CMA 3000

SPECIFICATIONS

ISDN and access protocol functionality option

Effective installation, operation and maintenance of 2 Mbps interfaces

CMA 3000 is Anritsu's new portable, compact and user-friendly field tester. It's designed specifically for field technicians who install and maintain mobile-access and fixed-access networks, transmission networks and switching.

Equipped with the basic ISDN protocol functionality option, the battery-powered Anritsu CMA 3000 is an easy-to-use, portable field tester for the installation, operation and maintenance of 2 Mbps interfaces in the access network.
The basic ISDN protocol signaling functions include signaling message monitoring with all-level decode, powerful signaling statistics and easy-to-use filter facilities.

With the CMA 3000 you're able to analyze a range of international and national ISDN protocols and other access protocols. The instrument allows you to capture signaling information from up to four 64 kbps or up to sixteen 16 kbps signaling channels.

Measurement functions include supervision of the 2 Mbps line and audio access to the traffic channels, as well as line-status and performance measurement. The CMA 3000 transmitter generates test signals for commissioning tests of 2 Mbps PCM systems. The transmitter also allows drop-and-insert testing for in-service measurement of transmission quality.

KEY FEATURES

- All-layer analysis of ISDN, V5.1/V5.2, QSIG and other access network protocols
- Signaling channel traffic statistics
- Full-featured 2 Mbps transmission test set
- Simultaneous monitoring of both directions on a line
- Traffic channel overview
- Automatic configuration to line, including identification of signaling channels

KEY APPLICATIONS

- Installation testing
- Rapid in-service diagnostics and troubleshooting
- PCM link performance
- Traffic channel usage
- Signaling-link performance and load
- Protocol analysis and troubleshooting
- Signaling-message sequences
- Call completion analysis

Protocol analysis

During installation or troubleshooting, the CMA 3000's event log provides you with valuable detailed information on the signaling by collecting signaling messages from the connected 2 Mbps line.

All layers of the protocol are decoded completely into text (ISDN, V5.x) or mnemonics. The mnemonics can be translated into plain language, and the use and possible values of the field are explained.

The CMA 3000 presents the recorded information in different ways: The Result List gives a one-line indication of each message for a rapid overview of the signaling information. This makes it simple to identify the input on which the message was detected. Intuitive color indications highlight messages that could not be correctly decoded. With the search facility you can easily find such messages. The Result List overview presentation may be expanded to contain a couple of lines per message, stating the most important information in the message.

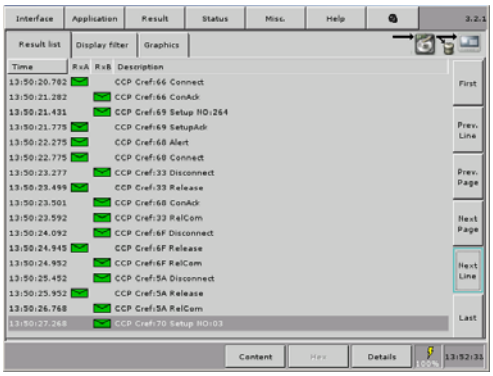

Figure 1 The Result List presentation of signaling.

The contents of a message can also be shown, either presenting the main information elements or all parts of the signaling message and the hexadecimal values for detailed inspection and analysis.

Messages are stored in the CMA 3000's memory and can be examined during or after the measurement. Filters can be applied to select the most essential information for storage and display.

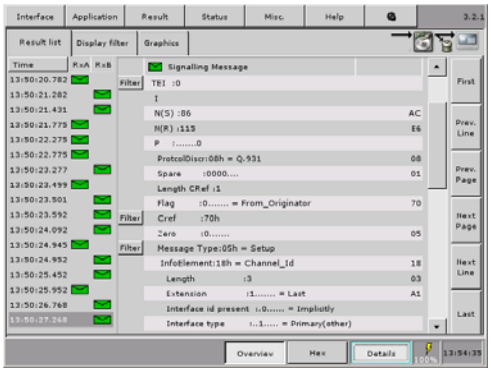

Figure 2 Detailed presentation of the message contents.

For ISDN protocols, you may set the filter to display only SETUP messages, providing a quick overview of calls on the line. It's easy to import the Call Reference parameter value to display filters, making the extraction of ISDN messages that belong to the same call a very simple task.

The CMA 3000 also has a general 4-digit search facility enabling you to extract 4-digit messages. This can be used to identify messages with a particular called party or calling party number.

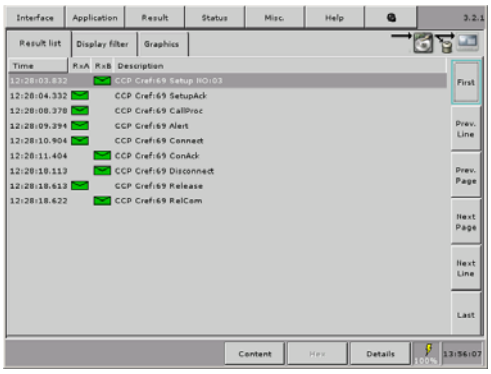

Figure 3 Extract of messages for a call.

Signaling statistics

The CMA 3000's signaling statistics provide data on the total traffic load and the quality of the signaling link.

For examination of the Layer 2 traffic load on the signaling link, CMA 3000 displays traffic information split into Supervisory (S), Unnumbered (U) and Information frames (I/UI).

The ISDN Layer 3 message type statistics provides you with numerous network-optimization opportunities. Call completion can be examined by comparing SETUP messages count on one side of the line with CONNect messages on the other side.

Traffic channel load is clearly displayed in a histogram presentation of SETUP message counts. Release cause statistics are also available for the ISDN protocols.

Other access protocols

The CMA 3000 supports analysis of other access protocols, such as V5.1/V5.2, QSIG, DPNSS and DASS2.

The instrument can capture signaling information from up to four 64 kbps signaling channels. This is particular important when analyzing V5.1/V5.2 systems where the signaling in many cases uses two or three 64 kbps signaling channels.

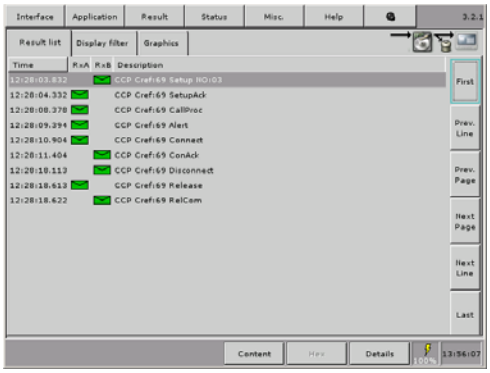

Figure 4 A Result List presentation of V5.2 signaling.

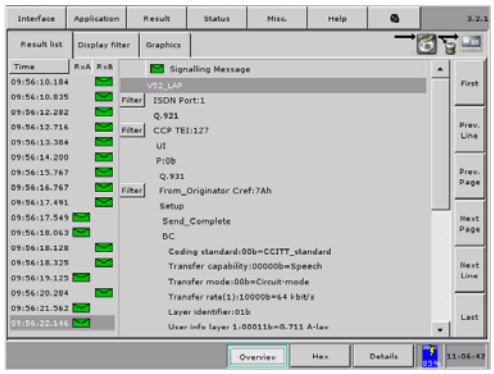

Figure 5 The high level contents of a V5.2 signaling message

Specifications

The specifications below cover the functionality for the CMA 3000 when installing the basic ISDN protocol functionality option. Please refer to the CMA 3000 Basic instrument specifications sheet for further information on the basic functionality.

General	
Optional ISDN and access protocols	Basic ISDN protocol functionality option is required. ISDN protocols: • ETSI EURO-ISDN (equivalent to ITU-T DSS1 - Q.931). • VN6, 1TR6, Australian ISDN Other access network protocols: • DPNSS, DASS 2 • V5.1/V5.2 • QSIG
Signaling channel access	For signaling analysis 1 x 64 kbps channel can be selected. Alternatively, up to 4 x 64 kbps channels or up to 16 x 16 kbps signaling channels can be selected for signaling analysis (audio access to traffic channels is disabled in this case)
Display of logged events	Messages are shown in mnemonics. Display modes: • Result List: showing one line with message type • Result List, Details: showing message type and main information elements • Message Contents: showing all information elements • Message Contents, Details: showing all parts of the message plus a hex presentation • Plain text help for individual fields • Hex-only presentation of messages
Message filter	Message filter conditions: ISDN protocols: SAPI, TEI, Call Reference, up to eight user-defined message types. For display filters also a message filter string of four user-defined digits (4 bit values)
Signaling statistics	• Traffic load: total, retransmitted and errored signaling frames • ISDN Layer 2 traffic load split into Supervisory (S), Unnumbered (U) and Information frames (I/UI) • For ISDN protocols: statistics for up to 32 message types or release cause values

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