



ST-QM Series

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 18/23GHz 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 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 65 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

TECHNICAL SPECIFICATIONS

Model	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	40/50/80/100/150 MHz	50/100/150 MHz
QPSK	68/85/136/170/255 Mbps	85/170/255 Mbps
16QAM	136/170/272/340/509 Mbps	170/340/509 Mbps
64QAM	204/255/408/509/764 Mbps	255/509/764 Mbps
256QAM	272/340/543/679/1000 Mbps	340/679/1000 Mbps
Tx Power Output		
QPSK	26 dBm	25 dBm
16QAM	24 dBm	24 dBm
64QAM	20.5 dBm	20.5 dBm
256QAM	17 dBm	17 dBm
Rx Sensitivity @1E-6	40/50/80/100/150 MHz	50/100/150 MHz
QPSK	-80/-79/-77/-76/-74 dBm	-79/-76/-74 dBm
16QAM	-74/-73/-71/-70/-68 dBm	-73/-70/-68 dBm
64QAM	-68/-67/-65/-64/-62 dBm	-67/-64/-62 dBm
256QAM	-62/-61/-59/-58/-56 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	

TECHNICAL SPECIFICATIONS

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 +65C, EN 300 019 Class 4.1 Altitude up to 4,500m, IP66 Enclosure
Regulatory	UC FCC Part 101; EMC/EMI FCC Part15, Class B

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