

High Power 270 – 300 GHz AMC Type 1213C-A

Product Description

1213x series of Amplifier/Multiplier Chains (AMCs) are designed to extend operation frequency of a microwave signal synthesizer or a sweeper, providing high performance sources for applications at MM-waves. The AMC applies ERAVANT High Power Amplifier Technology and ACST High Power Multiplier Technology resulting in best available performance with respect to output power, bandwidth and spectral purity.



Fig. 1: Optical view of the product

AMC output frequency is determined by the multiplication factor (n) of the input signal, while phase noise degradation (with respect to the input signal) adheres to $20 \log(n)$.

Based on a modular design, each AMC from this series is integrated in an esthetic metallic housing featuring standard input and output interfaces. They are fixed tuned and do not require any adjustment for proper operation. All required voltage biases and current sources are provided by an integrated Power Supply Unit (PSU). The module only needs electrical powering of 15-18V DC, which is provided by a universal AC/DC adapter, usually included in delivery package.

Options like Horn antenna (for coupling the output signal to free space), Waveguide sections compatible with the output RF-port may be integrated on customer request.

Type 1213C-A module requires input signal within frequency range of 11.25 to 12.5 GHz, generating output signal within frequency range of 270 to 300 GHz. In addition to standard options for 1213x series, a variable 1-25dB attenuator is offered for this type for user-controlled output power.

Additional options are passive frequency multipliers, which can easily be connected directly to the RF-output of the module to extend the frequency of the output signal to higher frequency bands.

One multiplier is available:

- A Tripler of type 229C for extending output signal to 810-900GHz frequency range (TBC).

Product Highlights

- High output power
- Broadband frequency range
- Flat frequency response
- Modular design
- Adjustable height control of housing.

Optional features (to be indicated in PO)

- Pyramidal horn antenna
- 25/50mm output waveguide sections.
- TTL-port for ON/OFF modulation
- Variable Attenuator typically ~1-25dB
- Frequency Tripler of type: 229C (810-900GHz) (TBC).

Tab. 1: Technical Specifications

Technical Specifications	Minimum	Typ.	Maximum
Output Frequency (GHz)	270		300
Output Power (dBm)*	15	17	19
Multiplication factor (n)		24	
Output Port (UG 387/U-M)		WR-3.4	
Input Frequency (GHz)	11.25		12.5
Input Power (mW)		1	3
Input Port (Coaxial)		SMA (female)	
TTL Port Voltage (V) (Optional)	0 (ON-Mode)		5 (OFF-Mode)
TTL Port Speed (kHz) (Optional)		1	10
Variable Attenuator (dB) (Optional)	1.2		25
Pyramidal feed horn gain (dBi) (optional)		24	25
Operating temperature range (°C)	5	22	35
Total power consumption (W)			30
Overall weight (Kg)			2

* Lower output power may be expected near the band edges.

Typical Performance

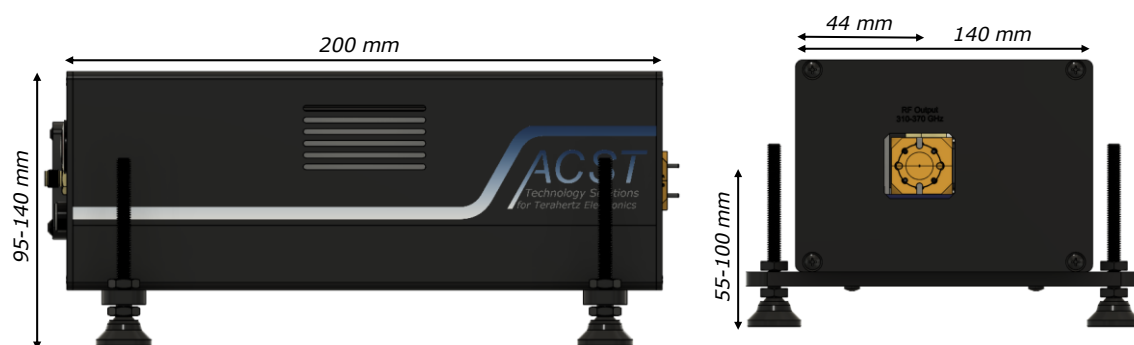
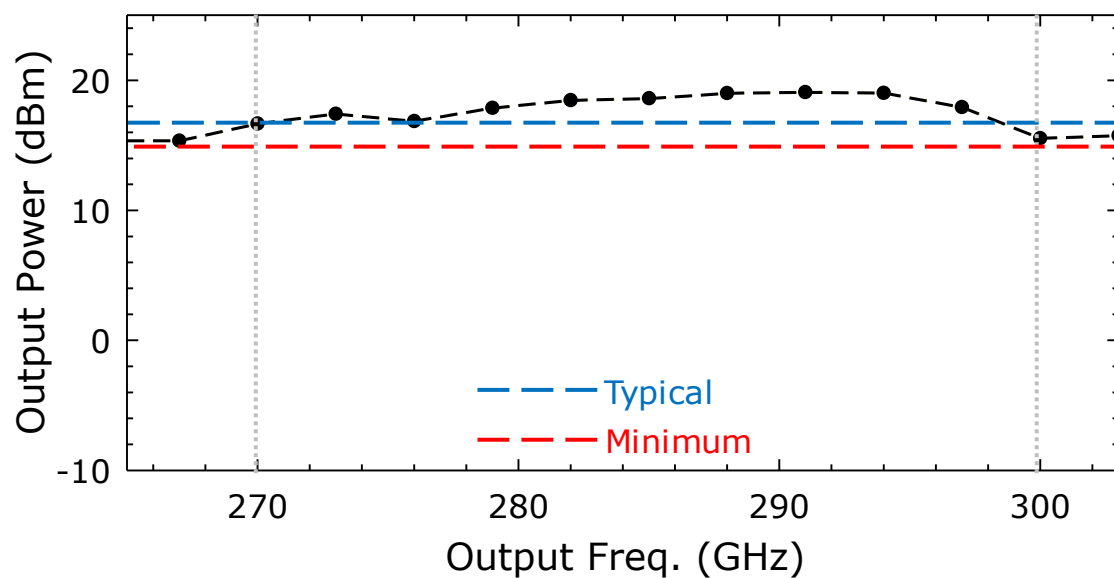


Fig. 2: Overall dimensions.

Notes

- All plotted data represent typical values. The actual data may vary from unit to unit.
- All tests are carried out at a room temperature of 24 °C.

Caution

- Absolute maximum ratings should not be used under normal operating conditions. Exceeding maximum ratings may lead to permanent failure.
- Any foreign body inserted into the waveguide will cause a loss of performance and may damage the device.

Order information

- Please indicate product name and type.
- Please indicate desired optional features.

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