

**Wide range of standard
Ku-band and Ext-Ku-band
high power SSPA
from 16–100 Watts**



US Monolithics provides microwave products and a comprehensive, advanced technology approach to your high volume communication systems. We work directly with you to optimize quality, cost, and performance for your microwave products. We bring you a combination of top-level, high frequency microwave systems knowledge and the experience to develop cost-effective, highly integrated custom MMIC chip sets and assemblies. The result is a high quality product, designed for high volume manufacturability and the lowest possible cost.

The US Monolithics ODU group can provide all your standard satellite communications outdoor units. We carry a complete line of standard Ku-band and C-band products including solid state block-up converters with power levels to 10 Watts, low-noise block-down converters for all frequency bands, and a full range of antennas up to 2.4-meter diameters.

Our capabilities include:

- Design and manufacture of high volume satcom and terrestrial microwave products
- Optimization of quality, cost, and performance
- Assessment of top-level system design options and tradeoffs
- Development of highly integrated custom MMIC chip sets and assemblies
- Design assurance for high volume manufacturability and the lowest possible cost
- Diverse technical staff, including the corporate resources of ViaSat

FEATURES

Frequency Configurations

- Available in Ku-Band and Ext Ku-Band configurations
- 14.00 to 14.50 GHz (Ku-Band) RF frequency
- 13.05 GHz local frequency
- 13.75 to 14.25 GHz (Ext Ku-Band) RF frequency
- 12.8 GHz (Ext) local frequency

Availability

- 16 W (+41 dBm min) output power
- 20 W (+42 dBm min) output power
- 25 W (+43 dBm min) output power
- 30 W (+44 dBm min) output power
- 50 W (+46 dBm min) output power
- 60 W (+47 dBm min) output power
- 100 W (+49 dBm min) output power
- Available in N-type and F-type connectors

SPECIFICATIONS

FREQUENCY RANGE

	Input (MHz)	Output (GHz)	LO (GHz)
Standard	950 to 1450	14.00 to 14.50	13.05
Extended	950 to 1450	13.75 to 14.25	12.8

TRANSMIT

Power	Output P1 dB (dBm) min	Gain (dB) typ @25°C	Power Consumption (Typ)
16 W	41	70	170 W
20 W	42	70	250 W
25 W	43	70	300 W
30 W	44	70	350 W
50 W	46	80	600 W
60 W	47	80	650 W
100 W	49	80	1200 W

INTERFACES

Gain Flatness for Full BW	±2.75 dB max
Gain Stability Over Temperature	±2.5 dB max
Spurious @P1 dB Output	-50 dBc max
Output Phase Noise @ 1kHz offset	-70 dBc/Hz
@ 10kHz offset	-80 dBc/Hz
@ 100kHz offset	-90 dBc/Hz
Intermodulation Product (with 2 CXR @1dB total back off)	-27dBc max
Input VSWR	2.0:1 max
IF Input Interface	50Ω N-Type Female 75Ω F-Type Female
Output Interface	WR-75 Grooved 50Ω N-Type Female

ENVIRONMENTAL

Operating Temperature	-40°C to +55°C
Relative Humidity	up to 100%

EXTERNAL REFERENCE

Frequency	10 MHz
Phase Noise @ 100Hz offset	-135 dBc/Hz
@ 1kHz offset	-140 dBc/Hz
@ 10kHz offset	-143 dBc/Hz
Power Level	-10 dBm to +5 dBm

MONITOR AND CONTROL (OPTIONAL)

Interface	MS3102R20-29S
SSPA Output Power Detect	Yes
SSPA On/Off Control	Yes

POWER SUPPLY

AC Input Voltage for Booster	220 Vac or 110 Vac +48 Vdc (Optional) (36V – 72V)
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MECHANICAL

Dimensions	(16 W)	(20 W)	(25 W)	(30 W)	(50 W)	(60 W)	(100 W)
	276.66L x 243.38W x 134.62H mm	276.66L x 243.38W x 221H mm	276.66L x 243.38W x 221H mm	276.66L x 243.38W x 221H mm	322.58L x 271.78W x 271.78H mm	322.58L x 271.78W x 271.78H mm	419L x 391W x 233.68H mm
Weight	7 kg	10 kg	10 kg	10 kg	14 kg	14 kg	37 kg
	(16W)	(20W)	(25W)	(30W)	(50W)	(60W)	(100W)

Note: Specifications are subject to change without notice. Other power levels available; consult factory.

PART NUMBER GUIDE

Example To order Ku-Band High Power BUC USBB48N01:

USBB48N01

Type	Freq Band	Power Level	Connector	Operating Voltage Range	Voltage Input Port
B – BUC	A – Ka	30 – 1W	F – F Type	0 – +38 to +60V (+48V DC)	0 – Same as IF Signal
L – LNB	B – Ku	33 – 2W	N – N Type	1 – +30V DC	1 – MS Connector
	C – C	35 – 3W		2 – +24V DC (18 to 28V)	2 – TNC Connector
	D – Ext Ku	36 – 4W		3 – +12V DC	
	E – Ext C	37 – 5W		4 – AC	
		39 – 8W			
		40 – 10W			
		42 – 16W			
		43 – 20W			
		44 – 25W			
		45 – 30W			
		46 – 40W			
		47 – 50W			
		48 – 60W			
		49 – 80W			
		50 – 100W			
		51 – 125W			
		52 – 150W			
		53 – 200W			
		54 – 250W			

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