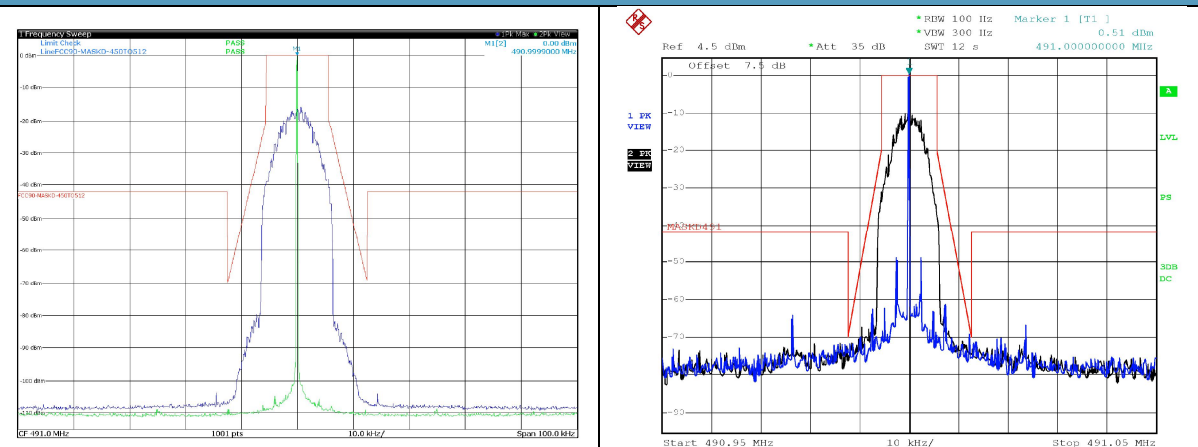
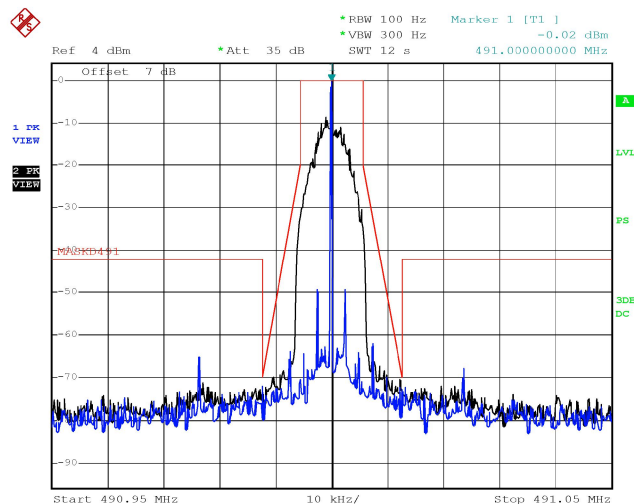


Test data



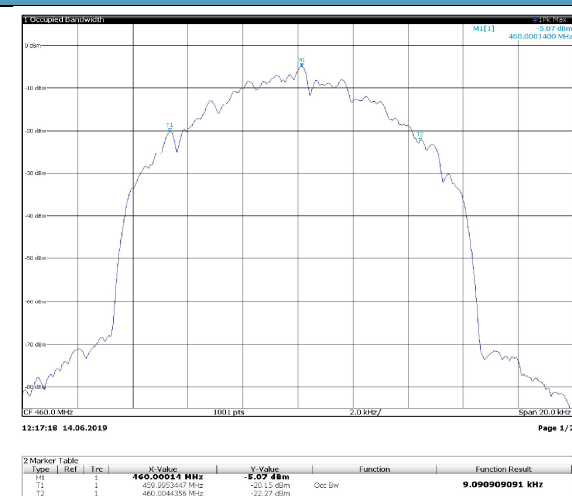
Emission mask D with input at AGC threshold with 8K70D1W signal at 491 MHz



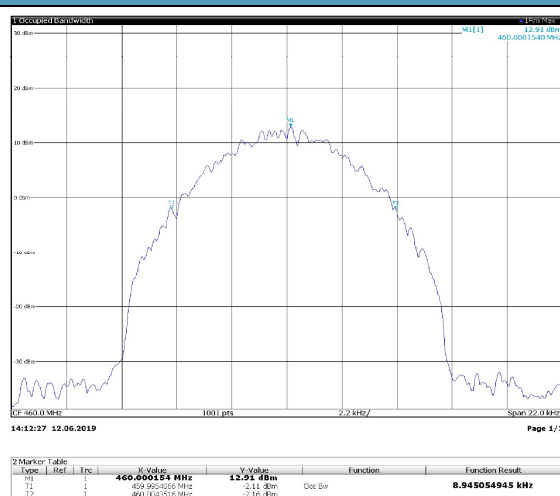
Output

Emission mask D with input at AGC threshold +3dB with 8K70D1W signal at 491 MHz

Test data



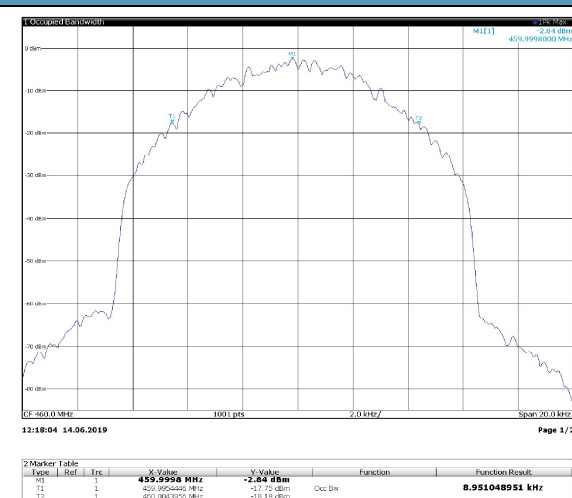
Input



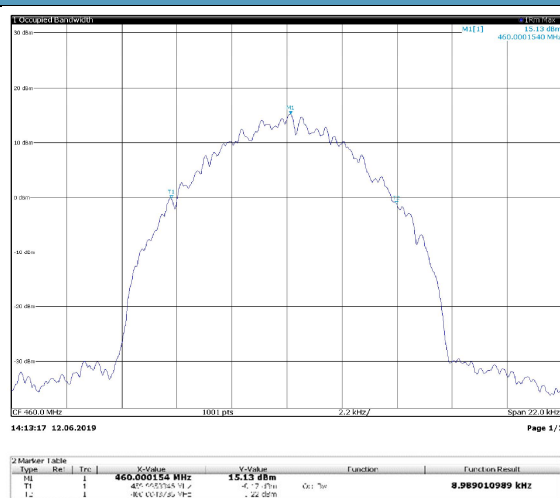
Output

99% occupied band with input at AGC threshold with 8K70D1W signal at 460 MHz

Test data



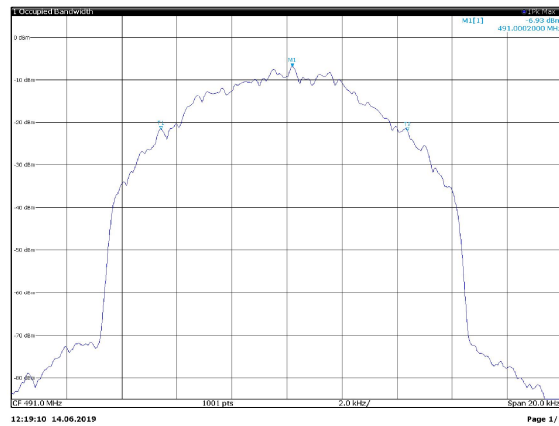
Input



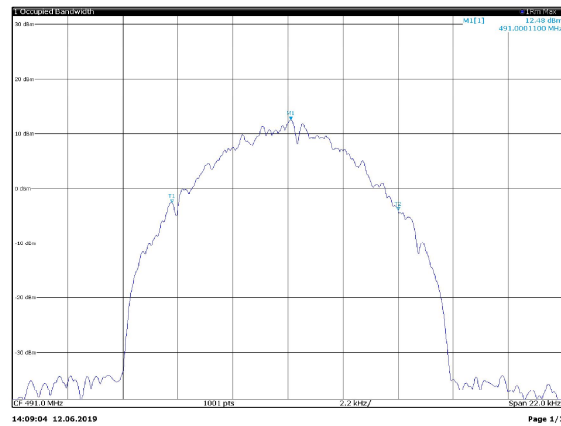
Output

99% occupied band input at AGC threshold +3dB with 8K70D1W signal at 460 MHz

Test data



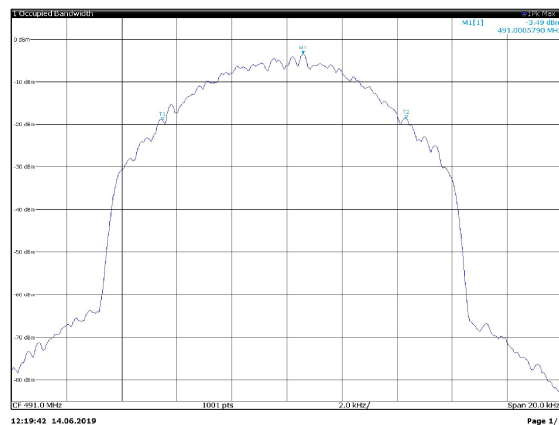
Input



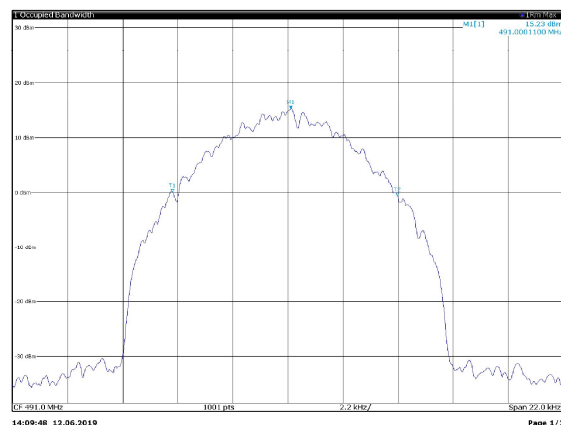
Output

99% occupied band with input at AGC threshold with 8K70D1W signal at 491 MHz

Test data



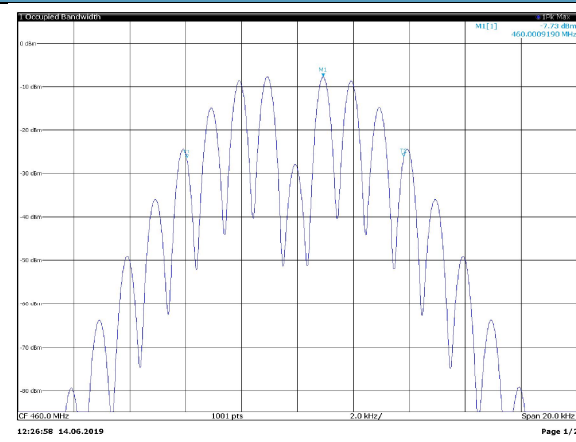
Input



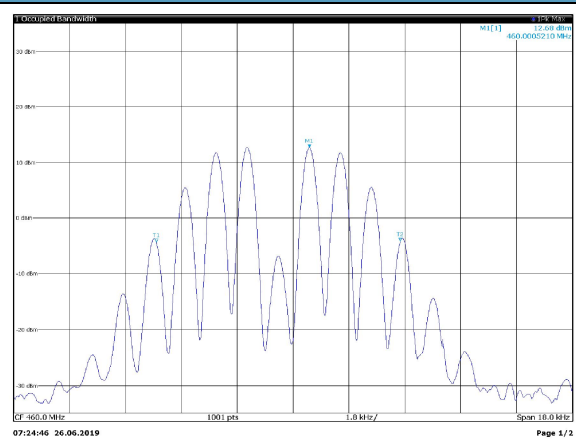
Output

99% occupied band input at AGC threshold +3dB with 8K70D1W signal at 491 MHz

Test data



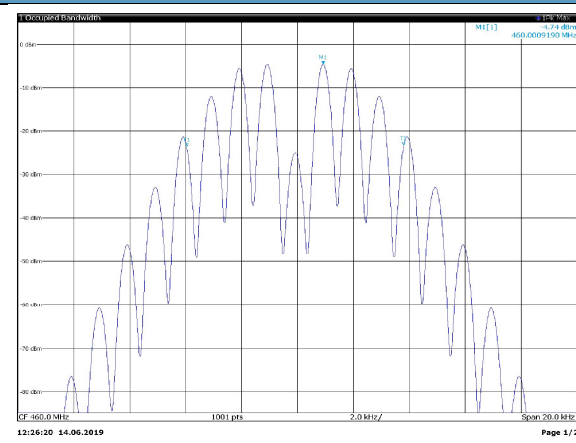
Input



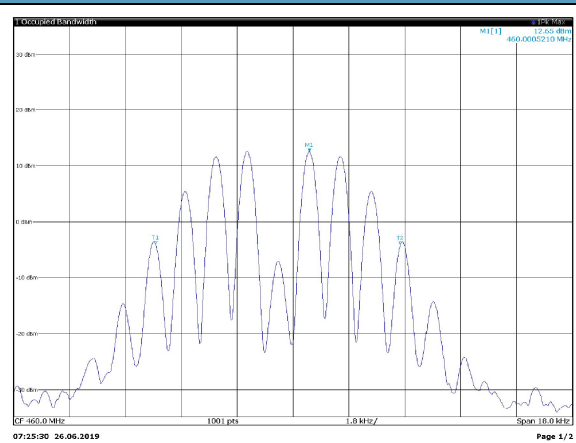
Output

99% occupied band with input at AGC threshold with 11K0F3E signal at 460 MHz

Test data



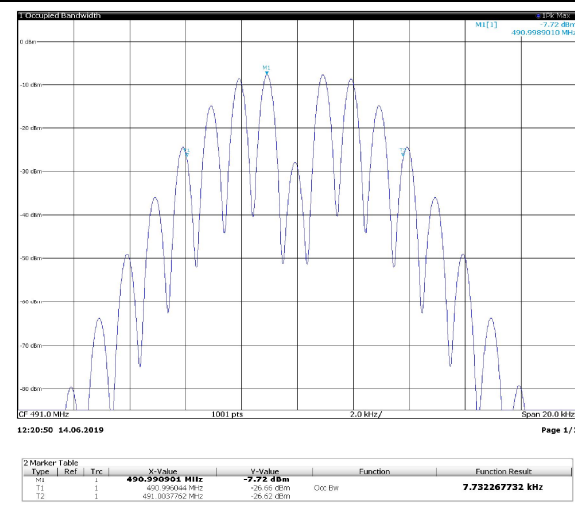
Input



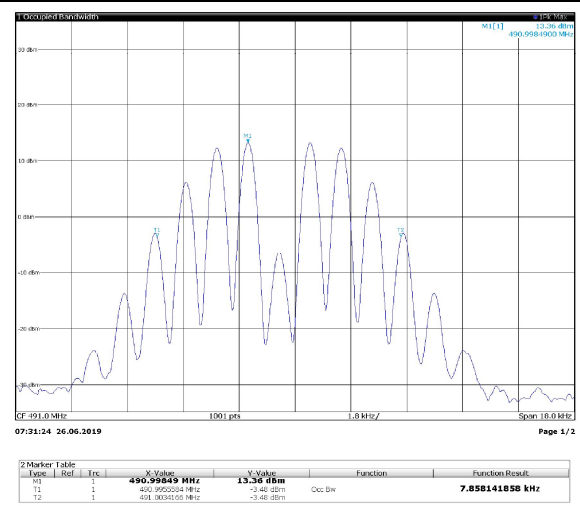
Output

99% occupied band input at AGC threshold +3dB with 11K0F3E signal at 460 MHz

Test data



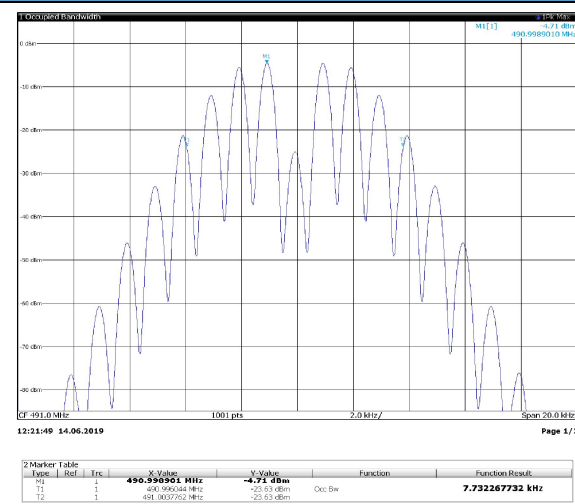
Input



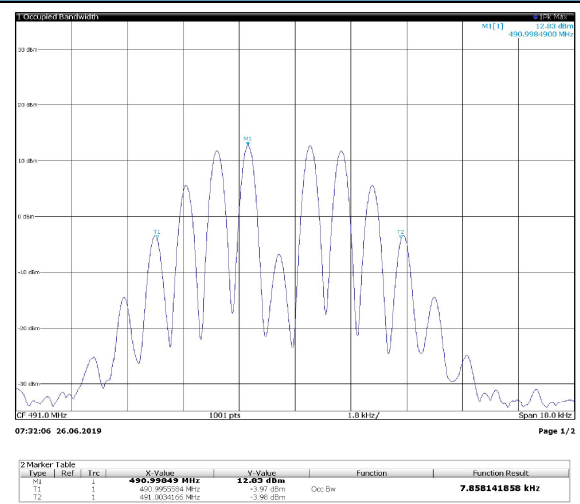
Output

99% occupied band with input at AGC threshold with 11K0F3E signal at 491 MHz

Test data



Input



Output

99% occupied band input at AGC threshold +3dB with 11K0F3E signal at 491 MHz

6.4 Input/output power and amplifier/booster gain

FCC 90.205(h)

450-470 MHz. (1) The maximum allowable station effective radiated power (ERP) is dependent upon the station's antenna HAAT and required service area and will be authorized in accordance with table 2. Applicants requesting an ERP in excess of that listed in table 2 must submit an engineering analysis based upon generally accepted engineering practices and standards that includes coverage contours to demonstrate that the requested station parameters will not produce coverage in excess of that which the applicant requires.

(2) Applications for stations where special circumstances exist that make it necessary to deviate from the ERP and antenna heights in Table 2 will be submitted to the frequency coordinator accompanied by a technical analysis, based upon generally accepted engineering practices and standards, that demonstrates that the requested station parameters will not produce a signal strength in excess of 39 dBu at any point along the edge of the requested service area. The coordinator may then recommend any ERP appropriate to meet this condition.

(3) An applicant for a station with a service area radius greater than 32 km (20 mi) must justify the requested service area radius, which may be authorized only in accordance with table 2, note 4. For base stations with service areas greater than 80 km, all operations 80 km or less from the base station will be on a primary basis and all operations outside of 80 km from the base station will be on a secondary basis and will be entitled to no protection from primary operations.

TABLE 2—450-470 MHz—MAXIMUM ERP/REFERENCE HAAT FOR A SPECIFIC SERVICE AREA RADIUS

	Service area radius (km)									
	3	8	13	16	24	32	40 ⁴	48 ⁴	64 ⁴	80 ⁴
Maximum ERP (w) ¹	2	100	² 500	² 500	² 500	² 500	² 500	² 500	² 500	² 500
Up to reference HAAT (m) ³	15	15	15	27	63	125	250	410	950	2700

¹Maximum ERP indicated provides for a 39 dBu signal strength at the edge of the service area per FCC Report R-6602, Fig. 29 (See §73.699, Fig. 10 b).

²Maximum ERP of 500 watts allowed. Signal strength at the service area contour may be less than 39 dBu.

³When the actual antenna HAAT is greater than the reference HAAT, the allowable ERP will be reduced in accordance with the following equation: $ERP_{allow} = ERP_{max} \times (HAAT_{ref} / HAAT_{actual})^2$.

⁴Applications for this service area radius may be granted upon specific request with justification and must include a technical demonstration that the signal strength at the edge of the service area does not exceed 39 dBu.

FCC 90.205(i)

(i) 470-512 MHz. Power and height limitations are specified in §§90.307 and 90.309.

FCC 90.219(e)(1)

The output power capability of a signal booster must be designed for deployments providing a radiated power not exceeding 5 Watts ERP for each retransmitted channel.

RSS-131 clause 6.2

The output power of the zone enhancer shall comply with the transmitter output power of the equipment with which it is to be used (as specified in RSS-119) and shall be within ± 1.0 dB of the zone enhancer manufacturer's rated output power

RSS-119 clause 5.4

The output power shall be within ± 1 dB of the manufacturer's rated power listed in the equipment specifications. The transmitter output power limits set forth in Table 2 will come into force upon the publication of Issue 12 of this standard and will apply to newly certified equipment.

Table 2 — Transmitter Output Power		
Frequency Bands (MHz)	Transmitter Output Power (W)	
	Base/Fixed Equipment	Mobile Equipment
27.41-28 and 29.7-50	300	30
72-76	No limit	1
138-174	110	60
217-218 and 219-220	110	30 $\pm$
220-222	See SRSP-512 for ERP limit	50
406.1-430 and 450-470	110	60
768-776 and 798-806	See SRSP-511 for ERP limit	30 3 W ERP for portable equipment
806-821/851-866 and 821-824/866-869	110	30
896-901/935-940	110	60
929-930/931-932	110	30
928-929/952-953 and 932-932.5/941-941.5	110	30
932.5-935/941.5-944	110	30

Test date: 2019-06-13

Test results: Pass

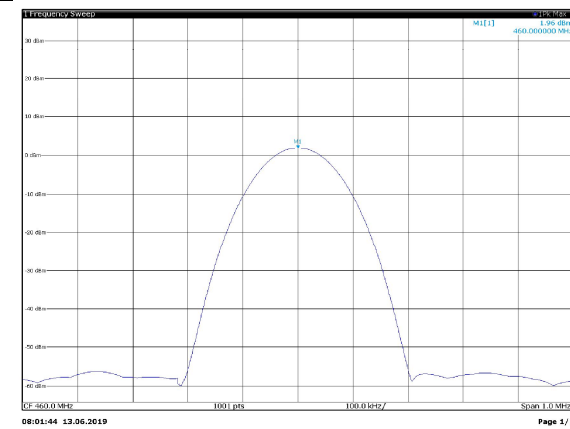
Special notes

Modulation used: CW and 8K70D1W

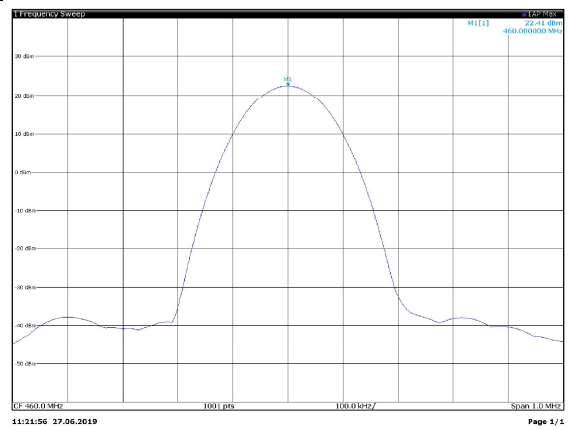
Test data

Gmax antenna gain (dBi) = 39.14 – 21.94 = 17.2 dBi

Test data



Input

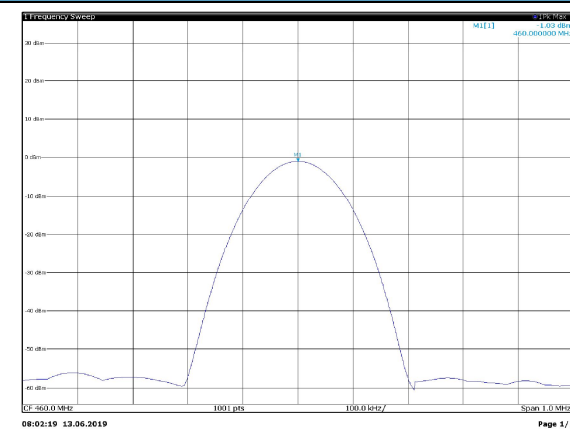


Output

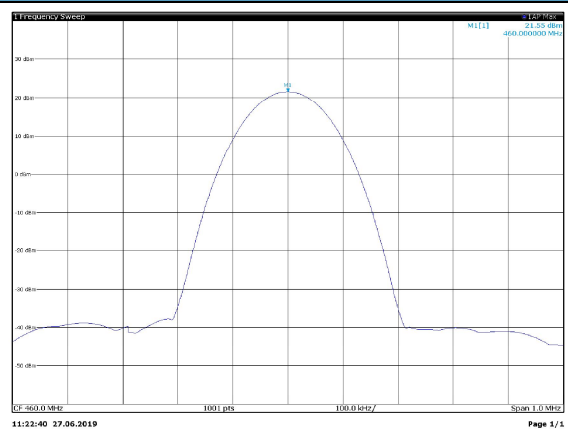
Output power with input at AGC threshold with CW signal at 460 MHz

Gain (dB) = output power (dBm) – input power (dBm) = 17.24

Test data



Input

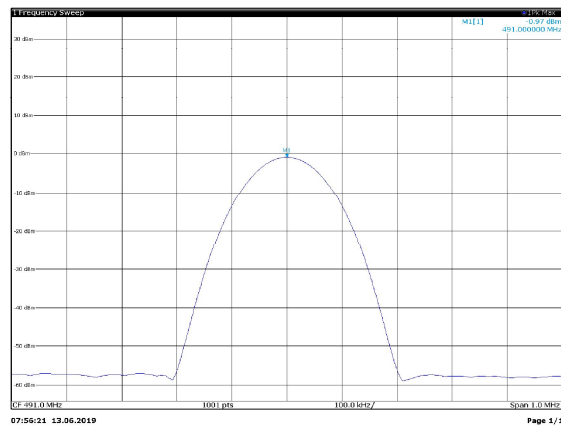


Output

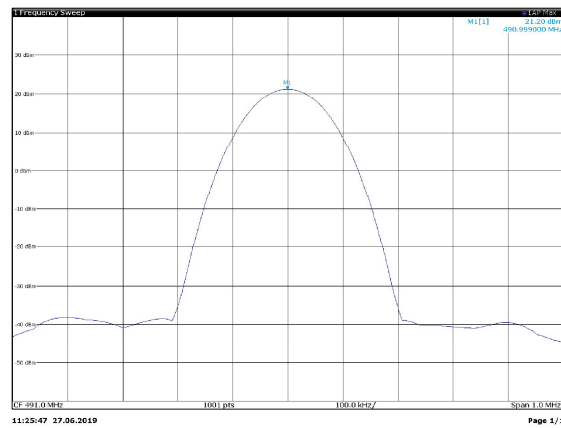
Output power with input at AGC threshold + 3 dB with CW signal at 460 MHz

Gain (dB) = output power (dBm) – input power (dBm) = 17.67

Test data



Input

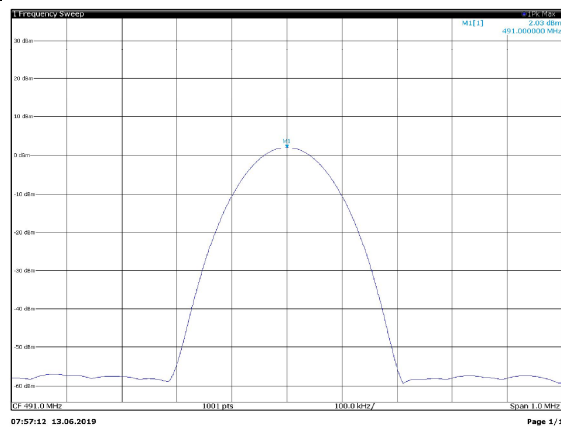


Output

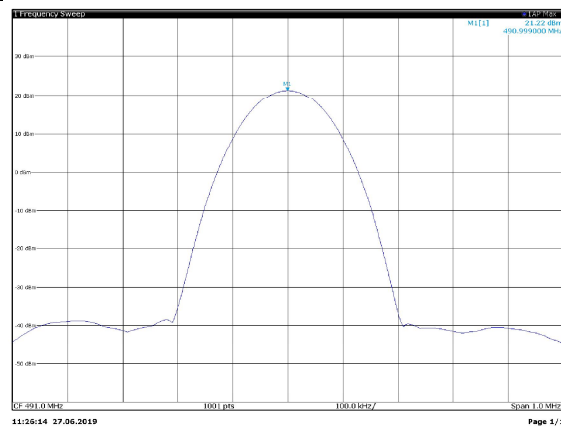
Output power with input at AGC threshold with CW signal at 491 MHz

$$\text{Gain (dB)} = \text{output power (dBm)} - \text{input power (dBm)} = 18.53$$

Test data



Input



Output

Output power with input at AGC threshold + 3 dB with CW signal at 491 MHz

$$\text{Gain (dB)} = \text{output power (dBm)} - \text{input power (dBm)} = 17.98$$