



WAVE RELAY® MANET
RF MODULES



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TECHNOLOGY FOR EXTREME ENVIRONMENTS



WWW.STEATITE-COMMUNICATIONS.CO.UK



10W HIGH POWER L-BAND RF MODULE



The High Power L-Band Interchangeable Frequency Module delivers increased output power and greater power efficiency to Military and Overseas customers. This module also provides increased noise immunity in congested and contested RF environments.

Frequency Range	1350 - 1390 MHz
RF Modulation	OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Chains	3 Independent RF Chains
TX/RX Operating Modes	SISO, 2x2 & 3x3 MIMO
Channel Bandwidth	5, 10 and 20 MHz
Peak TCP Throughput	Up to 150 Mbps
MIMO Techniques	Maximal Radio Combining Space-Time Block Coding Spatial Multiplexing
Max. Aggregate Transmit Power	10W (3.3W per RF Chain)
Antenna Ports	(3) SMP (50 Ohms)
TX Power Control	35 to 16.5 dBm, 0.5 dB per step
Power Control Accuracy	+/- 2 dB

Frequency Accuracy	+/- 4 ppm, max.
Minimum Receiver Sensitivity	-98 dBm (not absolute)
Max. RF Input	-20 dBm
Max. RF Input without Damage	+10 dBm
Max. Peak Power Consumption, TX	TBC
Power Consumption, RX	TBC
Operating Temperature	-40°C to +85°C (-40°F to 185°F)
ESD Protection	+/- 8KV Contact discharge, per IEC 6100-4-2 +/-15KV Air discharge, per IEC 61000-4-2
Dimensions	9.7 x 6.6 x 1.3 cm (3.8 x 2.6 x 0.5 in.)
Weight	130 g (4.6 oz.)





BAS-BAND RF MODULE



The BAS Band Interchangeable Frequency Module is designed for use by TV and radio stations in applications such as live event video streaming and electronic news-gathering. The BAS Band module allows broadcasters to use their licensed spectrum without monthly fees.

Frequency Range	2025 - 2150 MHz
RF Modulation	OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Chains	3 Independent RF Chains
TX/RX Operating Modes	SISO, 2x2 & 3x3 MIMO
Channel Bandwidth	5, 10 and 20 MHz
Peak TCP Throughput	Up to 120 Mbps channel
MIMO Techniques	Maximal Radio Combining Space-Time Block Coding Spatial Multiplexing
Max. Aggregate Transmit Power	6W (2W per RF Chain)
Antenna Ports	(3) SMP (50 Ohms)
TX Power Control	33 to 16.5 dBm, 0.5 dB per step
Power Control Accuracy	+/- 2 dB

Frequency Accuracy	+/- 4 ppm, max.
Minimum Receiver Sensitivity	-95 dBm (not absolute)
Max. RF Input	-5 dBm
Max. RF Input without Damage	+10 dBm
Max. Peak Power Consumption, TX	30.8W
Power Consumption, RX	4W
Operating Temperature	-40°C to +85°C (-40°F to 185°F)
ESD Protection	+/- 8KV Contact discharge, per IEC 6100-4-2 +/-15KV Air discharge, per IEC 61000-4-2
Dimensions	9.7 x 6.6 x 1.3 cm (3.8 x 2.6 x 0.5 in.)
Weight	130 g (4.6 oz.)





10W HIGH POWER S-BAND RF MODULE



The High Power S-Band Interchangeable Frequency Module delivers increased output power and greater power efficiency to Federal and Commercial customers. This module also provides increased noise immunity in congested and contested RF environments.

Frequency Range	2200 - 2500 MHz
RF Modulation	OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Chains	3 Independent RF Chains
TX/RX Operating Modes	SISO, 2x2 & 3x3 MIMO
Channel Bandwidth	5, 10 and 20 MHz
Peak TCP Throughput	Up to 150 Mbps
MIMO Techniques	Maximal Radio Combining Space-Time Block Coding Spatial Multiplexing
Max. Aggregate Transmit Power	10W (3.3W per RF Chain)
Antenna Ports	(3) SMP (50 Ohms)
TX Power Control	33 to 16.5 dBm, 0.5 dB per step
Power Control Accuracy	+/- 2 dB

ISM Band Certifications	FCC Part 15 Subpart C, 15.247 RSS-247, Issue 1, May 2015 RSS-GEN, Issue 4, November 2014 ANSI C63.10: 2013 ANSI C63.4: 2014
Frequency Accuracy	+/- 4 ppm, max.
Minimum Receiver Sensitivity	-98 dBm (not absolute)
Max. RF Input	-20 dBm
Max. RF Input without Damage	+10 dBm
Max. Peak Power Consumption, TX	40W (3 Chains @10W)
Power Consumption, RX	1.8W (3 Chains)
Operating Temperature	-40°C to +85°C (-40°F to 185°F)
ESD Protection	+/- 8KV Contact discharge, per IEC 6100-4-2
Dimensions	9.7 x 6.6 x 1.3 cm (3.8 x 2.6 x 0.5 in.)
Weight	130 g (4.6 oz.)





LOWER C-BAND RF MODULE



The Lower C-Band Interchangeable Frequency Module is ideal for use by NATO (4.4 – 4.6 GHz), Federal (4.6 – 4.8 GHz), and Public Safety (4.9 GHz) customers. The Lower C-Band module allows customers to make use of less congested spectrum than S-Band.

Frequency Range	4400 - 5000 MHz
RF Modulation	OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Chains	3 Independent RF Chains
TX/RX Operating Modes	SISO, 2x2 & 3x3 MIMO
Channel Bandwidth	5, 10 and 20 MHz
Peak TCP Throughput	Up to 120 Mbps
MIMO Techniques	Maximal Radio Combining Space-Time Block Coding Spatial Multiplexing
Max. Aggregate Transmit Power	6W (2W per RF Chain)
Antenna Ports	(3) SMP (50 Ohms)
TX Power Control	33 to 16.5 dBm, 0.5 dB per step
Power Control Accuracy	+/- 2 dB

ISM Band Certifications	FCC Part 15 Subpart C, 15.247 RSS-247, Issue 1, May 2015 RSS-GEN, Issue 4, November 2014 ANSI C63.10: 2013 ANSI C63.4: 2014
Frequency Accuracy	+/- 4 ppm, max.
Minimum Receiver Sensitivity	-98 dBm (not absolute)
Max. RF Input	-10 dBm
Max. RF Input without Damage	+10 dBm
Max. Peak Power Consumption, TX	50W
Power Consumption, RX	5W
Operating Temperature	-40°C to +85°C (-40°F to 185°F)
ESD Protection	+/- 8KV Contact discharge, per IEC 6100-4-2
Dimensions	10.3 x 6.6 x 1.4 cm (4.0 x 2.6 x 1.4 in.)
Weight	197 g (6.98 oz.)





UPPER C-BAND RF MODULE



The Upper C-Band Interchangeable Frequency Module is ideal for use by commercial customers in the unlicensed ISM (5.1 – 6 GHz) band. Additionally, the Upper C-Band module has FCC Part 15 and Japan Type certifications.

Frequency Range	5100 - 6000 MHz
RF Modulation	OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Chains	3 Independent RF Chains
TX/RX Operating Modes	SISO, 2x2 & 3x3 MIMO
Channel Bandwidth	5, 10 and 20 MHz
Peak TCP Throughput	Up to 120 Mbps
MIMO Techniques	Maximal Radio Combining Space-Time Block Coding Spatial Multiplexing
Max. Aggregate Transmit Power	4W (1.3W per RF Chain)
Antenna Ports	(3) SMP (50 Ohms)
TX Power Control	31 to 16.5 dBm, 0.5 dB per step
Power Control Accuracy	+/- 2 dB

Frequency Accuracy	+/- 4 ppm, max.
Minimum Receiver Sensitivity	-95 dBm (not absolute)
Max. RF Input	-10 dBm
Max. RF Input without Damage	+10 dBm
Max. Peak Power Consumption, TX	50W
Power Consumption, RX	2.5W
Operating Temperature	-40°C to +85°C (-40°F to 185°F)
FCC Certification	FCC Part 15, Subpart B FCC Part 15, Subpart E, 15.407, for UNII band I and III
Japan Type Certification	Article 2, Paragraph 1, Item 72 Category RB (Unmanned Mobile Image Transmission System)
ESD Protection	+/- 8KV Contact discharge, per IEC 6100-4-2
Dimensions	9.7 x 6.6 x 1.3 cm (3.8 x 2.6 x 0.5 in.)
Weight	130 g (4.6 oz.)





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