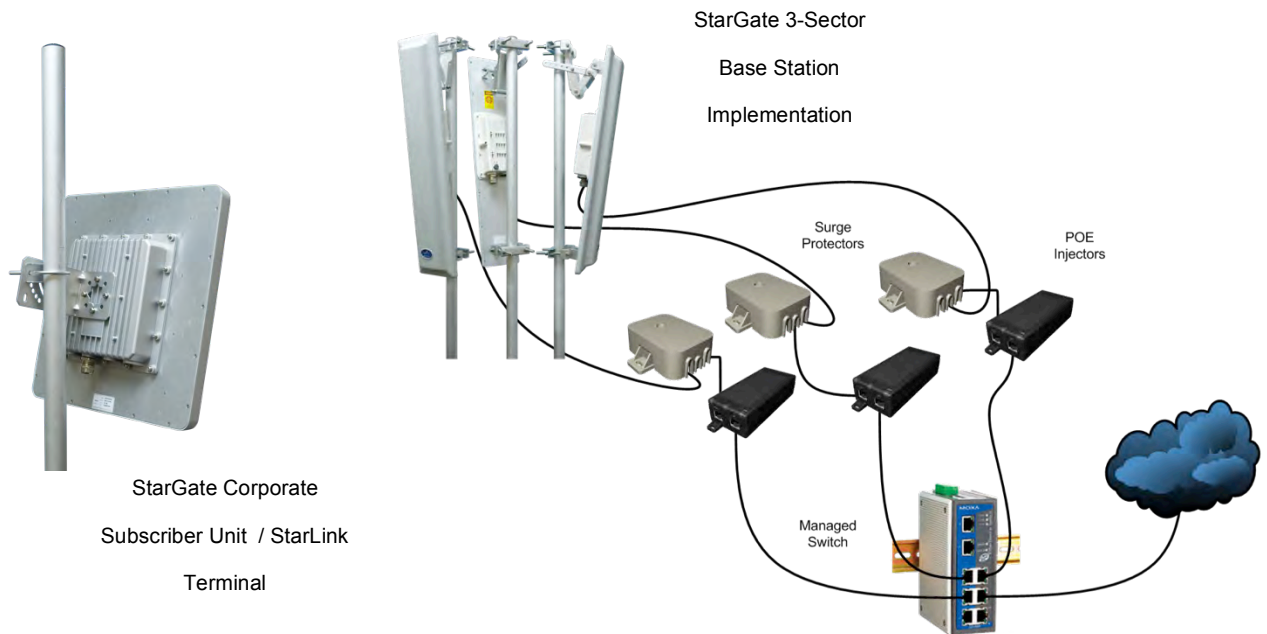




# StarGate / StarLink 3.5G

High Capacity Access Radios



The StarGate PMP and StarLink PTP High Capacity Access Radios provide up to 150 Mbps Ethernet connectivity cost-effectively using MIMO and OFDM techniques.

## Introduction

The StarGate PMP / StarLink PTP radio system is a hi-power, 2x2 MIMO radio with enhanced performance. It utilizes the advantages of OFDM modulation, MIMO technology and Time Division Multiple Access (TDMA) protocol to provide exceptional range and speed (100+Mbps real TCP) performance.

Optional GPS Synchronization provides precision synchronization and timing to eliminate co-location interference and enhance frequency re-use.

The StarGate / StarLink TDMA protocol allows each client to send and receive data using a pre-designated time slot eliminating hidden node collisions and maximizing airtime efficiency, improving latency, throughput and scalability performance compared with other outdoor systems in its class.

## Applications

- Connecting Communities - Cost-effective access within communities, municipalities and educational institutions specifically in rural low-density areas
- Security & Surveillance - Wireless connectivity for High Definition cameras in applications that require high bandwidth and low jitter.
- Last Mile Access – Fixed Broadband services for residential, business or public enterprise users, with secure access differentiation. LOS and near LOS (NLOS) connectivity in diverse environments such as building-cluttered or foliage obstructed urban or rural areas.
- Enterprise Network - Leased line replacement for cost-effective connectivity, providing services between nodes in enterprises, campuses and remote sites.

# The StarGate PMP / StarLink PTP provide best in class throughput for Fixed Wireless Access applications

## Specifications

StarGate BSS35C(G)	BS sector with 17 dBi, 90° or 120° Integrated Antenna (optional GPS Synch)
StarGate CSU35C	Corporate Subscriber Unit with 19dBi Integrated Antenna
StarLink P2P35(G)[EA]	P2P Radio Unit with 19dBi Integrated Antenna (with GPS Synch) [External Antenna]

### Radio Specifications

Frequency Bands	3.4GHz to 3.7GHz      Synthesizer Step Size: 250 kHz		
Channel Bandwidth	3, 5, 8, 10, 20, 25, 30 and 40 MHz		
Modulation	2x2 MIMO-OFDM (BPSK/QPSK/16QAM/64-QAM), Adaptive Modulation & Coding		
Duplex and Access	TDD with adaptive TDMA protocol		
Modulation & Coding	MCS8-10 (30-90 Mbps)	MCS11-13 (120-240Mbps)	MCS14-15 (270-300Mbps)
Tx Power	28dBm ±2dB	25dBm-28dBm ±2dB	22dBm-24dBm ±2dB
Rx Sensitivity (10 <sup>-6</sup> BER)	-90dBm to -95dBm	-79dBm to -87dBm	-75dBm to -78dBm

### Traffic/Networking Specifications

Capacity	Up to 150 Mbps Aggregate throughput (Layer-2 TCP) per Sector / TDMA time slot
Ethernet Interface	10/100 BASE-TX (Cat 5, RJ-45) Ethernet
QoS / Routing	Intelligent QoS – priority given to voice/video for seamless access / Static Routing

### Management

Management options	Webpage, AirControl NMS or Element Management System (North Bound I/F option)
Protocol	SSH, HTTPS, SNMPv1, SNMPv3
Spectrum Analyzer	Advanced Spectrum Analyzer Functionality: Waterfall, Waveform & Real-time views

### Power

Power Feed	All power provided by Power over Ethernet units (PoE)		
Power consumption	BSS35: 13.5W	CSU35: 13.5W	P2P35: 13.5W

### Environmental

Operating / Storage	-35°C to +60°C with 100% Condensing humidity, IP67 / -55°C to +85°C
Shock & Vibration	ETSI 300-019-1.4

### Mechanical

Construction	Sealed die-cast aluminum housings with Gore® Vent pressure equalizer		
Dimensions (w x h x d)	BSS35: 140 x 700 x 120 mm	P2P/CSU35: 400 x 400 x 100 mm	
Weight	BSS35: 4.0kg (Including Antenna)	P2P/CSU35: 3.5 kg (Including Antenna)	

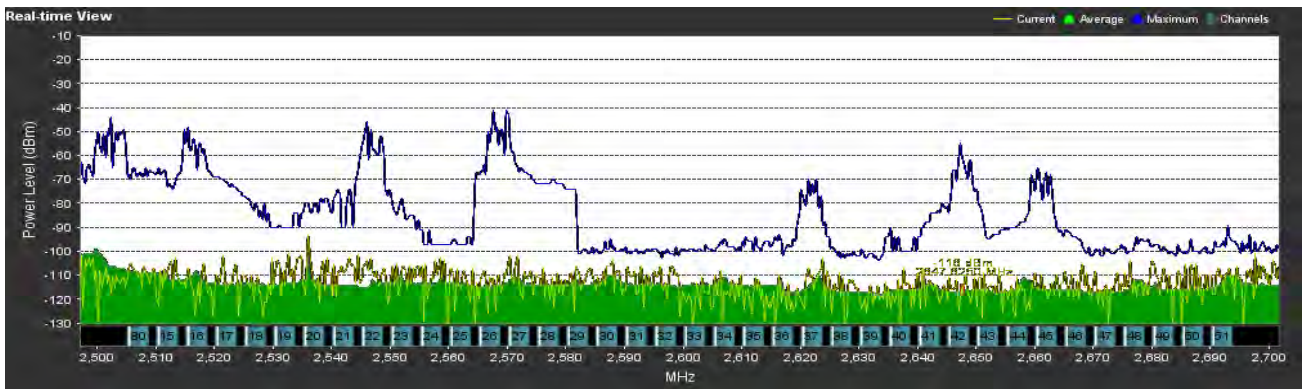
### Standards

FCC	FCC part 90Y, 47CFR Class B, Part15, Sub-part B
ETSI/ITU	EN302 502, EN 301 893, EN302 326-2 v1.2.2, 250kD7W, EN300 386, EN 301 489-1, EN 301-489-4
Regulatory	ICASA TA-2013/1355



## Features

- Fixed PMP / PTP solution for up to 300 Mbps air-rate per sector (150+Mbps layer 2 TCP)
- StarGate PMP can support more than 120 clients per sector
- Range up to 30km (PMP) and up to 50km (PTP)
- Robust air interface with MIMO and OFDM technology for high capacity with NLOS performance
- High spectral efficiency (up to 7.5bits/Hz)
- Management
  - Highly-secure remote management via SSL, SSH and SNMPv1 and SNMPv3
  - Compatible with AirContol NMS for basic configuration option
- Networking Features:
  - Intelligent QoS gives priority to voice/video for seamless access
  - Traffic Shaping – Up and down stream traffic shaping per client
  - Provides AES encryption technology
  - MAC, Ethernertype and IP address packet filtering for granular network security.
- Built in real-time spectrum analyzer (standard with all equipment)
- Integrated Lightning Protection
- Low Power Consumption: Base Station 12.5W per sector, Subscriber Station 12.5W



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