 TOGGLE ECHO/ NON_ECHO MODE	F7 TOGGLE ECHO/ NON_ECHO MODE	F7 TOGGLE ECHO/ NON_ECHO MODE						
F8 SELECT HISTORY INSPECT/ UPDATING MODE	F8 TOGGLE ON/OFF OF CURRENT FILTER	F8 TOGGLE ON/OFF OF CURRENT FILTER	F8 TOGGLE ON/OFF OF CURRENT FILTER						
F9 SELECT DCB CHANNEL	F9 MORE MANUAL OPTIONS	F9 MORE MANUAL OPTIONS	F9 MORE MANUAL OPTIONS						
SHIFT+F9 TOGGLE TIME MESSAGES	F10 OR ESC EXIT CURRENT SCREEN	F10 OR ESC EXIT CURRENT SCREEN	F10 OR ESC EXIT CURRENT SCREEN						
F10 OR ESC ↑ GO TO GO TO NEXT PREVIOUS FILTER UP SCREEN		↑ GO TO NEXT FILTER UP	↑ GO TO NEXT FILTER UP						
	↓ GO TO NEXT FILTER DOWN	↓ GO TO NEXT FILTER DOWN	↓ GO TO NEXT FILTER DOWN						

PHYSICAL SPECIFICATIONS

Physical Size 650 mm x 590 mm x 240 mm Weight 4.8 kg

ENVIRONMENTAL SPECIFICATIONS

Temperature 0°C to 60°C (optional -20°C to 60°C)

Humidity 20% to 95% (non-condensing)

FUNCTIONAL SPECIFICATIONS

Power Requirements 120 V or 240 V (selected on front panel)

Battery Type 12 V, 2.5 AH

PC Interface Via parallel port Battery Discharge Time (to auto shut down) six hours

Battery Low Indication (to auto shut down) one hour

Battery Recharge Time Seven hours

ORDERING INFORMATION								
Required with V.11 Module	Required with V.23 Module	Required with V.28 Module	Required with Optical Controller (Plastic)	Required with Optical Controller (Glass)	Part Number	Description		
Х	Х	Х	Х	Х	1901043	Test Set		
X					0303320	V.11 Dual Communications Controller		
Х					1050023	V.11 LN57 Protocol Firmware		
	X				0303319	V.23/Bell 202 Dual Communications Controller		
		Х			0303323	V.28 (RS-232) Dual Communications Controller		
	Х	Х			1050077	C300 Conitel Firmware		
			Х		0303352	Optical Controller - Plastic		
				Х	1050077	Optical Controller - Glass		
			Х	Х	1050057	LN57 Firmware		
Х			Х	Х	1101022	LN57 Test Set Software		
	Х	Х			1101023	Conitel Test Set Software		
	Х	Х			2005158	Conitel Test Set User Manual		
			Х	Х	2005160	LN57 Test Set User manual		

NOTE

Firmware must be separately ordered and installed.

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