



# Revolutionizing Connectivity with TerraNet mmWave Series

## **Bridging the connectivity barriers with TerraNet 60GHz mmWave solutions**

In the era of digital transformation, the demand for high-speed, reliable connectivity is at an all-time high, driven by the growing needs of smart cities, extensive Wi-Fi deployments, and robust gigabit backhauling.

RADWIN's TerraNet series provides essential gigabit services needed for enhancing urban safety, broadening rural Wi-Fi access, and enhancing gigabit backhaul infrastructure. By harnessing the power of 60GHz mmWave full-band technology (57-71GHz), TerraNet complements traditional 5/6GHz networks but also enables multi-gigabit last mile connectivity with significantly lower costs and reduced deployment times.

The TerraNet series adeptly overcomes the economic and technical challenges often encountered with fiber deployments in sparsely populated areas or when broadening existing networks. Designed for a variety of demanding settings, from vibrant urban locations to isolated rural regions, TerraNet breaks down the connectivity barriers, heralding a new era of digital inclusion and dependable connectivity.

# TerraNet Product offering:

The TerraNet Series showcases the V120, V90 and V40 radio units which can be used as:

- » **Point-to-Multipoint (PtMP)** Base Stations or Clients for scalable access networks, leveraging 2D beamforming and automatic antenna alignment
- » **Point-to-Point (PtP)** Master or Slave radios, enabling ultra-precise, high-performance links with long-range capability



## TerraNet V120 & V40

TerraNet **V120** offers a wide 120° beam coverage while TerraNet **V40** provides a narrow-beam (40°) subscriber unit or small-sector AP



## TerraNet V90

TerraNet **V90** is a modular, beam-adaptive unit with configurable antenna kits for 4°–90° beamwidths

## Product benefits:



### High Data Rates:

Offering up to 2.3Gbps, TerraNet solutions support bandwidth-intensive applications with unparalleled efficiency.



### Low Latency:

Critical for applications demanding real-time responsiveness, TerraNet signals allows for swift and seamless low-latency communications.



### Unlicensed Spectrum Availability:

In many regions, the 60GHz spectrum is available for unlicensed use. This can contribute to reducing costs associated with spectrum licensing.



### Low Interference:

In the 60GHz spectrum, the effects of oxygen absorption and the use of narrow beam antenna minimize the probability of interference between the radios. Moreover, 60GHz is less crowded than other frequencies



### Spectral Efficiency:

Make the most of the available bandwidth, supporting multiple users without compromising performance.



### Directional Transmission:

With highly directional antennas, TerraNet enhances signal quality and minimizes interference, perfect for dense urban landscapes.



### Easy deployment:

With its compact size and automatic antenna beam alignment at both link ends, the system ensures effortless deployment.



### High availability:

Offering sub-7GHz backup through Ethernet POE output, support for multiple VBS profiles, and a ping watchdog function, guaranteeing high availability and seamless operation.

# Product Highlights:

- » 57-71GHz full band coverage
- » Up to 2.3Gbps data rates
- » Beamforming antenna with auto alignment
- » Advanced security with AES+GCMP 128-bit encryption
- » Environmental resilience: IP56-rated\* (V120 & V40), IP67-compliant (V90)
- » Supports up to 32 SUs per AP
- » Dynamic TDD for efficient bandwidth management
- » Compliance with FCC, CE, and other regulatory standards
- » Modular antenna design (TerraNet V90): field-configurable for wide or focused coverage, from 90° to 4°

## Applications:

- » **Urban Connectivity:** Elevate city infrastructure with high-speed connections for security systems, traffic management, and public Wi-Fi.
- » **Rural Access:** Bring the internet's boundless opportunities to remote communities, bridging the digital divide.
- » **Smart Industry Operations:** Enable instant control and seamless data flow across manufacturing, logistics, and mining sectors with TerraNet's high-speed, low-latency connections.

Selecting the appropriate radio technology for Point-to-Multipoint (PtMP) or Point-to-Point (PtP) networks is crucial and depends on the specific needs of each deployment, such as data rate demands and environmental factors. Every option has its unique benefits.

The introduction of TerraNet signifies a notable enhancement to RADWIN's broad product lineup, introducing a compelling 60GHz mmWave connectivity solution for those in search of advanced options.

Our expert team is prepared to assist you, ensuring that whether it's TerraNet or another offering from our portfolio, your chosen technology aligns seamlessly with your project's requirements and goals.



Urban



Rural



Smart Industry

# Product Specifications:

RADWIN's TerraNet 60GHz mmWave portfolio now includes three powerful, purpose-built radios designed to adapt to your deployment needs: the wide-coverage V120, the compact V40, and the newly launched modular V90.

Feature	TerraNet V120	TerraNet V40	NEW! TerraNet V90
Primary Role	Modular PtMP / PtP radio	Modular PtMP / PtP radio	Modular PtMP / PtP radio
Architecture	Integrated beamforming antenna	Integrated beamforming antenna	Integrated beamforming antenna with swappable antenna lens kits
Use Case Flexibility	Sector coverage	SU or narrow PtMP sector	Wide PtMP to ultra-narrow long-range PtP
Deployment Efficiency	High	High	Exceptional: One device, many roles
Max net aggregate capacity	2.3 Gbps	2.3 Gbps	2.3 Gbps
Data Interfaces	2.5G RJ45 (PoE in), 1G RJ45 (PoE out)	2.5G RJ45 (PoE in), 1G RJ45 (PoE out)	2.5G RJ45 (PoE in), 1G RJ45 (PoE out)
<b>Radio</b>			
Frequency Range	57-71 GHz (Full band: CH 1-6); 57-66 GHz (CH 1-4)	57-71 GHz (Full band: CH 1-6); 57-66 GHz (CH 1-4)	57-71 GHz (Full band: CH 1-6); 57-66 GHz (CH 1-4)
Subscriber Units support	Up to 32 subscriber units	Up to 32 subscriber units	Up to 32 subscriber units
Range	Up to 1.2 km	Up to 1.2 km	Up to 4 km (depending on antenna kit)
Duplex Technology	TDD	TDD	TDD
TDD Inter & Intra site sync.	Not supported	Not supported	Not supported
Uplink / Downlink ratio	Dynamic	Dynamic	Dynamic
Encryption	AES + GCMP 128 bit	AES + GCMP 128 bit	AES + GCMP 128 bit
Channel Bandwidth	Full (2160 MHz), Half (1080 MHz)	Full (2160 MHz), Half (1080 MHz)	Full (2160 MHz), Half (1080 MHz)
Max TX Power	40 dBm EIRP	40 dBm EIRP	38 dBm EIRP (without antenna) Up to 55 dBm EIRP (with ext. antenna lens)
Antenna Gain	20 dBi	22 dBi	16 dBi (base); up to 37 dBi with ext. antenna lens
Sector azimuth beamwidth	120°	40°	90° (base) → 45°/6°/4° with ext. antenna lens
Sector elevation beamwidth	50°	40°	50° (base) → 10°/6°/4° with ext. antenna lens
Antenna Alignment	Automatic	Automatic	Automatic
Link failover	Multiple VBS profiles with priority management	Multiple VBS profiles with priority management	Multiple VBS profiles with priority management

Feature	TerraNet V120	TerraNet V40	NEW! TerraNet V90
<b>Networking</b>			
Sub convergence layer	Layer 2 bridge	Layer 2 bridge	Layer 2 bridge
QOS	DL / UL traffic shaping	DL / UL traffic shaping	DL / UL traffic shaping
VLAN Features	Mgmt & Data VLAN	Mgmt & Data VLAN	Mgmt & Data VLAN
MTU Size	1280–7900 bytes	1280–7900 bytes	1280–7900 bytes
DHCP Features	DHCP server filtering, DHCP Option 82	DHCP server filtering, DHCP Option 82	DHCP server filtering, DHCP Option 82
Backup data link	Supported via POE out port	Supported via POE out port	Supported via POE out port
ODU Management	IPv4/IPv6, DHCPv4 client, HTTP/HTTPS, SNMPv2/v3, SYSLOG, LLDP, NTP	IPv4/IPv6, DHCPv4 client, HTTP/HTTPS, SNMPv2/v3, SYSLOG, LLDP, NTP	IPv4/IPv6, DHCPv4 client, HTTP/HTTPS, SNMPv2/v3, SYSLOG, LLDP, NTP
<b>Power</b>			
Power Feeding	Passive PoE 38-55V compliant with 803.2at type 2 or direct +48V DC input	Passive PoE 38-55V compliant with 803.2at type 2 or direct +48V DC input	Passive PoE 38-55V compliant with 803.2at type 2 or direct +48V DC input
Max Power Consumption	17W without PoE out being used, and up to 30W with PoE out being used (using RW-9921-1059 POE)	17W without PoE out being used, and up to 30W with PoE out being used (using RW-9921-1059 POE)	17W without PoE out being used, and up to 30W with PoE out being used (using RW-9921-1059 POE)
<b>Mechanical</b>			
ODU Weight	695g	695g	425 g (Base)
ODU Size	Height: 11" / 28cm, Width: 4" / 10.2 cm, Depth: 2" / 5.1cm	Height: 11" / 28cm, Width: 4" / 10.2 cm, Depth: 2" / 5.1cm	Height: 5" / 13cm, Width: 5" / 12 cm, Depth: 2" / 5.5cm
Mounting	Wall or Pole	Wall or Pole	Wall or Pole
<b>Environmental</b>			
Operating Temperature	-30°C to 60°C	-30°C to 60°C	-30°C to 60°C
Humidity / ingress protection	IP-56*	IP-56*	IP-67 compliant
Safety	EN IEC 62368-1:2020+A11	EN IEC 62368-1:2020+A11	EN IEC 62368-1:2020+A11
EMC	FCC Part 15 Subpart B Class B; ICES-003 Issue 7 Class B; EN 301 489-1; EN 301 489-17	FCC Part 15 Subpart B Class B; ICES-003 Issue 7 Class B; EN 301 489-1; EN 301 489-17	FCC Part 15 Subpart B Class B; ICES-003 Issue 7 Class B; EN 301 489-1; EN 301 489-17

\* IP-56 once using enclosed sealing kit

# RADWIN

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