

TECHNICAL SPECIFICATION  
(version 2.1)**MIRRA SERIES IV**

<b>RECORDING INPUTS - ANALOGUE</b>	(0dBu = 0.775V rms)
<b>Inputs:</b>	4 to 48 channels
<b>Telephony Line Interface</b>	High Impedance (Z), (with no jumper)
<b>AC Impedance for Telephony:</b>	>30kΩ over the range 300Hz to 3400Hz
<b>AC Impedance for Non-Telephony:</b>	600 Ω with jumper closed on TIP-RING lines
<b>DC resistance for Telephony:</b>	>10MΩ
<b>DC resistance for Non-Telephony:</b>	600 Ω with jumper closed on TIP-RING lines
<b>Voltage Detection:</b>	
48V:	On Hook > 32.5V 4V < Off Hook < 32.5V Disconnect < 4V
24V:	On Hook > 20V 4V < Off Hook < 20V Disconnect < 4V
<b>Min Operating Voltage:</b>	4.0V DC
<b>Input Dynamic Range:</b>	-51 dB Min 7.75 mV rms (-40 dBu) - Max 3 V rms (+11.76 dBu)
<b>Signal to noise ratio:</b>	35 dB +/- 3 db@1400 Hz, Max 1%
<b>Frequency response:</b>	300 Hz (-6 dB) - 3.400 Hz (-7.0 dB)
<b>Crosstalk Coupling:</b>	-60dB @ 1000Hz
<b>Total Harmonic Distortion:</b>	1%

**RECORDING INPUTS - DIGITAL**

<b>Inputs:</b>	4 to 48 channels
<b>Input impedance:</b>	>1kΩ AC, >10MΩ DC, with passive coupler
<b>Tapping method:</b>	Direct digital extraction
<b>D Channel:</b>	Calling and Called number, ringing time & direction available for certain Alcatel, Avaya, Ericsson, Nortel Meridian & Siemens switches (details in price list)

**RECORDING INPUTS – E1/T1**

<b>Inputs:</b>	Up to 2 bi-directional trunks. Up to 48 voice channels
<b>Input impedance:</b>	1.1kΩ with passive coupler, >10kΩ DC with active coupler
<b>Tapping method:</b>	Passive or active tapping
<b>Input Dynamic Range:</b>	-30/35 dB for T1/E1 (Long haul operation)
<b>Supported protocols:</b>	ISDN PRI , CAS
<b>Line codes</b>	T1: B8ZS E1:HDB3
<b>D Channel:</b>	Calling and Called number available.

**VoIP – ADDITIONAL NETWORK PORTS**

<b>IEEE Standard / Network topology:</b>	1000Base-T, 100Base-TX & 10Base-T
<b>Cables and Operating distance:</b>	1000Base-T Category 5E maximum 100m 100Base-Tx Category 5 maximum 100m 10Base-T Category 3, 4, or 5 maximum 100m
<b>Supported transmission format</b>	G.711 & G.729

**RECORDING INPUTS - ANALOGUE AND DIGITAL**

<b>Activity threshold:</b>	-63dBu to +9 dBu (configurable per channel)
<b>AGC:</b>	<b>Attack time:</b> 32ms

**Release time:** 1.5s (configurable)

**Maximum gain:** 20 dB

**VOX on time:** The effective VOX on time is 0 seconds because the inputs are buffered

**VOX hold time:** 0 to 10 seconds programmable per channel

### RECORDING INPUTS – SERIAL PORT (ANI/ALI)

**RS-232:** 2400 to 115200 Baud rate  
4 to 8 data bits  
Configurable Parity, Stop bits & Flow control.

### STORAGE

**On-Line:** Single 250GB HDD  
**Instant access:** Up to 50,000 channel hours  
**Compression:** 8kb/s (G.729a)  
**Format:** Wav files with audio scrambling  
**Archive:** Single or Dual DVD RAM optical disks  
**Archive capacity:** Greater than 2200 channel hours per 9.4GB double sided disk (1100 channel hours per side)  
**Media life:** >1000 over-recordings per disk

### REPLAY ACCESS AND CONTROL

All replay access is via network PC

**PC specification (minimum):** P3 Processor 1.0GHz, 1GB HDD, DVD ROM, 256MB RAM, Direct X compatible Sound Card, XGA video card & monitor (1024 x 768), Network card - Ethernet TCP/IP, 10base T

**PC specification (ideal):** P4 Processor 2.0GHz, 160GB HDD, DVD RAM, 512MB RAM, Direct X compatible Sound Card, XGA video card & monitor (1280 x 1024), Network card - Ethernet TCP/IP, 100base T

**Replay facilities:** Message replay over LAN  
Up to 20 simultaneous sessions over the LAN  
Up to 16 simultaneous calls replayed in one session  
Shuttle play (from one message to next in succession)  
Message copy to local PC ( standard .wav format)  
Flexispeech – Constant pitch (x0.5 to x2)  
Book marking  
Auto shuttle between bookmarks within a message

**Live Monitor facility:** Multiple channels synchronised within 0.5 seconds.  
Monitoring 8 simultaneous channels (compressed or uncompressed) will not exceed 1.2Mb/s of network bandwidth.

### GENERAL

**Status display:** Optical media usage  
Local Call storage indication  
Alarm indicator

**Clock accuracy:** Real Time Hardware clock  $\pm 6$  seconds per week at 25°C  
Synchronisation by NTP or SNTP recommended for software clock

**Ports:** 10/100/1000Mb/s Ethernet TCP/IP (RJ45)  
USB x4  
RS232 (ANI/ALI – see above)  
VGA, Keyboard & Mouse (not used)

**ENVIRONMENTAL****Operating Temperature**

+5°C to +35°C

**Relative Humidity**

20% to 80%

**Cooling:**

Requires no additional forced air cooling

**EMC**

EN 55022 Class A

EN61000 -3-2, EN 61000-3-3

CFR 47 FCC Part 15, Class A

AS/NZS CISPR 22, Class A

CAN/CSA CISPR 22-02, Class A

V-3/2005.04, Class A

EN 55024 &amp; EN 61000-6-2

**Safety**

IEC / EN / UL 60950-1 (2003)

CSA C22.2 (60950-1-03, 2003)

CB

**Telecom**

TBR 21, ETSI EG 201 121

**RoHS & WEEE**

Complies

**Mechanical tests**

According to: ETSI 300 019-2-3, ETSI 300 019-2-2, IEC 60068-2

**Operational****Sine Vibration**

5- 200 Hz @ 0.2 g peak

10 sweeps within 5 minutes and 19 seconds

Duration of 53 minutes and 10 seconds in each of three perpendicular axes (X, Y, Z).

**Random Vibration**

5 – 100Hz @ 0.11g rms

Duration 30 minutes in each of three perpendicular axes (3 x 30 minutes)

**Shock**

Half Sine 3g 11msec

3 Positive Direction &amp; 3 Negative Direction in each of three perpendicular axes (3x2x3 Shocks)

**Non Operational****Random Vibration**

20 – 200Hz @ 0.79 g rms

Duration 30 minutes in each of three perpendicular axes (3 x 30 mins)

**Shock**

Half Sine 18g 11ms

100 Positive Direction &amp; 100 Negative Direction in each of three perpendicular axes (600 in total)

**Free fall**

Drop height 1 m,

2 drops on the base

**ELECTRICAL****Voltage range:**

100V to 240V

**Frequency range:**

50Hz to 60Hz

**Input surge current:**

125A (230 V), 65A (115 V)

**Power consumption:** Typically less than 85 Watts in normal operation

#### PHYSICAL

**Free-standing:** 450mm depth, 415mm width, 130mm height  
**Case loading footprint:** < 20kg over 250mm x 250mm area  
**Weight:** 13kg

#### RELIABILITY

**48 channel Mirra with 2 DVD drives:** MTBCF figure exceeds 47,000 hours

**24 channel Mirra with no DVD drives:** MTBCF figure exceeds 63,000 hours

For either option the MTTR will be less than 105 minutes and Availability will be better than 0.9999