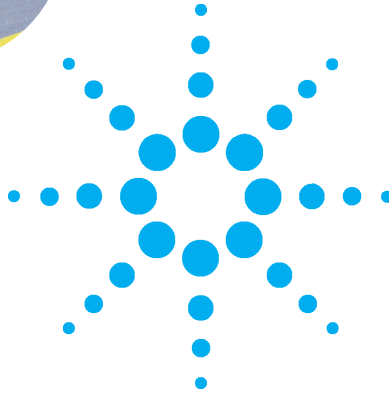




# N1737A Agilent aurora<sup>Jazz</sup> Portable ATM Test Tablet



# auroraJazz



## Complete, Portable, Flexible ATM Testing

**The use of Asynchronous Transfer Mode (ATM) transmission has set a challenge for the installation, operation and maintenance of networks beyond that encountered with traditional communication technology. ATM allows the co-existence of multiple data types on a single network, using any type of physical interface. Such a diverse set of demands is a heavy burden for engineers implementing and managing the networks. Agilent's auroraJazz is the tool that has an extensive test capability which provides all the assistance required for ensuring that ATM networks operate at their maximum efficiency.**

The complexity of ATM networks and equipment demands a new level of capability from test equipment. The auroraJazz meets that challenge and exceeds expectations. Whether the test requirement is for commissioning, maintaining or troubleshooting, the user of auroraJazz will be impressed with its ability to quickly and efficiently prove the correct operation of ATM circuits. The user can operate the tester with built-in test routines, user programmed test routines, or manually control all the test parameters. This satisfies the needs of the field engineer for a quick, easy to use tester, and of the network engineer for a fault finding analyzer.

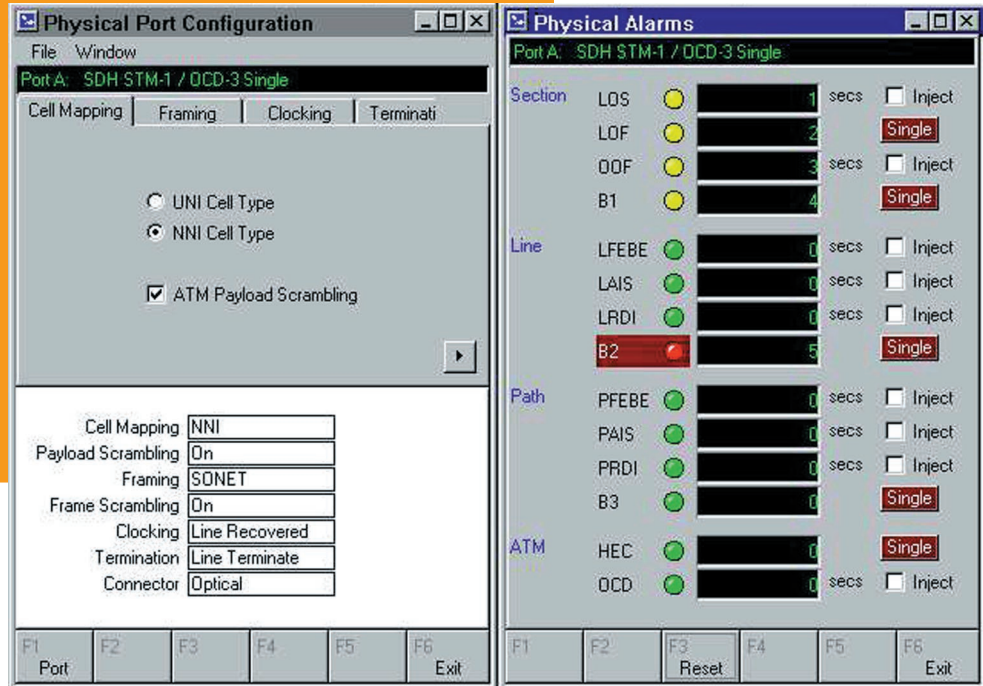


## Graphical User Interface Simplifies Testing

Color LCD screen gives quick and easy operation of all the features.

Simple cursor and menu software operation provides all the test functions with the minimum of product training.

Complete tests can be run and evaluated with as few as 3 key presses.

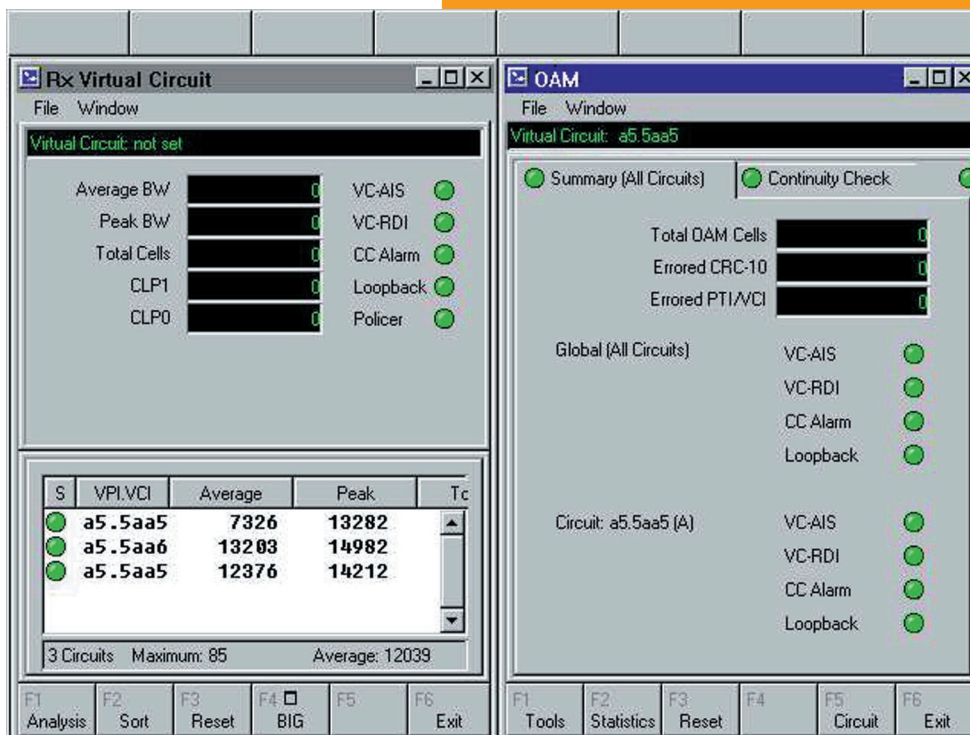


The auroraJazz provides all the test needs for operational ATM networks. The interchangeable interfaces provide for any mixture of SDH, SONET or PDH and the tester can carry out complete physical layer and framing analysis, and error reporting. Other tests include ATM cell BERT

and OAM cell analysis. ATM traffic tests allow complete profiling of up to 1024 cell streams, including average and peak cell rates, cell loss statistics and O.191 Quality of Service measurements over Permanent

Virtual Circuits (PVC). Applications involving the transfer of TCP/IP message packets can be tested using an IP PING to ensure end to end connectivity.

## Interchangeable SONET, SDH and PDH Line Interfaces



auroraJazz can contain two physical, user-changeable interface modules.

Carry out any mixture of line testing, from 1.5 Mbit/s to 155 Mbit/s.

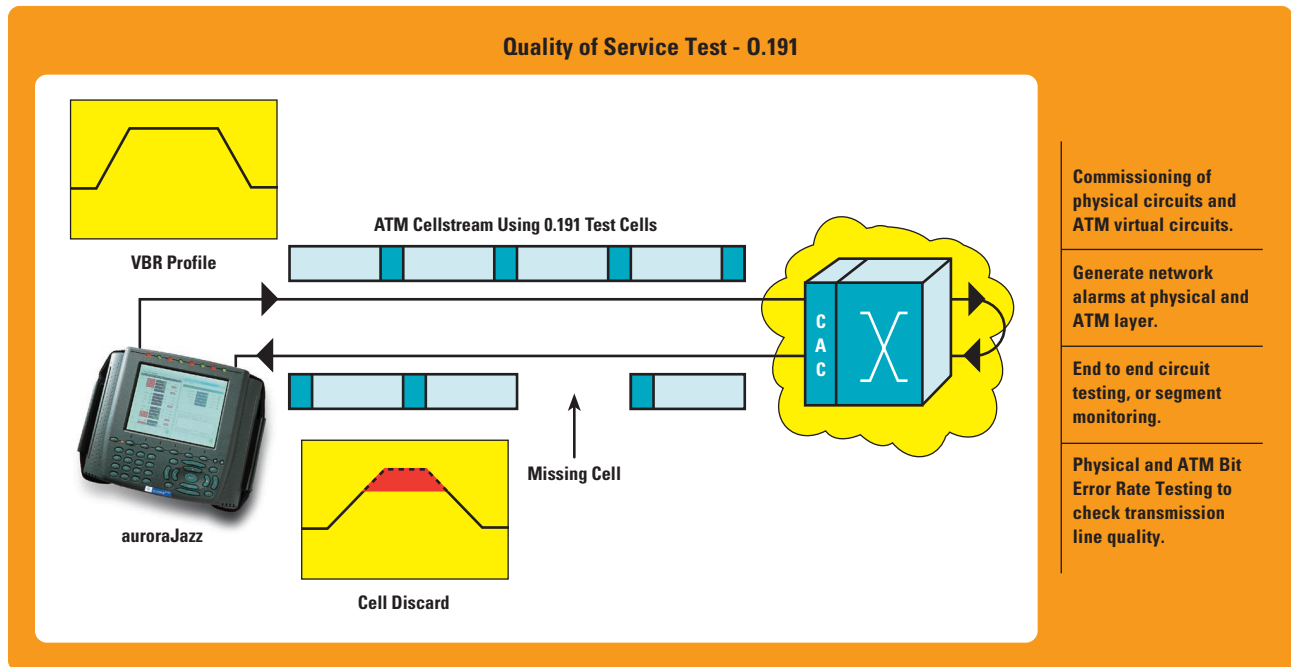
# Application Environments

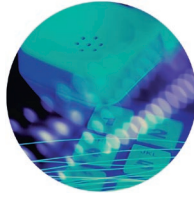
The auroraJazz can be configured to emulate terminal equipment or the network termination allowing it to function in any ATM environment.

- Emulate end equipment or transmission network.
- Fault finding on access network or transmission network.
- Monitoring of network circuits.

## Network Commissioning

Each interface can be flexibly configured for the line type and network framing being used. Analysis is provided of physical alarms, including the ability to inject alarms. The ability to carry out physical framed Bit Error Rate Testing (BERT) will ensure that the cable quality is adequate for the ATM service.



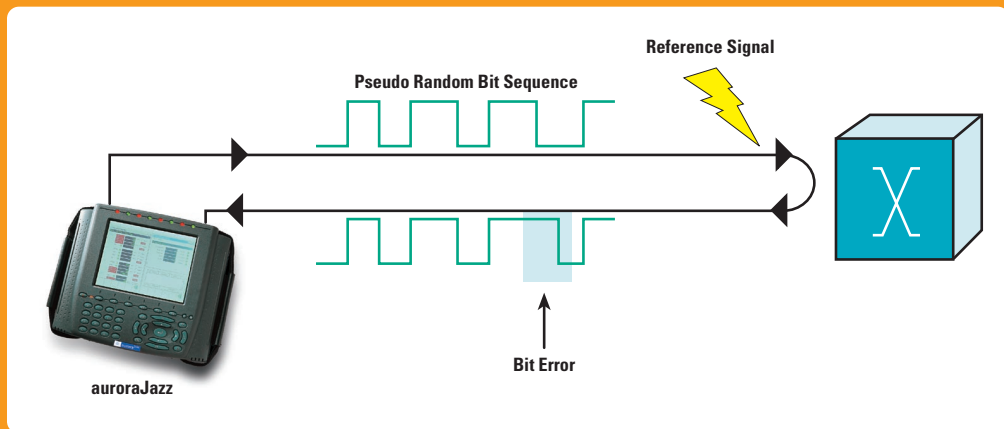


### Physical BERT Measurement

Line rate cell processing of 1024 receive circuits and 256 transmit circuits.

Verification testing of cellstream performance.

Traffic Policing on all receive circuits to verify or enforce Contract compliance.



### Traffic Monitoring

1024 ATM circuits can be monitored simultaneously with auroraJazz. Summary information is provided on Peak Cell Rate, Average Cell Rate, alarm status, cell discard tagging, and detailed circuit information gives total cell count, etc. Circuits may be marked for Traffic Policing verification, which provides statistics of contract violations and can discard non-compliant cells when the auroraJazz is looping cellstreams from Receive to Transmit ports.

### Quality of Service and Service Level Agreement Verification

The ITU-T O.191 test method is implemented to provide detailed

assessment of circuit quality by measuring lost cells, mis-inserted cells, cell transport delay, and 1 or 2 point cell delay variation. Counts are provided of Severely Errored Cell Blocks, Errored Seconds and Severely Errored Seconds. This test method is designed for proving that circuit performance meets the requirements of the service user and can be used by the network operator to demonstrate to the customer that the network performance is satisfactory.

- Quality of Service testing (O.191) for cell errors and cell timing to prove Service Level Agreement is being supplied.
- OAM cell processing for circuit alarms, continuity check and loopback.

### IP Ping

The auroraJazz is able to send and receive Ping messages through a selected ATM cellstream. This enables the tester to prove IP connectivity to routers over the ATM network. Response messages will also be generated when Ping messages are received from other devices. Up to 16 addresses are supported and a measurement of loop time is provided. The Ethernet port will respond to PING messages received from other devices.

- IP Ping on ATM cellstreams and Ethernet.

# Practical and Effective

The design of the auroraJazz has made it a tool that engineers want to use. Its portable, go-anywhere capability and ease of use, combined with its testing functionality, means that it is the only tool necessary.

- Robust design for field operation.
- Lightweight, handheld, battery powered.
- Full color graphical user interface.
- Function keys for quick operation of test applications.
- High visibility LEDs, configurable for any physical interface alarm.



Two interface ports for installation of user-changeable modules.

Mix and match of interface types:

- OC-3/STM-1 single mode (155 Mbit/s)
- OC-3/STM-1 multi mode and CAT5 UTP (155 Mbit/s)
- DS3 (45 Mbit/s) and DS1 (1.5 Mbit/s)
- E3 (34 Mbit/s) and E1 (2 Mbit/s)

Built in Ethernet and serial ports.

## User-Changeable Interfaces

The auroraJazz design accommodates the installation of two plug-in interface modules. These allow the unit to be configured with any

combination of circuit connections, and for the user to easily change these in the field. Additionally, DS3 and DS1 connections are provided in

a single interface module, as are E3 and E1, to allow the most convenient combination of interfaces to be loaded together.

# Specifications

## SUMMARY TECHNICAL DATA

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**Size:** 28.5 x 25.0 x 7.0 cm, 11.2 x 9.8 x 2.8 in.

**Weight:** 2.7 kg, 6.0 lbs.

**Display:** 16.0 x 12.0 cm (6.2 x 4.7 in.), 640 x 480 pixel color LCD with EL backlight

**LEDs:** Eight programmable for alarm & error indication, one for battery/power status

**Power:** Mains multi-voltage adapter, 12 V 2 A

**Battery:** 6 cell NiMH 'D' cell installed, or alkaline cells. 4 hour typical operating time.

**Temperature:** -25 to +70°C (-13 to +158°F) storage, 0 to +50°C (32 to +122°F) operating

## INTERFACES

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Any two interfaces may be installed.

OC3/STM1 Optical Single Mode, 155 Mbit/s, (SDH and SONET framing), SC connector.

OC3/STM1 Optical Multi Mode and Electrical CAT5 UTP, 155 Mbit/s, (SDH and SONET framing), SC and RJ45 connectors.

DS3 45 Mbit/s (ADM/PLCP, C-bit/frame) and DS1 1.5 Mbit/s (ADM/PLCP, SF/ESF), BNC and Bantam connectors.

E3 34 Mbit/s (G.751 ADM/PLCP, G.832 ADM) and E1 2 Mbit/s (G.704 PLCP, G.804 ADM, CAS and CRC), BNC and RJ45 connectors.

## PHYSICAL LAYER TESTS

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All physical alarms and errors monitored and counted

**Bit Error Rate Testing on DS3, DS1, E3 and E1 Interfaces:** PRBS 23, 20, and 15.

Alarm and error injection

## ATM LAYER TESTS

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**Traffic Generation:** 256 virtual circuits, CBR or VBR

**Traffic Scanning:** 1024 circuits, Cell count, Cell rate, Peak cell rate, histogram.

Traffic policing verification and enforcement.

**ATM Bit Error Rate Testing:** PRBS 23, 20, and 15.

**Quality of Service Testing (O.191):** 1pt or 2pt CDV, CTD, CLR, CMR, CER, SECBR, ES, SES

**OAM (I.610):** F4 and F5 AIS and RDI, Continuity Check, Loopback.

## IP PING

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### ATM Cellstream Operation

- Message send/receive, and response.
- 16 IP addresses supported.
- Loop time measured.

### Ethernet 10BASE-T

- Message response.

## Related Products

Agilent's growing family of aurora handheld testers provide powerful, affordable and rugged solutions for field installation and maintenance testing. aurora handhelds support deployment of ISDN, Frame Relay and ATM services, and provide field organizations with comprehensive, yet easy-to-use testing capabilities for commissioning, troubleshooting and service verification.

### auroraTempo

The auroraTempo combines physical layer and Frame Relay protocol testing over T1, V-series, E1 and DDS interfaces, with full PVC and SVC simulation.

### auroraPlus

The auroraPlus is an entry-level handheld Basic Rate ISDN and POTS tester that supports a wide range of ISDN call and connection types at both the S and U interface, with added BERT capabilities. Both North American and ITU versions of the auroraPlus are available.

### auroraDuet

The auroraDuet is a flexible ISDN handheld that can be configured with Basic Rate only or Basic and Primary Rate Interface capabilities for voice and data testing, including emulation, monitoring and analysis and automated service testing. Both North American and ITU versions of the auroraDuet are available.

### auroraSonata

The auroraSonata is an advanced, modular ISDN test handheld that combines physical layer testing, multi-mode simulation, add-on service testing and protocol analysis in one rugged unit. S, U and T interfaces can be configured as needed.

### auroraExpert

The auroraExpert is an add-on Windows software package that provides real-time filtering, display, storage and analysis of all ISDN protocol data captured by the aurora handheld. The software runs on any standard Windows PC or notebook, and supports all aurora products that capture D-Channel output.

For more information about Agilent Technologies test and measurement products, applications, services, and for a current sales office listing, visit our web site: <http://www.agilent.com/find/tmdir>

You can also contact one of the following centers and ask for a test and measurement sales representative.

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## Ordering Information

### N1737A auroraJazz

- opt 010: DS3 and DS1 Interface Module
- opt 020: E3 and E1 Interface Module
- opt 030: 1310 nm SM IR OC3/STM-1o Interface Module
- opt 040: 1310 nm MM OC-3/STM-1o & CAT 5 UTP Modules
- opt 305: CAT 5 UTP Cable, straight thru NT-TE 2 m
- opt 306: CAT 5 UTP Cable, cross over NT-NT 2 m
- opt 310: 110 Vac US adapter/charger
- opt 311: 220 Vac ITU adapter/charger
- opt 320: Soft Carry Case
- opt 800: Additional CD-ROM English Manual
- opt 900: Additional English Manual



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