



MAXWELLON GMUC-C

2~4GHz /4~8GHz /8~18GHz /18~26.5GHz /26.5~40GHz /18~40GHz

Microwave Upconverter

2023

GMUC-C Series Microwave Upconverter is a broadband frequency converter that is dedicated for satellite communication. It has a high performance, high reliability and an octave covered by RF signal. Its frequency step is precise and accurate to 1Hz with a variety of IF and signal bandwidth choices. GMUC-C series is equipped with functions like self-testing and combination alarm which is suitable for long-time uninterrupted use, guaranteed safety and reliability.

GMUC-C series microwave upconverter is mainly designed for satellite communication system, signal monitoring system, and electronic countermeasure system with an excellent phase noise, clutter suppression, and in-band flatness data. It is able to provide a transparent RF transmission channel to all videos or data communications. All programming commands can be set through a local panel or through network remotely. GMUC-C series microwave upconverter has a standard 2U size.

Applications: T&M Systems/Satellite Communications/MIMO

■ Key Feature

- Octave RF coverage (S, C, X, Ku, and Ka)
- 2GHz or above instantaneous signal bandwidth
- Amplitude Equalization and Group Delay
- Variety of commonly used IF and bandwidth combinations
- Excellent phase noise specification (40GHz): $\leq -100\text{dBc/Hz}@10\text{KHz}$
- Internal and external reference switching
- Remote programming
- Self-testing and combination alarm

■ Specifications

Output Characteristics	
Input Frequency Range	GMUC0204C: 2 to 4GHz
	GMUC0408C: 4 to 8GHz
	GMUC0818C: 8 to 18GHz
	GMUC1826C: 18 to 26.5GHz
	GMUC2640C: 26.5 to 40GHz
	GMUC1840C: 18 to 40GHz
Frequency Tuning Step Size	1Hz
IM3 Output	$\leq -36\text{dBc}$ (Δ 5MHz, Maximum Gain, Power Output: 2*0dBm)
Output VSWR	≤ 1.4 (GMUC0204C, GMUC0408C)
	≤ 1.5 (GMUC0818C, GMUC1826C, GMUC2640C)
	≤ 2.2 (GMUC1840C)
Output Impedance	50 Ω
RF Signal Monitoring	-20dBc (typ.)
Input Characteristics	
Input Frequency	70 \pm 20MHz, 140 \pm 40MHz, 0.72 \pm 0.25GHz, 1.2 \pm 0.25GHz, 1.2 \pm 0.5GHz, 1.8 \pm 1GHz (select between single or multiple IF outputs)
Maximum Power Input	+10dBm (Operating)
Input VSWR	≤ 1.4
Input Impedance	50 Ω

Transfer Characteristics		
Gain	0-30dB (minimum signal power output -100dBm or below, ATT110 support)	
Tuning Step Size	0.1dB	
Gain Resolution	≤±1dB	
Level Stability	≤±0.5dB/day at room temperature	
Gain Flatness	≤±0.3dB/40MHz, ≤±0.5dB/80MHz, ≤±1dB/500MHz, ≤±1.5dB/1000MHz, ≤±2dB/2000MHz, ≤±2dB/Full band	
Inband Frequency Clutter	Signal Related: ≤-60dBc (0dBm output, excluding output harmonics)	
	Signal Non-related: ≤-60dBm	
Group Delay (80% Signal Bandwidth)	Linear: ≤0.03ns/MHz	
	Parabola: ≤0.01ns/MHz ²	
	Jitter: ≤1ns	
AM/PM Conversion	≤0.1°/dB (Maximum gain, 0dBm output)	
Spectral Characteristics	Non-inverted	
RF Shutdown Feature	≥ 80dB	
Phase Noise (dBc/Hz)	@10Hz	≤ -50
	@100Hz	≤ -80(GMUC0204C, GMUC0408C, GMUC0818C); ≤ -75(GMUC1826C, GMUC2640C, GMUC1840C)
	@1kHz	≤ -105(GMUC0204C); ≤ -100(GMUC0408C); ≤ -95(GMUC1826C, GMUC2640C, GMUC1840C)
	@10kHz	≤ -110(GMUC0204C); ≤ -105(GMUC0408C); ≤ -102(GMUC0818C); ≤ -100(GMUC1826C, GMUC2640C, GMUC1840C)
	@100kHz	≤ -110(GMUC0204C); ≤ -105(GMUC0408C); ≤ -102(GMUC0818C); ≤ -100(GMUC1826C, GMUC2640C, GMUC1840C)
	@1MHz	≤ -115(GMUC0204C, GMUC0408C); ≤ -108(GMUC0818C, GMUC1826C); ≤ -105(GMUC2640C, GMUC1840C)
Reference Characteristics		
Internal Reference Frequency Stability	±2e-8 (0°C to +50°C, after 30min power on)	
Internal Reference Frequency Accuracy	0.05ppm	
Internal Reference Power Output	5±2dBm, 50Ω, 10MHz, Sine wave	
External Reference Power Input	5±2dBm, 50Ω, 10MHz, Sine wave	
Reference Phase Noise (dBc/Hz)	@10Hz	≤ -125
	@100Hz	≤ -140
	@1kHz	≤ -150
	@10kHz	≤ -155
	@100kHz	≤ -155
Physical Characteristics		
RF Output Port	2.92mm-K	
IF Input Port	SMA-K	
External Reference Input Port	BNC female	
Internal Reference Output Port	BNC female	
Control Interface	RJ-45 (TCP/IP over Ethernet) / RS422	
Power Supply	AC,176-264VAC, 45Hz-65Hz, Power consumption 60W	
Dimension	483mm*90mm *550mm (2U)	
Weight	15kg	
Environment		
Operating	Temperature: 0°C to +50°C, Humidify: up to 95% @30°C, Noncondensing, Height: 3000 meters	
Storage	Temperature: -30°C to +70°C, Humidify: up to 95% @40°C, Noncondensing, Height: 12000 meters, Shock and Vibration: Regular road transport/air transport	

■ Ordering Information

Models

Models	Name	Description
GMUC0204C	Microwave upconverter	2GHz to 4GHz
GMUC0408C	Microwave upconverter	4GHz to 8GHz
GMUC0818C	Microwave upconverter	8GHz to 18GHz
GMUC1826C	Microwave upconverter	18GHz to 26.5GHz
GMUC2640C	Microwave upconverter	26.5GHz to 40GHz
GMUC1840C	Microwave upconverter	18GHz to 40GHz

Standard Package

No.	Name	Qty.
1	Microwave Upconverter	1
2	Power Cord	1
3	Certificate of Calibration	1

Option

Models	Name	Description
GMUC-MA	IF/BW IF/Bandwidth	IF Input: 70±20MHz
GMUC-MB	IF/BW IF/Bandwidth	IF Input: 140±40MHz
GMUC-MC	IF/BW IF/Bandwidth	IF Input: 0.72±0.25GHz
GMUC-MD	IF/BW IF/Bandwidth	IF Input: 1.2±0.25GHz
GMUC-ME	IF/BW IF/Bandwidth	IF Input: 1.2±0.5GHz
GMUC-MF	IF/BW IF/Bandwidth	IF Input: 1.8±1GHz
GMUC-ATT110	ATT110	Minimum output of signal power down to -100dBm
GMUC-ST	Self-Testing and Combination Alarm	/



MAXWELLON

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