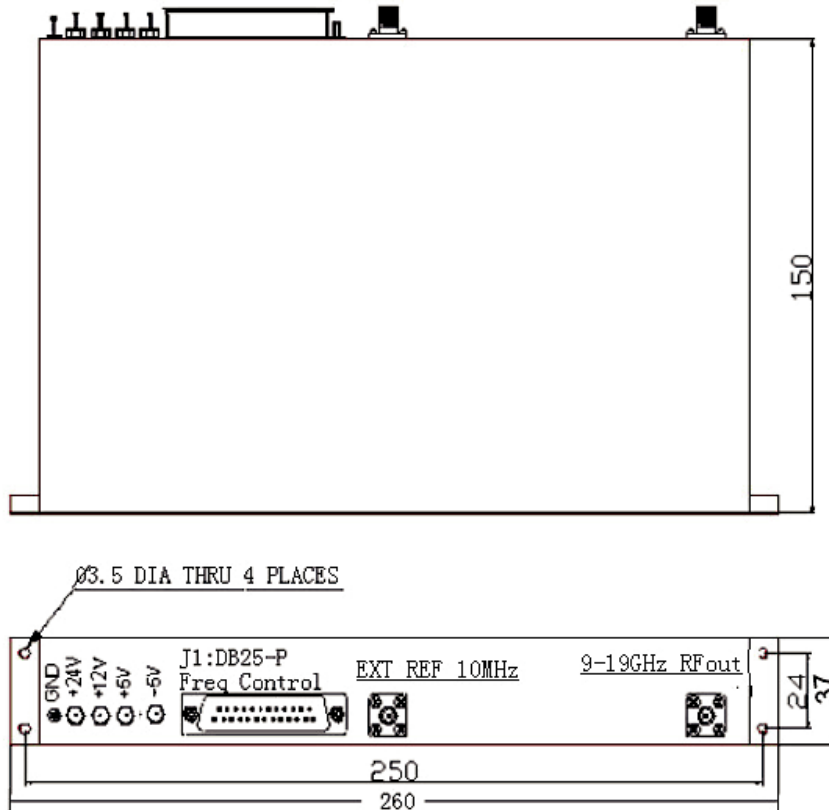


Technical Specification

Frequency Range	9 –19GHz
SSB Phase Noise	-70dBc @ 100Hz -80dBc @ 1KHz -82dBc @ 10KHz
Tuning Step Size	1MHz
Power Level	0dBm
Power Variation (Freq. & temp.)	±1dB
Harmonics	-55dBc
Spurious	-60dBc
Switching Speed	1ms max
Output Impedance	50 ohm
External Reference	10MHz; 0±3dBm Level
Temperature Stability	same as external Reference 10MHz
Aging	same as external Reference 10MHz
Tuning Format (Freq. Control)	3.3V~ 5V TTL 14Bits parallel
Serial Bits	NO USED
Phase Lock Indicator	3.3V-TTL HIGH LOCK LOW UNLOCK
Voltage	+12V/800mA +5V/1.8A -5V/0.1A +24V/0.1A max
Warm-Up Surge Current	500mA
Operational Case Temperature	+50°C
Operating Temperature	-10°C ~ +50°C
Humidity	10-90%
Altitude	10km
Weight	1500g max
Dimensions	See outline drawing



Outline Drawing (Size: mm)



Test Results

+25°C

Frequency (GHz)	Power (dBm)	SSB Phase Noise (dBc)				Spurious (dBc)	Harmonics (dBc)	Volts (V/mA)
		@1K	@10K	@1M	@10M			
9	1.7	-85.3	-91.8	-114	-125	≤-60	-64	+5V/770mA +12V/450mA -5V/80mA +24V/10mA
10	1.3	-85.3	-90.3	-104	-123	≤-60	-70	
11	1.5	-85.2	-89.2	-104	-122	≤-60	-72	
12	2.2	-82.6	-89.7	-103	-124	≤-60	-65	
13	2.4	-85.2	-88.3	-105	-125	≤-60	-67	
14	2.3	-83.2	-87.2	-106	-124	≤-60	/	
15	1.5	-80.7	-86.2	-105	-123	≤-60	/	
16	1.7	-82.2	-86.1	-102	-124	≤-60	/	
17	1.4	-82.1	-85.2	-106	-123	≤-60	/	
18	1.3	-80.8	-85.3	-102	-123	≤-60	/	
19	2.5	-81.1	-84.1	-101	-125	≤-60	/	



MFS09190
9.0-19.0GHz Frequency Synthesizer

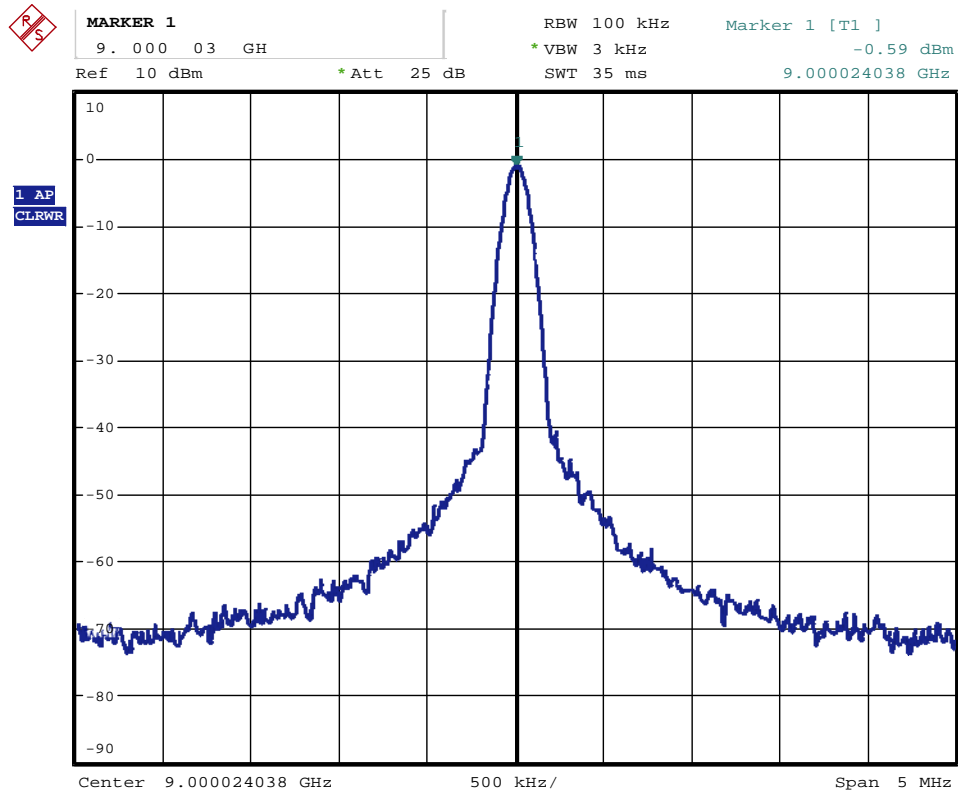
-10°C

Frequency (GHz)	Power (dBm)	SSB Phase Noise (dBc)				Spurious (dBc)	Harmonics (dBc)	Volts V/mA
		@1K	@10K	@1M	@10M			
9	1.4	-85.2	-88.2	-113	-126	≤-60	-69	+5V/710mA +12V/440mA -5V/110mA +24V/10mA
10	1.3	-84.4	-89.3	-112	-123	≤-60	-63	
11	1.5	-78.5	-87.4	-104	-125	≤-60	-65	
12	1.3	-79.6	-85.5	-106	-123	≤-60	-63	
13	2.7	-80.7	-86.6	-102	-123	≤-60	-74	
14	2.8	-81.9	-86.7	-105	-126	≤-60	/	
15	1.4	-77.8	-84.8	-107	-126	≤-60	/	
16	1.3	-80.5	-85.4	-105	-125	≤-60	/	
17	1.2	-80.5	-84.2	-105	-124	≤-60	/	
18	1.2	-78.4	-81.1	-103	-122	≤-60	/	
19	1.6	-80.2	-83.2	-106	-124	≤-60	/	

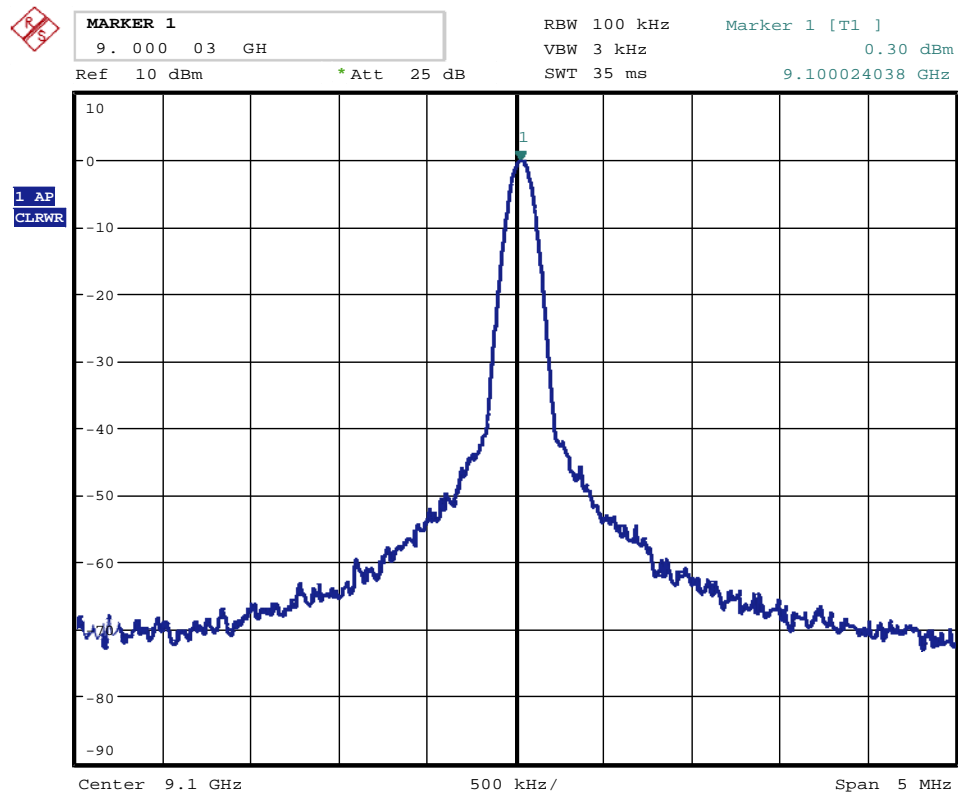
+50°C

Frequency (GHz)	Power (dBm)	SSB Phase Noise (dBc)				Spurious (dBc)	Harmonics (dBc)	Volts V/mA
		@1K	@10K	@1M	@10M			
9	1.4	-84.5	-89.3	-116	-127	≤-60	-65	+5V/740mA +12V/440mA -5V/100mA +24V/10mA
10	1.2	-85.3	-89.4	-112	-123	≤-60	-63	
11	1.7	-82.2	-88.5	-104	-125	≤-60	-64	
12	1.3	-82.5	-86.7	-103	-123	≤-60	-62	
13	2.2	-81.4	-86.5	-104	-126	≤-60	-69	
14	2.7	-81.6	-86.3	-103	-125	≤-60	/	
15	1.3	-80.8	-85.3	-104	-126	≤-60	/	
16	1.6	-81.5	-84.2	-106	-128	≤-60	/	
17	1.2	-80.6	-82.3	-107	-125	≤-60	/	
18	1.8	-80.8	-83.3	-111	-122	≤-60	/	
19	1.8	-80.5	-83.5	-112	-124	≤-60	/	

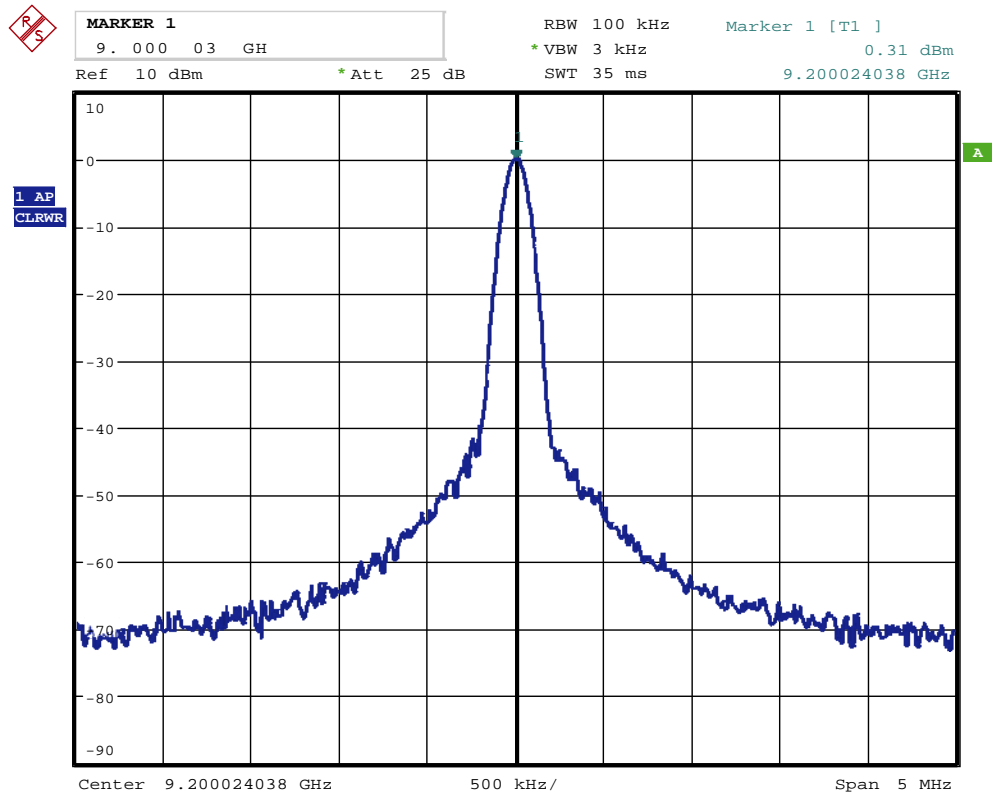
Phase Noise
9.0GHz@5MHz



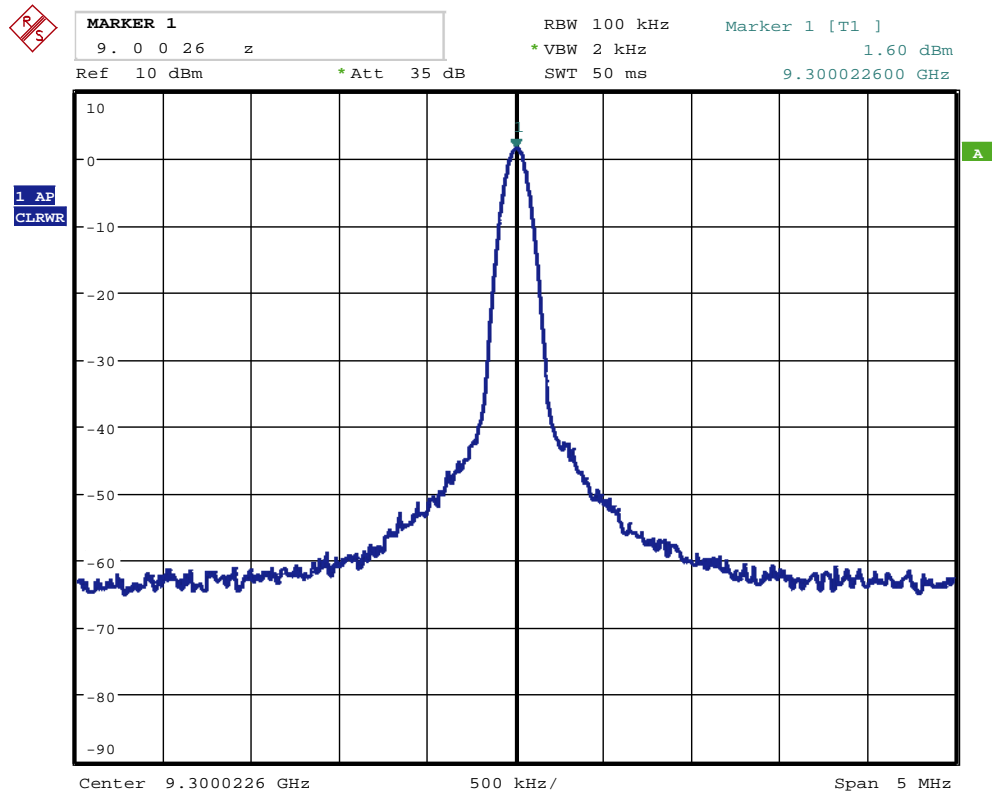
9.1GHz@5MHz



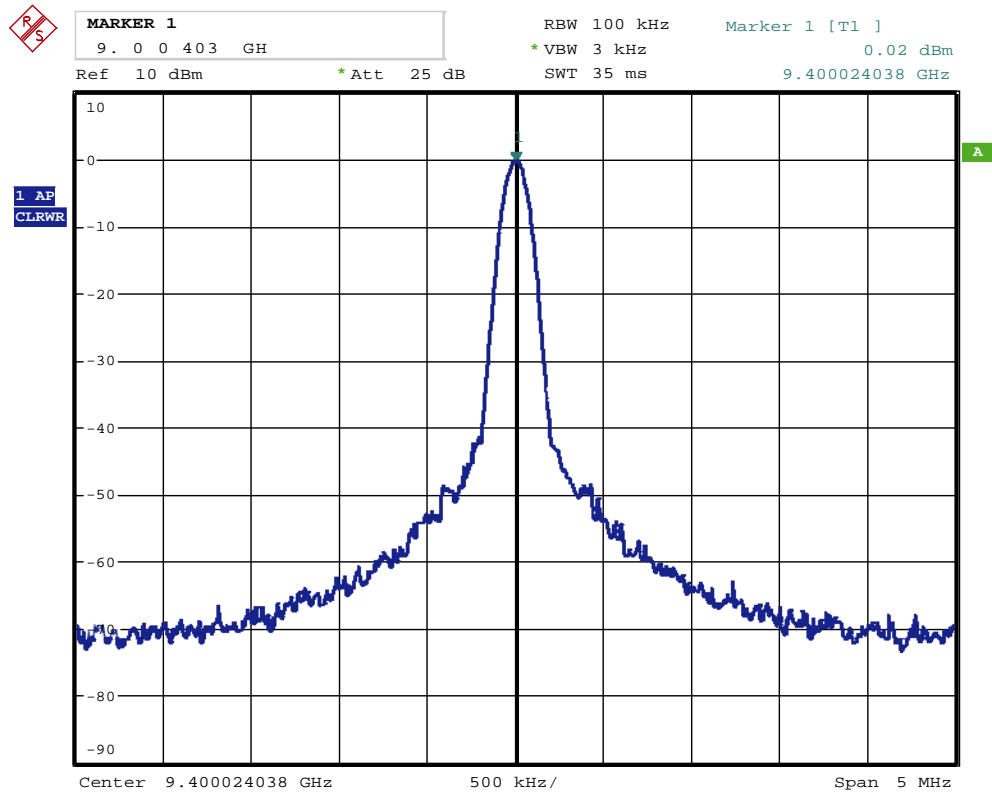
9.2GHz@5MHz



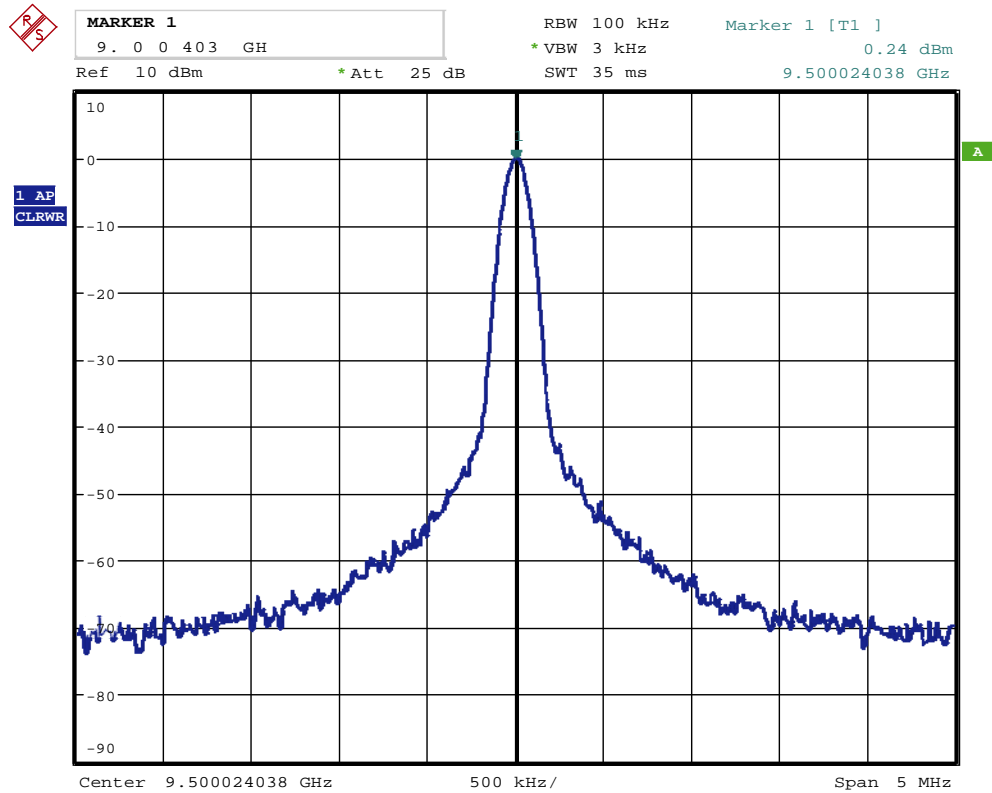
9.3GHz@5MHz



9.4GHz@5MHz

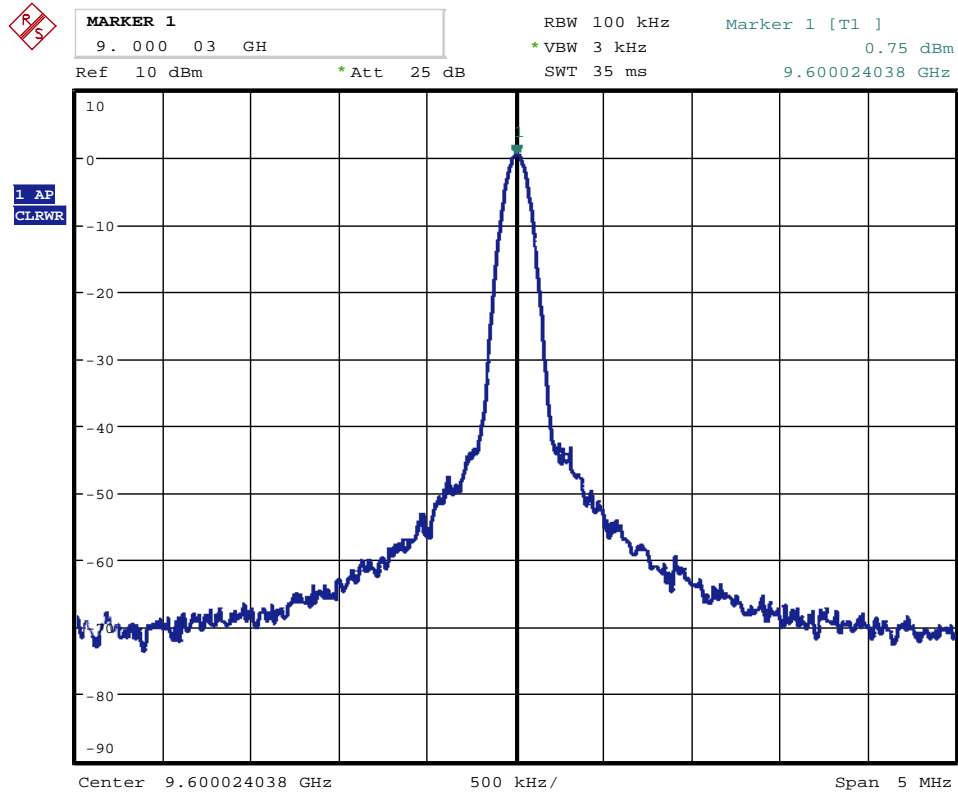


9.5GHz@5MHz

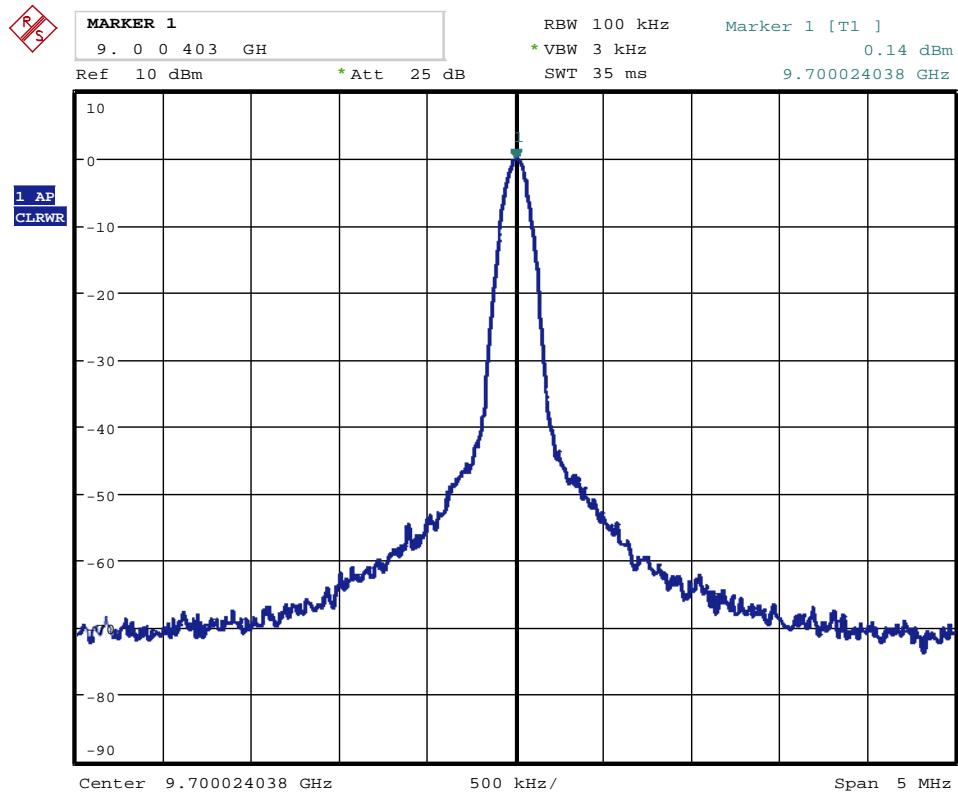




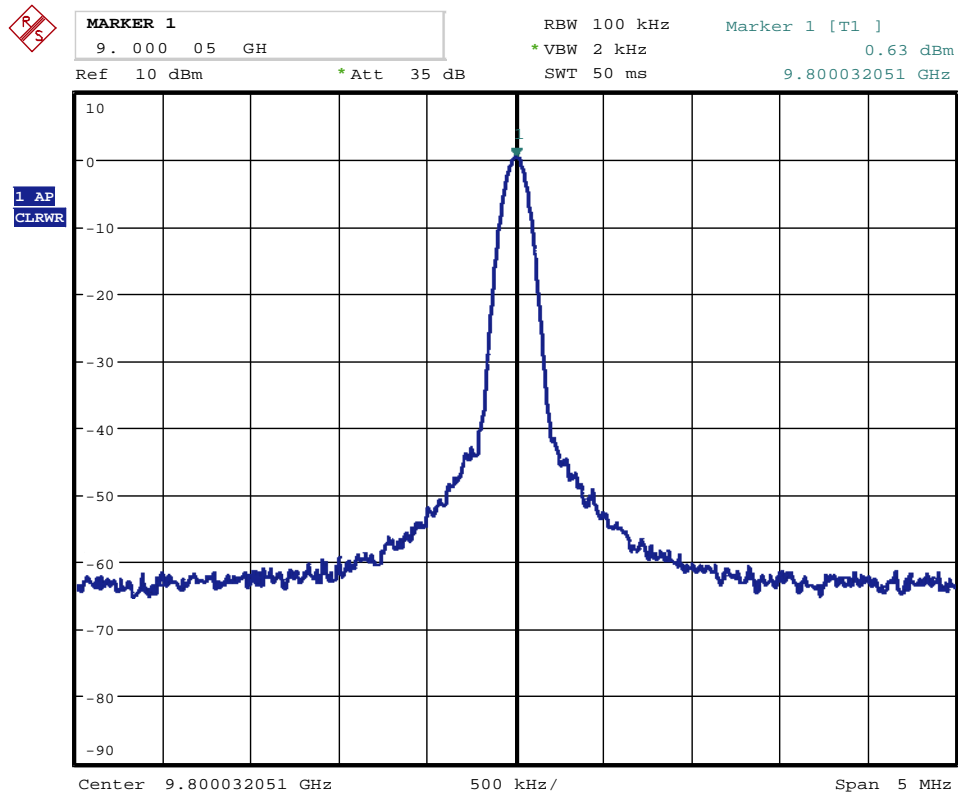
9.6GHz@5MHz



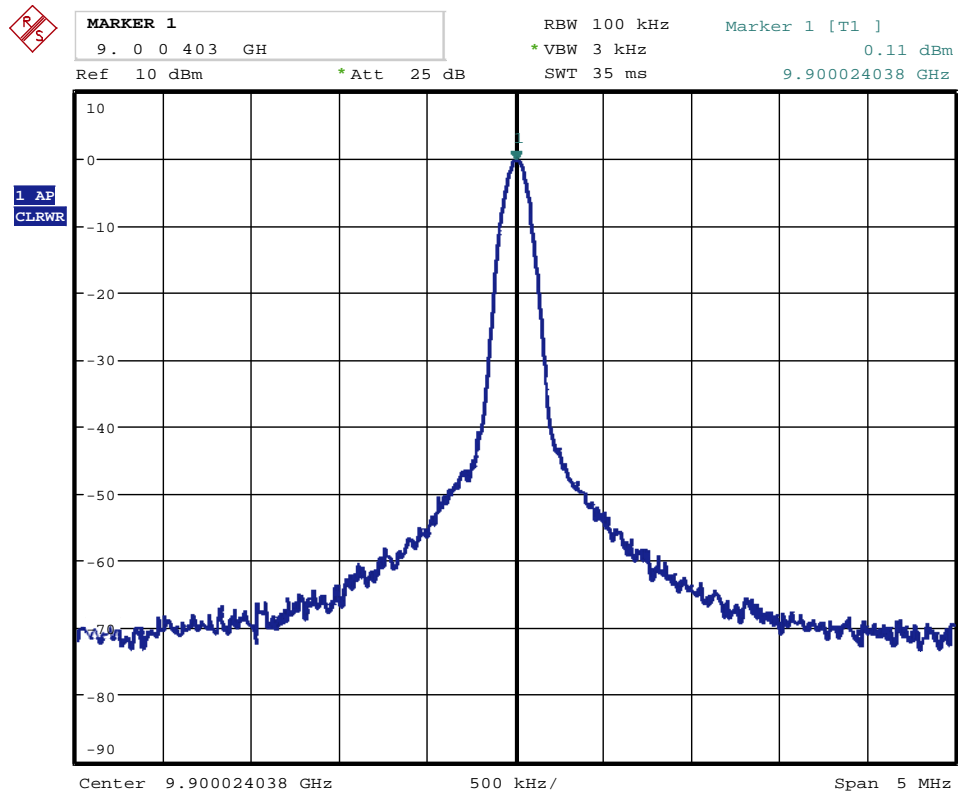
9.7GHz@5MHz



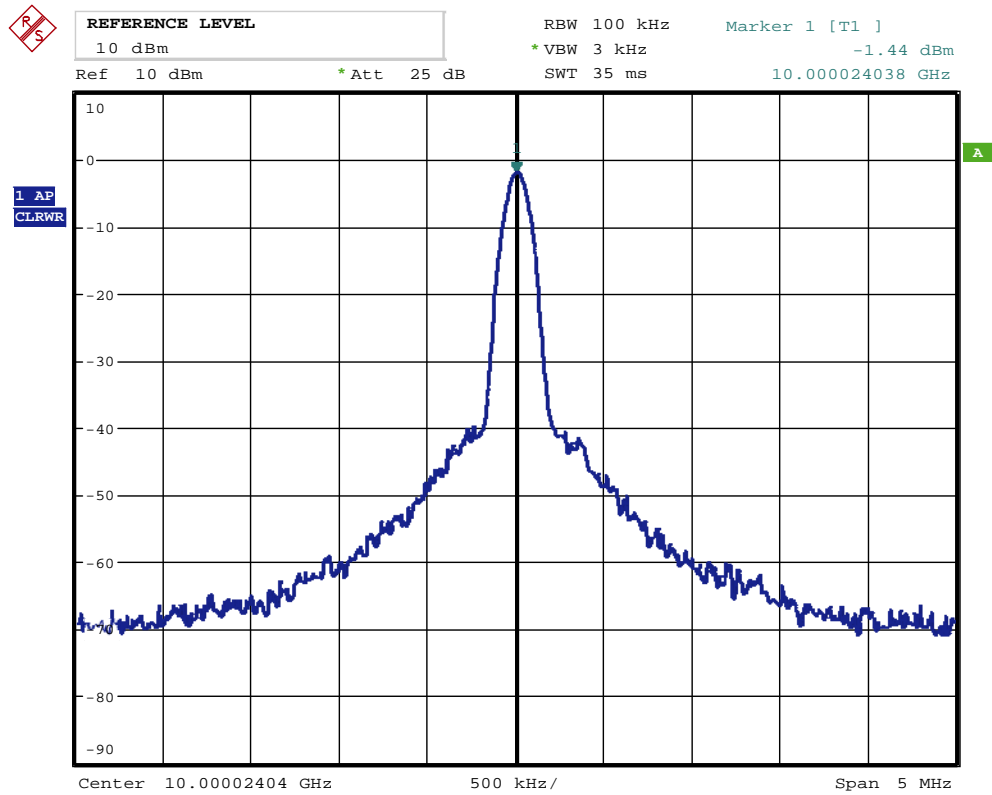
9.8GHz@5MHz



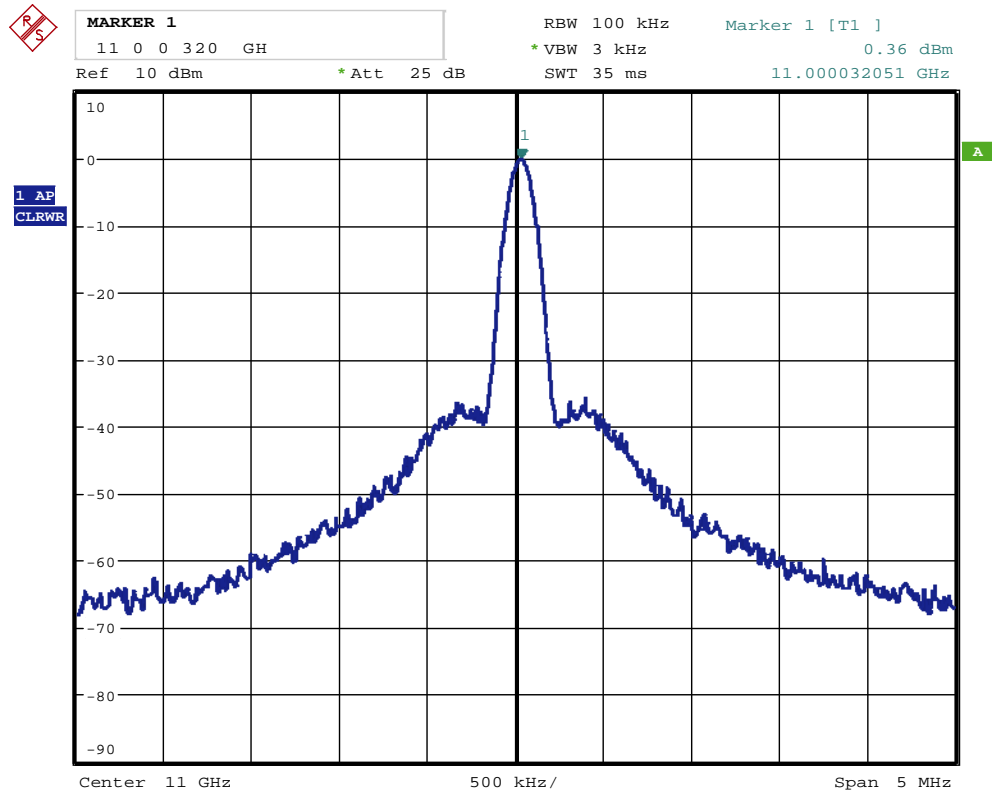
9.9GHz@5MHz



10.0GHz@5MHz

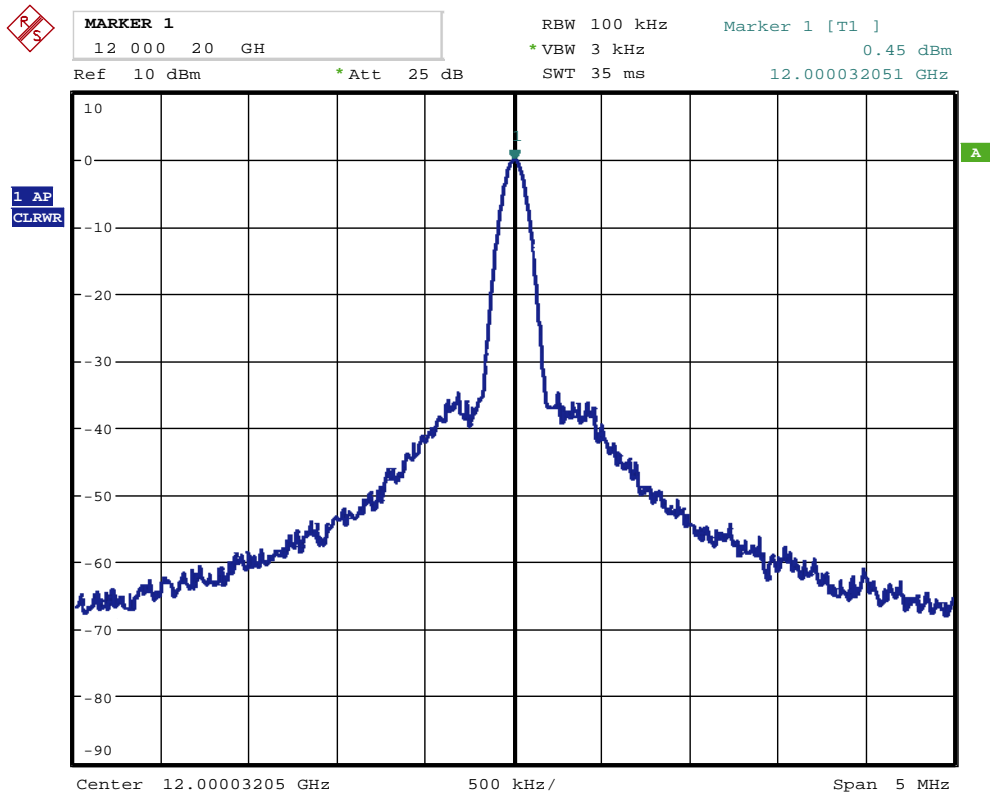


11.0GHz@5MHz

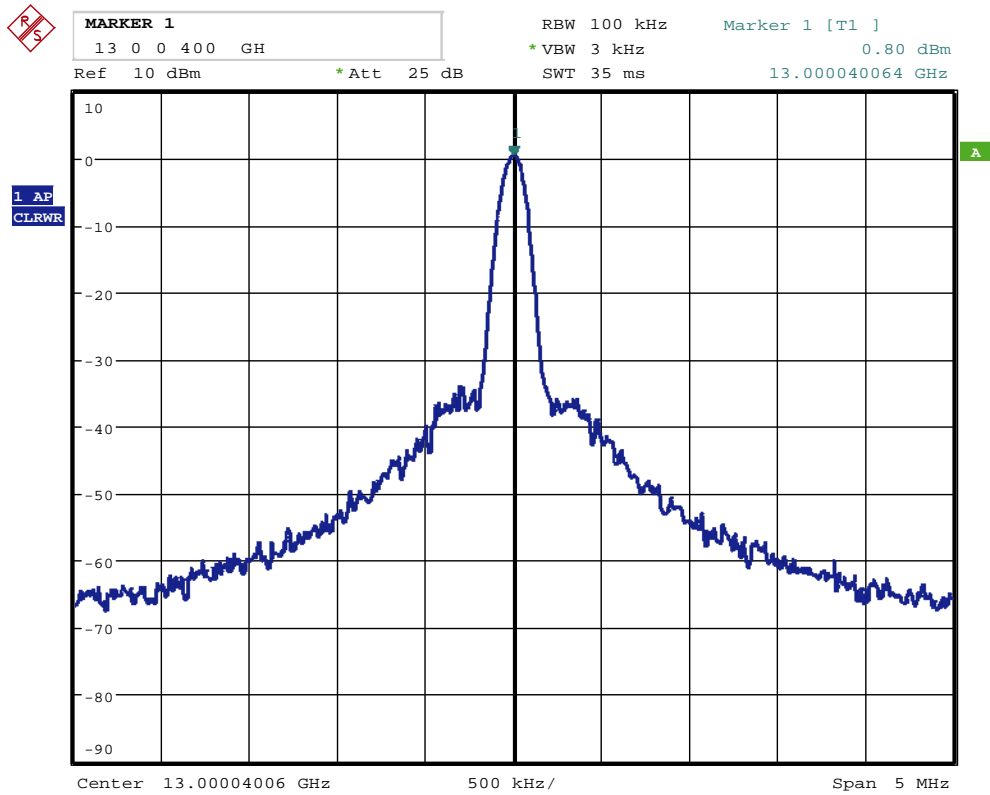




12.0GHz@5MHz

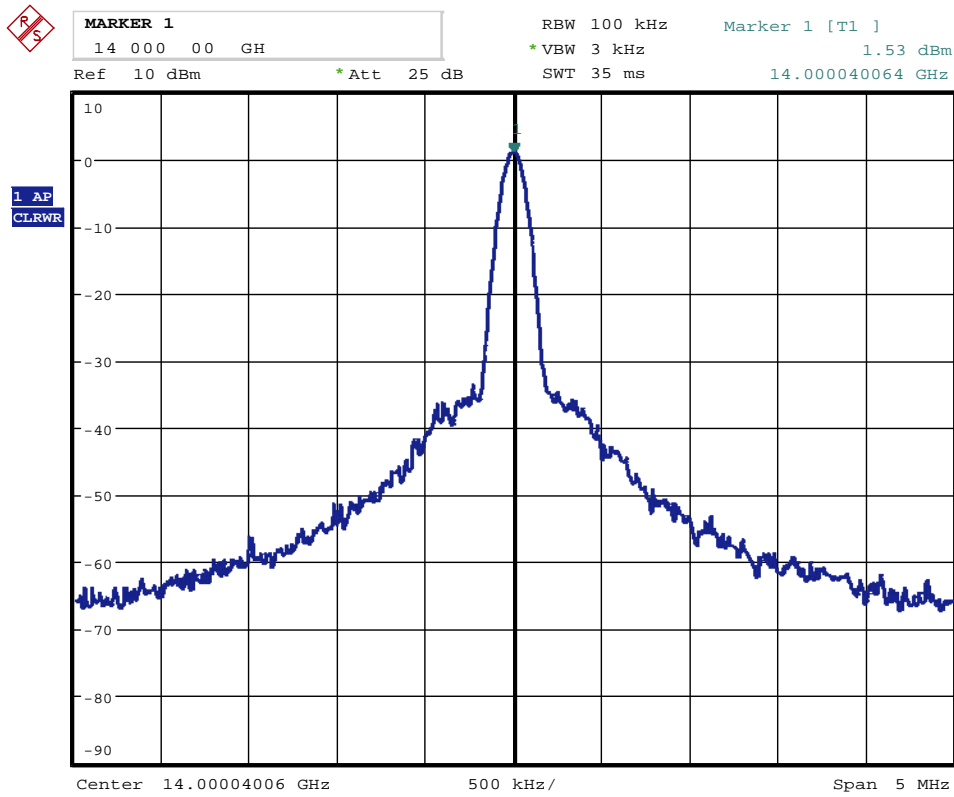


13.0GHz@5MHz

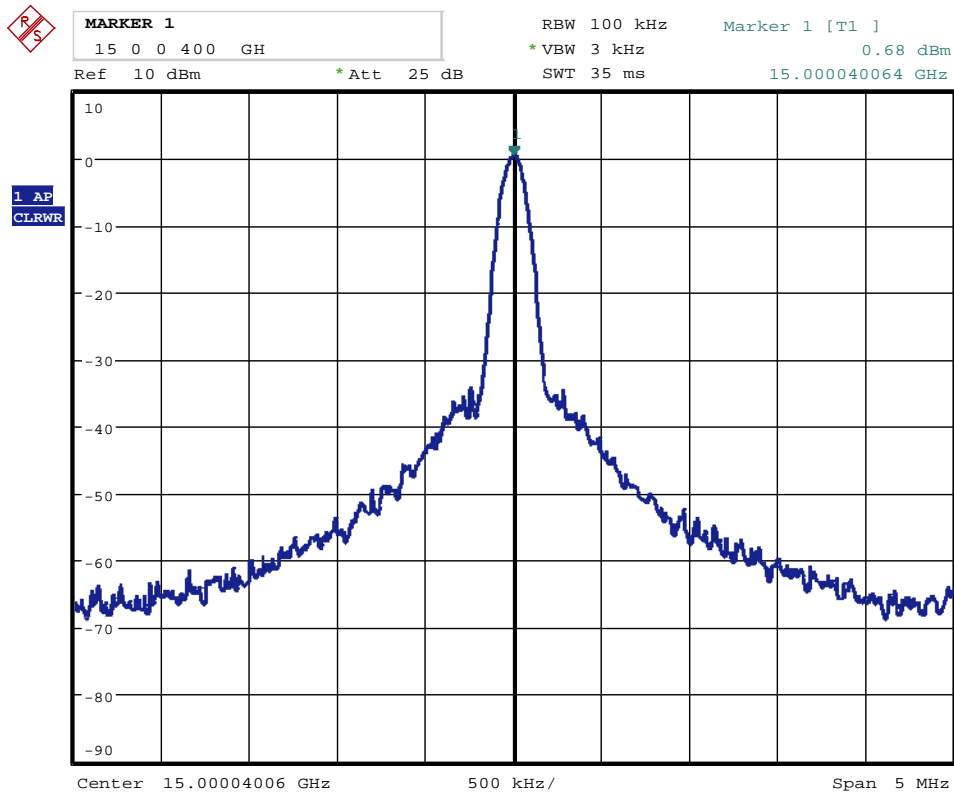




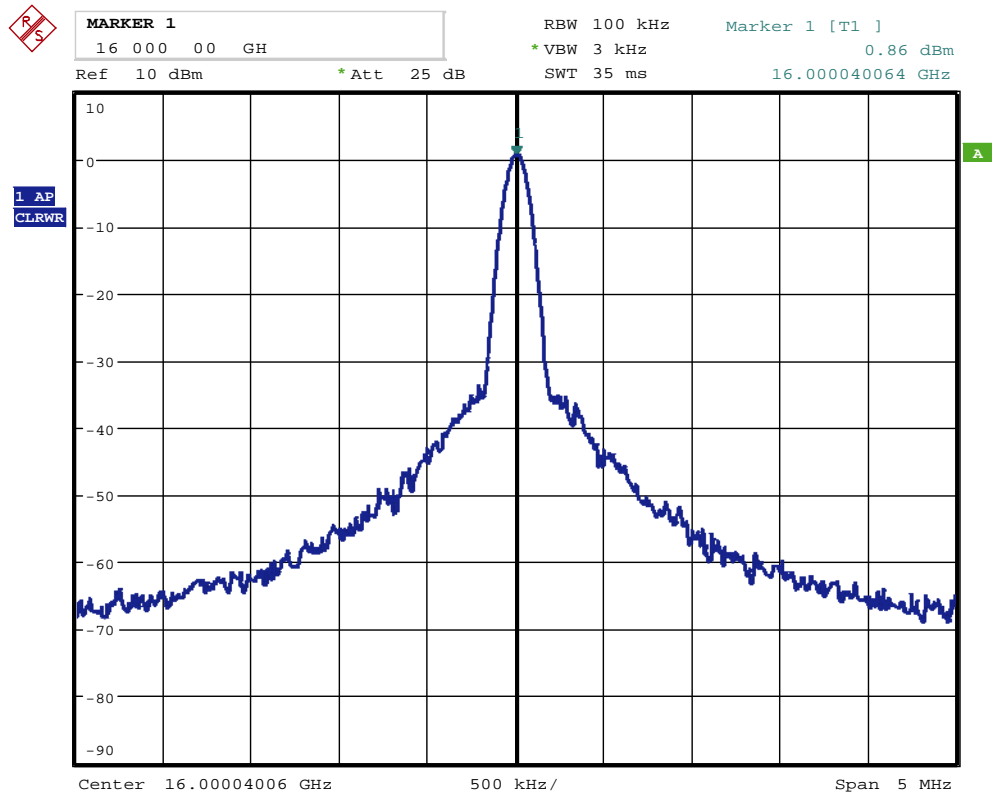
14.0GHz@5MHz



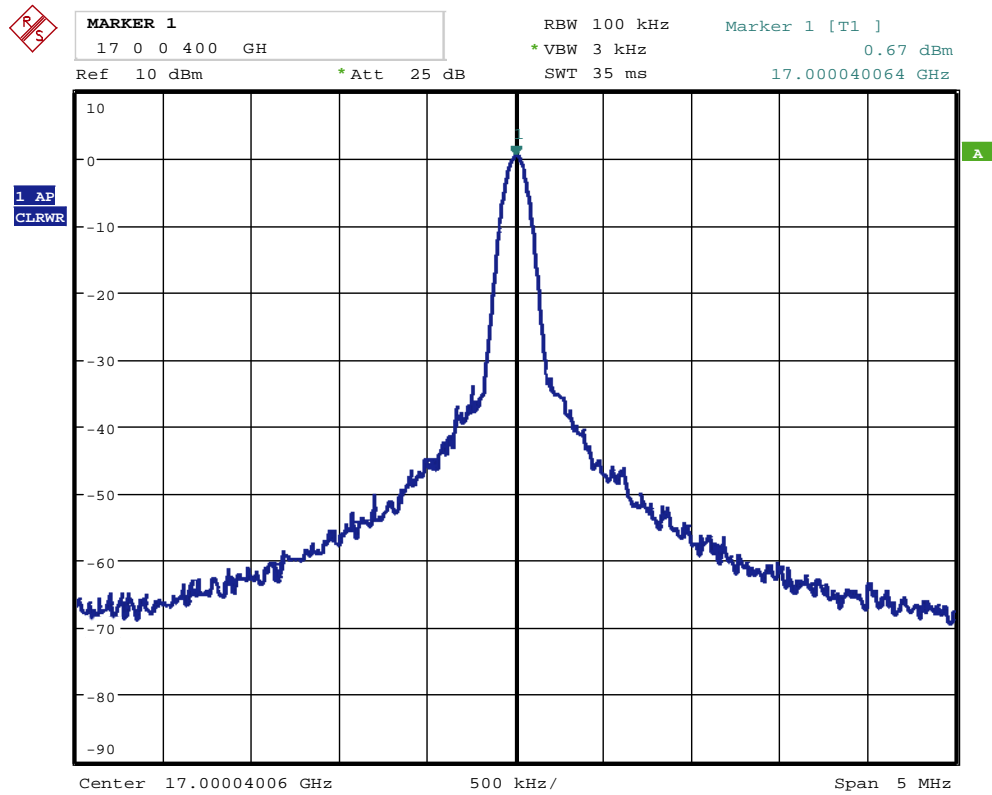
15.0GHz@5MHz



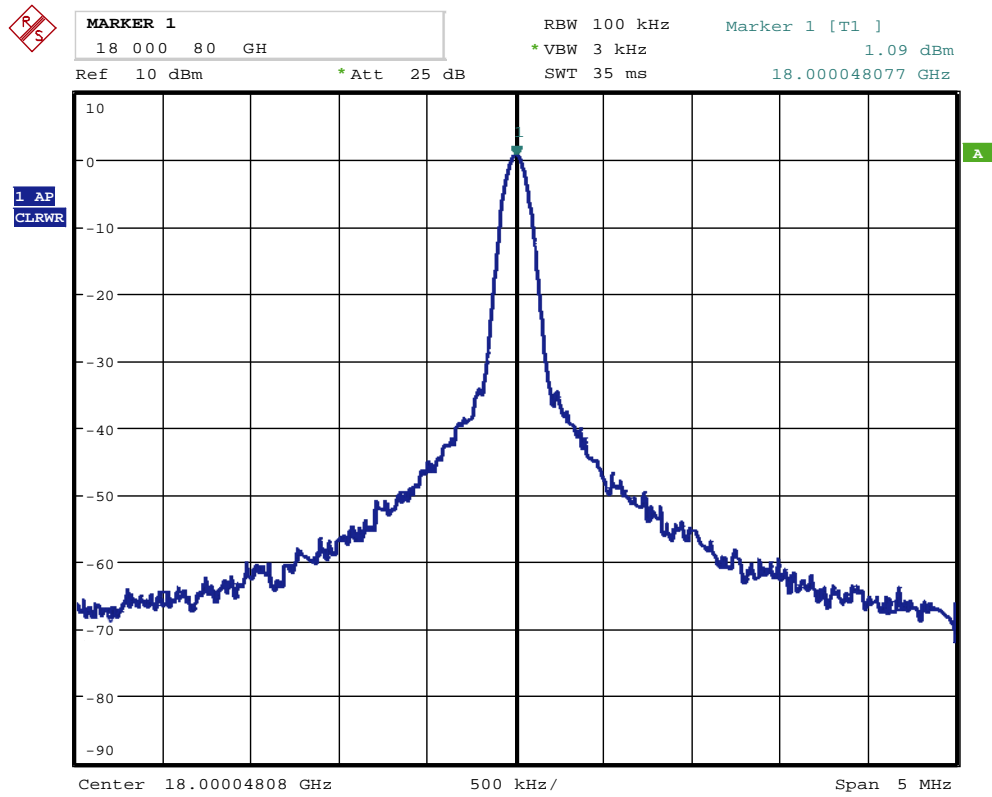
16.0GHz@5MHz



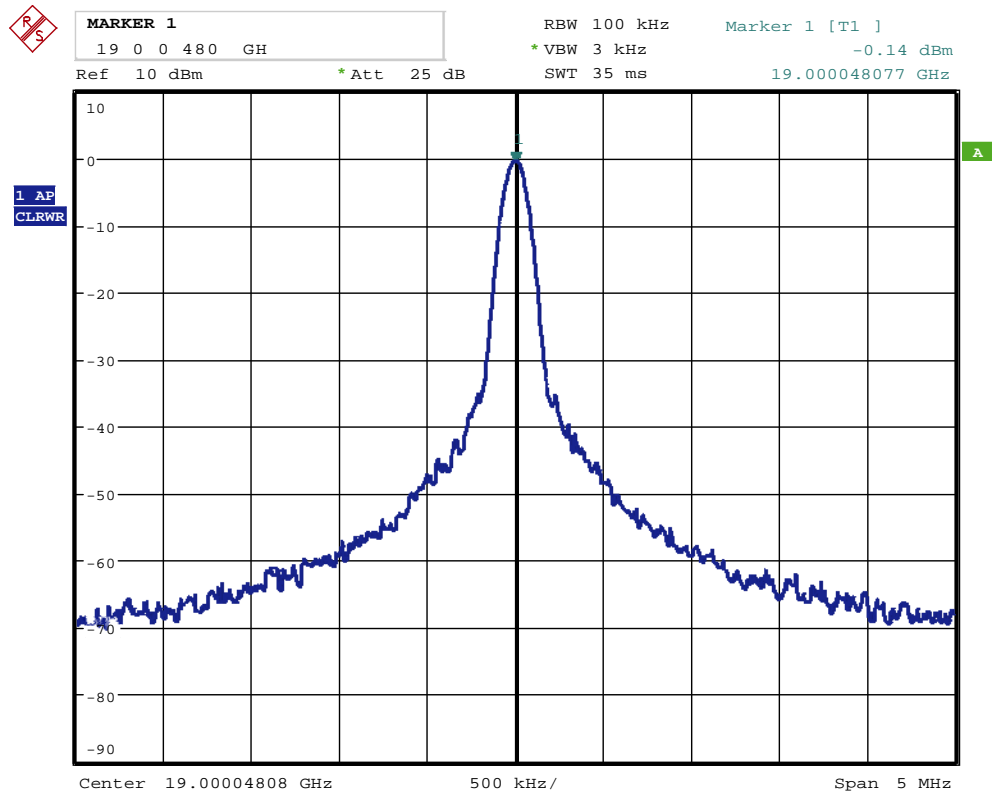
17.0GHz@5MHz



18.0GHz@5MHz

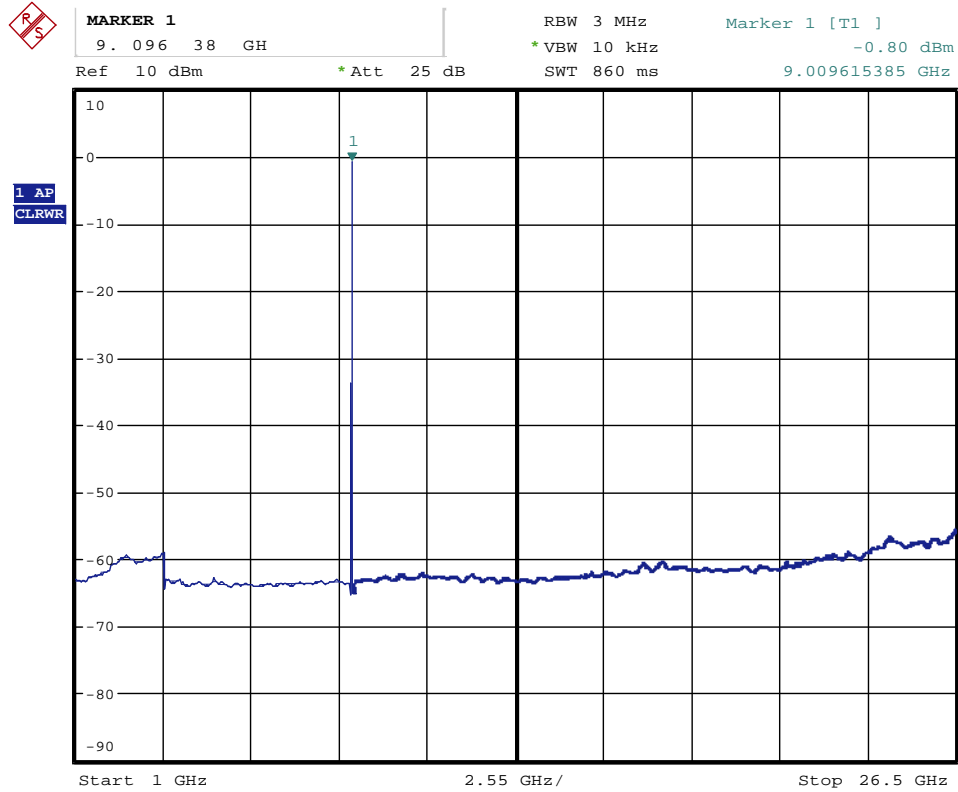


19.0GHz@5MHz

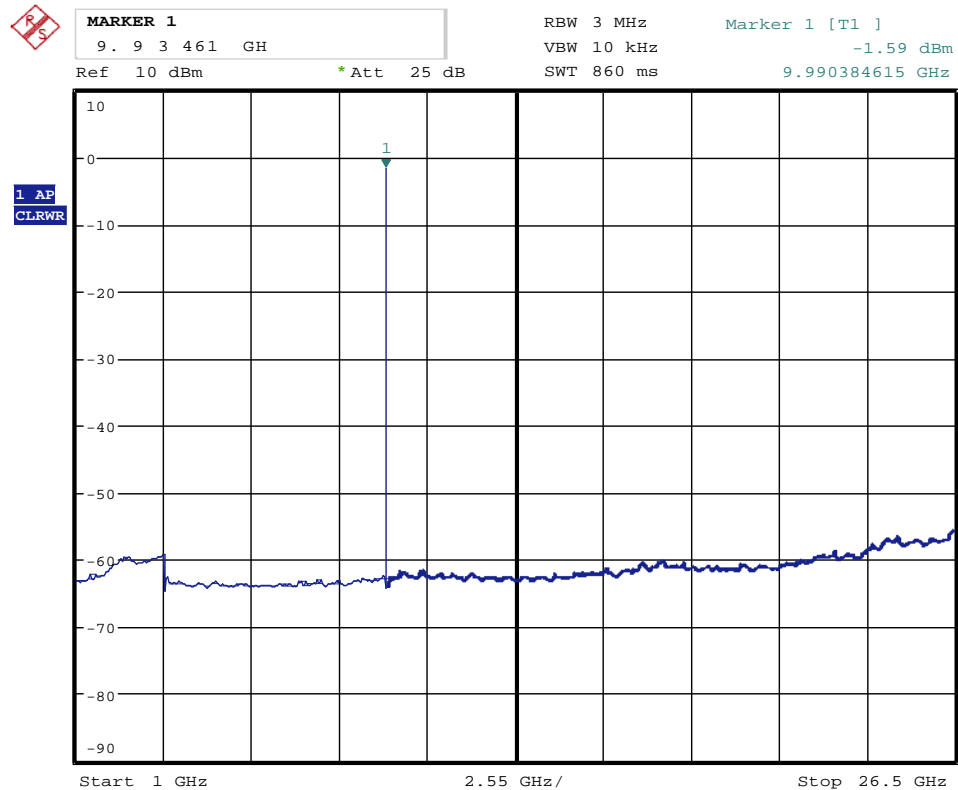




Spurious 9GHz

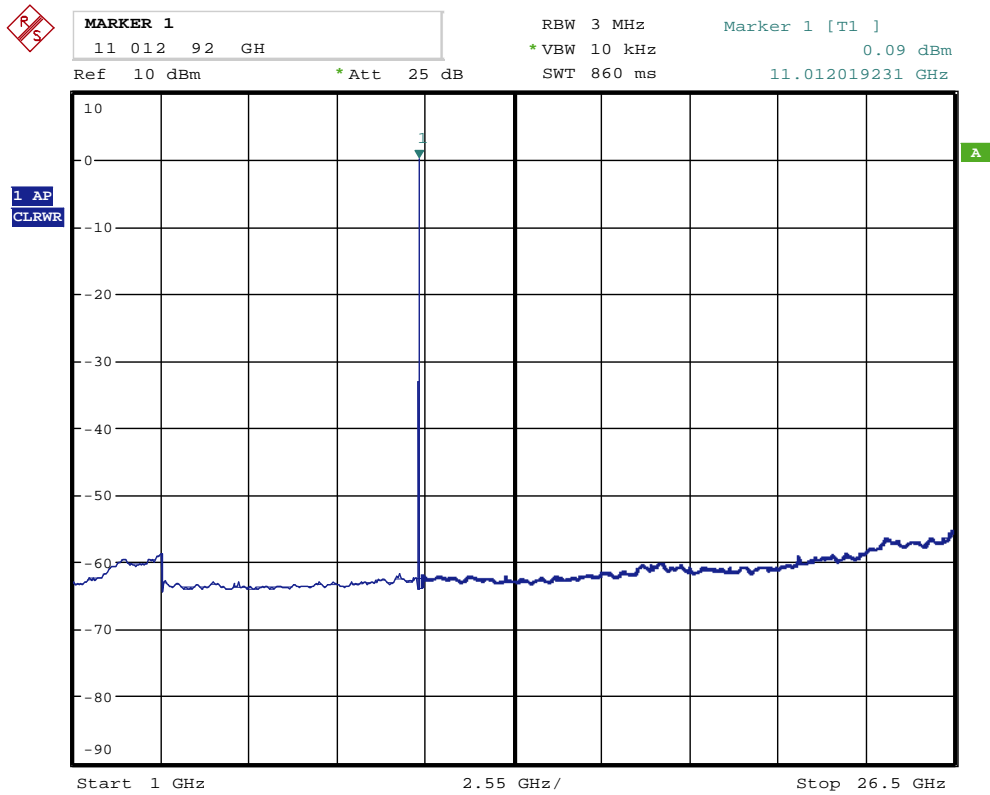


10GHz

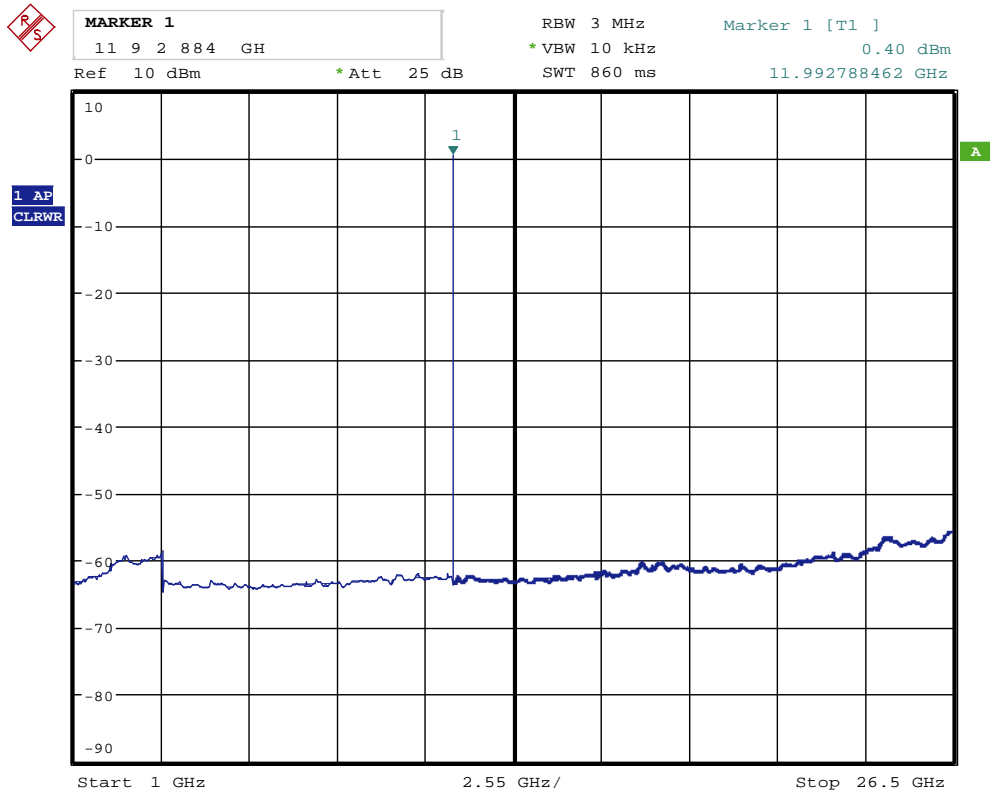




11GHz

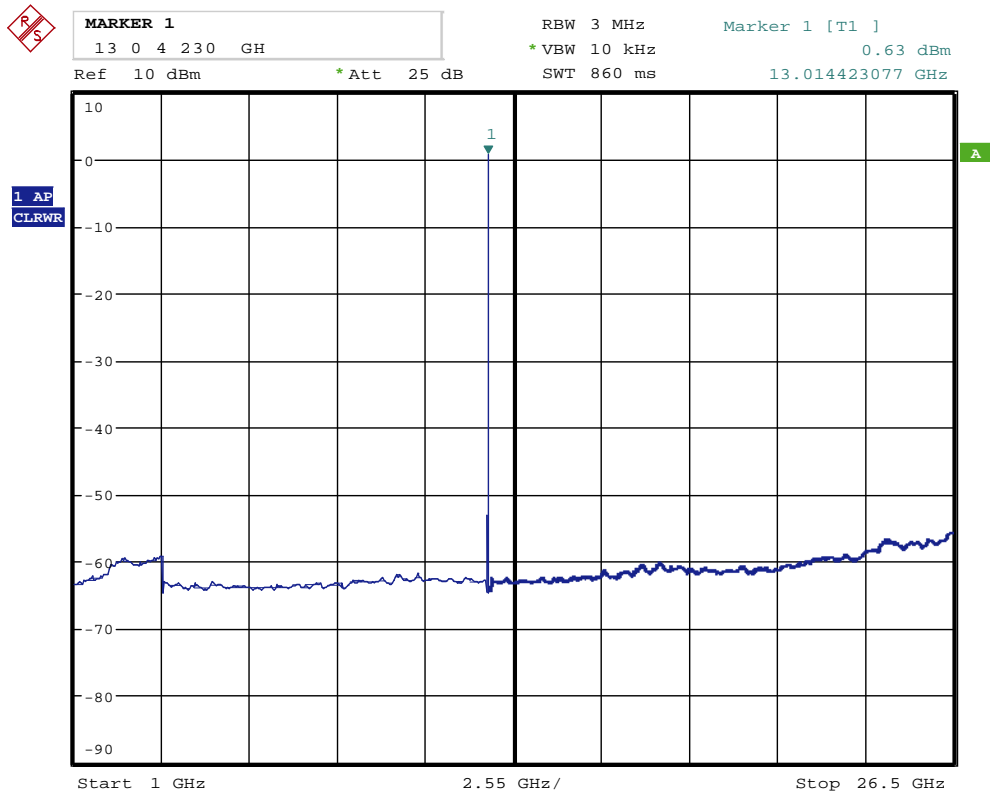


12GHz

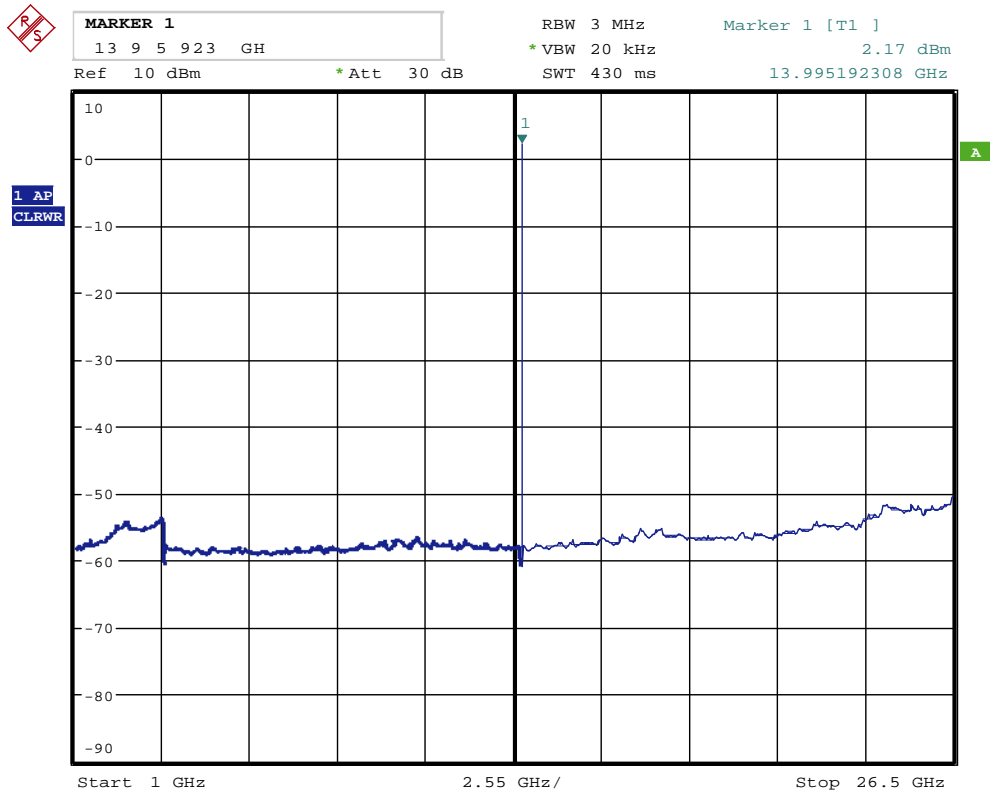




13GHz

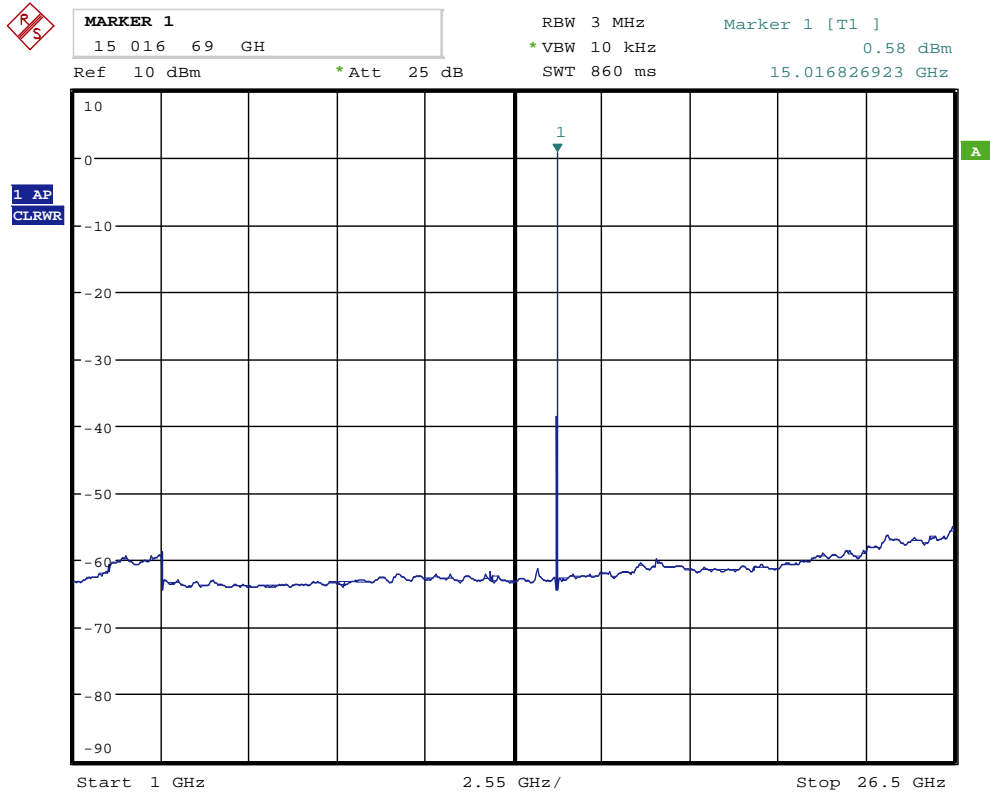


14GHz

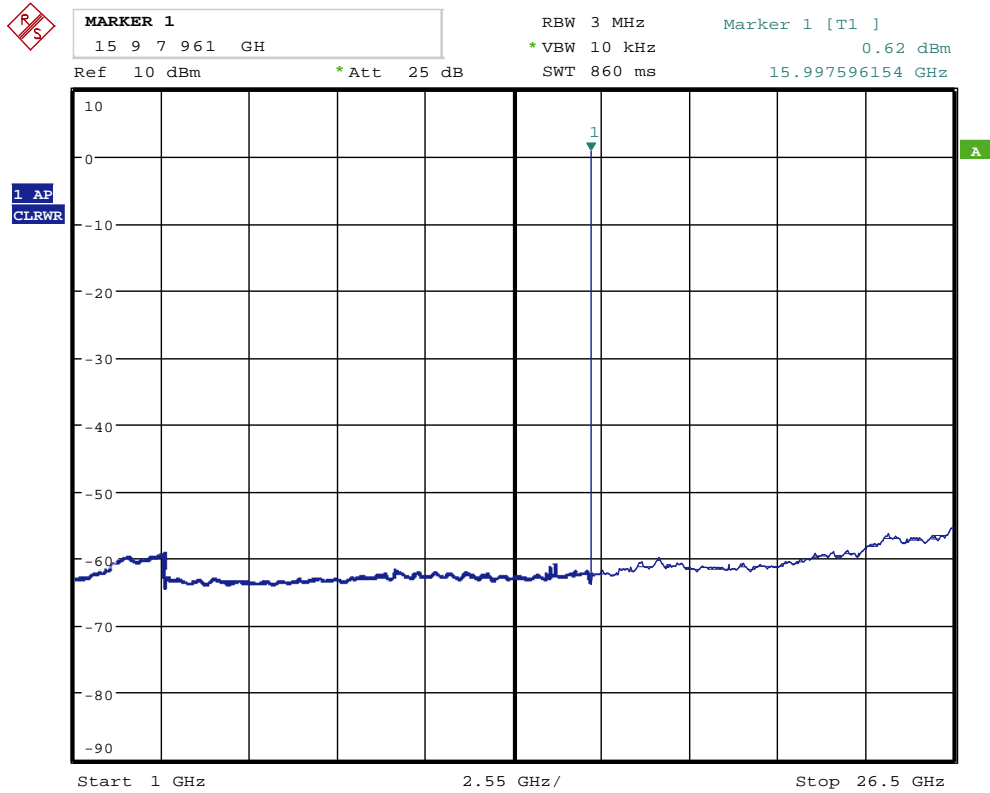




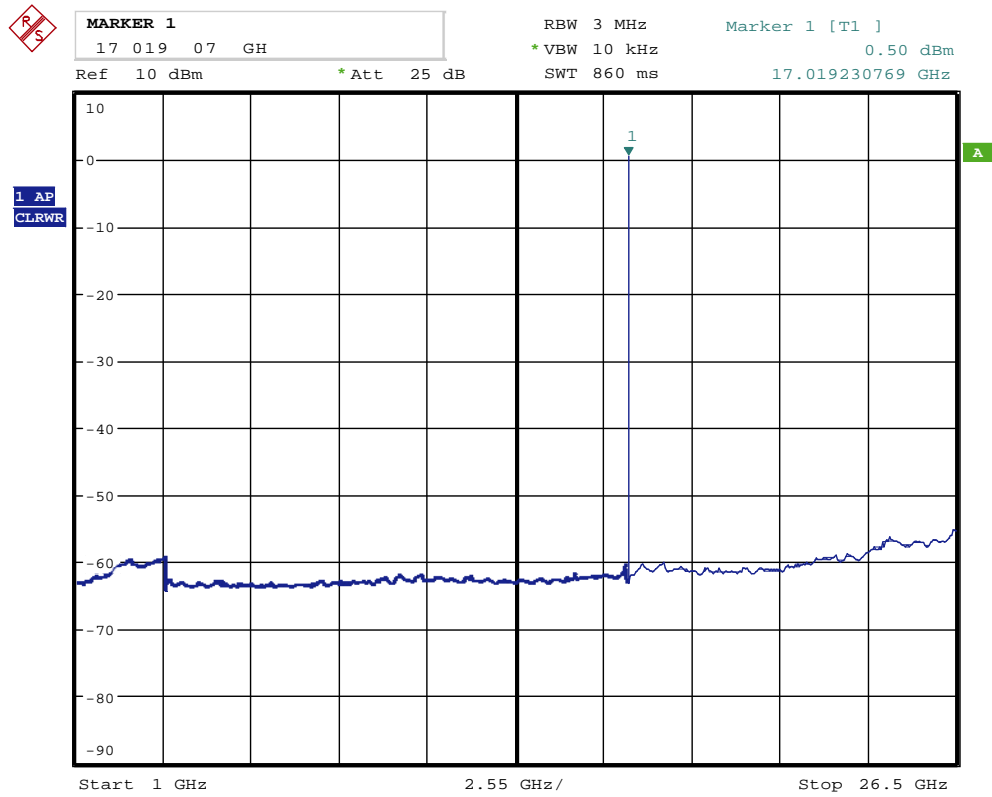
15GHz



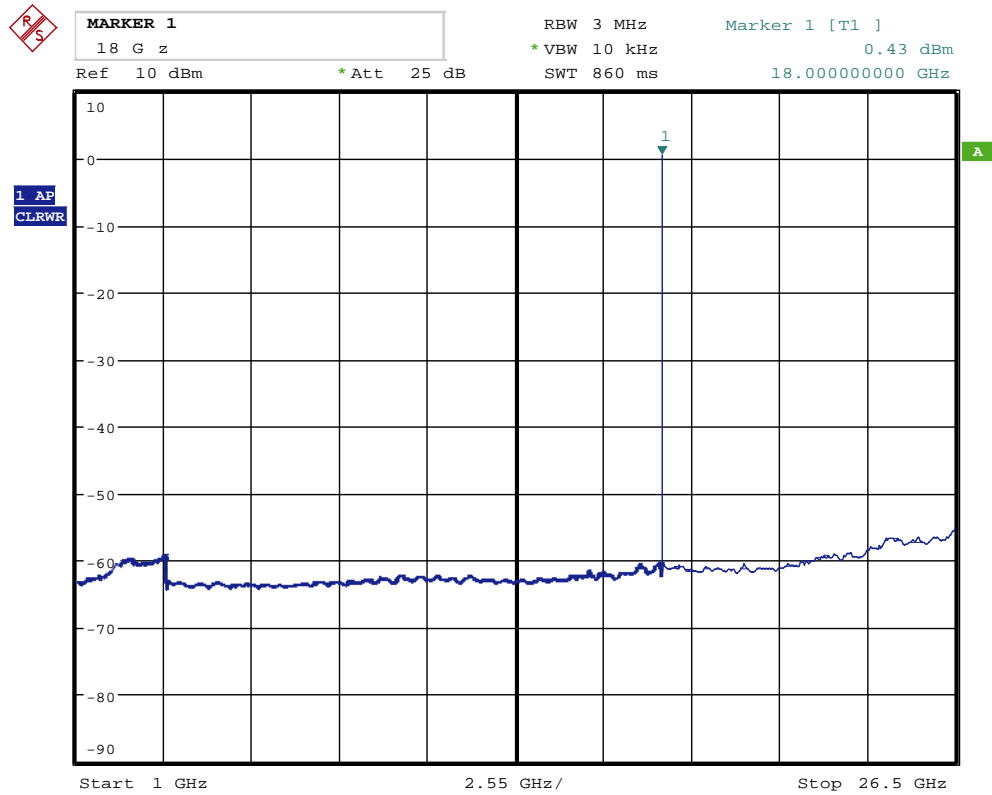
16GHz



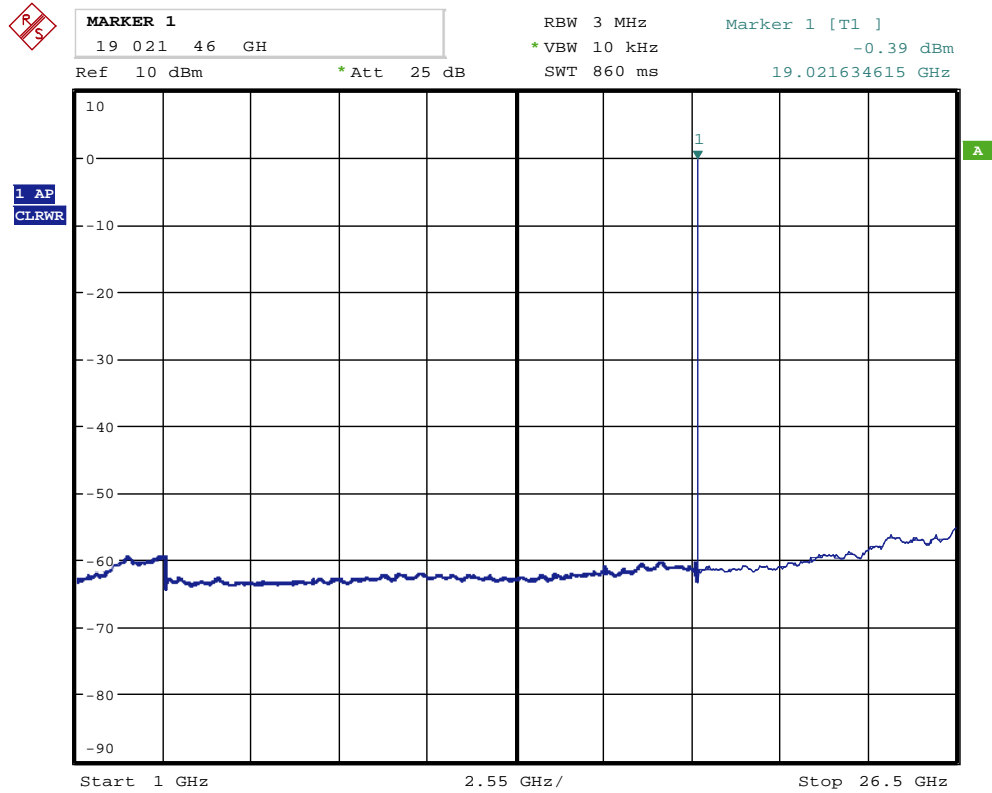
17GHz



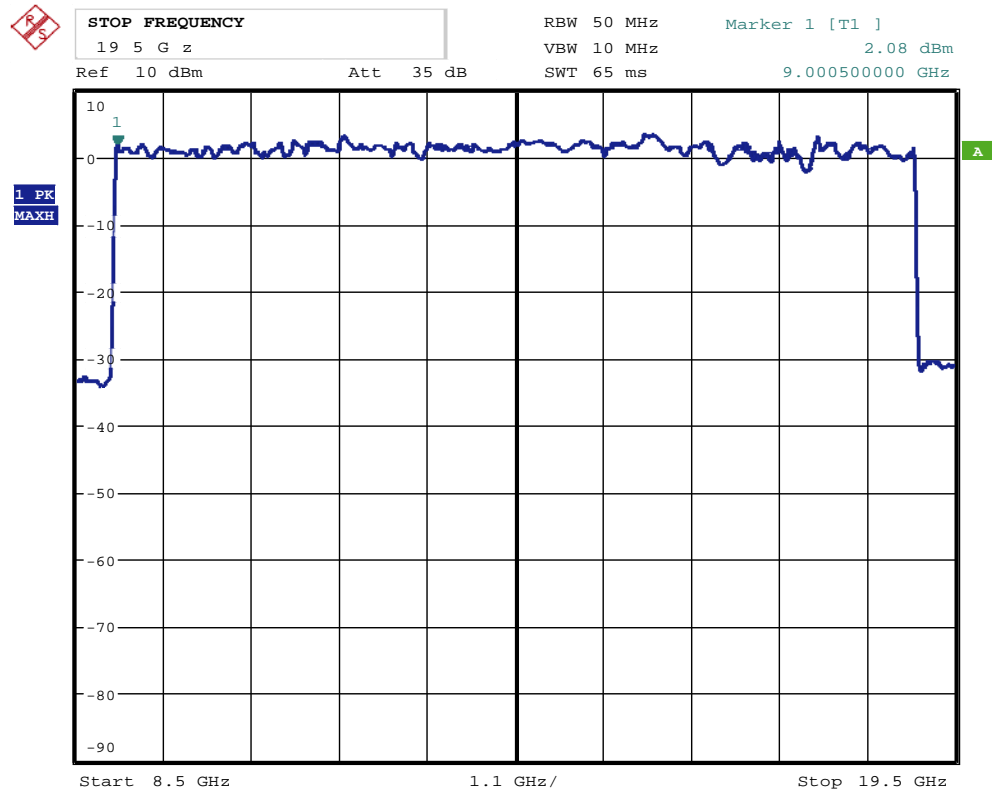
18GHz



19GHz



Amplitude-Frequency Characteristic



Power Level

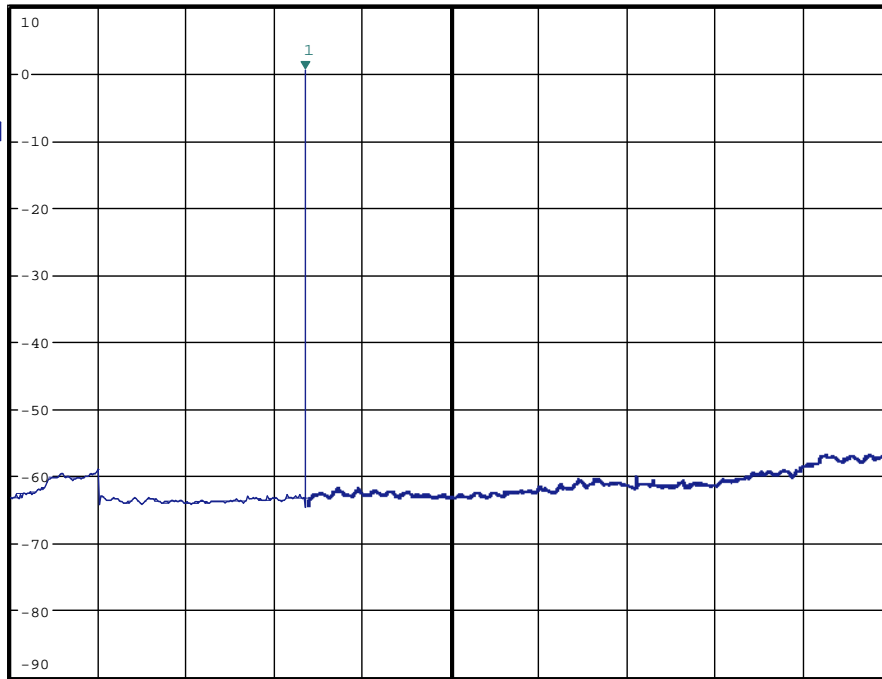


MARKER 1
9.400 10 GH

RBW 3 MHz
* VBW 10 kHz
SWT 860 ms
Marker 1 [T1]
0.38 dBm
9.540064103 GHz

Ref 10 dBm * Att 25 dB

1 AP
CLRWR



Start 1 GHz

2.55 GHz/

Stop 26.5 GHz