

## eLYTE 2 Wire POTS

### Specification

<b>Transmission Method</b>	Frequency Modulated Carrier via two optical fibers. Exchange to Customer 130kHz carrier Customer to Exchange 82kHz carrier
<b>Interface types available</b>	2mm Plastic Fiber capable. Multi-Mode(MM) Glass fiber 50/125, 62.5/125 or 100/140um sizes. Single-Mode (SM) Glass fiber 9um
<b>Maximum Distance*</b>	Transmit power is dependent on Exchange terminal voltage available. 2mm Plastic fiber 20 meters max. @ 660 nm wavelength MM Glass Fiber 2.2-7.6dBm → 400-1400m 50/125um @ 820nm 6-13dBm → 500-1500m 62.5/125um @ 820nm 6-13dBm → 500-1500m 100/140um @ 820nm SM Glass Fiber Due to power limitations at Exchange end, limited performance can be expected from a single mode option Maximum Fiber Budget 6dB Typical single mode fiber range given 6dB attenuation 1600m 9/125um @ 1310nm
<b>Fiber Type</b>	Dependent on customer requirements Plastic, MM or SM
<b>Fiber Connector Type</b>	Plastic fiber utilises Avago Versalink connections/ Exchange receive path utilises a custom receiver and requires a TE Connectivity Sweetspot connector. MM and SM fiber utilises the ST interconnects.
<b>POTS Wire Connector</b>	RJ12 socket for Tip/Ring Pin 3 Tip Pin 4 Ring
<b>Power Wire Connector</b>	Plugable Screw Terminal, 12-26 AWG
<b>Power requirements</b>	<b>Customer</b> card DC supply between 18 to 70Vdc @ 18Vdc 29mA nominal - 250mA max. during continuous ringing @ 70Vdc 15mA nominal - 85mA max. during continuous ringing  <b>Exchange</b> card powered by line. Standby current consumption typically 35uA from 50Vdc feed Off-Hook complies with ACIF V/I Characteristics of 10V @ 20mA
<b>Operating Temperature</b>	-40°C +70°C, 95% non condensing
<b>Card Dimensions</b>	100mm x 85mm deep – add fiber connector and bend radius
<b>Electrical Isolation</b>	100kV per meter -distance between Exchange and Customer Enclosures.

Specifications subject to change without notice

<b>Compliant Approvals</b>	AS/NZS 60950-1:2003 + A1:2006 + A2:2008 + A3:2008 Safety AS/NZS CISP22:2009 EN55022: 2006 Class A device EMC FCC part 15 sub-part A and B as Class device AS/ACIF-S002/003:2005 'A' Tick <b>N1246</b> Australian PTC200 'Telepermit' <b>PTC 210/06/003</b> New Zealand
<b>Audio parameters</b>	500-3200Hz 0dB ±0.5db relative to 1000Hz 300-500Hz 0dB to -1.5dB relative to 1000Hz 3200-3400Hz 0 to -3dB relative to 1000Hz
<b>Return loss</b>	>15dBm between 300-3000Hz at any selected Impedance
<b>Overload Level</b>	+3dB relative to nominal transmission level of -10dBm and local relative transmission requirements.
<b>Noise</b>	< 70dBm psophometric
<b>Customer Telephone feed</b>	38Vdc Typical 45Vdc open cct 48V max
<b>Dialing Method</b>	DTMF only (decadic dialing not supported)
<b>Ringling</b>	<b>Customer</b> card generates >65Vrms into 2u2F+10kohm load. (Typical electronic phone load)  <b>Exchange</b> card REN=0.5 Ringling frequency and cadence are unchanged through system. Guaranteed on 16.6 20 and 25Hz ring sources.
<b>Line Loop Resistance</b>	Customer Terminal:1kohm Exchange Terminal:3kohm total loop resistance.
<b>Surge Protection</b>	Both cards provide: 230V Varistor + Trisil + series PTC devices

- \* Fiber range dependent on installed fiber stock and number of interconnects between transmitter and receiver.
- |   |  |
|---|--|
| MM step index fiber is typically                          | 4 to 6dB/km @850nm                       |
| MM graded index fiber is typically                        | 3dB/km @850nm<br>1dB/km @1300nm          |
| Typical Fiber attenuation for 9/125um SM fiber is approx. | 0.25dB/km @1550nm.<br>0.40dB/km @1310nm. |
- Typical fusion splice attenuation is up to 0.1dB.

Specifications subject to change without notice

Longer loop resistance effects the available voltage at the eLYTE exchange card.

Lower voltage, limits the power available to transmit light energy.

Maximum transmit power is 60mA, this is device limitation.

Device data from Avago regarding the HFBR 1412Z and HFBR2412Z multimode devices quotes range limits based on a normalised 60mA transmission power.

For	injected power		effective maximum range.
50/125um	4.2 to 9.6dB	=	850m to 2100m
62.5/125um	8.0 to 15dB	=	2000m to 3600m
100/140um	8.0 to 15dB	=	1500m to 3600m

Above ranges are device tolerances. Independent of circuit type and fiber losses.

DAVAS eLYTE Exchange card varies the transmit power so as to not compromise the audio performance i.e. on long copper loop, less terminal voltage is available.

If the exchange card transmits too much power we effect the terminal voltage, which effects the available power to transmit correct audio levels, particularly during required overload conditions as per PTC200 and S002/3 specifications.

For this reason we could expect a drop of transmit power of up to 1/3 normalized power or 40mA. This translates to a light power of 2dB less than normalised conditions above.

Considering a worse case loop length effecting our maximum transmit power available we would expect the following light energy being transmitted.

For	injected power		effective maximum range.
50/125um	2.2 to 7.6dB	=	400m to 1400m
62.5/125um	6.0 to 13dB	=	500m to 1500m
100/140um	6.0 to 13dB	=	500m to 1500m

The wide ranges above are device dependant. DAVAS cannot specifically state that all product would perform at a given maximum range, but we can state the worse case minimums.

Specifications subject to change without notice