ORION TELECOM NETWORKS INC.

VCL-TRLD, Thin Route DCME Voice Compression Equipment

Brochure / Data Sheet

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Introduction

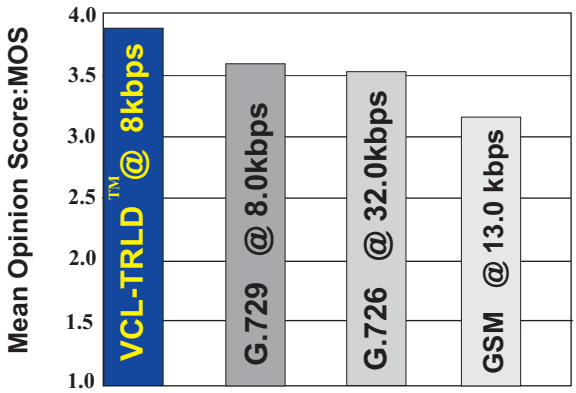
VCL-TRLD, is a "Thin Route" Voice Compression Equipment which provides “Toll-Quality” , very clear and sharp, voice telephony channels for "thin route" (low density) applications. The VCL-TRLD is available in two versions.

The first version provides a Single, Toll Quality voice channel @ 9.6Kbps for transmission over a standard RS232 (asynchronous) data interface.

The second version provides Six, Toll Quality voice channels on a single, 64Kbps, synchronous channel (single time-slot).

The equipment uses advanced, DSP based Viterbi decoders with automatic Voice / Silence detection (VAD) and adaptive comfort noise (CNG) generation to provide toll-quality voice channels.

The interface to the local PSTN is analog and is available with FXO, FXS and E&M (2 wire / 4 wire) options. The VCL-TRLD is ideally suited in "thin route" telephony applications where a limited number of voice channels are required to connect two locations through satellite links, or through limited bandwidth data channels.



Voice Quality Vs. Bit Rate

Features

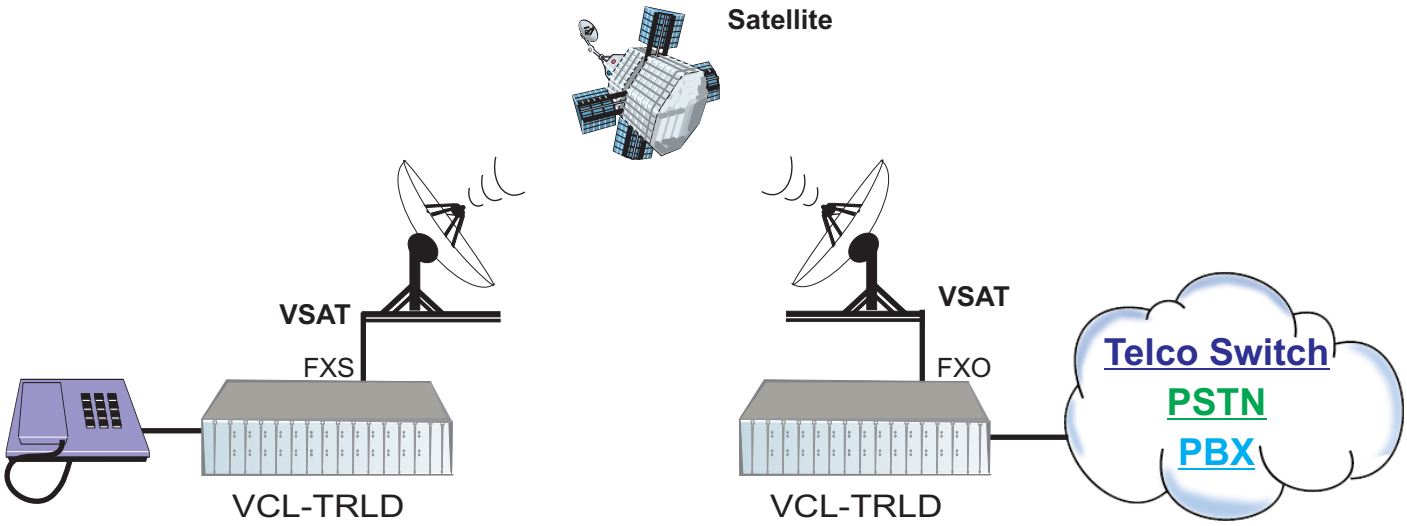
- Modular Architecture
- Scalable - build as you grow.
- Transports voice over point-to-point satellite data links, dedicated limited bandwidth data channels, IP networks (optional additional hardware required).
- 3U high, compact contruction - 12 voice compression channels per shelf.
- 6:1 Compression Ratio

Highlights

- One "Toll-Quality" voice channel over RS232, 9.6Kbps (asynchronous) link.
- Six "Toll-Quality" voice channels over a synchronous 64Kbps (single time-slot) channel.
- Advanced, DSP based Vertibi Decoder for superior voice quality.
- Distributed (independent) power-supplies for maximum redundancy.

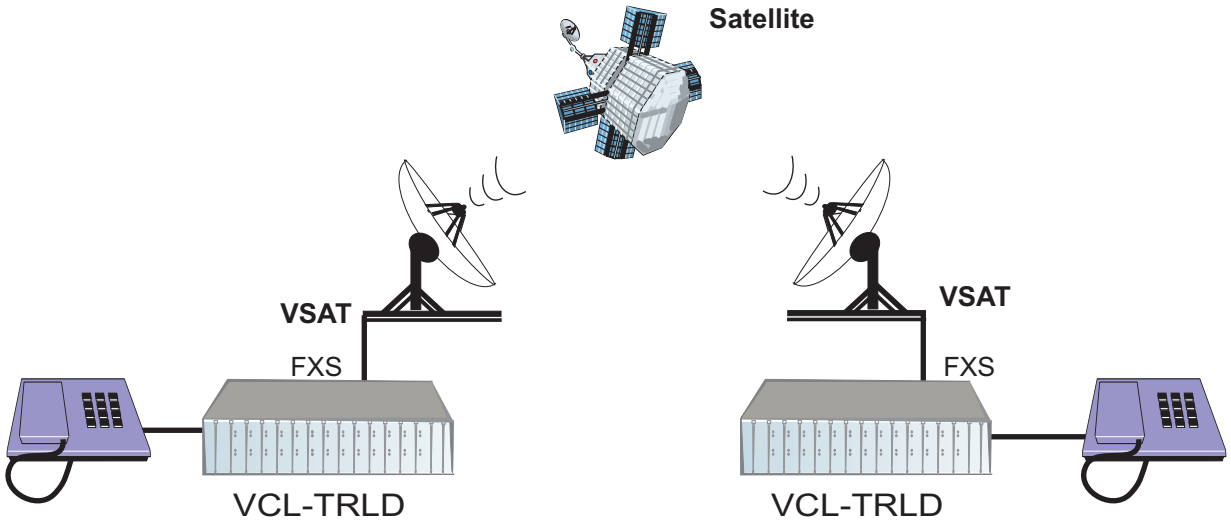
Applications		
General	***Business***	***Infrastructure***
Rural	Long distance telephony	Civil Engineering
Distance Learning	Telcos	Offshore Oil Rigs
Disaster Relief	Wireless Networks	Production
Farming	Scalable Call Centers	Pipelines
Tourism	Retail Outlets	Water Works

Thin Route Telephony, Remote Access - Link
FXS - FXO



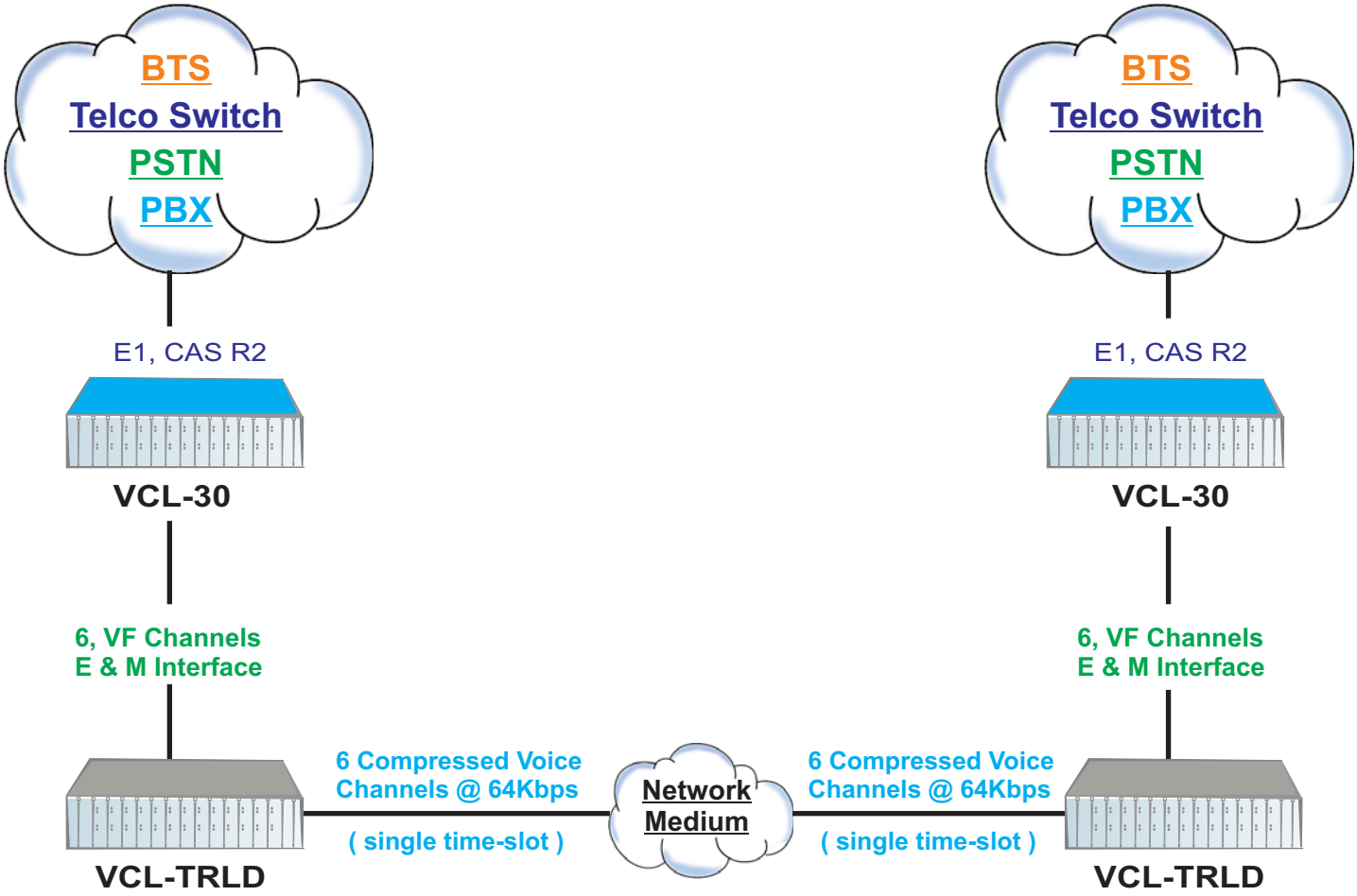
- 1 Voice Channel @ 9.6kbps (Asynchronous RS232)
  or
- 6 Voice channels @ 64kbps (Synchronous)
- Medium may be satellite (VSAT) @ 9.6kbps (RS232) asynchronous data link (one voice channel), or 64kbps synchronous data link (6 voice channels).

Thin Route Telephony, Point to Point VF Link for Hot-Line Access
FXS - FXS



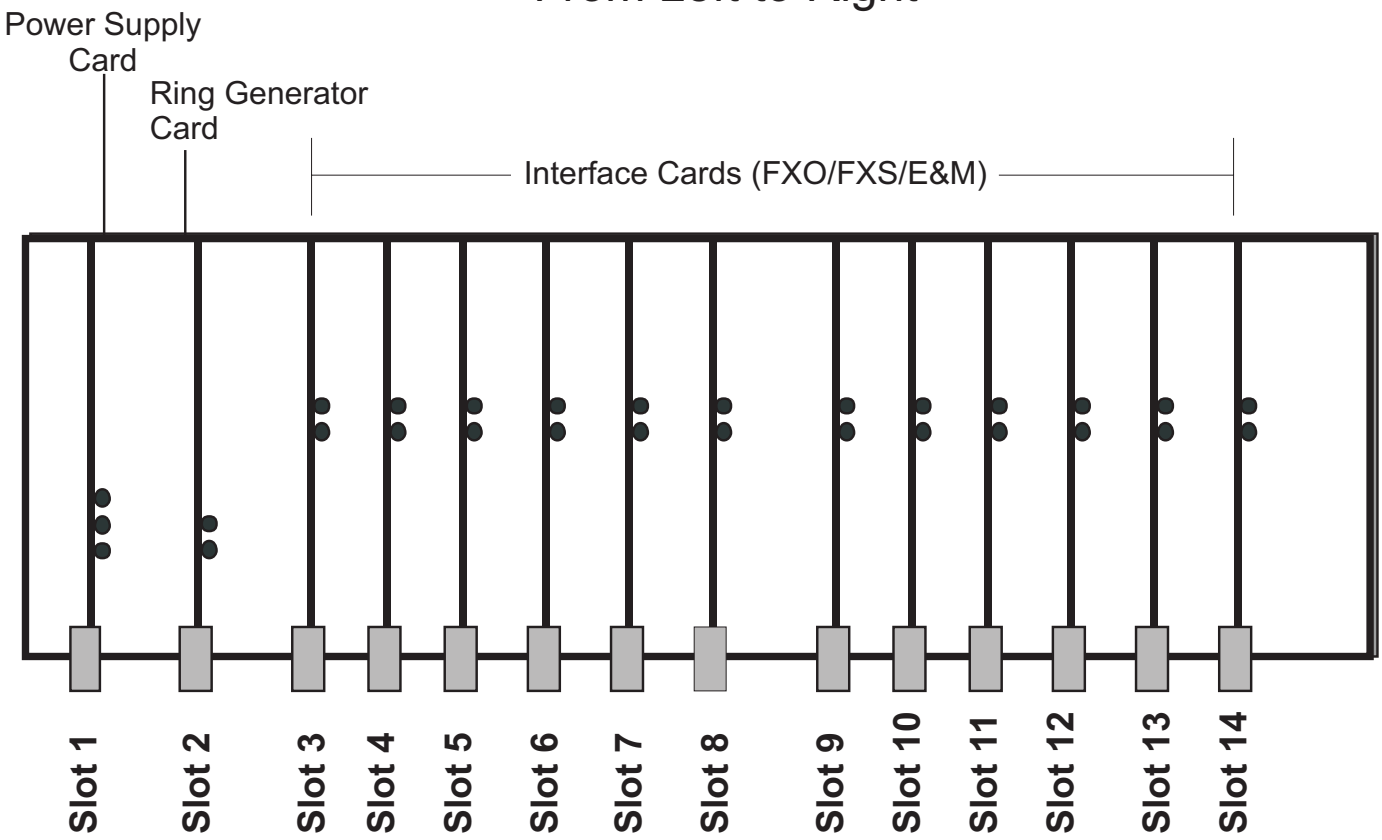
- 1 Voice Channel @ 9.6kbps (Asynchronous Rs232)
  or
- 6 Voice channels @ 64kbps (Synchronous)
- Medium may be satellite (VSAT) @ 9.6kbps (RS232) asynchronous data link (one voice channel), or 64kbps synchronous data link (6 voice channels).

Cellular, Thin Route, Prepaid Calling card, Call Center applications
E&M - E&M



- **Network Medium may be a satellite data link or a leased line @ 64Kbps (6 voice channels on a single time-slot)**

Front View of VCL-TRLD From Left to Right



System Composition

- Backplane
- 19-inch Shelf
- Power Supply Card

Slot 1	Power Supply Card
Slot 2	Ringer Card
Slot 3 to 14	Voice Interface Card(s) (FXO/FXS/E&M)

Mechanical Specifications

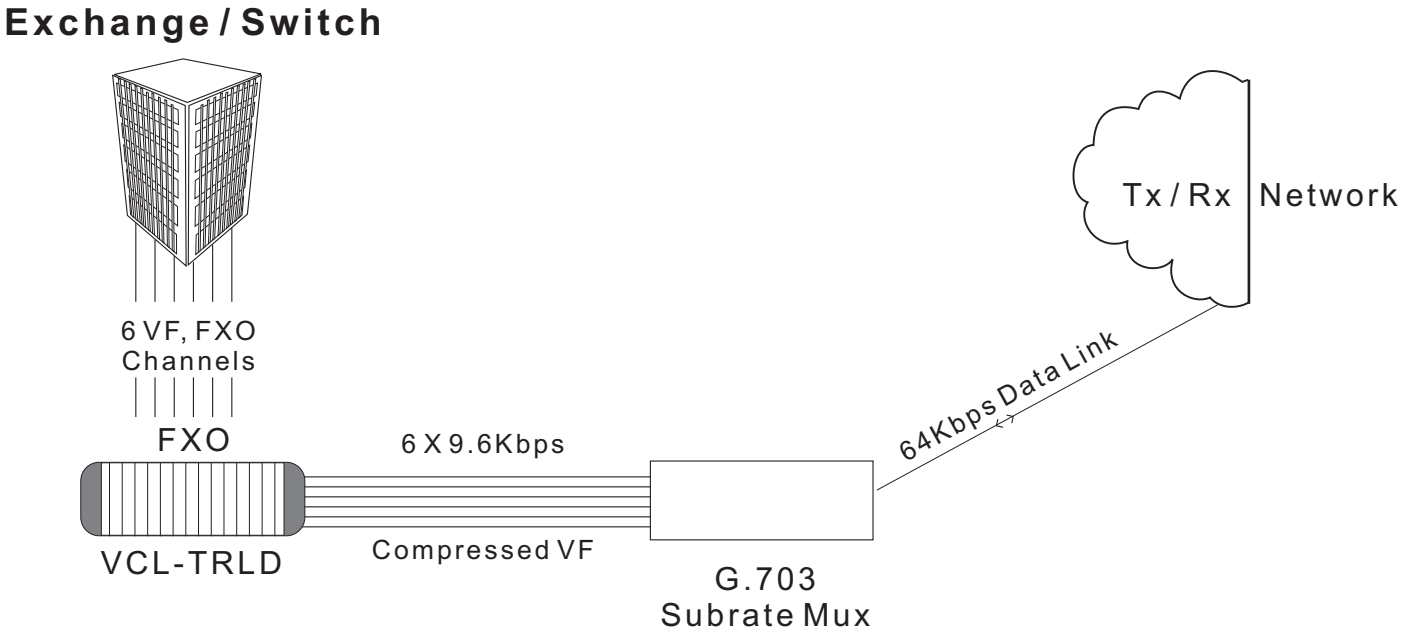
Rack Mounting	Standard 19 Inch. DIN Rack
Height	133.33mm.
Depth	260mm.
Width	477mm.
Weight (Net)	7.50 Kg (12 Channels)
	6.50 kg (6 Channels)

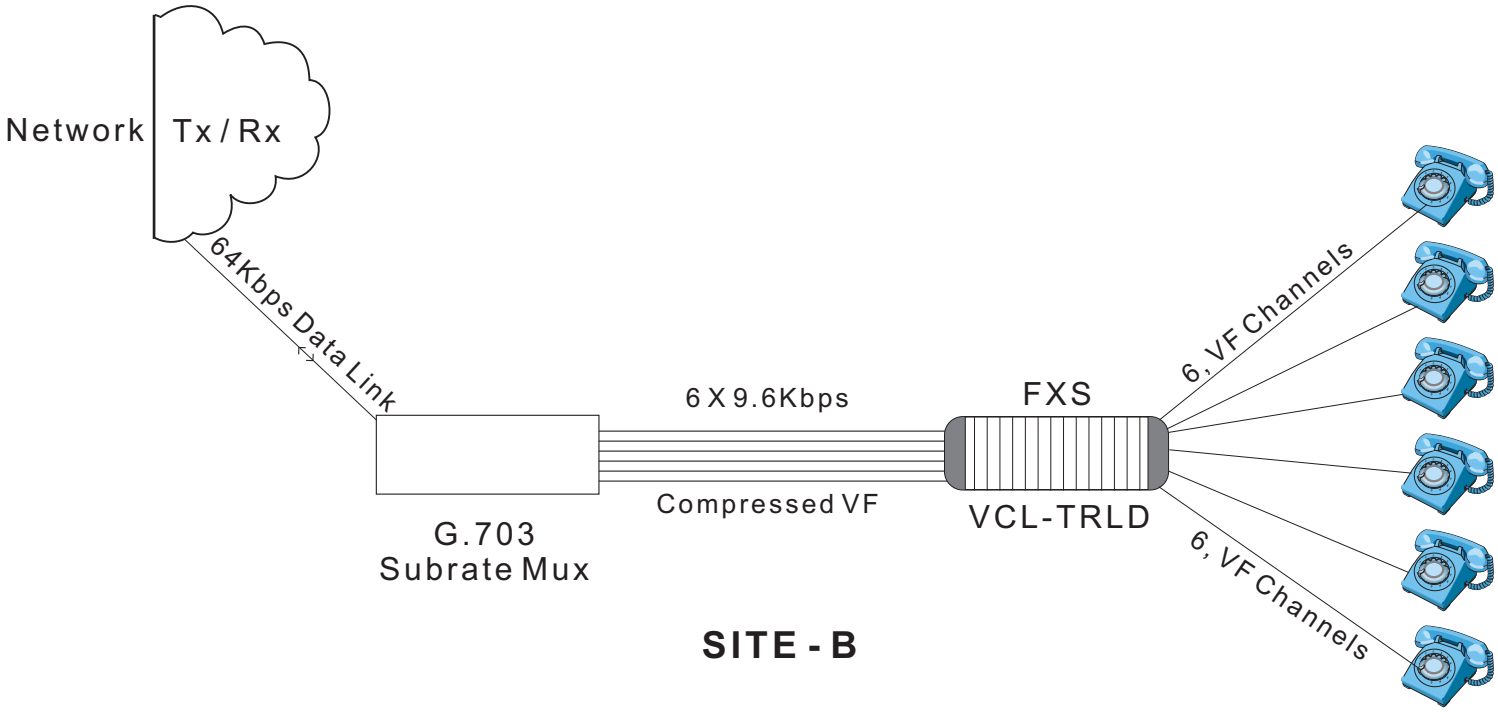
User Configurable Interface Card

~Voice Interface :-

(FXO - FXS) POTS service from a Central Office Switch. (Figure# 1 for application diagram)
(FXS-FXS) Hot Line (Figure# 2 for application diagram)
E&M 2 Wire and 4 Wire, applications. (Figure# 3 for application diagram)

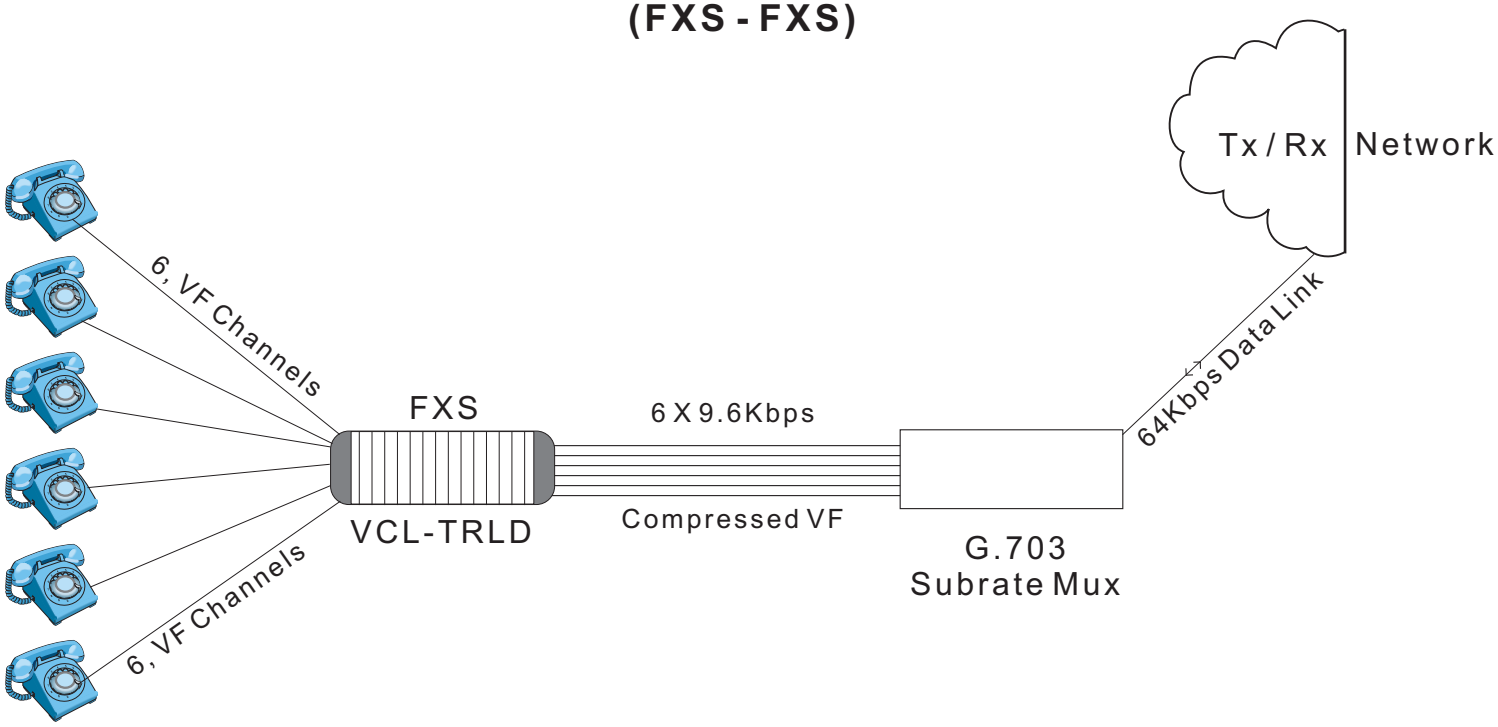
Application for Standard POTS Service (FXO- FXS)



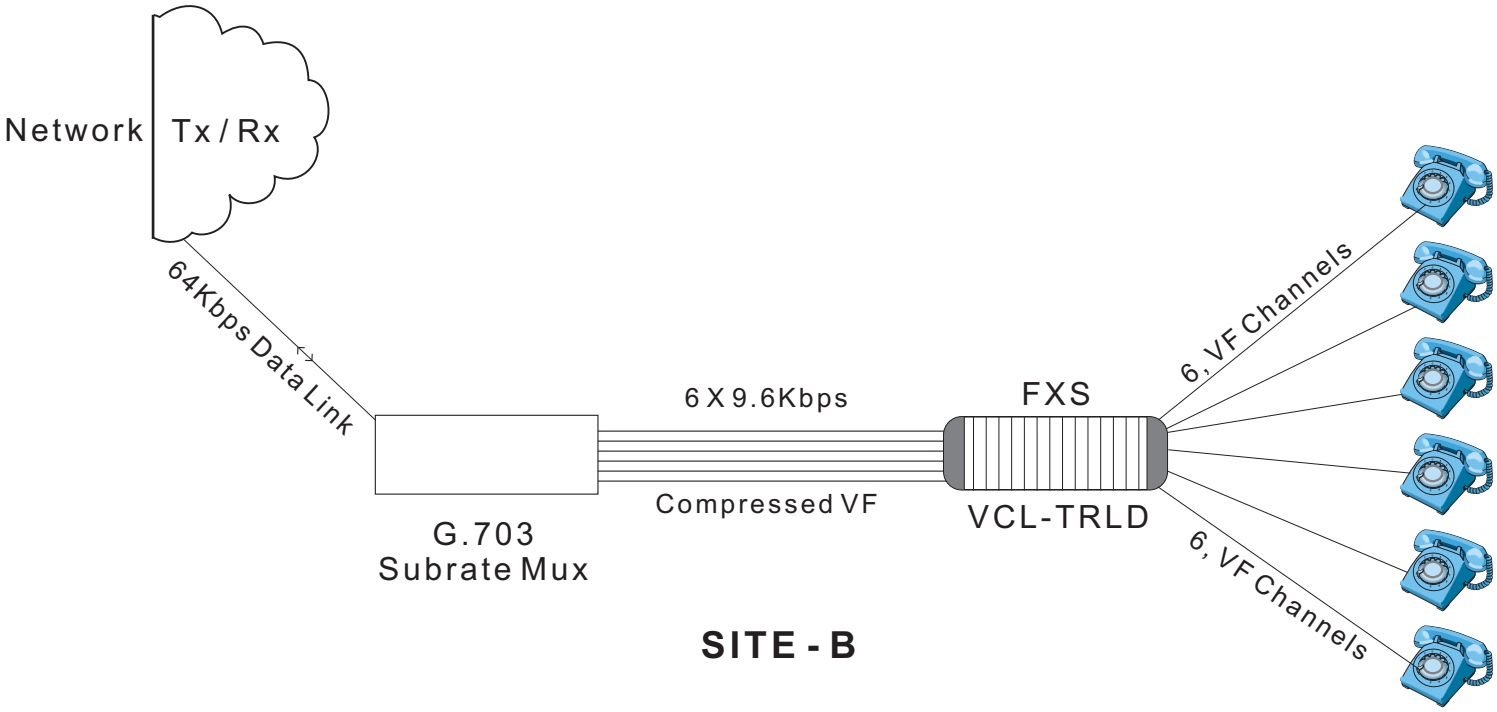


Figure#1

For Application of Hotline (Ring-Down) Service (FXS - FXS)



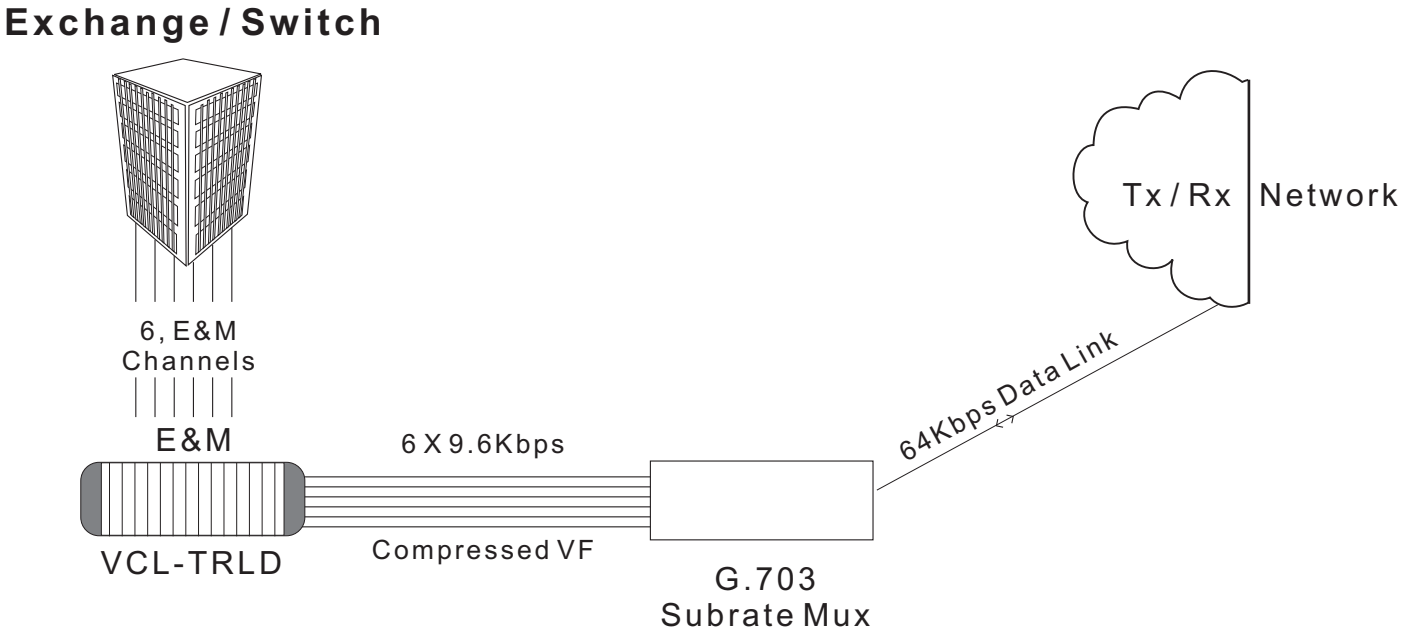
SITE - A



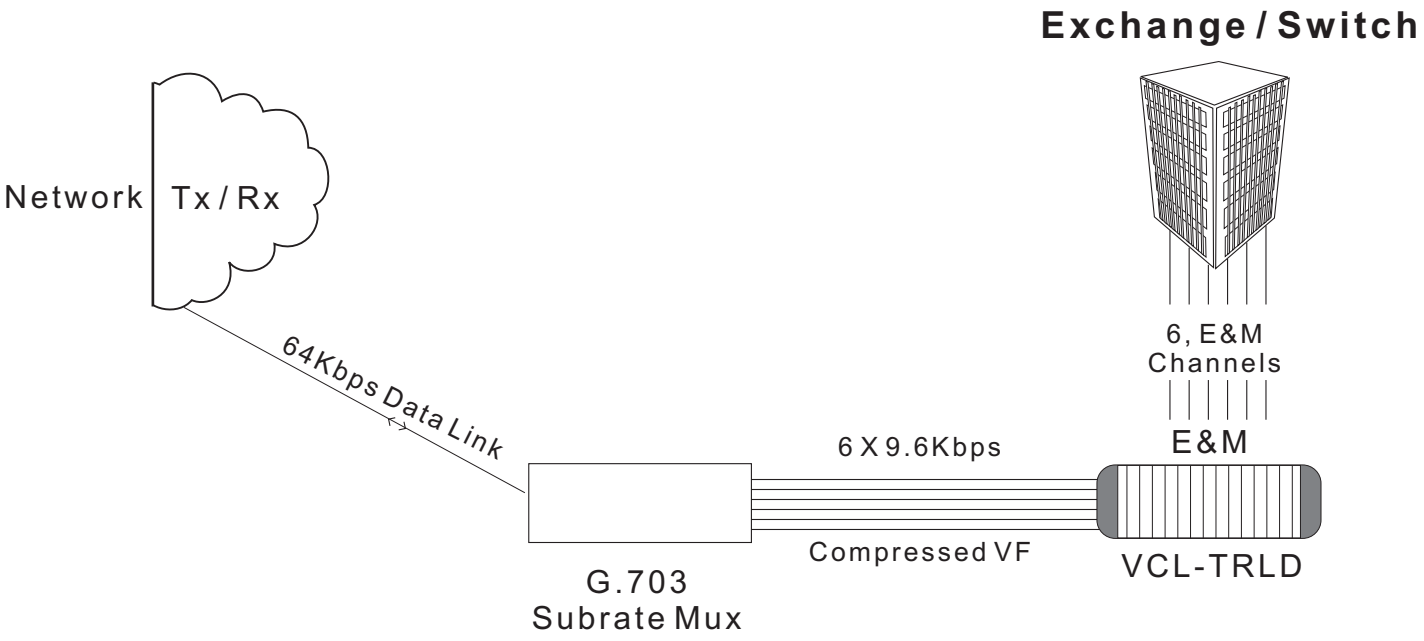
SITE - B

Figure#2

For Application of 2 Wire / 4 Wire E&M Trunks (E&M - E&M)



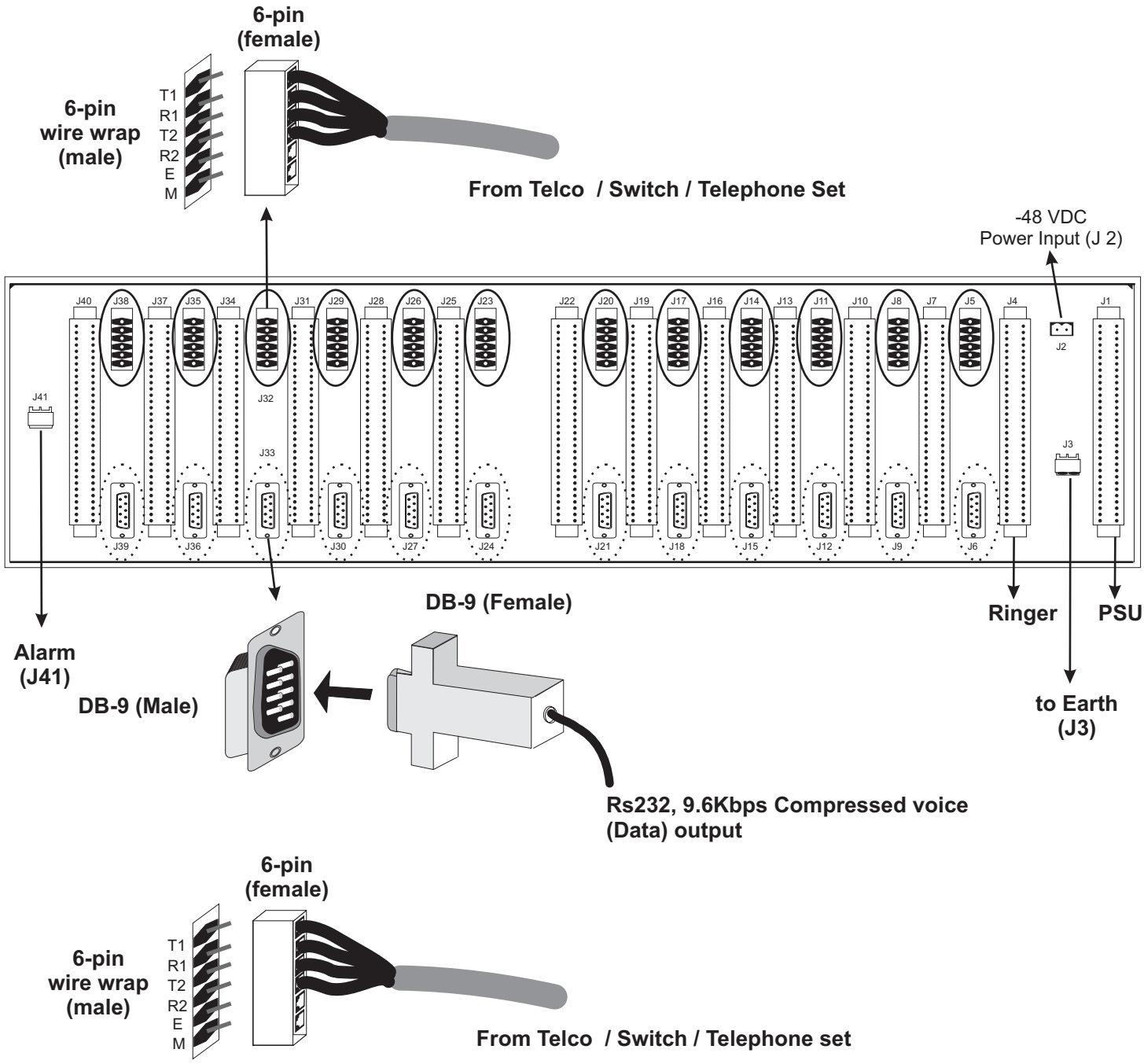
SITE - A



SITE - B

Figure#3

VCL-TRLD Connectorized Back Panel View



T1, R1-line for FXO(JNC), FXS(SLC) & E&M(Tx)
T2, R2-line for E&M(Rx)
E-Ear (E Signaling)
M-Mouth (M Signaling)

Figure #4

Thin Route, DCME SLC / FXS Interface Module Part #VCL-TR-025

Specifications - Analog Interface (Uncompressed Input)

Transmission Performance	MOS 3.8 Exceeds G.726 @ 32Kbps, G.729 @ 8Kbps and GSM @ 13Kbps *Please see Graph on page 4*
Number per card	1
Maximum number of Cards / Shelf	12
Insertion loss (Nominal)	2dB
User selectable range for insertion loss	1dB to 7dB (Through Dip Switch)
Input level minimum	-11dB
Input level maximum	3.2dB
Operating voltage	-48V dc (Nominal)
Line Impedance	600ohms
	900ohms (Optional on request)
Idle Channel Noise	≤ 65dB
Overload Level	+3.14dBm ± 0.5dB
Maximum Loop resistance	1200 ohms
Ring voltage	75Vrms / 86Vrms
Ring frequency	17Hz / 20Hz / 25Hz / 50Hz
Dial pulse speed	10pps

Specifications - Digital Interface (Compressed Voice)

Number per Card	1
Maximum No. of Slots / Shelf	12
Type	RS 232 Tx, Rx, Gnd
Mode	Asynchronous
Baud Rate	9.6 kbps - Fixed
Data Size	8bits
Parity	None
Flow Control	None (Xon / X off)
Stop Bit	1

Thin Route, DCME JNC / FXO Interface Module Part #VCL-TR-030

Specifications - Analog Interface (Uncompressed Input)

Transmission Performance	MOS 3.8 Exceeds G.726 @ 32Kbps, G.729 @ 8Kbps and GSM @ 13Kbps *Please see Graph on page 4*
Number per card	1
Maximum No. of Cards / Shelf	12
Insertion loss (Nominal)	2dB
User selectable range for insertion loss	1dB to 7dB (Through Dip Switch)
Input level minimum	-11dB
Input level maximum	3.2dB
Operating voltage	-48 V dc (Nominal)
Open loop resistance	> 22 K ohm
Closed loop resistance	Constant current sink of 23mA
Line Impedance	600ohms 900ohms (Optional on request)
Idle Channel Noise	≤ 65dB
Overload Level	+3.14dBm ± 0.5dB
Ring voltage detection (min)	35Vrms
Dial pulse speed	10pps

Specifications - Digital Interface (Compressed Voice)

Number per Card	1
Maximum No. of Slots / Shelf	12
Type	RS 232 Tx, Rx, Gnd
Mode	Asynchronous
Baud Rate	9.6 kbps - Fixed
Data Size	8bits
Parity	None
Flow Control	None (Xon / X off)
Stop Bit	1

Thin Route, DCME,2 Wire / 4 Wire E&M Trunk Interface Module
Part #VCL-TR-O35

Specifications - Analog Interface (Uncompressed Input)

Transmission Performance	MOS 3.8 Exceeds G.726 @ 32Kbps, G.729 @ 8Kbps and GSM @ 13Kbps *Please see Graph on page 4*
Number per card	1
Maximum No. of Cards / Shelfs	12
Performance Characteristics:	
Between voice frequency ports	as per CCITT G.713
Insertion loss (Nominal)	2dB
Line Impedance	600ohms 900ohms (Optional on request)
Idle Channel Noise	≤ 65dB
Overload Level	+3.14dBm ± 0.5dB
User selectable range for insertion loss	1dB to 7dB (Through Dip Switch)
Input level minimum	-11dB
Input level maximum	3.2dB

Specifications - Digital Interface (Compressed Voice)

Number per Card	1
Maximum No. of Slots / Shelf	12
Type	RS 232 Tx, Rx, Gnd
Mode	Asynchronous
Baud Rate	9.6 kbps - Fixed
Data Size	8bits
Parity	None
Flow Control	None (Xon / X off)
Stop Bit	1

Notes

Technical specification are subject to change without notice.
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