

Diagnostic Test Set Software

C3-ilex's Diagnostic Test Set (DTS) software is designed to provide a set of tools that allows the user to view and capture communication messages to facilitate diagnostics on C3-ilex supplied RTUs. The DTS software will run on any laptop or desktop computer running Windows NT, 2000 or XP operating system. The minimum suggested computer requirements are 400MHz processor and 256MBs of memory. RTU communications testing requiring 2 or 4 wire leased line requires the use of an EOSmodem. Product features are:

- Simulates a C3-ilex master station.
- Communicates via the C3-ilex protocol
- RTU communications use the standard Laptop serial port
- 2/4 wire leased line RTU communications (requires a C3-ilex EOSModem)
- Displays the Send & Receive function codes
- RTU test configurations can be saved to files
- Capable of expanding to the largest RTU point count
- Capable of displaying & controlling: Indications, Analogs, SBO & Raise Lower Controls, Pulse Accumulators, Analog Outputs and all supported IED devices
- Displays raw count of analog and pulse accumulator data
- Views and captures communication messages to files and displays the good & bad communication counts
- User definable database
- Easy to use Windows Explorer-like user interface

Options:

- DTS Software can be provided preloaded on Laptop computer(s) delivered from factory
- An EOSmodem for 2 or 4-wire communications, or listen mode
- DNP 3.0 communications protocol

DTS Software Screens:

The screenshot displays the 'Yosemite Valley Sub.tst - C3-ilex Diagnostic Test Set' application. The main window shows a table of device status:

Device Name	DQ	State/Raw	Num Chgs/Scaled/Delta
Cooper Form 5	N	BAD	
Indication 1		1	1
Indication 2		1	1
Indication 3		1	1
Indication 4		1	1
Indication 5		0	0
Indication 6		0	0
SOE Breaker 1	N	0	0
SOE Breaker 2	N	0	0
SOE Breaker 3	N	0	0
1		0x331	39.91
2		0x331	39.91
3		0x331	39.91
4			

Below the table, there is a list of devices including KWH 1, KQH 1, and three SB0 Breakers. A terminal window at the bottom shows the following data:

```
SEND: RTU: 1, Function 0
SEND: 31 00 3D A0

RCV: 16:21:16.115 St
RCV: RTU: 1, Function 0
RCV: 35 00 00 0E 02 0
RCV: 31 33 31 01 02 3
RCV: 81 FF 88 09 0A 8
```

An overlaid dialog box titled 'Script - C:\Test Set SW 7-31-03\Polling 1.scr' is open. It contains the following fields and options:

- Exception Scan Interval: 1 s
- Force Scan Interval: 1 s
- Iterations: 0
- Script list: RTU Freeze, RTU Download Deadbands, RTU Cycle Trips, RTU Cycle Closes, RTU Cycle Raises, RTU Cycle Lowers, RTU Cycle Analog Outputs, Node Force Scan, IED Force Scan, IED Cycle Trips, IED Cycle Closes, IED Cycle Raises, IED Cycle Lowers, IED Cycle Analog Outputs.
- Commands list: RTU Freeze, RTU Download Deadbands, RTU Cycle Trips, RTU Cycle Closes, RTU Cycle Raises, RTU Cycle Lowers, RTU Cycle Analog Outputs, Node Force Scan, IED Force Scan, IED Cycle Trips, IED Cycle Closes, IED Cycle Raises, IED Cycle Lowers, IED Cycle Analog Outputs.
- Navigation buttons: <<, >>
- Buttons: OK, Cancel