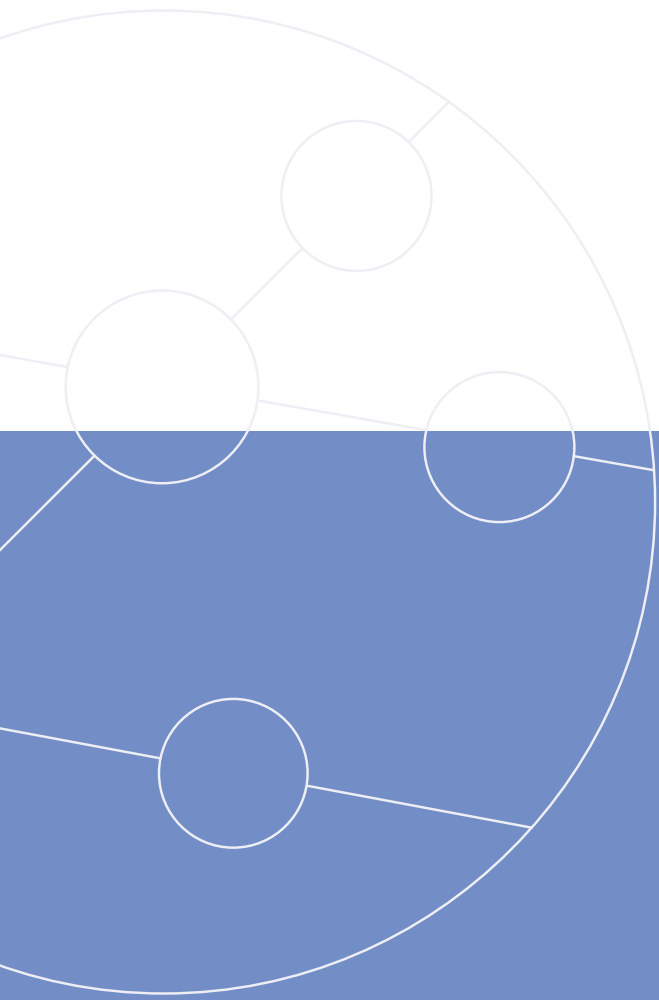


AuroraDuet



ISDN Test Equipment



ISDN

Hand-held testing for Basic & Primary Rate ISDN



TrendCommunications

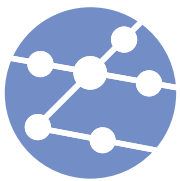
The **AuroraDuet** is the total solution to problem issues associated with the operation of the ISDN. Available as a Basic Rate or combined Basic and Primary Rate test instrument, the **AuroraDuet** provides a complete range of test functions from the very basic to the very advanced. With this instrument, the engineer can maintain the integrity of the ISDN circuits and equipment under his control at any time. This hand-held unit is an ideal instrument for the field engineer dealing with the

simplest of line installations yet sophisticated enough to be used in a laboratory to validate the operation of new developments.

The extensive functionality of the **AuroraDuet** makes it ideal for all applications that engineers in the field can experience. Much thought has gone into the actual operating requirements of the tester. The logically constructed menus for configuration and operation are supplemented by single key selections for commonly needed functions and

service tests to save time. The unit's size and design means that virtually any location where it is possible to install ISDN equipment is accessible to an engineer with an **AuroraDuet**, including areas of poor light quality. The **AuroraDuet** is also capable of being totally controlled remotely by an engineer using a PC connected directly to the tester or across the PSTN.

The **AuroraDuet** is a key asset to all business activities involving ISDN. Service providers can make extensive use of the U interface and V5 monitoring capabilities. Organisations concerned with the commissioning and installation of ISDN equipment can profit from the simulation capability. Companies involved with maintenance and troubleshooting will find the monitoring and analysis functionality invaluable. Manufacturers of ISDN equipment can use the **AuroraDuet** as a Quality assessment tool, and users of ISDN services can ensure that the services are as expected and as an arbitration tool between different suppliers in their ISDN environment.



AuroraDuet

*The total solution to
ISDN testing*



What are the key testing applications?

Simulation

The **AuroraDuet** can simulate on the Basic Rate 'S/T' or 'U' reference points allowing a full combination of TE, NT and LT modes including EOC loopback commands and on the Primary Rate interface in TE or NT mode, either directly on the exchange or at customer premises.

Physical layer testing and Link Quality assessment

When a call fails or call set-up problems exist it is essential to have an instant readout of the physical layer quality indicators to help isolate customer equipment problems. The **AuroraDuet** offers 'hotkey' access to view instantly G.703 and G.704 error counts and messages when in monitor or simulation test modes. When installing or maintaining coaxial or twisted pair cabling for 2Mbit/S links the cable 'digital quality' will need to be determined. This can be achieved by terminating each end of the link (receive and transmit paths) with an **AuroraDuet** running a wide-band bit-error-rate-test (BERT) across the link.

- Physical layer 1 testing and monitoring using LEDs and Screen gives indication of Remote Alarm, CRC Error, Sync Alarm, Signal Detect, AIS, Activation, Info states and a number of other key indicators.
- Selective BERT capability for both Basic and Primary Rate circuits, including Nx64k multi channel
- 2MB framed and unframed BERT capability for PCM circuit testing

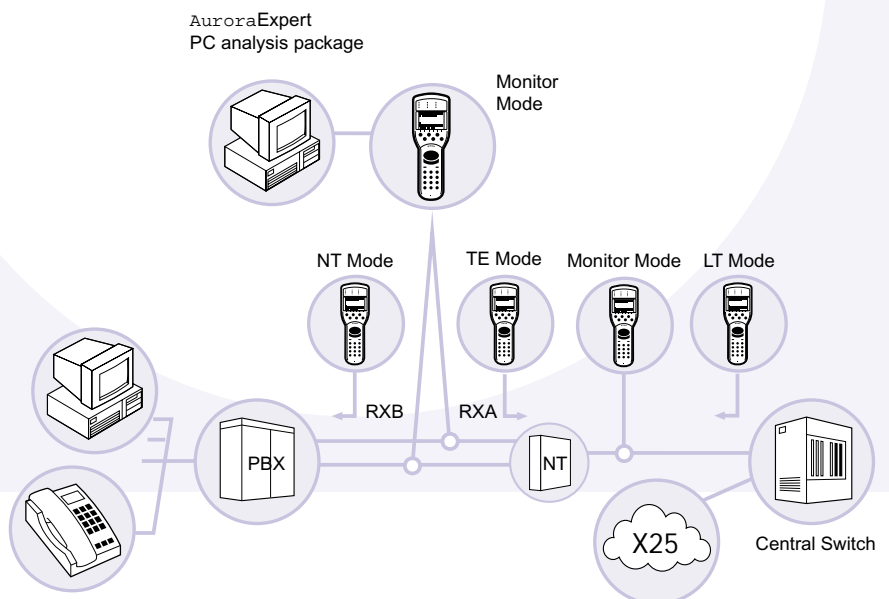
- **Multi-channel simulation:**
Phantom power for NT1, S-bus devices as well as power feed to Up0 interface
- B1, B2, Bx channel selection in Basic Rate modes
- Automatic B-Channel Cross Connect on Basic Rate for "mini-switch" simulation
- Establish up to 30 simultaneous calls in Primary Rate modes
- Establish up to 15 simultaneous cross-connect calls in Primary Rate NT mode
- Traffic generation capability using automated tests

Keypad support for * and #; Hold/Retrieve; Call Waiting; Forwarding (CFU, CFB, CFNR); Completion; Closed User Group; Terminal Portability; 3 Party and Conference Calls; Malicious Call ID; Origination and display of Calling Line Identity (CLIP), Connected Line Identity (COLP), Charging information; Validates operation of Direct Dialling In (DDI), Multiple Subscriber Numbers (MSN), User to User information, Alpha-numeric subaddressing.

Teleservice & Supplementary Service Testing

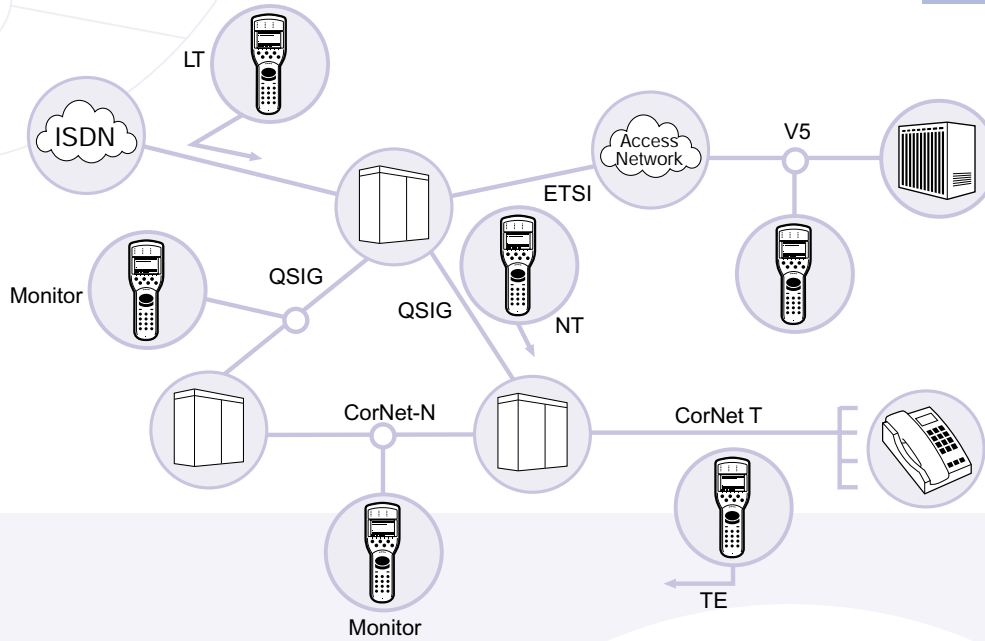
- Automatic Service Tests for one key testing
- Check the line configuration
- Check Quality of Service by initiating BER Tests
- Validates operation across all channels

Identifies which services are available on the line under test and therefore those which are not.



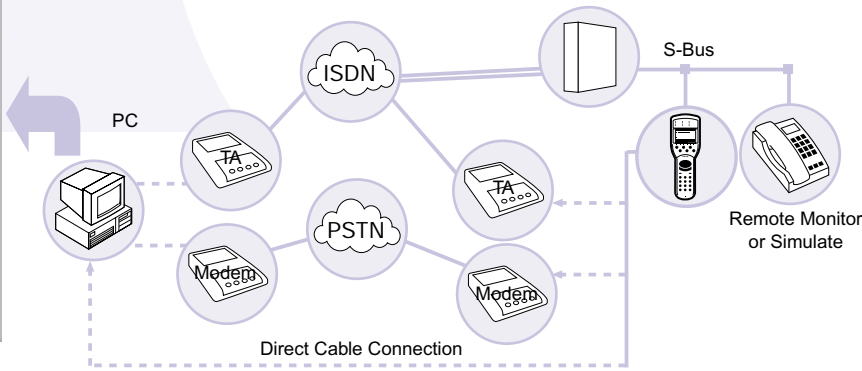
International, National and Private protocols – enables engineers to work on a variety of equipment and mixed protocol networks without using a different tester. Also provides identification and decode of encapsulated protocols in B-Channel including PPP/IP.

- ETSI, EDSS1, 1TR6, VN4, TPH, DASS, DPNSS, QSIG, CorNet-N, CorNet-T, CorNet NQ, TN1R6
- X.25 D & B-Channel
- IP protocol decode support conforming to RFC1490
- Holds over 16 protocols on one tester which means the right one should always be to hand



- Full remote operation
- PC control through "Virtual Instrument" representation of the **AuroraDuet**
- Up to 20 instrument and location profiles for central testing control.
- Analyse the remote traces with **AuroraExpert**

Remote testing and diagnosis
Intermittent faults may result in many unproductive and costly site visits before the fault is observed. The **AuroraDuet** may be controlled remotely via a PSTN modem or ISDN TA. This will allow real-time testing to take place or tests to be set running with dial-up and download of results later.



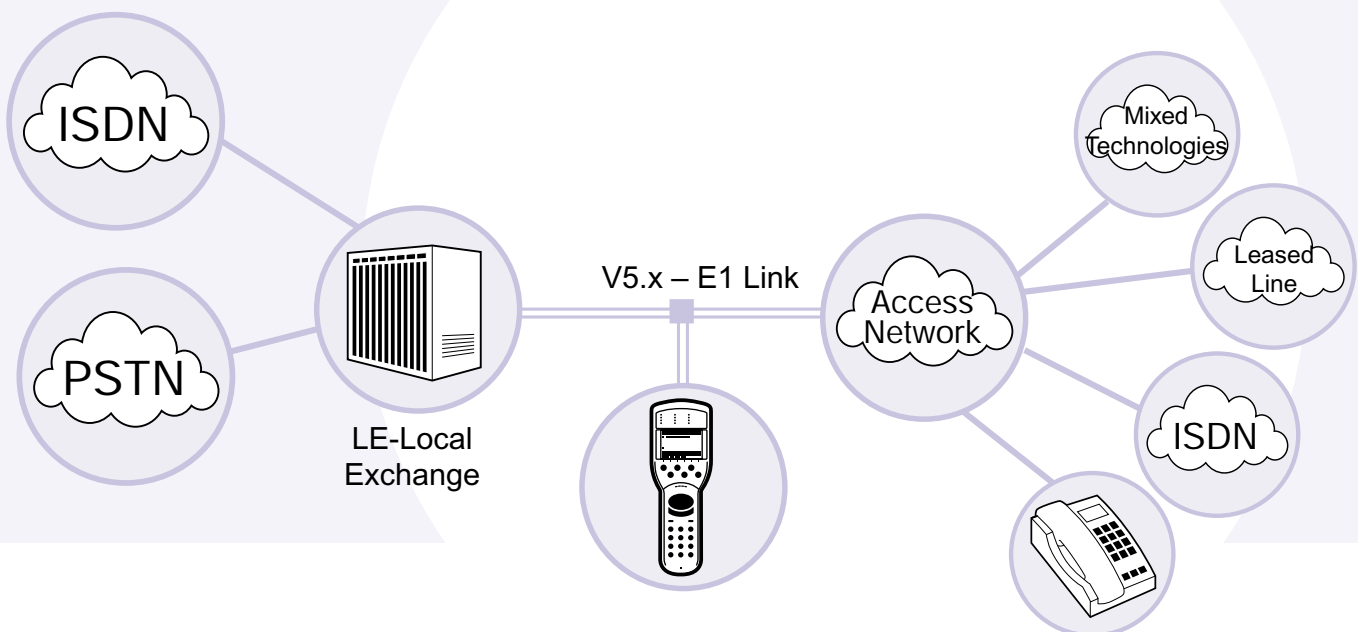
V5 Protocol Monitor

With access networks providing the means to accommodate mixed technologies across multiple E1 spans, monitoring and decoding the traffic over these interfaces is crucial in determining where cross protocol errors may occur.

The **AuroraDuet** provides an automatic link protocol scan to identify C-Channel protocols, LAPD signalling and link configuration.



- Fully decode all V5.1 and V5.2 protocols
- Decode encapsulated ISDN and X.25 signalling (user signalling)
- Scan and identify C-Channel protocols and link configuration
- Drop any timeslot to the **AuroraDuet** communication port
- Extensive on-tester filtering; protocol, LFA, layer and lots more



AuroraDuet

ITEM	BRI	PRI
Physical Measurement	Voltage measurement across common mode pairs	Display G.703/G.704 statistics and FAS/NFAS word
Voice	3.1KHz and ISDN voice calls on user selected B-Channel. With manual or automatic answer.	
Data	Automatic answer. Wide range of Teleservices. Auto/Manual Bit Error inject. Loop of Receive to Transmit data.	
Test Length	1 min, 15 mins, 1 hr, continuous User defined.	
Test Pattern	11 selectable & user defined	13 selectable & user defined
Results (Displayed as per G.821)	Bits received, Bit Errors, Bit error ratio, Errored seconds, Error Free seconds, Severely Errored Seconds, Unavailable Seconds, Degraded Minutes, Elapsed time, Sync losses.	
Protocol	Display of call progress and textual explanation of clear/fail causes. Monitor and Tracer facility giving time stamped three layer decode to screen or printer port.	
Interfaces	S/T: 192Kbps to ITU 1.430	ITU G.703 2.048Mbps
Connectors	RJ45 or TAE8 + 4 connectors	75ohm unbalanced/120ohm balanced TAE8 + 4
	RJ11 for audio input/output	
Clocking		Transmit clock recovered from received data. Internally generated 2.048Mbps + 10 ppm. Supplied from external source Coding HDB3, CRC4 on/off.
RS232	Asynchronous selectable to 115.2Kbps	
Parallel	Synchronous	
U Interface (Individual hardware required for each interface)	2B1Q, 4B3T, Up0 using TAE8 + 4.	
Display	Backlit display 24 characters by 16 lines	
Indicators	TE Mode Operational NT Mode Operational Monitor Mode Operational Battery Charge/Low Level BERT Sync	
	BRI S bus selected D Channel present B1 Channel selected B2 Channel selected L1 Status U interface selected	PRI Mode Selected Rx Data A Sync A RX Data B Sync B L2 Status
Size		
Weight	320 x 105 x 60 mm	320 x 105 x 75 mm
Operating temp	1kg	1.6kg
Storage temp	0°C – 40°C	
Power Supply	-25°C – 60°C (ETSI 300 019 – 1-1 class 1.2)	
	Rechargeable Nickel Cadmium battery. Supplied with 220/240 VAC to DC adaptor.	
Options	S-bus wiring tester. Remote Control. Providing remote operation of an unattended AuroraDuet by a PC attached via a direct wire connection, a PSTN line or the over the ISDN network. This software accessory may be fitted to both PRI and BRI units. Requires Remote Control software for PC.	



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A Member of the Telematrix plc Group



Distributor

To arrange a demonstration or to obtain the latest information on the Trend **AuroraDuet** or any of Trend's other test equipment, contact your nearest Trend Distributor.

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