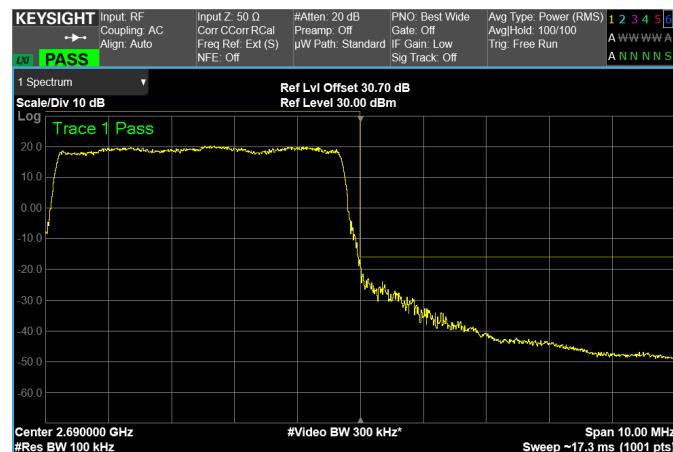


**Test data, continued: band edges Inter modulation**
**RF PORT 1**

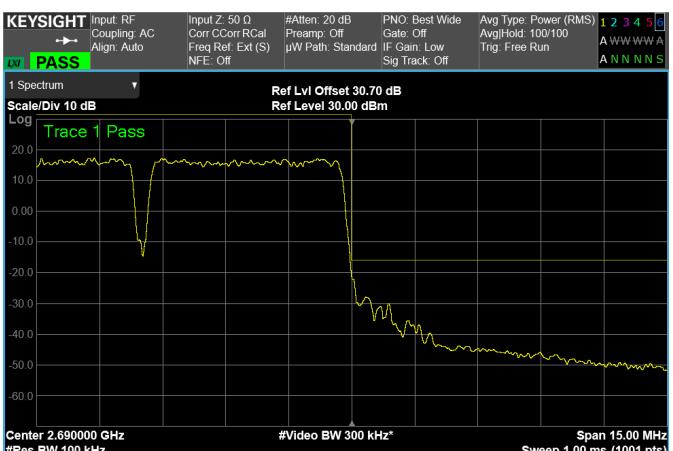

Low Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=5MHz



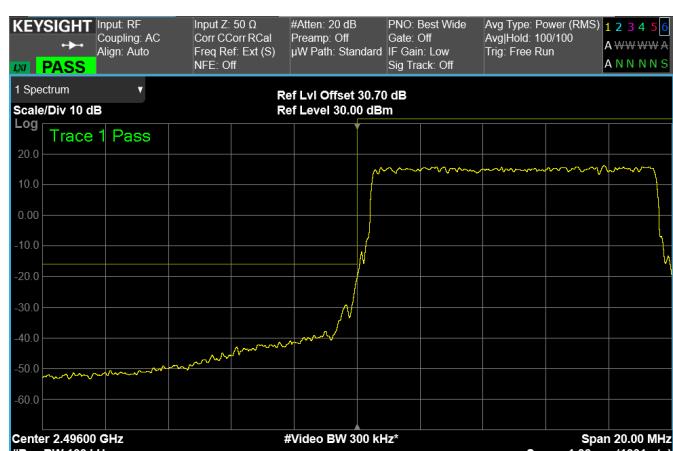
High Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=5MHz



Low Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=5MHz



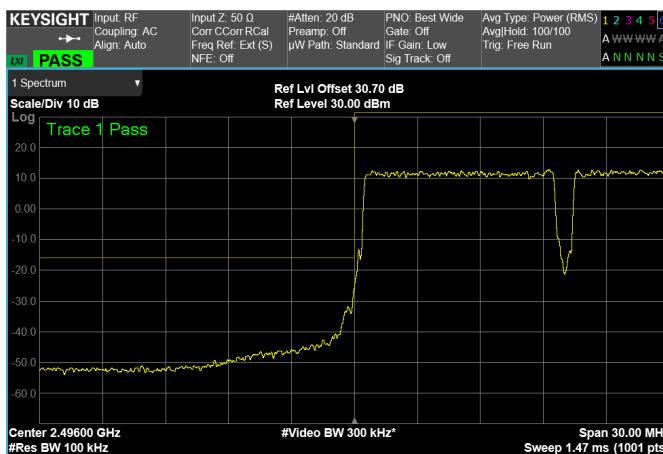
High Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=5MHz



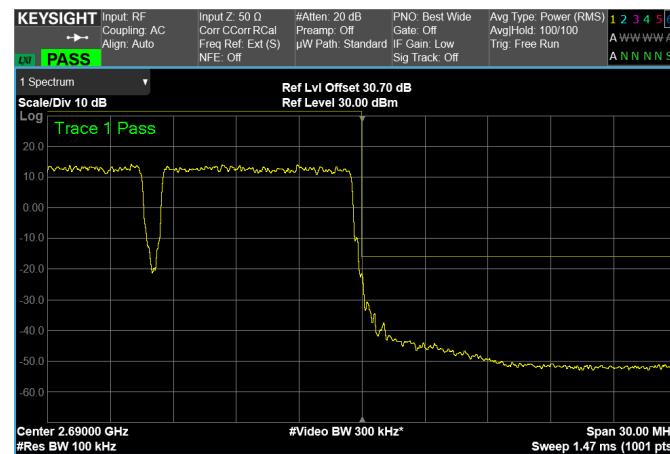
Low Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=10MHz



High Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=10MHz



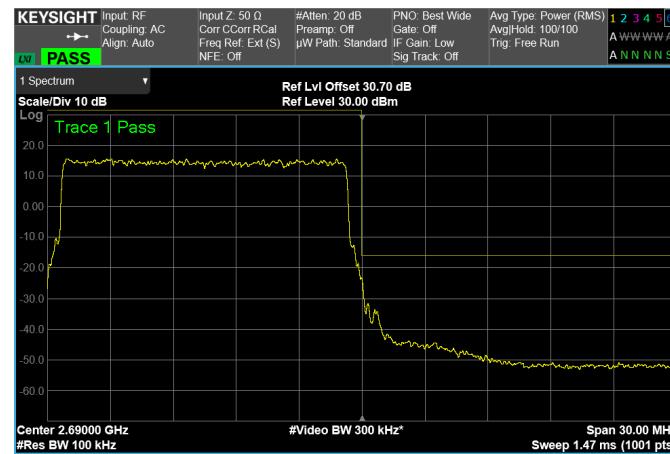
Low Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=10MHz



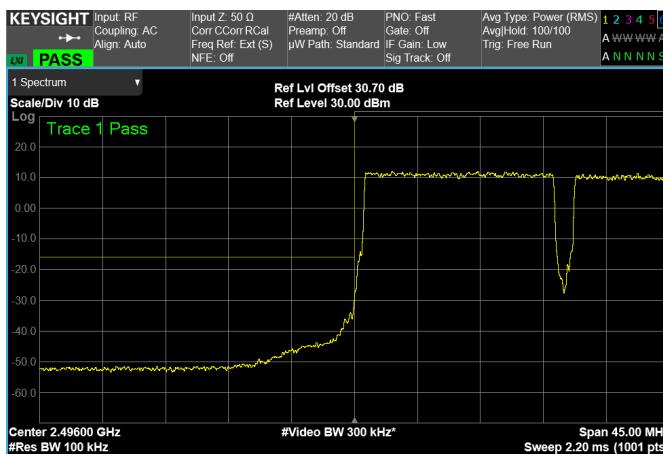
High Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=10MHz



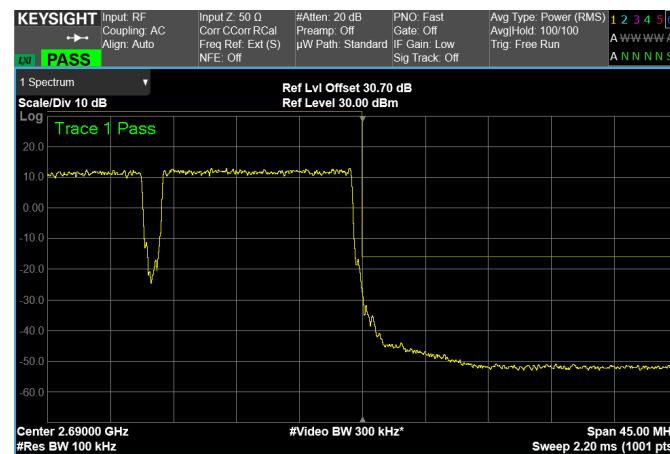
Low Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=15MHz



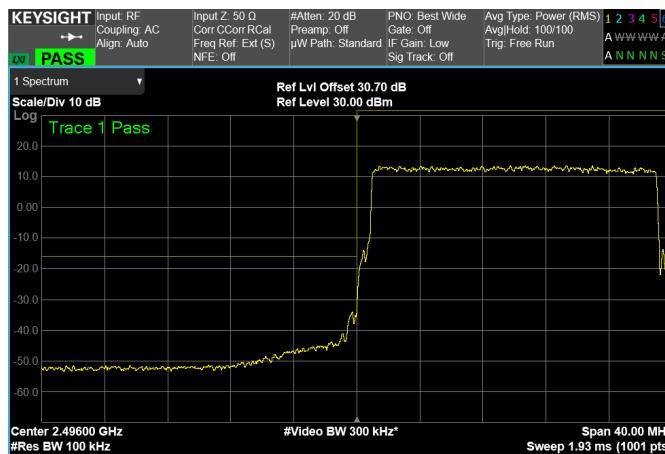
High Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=15MHz



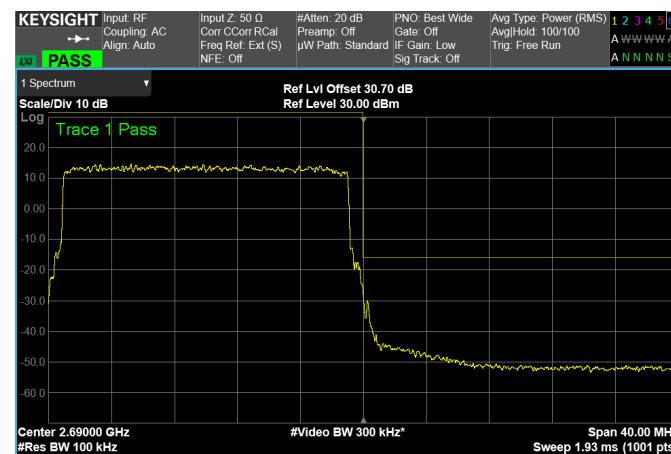
Low Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=15MHz



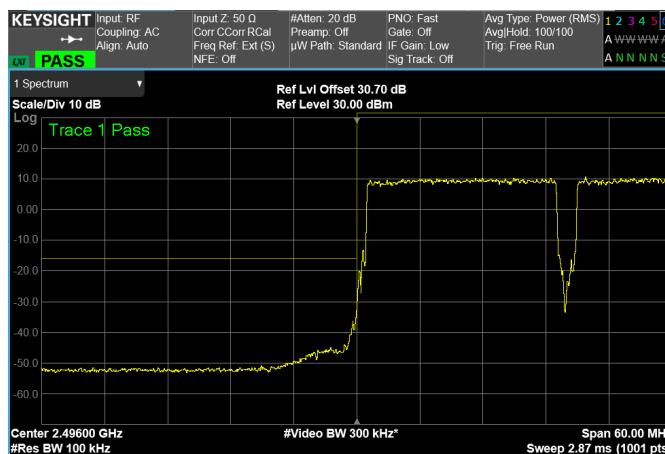
High Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=15MHz



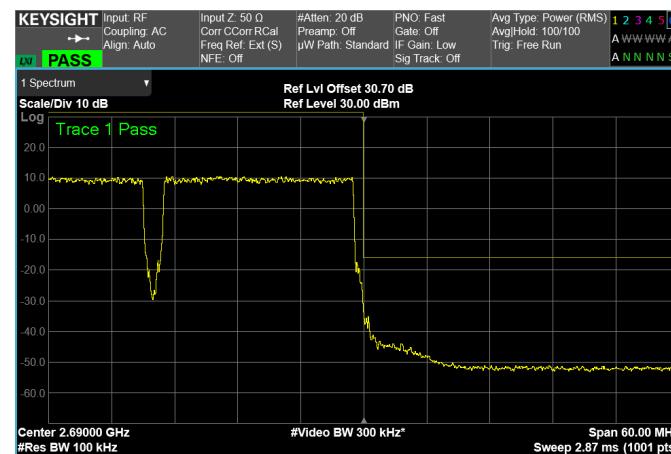
Low Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=20MHz



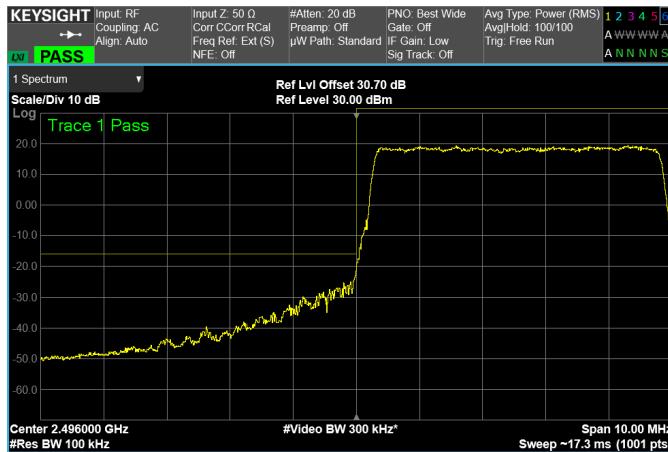
High Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=20MHz



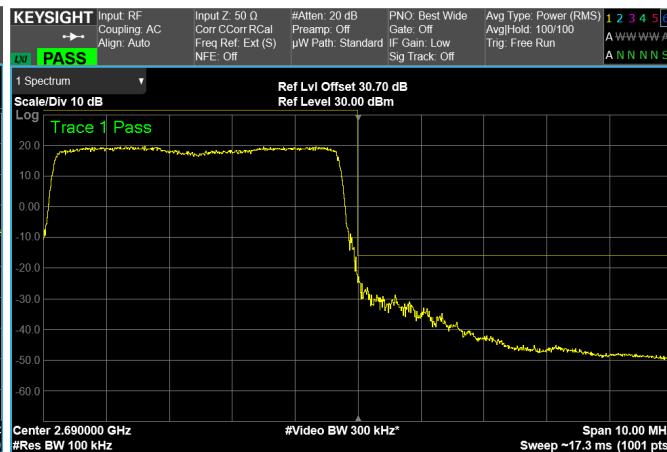
Low Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=20MHz



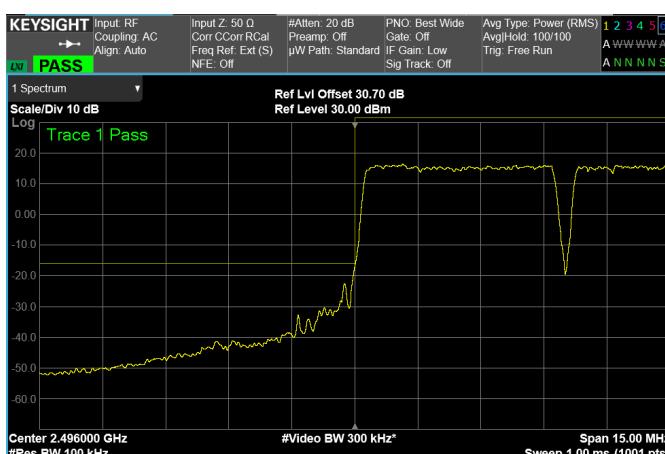
High Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=20MHz

**RF PORT 2**


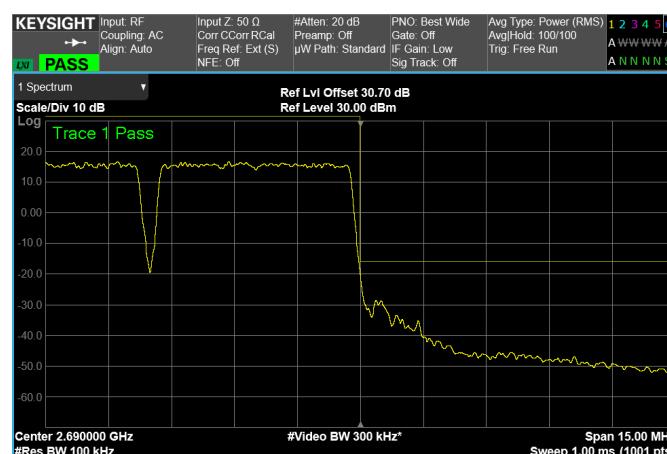
Low Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=5MHz



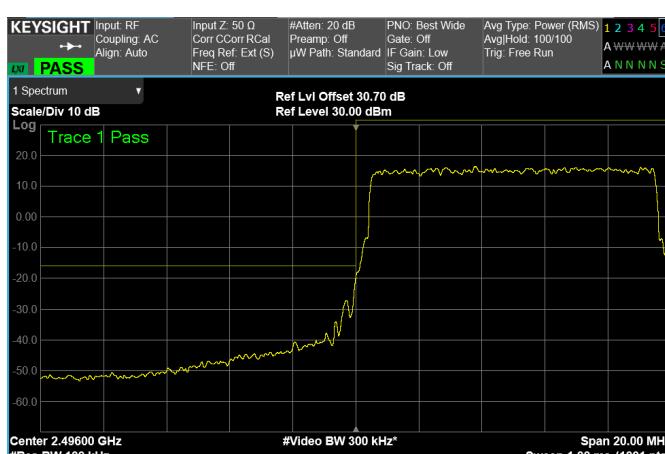
High Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=5MHz



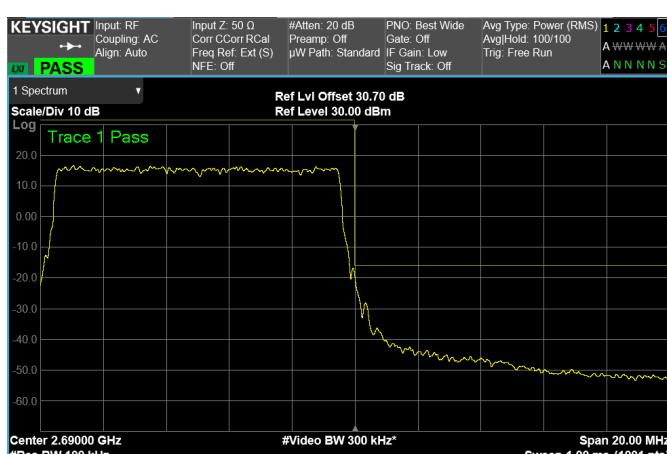
Low Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=5MHz



High Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=5MHz



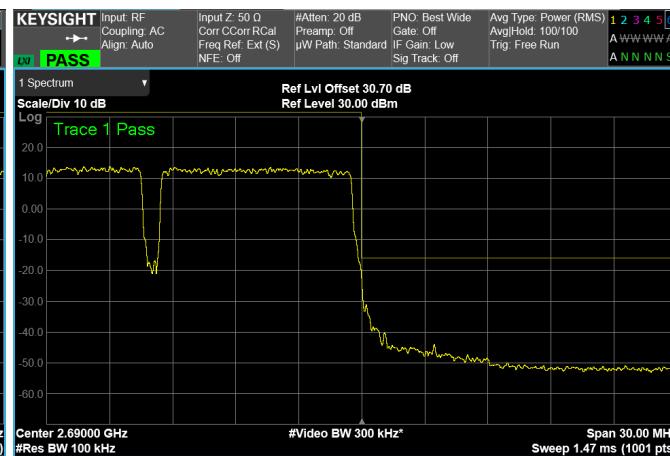
Low Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=10MHz



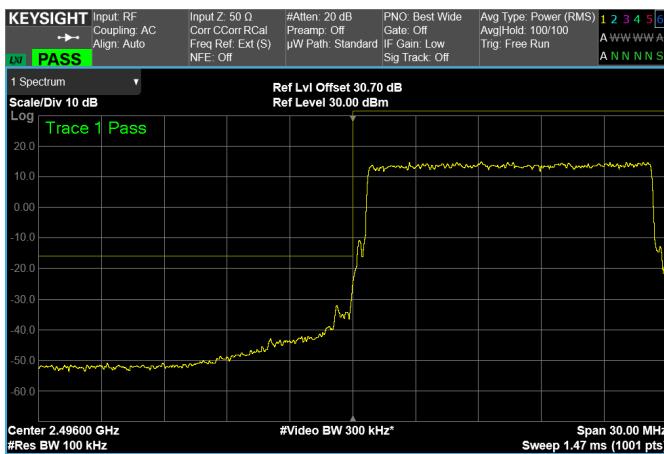
High Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=10MHz



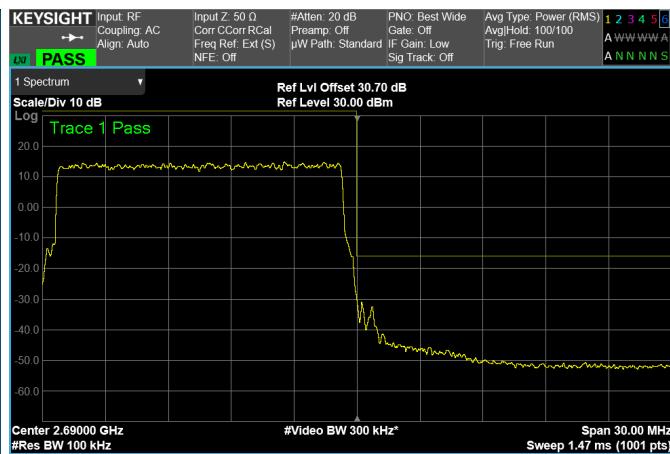
Low Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=10MHz



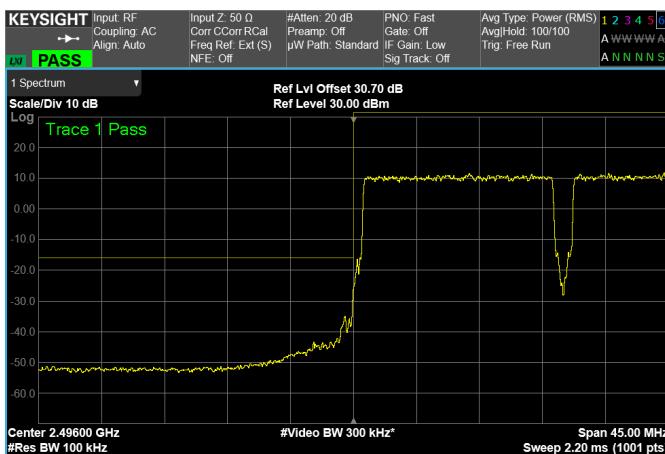
High Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=10MHz



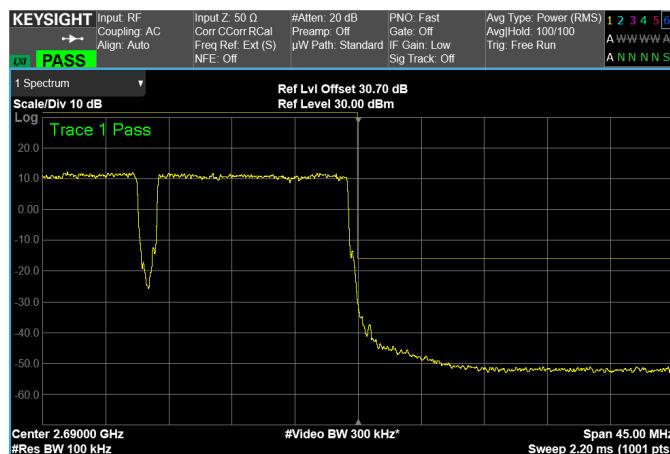
Low Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=15MHz



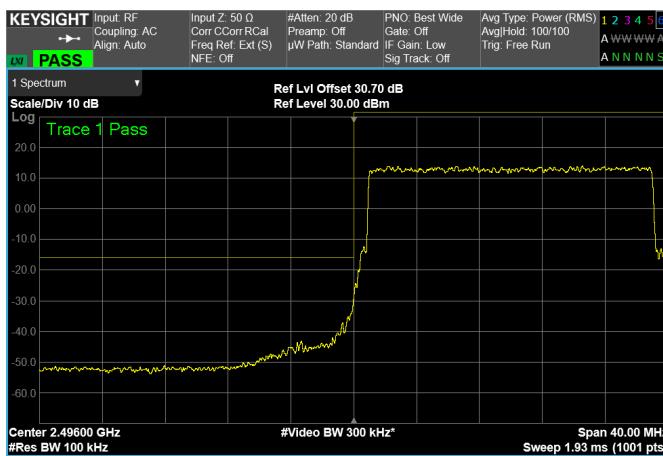
High Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=15MHz



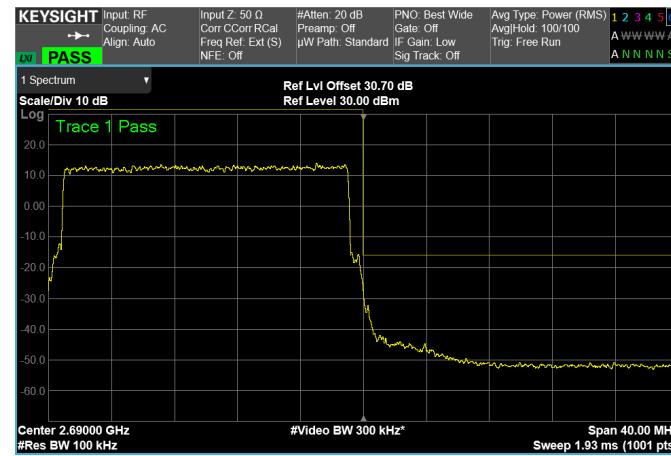
Low Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=15MHz



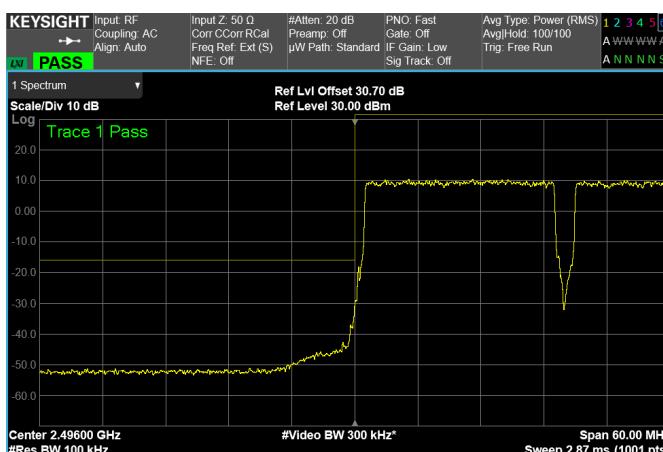
High Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=15MHz



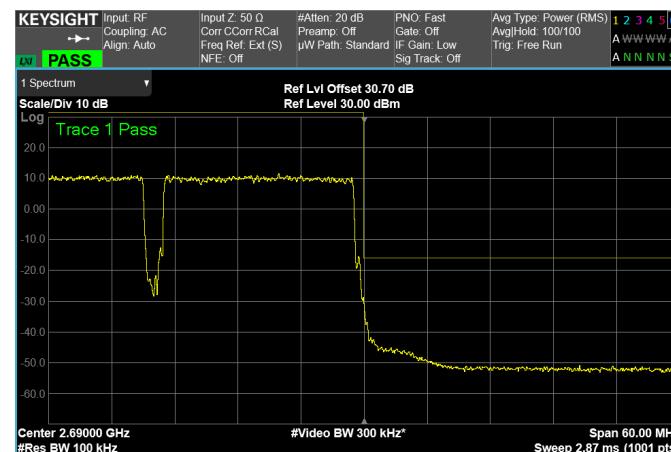
Low Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=20MHz



High Band Edge, 1 Carrier,  
Modulation: 64QAM, BW=20MHz



Low Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=20MHz



High Band Edge, 2 Carriers,  
Modulation: 64QAM, BW=20MHz

## Clause 27.53(m) Radiated Spurious emissions

**(m) For BRS and EBS stations, the power of any emissions outside the licensee's frequency bands of operation shall be attenuated below the transmitter power (P) measured in watts in accordance with the standards below. If a licensee has multiple contiguous channels, out-of-band emissions shall be measured from the upper and lower edges of the contiguous channels.**

(2) For digital base stations, the attenuation shall be not less than  $43 + 10 \log (P)$  dB, unless a documented interference complaint is received from an adjacent channel licensee with an overlapping Geographic Service Area. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS No. 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. Provided that a documented interference complaint cannot be mutually resolved between the parties prior to the applicable deadline, then the following additional attenuation requirements shall apply:

(6) *Measurement procedure.* Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

Test date: 06/09/2022 to 06/24/2022

Test results: Pass

### Special notes

Measurements were performed for all modulation types. As an example, only measurements for 64 QAM modulation type are reported.



## Clause 27.53(m) Radiated spurious emissions, continued

## Test equipment used

Equipment	Manufacturer	Model No.	Asset/Serial No.
Trilog Broad Band Antenna	Schwarzbeck	VULB 9162	VULB 9162-25
Bilog antenna (1 ÷ 18 GHz)	Schwarzbeck	STLP 9148	STPL 9148-123
Double ridge horn antenna (4 ÷ 40 GHz)	RFSpin	DRH40	061106A40
Broadband preamplifier (18 ÷ 40 GHz)	Sage	STB-1834034030-KFKF-L1	18490-01
Broadband preamplifier (1 ÷ 18 GHz)	Schwarzbeck	BBV9718C	00121
EMI receiver (2 Hz ÷ 44 GHz)	R&S	ESW44	101620
Controller	Maturo	FCU3.0	10041
Tilt antenna mast	Maturo	TAM4.0-E	10042
Turntable	Maturo	TT4.0-5T	2.527
Semi-anechoic chamber	Nemko	10m semi-anechoic chamber	530
Shielded room	Siemens	10m control room	1947

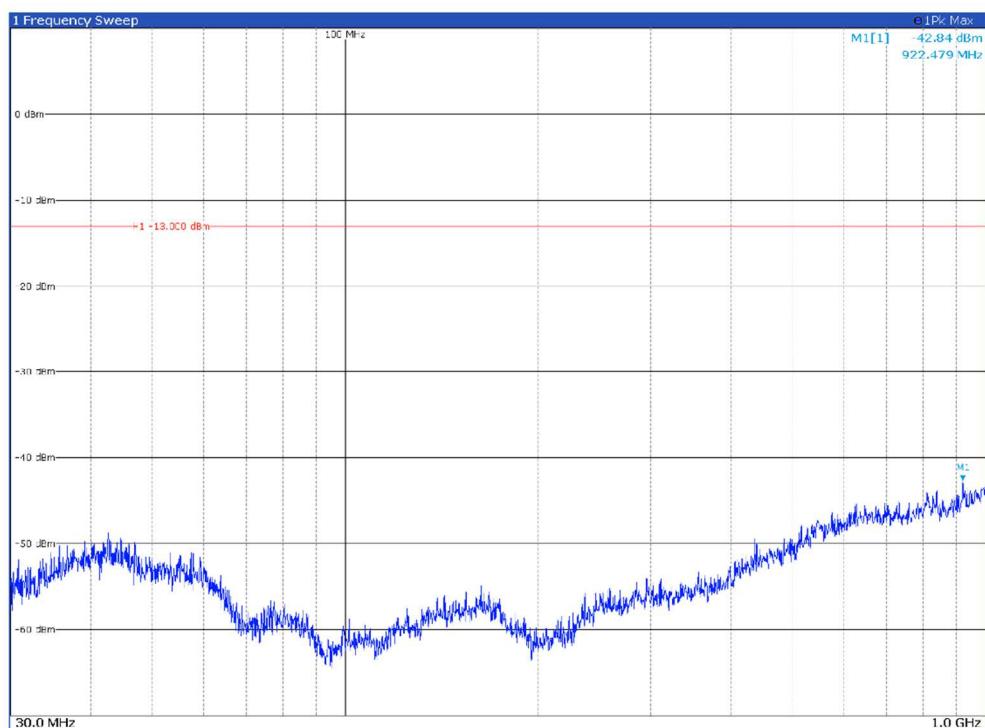
## Test data

The D.U.T. was positioned according to the radiated emissions set-up

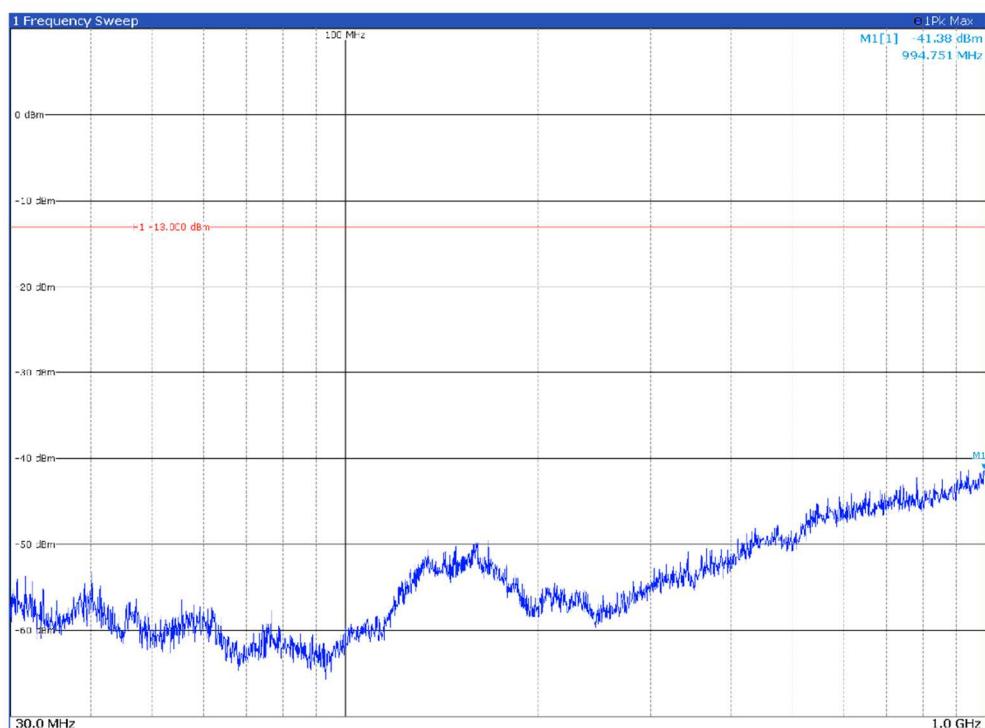
The D.U.T. antenna connector was terminated by a 50 Ω shielded dummy load.

The spectrum was searched from 30 MHz to 1 GHz (RBW 100 kHz) & 1 GHz (RBW 1 MHz) to the tenth harmonic of the carrier.

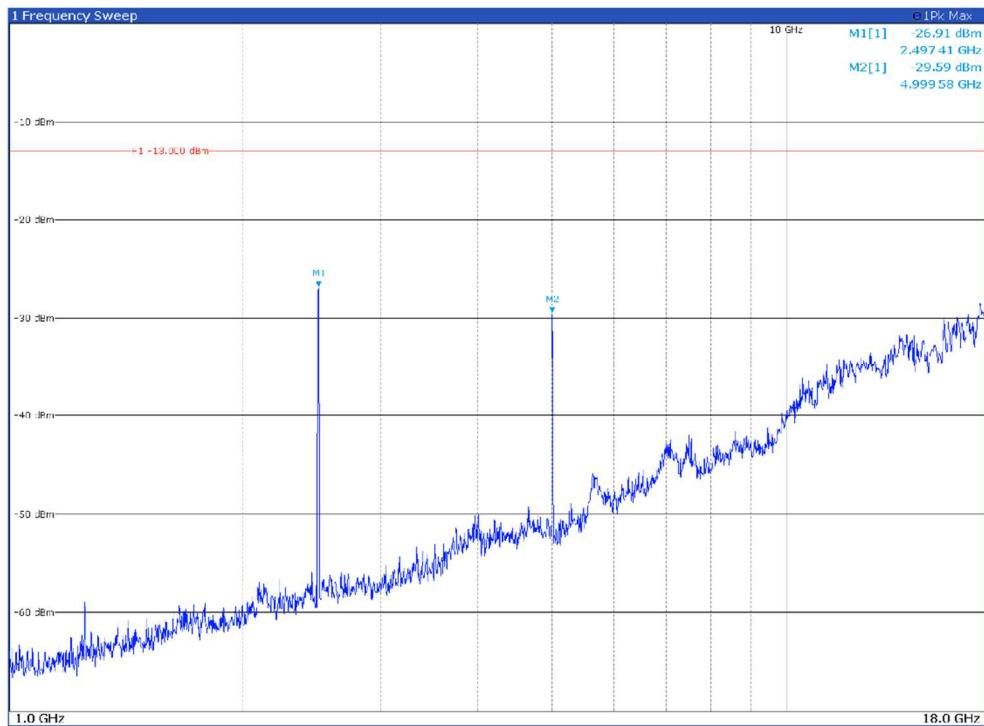
Note: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.

**BANDWIDTH: 5 MHz**


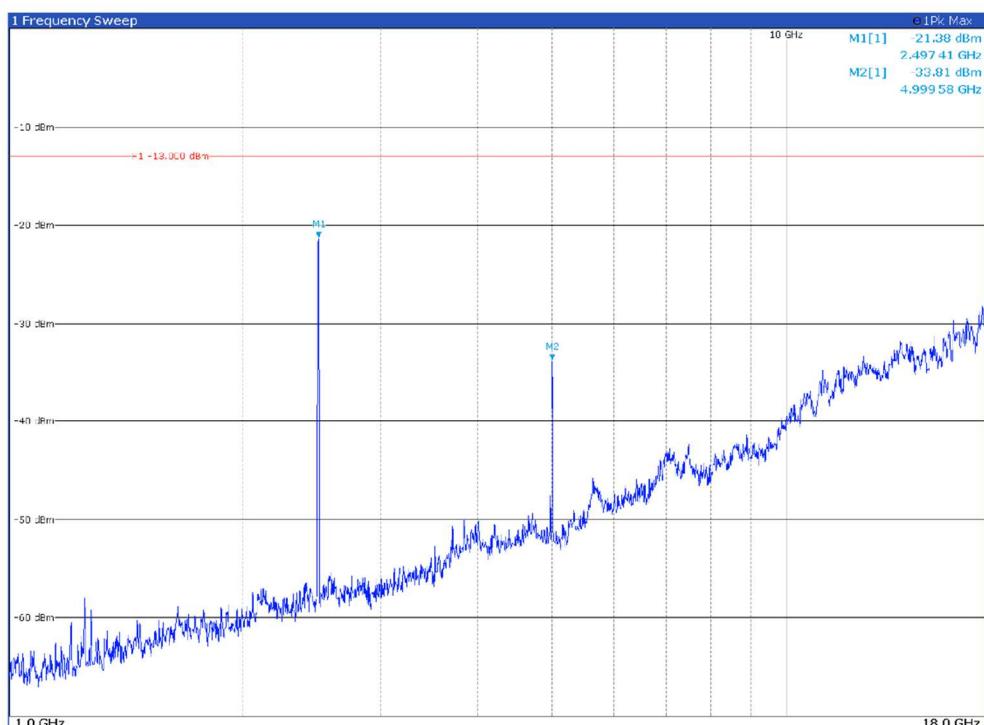
Channel: BOTTOM, Modulation: 64QAM,  
 BW=5MHz, Range: 30MHz - 1GHz, Polarization: Horizontal



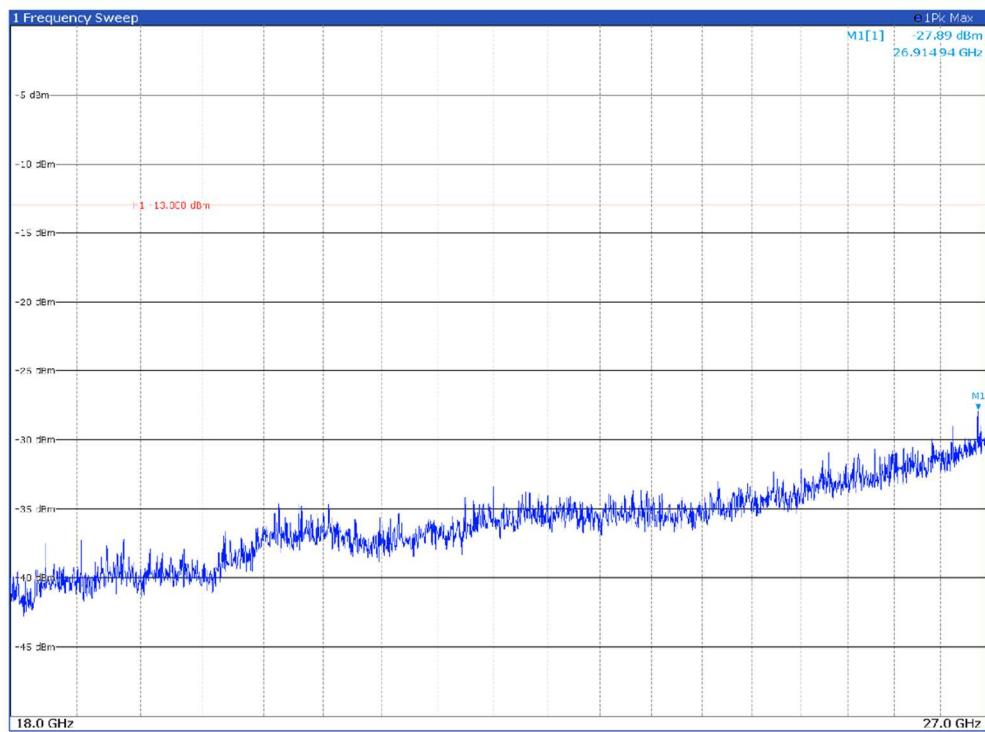
Channel: BOTTOM, Modulation: 64QAM,  
 BW=5MHz, Range: 30MHz - 1GHz, Polarization: Vertical



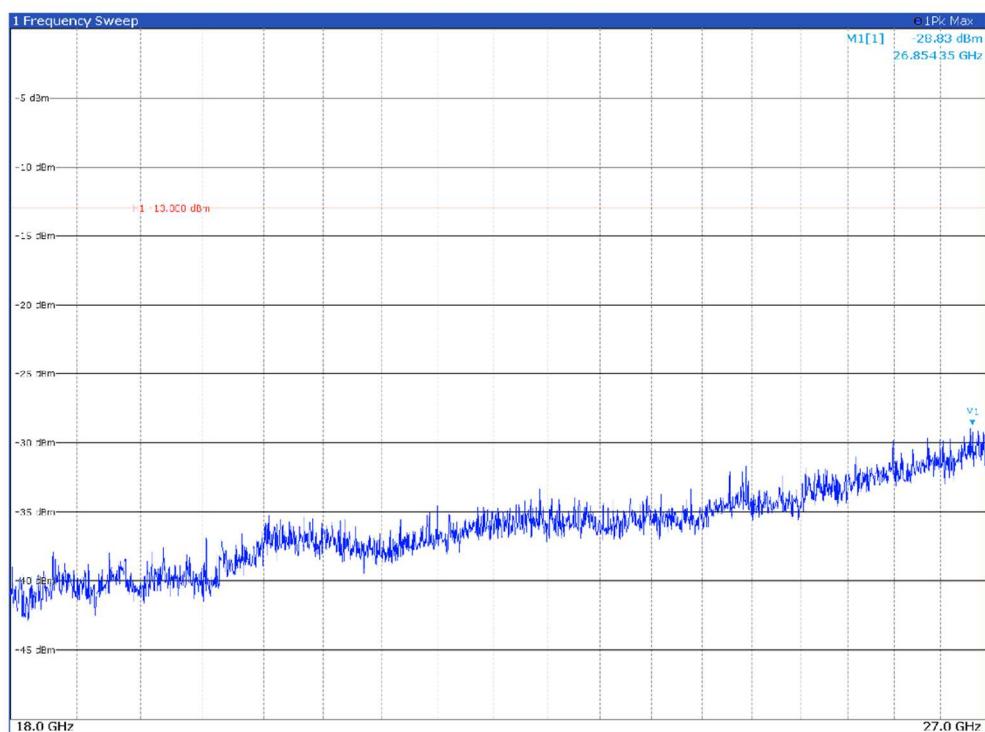
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, Range: 1GHz - 18GHz, Polarization: Horizontal



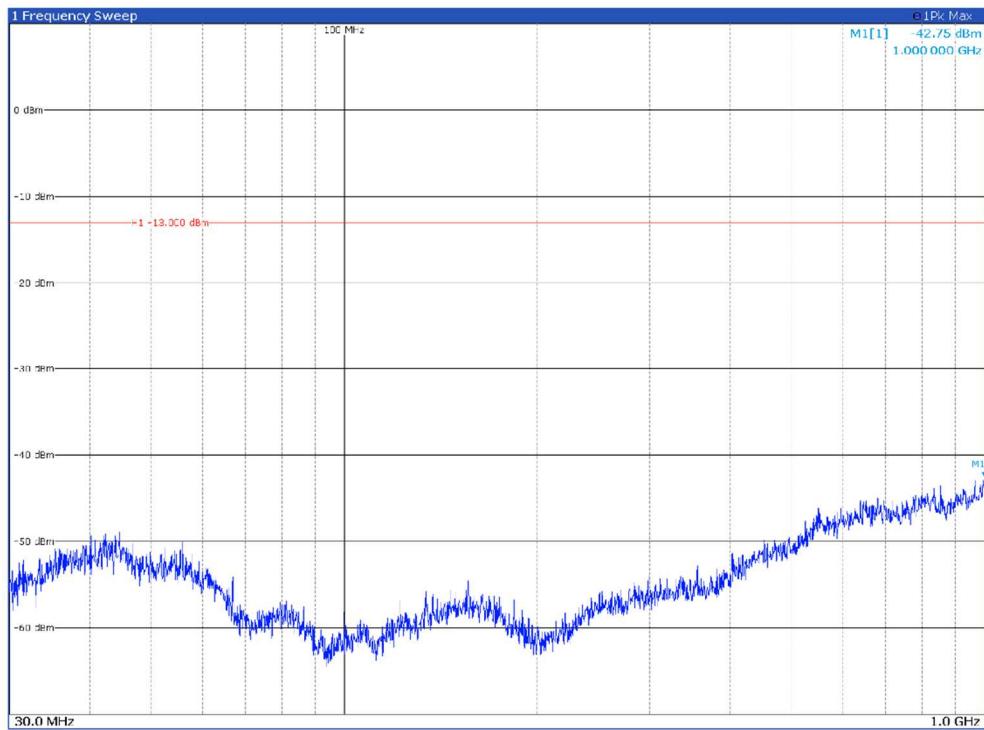
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, Range: 1GHz - 18GHz, Polarization: Vertical



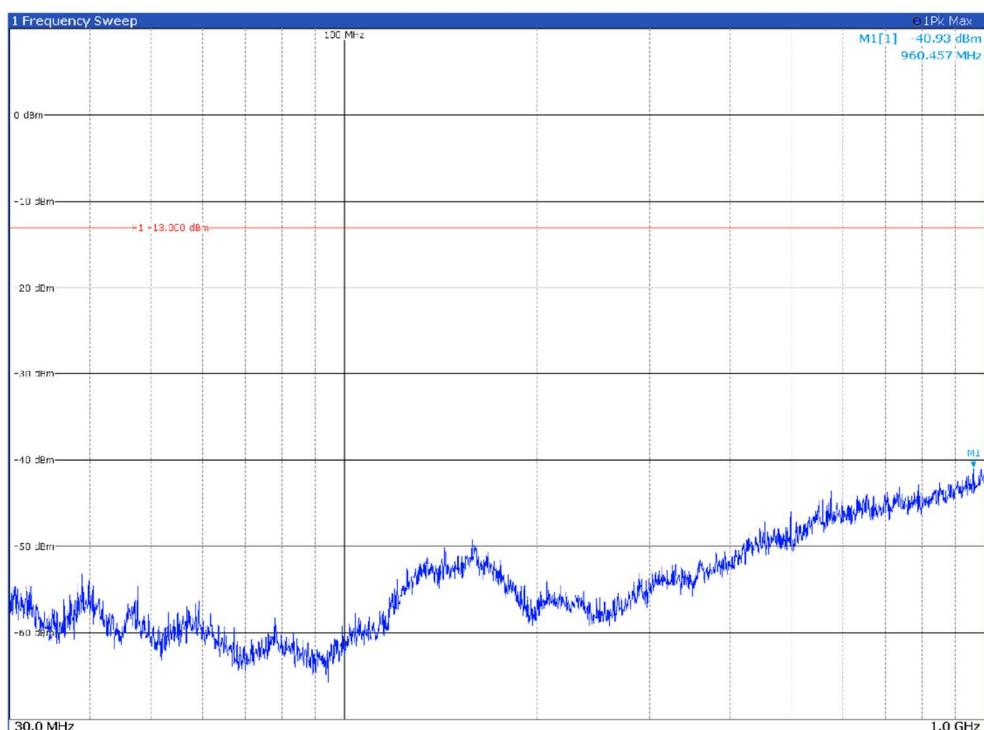
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, Range: 18GHz - 27GHz, Polarization: Horizontal



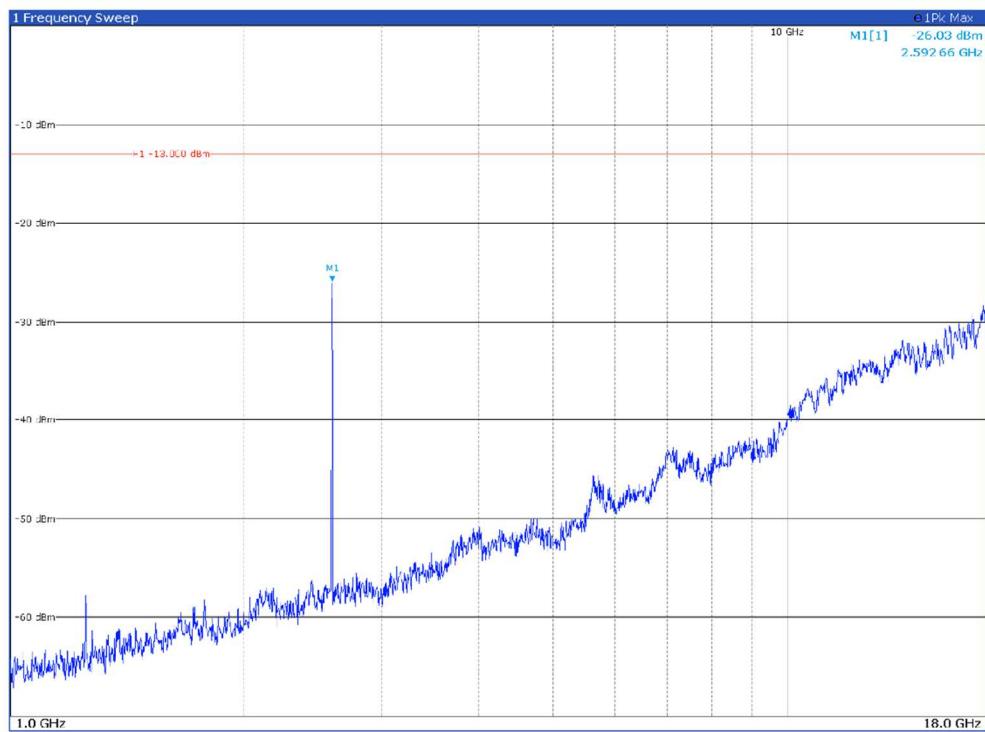
Channel: BOTTOM, Modulation: 64QAM,  
BW=5MHz, Range: 18GHz - 27GHz, Polarization: Vertical



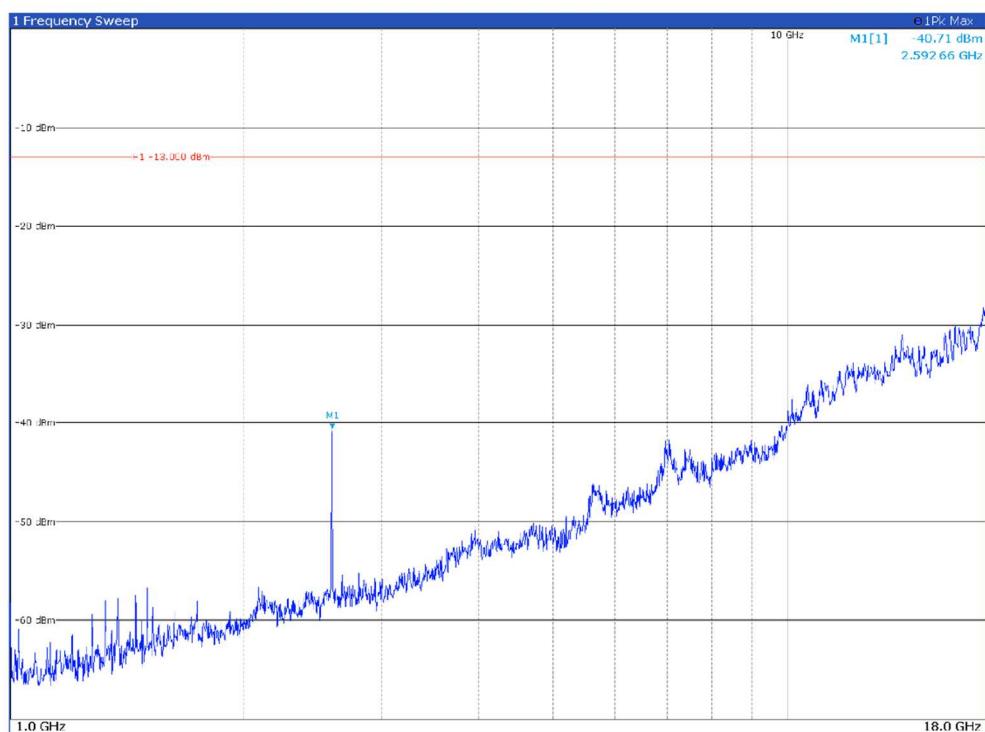
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Range: 30MHz - 1GHz, Polarization: Horizontal



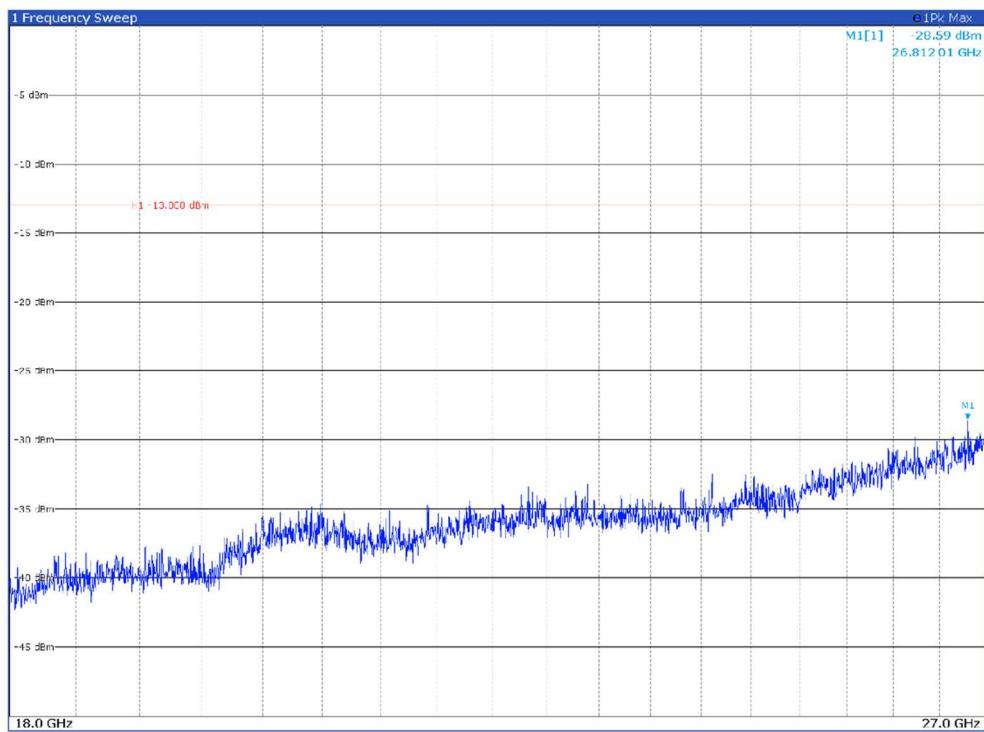
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Range: 30MHz - 1GHz, Polarization: Vertical



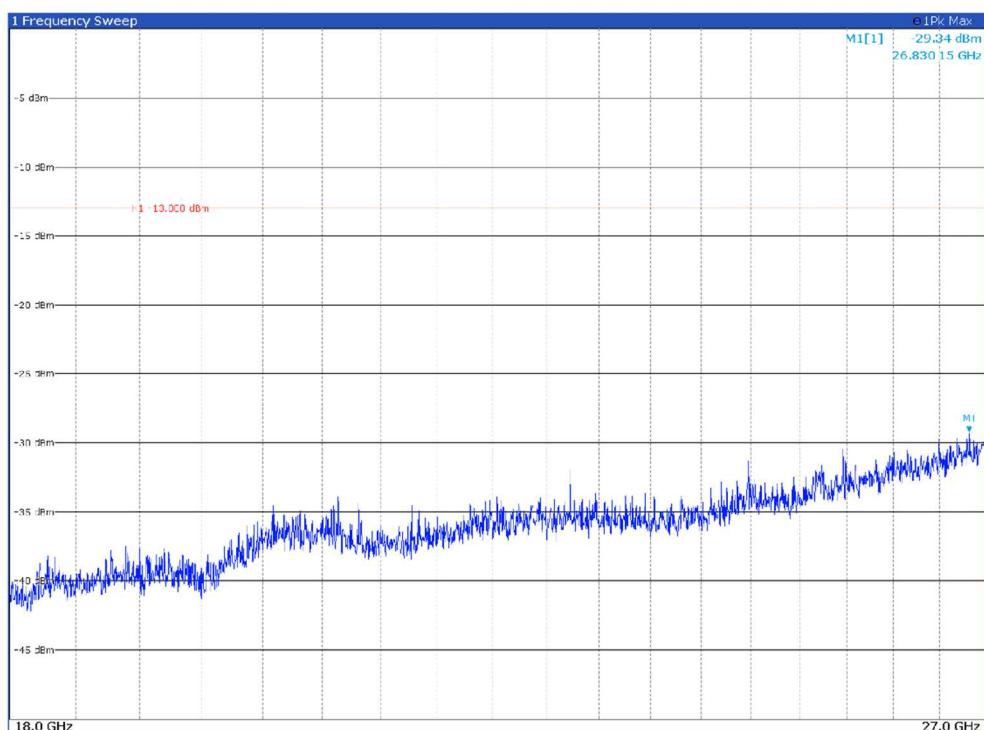
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Range: 1GHz - 18GHz, Polarization: Horizontal



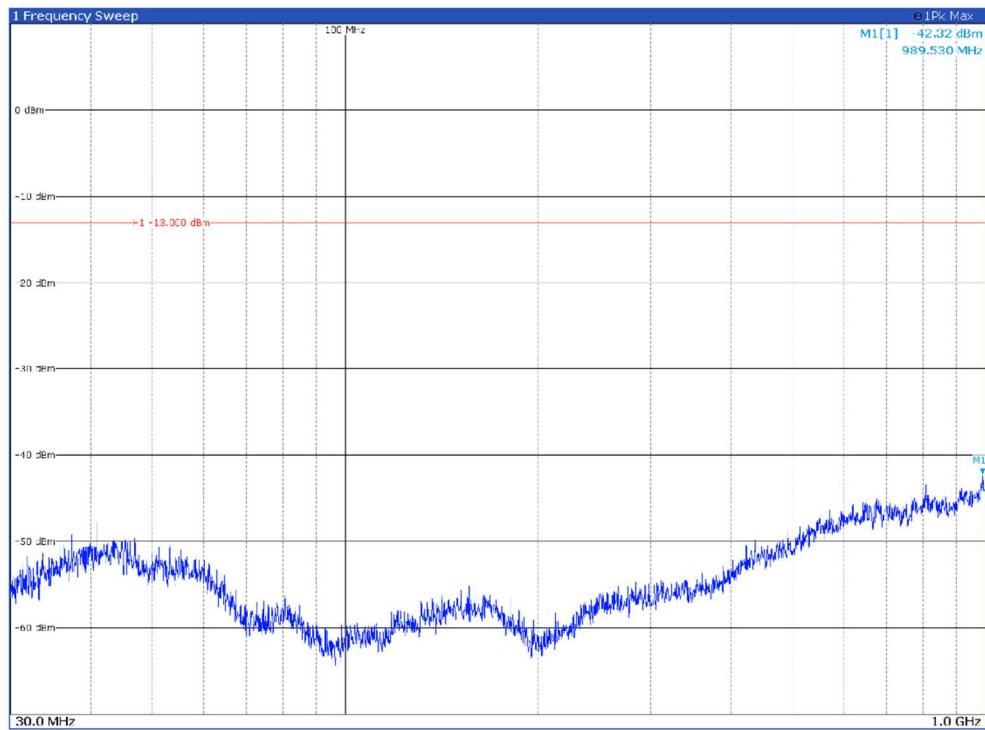
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Range: 1GHz - 18GHz, Polarization: Vertical



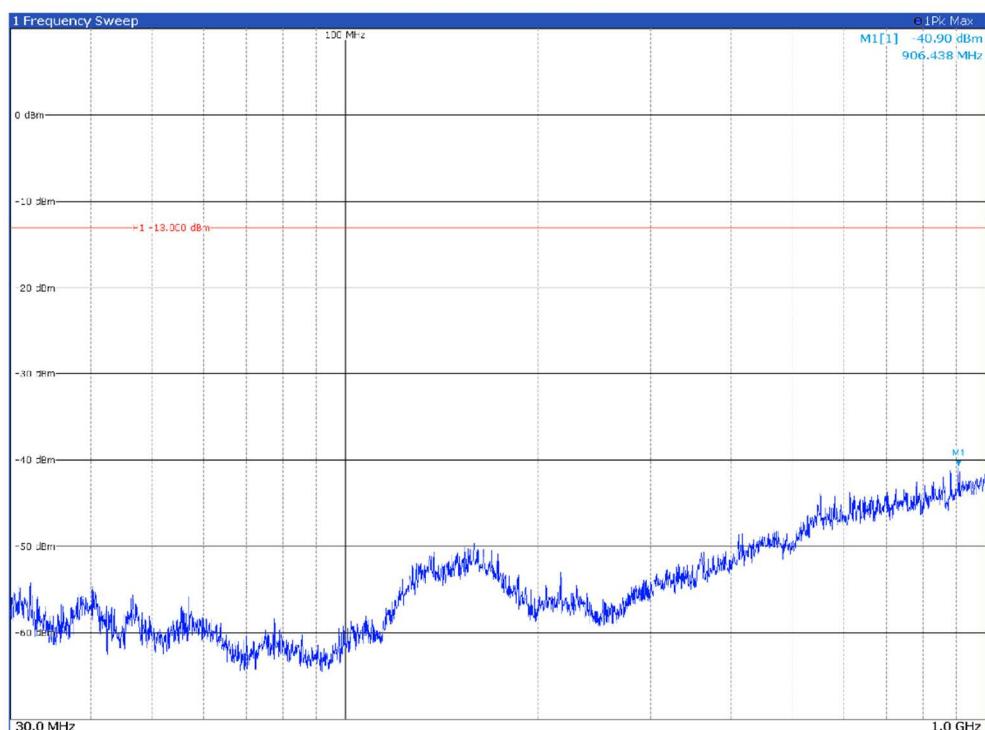
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Range: 18GHz - 27GHz, Polarization: Horizontal



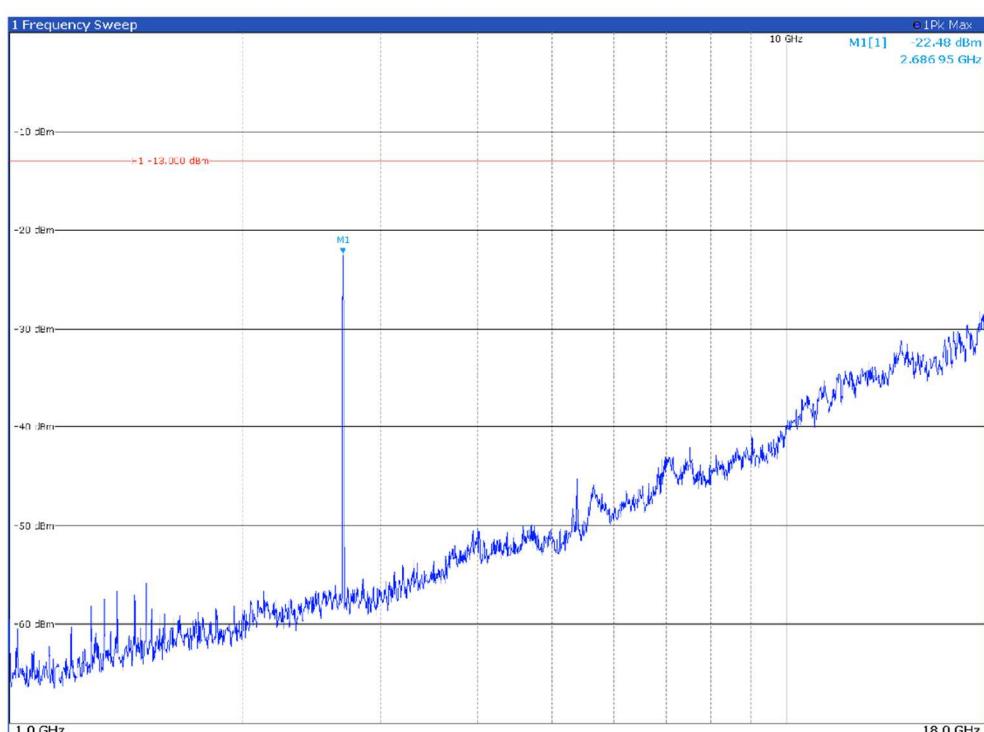
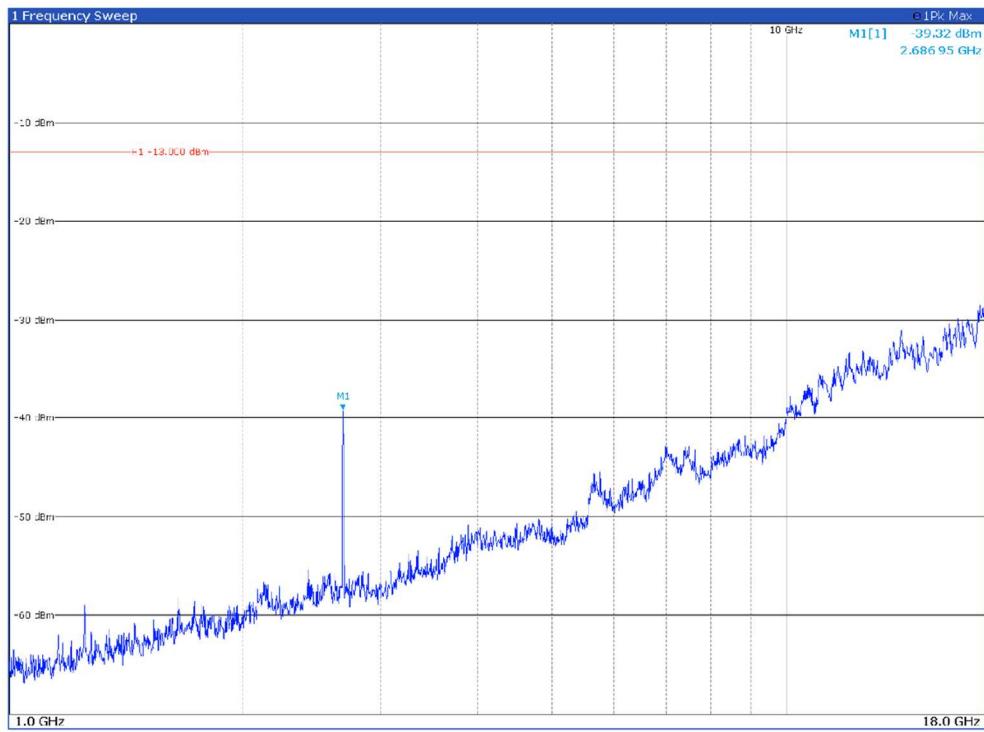
Channel: MIDDLE, Modulation: 64QAM,  
BW=5MHz, Range: 18GHz - 27GHz, Polarization: Vertical

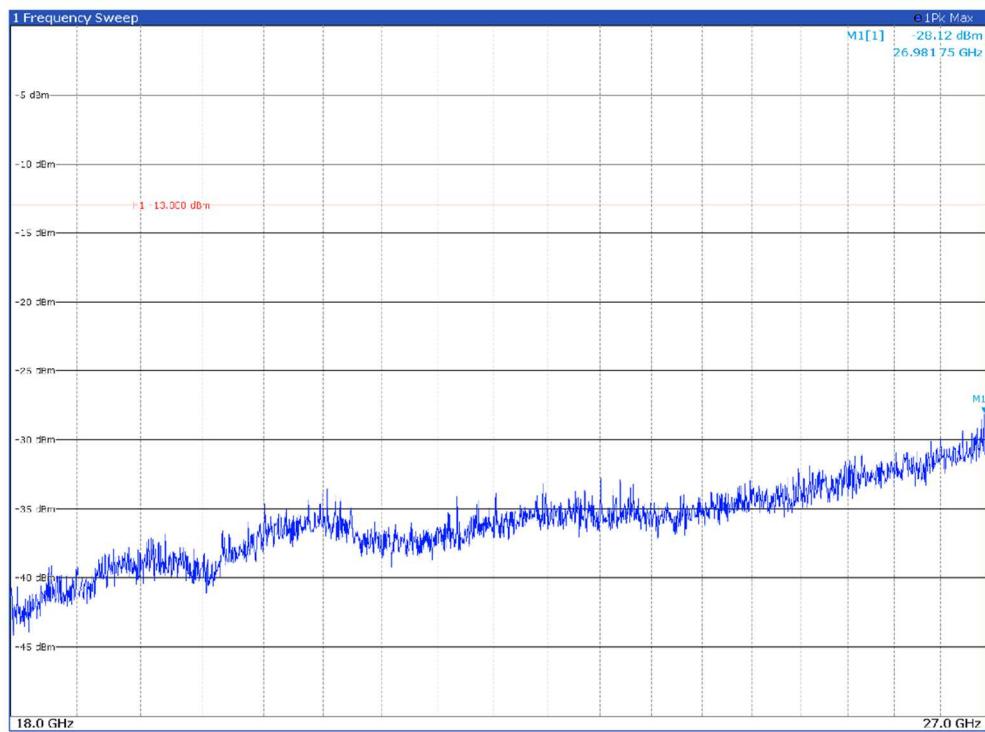


Channel: TOP, Modulation: 64QAM,  
BW=5MHz, Range: 30MHz - 1GHz, Polarization: Horizontal

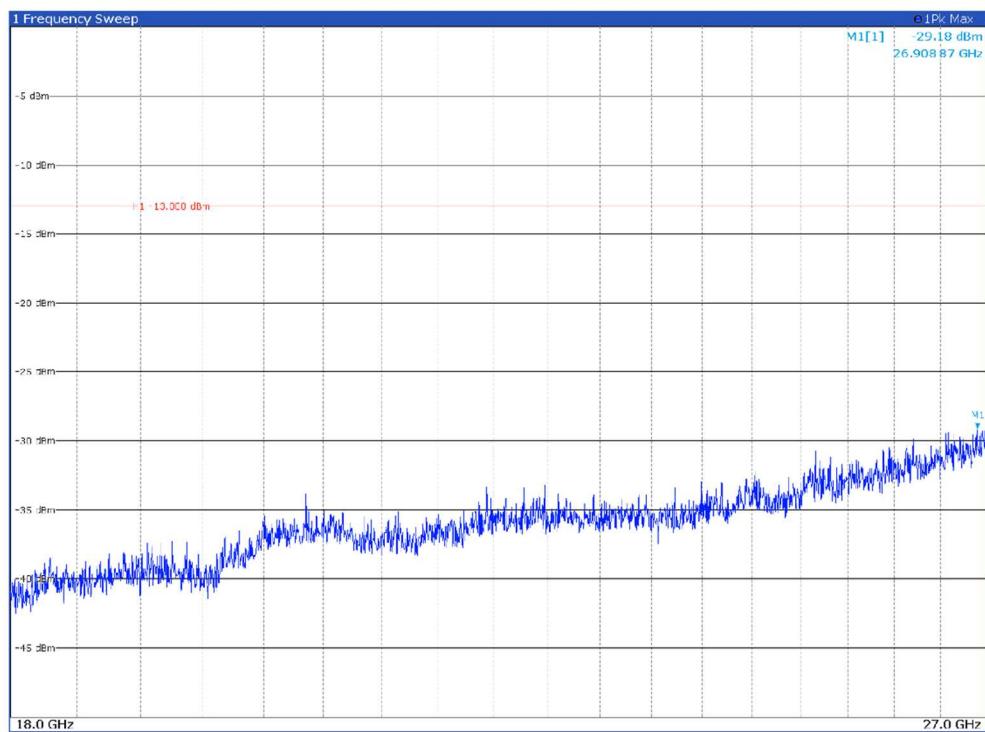


Channel: TOP, Modulation: 64QAM,  
BW=5MHz, Range: 30MHz - 1GHz, Polarization: Vertical

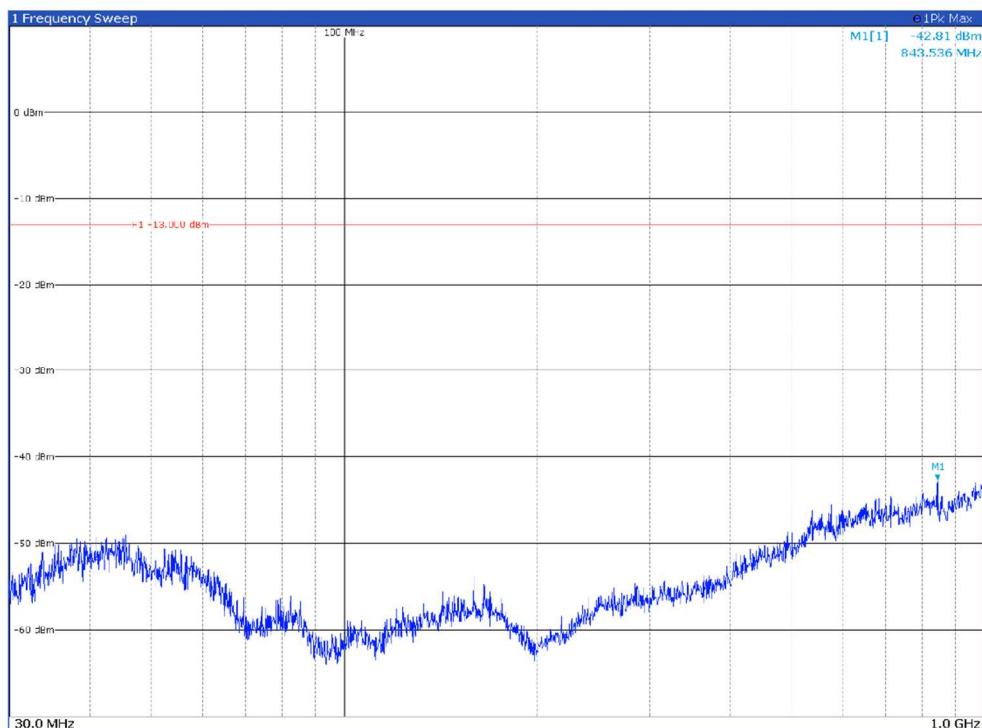




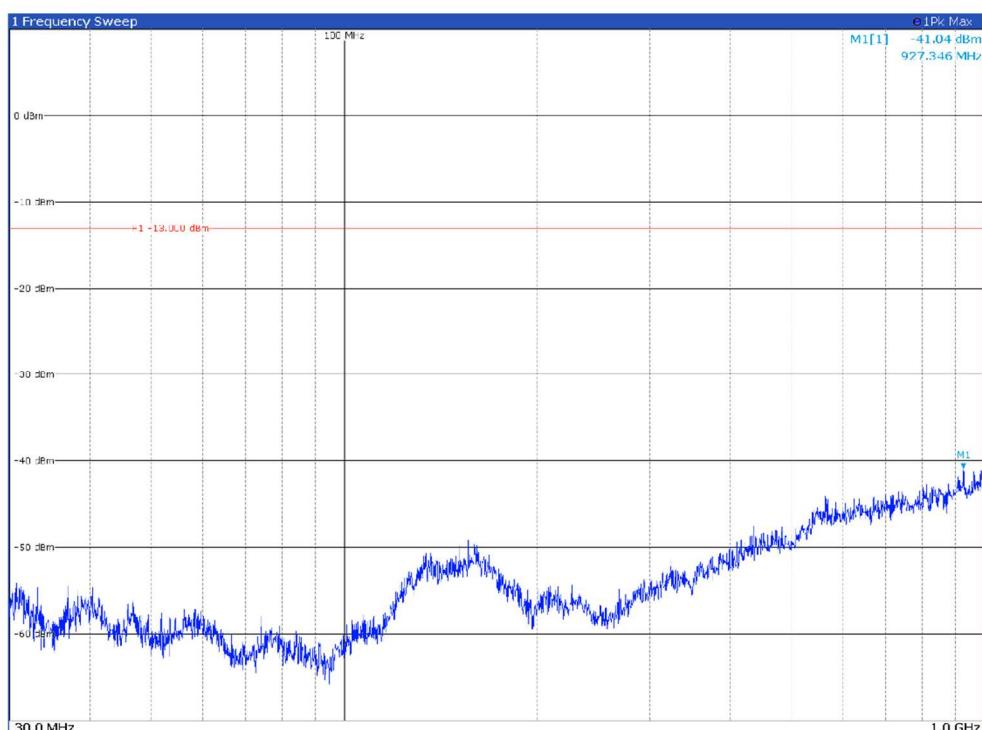
Channel: TOP, Modulation: 64QAM,  
BW=5MHz, Range: 18GHz - 27GHz, Polarization: Horizontal



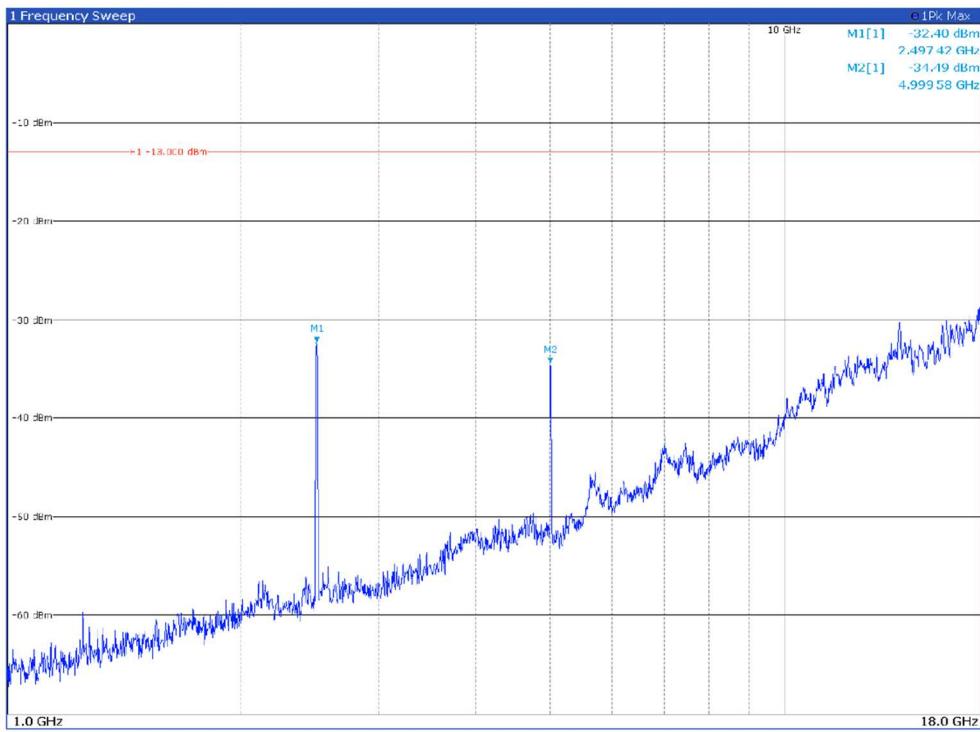
Channel: TOP, Modulation: 64QAM,  
BW=5MHz, Range: 18GHz - 27GHz, Polarization: Vertical

**BANDWIDTH: 10 MHz**


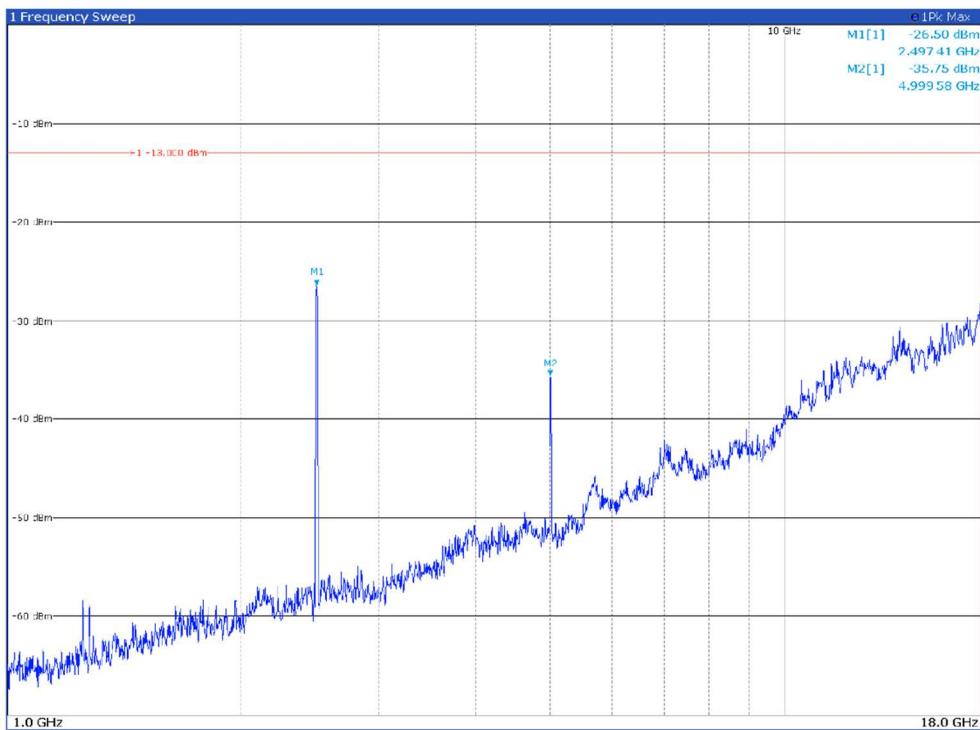
Channel: BOTTOM, Modulation: 64QAM,  
 BW=10MHz, Range: 30MHz - 1GHz, Polarization: Horizontal



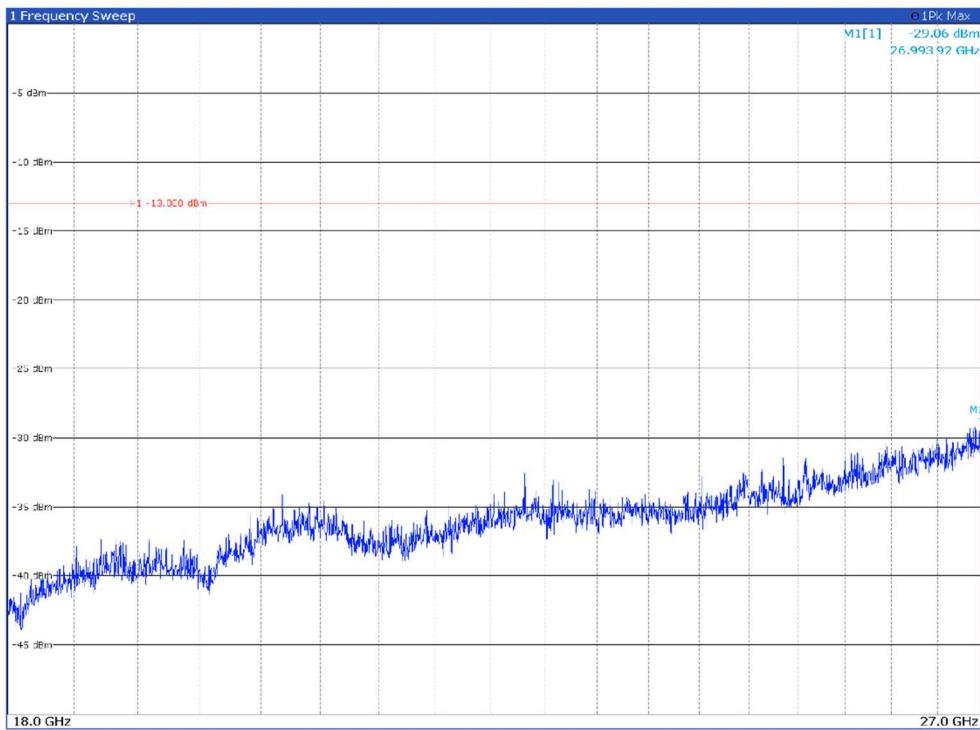
Channel: BOTTOM, Modulation: 64QAM,  
 BW=10MHz, Range: 30MHz - 1GHz, Polarization: Vertical



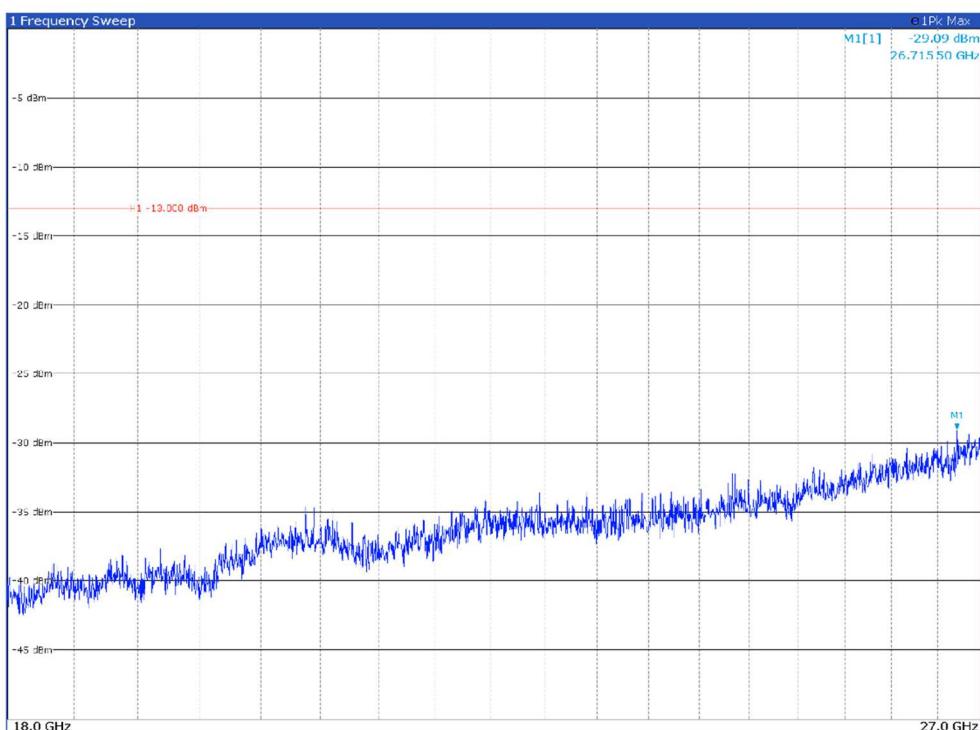
Channel: BOTTOM, Modulation: 64QAM,  
BW=10MHz, Range: 1GHz - 18GHz, Polarization: Horizontal



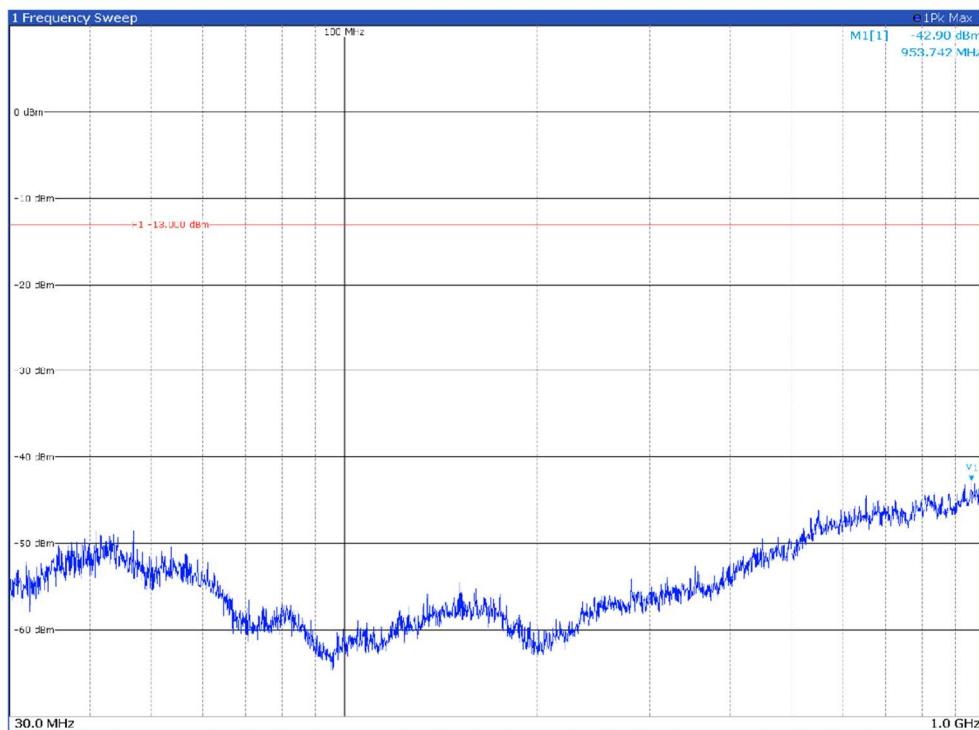
Channel: BOTTOM, Modulation: 64QAM,  
BW=10MHz, Range: 1GHz - 18GHz, Polarization: Vertical



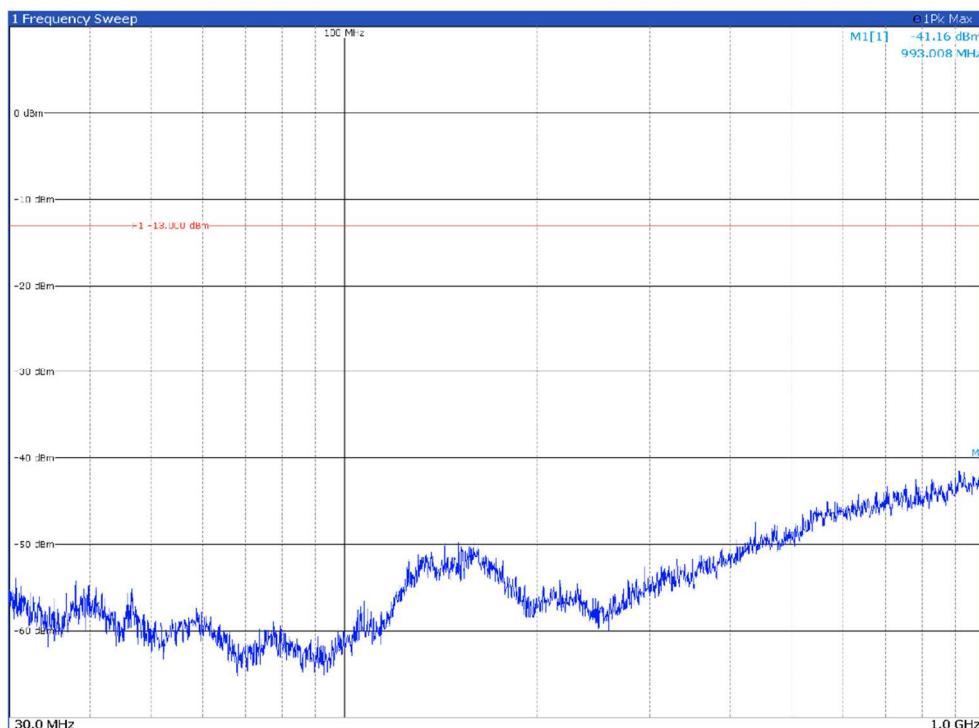
Channel: BOTTOM, Modulation: 64QAM,  
BW=10MHz, Range: 18GHz - 27GHz, Polarization: Horizontal



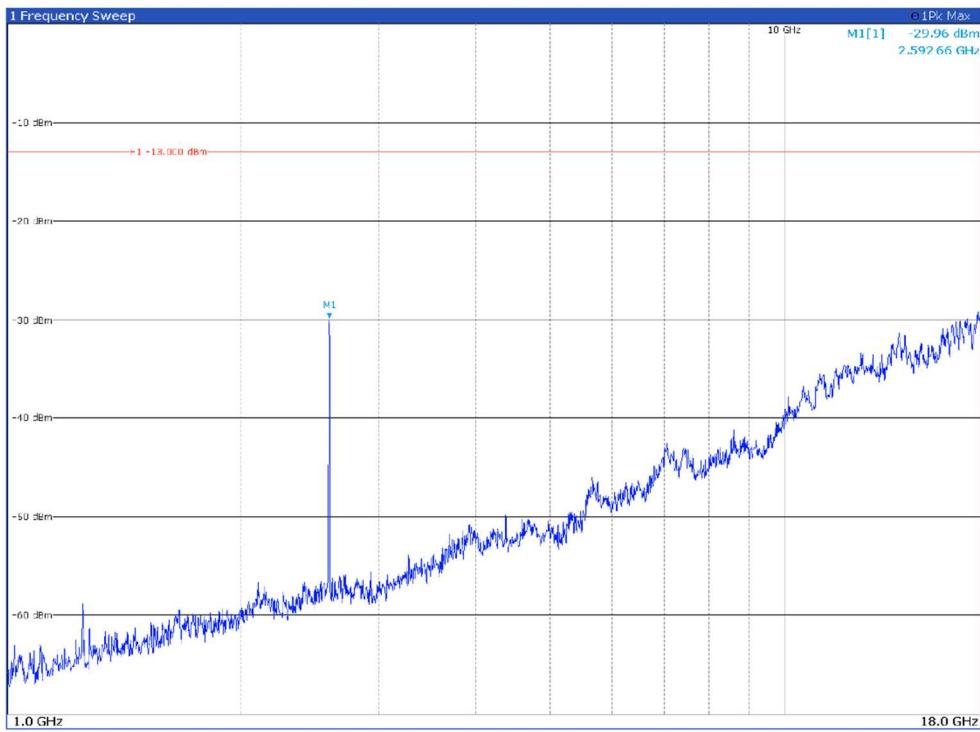
Channel: BOTTOM, Modulation: 64QAM,  
BW=10MHz, Range: 18GHz - 27GHz, Polarization: Vertical



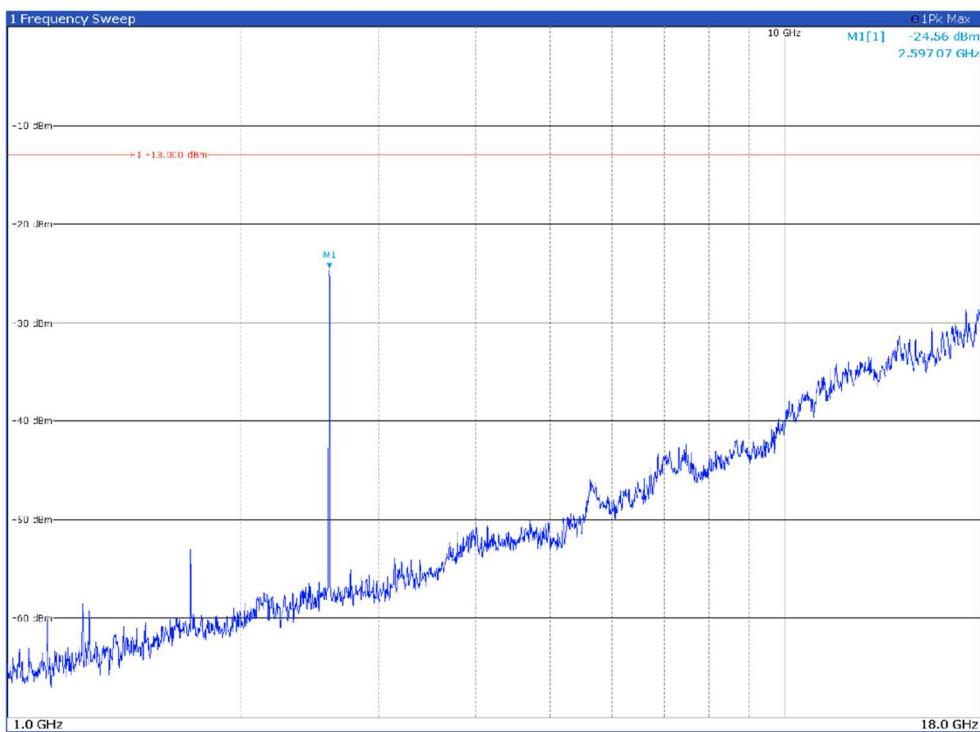
Channel: MIDDLE, Modulation: 64QAM,  
BW=10MHz, Range: 30MHz - 1GHz, Polarization: Horizontal



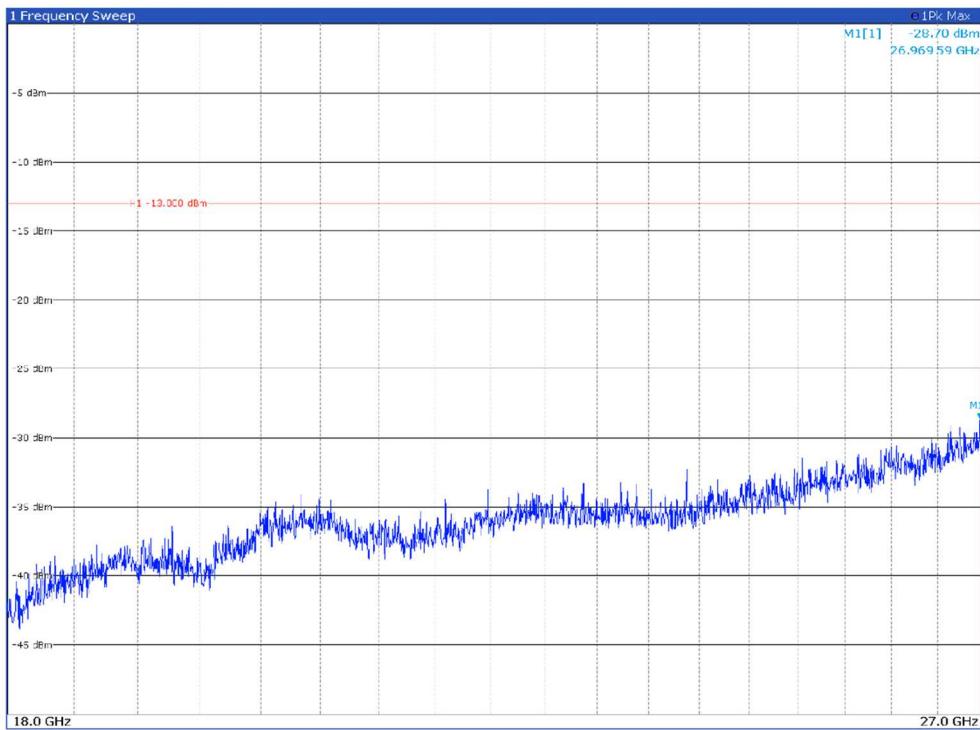
Channel: MIDDLE, Modulation: 64QAM,  
BW=10MHz, Range: 30MHz - 1GHz, Polarization: Vertical



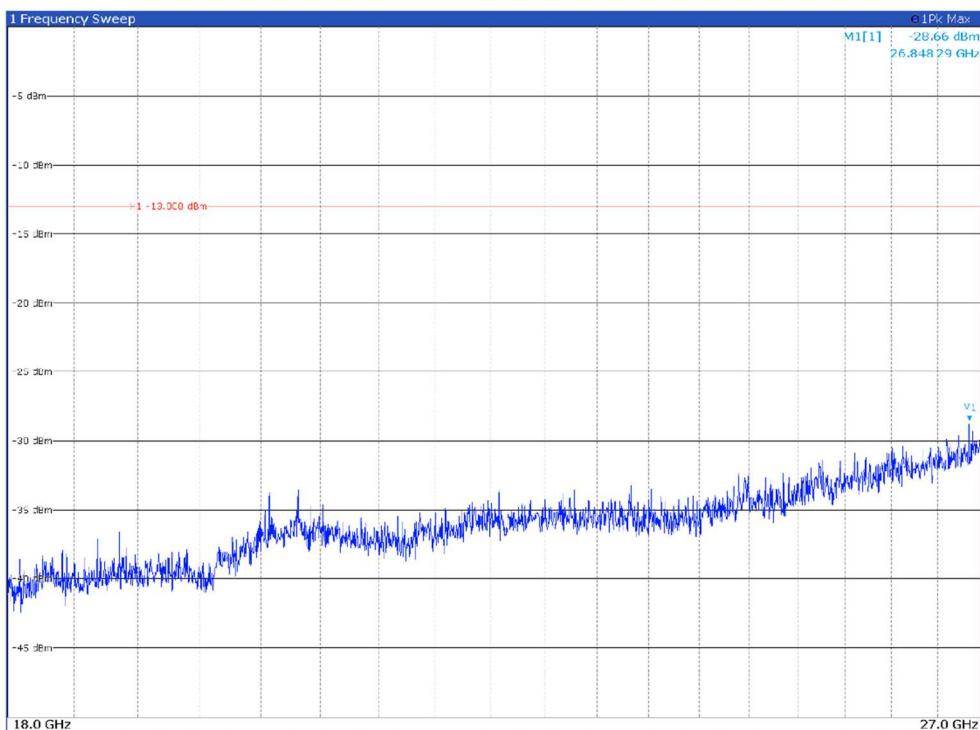
Channel: MIDDLE, Modulation: 64QAM,  
 BW=10MHz, Range: 1GHz - 18GHz, Polarization: Horizontal



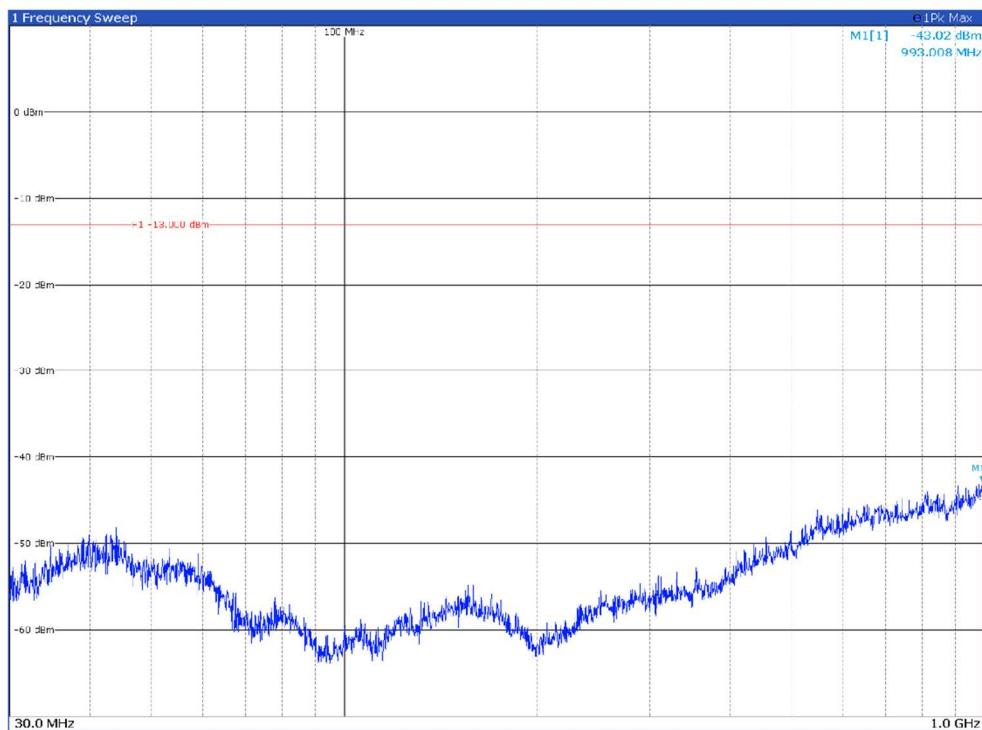
Channel: MIDDLE, Modulation: 64QAM,  
 BW=10MHz, Range: 1GHz - 18GHz, Polarization: Vertical



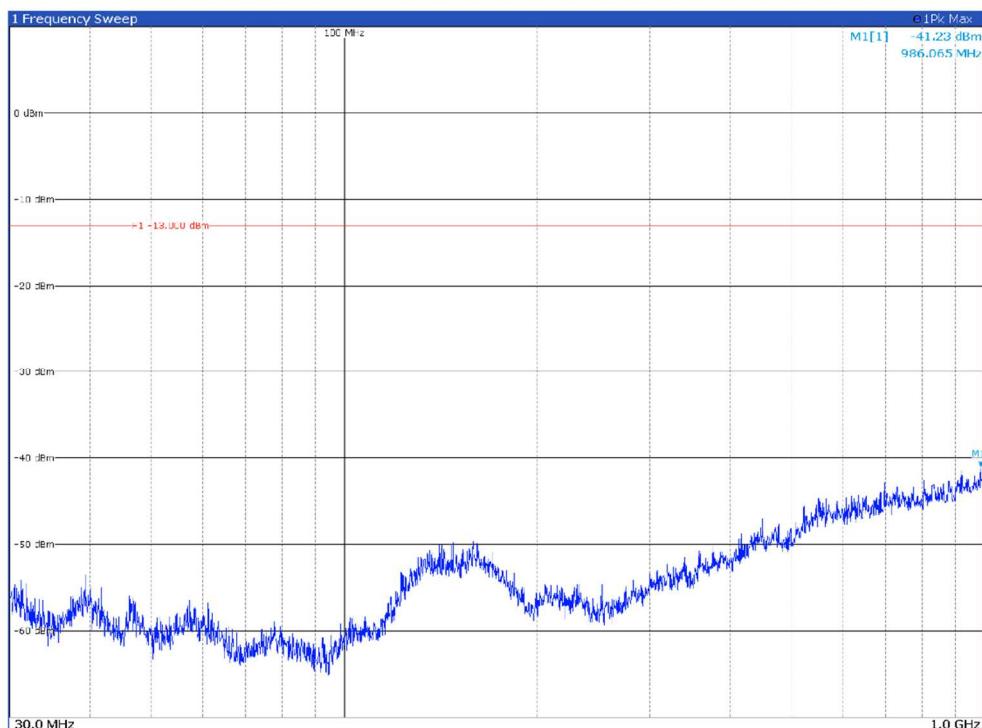
Channel: MIDDLE, Modulation: 64QAM,  
BW=10MHz, Range: 18GHz - 27GHz, Polarization: Horizontal



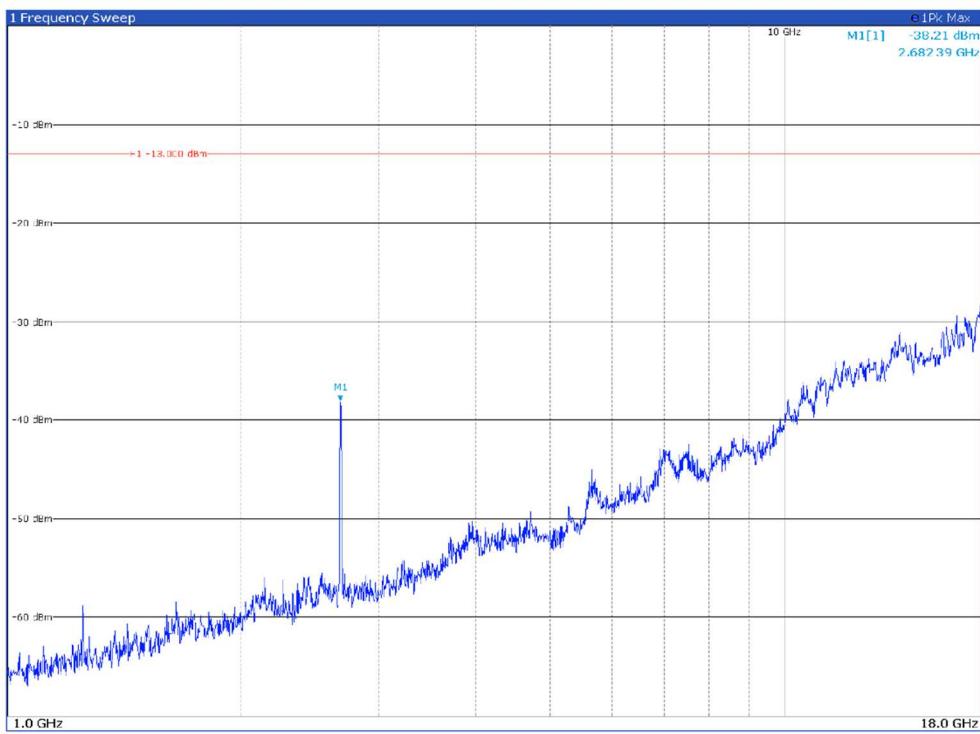
Channel: MIDDLE, Modulation: 64QAM,  
BW=10MHz, Range: 18GHz - 27GHz, Polarization: Vertical



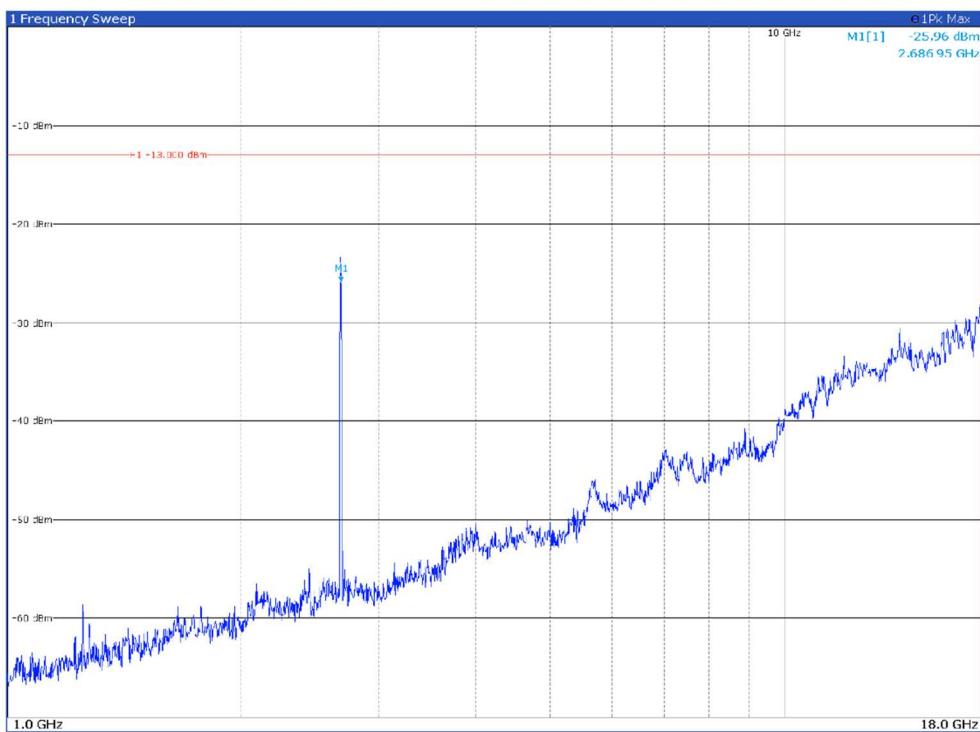
Channel: TOP, Modulation: 64QAM,  
BW=10MHz, Range: 30MHz - 1GHz, Polarization: Horizontal



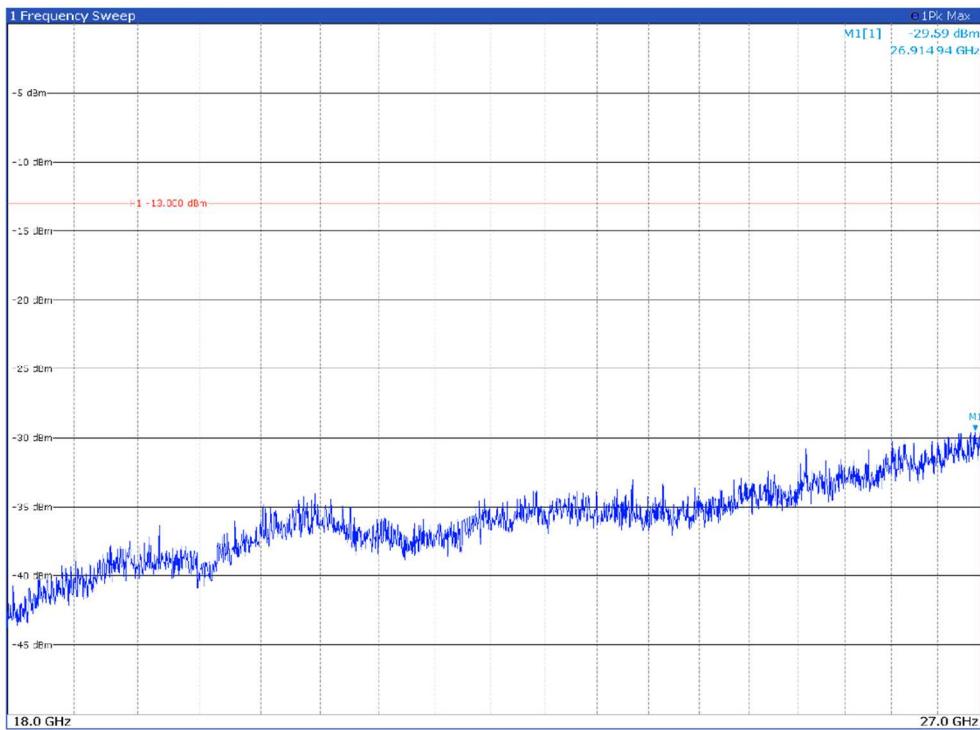
Channel: TOP, Modulation: 64QAM,  
BW=10MHz, Range: 30MHz - 1GHz, Polarization: Vertical



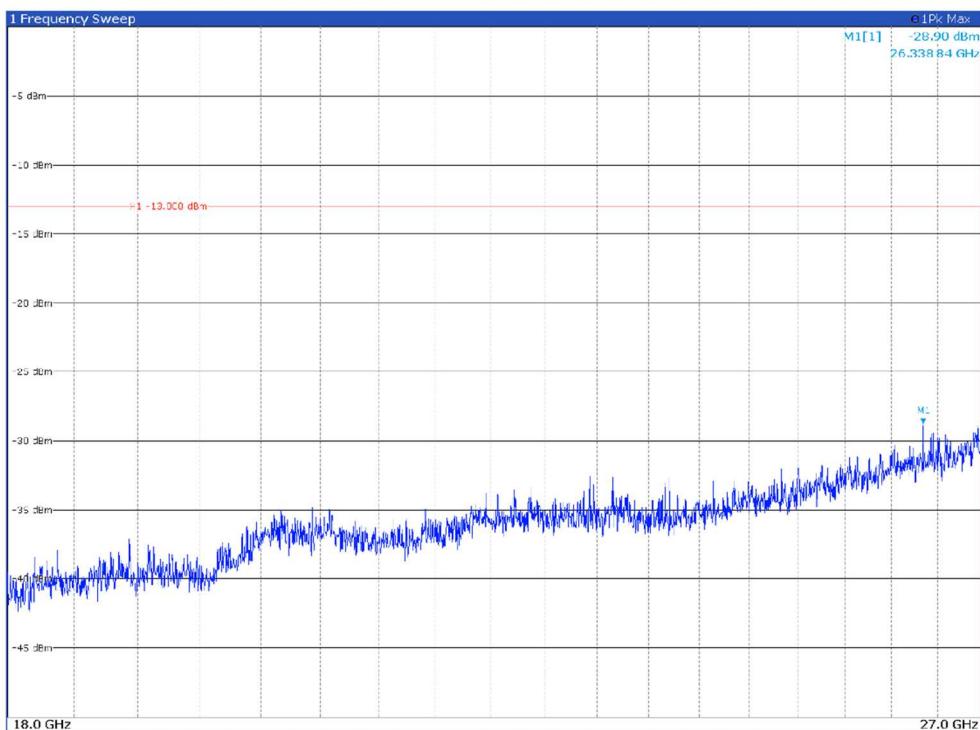
Channel: TOP, Modulation: 64QAM,  
 BW=10MHz, Range: 1GHz - 18GHz, Polarization: Horizontal



Channel: TOP, Modulation: 64QAM,  
 BW=10MHz, Range: 1GHz - 18GHz, Polarization: Vertical



Channel: TOP, Modulation: 64QAM,  
BW=10MHz, Range: 18GHz - 27GHz, Polarization: Horizontal



Channel: TOP, Modulation: 64QAM,  
BW=10MHz, Range: 18GHz - 27GHz, Polarization: Vertical