

# EVO

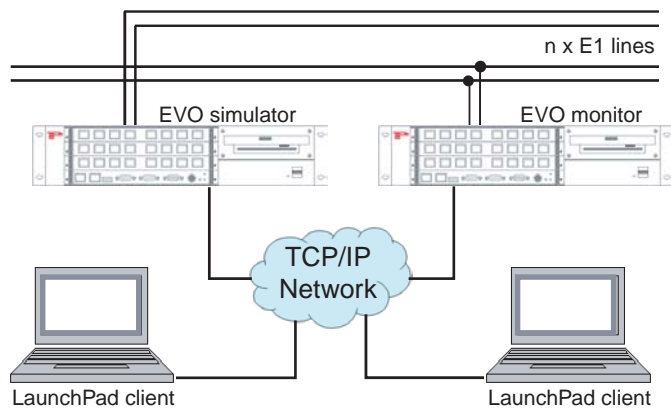
## Probe, Monitor and Simulators



The EVO® range of protocol test and probe systems -  
the system and tools for a managed test or monitor environment.

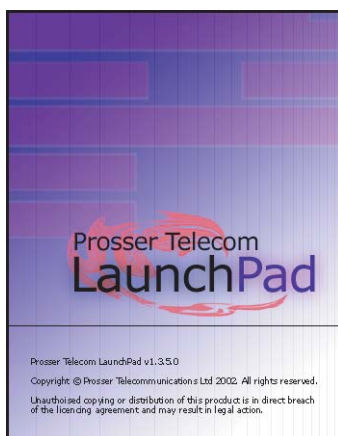
4 - 24 E1/T1 Ports | 4 - 744 Timeslots | Monitor and Probe (Hi-Z)  
Simulator and generator | Active grooming | STP mode | 2U/4U PCI or cPCI chassis or rack

- Powerful database tools to fully configure available resources
- Data streaming across TCP/IP networks allow multi-user access to all the available data
- A single card has the capability to monitor 124 timeslots or simulate 64 timeslots
- Fast searching and filtering functions using the Linux database engine 'MySQL'
- Set up multiple client sessions on the same PC, each accessing different resources
- Probe works with Switchblade® and other Fraud and Traffic Management CDR streaming software
- Interconnects with the TestAce® and Centralised Testing Environment software



The diagram shows a typical testing environment with EVO test heads managing the data from all available E1 links, and multiple client PCs running the LaunchPad client application. All data collected by the test heads is streamed live to the TCP/IP network.

EVO protocols:		
<b>Available:</b>		<b>Gateway:</b>
MTP2 / 3	TUP	SIGTRAN
BTNUP	ISUP	- SCTP
SCCP	TCAP	- M3UA
INAP	GSM	IP and STM-1
DPNSS	MAP	
ISDN	3GSM	



LaunchPad® is the client software application from Prosser Telecom. It is designed to work with the EVO range of protocol test heads and probe nodes, allowing you to:

- Display decoded messaging for multiple protocols
- Replay captured log files with full decode
- Create monitoring profiles to view specific resources
- Create filtering profiles to target key data
- Simulate traffic for high volume flood testing
- Write, compile and run conformance test scripts
- Create users and user groups (administrators only)
- Configure several test heads and probe nodes at once

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### Performance.

The performance of the EVO Monitor and Simulator System depends on several factors. The first of these is the speed of the CPU. Modern processors are very fast and, coupled with large amounts of RAM, offer outstanding performance for the money. Due to the client-server configuration of the system, the second factor that has a bearing on the performance of the system is the speed of the LAN connecting the EVO to the client software, LaunchPad. A minimum of 100Mb/s LAN (switched) is recommended.

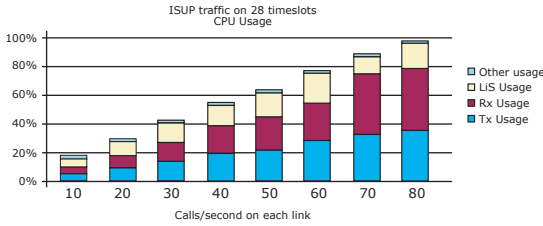


Figure 1 - ISUP call rate vs. CPU usage

This graph shows the CPU usage for a number of processes plotted against the number of calls/second per link over 28 links. As can be seen, the CPU usage reaches a peak of 98% when the call rate is increased to 80 calls/second over 28 links. This gives a faster CPU performance figure of 2240 calls/second. The use of a faster CPU would allow this figure to rise. The main bulk of the CPU is taken up processing the ISUP messages. Of the remainder, the Linux streaming software (LIS) uses around 17% CPU.

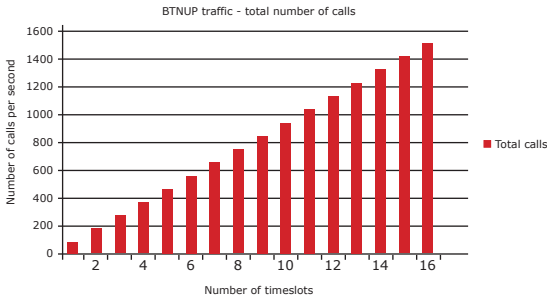


Figure 2 - Maximum call rate for BTNUP traffic

Tests were carried out to attempt to achieve as close to full link occupancy as possible using BTNUP signalling traffic. As can be seen from the accompanying graph, 95 calls/second per link were achieved linearly from 1 to 16 links, representing a peak call rate of 1520 calls/second. More links were added up to a maximum of 31. Even with 31 links activated, a traffic rate of 40 calls/second per link was achieved, representing 1240 calls/second.

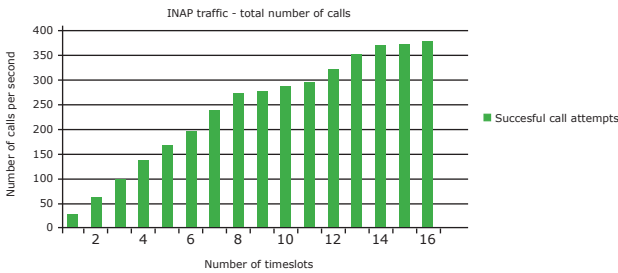


Figure 3 - Maximum call rate for INAP traffic

This graph shows the performance of the EVO in the demanding area of INAP. The rate at which calls can be generated steadily rises with the number of links activated. At 8 links, the call rate is just under 34 calls/second per link (which represents close to full link occupancy). The maximum call rate is 377 calls/second over 16 links (representing nearly 24 calls/second per link).

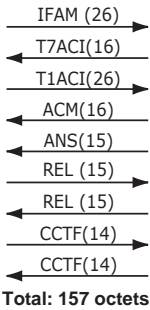
### Performance Figures - summary

Max call rates (typical)	ISUP - 2500 <sup>1</sup> calls/s	Busy hour call attempts	> 10,000,000 BHCA
	ISUP - 4000 <sup>2</sup> calls/s	Binary logfile capacity	> 20,000,000 lines
	NUP - 2400 <sup>3</sup> calls/s	Simultaneous logfiles	Unlimited
	INAP - 500 <sup>4</sup> calls/s	E1 Ports per chassis	Up to 24
	(See typical call flows, right)	Timeslots per chassis	Up to 744
		Monitoring capacity	>10,000 messages/s <sup>5</sup>

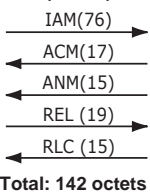
### Technical Specifications (typical)

Size	441 x 88 x 295mm	Logfile search facility	ASCII (+ within messages)
Power Supply	200w ATX	CPU	Intel Pentium IV
Weight	< 8.0Kg	RAM	1GB +
Operating System	Red Hat Linux 7.2	Hard Disk	40GB +
Config. database	MySQL	Ethernet	10/100 Mb or Gigabit
Message buffer	> 100,000 lines	Boot-up self recovery	Yes

#### NUP call flow: (octets)



#### ISUP call flow: (octets)



#### INAP call flow: (octets)



#### Notes:

1. Generating over 32 timeslots.
2. Extrapolated to 64 timeslots and maximum CPU usage.
3. Generating over 32 timeslots.
4. Generating over 32 timeslots
5. Dependent upon LAN and PC spec. Example shown achieved using LaunchPad v1.3.5 on P4 1.5GHz PC + 384MB RAM on 100BaseT LAN.

All testing conducted at Prosser Telecom headquarters in the UK.

