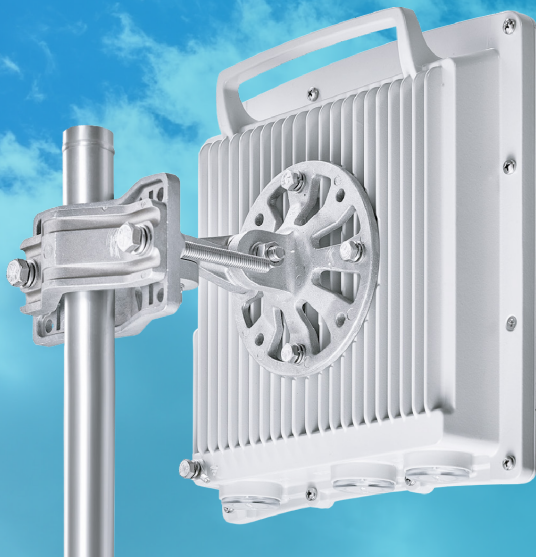# INFINET
wireless

InfiMAN Evolution

Robust Point-to-Multipoint wireless solutions with extensive networking functionality

| 4.9 – 6.425 GHz | 800 Mbps |

Applications

- ▶ WISP access infrastructure
- ▶ Last mile for video surveillance and public safety infrastructures
- ▶ Flexible connectivity for SCADA systems
- ▶ Internet access for difficult to reach locations
- ▶ Backhauling for public Wi-Fi networks

WISP's do not merely deliver connectivity; they manage a complex and challenging business. Their customers demand high performance, guaranteed data security and zero downtime. WISP engineers have to manage their operations using sophisticated network solutions from multiple vendors. Their competition is increasing whilst their ARPU is decreasing. At Infinet Wireless, we designed the **InfiMAN Evolution** family of solutions to address the exact needs of wireless professionals.

InfiMAN Evolution provides the ultimate solution for all types of professionals in the wireless technologies arena.

High performance = High revenue

The InfiMAN Evolution base station provides a high throughput and quality of service to a larger number of subscribers, ultimately helping to generate additional revenue streams and profits.

Integrated router for complicated network scenarios

The InfiMAN Evolution has a built-in router functionality, eliminating the cost of installing an additional SOHO router at the customer's premises. Potential cyber-security issues can be quickly addressed with a built-in firewall.

Reliable solution for demanding tasks

The family of solutions guarantees many years of uninterrupted operation, thanks to its completely sealed enclosure, which is resistant to moisture and salt damage. All InfiMAN Evolution products also come equipped with an advanced lightning protection.

Versatile model range of subscriber terminals

The subscriber units provided with this product family are dual band, able to operate in both the 5 GHz and 6 GHz frequency bands. They can be fitted with a range of integrated and external antennas to cater for both short distances as well as longer ones of 25 km and further.

Technical Specifications

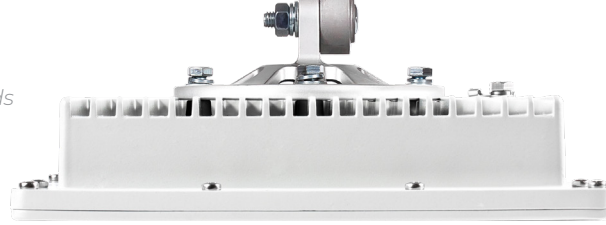| System component	InfiMAN Evolution Base Stations				
Model	**E5-BSQ**	**E5-BSI** **E6-BSI**	**E5-BSE** **E6-BSE**	**E5-BSI-L**	**E5-BSE-L**
Device description	High-capacity base station sector with an integrated beamforming antenna	High-capacity base station sector with an integrated antenna	High-capacity base station sector for an external antenna	Medium-capacity base station sector with an integrated antenna and 10 simultaneous subscribers	Medium-capacity base station sector for an external antenna and 10 simultaneous subscribers
Throughput	Up to 800 Mbps sector net throughput			Up to 360 Mbps sector net throughput	
Distance	Middle-to-long range (30 km)	Middle range (20 km)	Long range (40+ km)	Middle range (20 km)	Long range (40+ km)
Frequency Bands / Antenna	E5-BSQ: 4.9 – 6.05 GHz / 21 dBi dual-pol integrated sector beamforming antenna 90°x8° (20° Az-steerable beam)	E5-BSI: 4.9 – 6.05 GHz / 16 dBi dual-pol integrated antenna 90°x8° E6-BSI: 6.05 – 6.425 GHz / 16 dBi dual-pol integrated antenna 90°x8°	E5-BSE: 4.9 – 6.05 GHz / connectorized antenna (2 x N-type (Female) connectors) E6-BSE: 6.05 – 6.425 GHz / connectorized antenna (2 x N-type (Female) connectors)	E5-BSI-L: 4.9 – 6.05 GHz / 16 dBi dual-pol integrated antenna 90°x8°	E5-BSI-L: 4.9 – 6.05 GHz / 16 dBi dual-pol integrated antenna 90°x8°
Radio	Radio technology: MIMO 2x2 with OFDM 64/128 Modulation types: BPSK 1/2 to QAM256 5/6 Duplex method: TDD Transmit power: up to 27 dBm Receiver sensitivity: -93 dBm Channel bandwidth: 5*/10*/20/40/80 MHz			Radio technology: MIMO 2x2 with OFDM 64/128 Modulation types: BPSK 1/2 to QAM256 5/6 Duplex method: TDD Transmit power: up to 27 dBm Receiver sensitivity: -93 dBm Channel bandwidth: 5*/10*/20/40 MHz	
Antenna	21 dBi dual-pol integrated sector beamforming antenna 90°x8° (20° Az-steerable beam)°	16 dBi dual-pol integrated sector antenna 90°x8°	2 x N-type (Female) connectors	16 dBi dual-pol integrated sector antenna 90°x8°	2 x N-type (Female) connectors
Wired interfaces	1x Gigabit Ethernet port (10/100/1000 Base-T), RJ-45 connector 1x SFP port 1x SYNC port				
Power consumption	Consumption: Up to 30 W Power options: 90-240 VAC @ 50/60 Hz ±43..56 VDC 802.3at or Proprietary PoE				
Form Factor and Dimensions	Outdoor Unit (ODU) E5-BSQ 21 dBi antenna 371 x 371 x 90 mm, 4.4 kg	Outdoor Unit (ODU) E5-BSI or E6-BSI 16 dBi antenna 371 x 371 x 90 mm, 4.4 kg	Outdoor Unit (ODU) E5-BSE or E6-BSE External antenna 240 x 248 x 87 mm, 2.2 kg	Outdoor Unit (ODU) E5-BSI-L 16 dBi antenna 371 x 371 x 90 mm, 4.4 kg	Outdoor Unit (ODU) E5-BSE-L External antenna 240 x 248 x 87 mm, 2.2 kg
	Indoor Unit IDU-BS-G (60W) 151 x 62 x 38 mm, 0.32 kg				

* Roadmap item

System component	InfiMAN Evolution Subscriber Terminals				
Model	E5-ST18 E6-ST18	E5-ST23	E5-ST25 E6-ST25	E5-ST28 E6-ST28	E5-STE E6-STE
Device description	Integrated antenna subscriber terminal unit	Integrated antenna subscriber terminal unit	Integrated antenna subscriber terminal unit	Integrated antenna subscriber terminal unit	External antenna subscriber terminal unit
Throughput	Up to 670 Mbps				
Distance	Short range (5-10 km)	Middle range (12-15 km)	Middle-to-long range (15-20 km)	Long range (25+ km)	Long range (30+ km)
Frequency Bands / Antenna	E5-ST18: 4.9 – 6.05GHz / 18 dBi dual-pol integrated antenna E6-ST18: 4.9 – 6.425 GHz / 18 dBi dual-pol integrated antenna	E5-ST23: 4.9 – 6.05GHz / 23 dBi dual-pol integrated antenna	E5-ST25: 4.9 – 6.05GHz / 25 dBi dual-pol integrated antenna E6-ST25: 4.9 – 6.425 GHz / 25 dBi dual-pol integrated antenna	E5-ST28: 4.9 – 6.05GHz / 28 dBi dual-pol integrated antenna E6-ST28: 4.9 – 6.425 GHz / 28 dBi dual-pol integrated antenna	E5-STE: 4.9 – 6.05GHz / connectorized antenna (2 x N-type connectors) E6-STE: 4.9 – 6.425 GHz / connectorized antenna (2 x N-type connectors)
Radio	Radio technology: MIMO 2x2 with OFDM 64/128 Modulation types: BPSK 1/2 to QAM256 5/6 Duplex method: TDD Transmit power: Up to 25 dBm Receiver sensitivity: -91 dBm Channel bandwidth: 5*/10*/20/40/80 MHz				
Wired interfaces	1 x Gigabit Ethernet (10/100/1000 Base-T) RJ-45 connector				
Power consumption	Consumption: Up to 15 W Power options: 110-240 VAC @ 50/60 Hz ±43..56 VDC, 802.3at or Proprietary PoE				
Form Factor and Dimensions	Outdoor Unit (ODU) E5-ST18 or E6-ST18 18 dBi antenna	Outdoor Unit (ODU) E5-ST23 23 dBi antenna	Outdoor Unit (ODU) E5-ST25 or E6-ST25 25 dBi antenna	Outdoor Unit (ODU) E5-ST28 or E6-ST28 28 dBi antenna	Outdoor Unit (ODU) E5-STE or E6-STE External antenna
	188 x 188 x 45 mm, 1.3 kg	305 x 305 x 66 mm, 1.75 kg	350 x 350 x 71.5 mm, 2.3 kg	600 x 600 x 68 mm, 5.8 kg	188 x 190 x 86 mm, 1.2 kg
	Indoor Unit IDU-CPE-G(24W) 97x53.5x33.5 mm, 0.133 kg				

* Roadmap item

Features

Radio

Voice/RTP Aware Superpacketing

DFS

Automatic Bitrate Control

Automatic Transmit Power Control

Automatic Distance Learning

Channel Time Adjustment

Spectrum Analyzer mode

Channel testing tools

Networking

Ethernet-over-IP, IP-over-IP tunneling

ARP protocol support

MAC/IP filtering

Full-fledged 2nd layer switch

RIPv2 / OSPFv2 /static routing

L2/L3 Firewall

NAT (multipool, H.323-aware)

DHCP client/server/relay

Standard compliance

Radio

– ETSI EN 301 893 v.2.1.1

– ETSI EN 302 502 v.2.1.3

– FCC part 15.407

EMC

– ETSI EN 301 489-1 v.2.2.3

– ETSI EN 301 489-17 v.3.2.4

– FCC Part 15 Class B

Safety

– EN 62368-1:2014+A11:2017

– EN 60950-22:2017

– EN 62311:2008

RoHS (pending)

– RoHS3 Directives 2015/863/EU

Quality-of-service

17 priority queues

IEEE 802.1p support

IP TOS / DiffServ support

Full voice support

Traffic limiting (absolute, relative, mixed)

Traffic redirection

Environmental

Outdoor Units: -40..+60°C, can be extended to -55..+60°C (models with "t" index in PN),
100% humidity, condensing

Indoor Unit: 0..+40°C,
95% humidity, non-condensing

IP66/IP67

Security features

Storm / flood protection

Password protection

Secure command-line access via SSH protocol

Product Highlights

- ▶ Single system covering multiple bands as one subscriber terminal operates in 4.9-6.4 GHz frequency bands

- ▶ Thanks to a built-in firewall and rich security features, traffic security is under your full control

- ▶ The most comprehensive networking feature set: full-fledged L2 switch supporting VLAN, Q-in-Q, STP, static and dynamic routing

- ▶ Base station sectors with smart beamforming technology supported to increase capacity two-fold and improve interference and noise immunity

- ▶ Advanced Quality-of-Service and Traffic Shaping features for in-depth service packages design

- ▶ Unique network reliability and management capabilities through proprietary MINT network architecture

- ▶ Backward compatibility with InfiMAN 2x2 family units

- ▶ Cost-effective base station models E5-BSI-L and E5-BSE-L for low-density sectors