ST-QM All Outdoor Radio shown with a 1FT diameter antenna.

Technical Summary

- Frequency Bands: 18 / 23 GHz
- Channel BW
    40/50/80/100/150 MHz (18GHz)
    50/100/150 MHz (23GHz)
- Tx Power: 17 to 26 dBm
- Modulation: QPSK to 256 QAM
- Temp Range: -40 to 60 C
- Interfaces:
    (1) GE RJ-45 copper port
    (4) GE SFP ports for fiber inputs
- Power Consumption: 70W, Max.
- Optional POE input
- Dimensions: 12" x 7.25" (dia x depth)
- Weight: 14 lbs

Feature Summary

- Ultra high capacity — 1,000 Mbps (1 Gbps), Full Duplex link
- Internal 5-port gigabit Ethernet switch
- Proprietary channel bonding — up to 150 MHz bandwidth
- Modulation up to 256QAM for maximum bit efficiency
- Optional 256-bit AES encryption
- (4) SFP Ethernet ports for maximum flexibility in interface choices
- Adaptive Coding/Modulation (ACM).
- Full Capacity model — no need for costly key upgrades in the future

Product Description

The ST-QM Series represents the top end of licensed microwave products available in the market today. In a single radio+antenna system, the radio link features a true 1 Gbps full duplex (2 Gbps aggregate) throughput without resorting to complex multi-radio N+0 configuration.

The single unit gigabit operation has been available with E-Band systems at 70/80GHz, but with a much shorter link distance. ST-QM operating at 18/23 GHz now will allow customers to extend the same gigabit rate to long distance applications without compromising the link availability up to 99.999%.to 5km in most rain regions and the built-in ACM feature will protect the link reliability for longer link distances.

The compact form factor to achieve the gigabit rate means cost savings due to easy equipment purchase and simplified tower logistics due to smaller, lighter tower loading and lower tower lease expenses.

The ST-QM Series features an internal 5 port GigE switch with one RJ-45 port and four SFP ports for maximum flexibility in interface choices. IP66-based enclosure allows for outdoor deployments with a wide temperature range.

The QM Series radio features high output power up to 26dBm for long distance with a variety of frequency band and channel BW options. The addition of 256QAM modulation adds capacity for shorter-hop applications with full rate gigabit connection. The ACM feature will ensure that the radio will automatically switch to a more robust modulation in the event that the local RF condition worsens, thus preserving the link connection in most cases.

Network Management can easily be performed with the built-in web GUI with either HTTP or secure HTTPS protocols. SNMP support is provided so that the radio systems can be easily integrated in the customer's NMS environment.

TECHNICAL SPECIFICATIONS

	18 GHz	23 GHz
Frequency Band	17.7 — 19.7 GHz	21.2 — 23.6 GHz
T/R Spacing	1560 MHz	1200 MHz
Frequency Plan	ITU-R F.595-6, Annex 2 / FCC Part 101.147	ITU-R F.637-3, Annex 4 / FCC Part 101.147
Data Rate & Modulation QPSK 16QAM 64QAM 256QAM	40/50/80/100/150 MHz 68/85/136/170/255 Mbps 136/170/272/340/509 Mbps 204/255/408/509/764 Mbps 272/340/543/679/1000 Mbps	50/100/150 MHz 85/170/255 Mbps 170/340/509 Mbps 255/509/764 Mbps 340/679/1000 Mbps
Tx Power Output QPSK 16QAM 64QAM 256QAM	26 dBm 24 dBm 20.5 dBm 17 dBm	25 dBm 24 dBm 20.5 dBm 17 dBm
Rx Sensitivity @1E-6 QPSK 16QAM 64QAM 256QAM	40/50/80/100/150 MHz -80/-79/-77/-76/-74 dBm -74/-73/-71/-70/-68 dBm -68/-67/-65/-64/-62 dBm -62/-61/-59/-58/-56 dBm	50/100/150 MHz -79/-76/-74 dBm -73/-70/-68 dBm -67/-64/-62 dBm -61/-58/-56 dBm
Forward Error Correction	Reed-Solomon RS(204,188)	
RF Protocol	Adaptive Coding and Modulation (ACM)	
Ethernet	(1) RJ-45 1000Base-T, (4) SFP ports supporting fiber SM & MM interface	
Frame Size	Jumbo packets up to 10,000 bytes, per port rate limiting	
Management	Web-based HTTP / HTTPS, SNMP support with MIB-II, Syslog event support, RADIUS	
Security	AES 256 bit encryption (Optional)	
Power	-48 V DC input (-38 to -70 V DC range), Proprietary POE option	
Size & Weight	12" diameter x 7.25 depth (30 x 19 cm); 14 lbs (6.3 kg)	
Environmental	Operating temperature –40 to +60C, EN 300 019 Class 4.1 Altitude up to 4,500m, IP66 Enclosure	
Regulatory	UC FCC Part 101; EMC/EMI FCC Part15, Class B	