



ORION TELECOM NETWORKS INC.

VCL-DMR - E1 Digital Microwave Radio (5.8 GHz for un-licensed frequency band)

Product Brochure & Data Sheet

ORION TELECOM NETWORKS INC.

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Product Description

E1 Digital Microwave solution for 5.8 GHz, un-licenced frequency band wireless transmission

Orion's offers a rugged and a very reliable Wireless Digital Microwave solution which may be used to transmit up to 8 E1 channels (or E1 channels plus an Ethernet Channel) up to a distance of 40 KM in a "line-of-sight" installation.

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Front View

Orion's Digital Microwave Radio solution consists of a 1U, 19-Inch Rack-Mountable Indoor Unit (IDU) and a very compact, pole-mountable Out-Door Unit (ODU).

The 1U, 19-Inch Rack-Mountable Indoor Unit (IDU) may be powered from a nominal - 48V DC power input (acceptable DC voltage input range is - 40V DC to - 60 V DC).

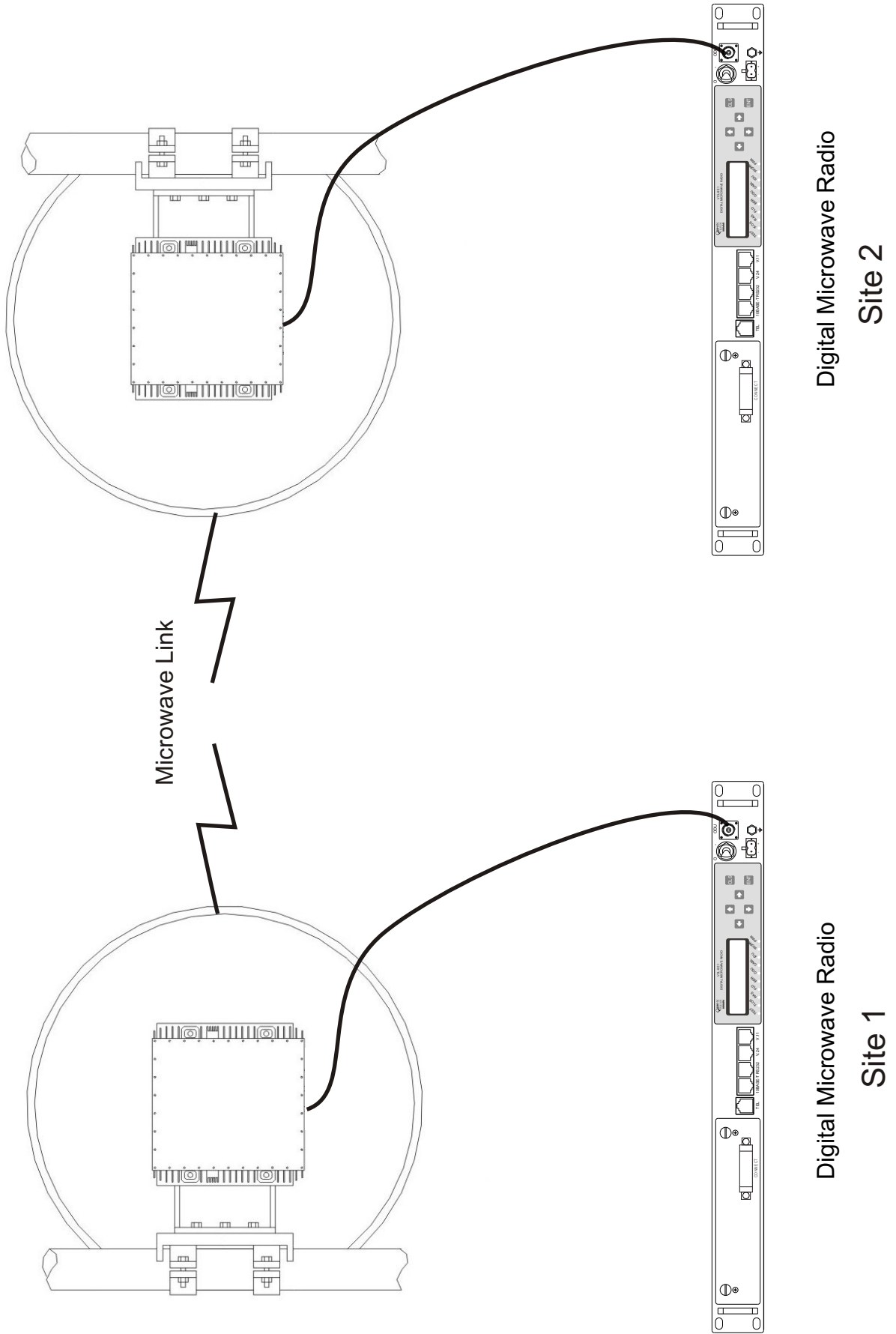
The ODU (Out-Door Unit) is packaged in a weather-proof, rugged pole-mountable units which is powered from the IDU (Indoor Unit) through it's single antenna cable.

Orion's Digital Microwave Radio solution is provided with advanced internal diagnostics capabilities which enables it to offer reliable performance even under the most difficult and harsh conditions. The equipment is also available (optionally) in a 1+1 protected package.

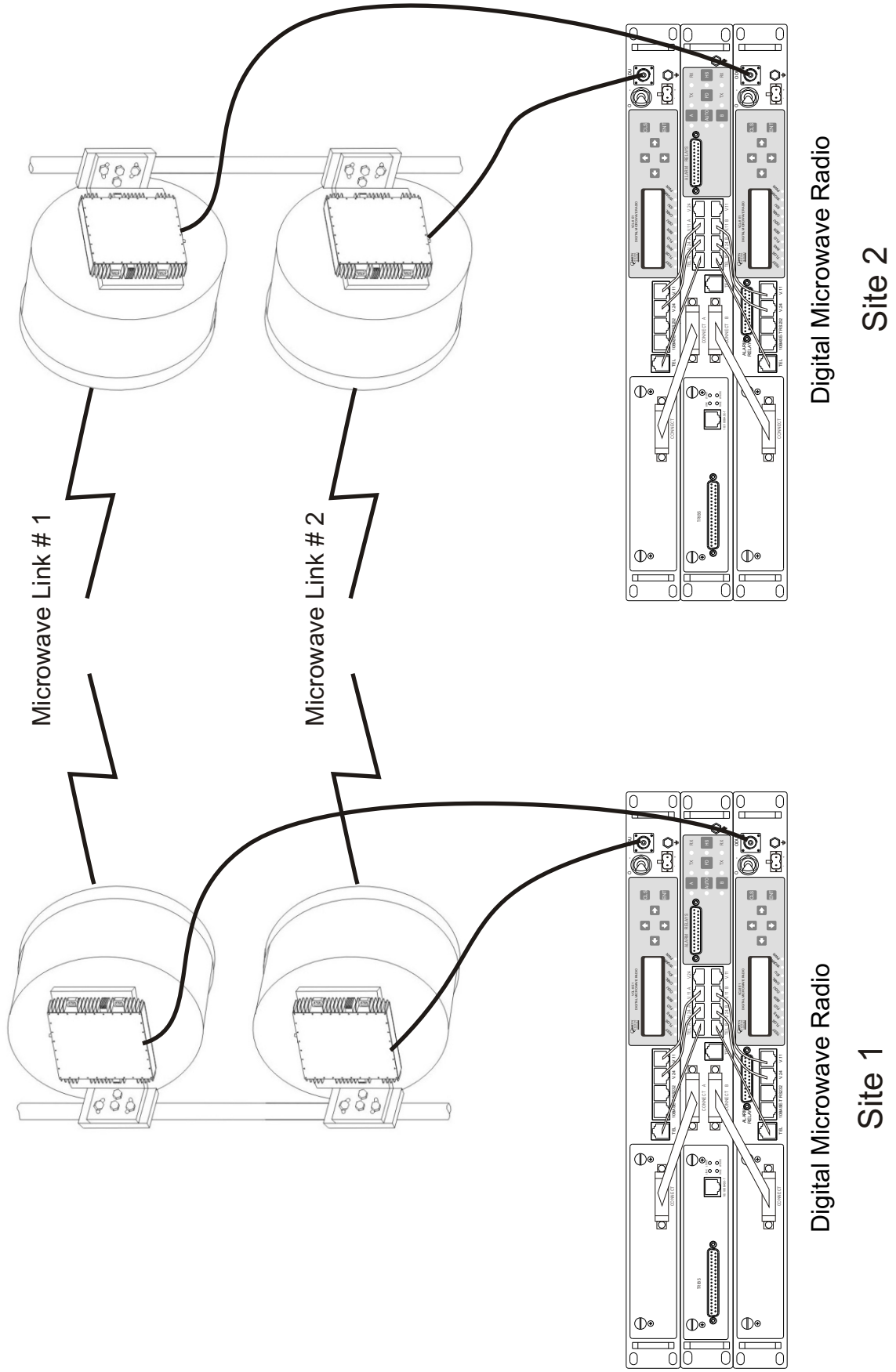
Features

- Operates in 5.8 GHz, un-licenced frequency band
- Scalable transmission capacities from 2Mbps (one E1) to upto 8 E1s
- Offers 8xE1 network interfaces via flexible plug-in modules
- User Programmable Output Power Level
- Software-selectable frequency, upgradable capacity
- Adaptive Reed-Solomon Forward Error Correction (FEC) to ensure error-free transmission
- Automatic Transmit Power Control (ATPC)
- Integrated WEB server
- SNMP based Network Management System
- Comprehensive, integrated performance monitoring and logging
- Available in 1+1 protected, or 1+0 unprotected configurations - "space" and "frequency" diversity
- Reliable Link performance
- High reliability

Application Diagram
1+0 configuration



Application Diagram 1+1 configuration



Note: The E1s automatically 'Switch' to the 'Active Microwave Link'.

Technical Specifications:**General Specifications:**

Radio Type	8E1 Digital Microwave Radio, 5.8 GHz for un-licenced frequency band
Frequency Source	Synthesizer
System Configuration	Non-Protected (1+0) 1+1 hot standby system
RF Channel Selection	IDU Controlled, or via NMS
Modulation	QPSK
User Interface options	E1 - 120 Ohms - Balanced, (4E1s, 8E1s)
Unfaded BER	10^{-11} or better
Loopback Test Options	Port Loopback, Frame Loopback, Interface Loopback, Remote Line Loopback
Alarm Input	4 x TTL Inputs
Relay Output	5 x Form "C" Relays
MTBF	180,000 Hours
Frequency 4E1	5.725 GHz - 5.850 GHz
Frequency 8E1	5.725 GHz - 5.875 GHz

Transmit and Receive Power:

Transmitter	
Output Power	20dBm
Frequency Stability	± 5 ppm
Tx Intermediate Frequency	310 MHz
Receiver	
Noise Figure	< 4.0 dB
Rx Intermediate Frequency	70 MHz
Overload	-30 dBm
Receiver threshold (1×10^{-6} BER)	QPSK Modulation - Receiver threshold: 4xE1 - 87 dBm 8xE1 - 84 dBm

Mechanical:

Dimension	Indoor Unit: 482mm x 44mm x 265mm Outdoor Unit: 265mm x 265mm x110mm
Weight	Indoor Unit: 3.5 kg Outdoor Unit: 5.5 kg
Indoor Unit - Outdoor Unit Interconnection	Single Cable, RG-8 Type, 50 Ohms - unbalanced Recommended Cable: Times-Microwave LMR400, or Belden 9913 Maximum Distance: Up to 1000 Ft. (300 m) Outdoor Unit Connector Type: "N" Male Indoor Unit Connector Type: "TNC" Female

Operating Conditions - Environmental:

Temperature Range	Operating Temperature Range: Indoor Unit: -5~+50°C Outdoor Unit: -33~+65°C
Relative Humidity	Relative Humidity (non-condensing): Indoor Unit: 20%~90% Outdoor Unit: 0%~100%

Service Channels - Voice:

Engineering Order Wire (EOW)	Frequency Response: 300-3400 Hz Impedance: 600 balanced Interface RJ-11: RJ-11
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Service Channels - Data:

Digital Data Channel 1	0~9600bps, RS232C Serial Interface: (RJ-45 Connector)
Digital Data Channel 2	0~9600bps, RS422 Interface Serial Interface: (RJ-45 Connector)

Management Interfaces:

NMS - Data Channel 1	Serial Interface - 9600bps, RS232C Interface (RJ-45 Connector)
NMS - Data Channel 2	Ethernet Interfaces - 10Mbps, 10BASE-T Interface (RJ-45 Connector)

Power Supply:

Input DC Voltage	- 48V DC Volts
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Power Consumption:

Power Consumption	30 Watts
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Ordering Information:

VCL-DMR - E1 Digital Microwave Radio		
S.No.	Product Description	Qty
1.	VCL-DMR - 8 E1 Digital Microwave Radio, 5.8 GHz for un-licenced frequency band	1

Technical specifications are subject to changes without notice.
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