



Advanced Test Equipment Rentals
www.atecorp.com 800-404-ATEC (2832)



aurora^{Tempo} User Guide



423972

Issue 1a - 10/99



Appendix 1 - Technical Data

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Appendix 1 - Technical Data

This chapter provides technical and safety information about your aurora^{Tempo} and its various interfaces.

aurora^{Tempo} Specifications

Protocols

Frame Relay to LMI consortium, ITU-T Annex A, ANSI Annex D, FRF4, ITU-T Q.933 SVC, RFC1490
Multiprotocol Interconnect over Frame Relay (IP, ICMP, SNAP, Ethertype IPX).

Interfaces

Accommodates any two of the following interface modules :

- Full Duplex T1 interface module.
- Full Duplex V-series interface module (V.35, RS-232, RS-449, EIA-530, X.21).
- Full Duplex 4-Wire Local Loop DDS interface module.
- Full Duplex E1 interface module.

Display

Backlit, graphic monochrome Liquid Crystal Display (LCD) with contrast control. Resolution = 640 x 200.

Keypad

31 key keypad.

Connectors

- Serial port: 9 way D type (PC AT)
- DC power in
- External clock input: BNC

Environmental

Dimensions	280mm x 245mm x 78mm (11.01" x 9.67" x 3.07")
Weight	No interfaces - 2.5kg (including batteries). With 2 interfaces - 2.7kg (including batteries).
Temperature Range	-5°C to 50°C (operating) -25°C to 60°C (storage)
Durability	Conforms to IEC 68-2-27/29/31/32 & 36

Power supply

- 6 x 1.5V standard D cells
- 7.2V Ni-Cd rechargeable pack
- 12V DC (from mains power supply adaptor)

Memory buffer capacity

Mass storage

512KB, upgradeable to 2MB.

Flash Capacity

4MB, upgradeable to 16MB.

Interface Specifications

T1 Interface module

Conforms to ANSI T1.403 and has a bit rate of 1.544 Mbits/s

For Bantam connectors, it may be necessary to change connectors when changing between simulate (DTE or DCE) and Monitor modes (DTE or DCE).

Connectors

- 2 Bantam connectors for the receive ports
- 1 Bantam connector for the transmit port
- 1 RJ48C

DDS Interface module

Connectors

- 1 RJ48C connector (internally configured for simulation or dual monitoring)

V-series Interface module (V.35, RS-232, RS-449, EIA-530,X.21)

Connectors

- 37 way D type connector with 'personality' cables.

E1 Interface module

For the RJ48C connector, switching between DTE, DCE and Monitor modes is performed automatically when the **Emulation** setting on the **Setup Config** menu is changed.

For the BNC connectors it may be necessary to change connectors when changing between simulate (DTE or DCE) and Monitor modes (DTE or DCE).

Connectors

- 2 BNC connectors for the receive ports
- 1 BNC connector for the transmit port
- 1 RJ48C

 **Note**

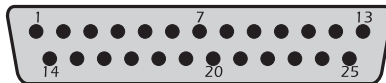
Throughout this appendix we use the term RJ48C connector; these connectors are equivalent to RJ45 connectors.

Cable Pinouts

The following pages contain information on the pinouts for the cable connectors for each interface and the serial port.

V.35 Interface

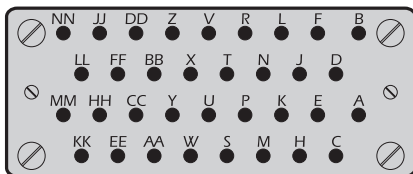
25 Way D Type Connector (Male)



V35 - 25 Way D Type	
Pin	Description
1	Send Data (b)
2	Transmit Clock (a)
3	Signal Ground
4	Receive Clock (a)
5	Receive Clock (b)
6	External Transmit Clock (a)
7	Data Carrier Detect
8	Data Terminal Ready
14	Send Data (a)
15	Transmit Clock (b)
16	Receive Data (a)
17	Receive Clock (a)
18	Signal Ground
19	External Transmit Clock (b)
20	Data Set Ready
22	Clear To Send

Part number ~ 423356

34 Way MRAC/Winchester Connector (Male)

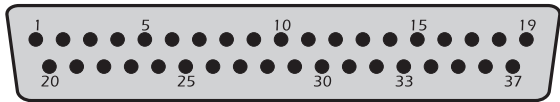


V35 - 34 Way MRAC	
Pin	Description
B	Signal Ground
C	Request To Send
D	Clear To Send
E	Data Set Ready
F	Data Carrier Detect
H	Data Terminal Ready
P	Transmit Data (a)
R	Receive Data (a)
S	Transmit Data (b)
T	Receive Data (b)
U	External Transmit Clock (a)
V	Receive Clock (a)
W	External Transmit Clock (b)
X	Receive Clock (b)
Y	Transmit Clock (a)
AA	Transmit Clock (b)

Part number ~ 423355

RS449 Interface

37 Way D Type Connector (Male)

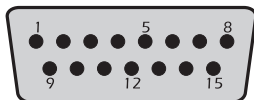


RS449 - 37 Way D Type	
Pin	Description
4	Send Data (a)
5	Send Timing (a)
6	Receive Data (a)
7	Request To Send (a)
8	Receive Timing (a)
9	Clear To Send (a)
11	Data Mode (a)
12	Terminal Ready (a)
17	Terminal Transmit Clock (a)
19	Signal Ground
20	Signal Ground
22	Send Data (b)
23	Send Timing (b)
24	Receive Data (b)
25	Request To Send (b)
26	Receive Timing (b)
27	Clear To Send (b)
29	Data Mode (b)
30	Terminal Ready (b)
35	Terminal Transmit Clock (b)
37	Signal Ground

Part number ~ 423354

X21 Interface

15 Way D Type Connector (Male)

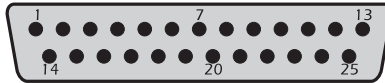


X21/V11 - 15 Way D Type	
Pin	Description
2	Transmit Data (a)
3	Control (a)
4	Receive Data (a)
5	Indication (a)
6	Signal Element Timing (a)
8	Signal Ground
9	Transmit Data (b)
10	Control (b)
11	Receive Data (b)
12	Indication (b)
13	Signal Element Timing (b)

Part number ~ 423353

V24/RS232 Interface

25 Way D Type Connector (Male)

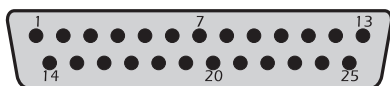


V24/RS232 - 25 Way D type	
Pin	Description
2	Transmit Data
3	Receive Data
4	Request To Send
5	Clear To Send
6	Data Set Ready
7	Signal Ground
8	Data Carrier Detect
15	Transmit Clock
17	Receive Clock
20	Data Terminal Ready
24	External Transmit Clock

Part number ~ 423352

EIA530 Interface

25 Way D Type Connector (Male)

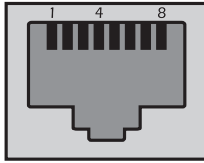


EIA530 - 25 Way D Type	
Pin	Description
2	Send Data (a)
3	Receive Data (a)
4	Request To Send (a)
5	Clear To Send (a)
6	Data Set Ready (a)
7	Signal Ground
8	Data Carrier Detect (a)
9	Receive Timing (DCE) (b)
10	Data Carrier Detect (b)
11	Terminal Timing (DTE) (b)
12	Send Timing (DCE) (b)
13	Clear To Send (b)
14	Send Data (b)
15	Send Timing (DCE) (a)
16	Receive Data (b)
17	Receive Timing (DCE) (a)
19	Request To Send (b)
20	Data Terminal Ready (a)
22	Data Set Ready (b)
23	Data Terminal Ready (b)
24	Terminal Timing (DTE) (a)

Part number ~ 423360

T1 Interface

RJ48C (Female)



T1 RJ48C		
DTE	DCE	Function
5	2	Transmit Data (+)
4	1	Transmit Data (-)
2	5	Receive Data (+)
1	4	Receive Data (-)

Part number ~ 423358

T1Interface

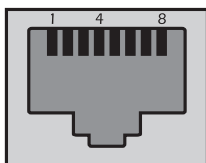
Bantam

T1 Bantam	
Contact	Description
Tip	Transmit Data (+)
Ring	Transmit Data (-)
Tip	Receive Data (+)
Ring	Receive Data (-)

Part number ~ 2 off 423350

E1 Interface

RJ48C (Female)



E1 RJ48C		
DTE	DCE	Function
5	2	Transmit Data (+)
4	1	Transmit Data (-)
2	5	Receive Data (+)
1	4	Receive Data (-)

Part number ~ 423358

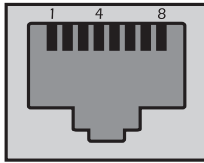
BNC

E1 BNC	
Contact	Description
Tip	Transmit Data (+)
Ring	Transmit Data (-)
Tip	Receive Data (+)
Ring	Receive Data (-)

Part number ~ 423361

DDS Interface

RJ48S (Female)



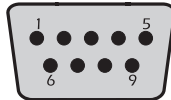
DDS RJ48S

Pin	Contact	Direction
1	Ring	Customer to Network
2	Tip	Customer to Network
7	Tip 1	Network to Customer
8	Ring 1	Network to Customer

Part number ~ 423358

Serial port

9 Way D Type Connector (Male)



Serial Port - 9 Way D Type

Pin	Description
1	Not Connected
2	Receive Data
3	Transmit Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request to Send
8	Clear To Send
9	Not Connected

Part number ~ 423350

Approvals

aurora^{Tempo} is complies with safety standards:

- EN 60950:1992/A4:1997
IEC 950:1991/A4:1996
TS001:1996
AS/NZS 3260:1993/A4:1997
CSA C22.2 No.950
UL1950

aurora^{Tempo} complies with environmental standards:

- ETS 300 019-2-1
ETS 300 019-2-2
ETS 300 019-2-7

aurora^{Tempo} complies with communications standards:

- E1 interface - CTR13:January 1996 and PD7024:1994
- T1 interface - GR-342-CORE Section 4

aurora^{Tempo} complies with EMC standards:

EN55022 Class A
EN50082-1

Calibration

aurora^{Tempo} was designed not to require any periodic calibration. You may want to carry out periodic performance verification (to conform to ISO9000 procedures for example). However, we recommend that there is no need to do this more frequently than once every five years.

Safety

When using your aurora^{Tempo}, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

- Do not open the back of the unit while it is powered-up.
- Use only the batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
- Avoid using the product during an electrical storm. There may be a remote risk of electric shock from lightning.