

# VALIANT COMMUNICATIONS LIMITED



## VCL-DMR - E1 Digital Microwave Radio (2.4 GHz or 5.8 GHz for un-licenced frequency band)

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### Product Brochure & Data Sheet

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## Product Description

### E1 Digital Microwave solution for 2.4 GHz or 5.8 GHz, un-licenced frequency band wireless transmission

Valiant'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.

Valiant'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 -60V 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.

Valiant'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 2.4 GHz or 5.8 GHz, un-licenced frequency bands
- Single coaxial cable connection between IDU and ODU
- IDU can be used at any frequency
- Scalable transmission capacities from 2 Mbps to 17 Mbps
- 2E1, 4E1, 8E1, Ethernet etc. network interface by flexible plug-in module (4E1 + LAN or 8E1 + LAN (optional))
- Software Programmable Output Power Level
- Software-selectable frequency
- Adaptive Reed-Solomon Forward Error Correction (FEC)
- Automatic Transmit Power Control (ATPC)
- Local loopback & Remote loopback
- On-line BER monitor
- Integrated WEB server
- SNMP based Network Management System
- Comprehensive, integrated performance monitoring and logging
- Available in 1+1 protected, or 1+0 unprotected configurations
- High Link performance and reliability

### VCL-DMR - E1 Digital Microwave Radio for 2.4 GHz or 5.8 GHz un-licenced frequency band



IDU



ODU (Bottom View)

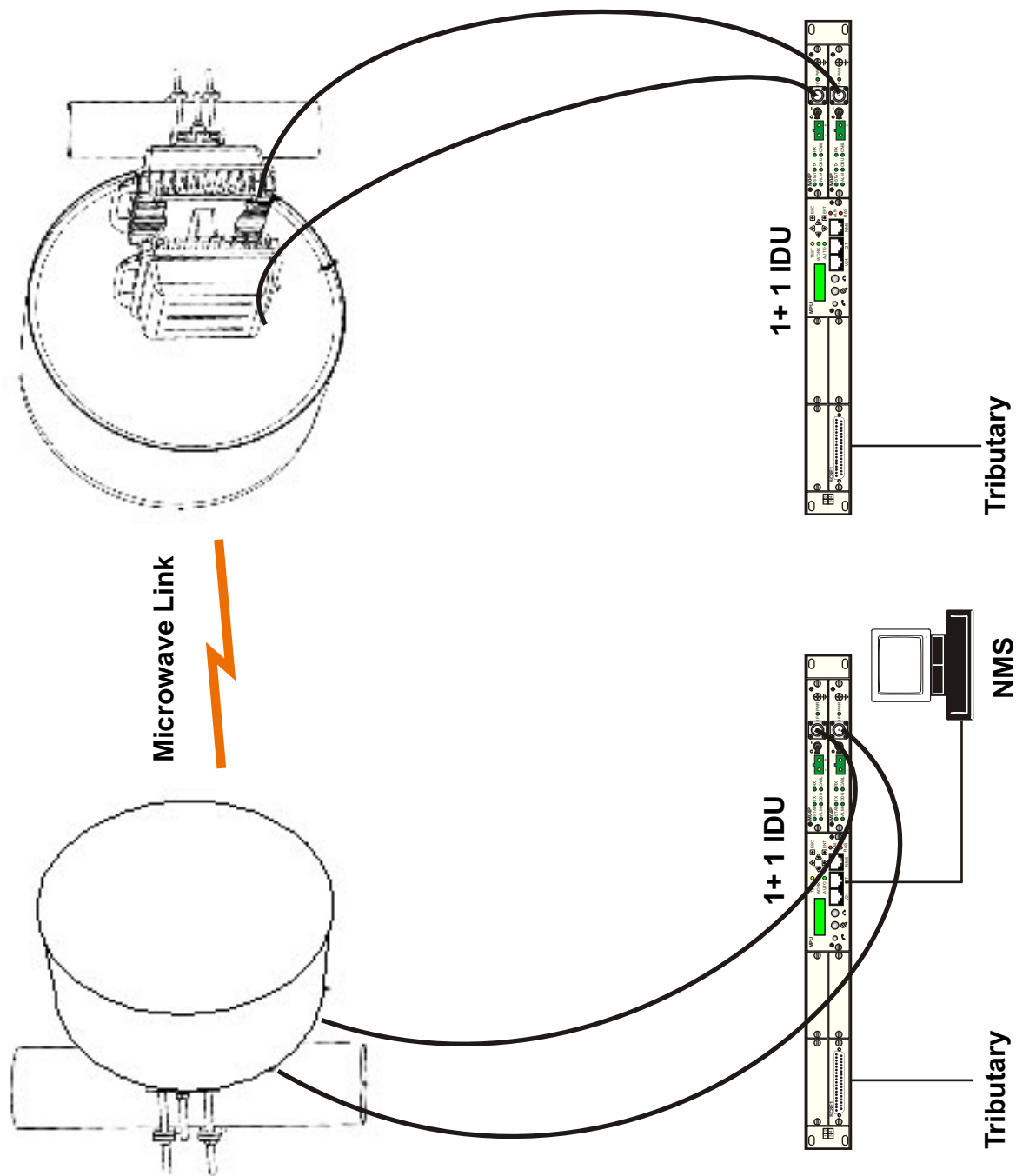


ODU (Top View)





# Application Combiner / Coupler 1+1 System configuration



**Technical Specifications:****Operation Frequency and Channel Configuration**

Freq. Bands (GHz)	Freq. Range (MHz)	Tx/Rx Spacing (MHz)
2.4	2400 ~ 2483.5	55
	2300 ~ 2500	116
5.8	5725 ~ 5850	82

**General Specifications**

Freq. Bands (GHz)	2.4	5.8
Tx/Rx Spacing (MHz)	55/116	82
Transmission Capacity	2E1/4E1/8E1	
Occupation Band (MHz)	3.5/7/14	
Modulation	QPSK	
Freq.Synthesizers Step Size (KHz)	250	
Freq.Stability (ppm)	± 10	
System Configuration	(1+0), (1+1) Co-channel standby system, (1+1) Channel hot standby system	
RF Channel Selection	IDU Controlled, or via NMS	
E1 Interface	HDB3; 75Ωhms - Un-balanced, BNC or 120Ω - balanced, RJ-45	
Ethernet Interface	10/100BASE-T, RJ-45	
Power Supply (V)	DC -48V ± 20%	
Power Consumption	35	30
RF Interface	N	N

**Transmit and Receive Power:**

<b>Transmitter</b>		
Freq. Bands (GHz)	2.4	5.8
Transmitting IF (MHz)	310	
RF Output Power (dBm)	24	20
ATPC Range (dBm)	+5dBm ~ Maximum	
<b>Receiver</b>		
Receiving IF (MHz)	70	
RF Input Level Range (dBm)	-20 ~ -90	
Receiver Threshold BER=1E-6 (dBm)	4 x E1	- 87
	8 x E1	- 84
Saturate Input Level(dBm)	- 10	

**Auxiliary & NMS**

Order Wire	1 Channel digital order wire, 3.5mm (1/8 inch) Headset Jack
Auxiliary Data	19.2kbit/s, RS232C, RJ-45
Software Update	115.2kbit/s, RS232C, RJ-45
NMS	100Mbit/s, 10/100BASE-T, RJ-45
Operation System	WIN2000 / WINDOWS NT / WINXP

**Mechanical:**

Dimension	Indoor Unit: 482mm x 44mm x 265mm Outdoor Unit: 290mm x 215mm x110mm
Weight	Indoor Unit: 3.5 kg Outdoor Unit: 4.5 kg

**Operating Conditions - Environmental:**

Temperature Range	Operating Temperature Range: Indoor Unit: -0~+50°C Outdoor Unit: -33~+65°C
Relative Humidity	Relative Humidity (non-condensing): Indoor Unit: 20%~90% Outdoor Unit: Full Range
Elevation (m)	≤ 4500

**Ordering Information:**

<b>VCL-DMR - E1 Digital Microwave Radio</b>		
<b>S.No.</b>	<b>Product Description</b>	<b>Qty</b>
1.	VCL-DMR - E1 Digital Microwave Radio, 2.4 GHz or 5.8 GHz for un-licenced frequency band	1

Technical specifications are subject to changes without notice.  
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