

RADWIN

Alpha Integrated

Data Sheet



Product overview

RADWIN 2000 Alpha Integrated series is an attractively priced 500Mbps Point-to-Point outdoor radio unit with an integrated antenna, that operates in the 5GHz band.

RADWIN Alpha includes a field proven air interface that ensures best-in-class link connectivity in harsh spectrum for backhaul and access as well as wireless CCTV and additional applications that require robust connectivity. For this purpose, RADWIN Alpha was designed to deliver an impressive packet switching power as well as jumbo frame support to guarantee full capacity, regardless of traffic packet size.

Enabling minimum TCO, RADWIN Alpha is extremely reliable and durable, complying with IP 67 standard. The unit features a built-in GPS for TDD synchronization and can be powered by RADWIN PoE or a RADWIN PoE switch. Alpha uniquely facilitates a 'dying gasp' message when local power failures occur, saving upon unnecessary maintenance efforts. The unit can also be used as SU PRO, enabling an initial low-cost deployment using PtP while seamlessly migrating to Point-to-MultiPoint with network growth.

Product Highlights

- » Up to 500Mbps PtP radio unit
- » 22dBi Integrated antenna
- » 4.9-6.0 GHz
- » Up to 40 km / 25 miles
- » Built-in GPS
- » Dying gasp
- » Dynamic channel bandwidth
- » 350K Packets-Per-Second
- » Supports Jumbo frames
- » Operable also as PtMP SU
- » Highly durable - IP 67

Product specifications:

Configuration	
Architecture	Outdoor Unit with integrated antenna
Wireless topology	PtP unit / PtMP subscriber unit
Data interfaces	10/100/1000 Mbps RJ45 PoE
POE and ODU interfaces	Outdoor CAT-5e; Maximum cable length: 75m for 1000BaseT
Radio	
Max capacity	500 Mbps net aggregate throughput (up to 250 Mbps per direction)
Range	Up to 40 km / 25 miles
Channel bandwidth	Configurable: 10, 20, 40, 80 MHz *
Dynamic Channel BW selection	20/40/80 MHz
Modulation	OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)
Error correction	FEC k = 1/2, 2/3, 3/4, 5/6
Adaptive modulation and Coding	Supported
Duplex technology	TDD
DFS	Supported *
Antenna modes	MIMO 2x2 , diversity , adaptive MIMO/diversity
Dynamic Bandwidth management	Committed Information Rate (CIR) and Best Effort service level (in PtMP mode)
Nomadic mode of operation	Supported (in PtMP mode)
Max TX power	26 dBm *
Encryption	AES128
TDD intra site synchronization	Supported via Ethernet, built-in GPS **
Uplink/Downlink allocation	Configurable: Symmetric or Asymmetric
Networking	
QoS	Packet classification to 4 priority queues according to 802.1P or Diffserv
VLAN support	802.1Q, QinQ, 4094 VLANs
MTU size	Up to 9216 bytes ***
ODU management	IPv4/IPv6 dual-stack; SNMPv1, SNMPv3; HTTP/HTTPS using web browser
Dying gasp notification	Supported (for remote PtP unit)
802.1x	Supported (for PtMP mode)
Option 82	Supported (for PtMP mode)
DHCP filtering	Supported (for PtMP mode)
IGMP snooping	Supported (for PtMP mode)
PPPoE filtering	Supported (for PtMP mode)
RADIUS Authorization	Supported (for PtMP mode)
RADIUS User authentication	Supported
Syslog	Supported

* May be limited by regulation - please refer to technical datasheet for a specific part number

** Hardware ready, will be enabled via software upgrade

*** Depends on base station MTU size in case of PtMP operation

Physical Specification:

Mechanical	
Dimension	32.5(w) x 32.5(h) x 6.4(d) cm / 12.8" (w) x 12.8" (h) x 2.5" (d)
Weight	2 kg/4.41lbs
Power	
Power consumption	<13W
Power feeding	Power provided over ODU-IDU cable
POE input range	24-56V (POE voltage \geq 55V is required for dying gasp support)
Environmental	
Operating temperature	-35°C to 60°C / -31°F to 140°F
Humidity	100% condensing
Enclosure protection	IP67 per EN/IEC 60529, NEMA Type 4 Enclosure

Antenna:

Integrated Antenna	
Gain	22 dBi (typical)
VSWR	2.0 : 1
3 dB Azimuth beamwidth	10° (typical)
3 dB Elevation Beamwidth	10° (typical)
Polarization	Dual Linear (Vertical and Horizontal)
Sidelobes level	-12 dB(typical)
Cross polarization	-25 dB (typical)
F/B Ratio	25 dB
Port To Port isolation	30 dB (typical)
Lightning protection	DC Grounded

Regulatory compliance:

Radio	
USA	FCC 47CFR Part 15.407
Canada	ISED RSS-247
EU	ETSI EN 301 893; ETSI EN 302 502
Safety	
CE/IEC	EN/IEC 62368-1, EN/IEC 60950-22
USA/Canada (cTUVus)	UL/CSA-C22.2 62368-1, UL/CSA-C22.2 60950-22
EMC	
EU	ETSI EN 301 489-1, ETSI EN 301 489-4, ETSI 301 489-17
USA	FCC 47CFR Part 15 Subpart B, Class B
Canada/CSA – CEI/IEC	ICES-003, CISPR 32 Class B
AS/NZS	CISPR 32 Class B

Supported Bands:

Band	Occupied Bandwidth Support	Radio Compliance
5.8 GHz FCC/ISED	5.730-5.845 GHz	FCC 47CFR Part 15.407, ISED RSS-247
5.4 GHz FCC/ISED	5.480-5.715 GHz	FCC 47CFR Part 15.407, ISED RSS-247
5.2 GHz FCC/ISED	5.250-5.340 GHz	FCC 47CFR Part 15.407, ISED RSS-247
5.1 GHz FCC	5.170-5.250 GHz	FCC 47CFR Part 15.407
4.9 GHz Universal	4.900-4.995 GHz	Universal
5.1 GHz Universal	5.130-5.375 GHz	Universal
5.4 GHz Universal	5.455-5.760 GHz	Universal
5.8 GHz Universal	5.730-5.845 GHz	Universal
5.8 GHz ETSI/ISR	5.73-5.875 GHz	ETSI IL (Israel) EN 302 502
5.1 GHz UBR	5.130-5.875 GHz	Universal
5.9 GHz Universal	5.710-5.990 GHz	Universal
6.0 GHz Universal	5.680-6.090 GHz	Universal
5.4 GHz ETSI	5.475-5.710 GHz	EN 301 893
5.8 GHz ETSI	5.735-5.865 GHz	EN 302 502
5.8 GHz ETSI/GER	5.735-5.865 GHz	EN 302 502 and ECC Recommendation (06)04
5.8 GHz WPC	5.825-5.875 GHz	WPC (India) G.S.R 38(E) / 19 January 2007
5.1 GHz WPC	5.150-5.875 GHz	WPC (India) G.S.R 1048(E) / 22 October 2018

* List of supported bands are limited by regulation - please refer to technical datasheet for a specific part number

Product ordering:

Radio units			
Part number	Product name	Regulation	Default Band
RW-2050-6HC5	RW2000/ODU/Alpha/F58/FCC/INT/500M	FCC	5.8 GHz
RW-2154-6HC5	RW2000/ODU/Alpha/F54/IC/INT/500M	IC/ISED	5.4 GHz
RW-2250-6HC5	RW2000/ODU/Alpha/F54/ETSI/INT/500M	ETSI	5.4 GHz
RW-2450-6HC5	RW2000/ODU/Alpha/F58/WPC/INT/500M	WPC	5.8 GHz
RW-2954-6HC5	RW2000/ODU/Alpha/F54/UNI/INT/500M	Universal	5.4 GHz
RW-2158-6HC5	RW2000/ODU/Alpha/F58/IL/INT/500M\	IL	5.8 GHz

PoE units		
Part number	Product name	Part description
RW-9921-1039	POE/DC/GBE/24-57	DC input 24VDC -57VDC
RW-9921-400X	POE/AC/2.5/GBE	AC input 100VAC – 240VAC See PoE datasheet for country specific power plug

PoE switching units		
Part number	Product name	Part description
RW-7401-6006	IDU-S/HP	Managed indoor switch, 6x PoE ports, SFP/SFP+ interfaces

Package contents:

Radio unit
Mounting Kit
IP67 Cable gland

Datasheet information can be changed by manufacturer without prior notice