VCL-NetProbe

Product Brochure & Data Sheet

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VCL-NetProbe
Signaling Monitoring and Analysis

Network probe for real-time network surveillance.

Signaling refers to the exchange of control information between various network elements to perform call handling, billing, and other maintenance activities.

Signaling System No.7, more commonly known as SS7 is the key signaling system used in telecommunication network. This is used as out-of-band signaling on dedicated 64 Kbps time-slots to support call establishment, routing, billing, information exchange in the Public Switched Telephone Network. In addition to the above functions SS7 supports in radio resource management, mobility management in the mobile networks such as GSM and CDMA.

Signaling refers to the exchange of control information between various network elements to perform call handling, billing, and other maintenance activities.

Monitoring SS7 information can give valuable information concerning the traffic, network performance, faults etc which form the basis for many applications like, Fraud Management, Revenue Assurance and Revenue Maximization, Interconnect Reconciliation etc.

VCL-NetProbe is a Real Time Network Surveillance Probe, which includes functions like Call Detail Record (CDR) generation, SS7 accounting, Traffic Report generation and interconnect report generation etc.

VCL-NetProbe is based on highly scalable and distributed architecture. The system monitors the SS7 links in the network at various levels on various protocols and captures the messages to build CDRs. The CDRs can be formatted to comply with any switch CDR format. The data generated by VCL-NETPROBE can be used by various applications like revenue assurance, interconnect billing verification, traffic analysis and SS7 accounting etc.

VCL-NetProbe provides an alternate source of data to the Switch generated CDRs to the operator to perform various validations across the network relating to revenue assurance and network performance.

A highly efficient and performance optimized monitor engine ensures that there is absolutely **no message loss**. It ensures that all the messages are captured, decoded and stored in the database.

Features

- Hi-Z for non-intrusive monitoring of E1/T1 links
- Highly modular and configurable
- Auto protocol detect and decode
- Efficient CDR generation engine
- Robust carrier grade platform
- 64/128 full duplex links per probe
- Multi protocol support

Typical Applications

- CDR Generation
- Protocol Analysis
- Signaling Network Performance Measurement for analysis and report generation
- Network QoS Measurement
- Network Planing and Engineering
- Roaming and Interconnect Records

Features with Description

E1/T1 Interface Module	The Probe can be ordered for either E1 or T1 interfaces.
Link Capacity	Offered in two capacities of 64 full duplex SS7 links and 128 full duplex SS7 links.
Filters	In order to reduce unwanted packet overload various filters can be set. The filters are applicable at FISU, LSSU and MSU levels.
Real-time Processing	A highly efficient processing logic captures and stores the packets in a database for further processing ensuring zero packet loss.
Post Processing	The captured data is worked on by various filters, criteria, rules to generate meaningful data and reports for various applications.
CDR Generation	The CDR generation logic generates CDRs from the packets captured applying correlation rules and tracing in time. The CDR formatter gives the flexibility of choosing and appropriate format and field selection as may be required by the user application software.
SS7 Performance	SS7 performance in terms of link outages, link errors can be measured in real-time.
Network Performance	Various reports on traffic patterns, link usage, circuit usage, failed call analysis empowers the operator to visualize the network performance qualitatively and qualitatively in real-time.
Synchronization	The probe can be time synchronized with the network time server using NTP.

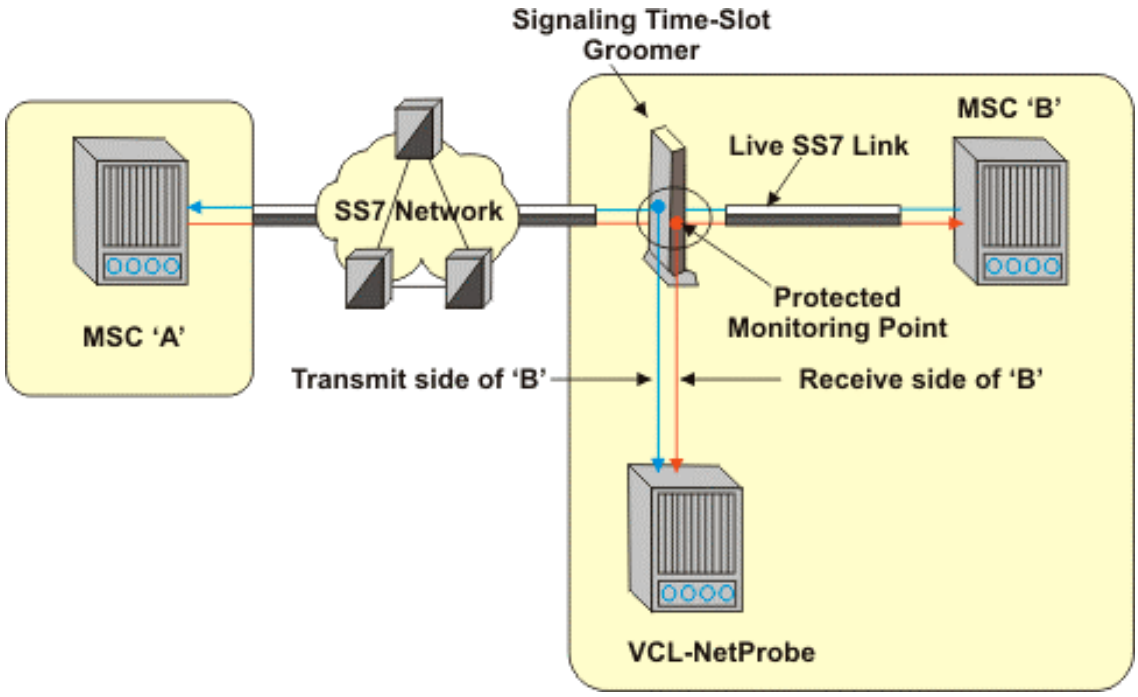
Real-time Call Tracing	The call tracer module displays call trace graphically in the form of ladder diagrams enabling the operator to trace the route of the call from the point of origin to the destination through transit nodes. And all in real-time.
Protocol	SS7 (ITU/ANSI), ISUP, CAMEL, MAP, IS-41, INAP, WIN • Link Performance reports • MTP level reports • SCCP level reports • Destination wise traffic reports • Erlang reports • CIC/CIC Group reports • Failed call analysis reports • CDR generations reports • CDR transmission reports • Location update reports • Authentication reports
Provisioning	VCL-NetProbe supports provisioning of the following items: • Area codes and mapped names • CIC/CIC Group data • Network specific cause codes
Compatible/Matching Grooming Equipment	• Matched to VCL - E1 and T1 Groomers

VCL-NetProbe

Signaling Monitoring and Analysis

SS7 Signaling capture and analysis in
CDMA, GSM, PSTN networks on T1/E1 interfaces

Application Diagram



A typical application/report generated between BSC – MSC links in mobile network

S. No.	Requirement	Remarks
The network data needed from the probe system is as follows:		
1.	"A-Link" (BSC-MSC)	The A Links are non-intrusively monitored through a Hi-Z (high impedance) path from a monitoring point on a DDF. The protocols that are handled by VCL-NetProbe are SCCP/DTAP and BSSAP/MAP/ISUP /INAP and CAP. All the messages provided below are parsed and provided in a readable format by VCL-NetProbe.
2.	Call Set-up Indication	
3.	Call Closure Indication	
4.	Handover Request	
5.	Handover Request ACK	
6.	Handover Command	
7.	Handover Performed	
8.	Handover Complete	
9.	Handover Failure	
10.	TMSI Re-assignment	
11.	TMSI Re-allocate complete	
12.	Location Update	
13.	Location Update Accepted	
14.	Assignment Request	
15.	Assignment Complete	
16.	Assignment Failure	
17.	SMS Origination Indication	
18.	SMS Termination Indication	
For the above two events the following data is required		
19.	Unique message session ID (Record ID)	
20.	IMSI	
21.	TMSI	
22.	Cell/Sector Description	
23.	LAC CID	
24.	Timestamp	
The required data is standard to GSM and generated within network as mobiles provide location updates, originate/terminate calls/SMS messages and hand over between cells.		

Technical Specifications

E1 Port

Connector	RJ-45
Impedance	120 Ohms, balanced
Compliance	G.703
Framing	G.704
Number of E1 Ports to connect to the Monitored Equipment	4, 8 (as per customer requirement)

Power Supply

Power supply	240/110 Volt AC, - 48Volt (options, as ordered)
Power Consumption	100 Watt (Max.)

Technical specification and regulation compliance

Meets CE requirements
Complies with FCC, Part 68 and Part 15 sub part A specifications
Safety - UL 1459 Issue 2

Management and Control

Serial management port (RS232) -COM Port
10/100 BaseT for remote management over a LAN
10/100 BaseT telnet over a TCP/IP network

Temperature

Operating	0^0C to 50^0C
Humidity	5% to 95% Non-condensing

Mechanical Specifications

Width	480 mm
Depth	280 mm
Height	180 mm
Weight	9.0 kg

Notes:

Technical specifications are subject to changes without notice.
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Revision 02 - January 19, 2007.

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