Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
GSM850	GSM/TM1	LCH	32.67	31.32	38.5	PASS
		MCH	32.49	31.14	38.5	PASS
		HCH	32.51	31.16	38.5	PASS
	GSM/TM2	LCH	26.03	24.68	38.5	PASS
		MCH	26.07	24.72	38.5	PASS
		HCH	25.99	24.64	38.5	PASS
Test Band	**Test Mode**	**Test Channel**	**Measured[dBm]**	**EIRP [dBm]**	**Limit [dBm]**	**Verdict**
PCS1900	GSM/TM1	LCH	30.02	29.02	33	PASS
		MCH	30.03	29.03	33	PASS
		HCH	29.98	28.98	33	PASS
	GSM/TM2	LCH	25.45	24.45	33	PASS
		MCH	25.56	24.56	33	PASS
		HCH	25.60	24.60	33	PASS

Note1:

a, For getting the ERP (Efficient Radiated Power) or EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

ERP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBd]

EIRP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBi]

b, SGP = Signal Generator Level

Note2:

SET Span = 1.5 * OBW

SET RBW = 1% of the OBW, not to exceed 1MHz

SET VBW >= 3 * RBW

SET Sweep time = auto - couple.

Detector: RMS

2Appendix_B: Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
GSM850	GSM/TM1	LCH	2.05	13	PASS
		MCH	2.14	13	PASS
		HCH	1.94	13	PASS
	GSM/TM2	LCH	4.64	13	PASS
		MCH	4.67	13	PASS
		HCH	4.41	13	PASS
PCS1900	GSM/TM1	LCH	2.02	13	PASS
		MCH	1.81	13	PASS
		HCH	1.99	13	PASS
	GSM/TM2	LCH	4.93	13	PASS
		MCH	4.86	13	PASS
		HCH	5.03	13	PASS

3Appendix_C: Modulation Characteristics

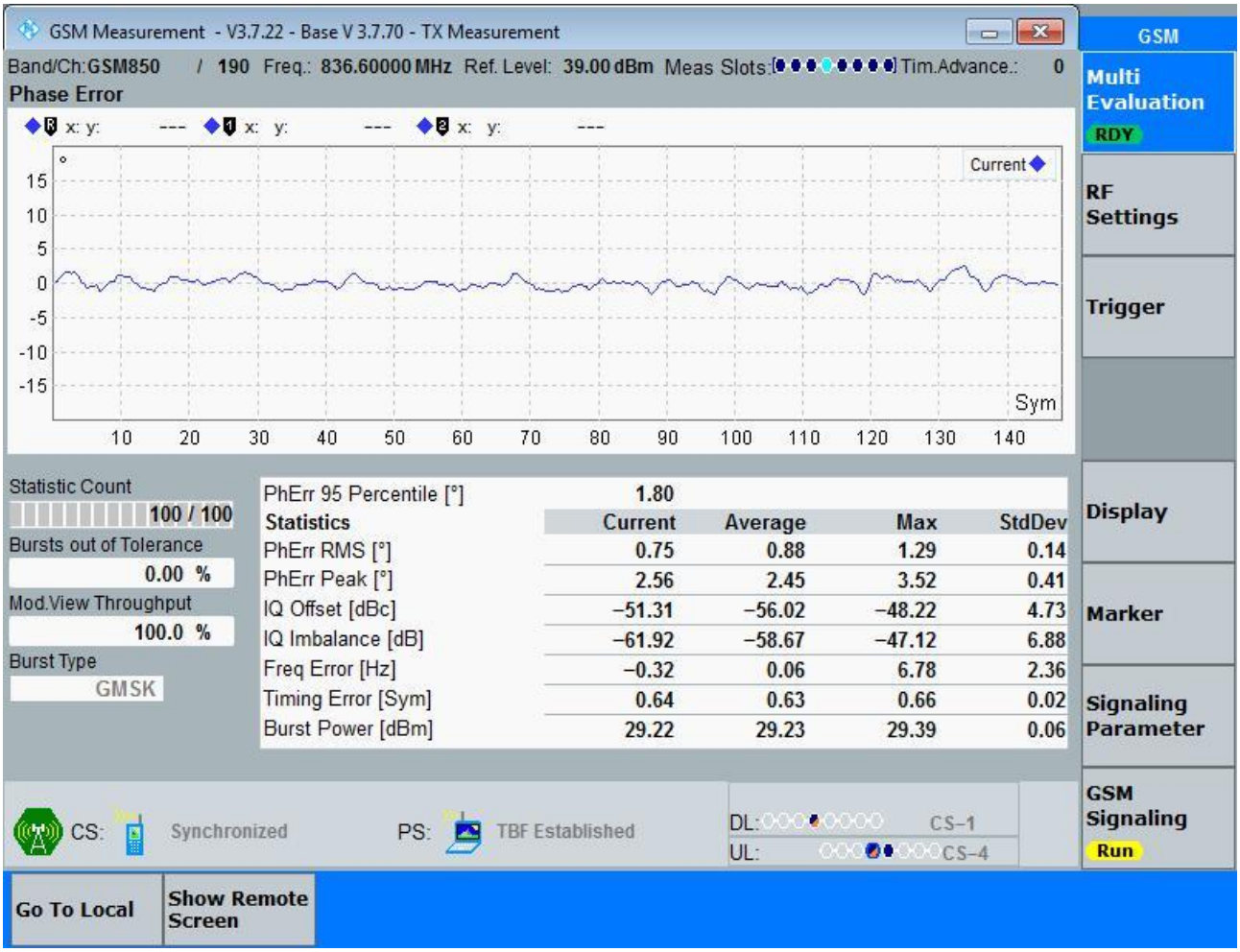
Part I - Test Plots

3.1 For GSM

3.1.1 Test Band = GSM850

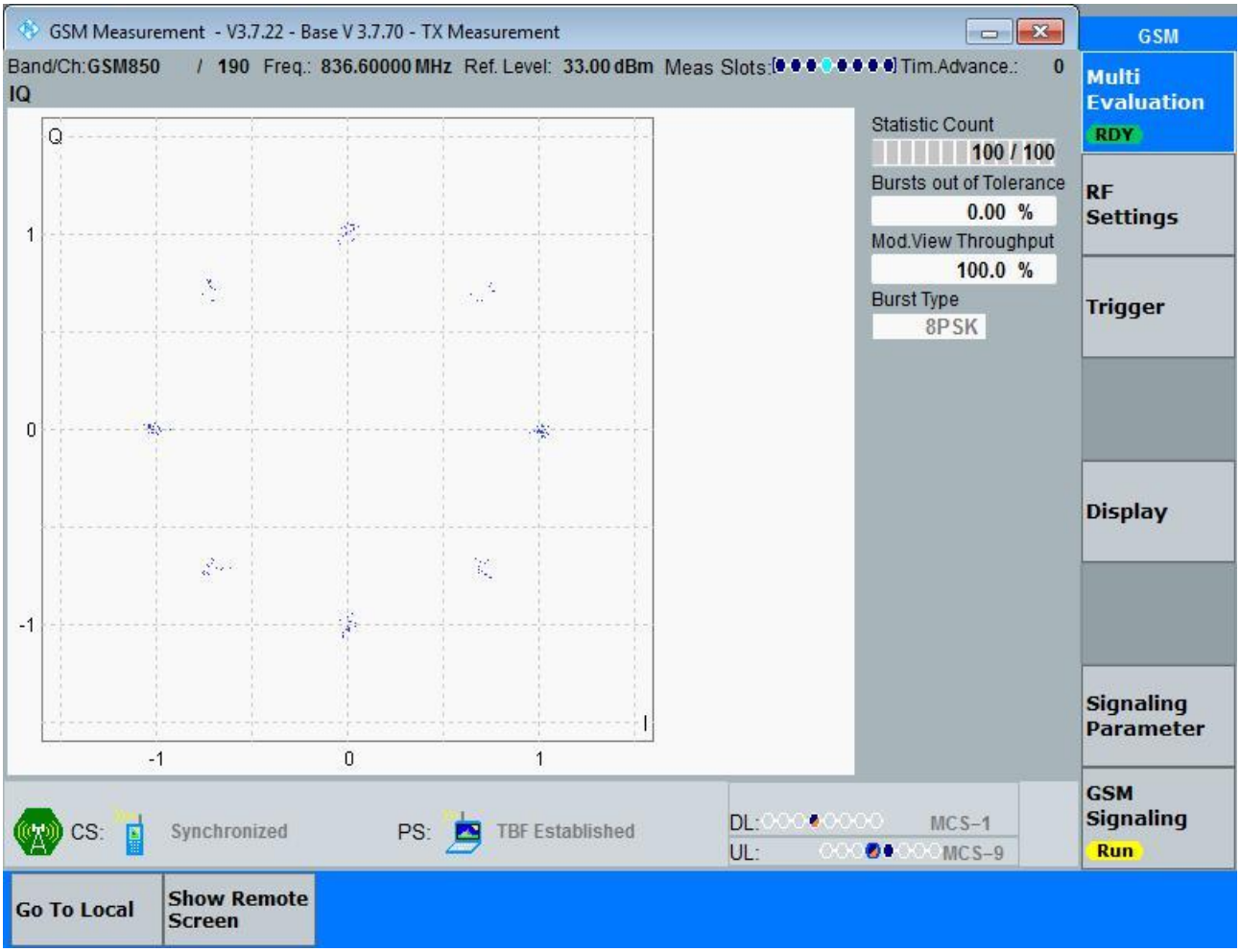
3.1.1.1 Test Mode = GSM/TM1

3.1.1.1.1 Test Channel = MCH



3.1.1.2 Test Mode = GSM/TM2

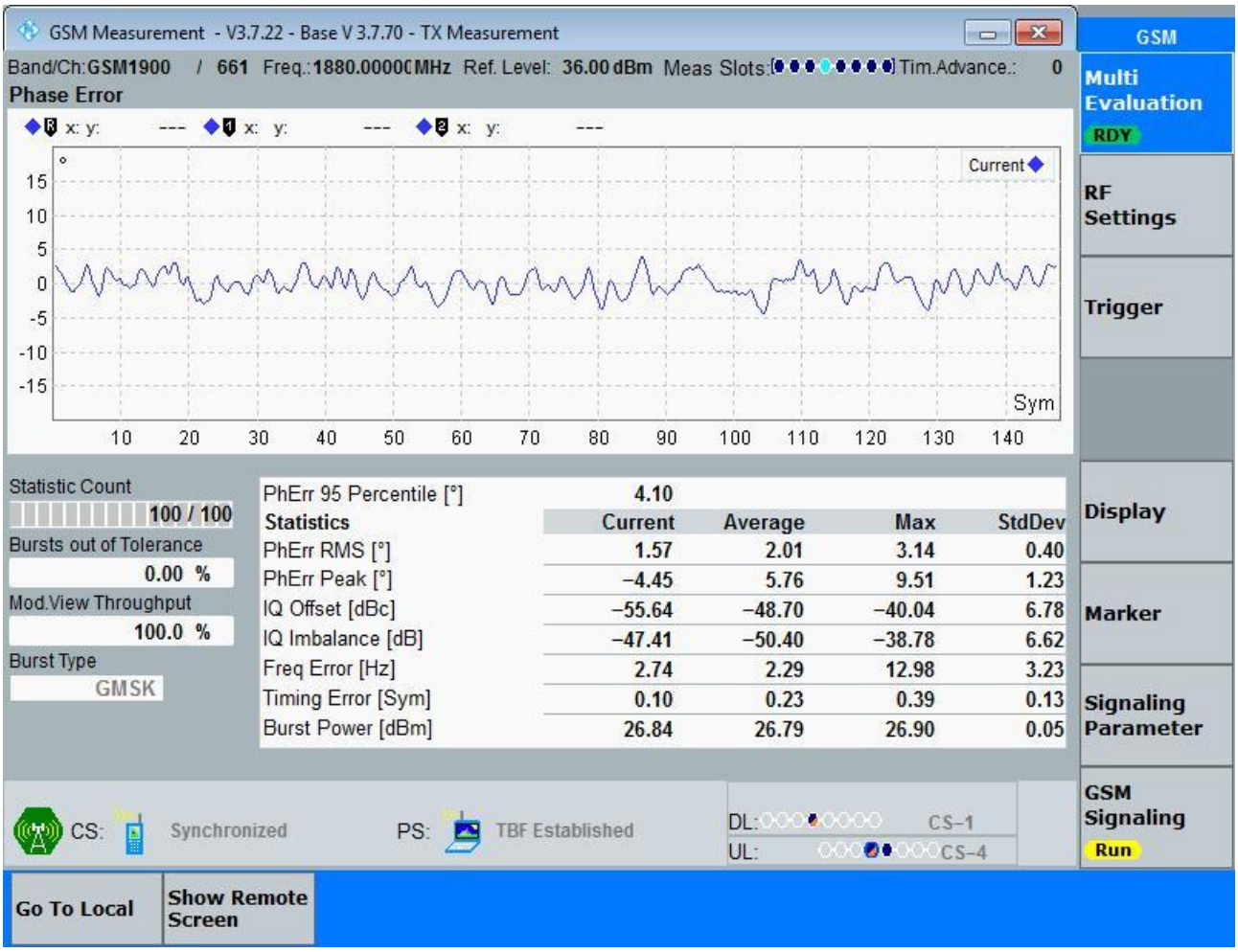
3.1.1.2.1 Test Channel = MCH



3.1.2 Test Band = PCS1900

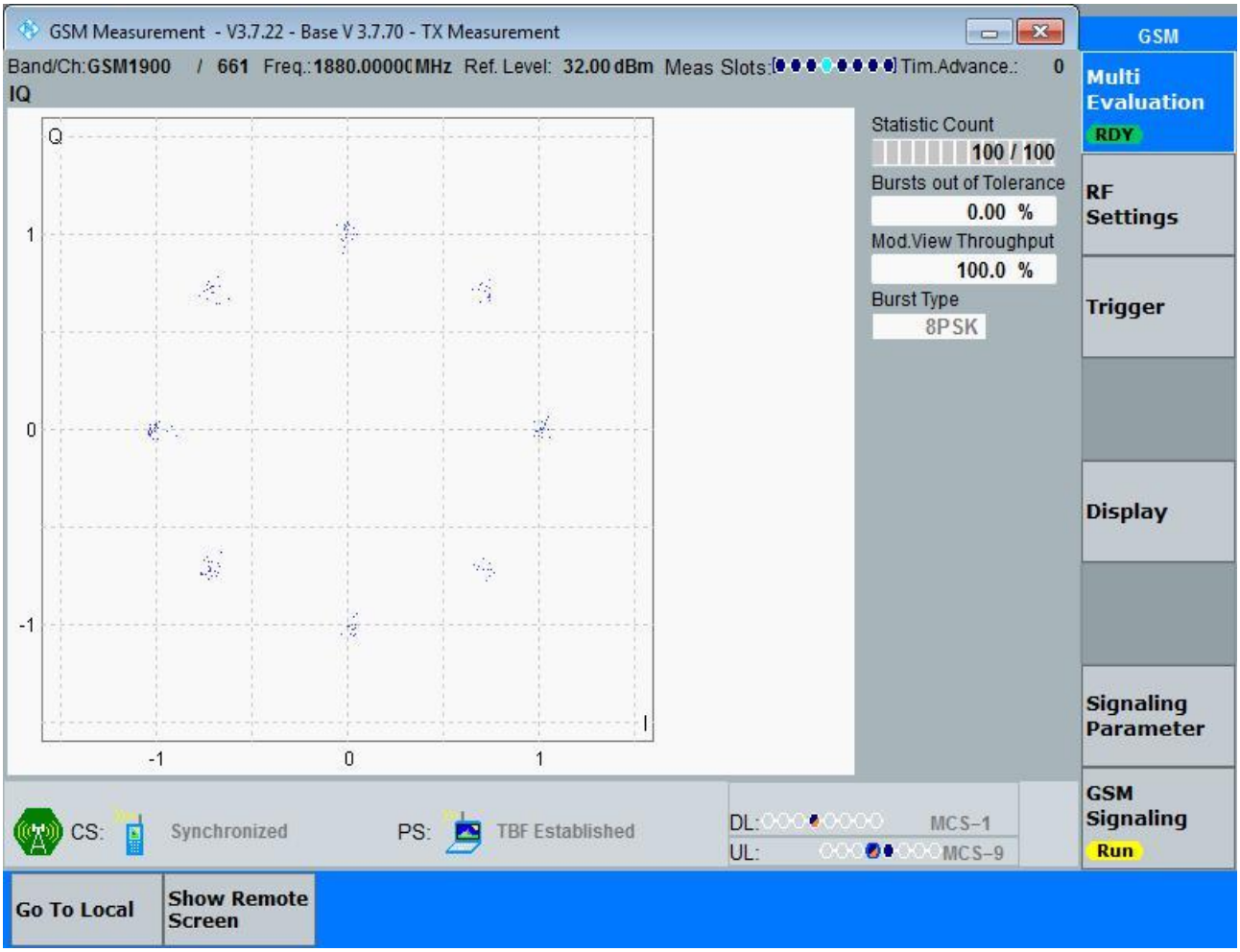
3.1.2.1 Test Mode = GSM/TM1

3.1.2.1.1 Test Channel = MCH



3.1.2.2 Test Mode = GSM/TM2

3.1.2.2.1 Test Channel = MCH



4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
GSM850	GSM/TM1	LCH	245.58	314.2	Pass
		MCH	245.08	313.3	Pass
		HCH	245.63	316.7	Pass
	GSM/TM2	LCH	253.65	328.3	Pass
		MCH	255.86	327.7	Pass
		HCH	252.09	330.5	Pass
PCS1900	GSM/TM1	LCH	246.84	314.6	Pass
		MCH	245.16	319.8	Pass
		HCH	249.29	322.8	Pass
	GSM/TM2	LCH	249.10	322.2	Pass
		MCH	252.02	316.3	Pass
		HCH	249.08	321.2	Pass

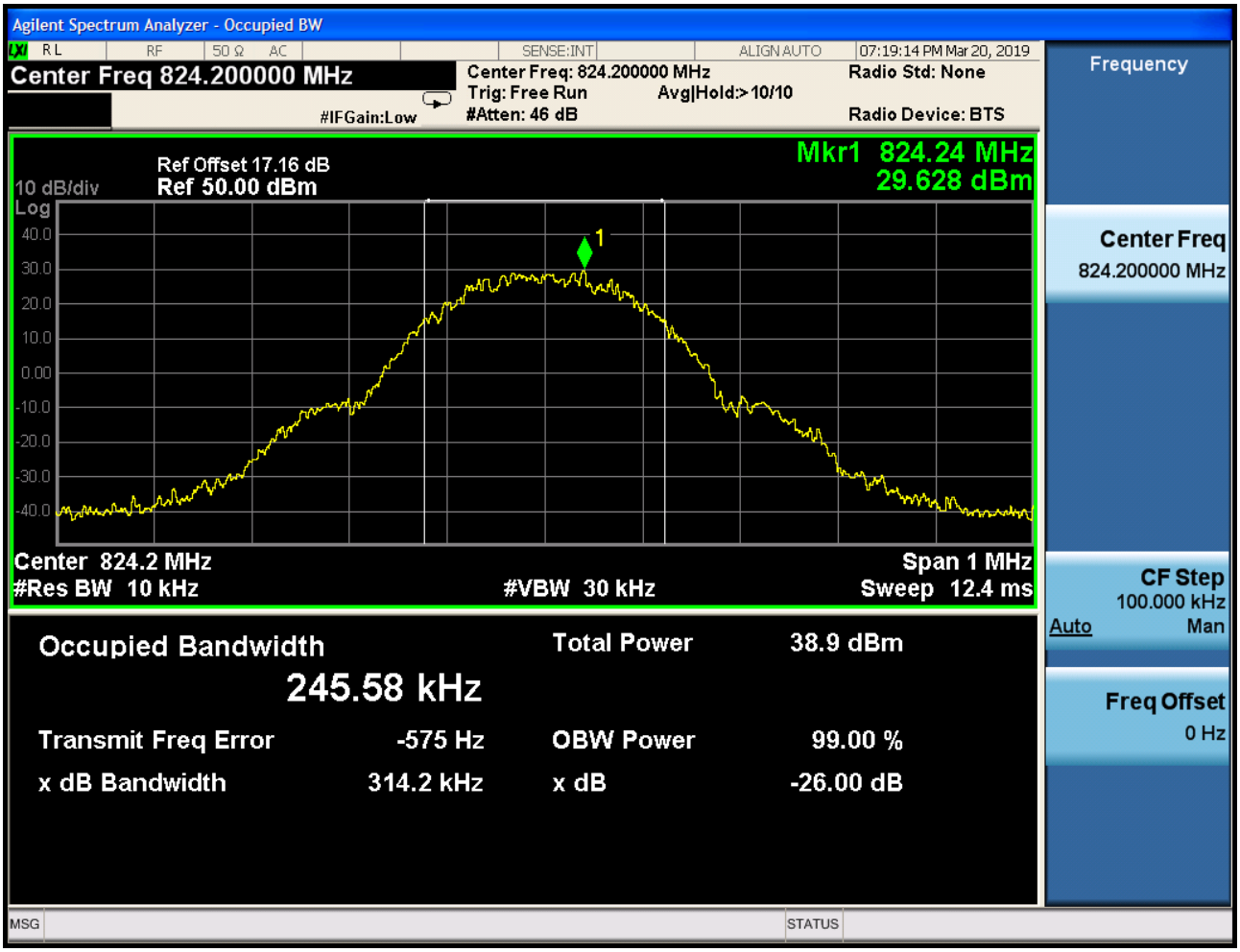
Part II - Test Plots

4.1 For GSM

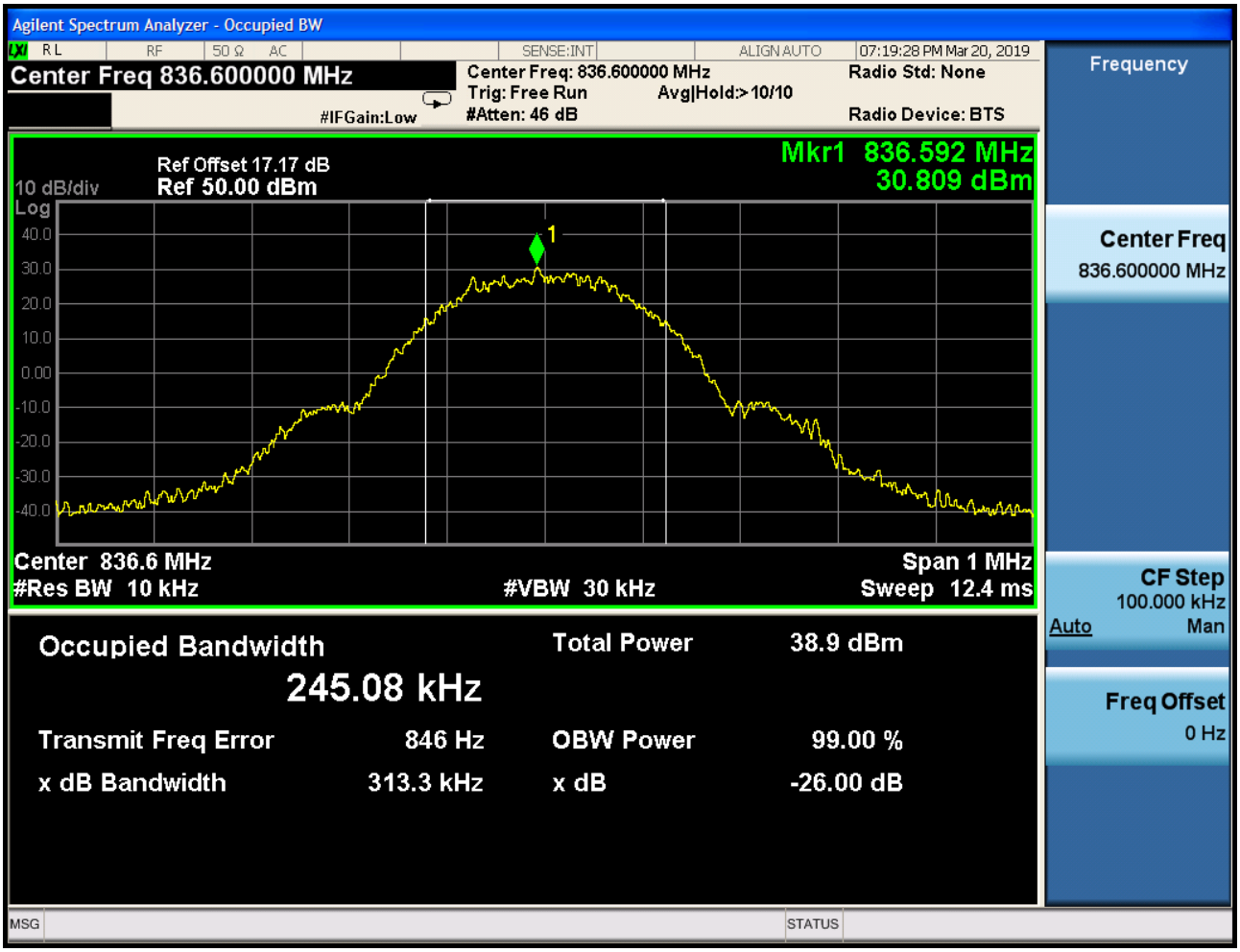
4.1.1 Test Band = GSM850

4.1.1.1 Test Mode = GSM/TM1

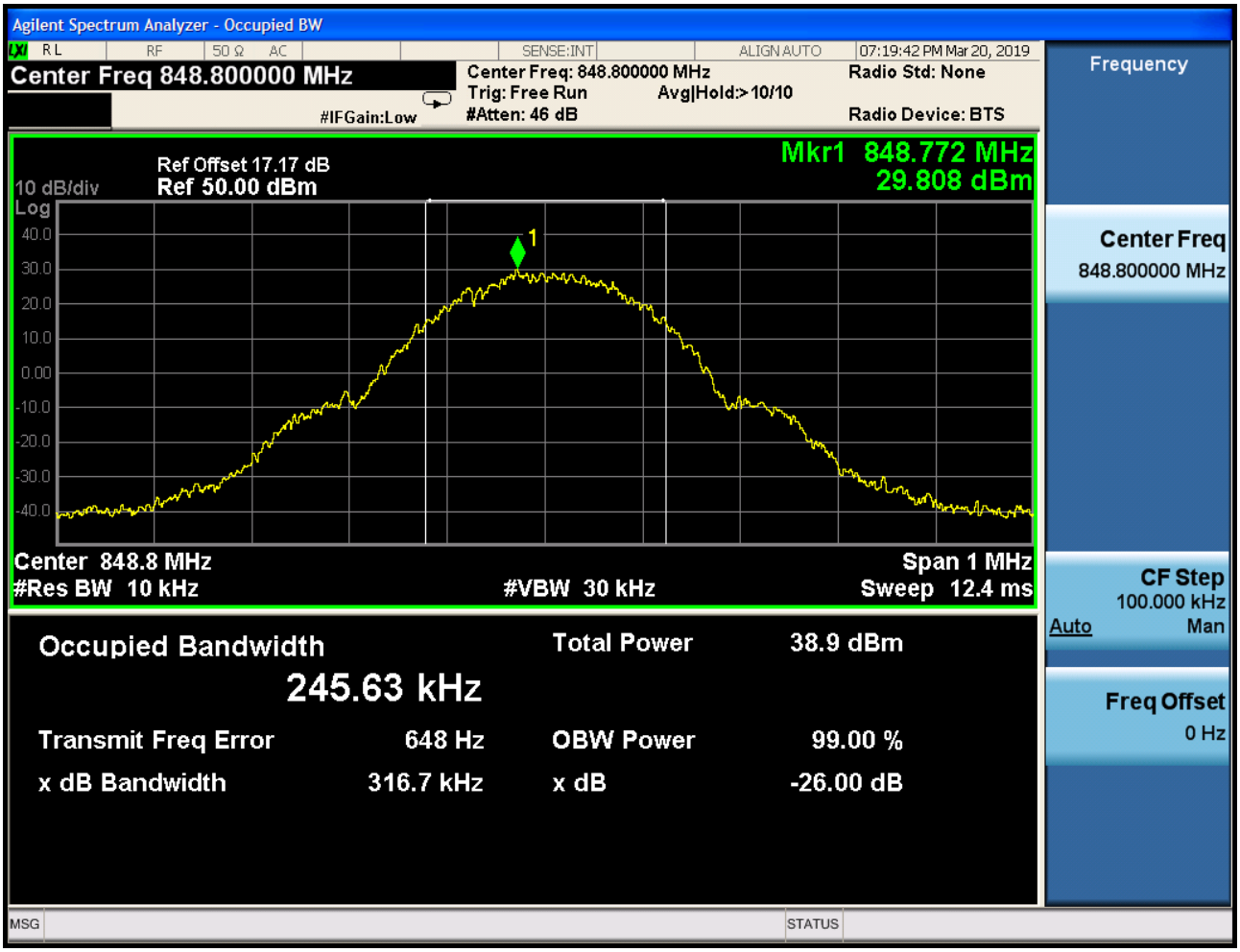
4.1.1.1.1 Test Channel = LCH



4.1.1.1.2 Test Channel = MCH

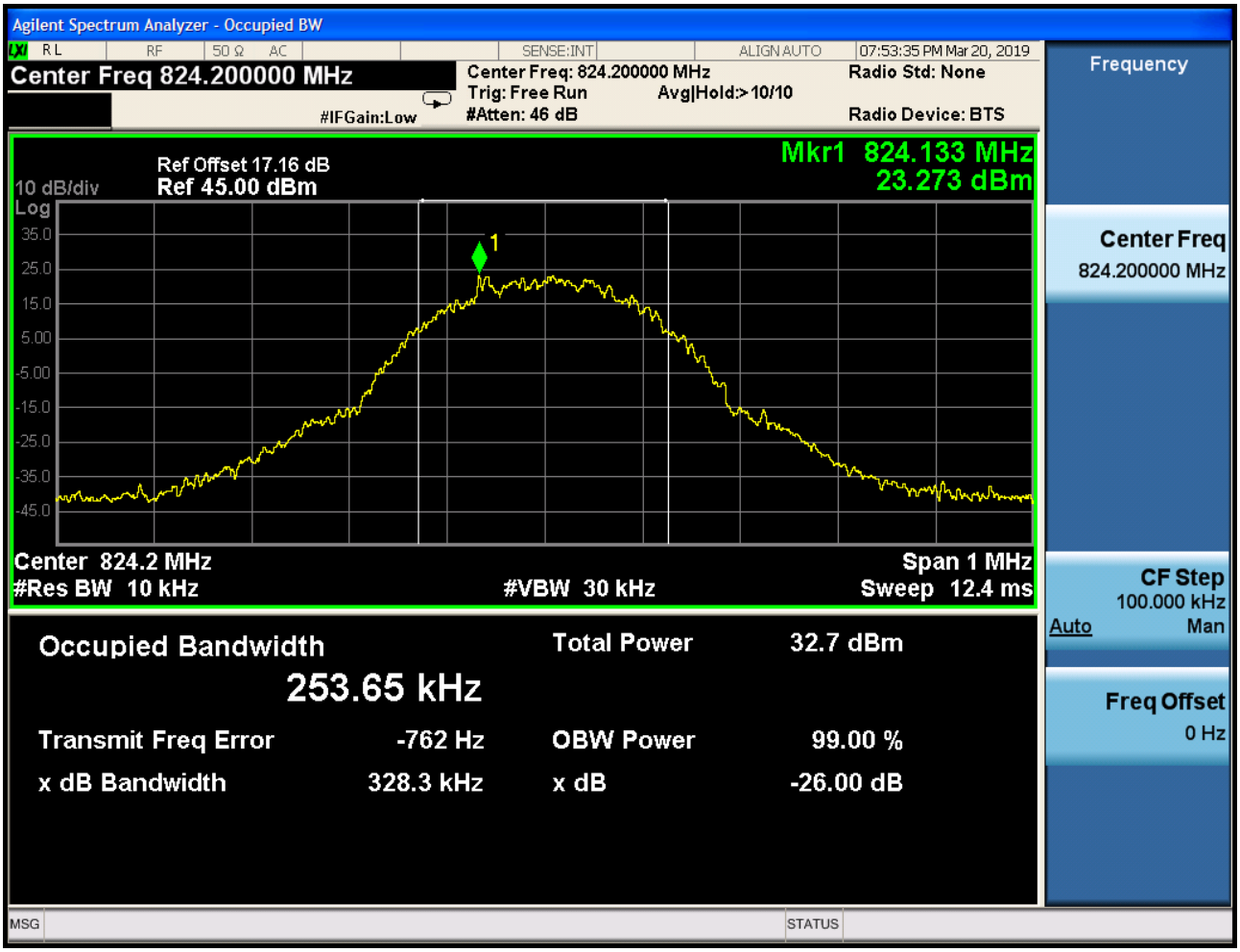


4.1.1.1.3 Test Channel = HCH

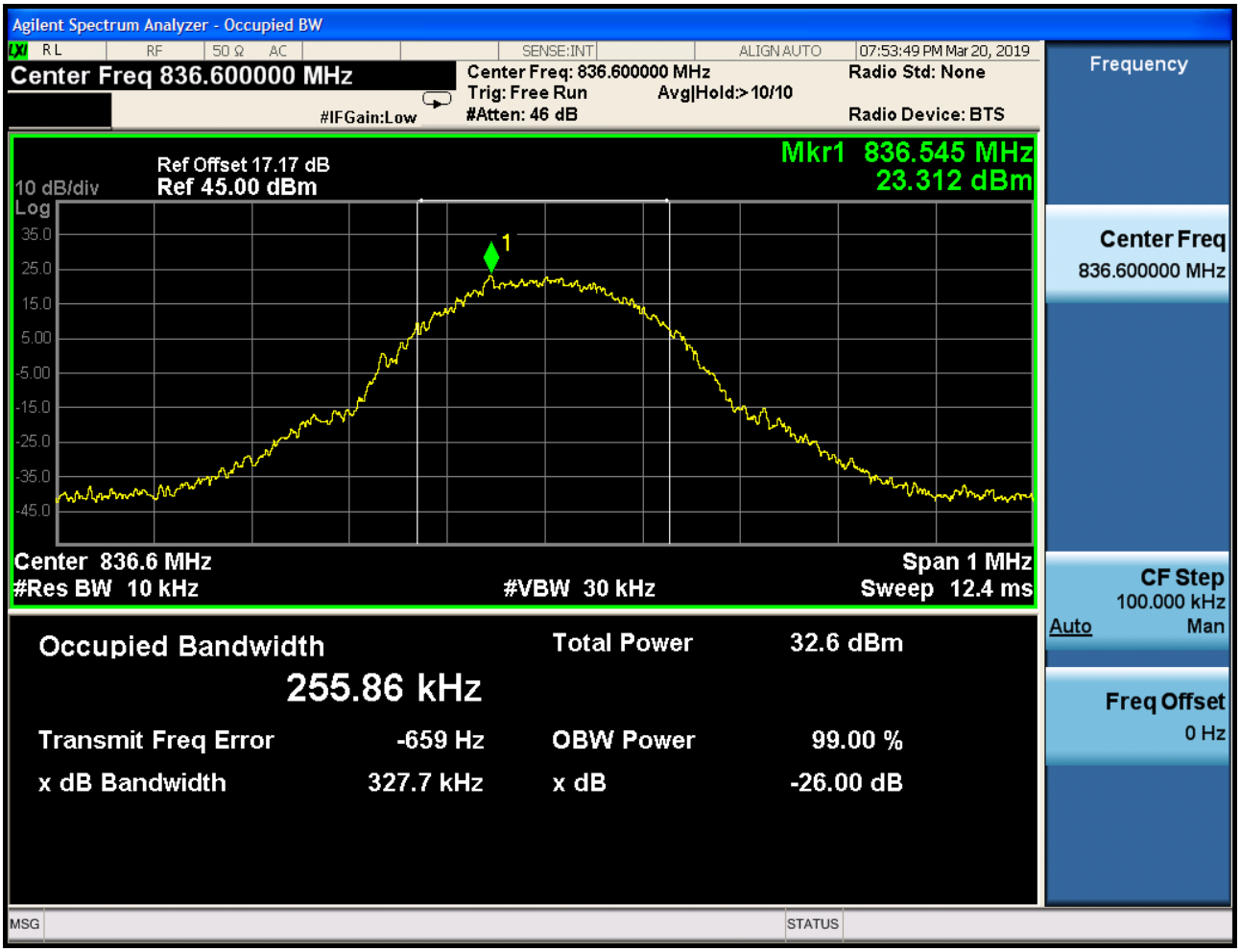


4.1.1.2 Test Mode = GSM/TM2

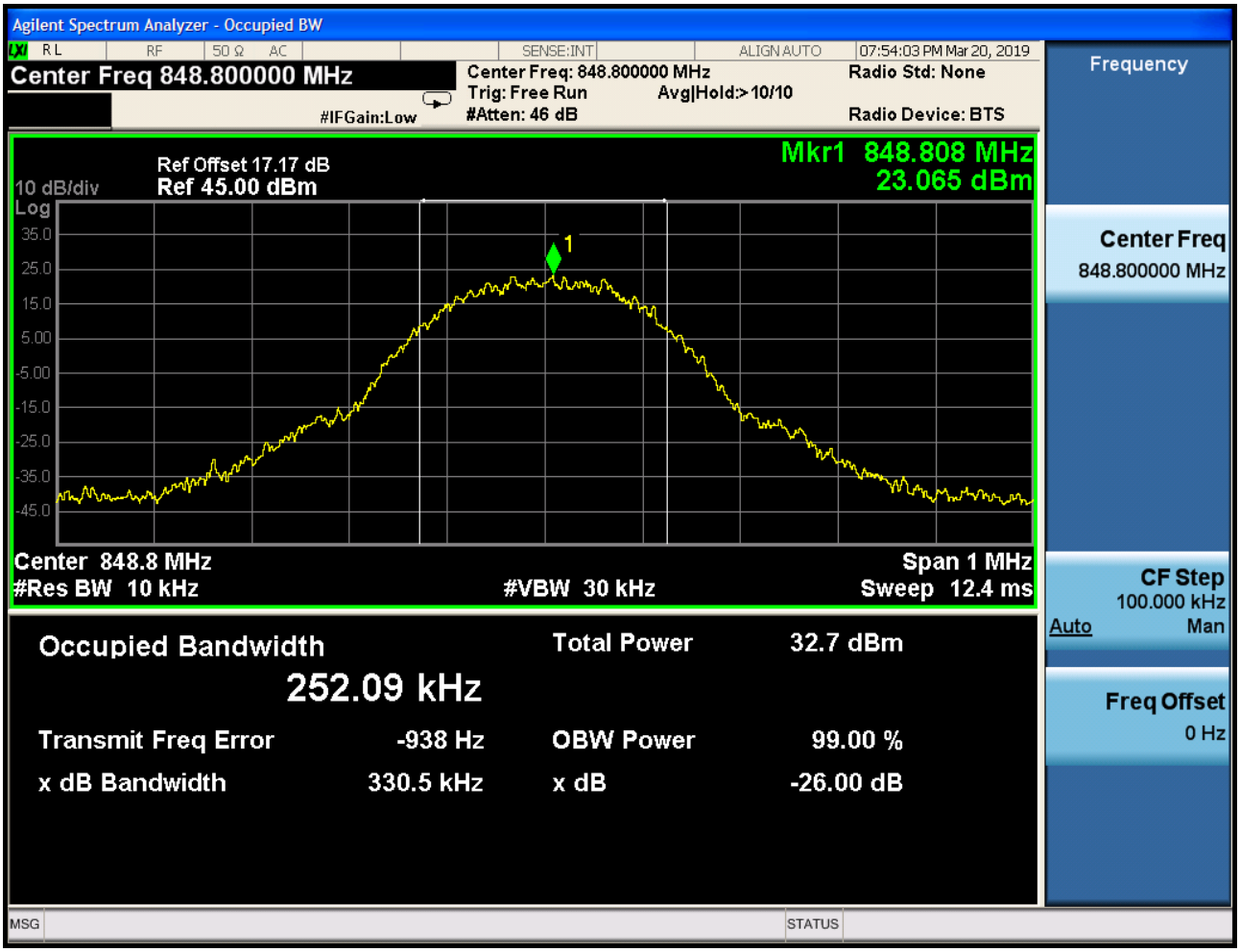
4.1.1.2.1 Test Channel = LCH



4.1.1.2.2 Test Channel = MCH



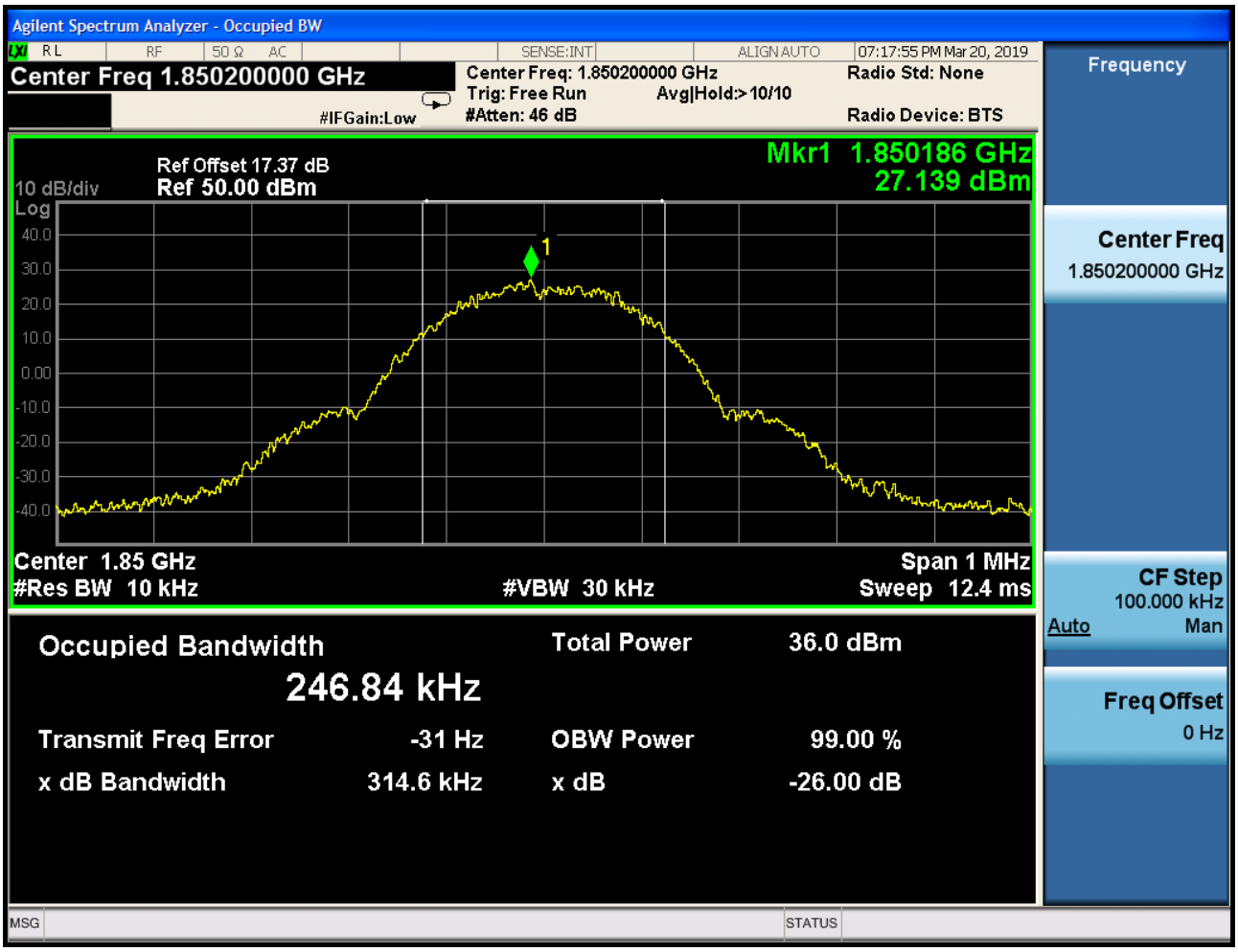
4.1.1.2.3 Test Channel = HCH



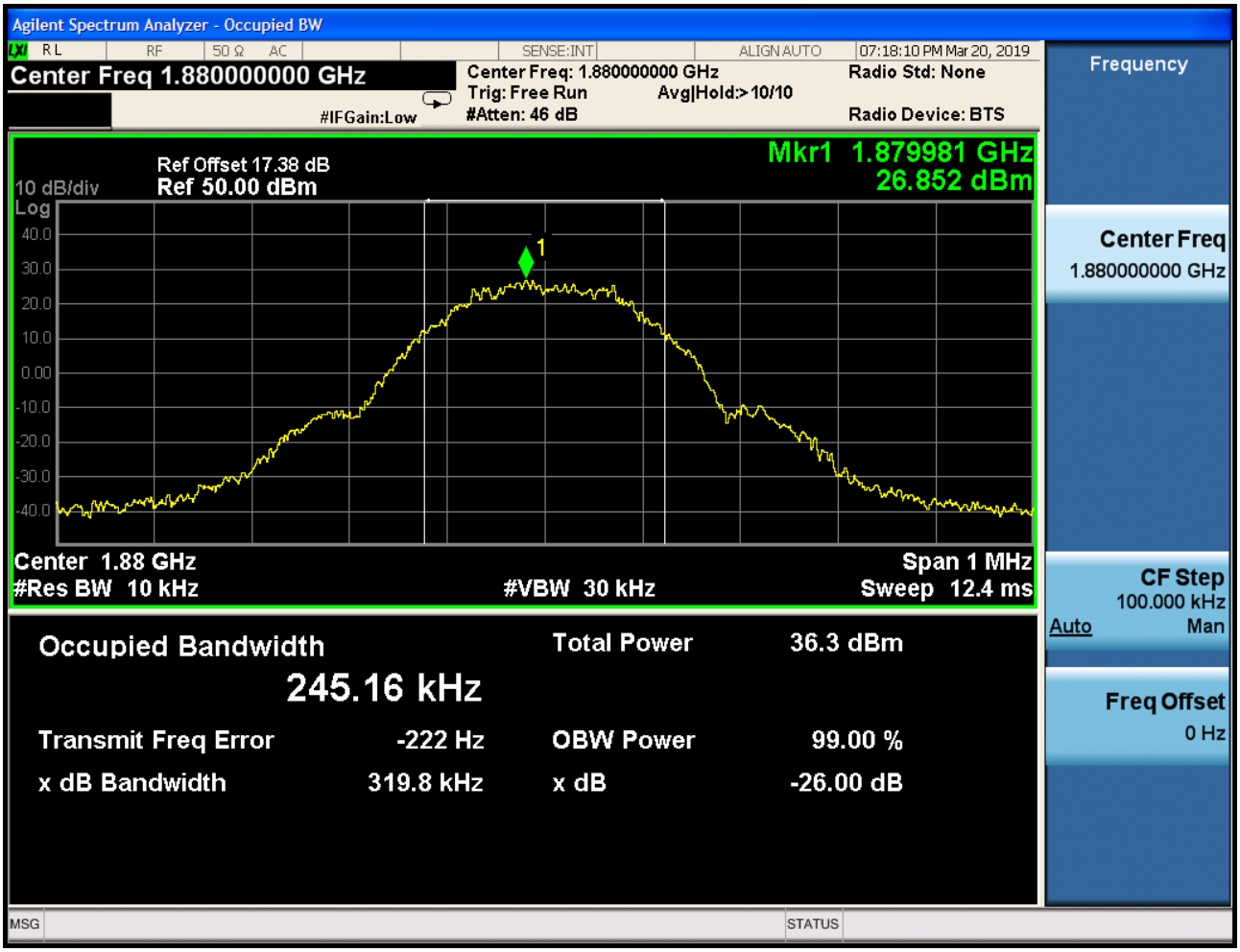
4.1.2 Test Band = PCS1900

4.1.2.1 Test Mode = GSM/TM1

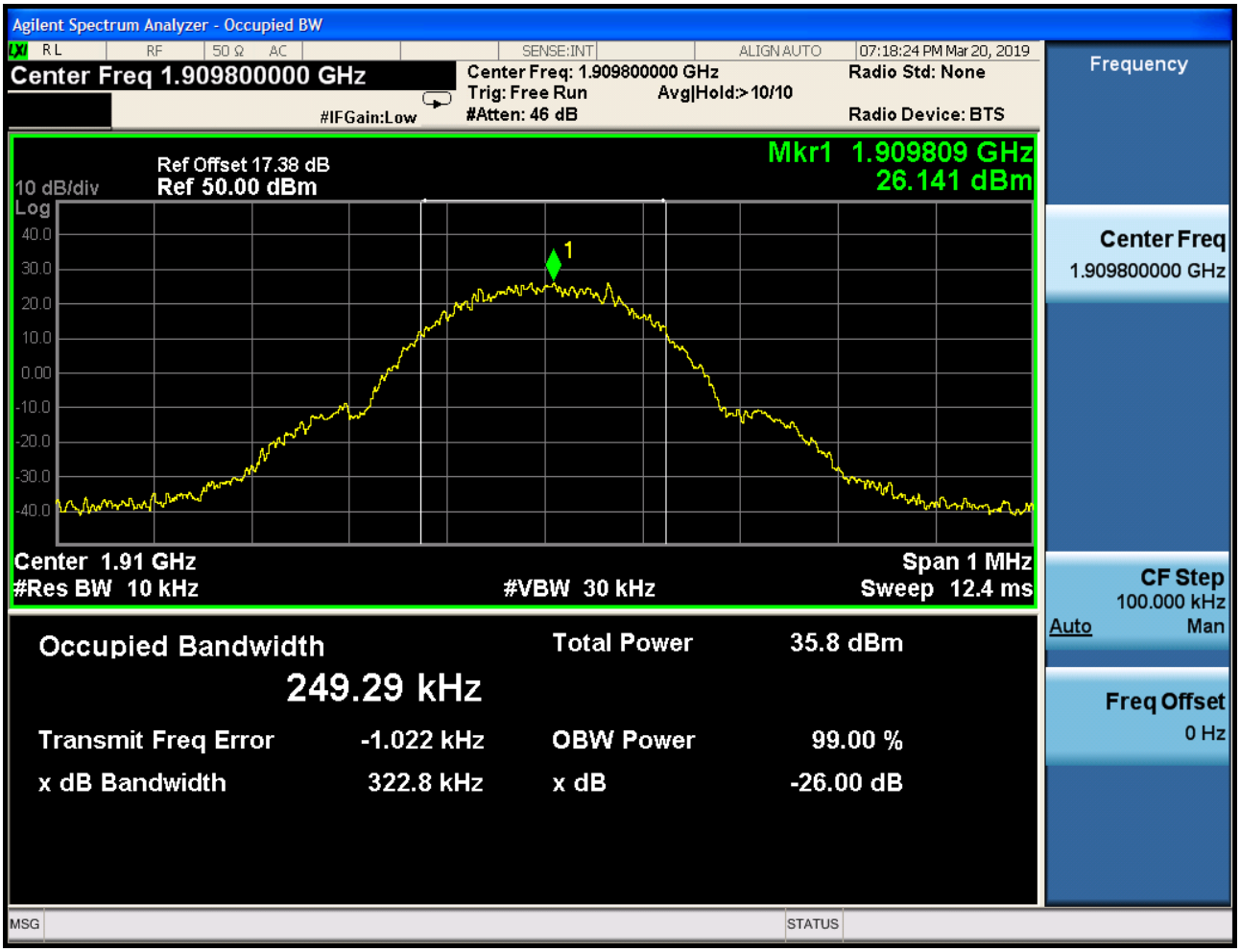
4.1.2.1.1 Test Channel = LCH



4.1.2.1.2 Test Channel = MCH

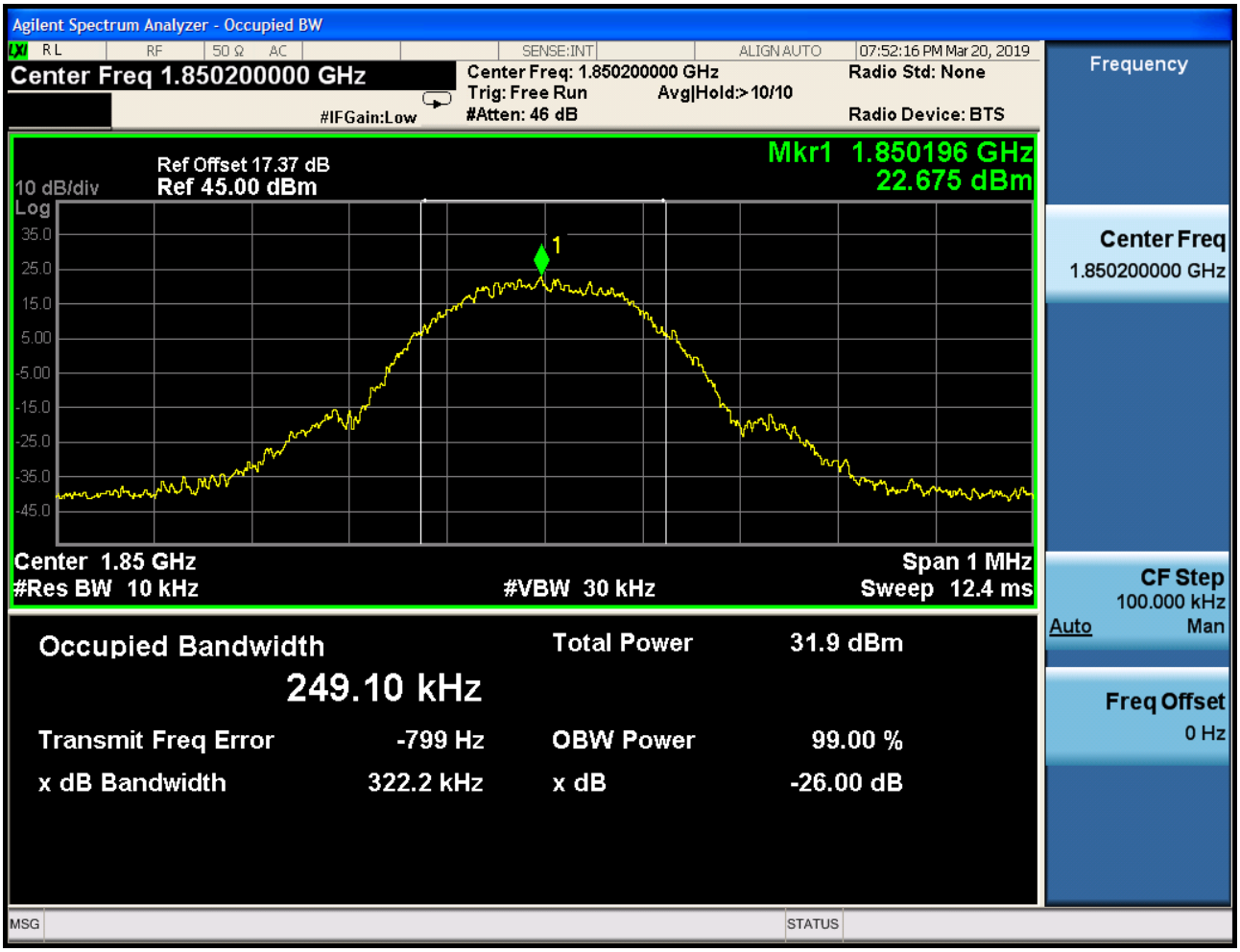


4.1.2.1.3 Test Channel = HCH

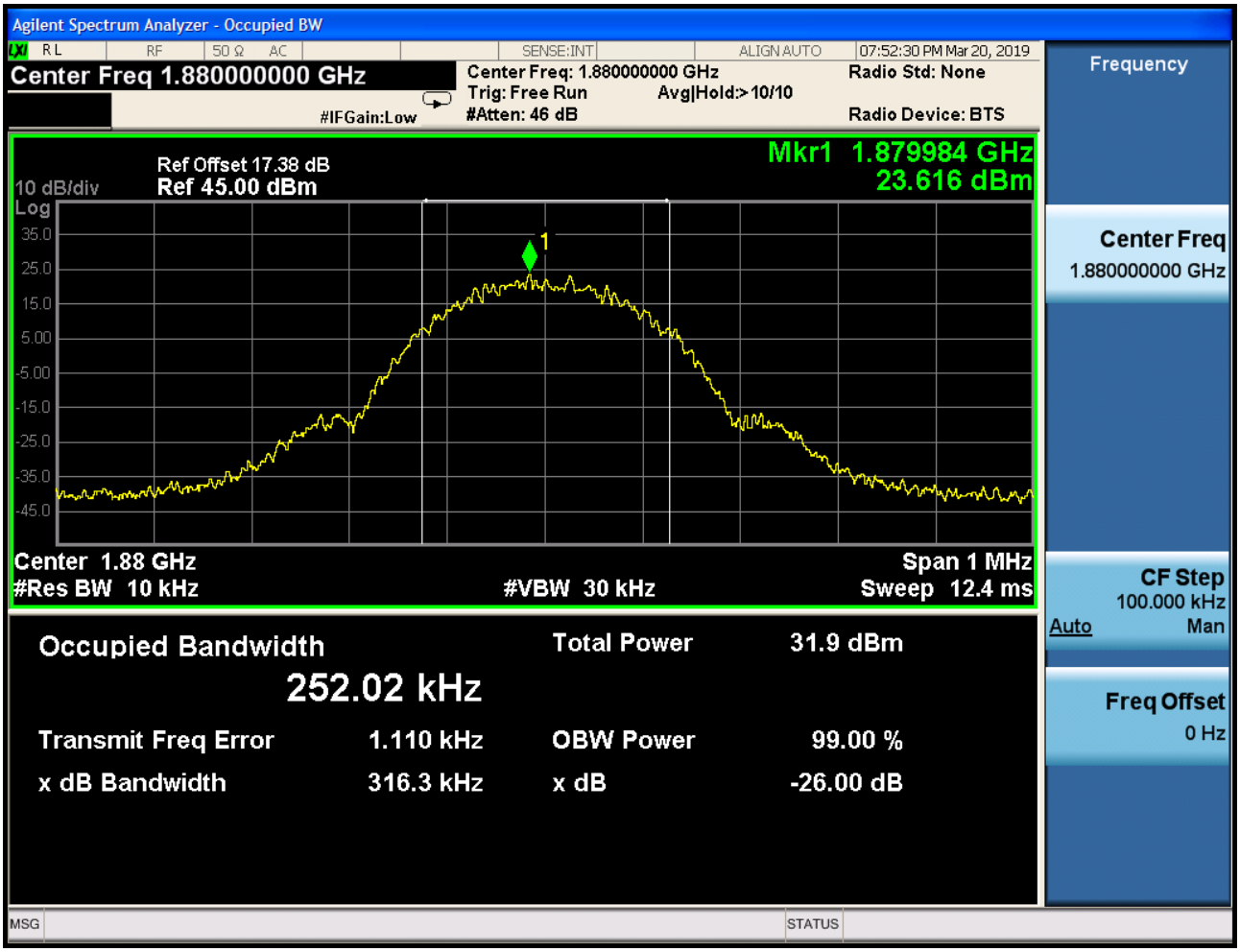


4.1.2.2 Test Mode = GSM/TM2

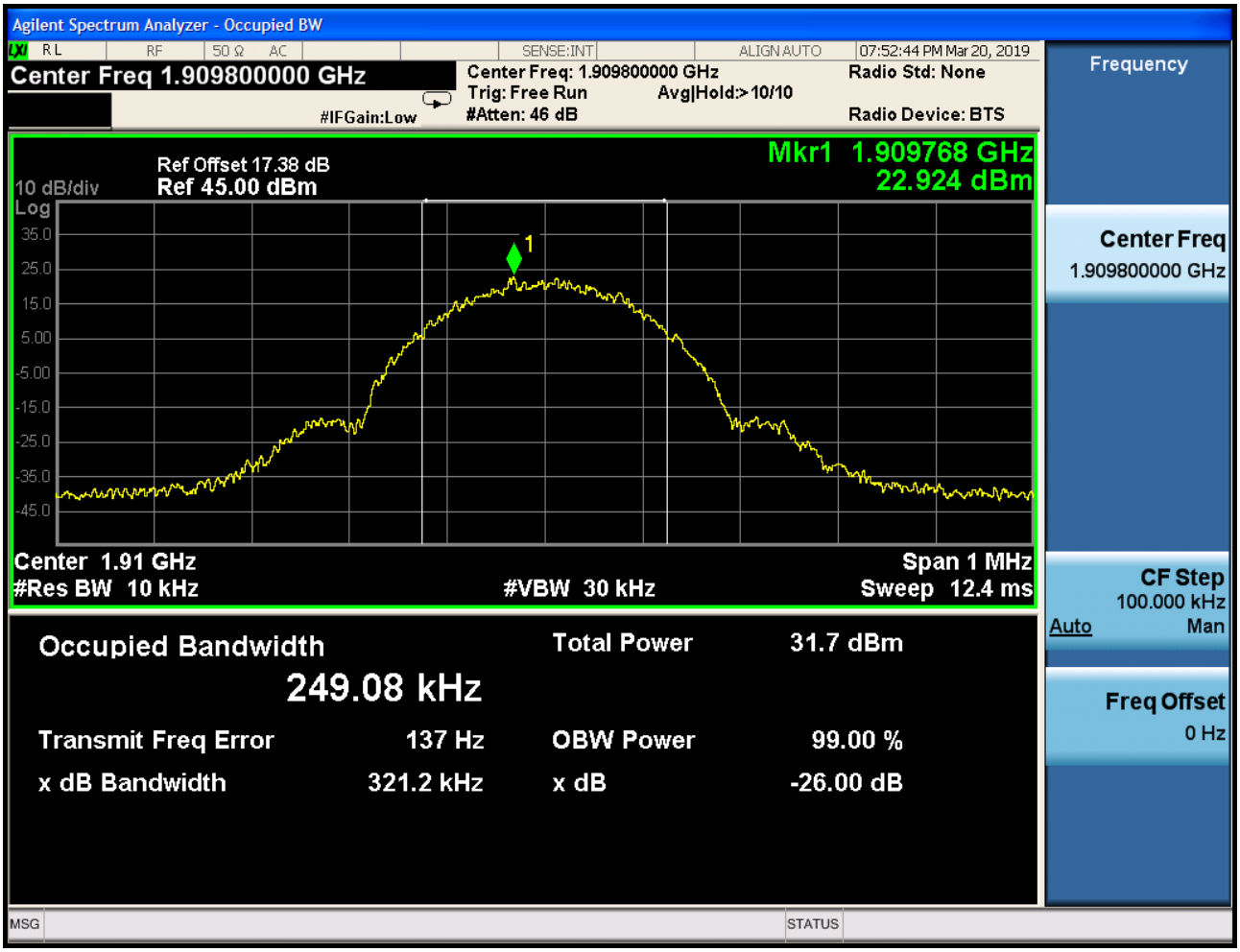
4.1.2.2.1 Test Channel = LCH



4.1.2.2.2 Test Channel = MCH



4.1.2.2.3 Test Channel = HCH



5Appendix_E: Band Edges Compliance

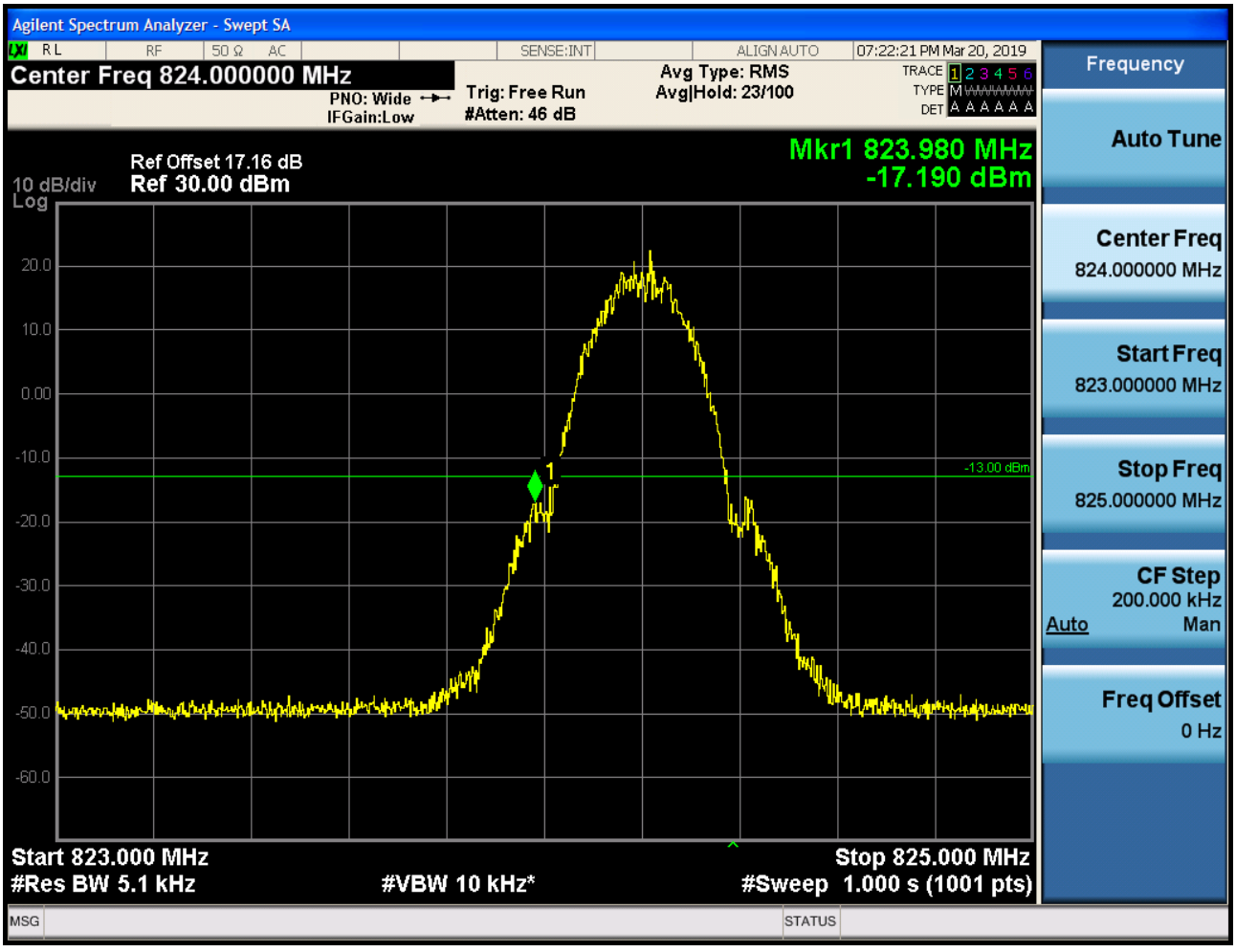
Part I - Test Plots

5.1 For GSM

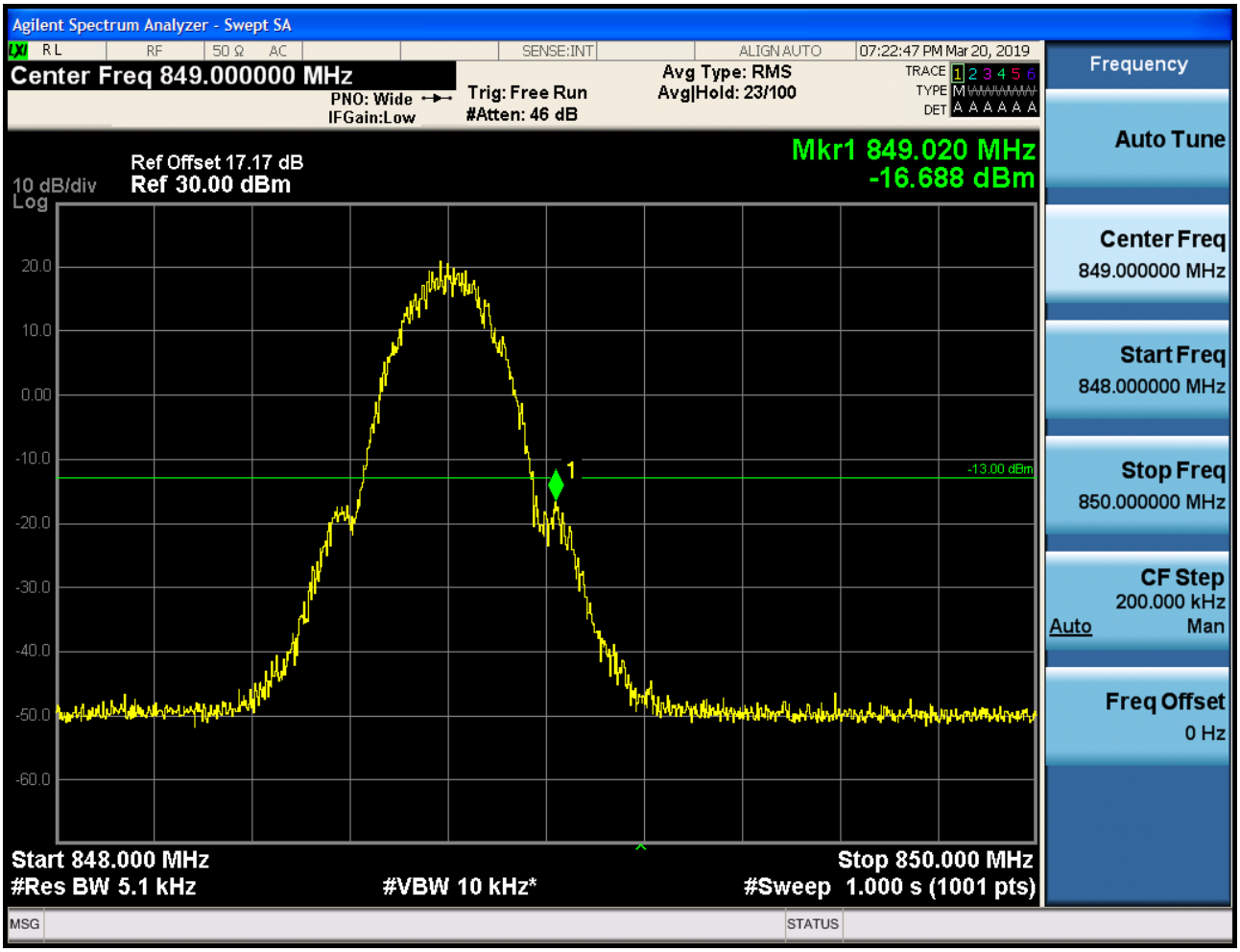
5.1.1 Test Band = GSM850

5.1.1.1 Test Mode = GSM/TM1

5.1.1.1.1 Test Channel = LCH

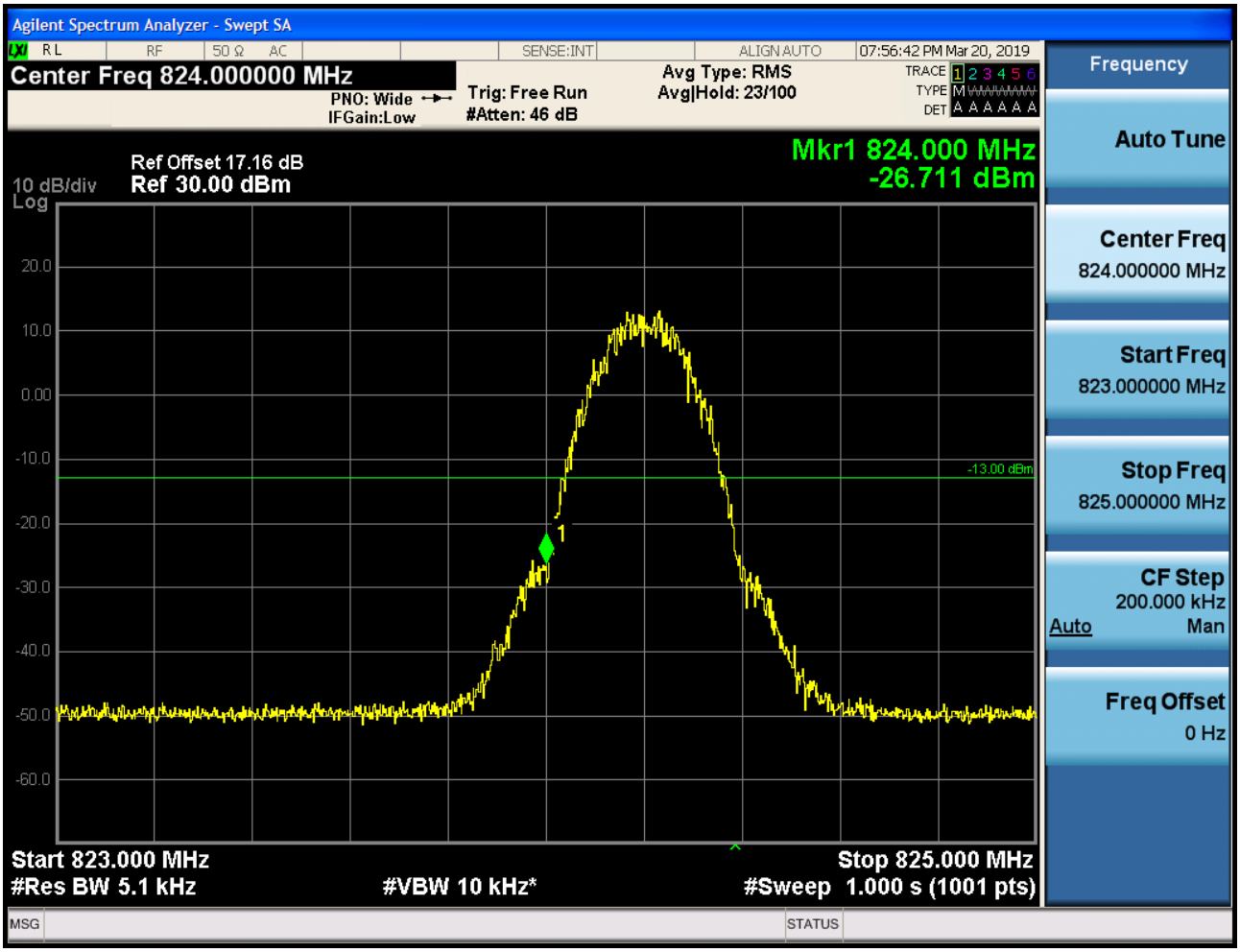


5.1.1.1.2 Test Channel = HCH

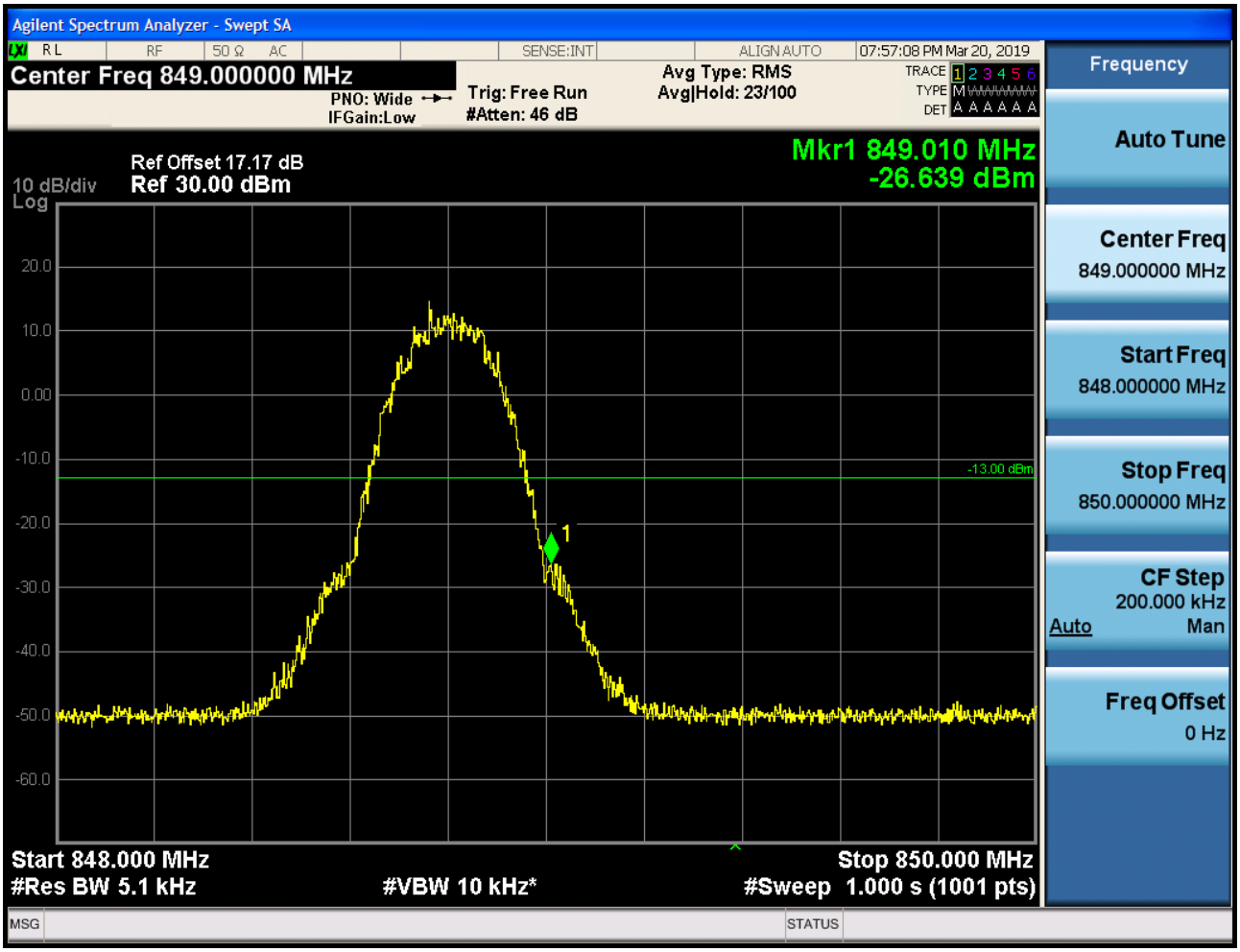


5.1.1.2 Test Mode = GSM/TM2

5.1.1.2.1 Test Channel = LCH



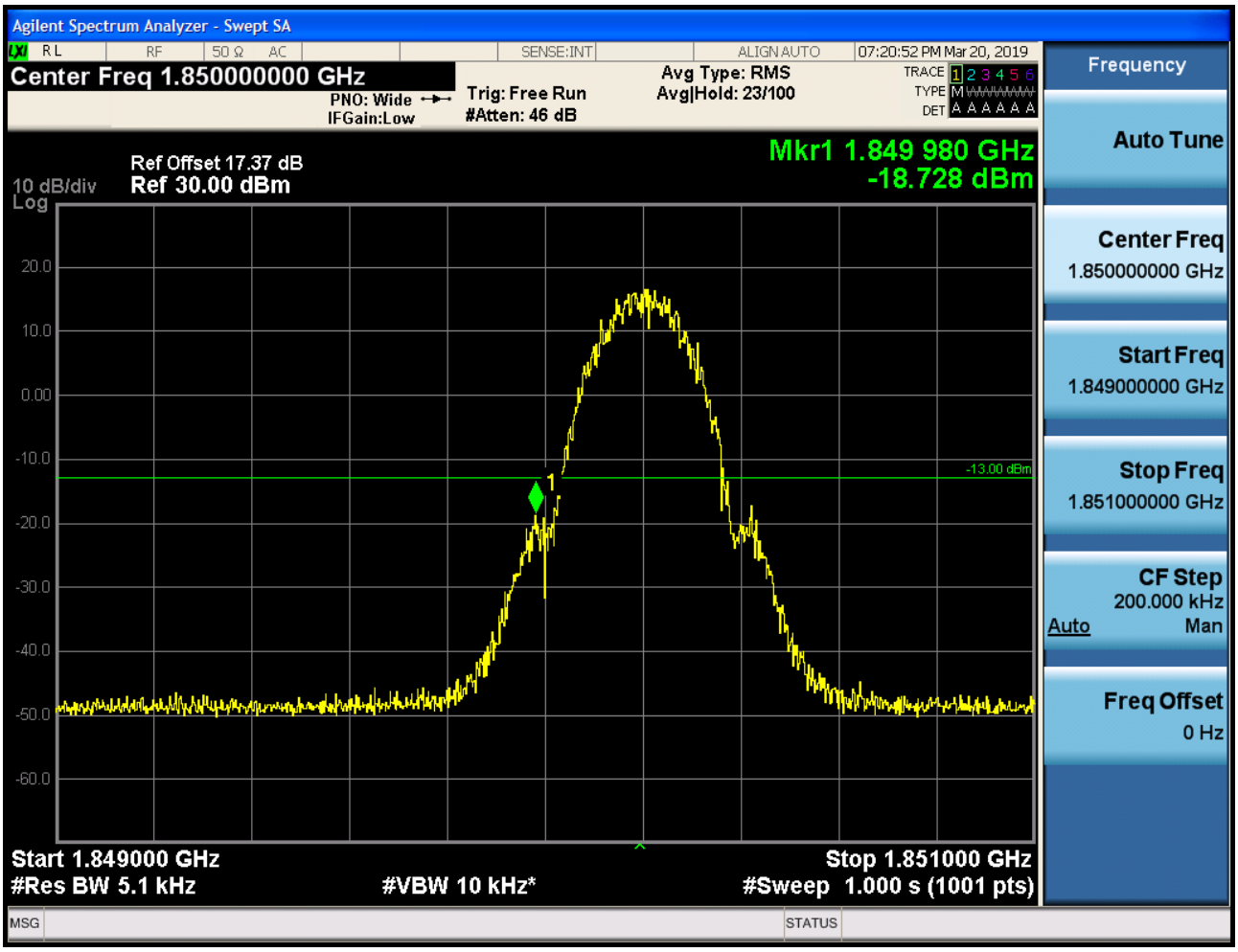
5.1.1.2.2 Test Channel = HCH



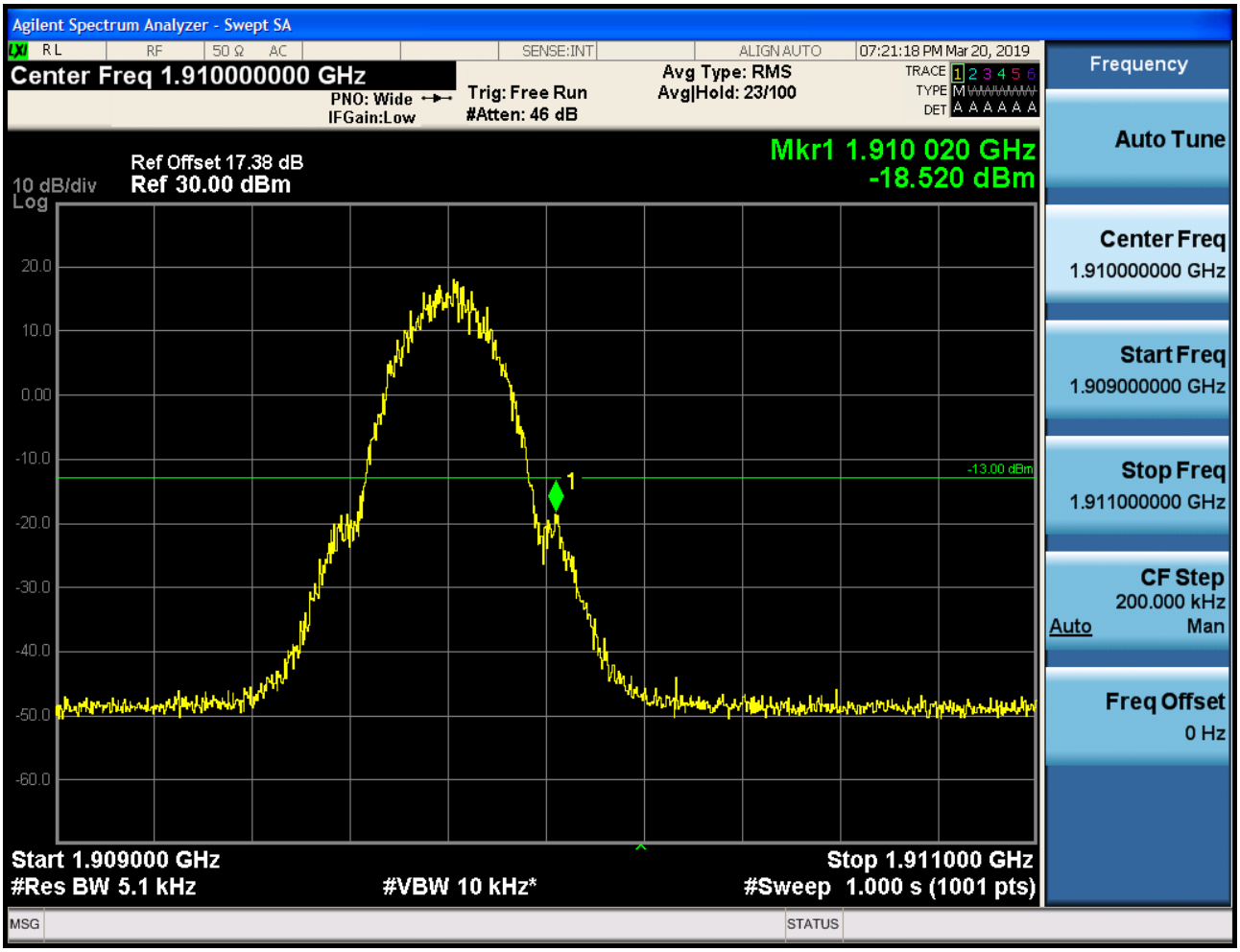
5.1.2 Test Band = PCS1900

5.1.2.1 Test Mode = GSM/TM1

5.1.2.1.1 Test Channel = LCH

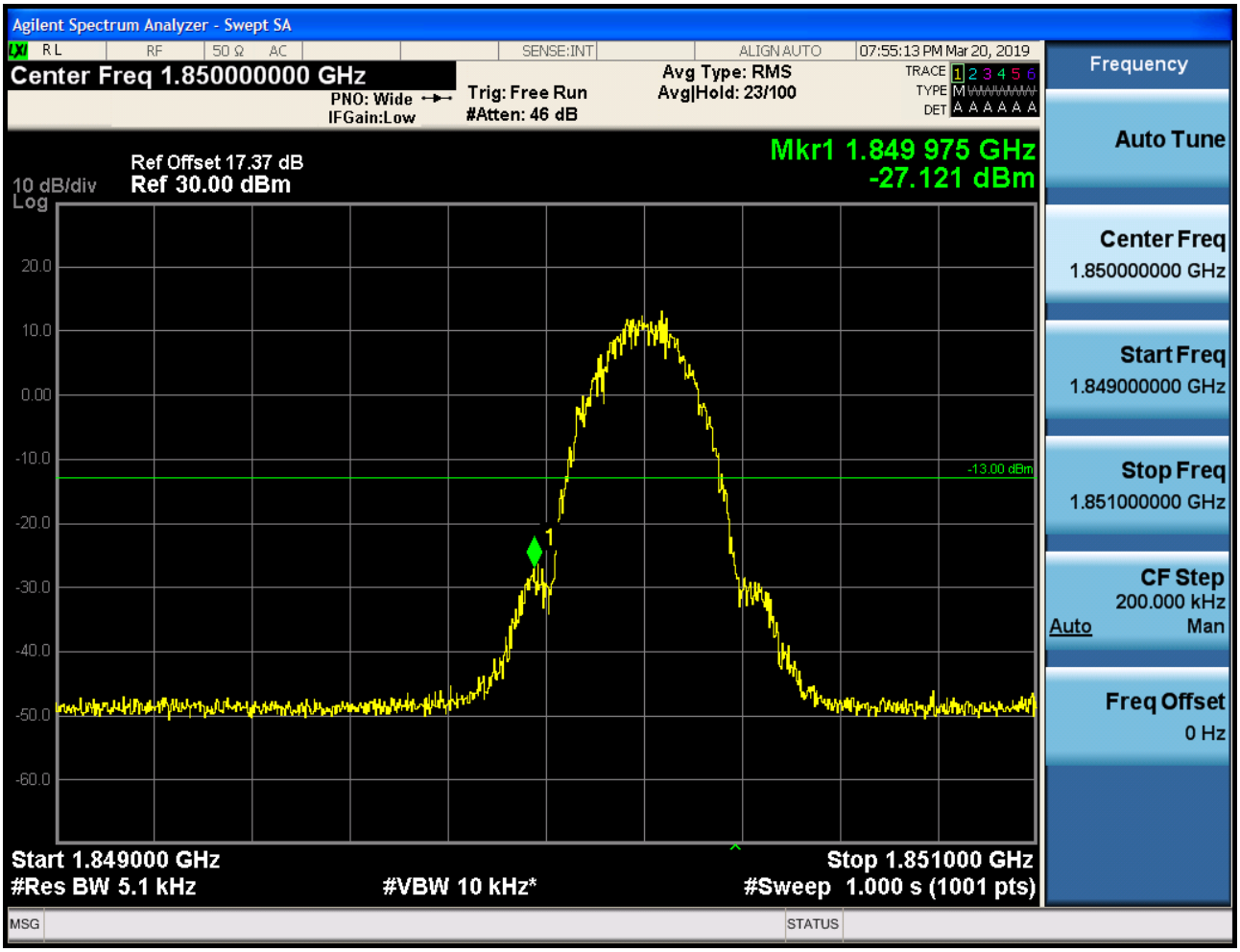


5.1.2.1.2 Test Channel = HCH

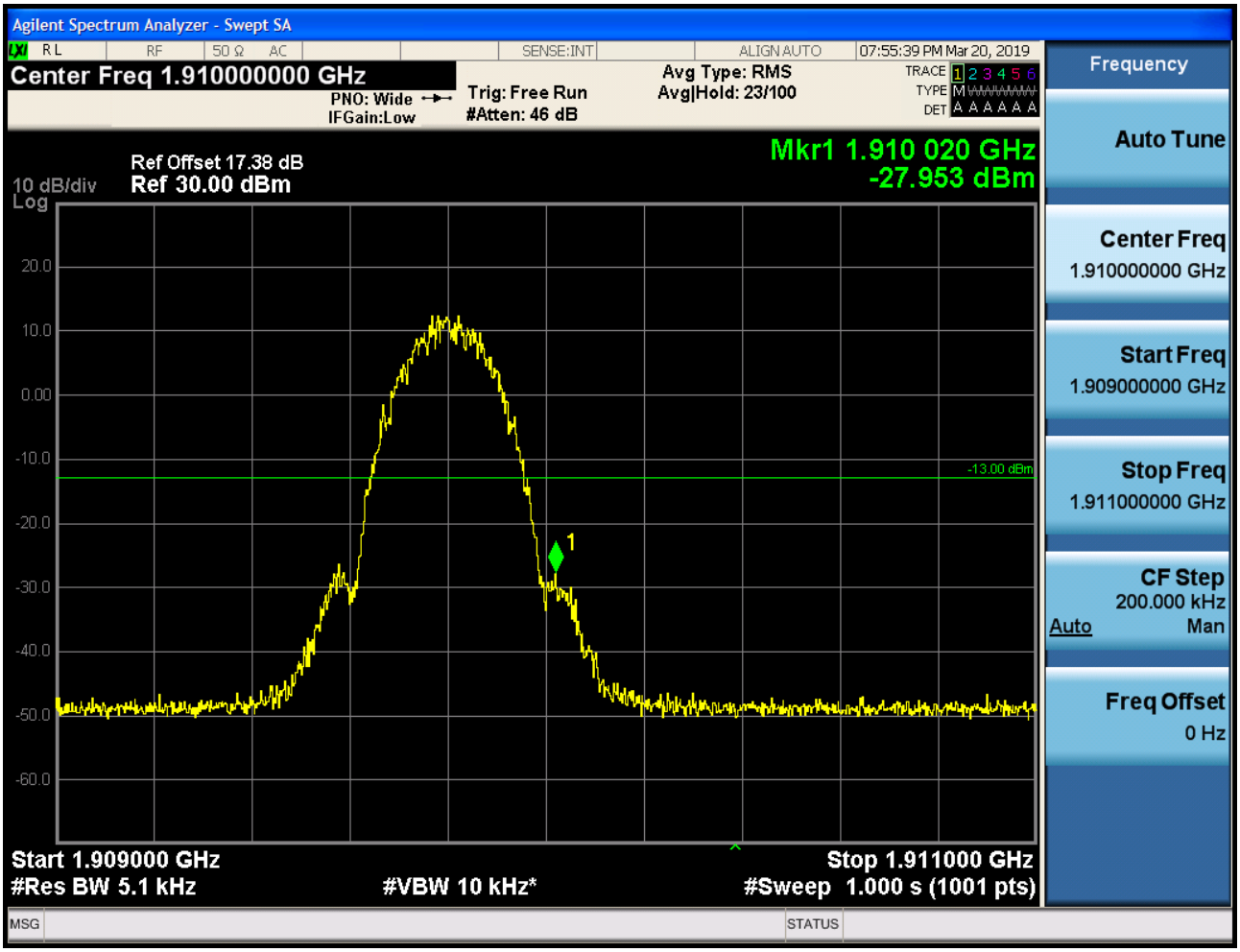


5.1.2.2 Test Mode = GSM/TM2

5.1.2.2.1 Test Channel = LCH



5.1.2.2.2 Test Channel = HCH



6Appendix_F: Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of < RBW/2 so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = k * (Span / RBW)" with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

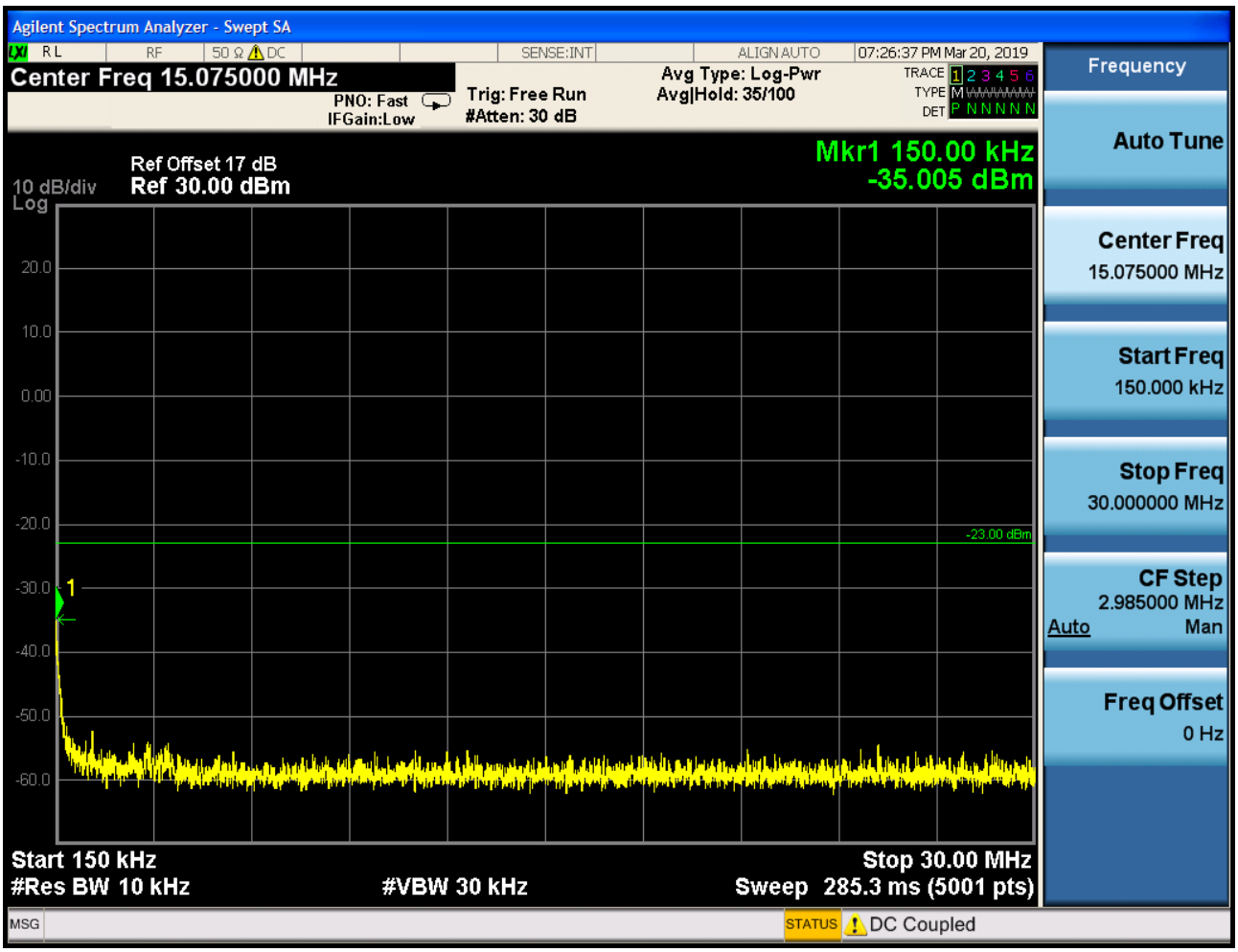
Part I - Test Plots

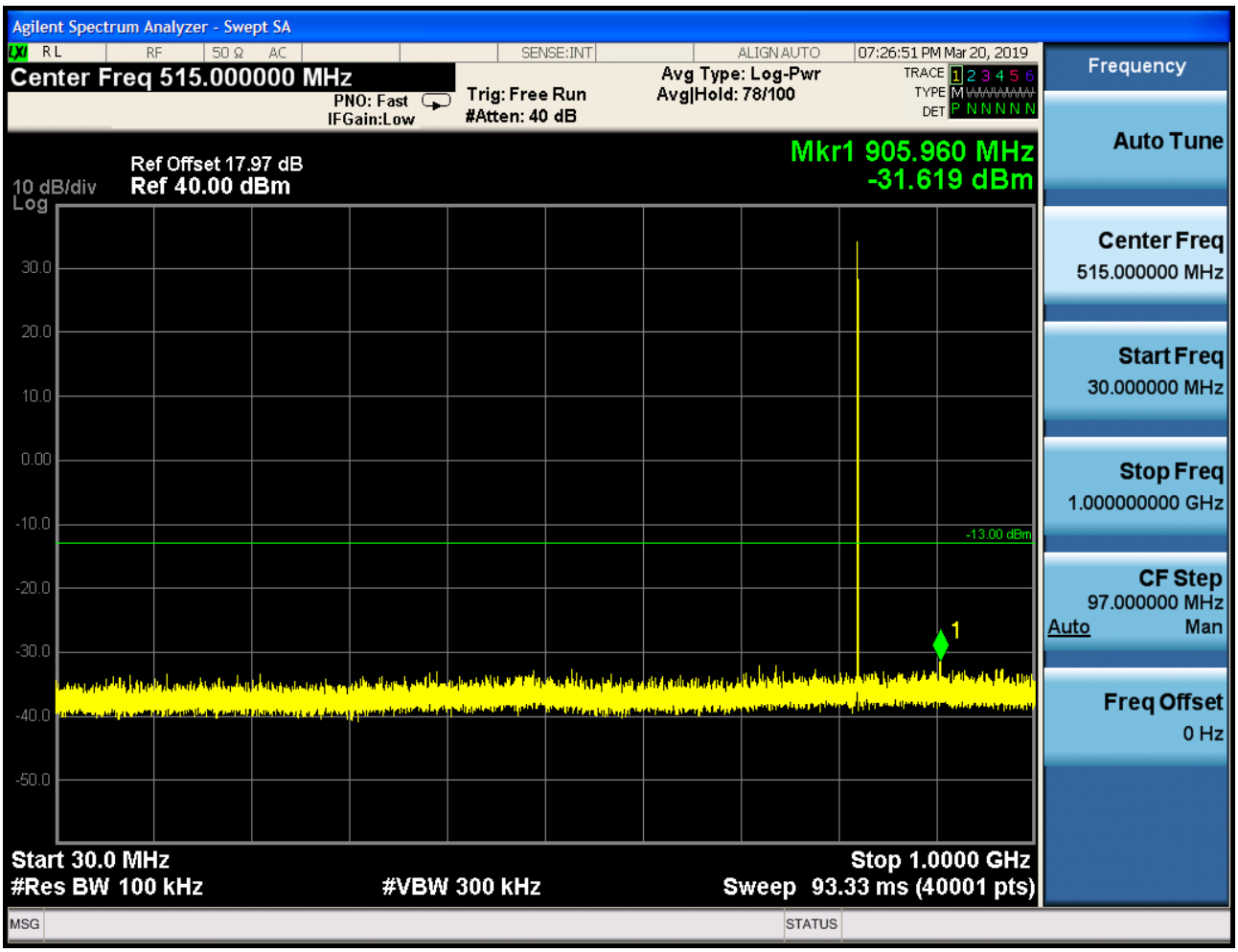
6.1 For GSM

6.1.1 Test Band = GSM850

6.1.1.1 Test Mode = GSM/TM1

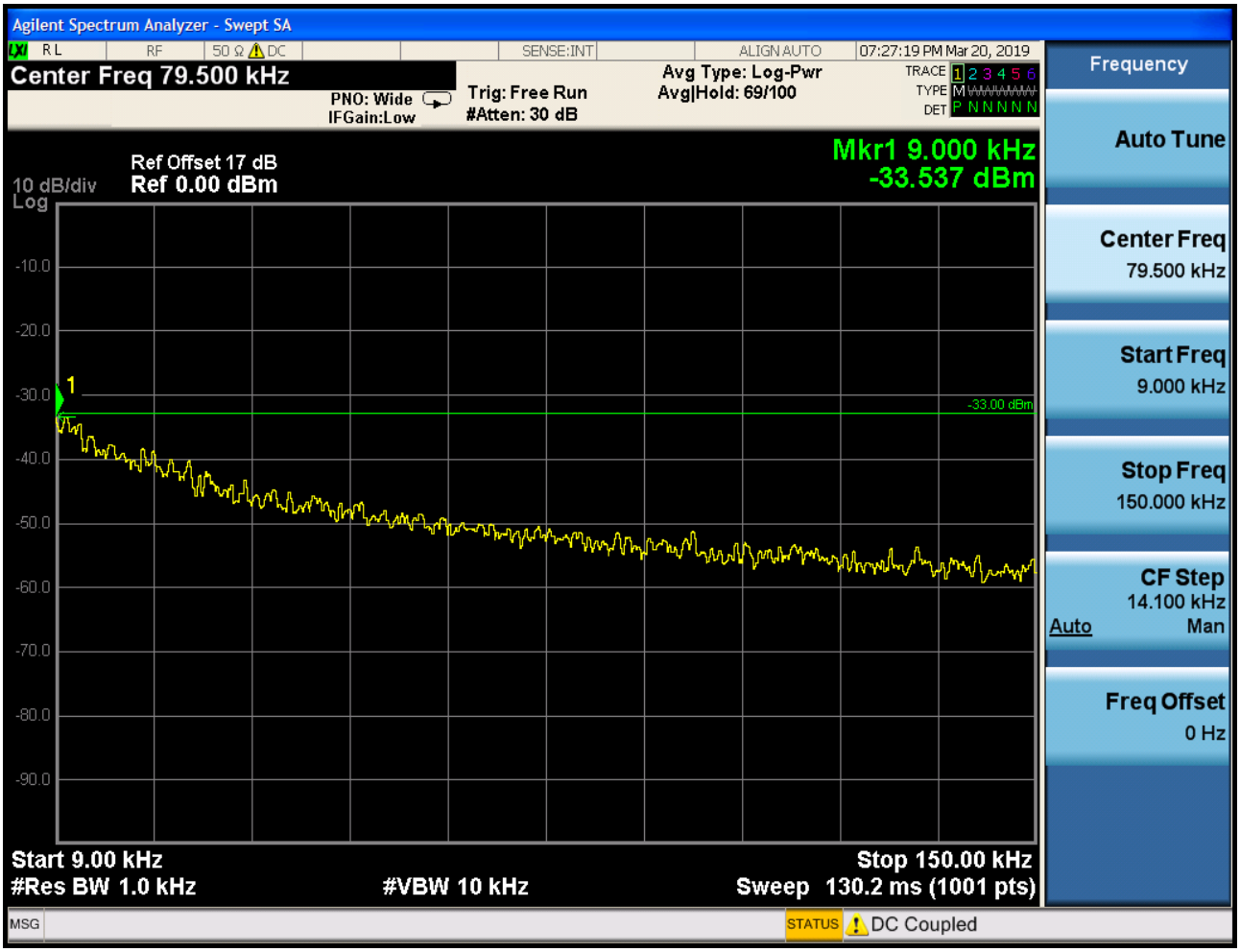
6.1.1.1.1 Test Channel = LCH

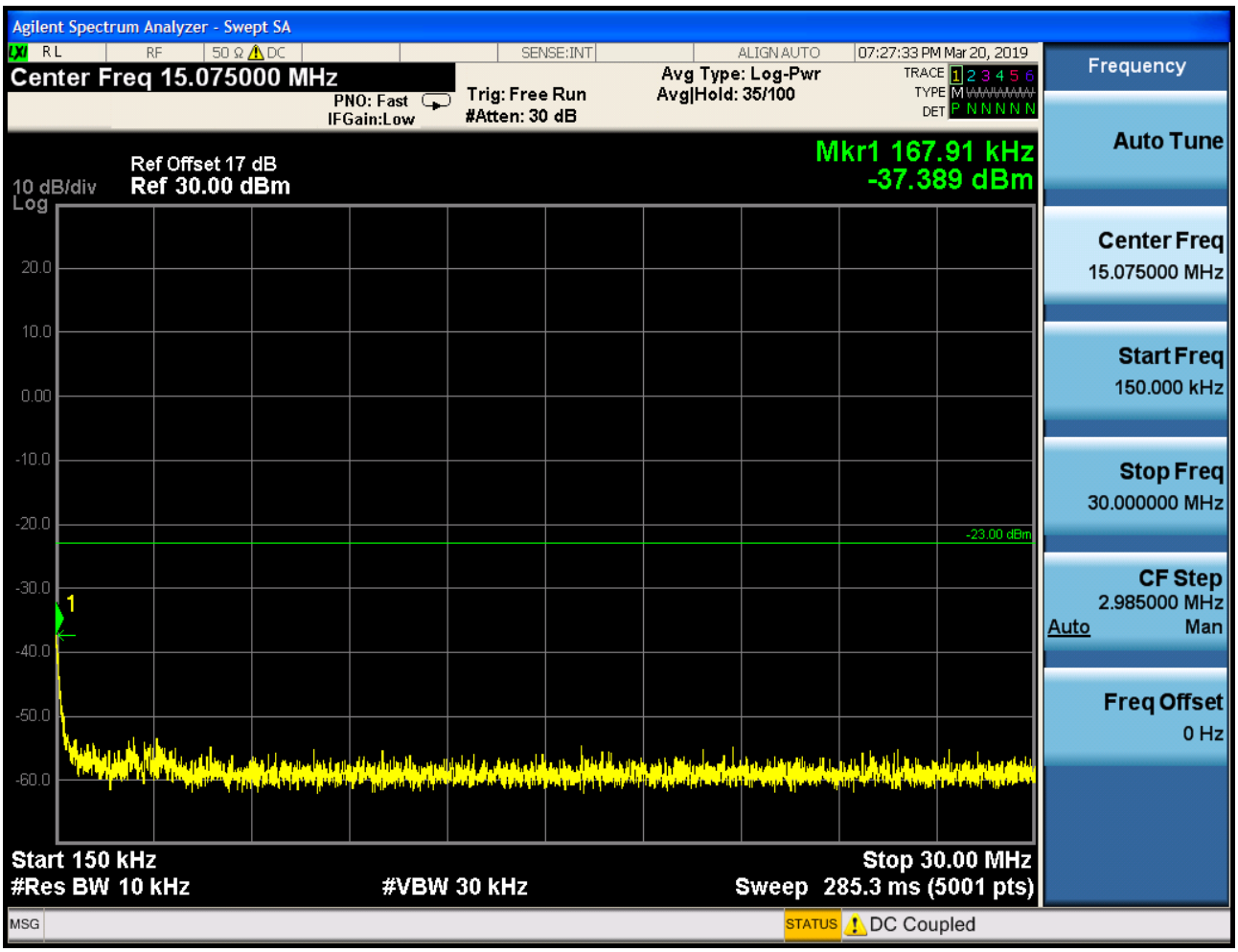


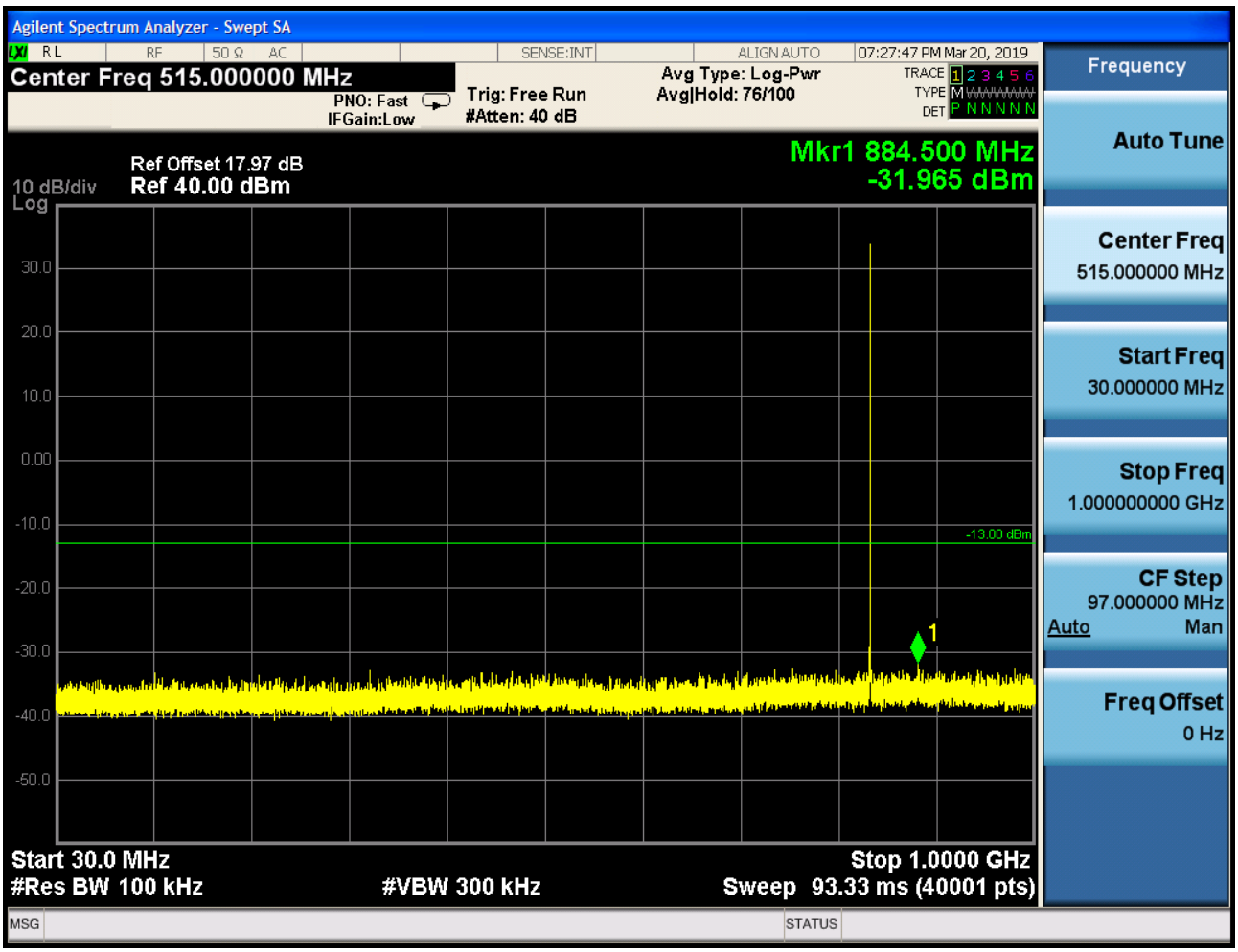

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
07:26:51 PM Mar 20, 2019
Center Freq 515.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold: 78/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17.97 dB
10 dB/div
Log
Ref 40.00 dBm
Mkr1 905.960 MHz
-31.619 dBm
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-13.00 dBm
1
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.33 ms (40001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz

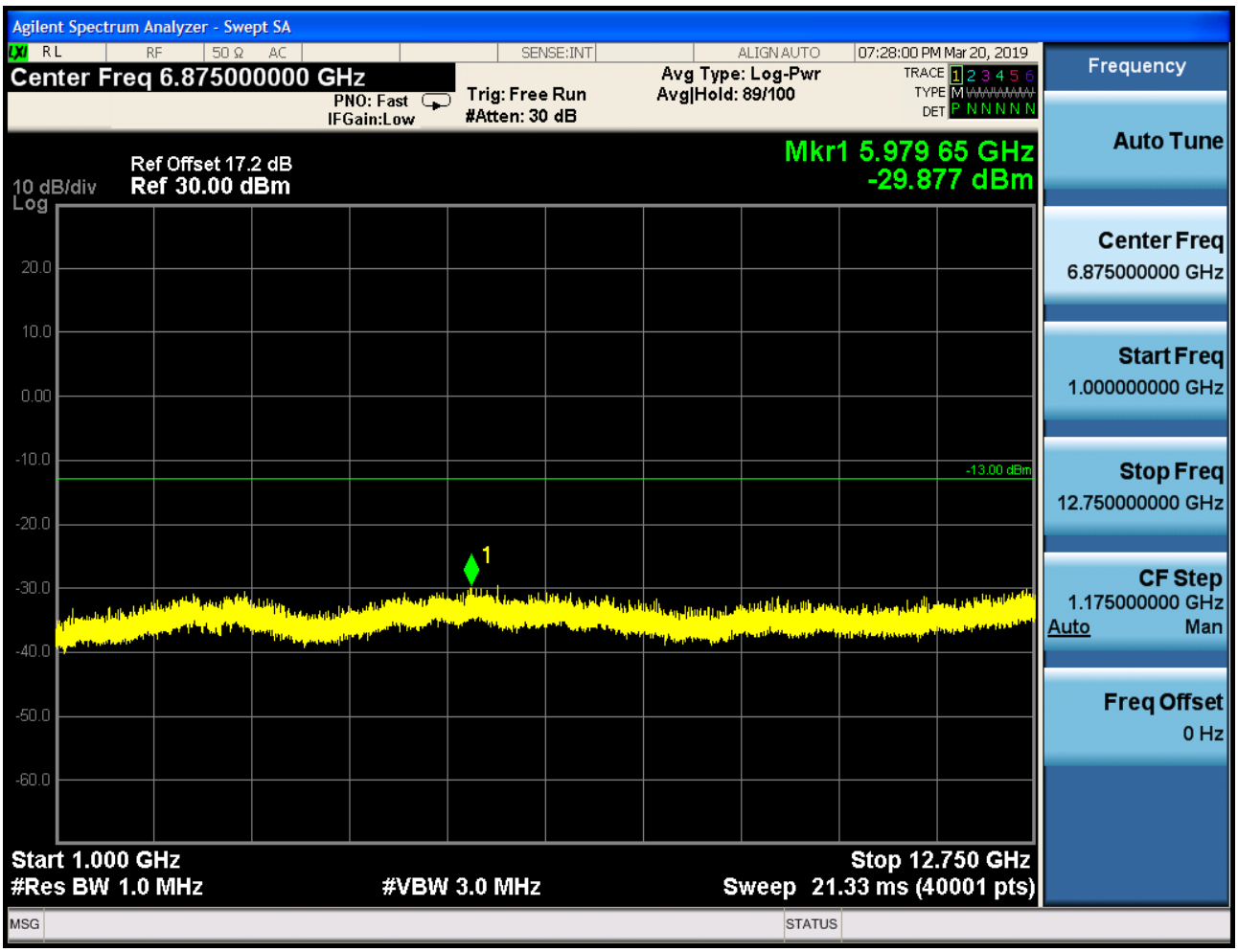

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
07:27:05 PM Mar 20, 2019
Center Freq 6.875000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 87/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17.2 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 5.594 54 GHz
-29.462 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
1
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 21.33 ms (40001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

6.1.1.1.2 Test Channel = MCH

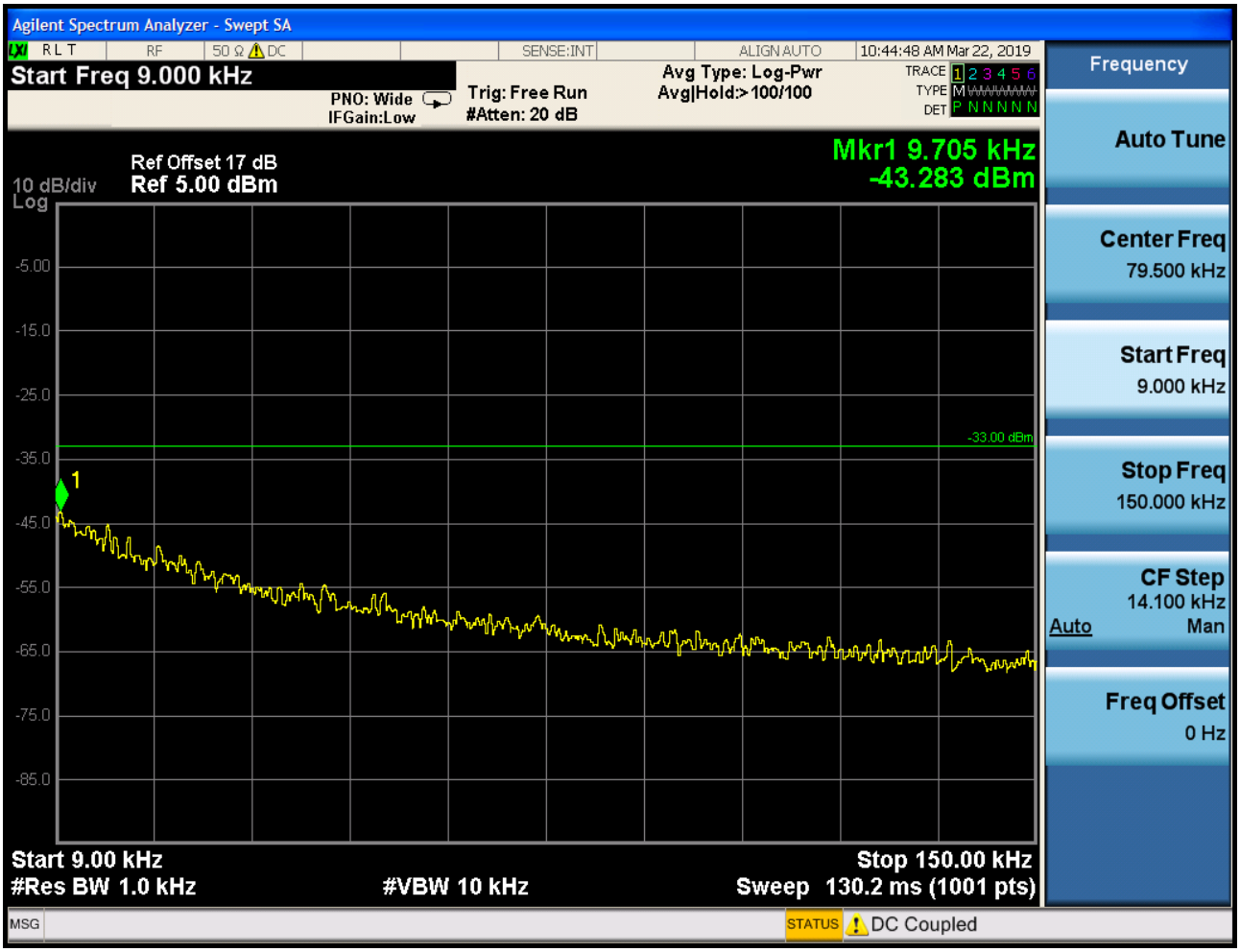


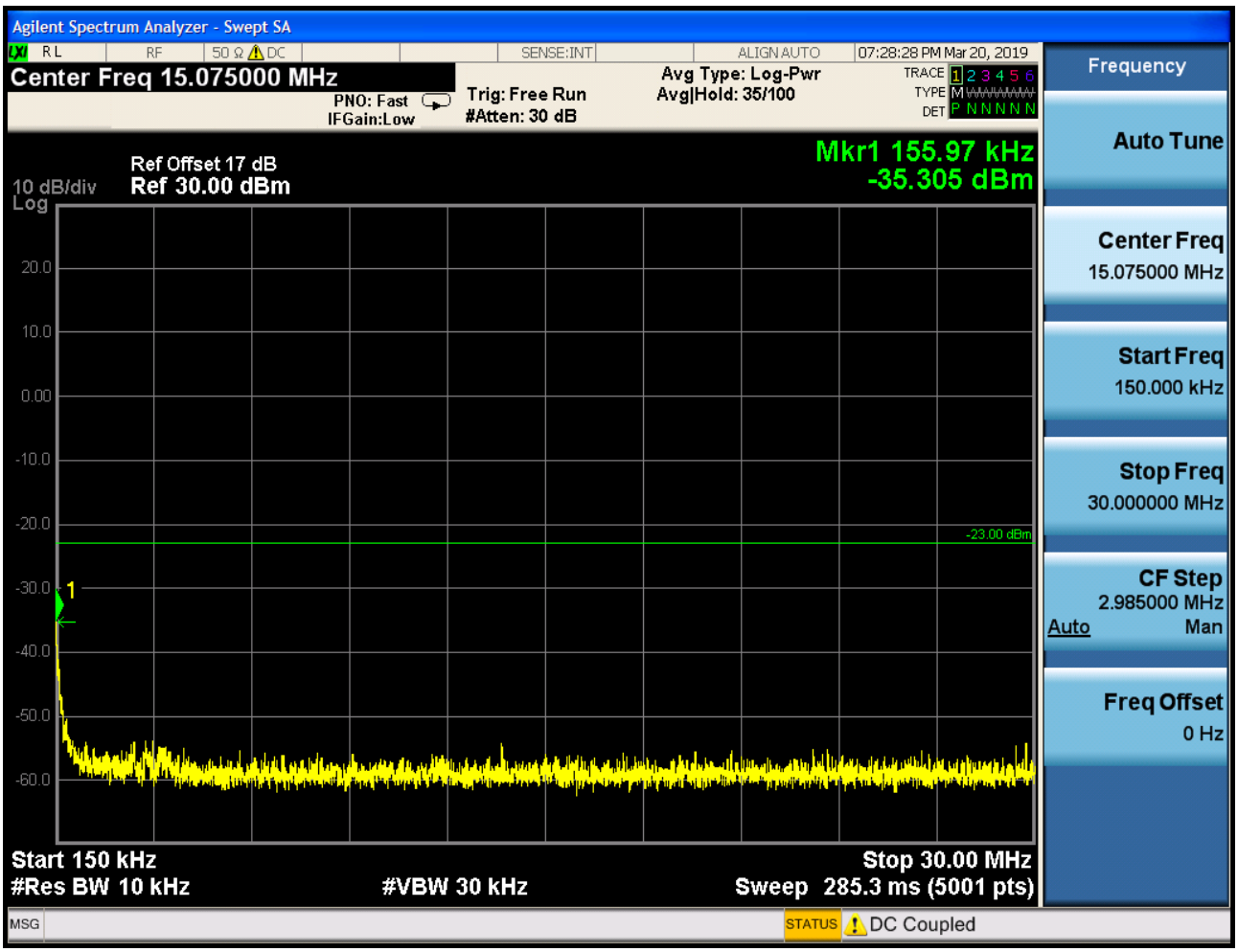

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
07:27:33 PM Mar 20, 2019
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 167.91 kHz
-37.389 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-23.00 dBm
1
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz
Stop 30.00 MHz
Sweep 285.3 ms (5001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

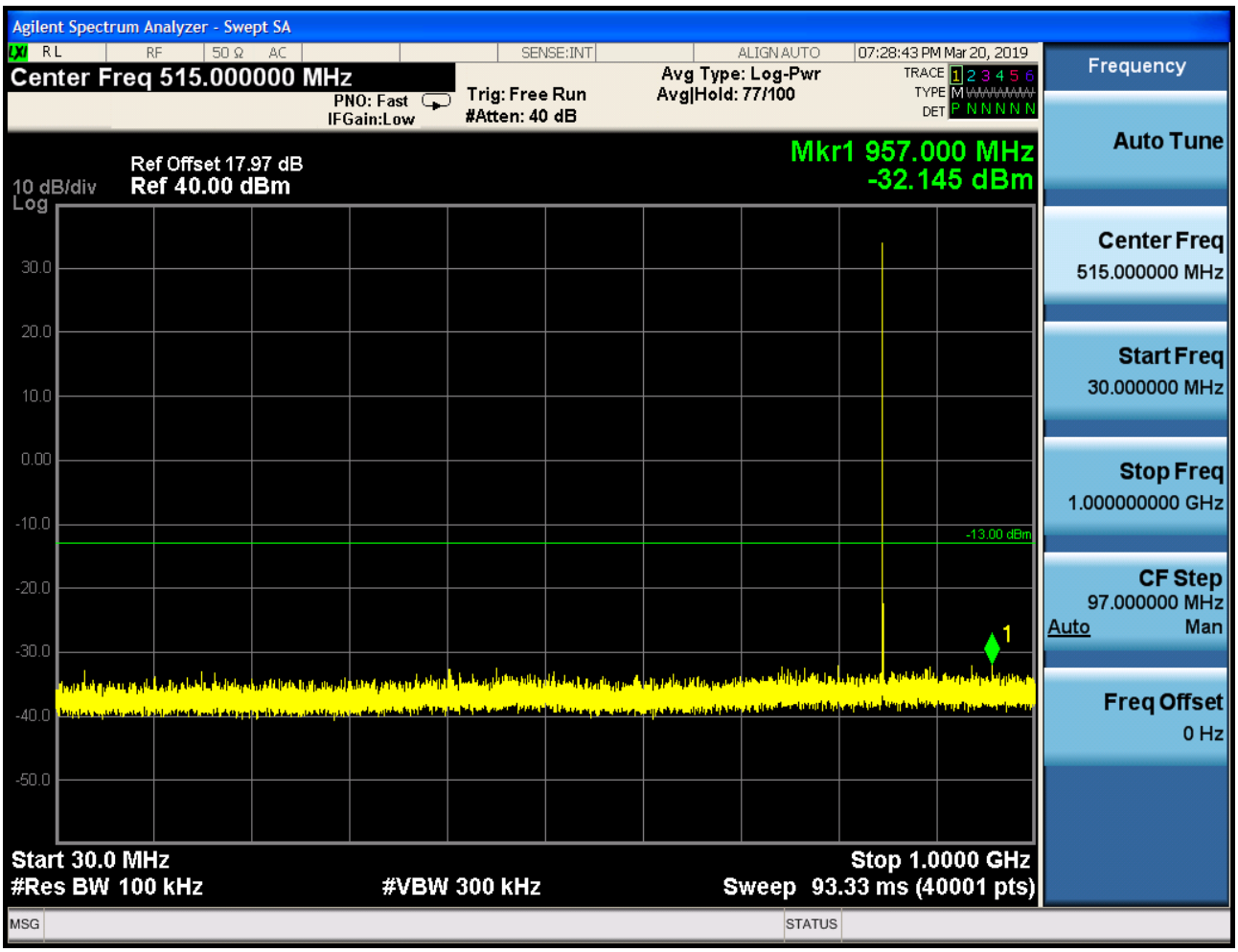


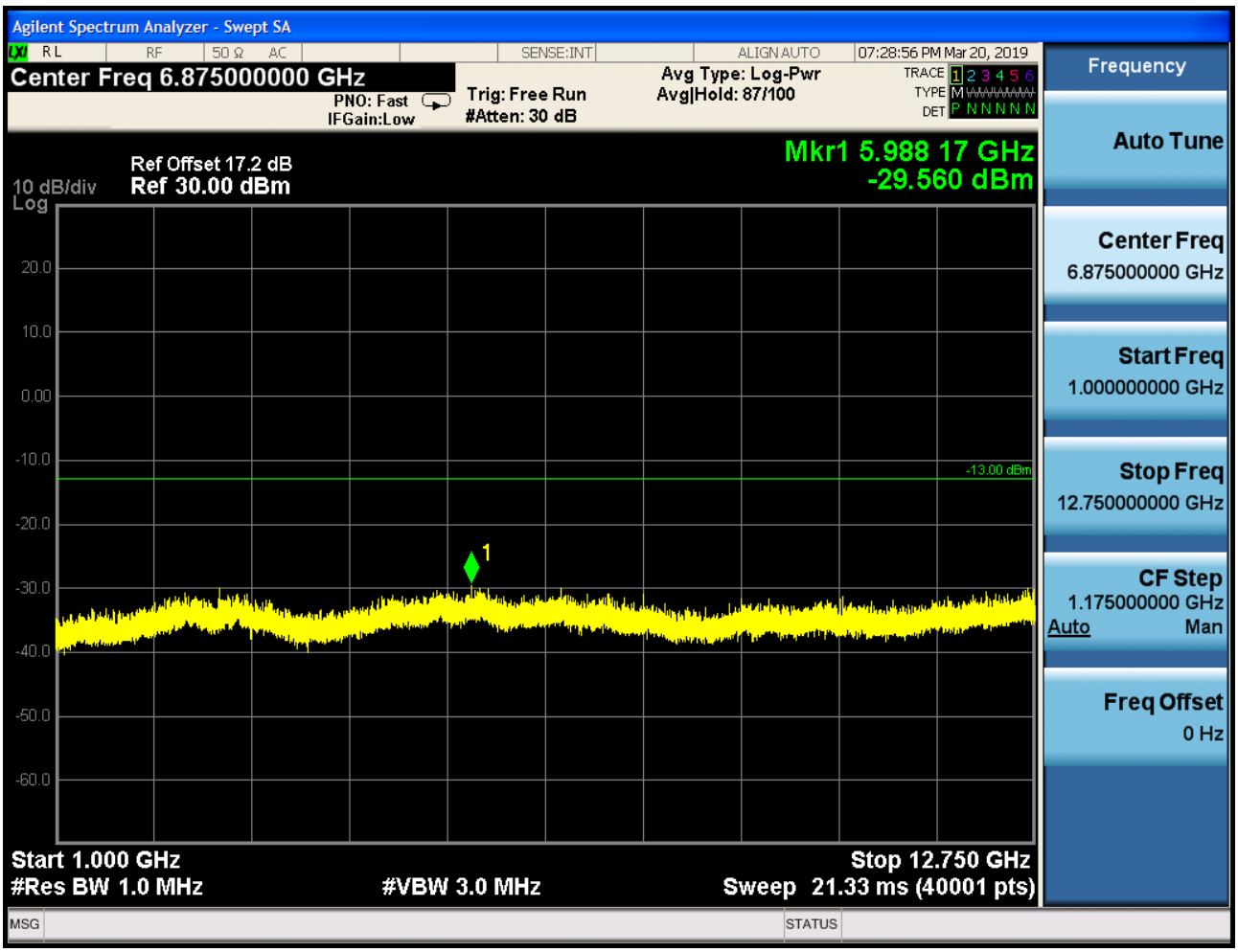

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
07:28:00 PM Mar 20, 2019
Center Freq 6.875000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 89/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17.2 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 5.979 65 GHz
-29.877 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
1
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 21.33 ms (40001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

6.1.1.1.3 Test Channel = HCH



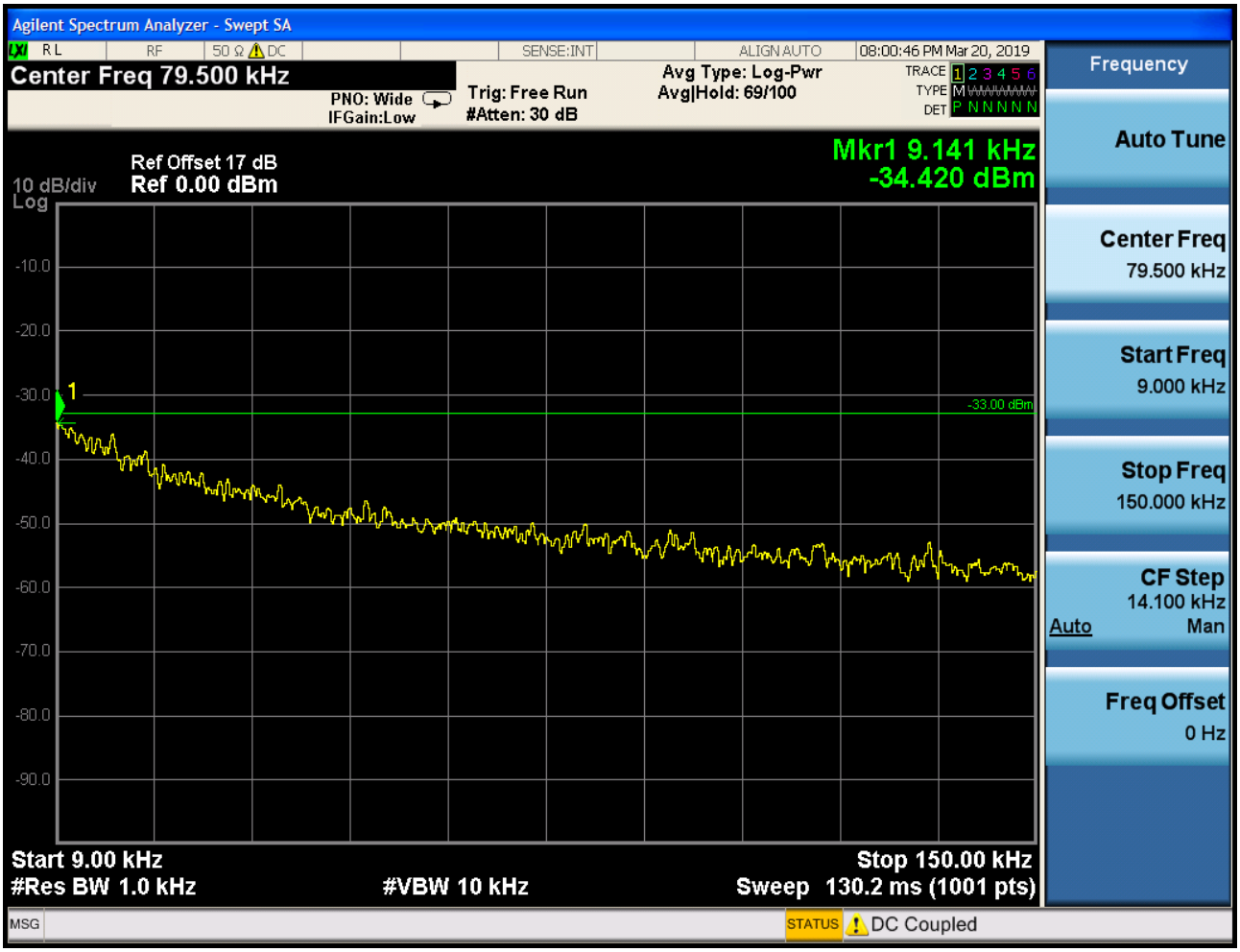

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
07:28:28 PM Mar 20, 2019
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 155.97 kHz
-35.305 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-23.00 dBm
1
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz
Stop 30.00 MHz
Sweep 285.3 ms (5001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

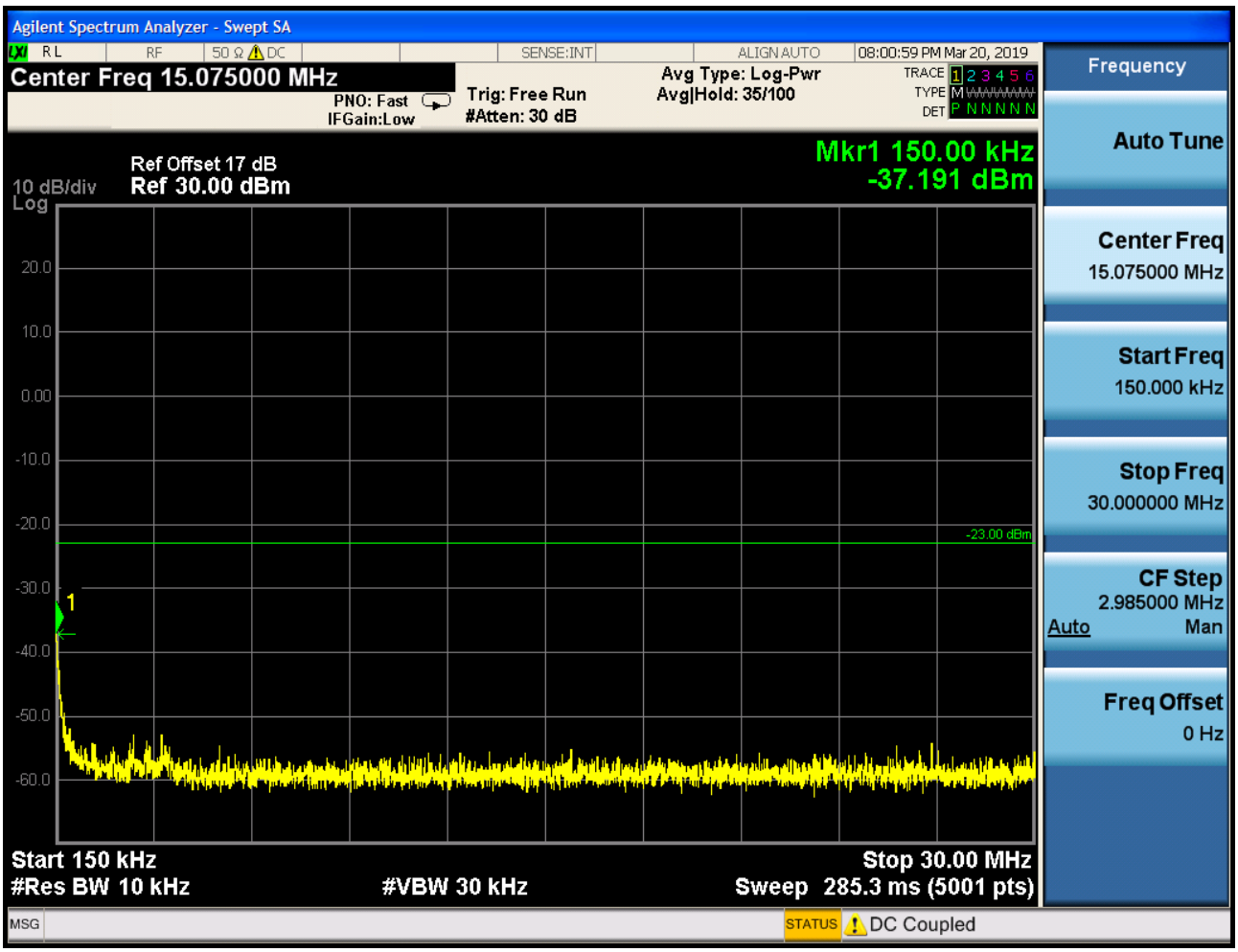

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
07:28:43 PM Mar 20, 2019
Center Freq 515.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold: 77/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17.97 dB
10 dB/div
Log
Ref 40.00 dBm
Mkr1 957.000 MHz
-32.145 dBm
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-13.00 dBm
1
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 93.33 ms (40001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz

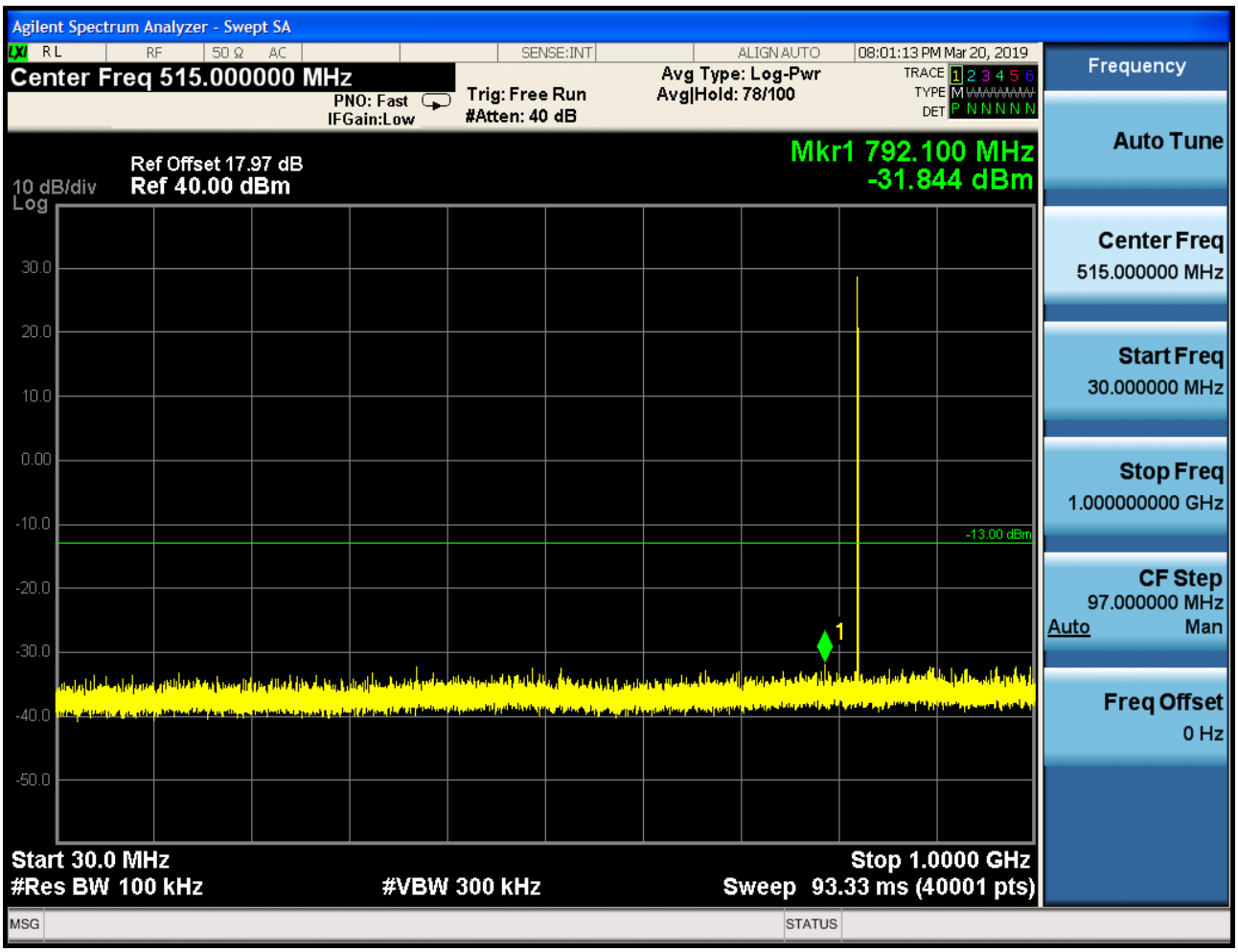

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
07:28:56 PM Mar 20, 2019
Center Freq 6.875000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 87/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17.2 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 5.988 17 GHz
-29.560 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
1
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 21.33 ms (40001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

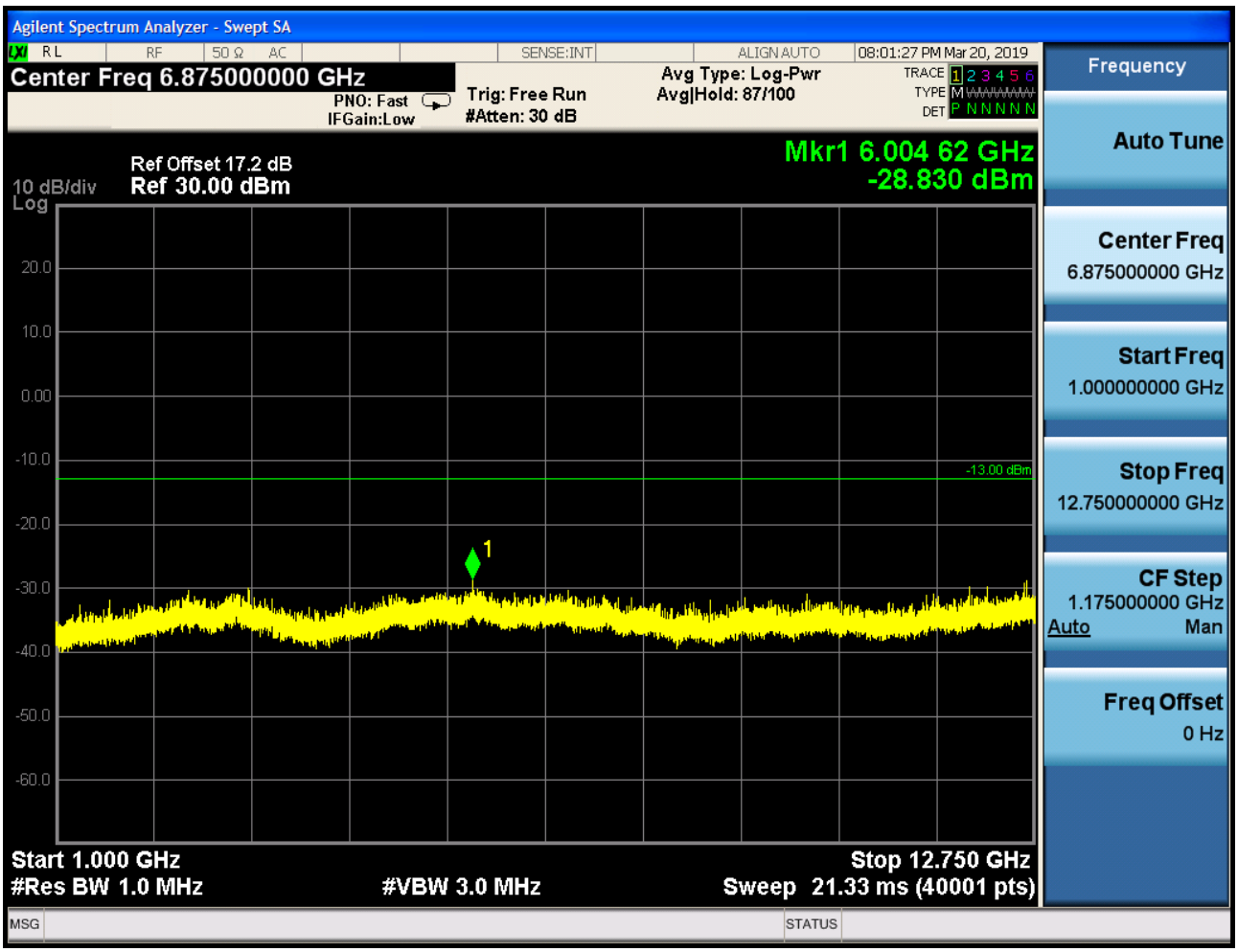
6.1.1.2 Test Mode = GSM/TM2

6.1.1.2.1 Test Channel = LCH

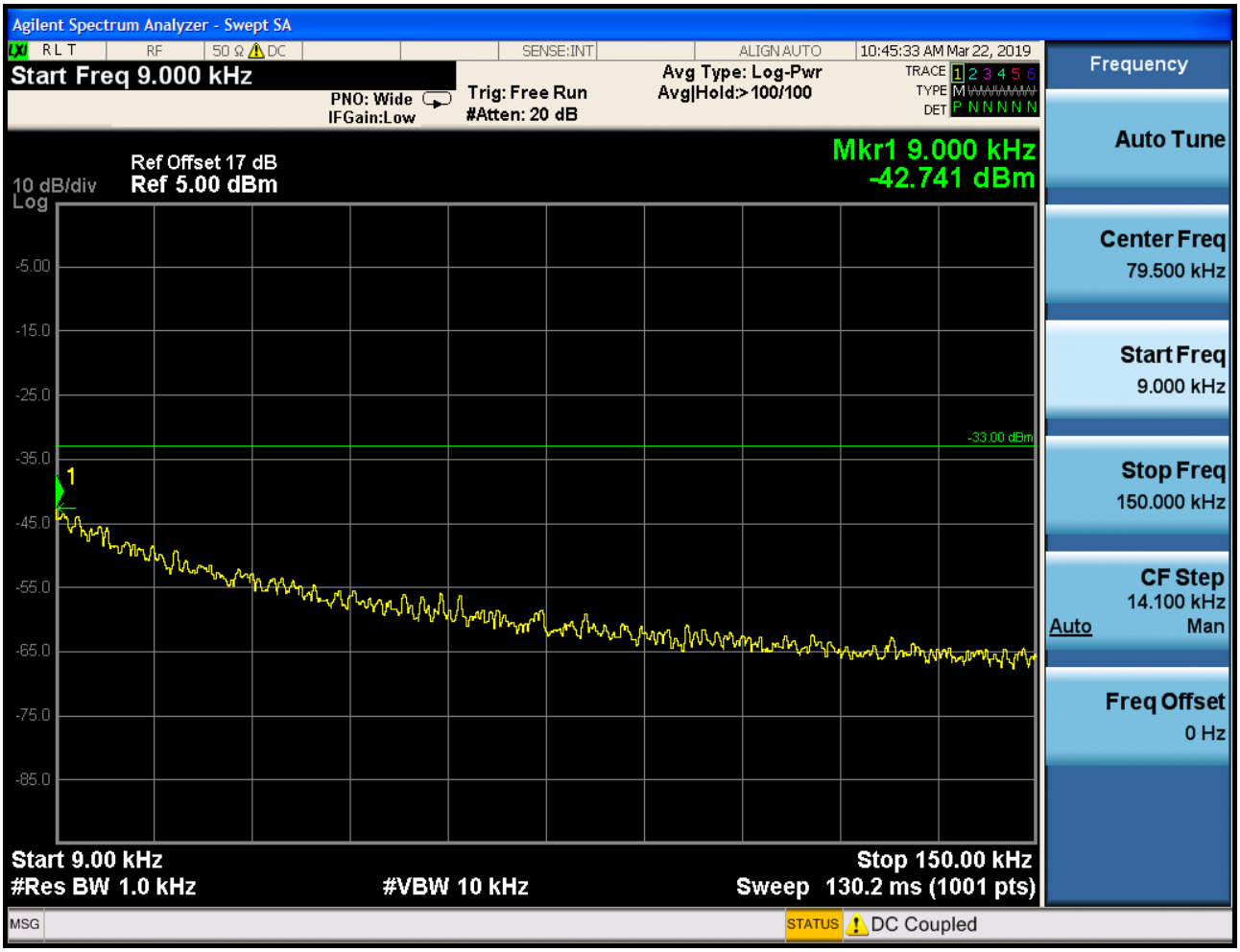


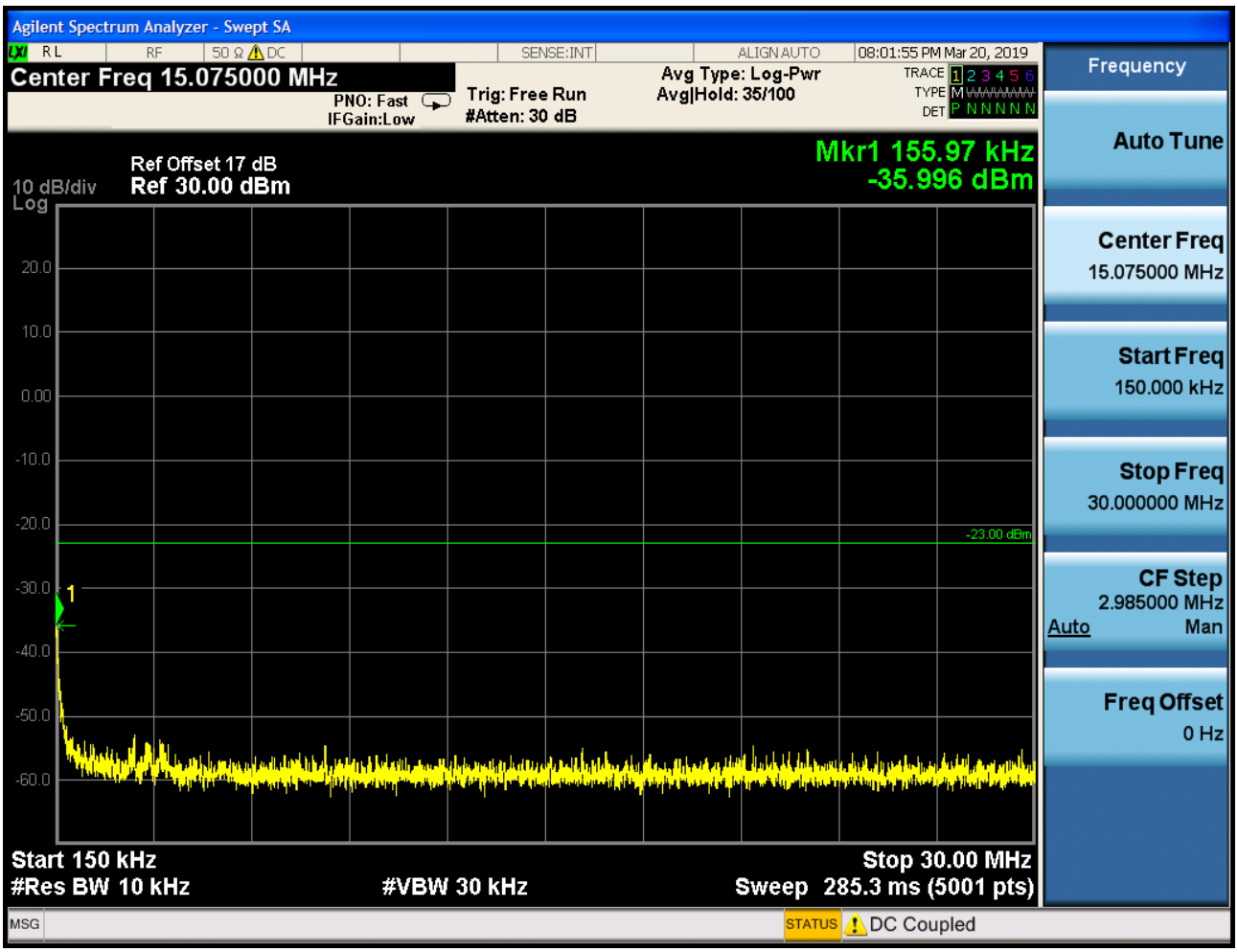

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
08:00:59 PM Mar 20, 2019
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 150.00 kHz
-37.191 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-23.00 dBm
1
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz
Stop 30.00 MHz
Sweep 285.3 ms (5001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

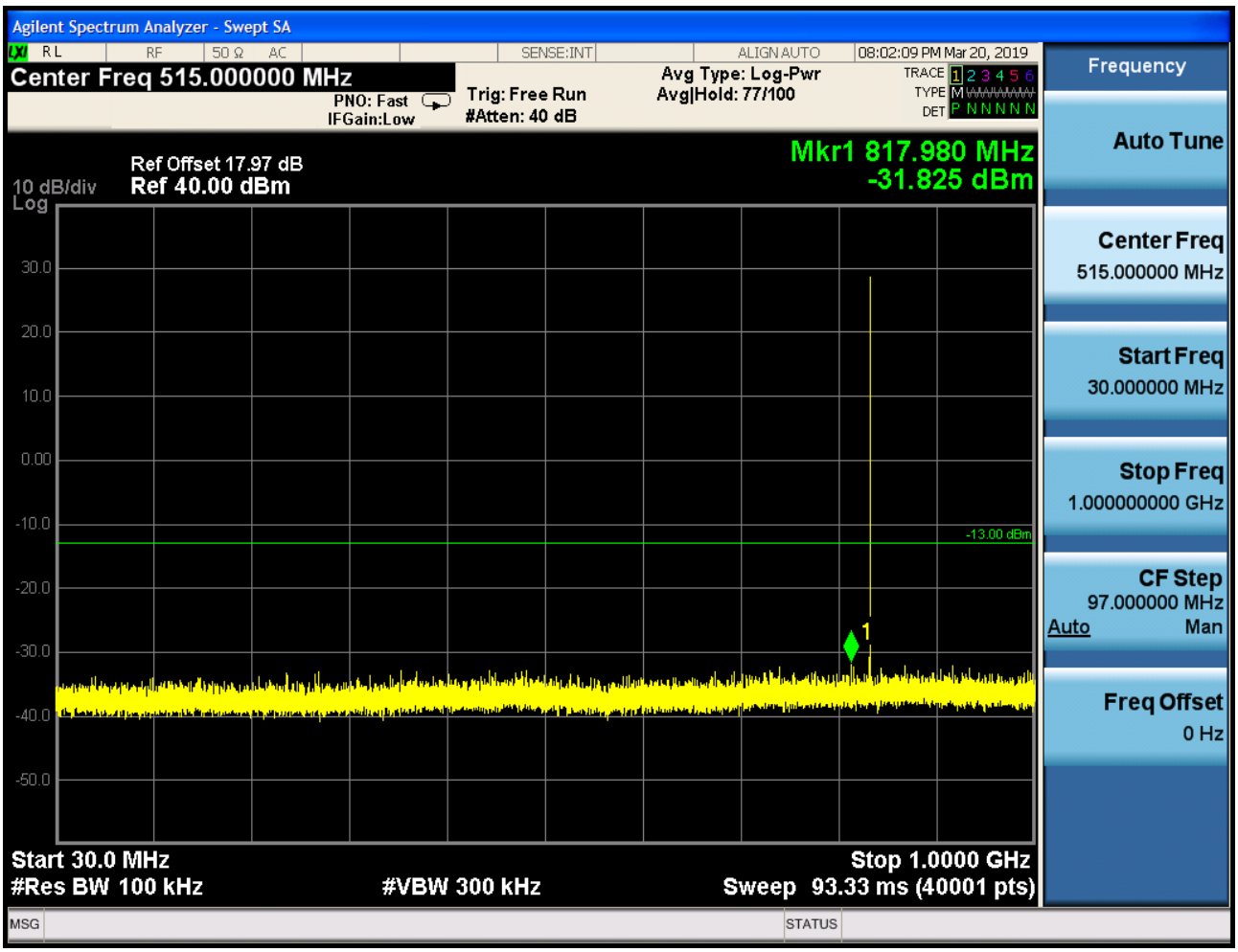


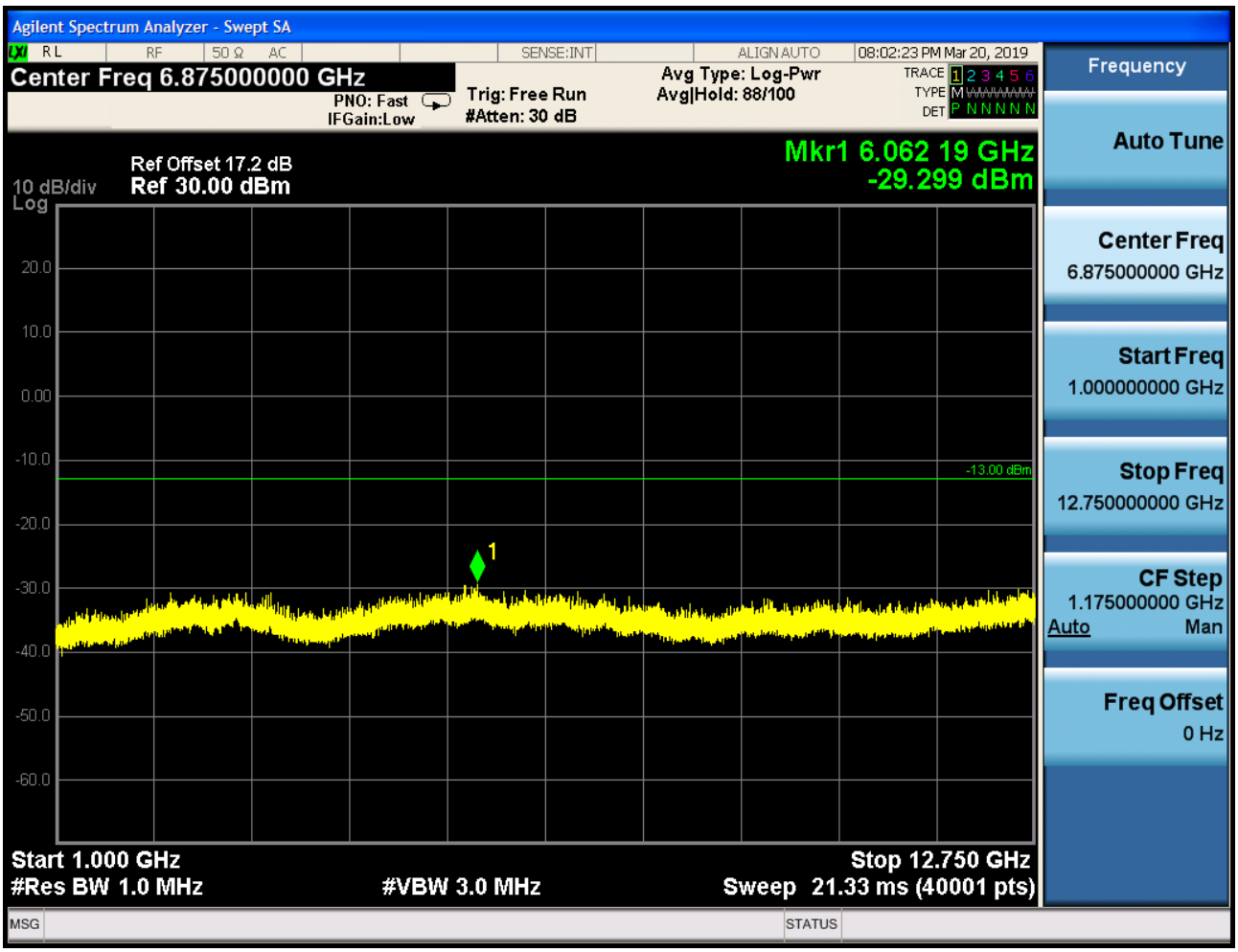

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
08:01:27 PM Mar 20, 2019
Center Freq 6.875000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 87/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17.2 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 6.004 62 GHz
-28.830 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
1
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 21.33 ms (40001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

6.1.1.2.2 Test Channel = MCH

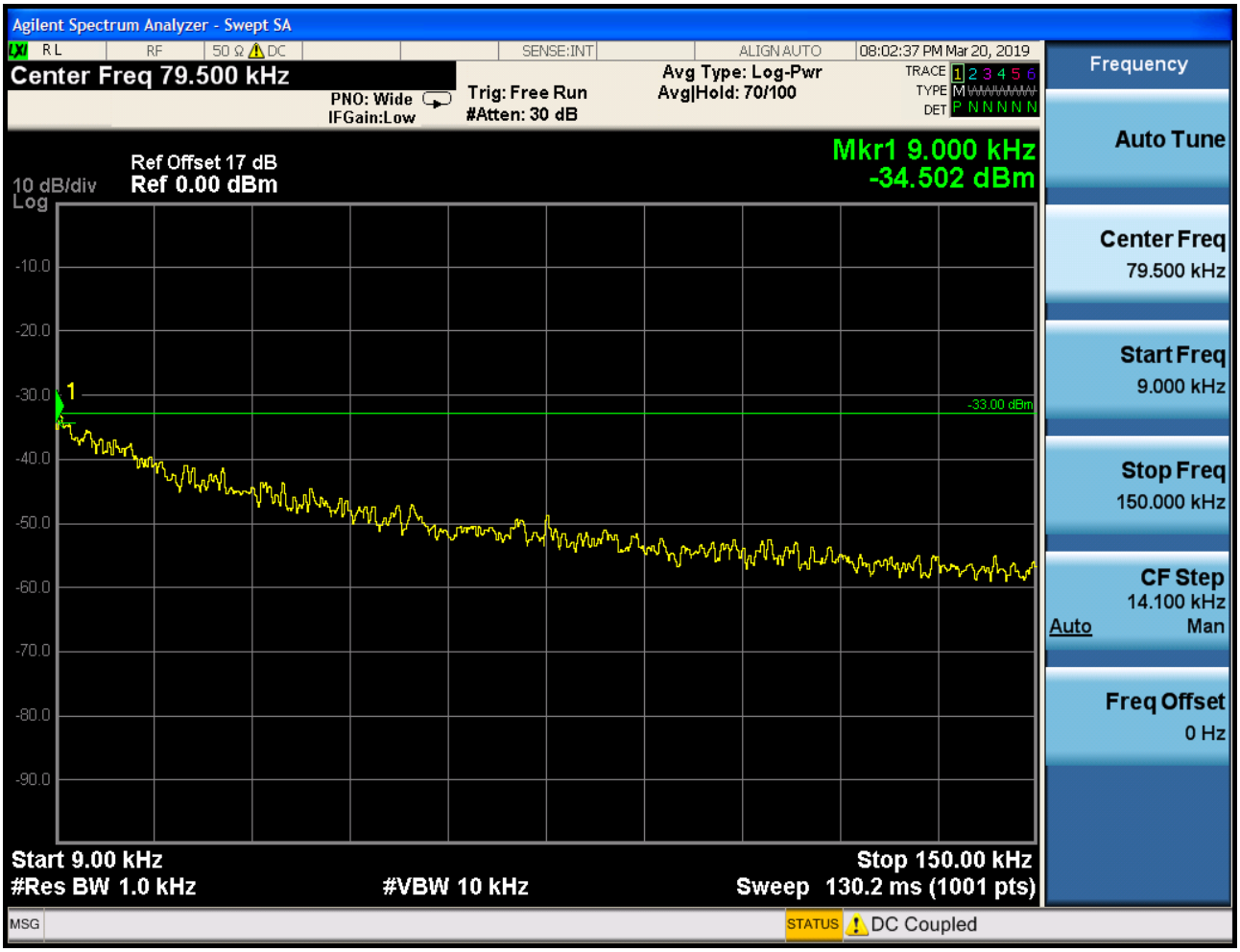


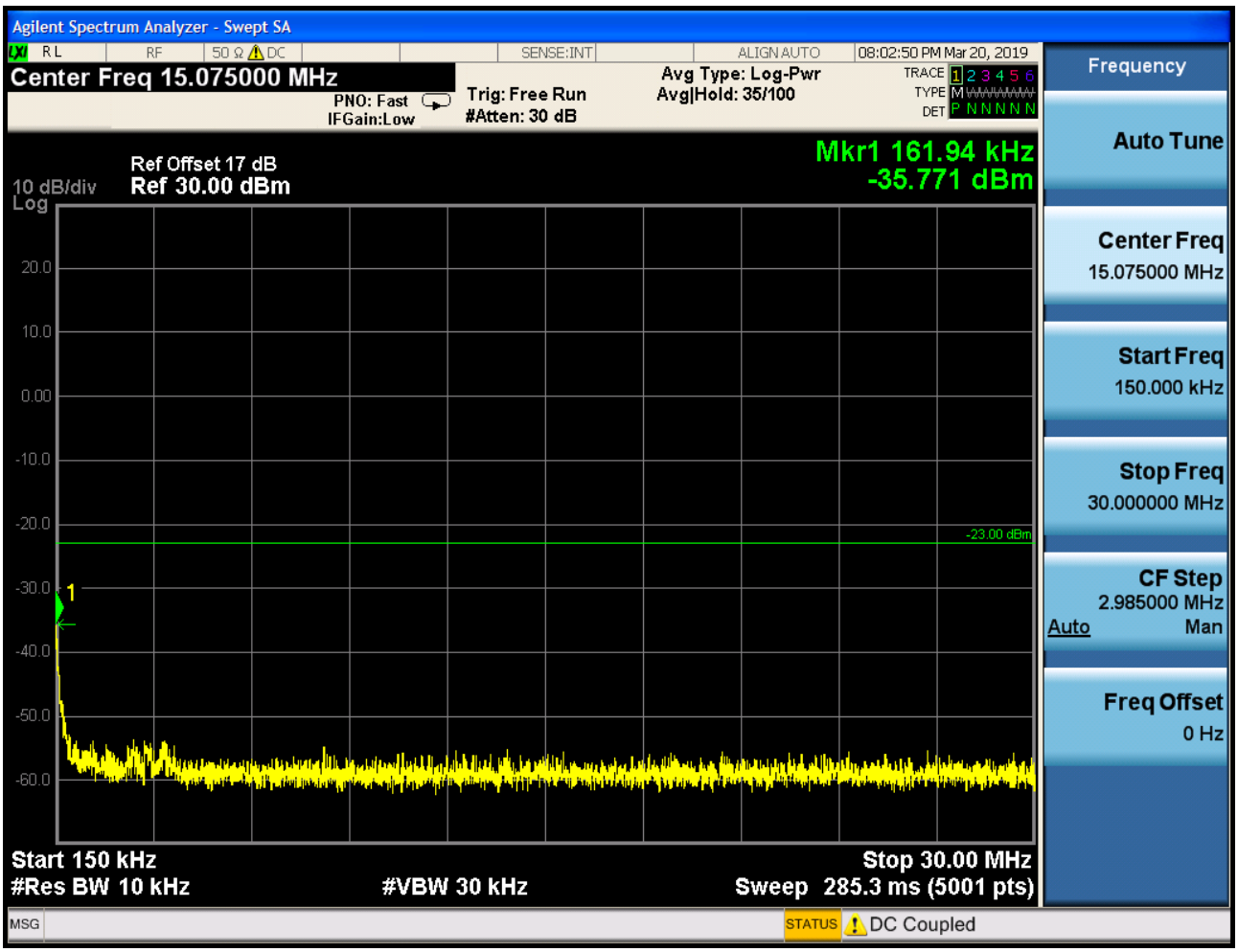

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
08:01:55 PM Mar 20, 2019
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 155.97 kHz
-35.996 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-23.00 dBm
1
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz
Stop 30.00 MHz
Sweep 285.3 ms (5001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

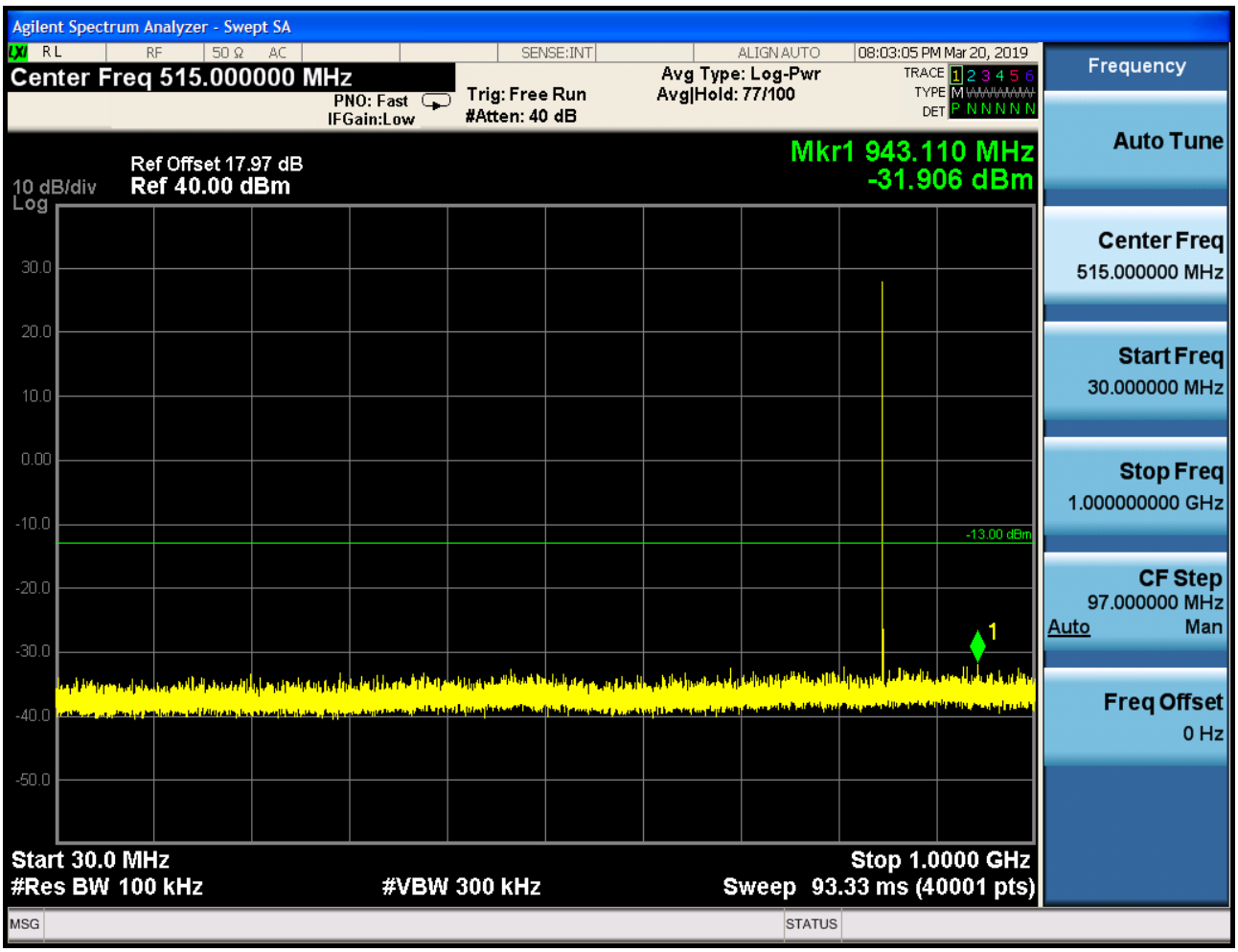


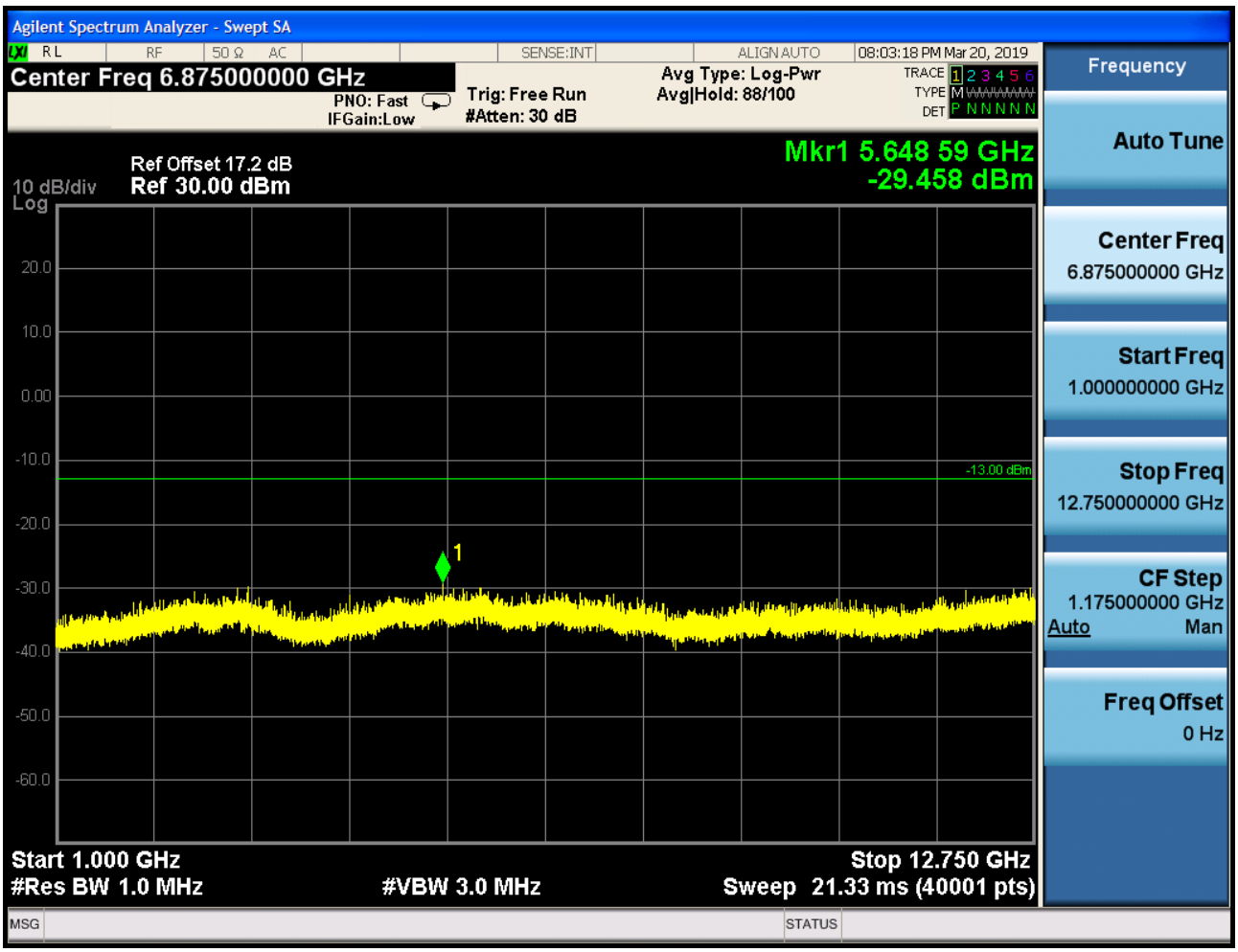

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
08:02:23 PM Mar 20, 2019
Center Freq 6.875000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 88/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17.2 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 6.062 19 GHz
-29.299 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
1
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 21.33 ms (40001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

6.1.1.2.3 Test Channel = HCH





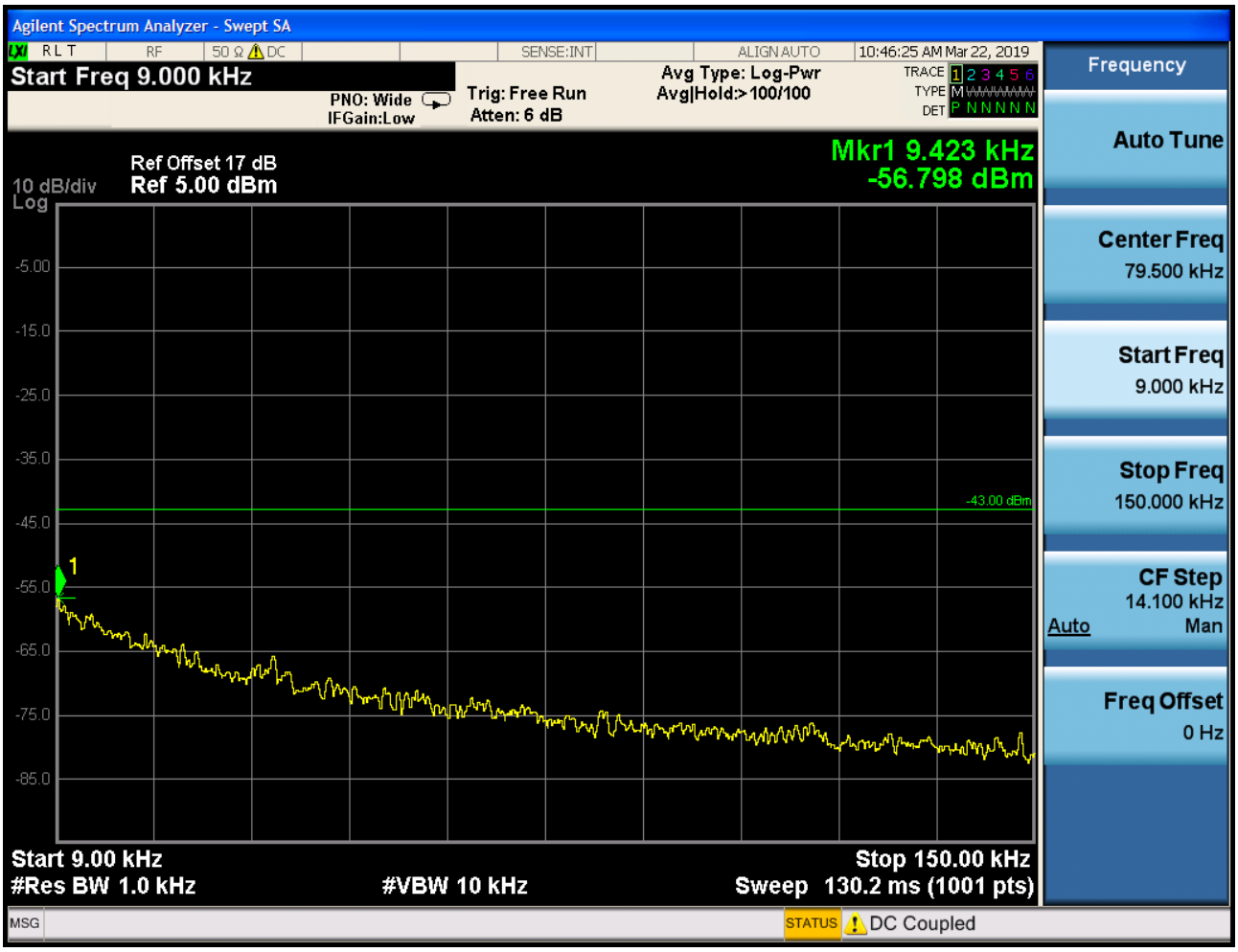


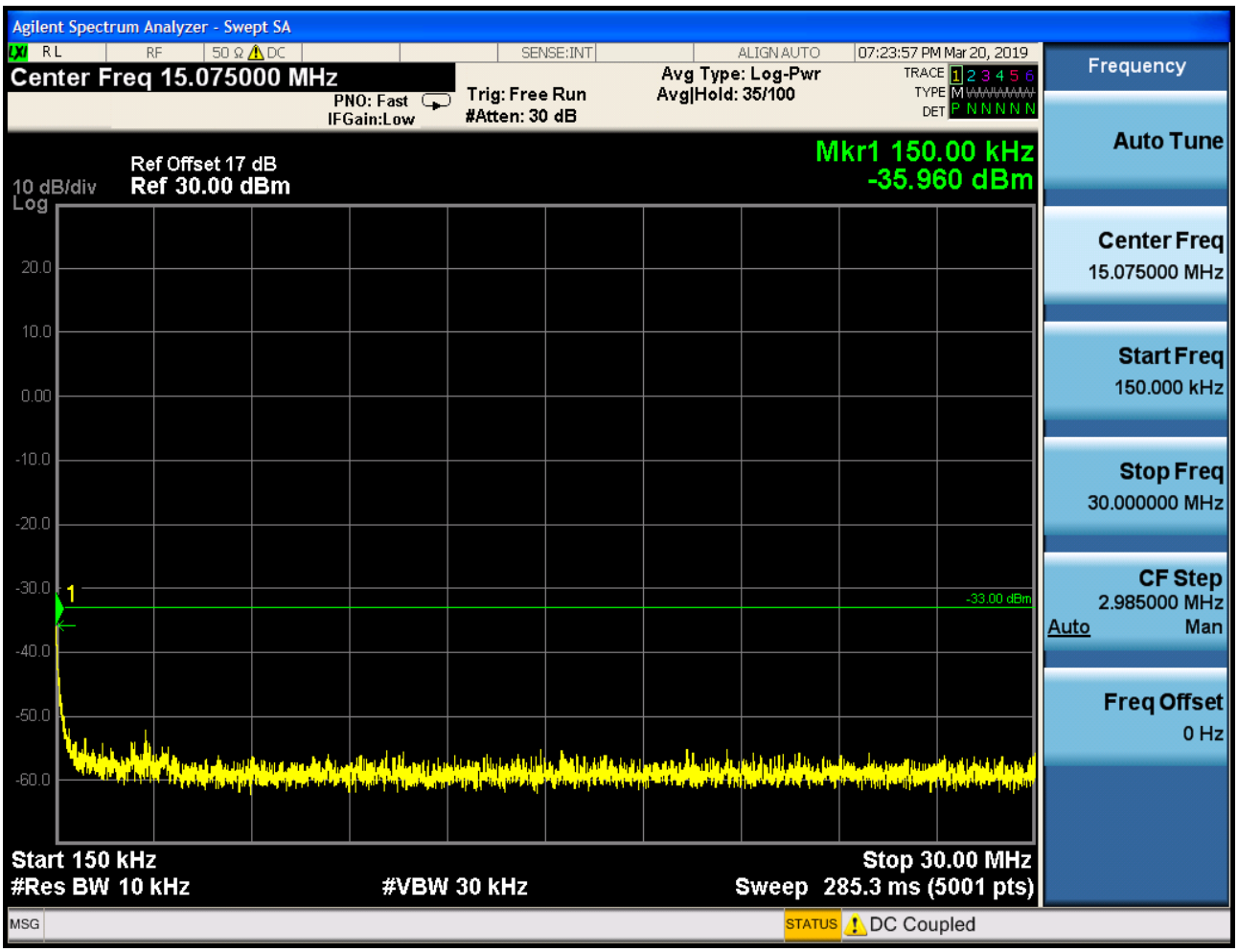

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
08:03:18 PM Mar 20, 2019
Center Freq 6.875000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 88/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17.2 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 5.648 59 GHz
-29.458 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
1
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 21.33 ms (40001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

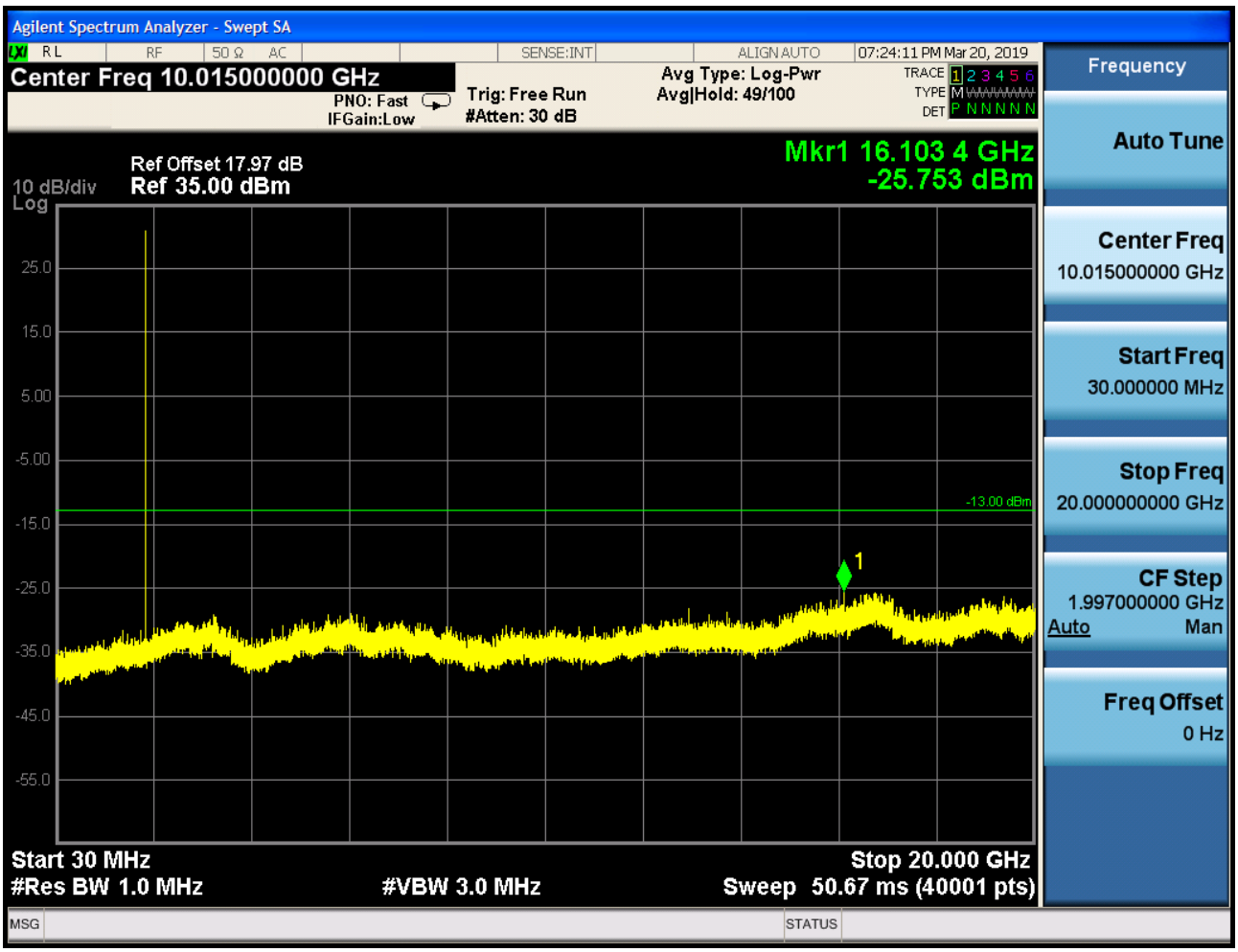
6.1.2 Test Band = PCS1900

6.1.2.1 Test Mode = GSM/TM1

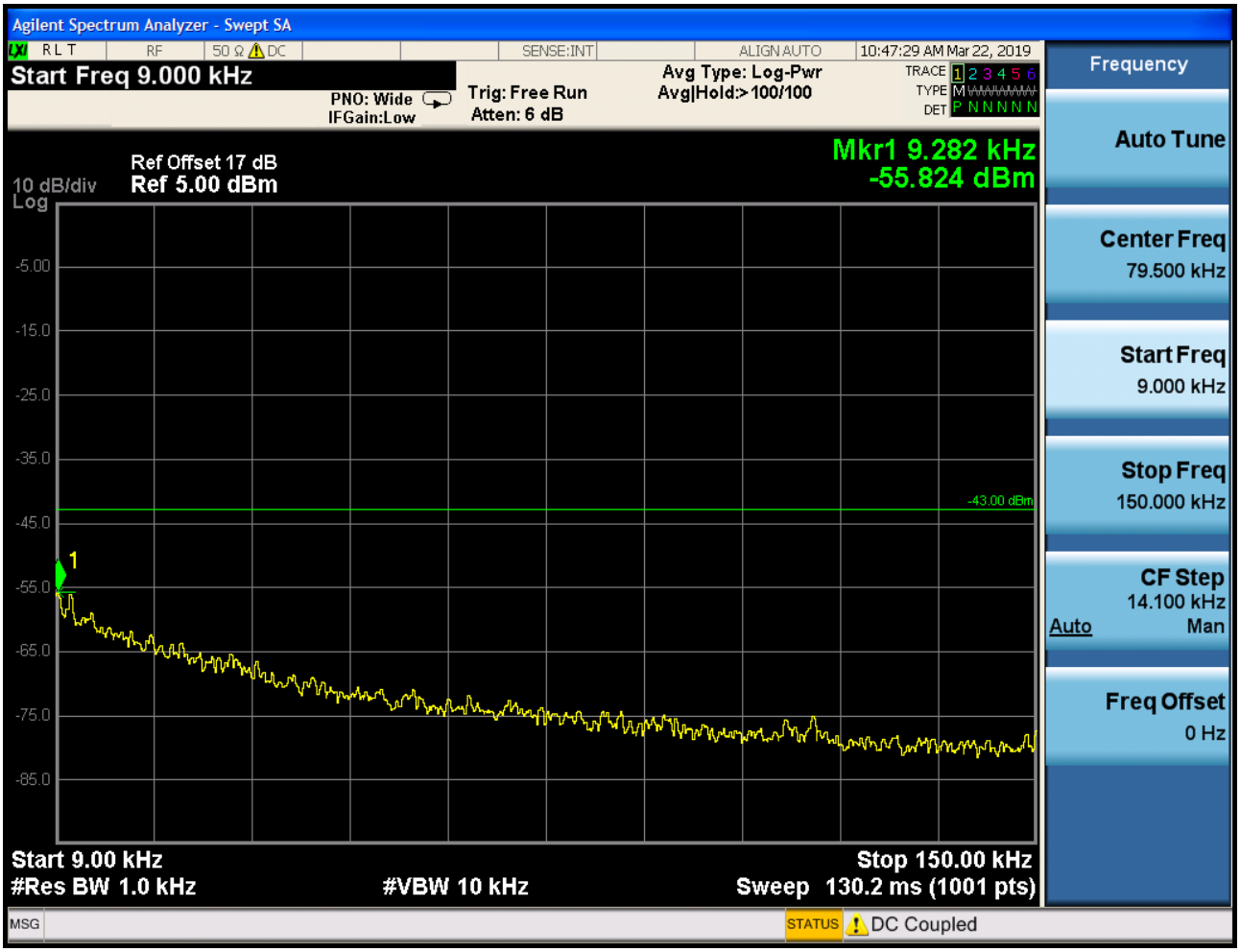
6.1.2.1.1 Test Channel = LCH

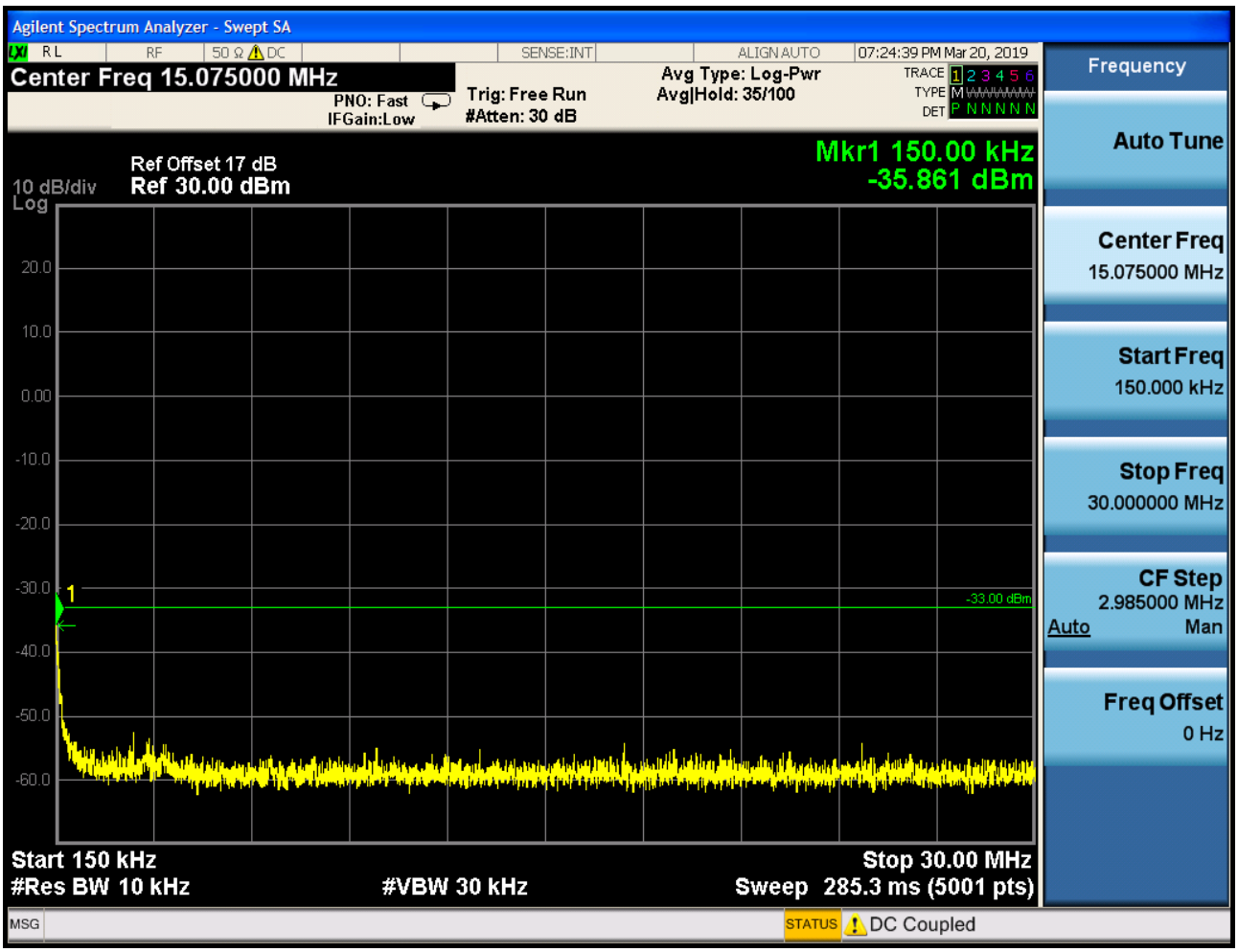


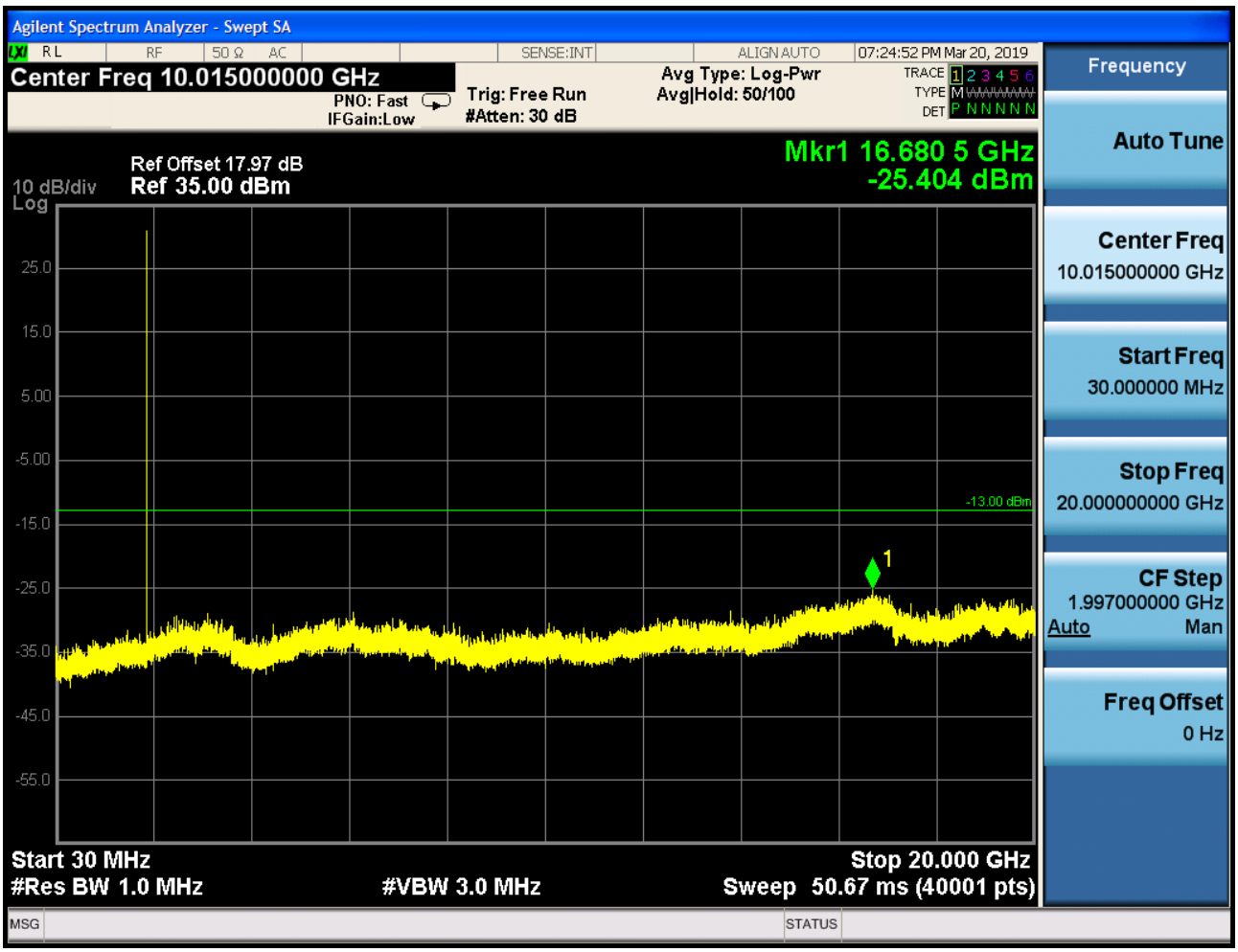

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
07:23:57 PM Mar 20, 2019
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 150.00 kHz
-35.960 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
-33.00 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz
Stop 30.00 MHz
Sweep 285.3 ms (5001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz



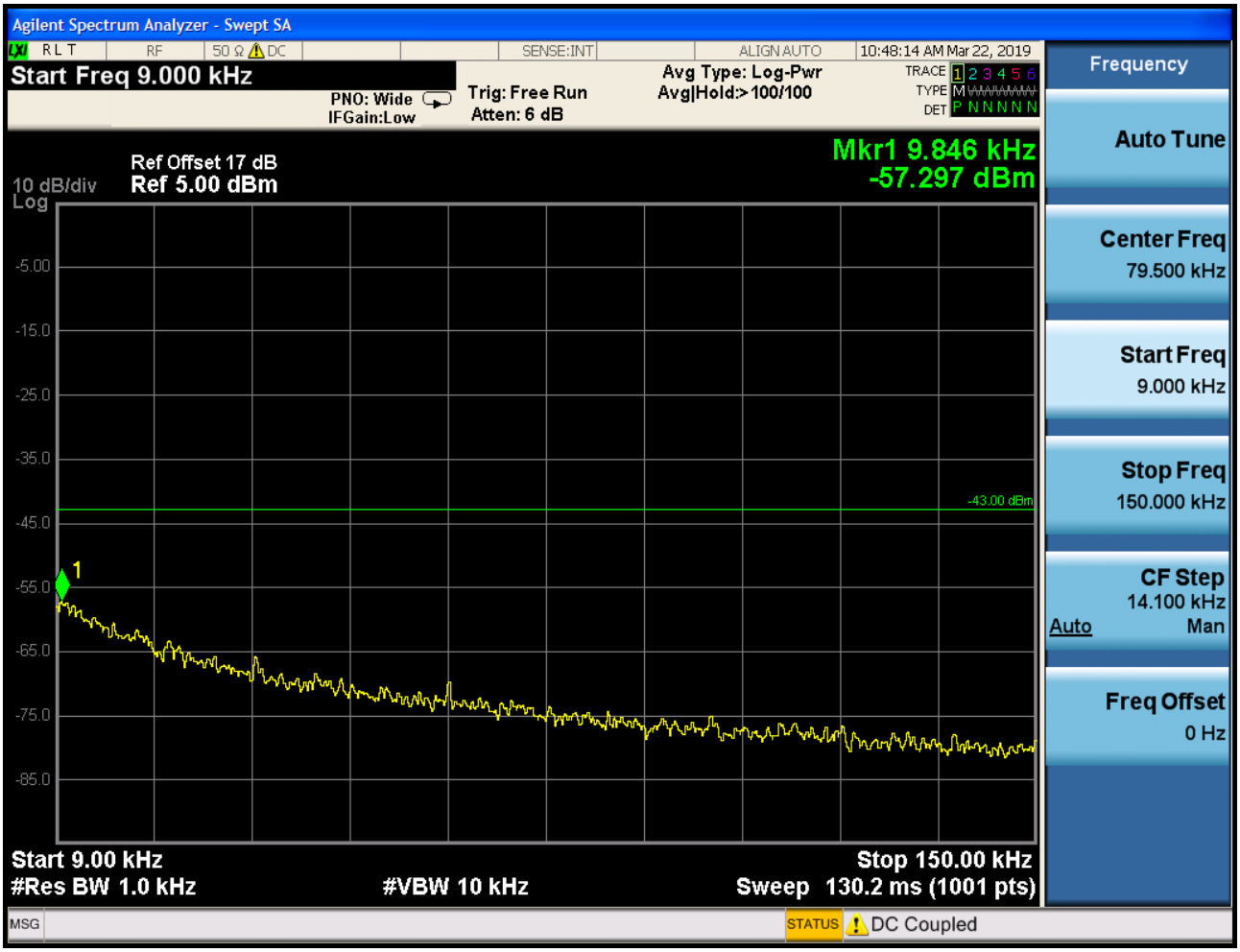
6.1.2.1.2 Test Channel = MCH

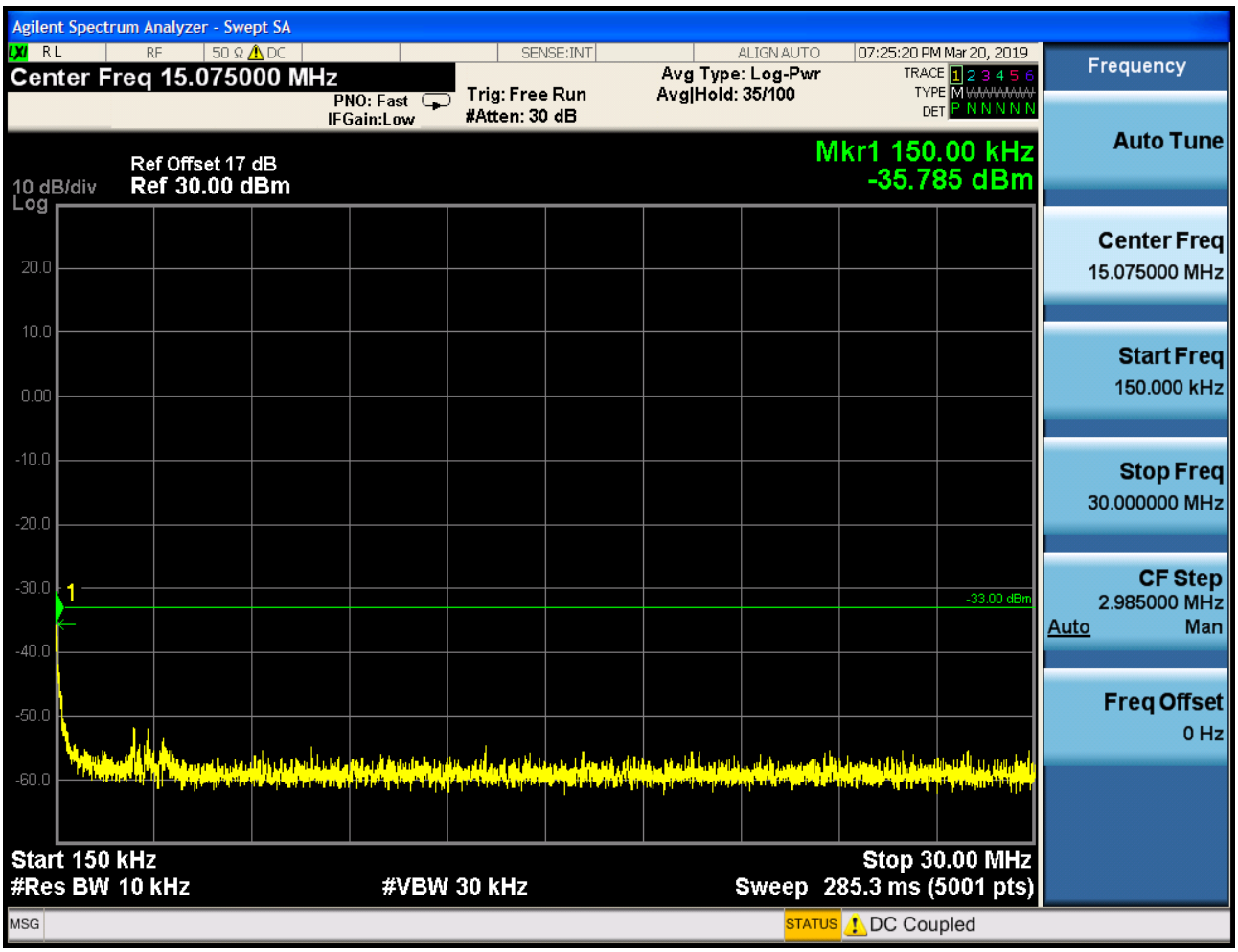


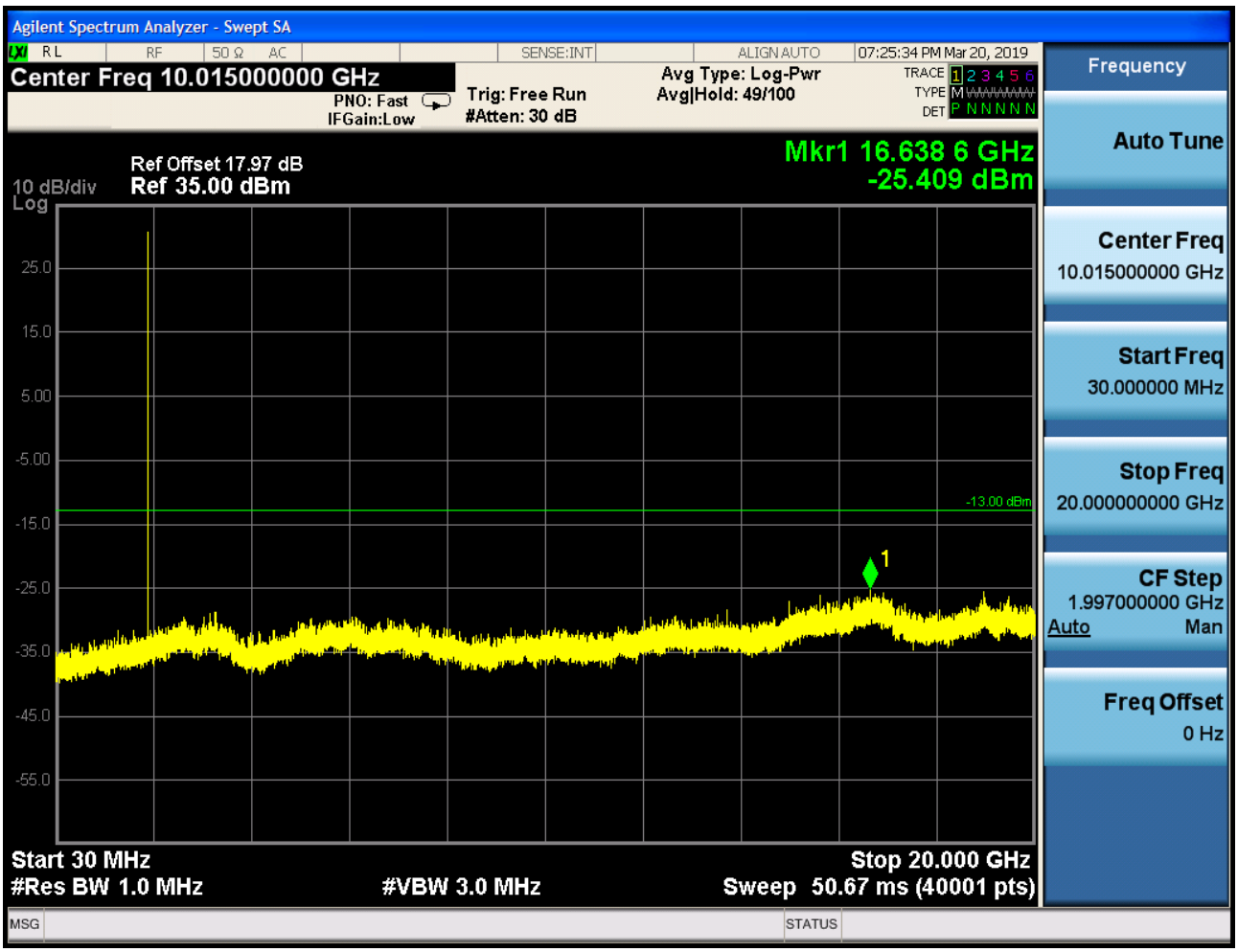

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
07:24:39 PM Mar 20, 2019
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 150.00 kHz
-35.861 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
-33.00 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz
Stop 30.00 MHz
Sweep 285.3 ms (5001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz



6.1.2.1.3 Test Channel = HCH

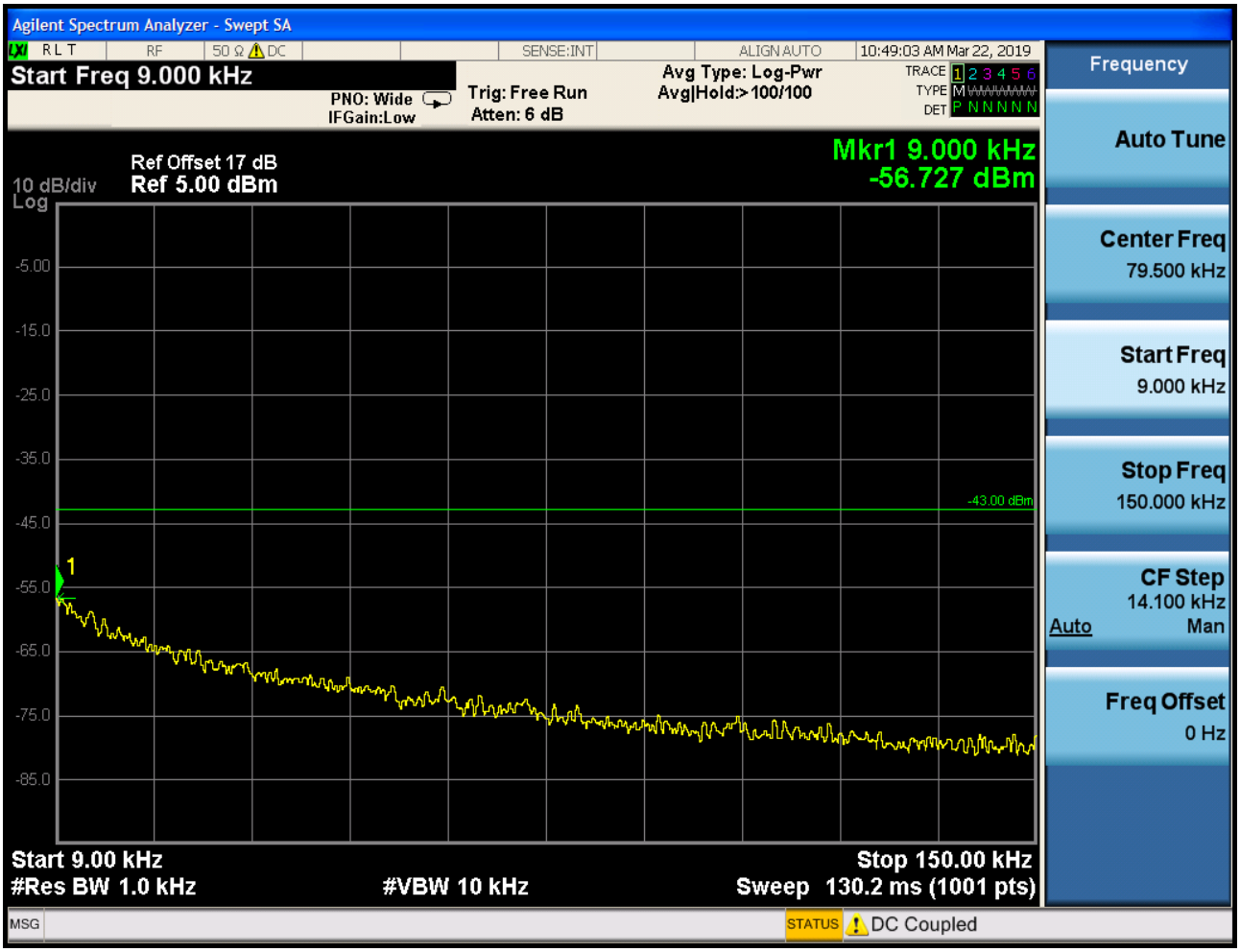


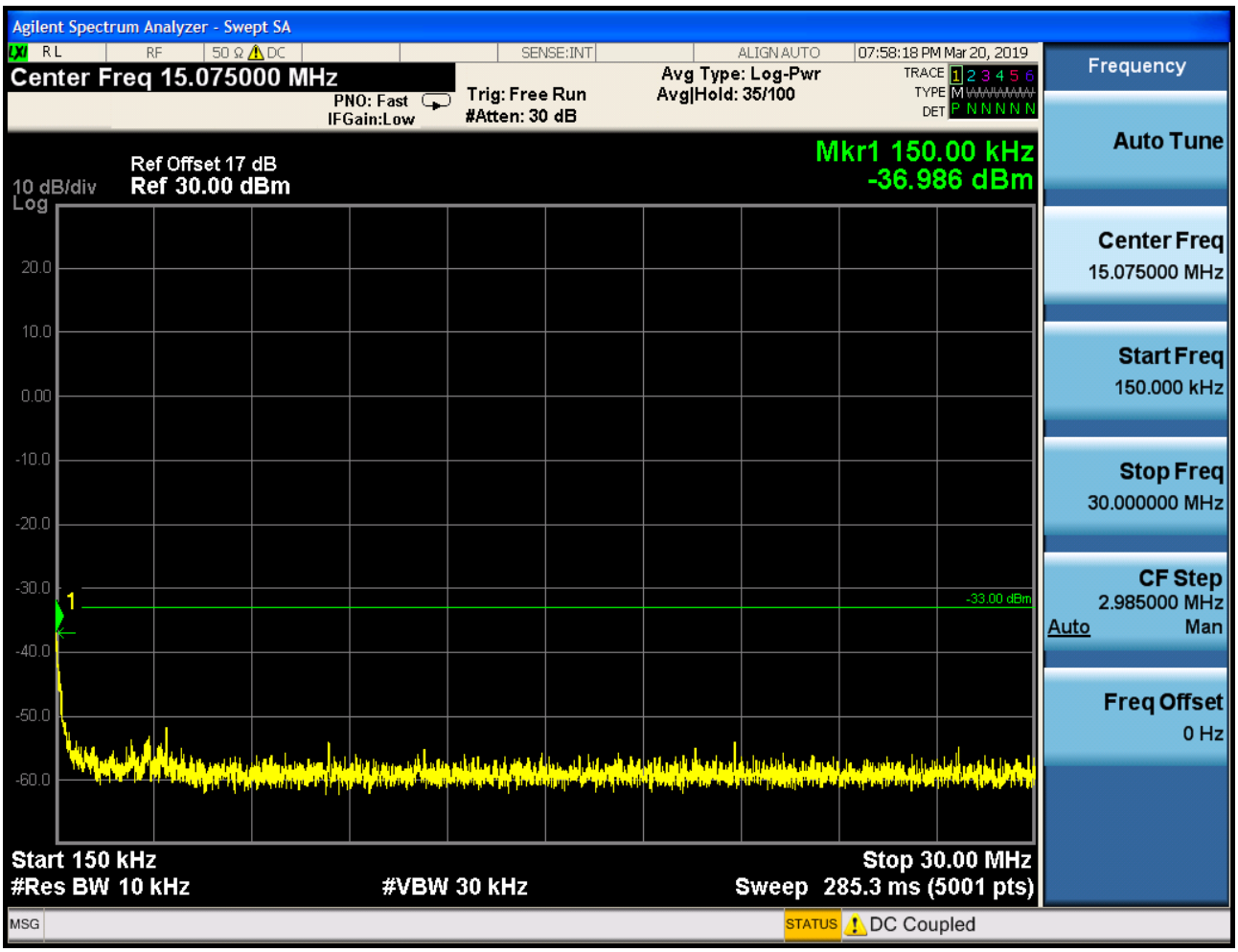


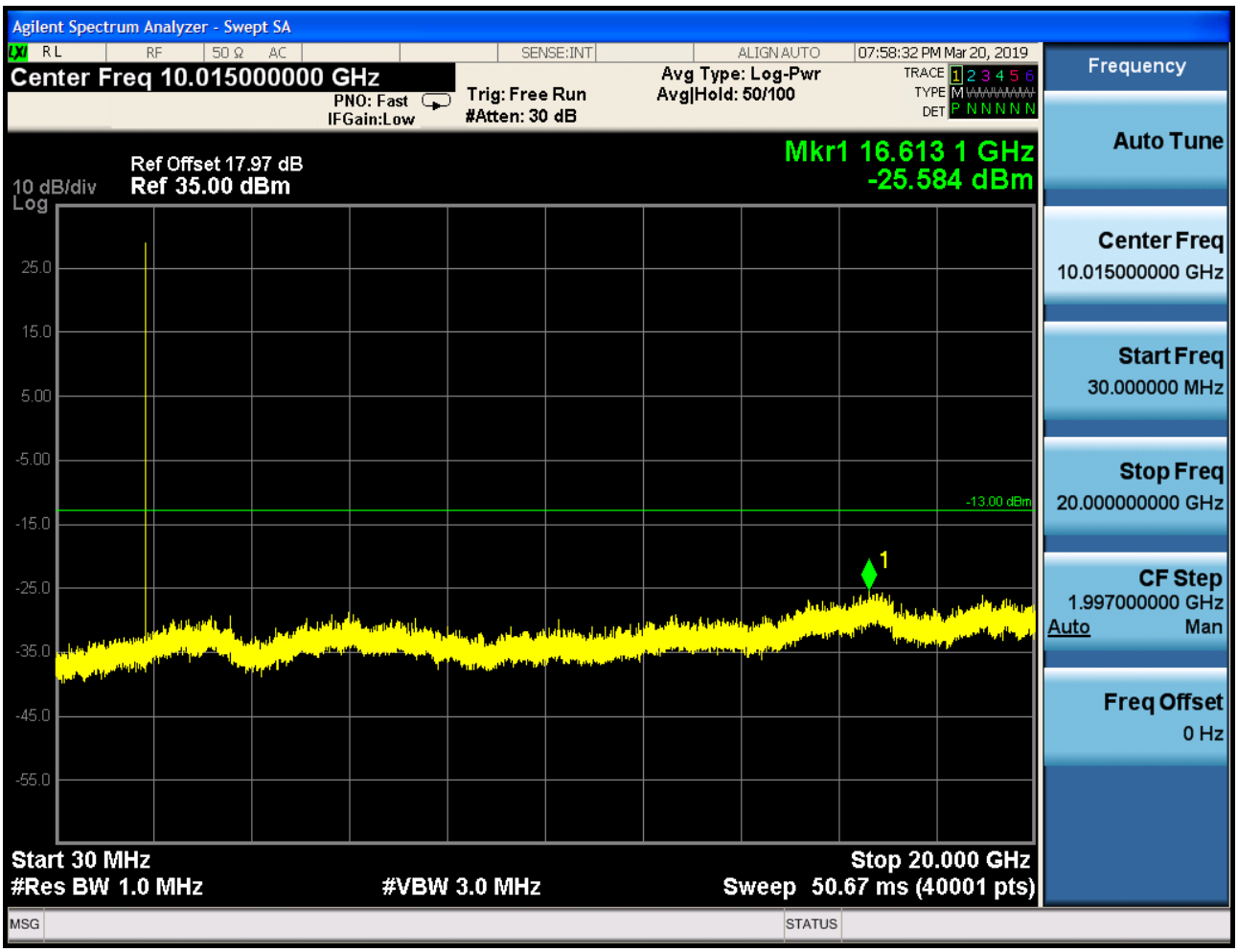


6.1.2.2 Test Mode = GSM/TM2

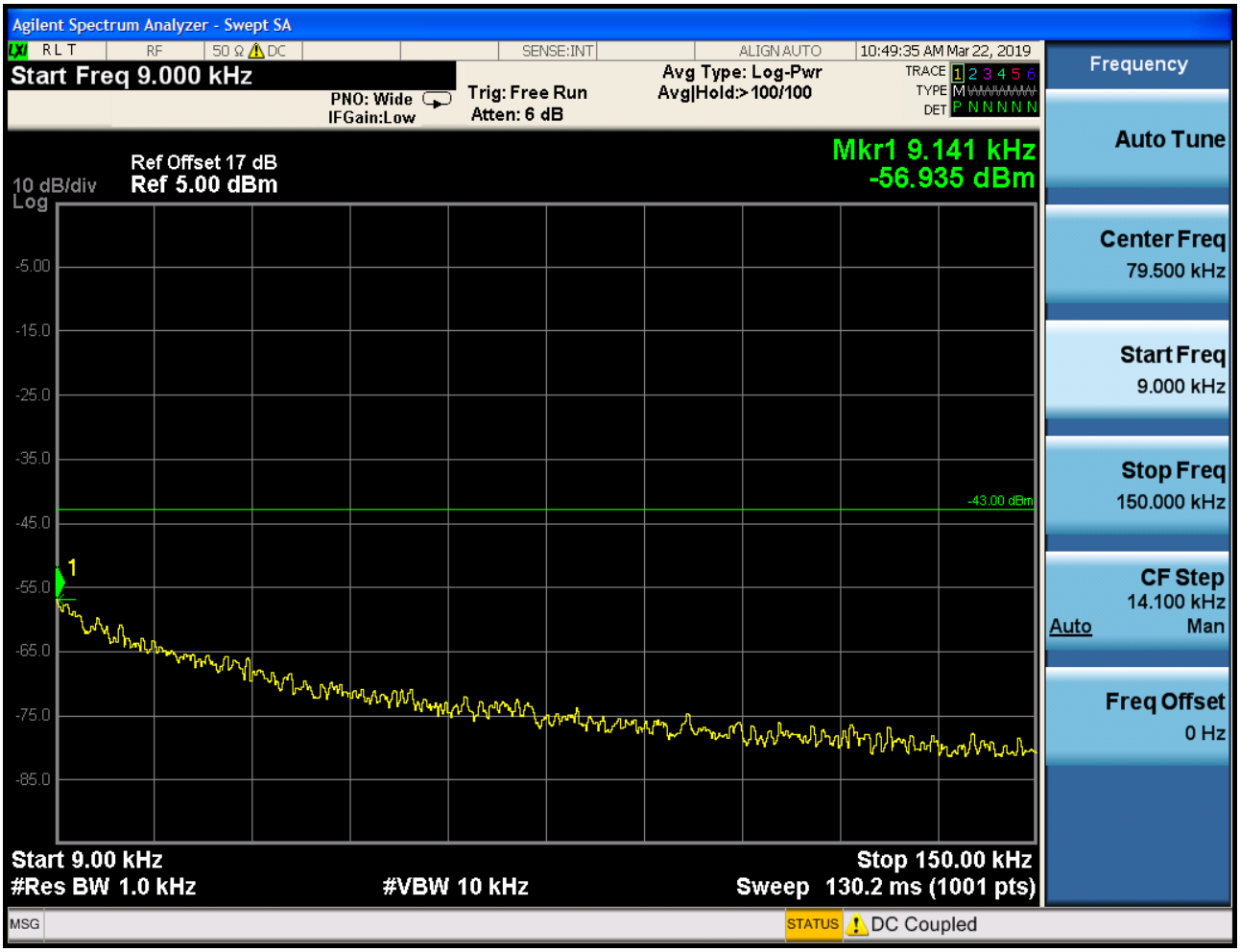
6.1.2.2.1 Test Channel = LCH

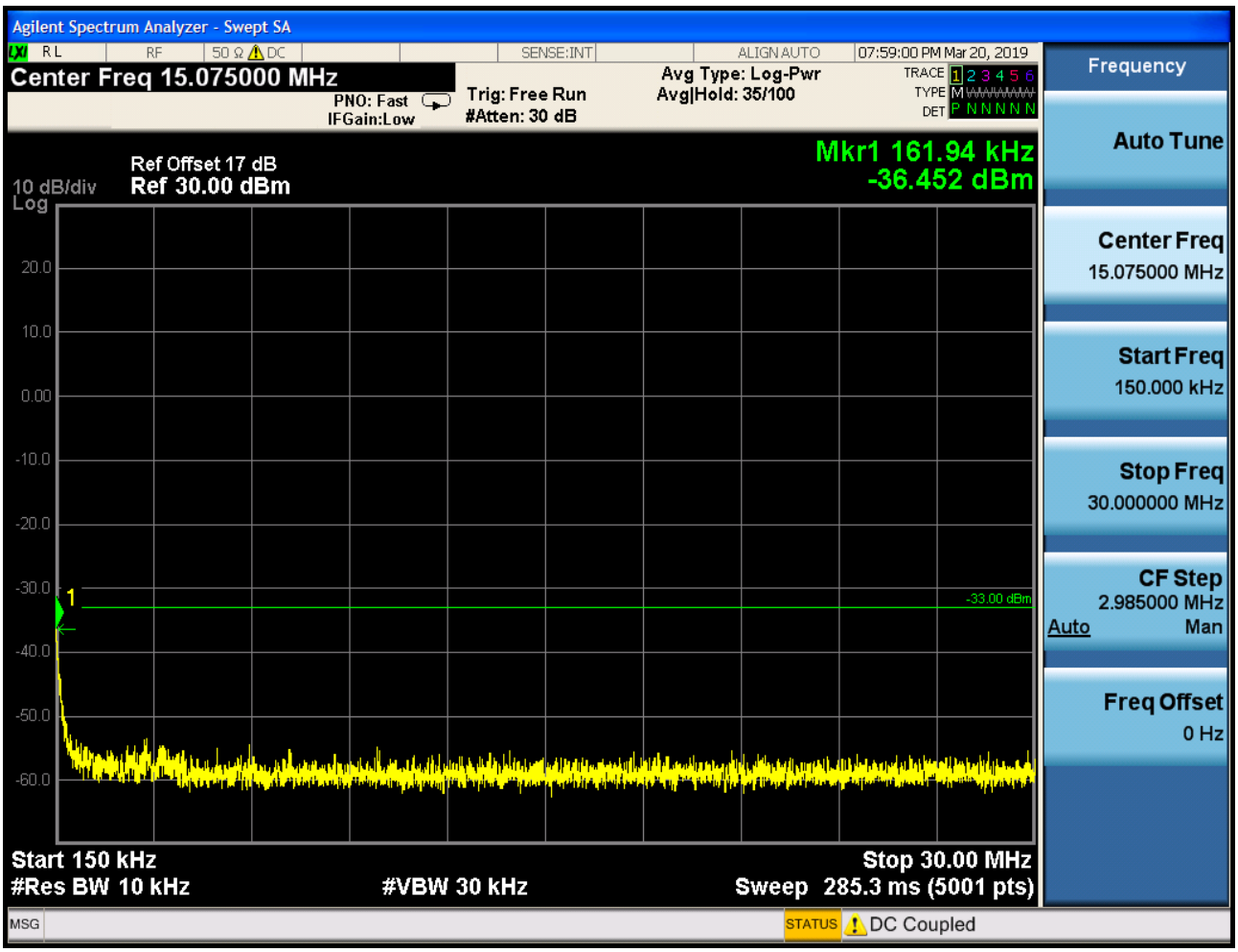


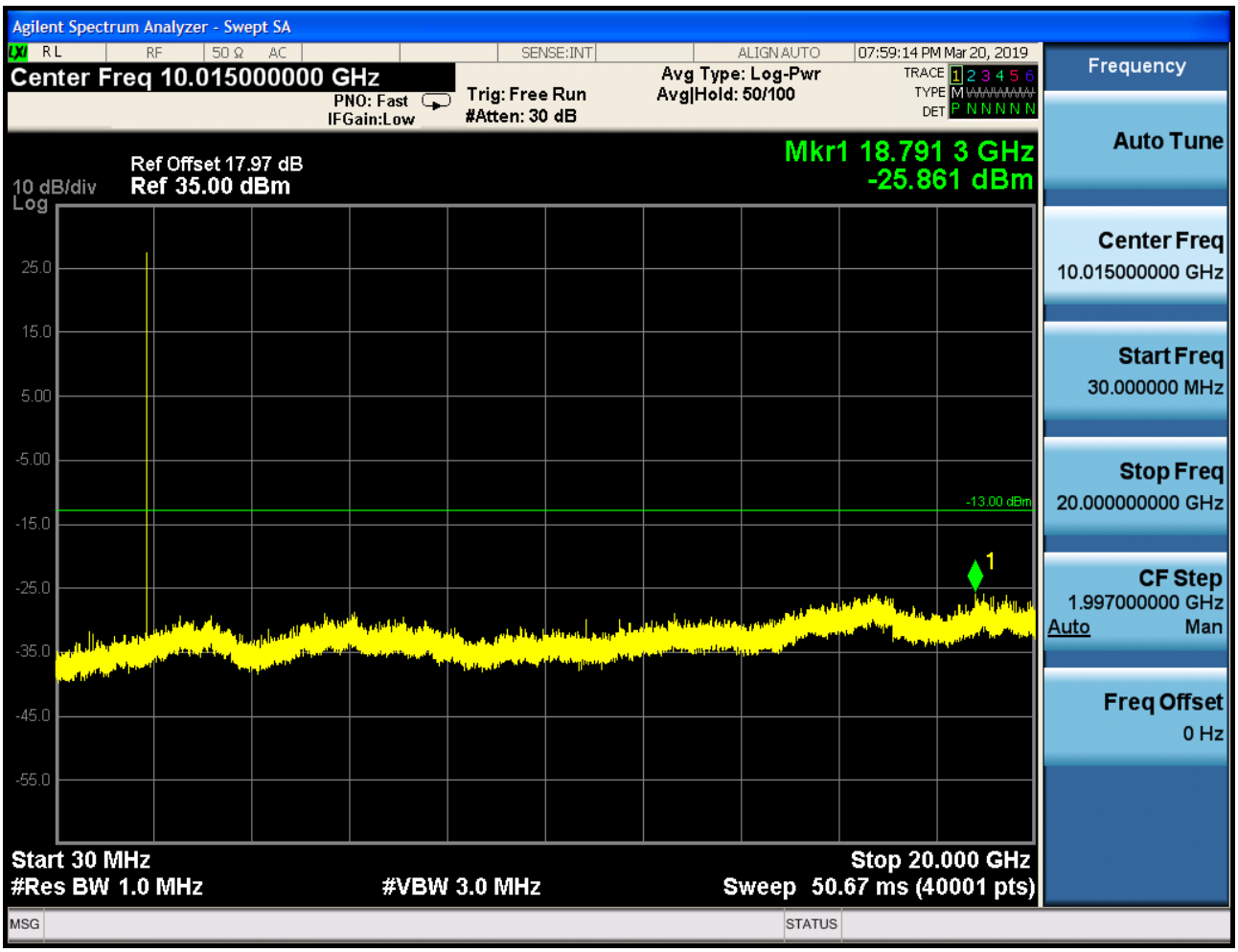




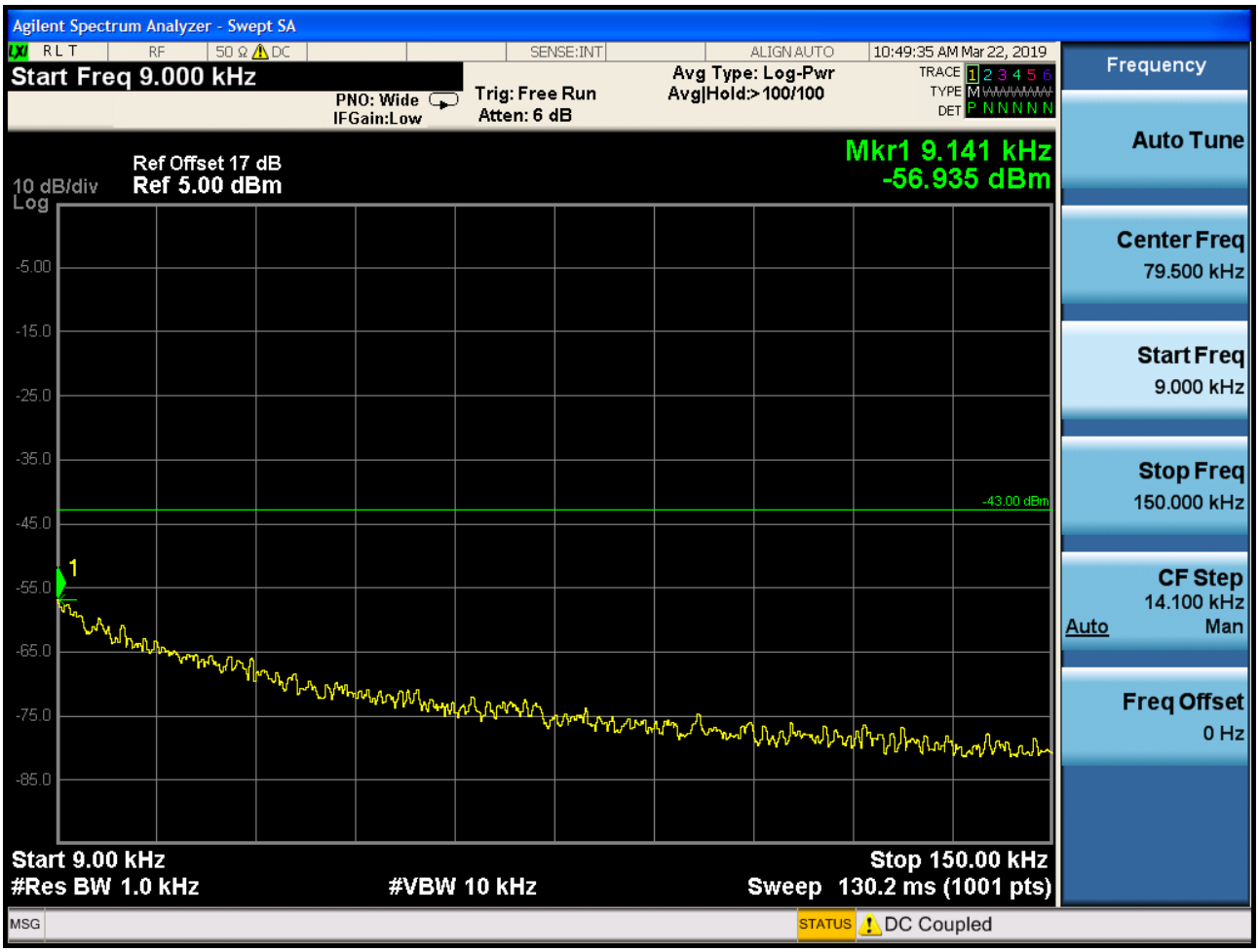
6.1.2.2.2 Test Channel = MCH

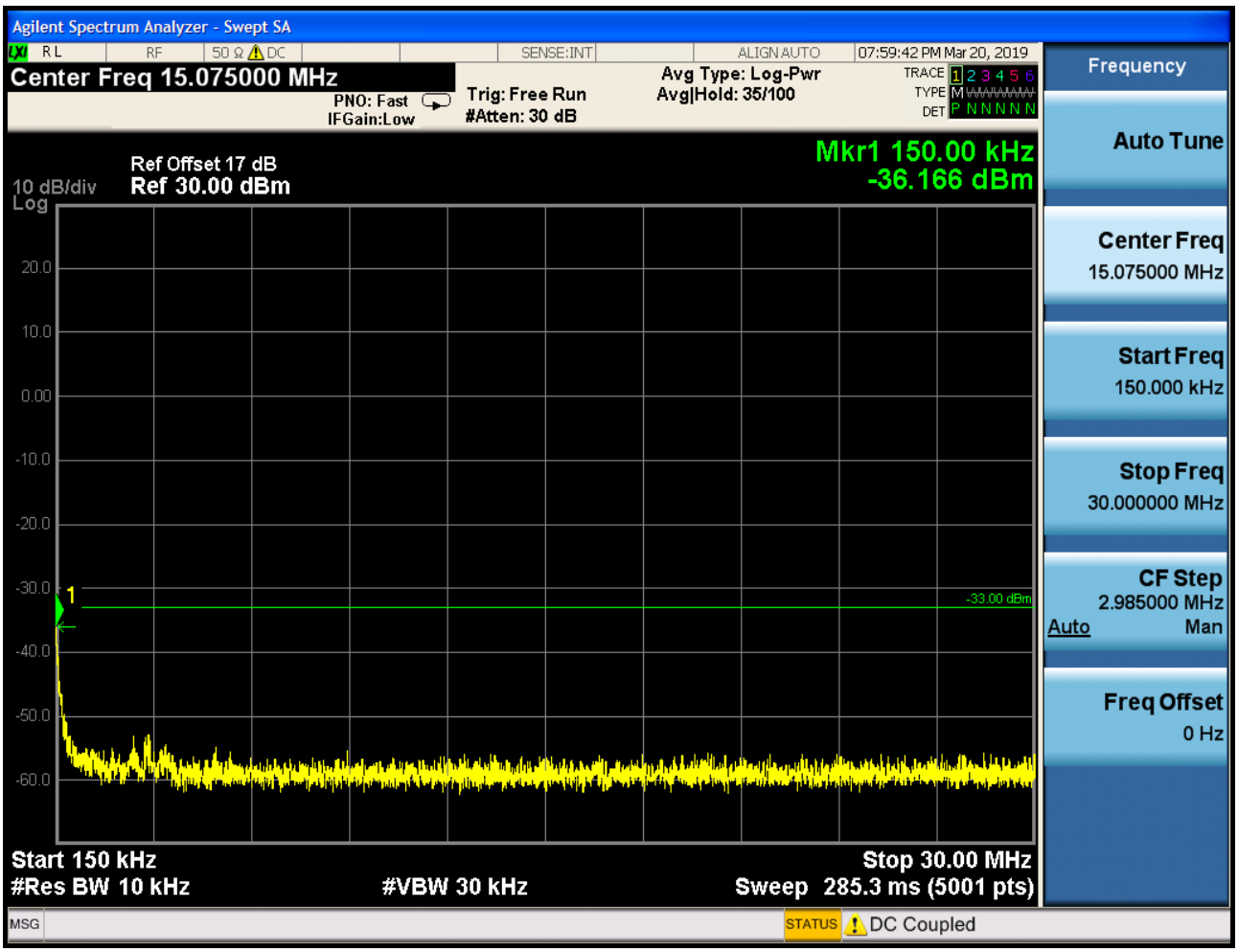


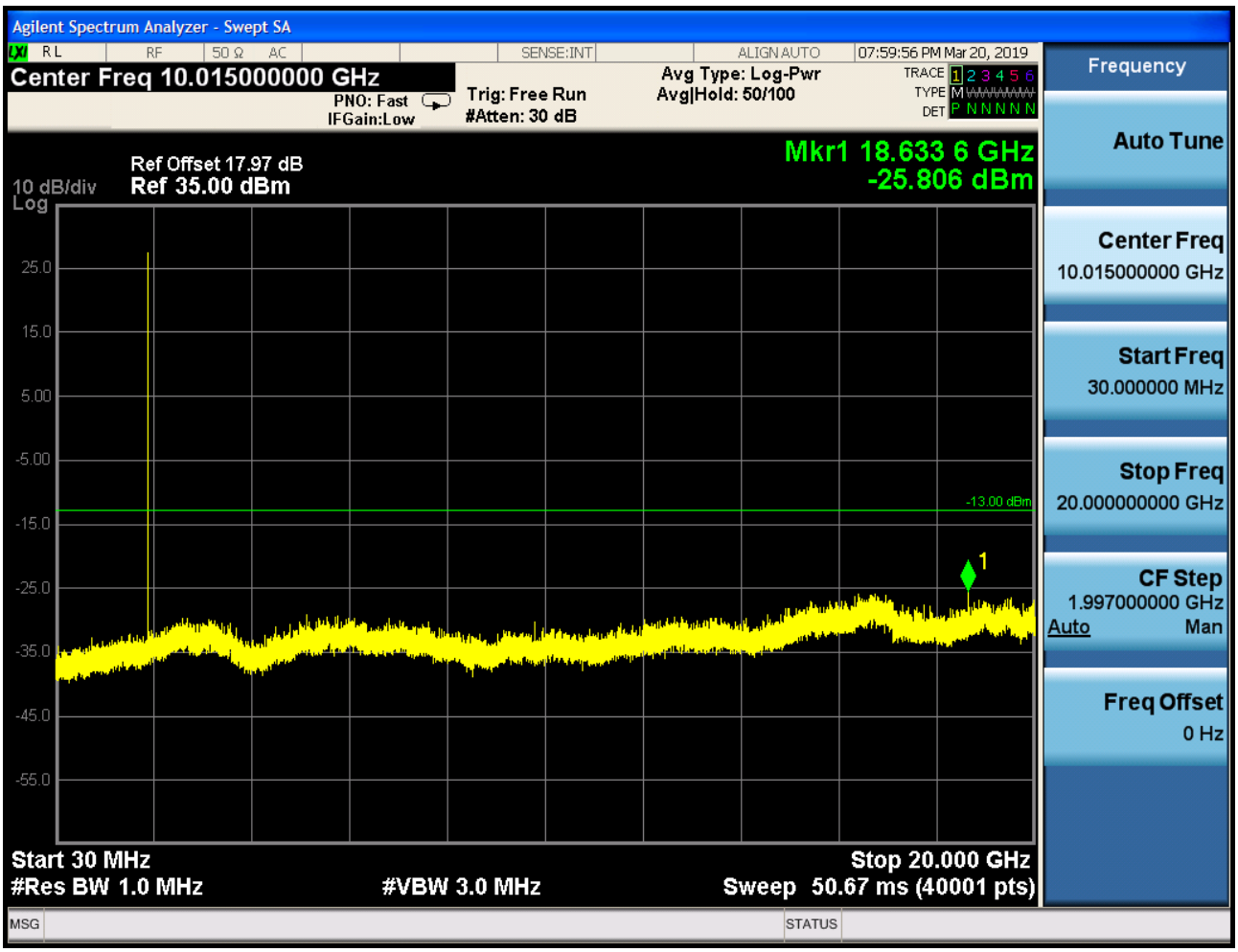

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
07:59:00 PM Mar 20, 2019
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 161.94 kHz
-36.452 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
-33.00 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz
Stop 30.00 MHz
Sweep 285.3 ms (5001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz



6.1.2.2.3 Test Channel = HCH




Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
07:59:42 PM Mar 20, 2019
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 17 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 150.00 kHz
-36.166 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
-33.00 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz
Stop 30.00 MHz
Sweep 285.3 ms (5001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz



7Appendix_G: Field Strength of Spurious Radiation

Note:We tested all modes, but the data presented below is the worst case.

9kHz~150kHz, RBW = 200Hz, VBW = 600 Hz, Detector: PK

150kHz~30MHz, RBW = 9kHz, VBW = 30k Hz, Detector: PK

30MHz~1GHz, RBW = 100 kHz, VBW = 300 kHz. Detector: PK

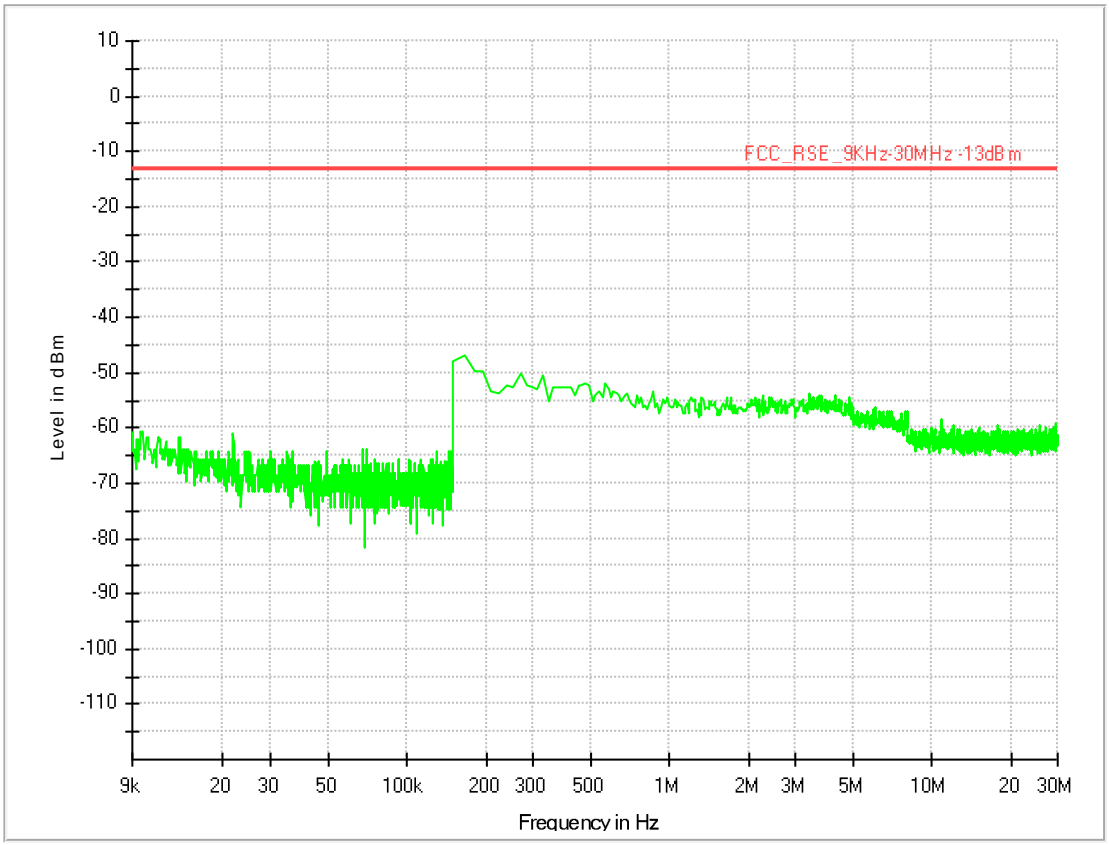
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

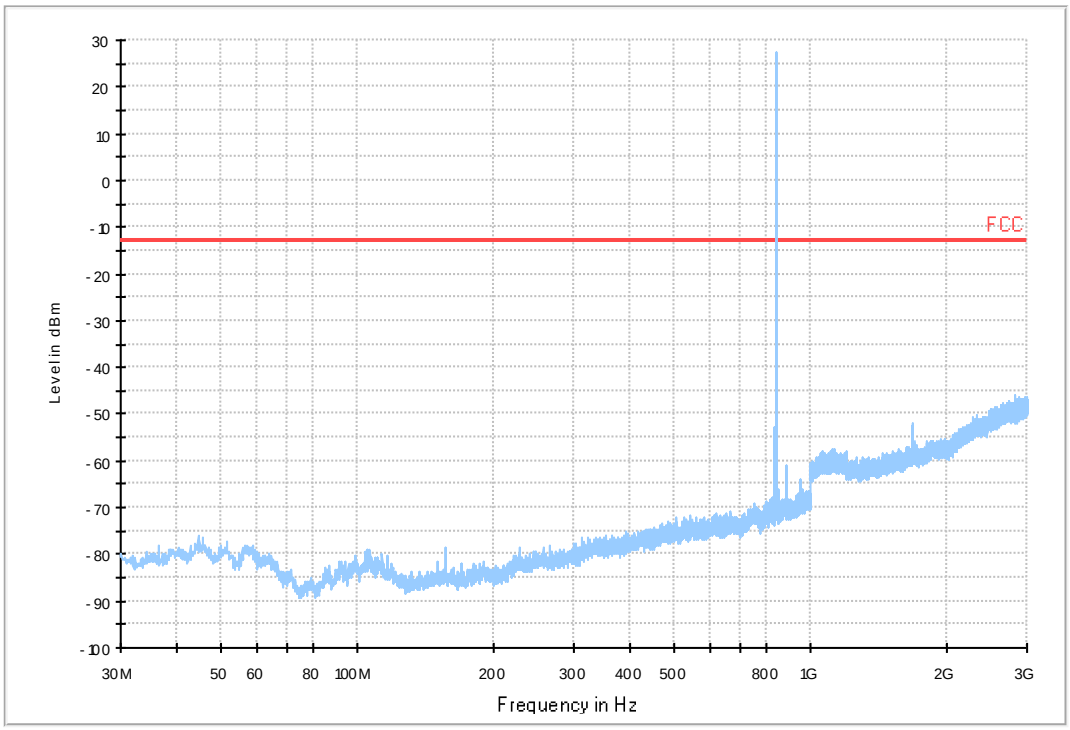
7.1 For GSM_ANT1

7.1.1 Test Band = GSM850

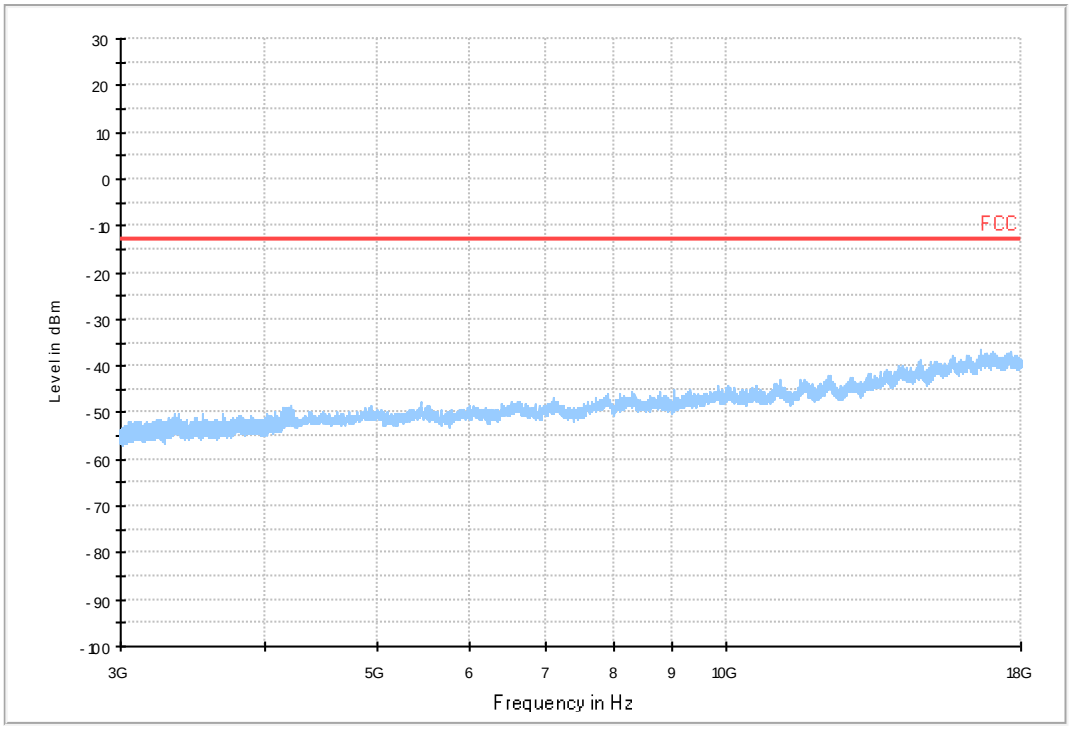
GSM850/TM1_Ant1



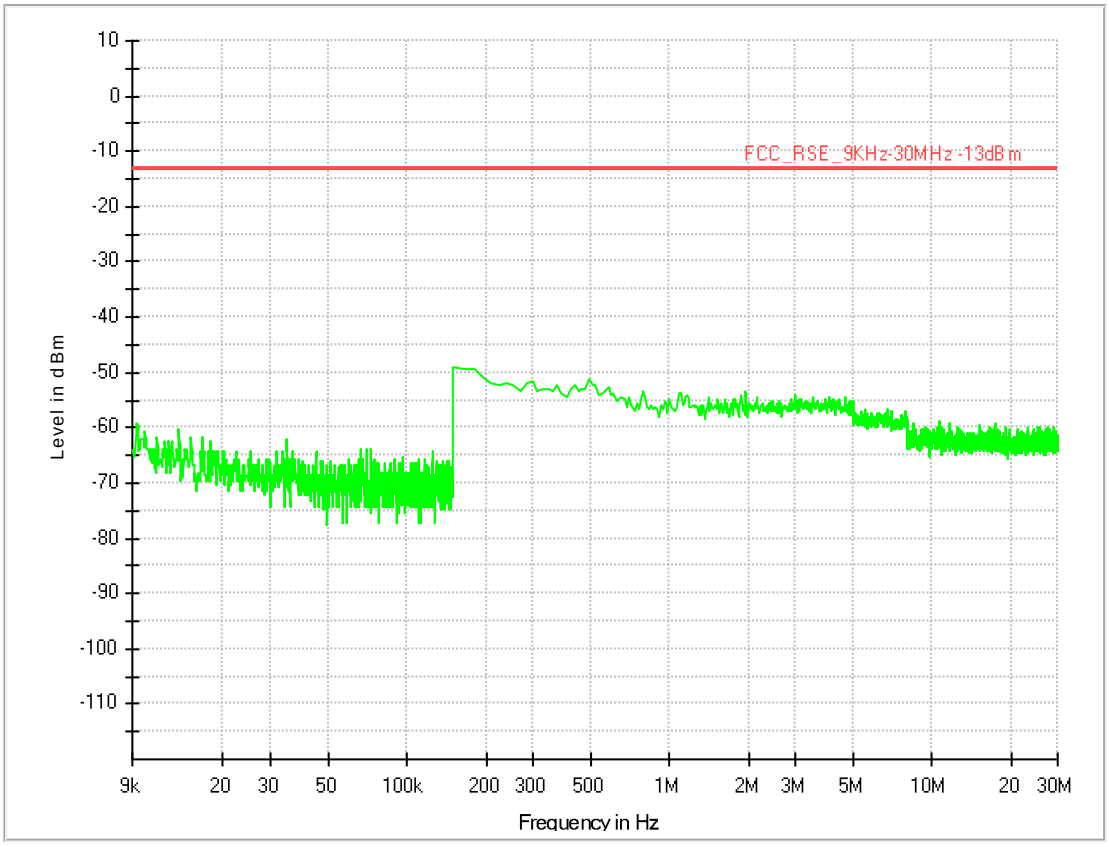
04 FCC PART 22 GSM850_L



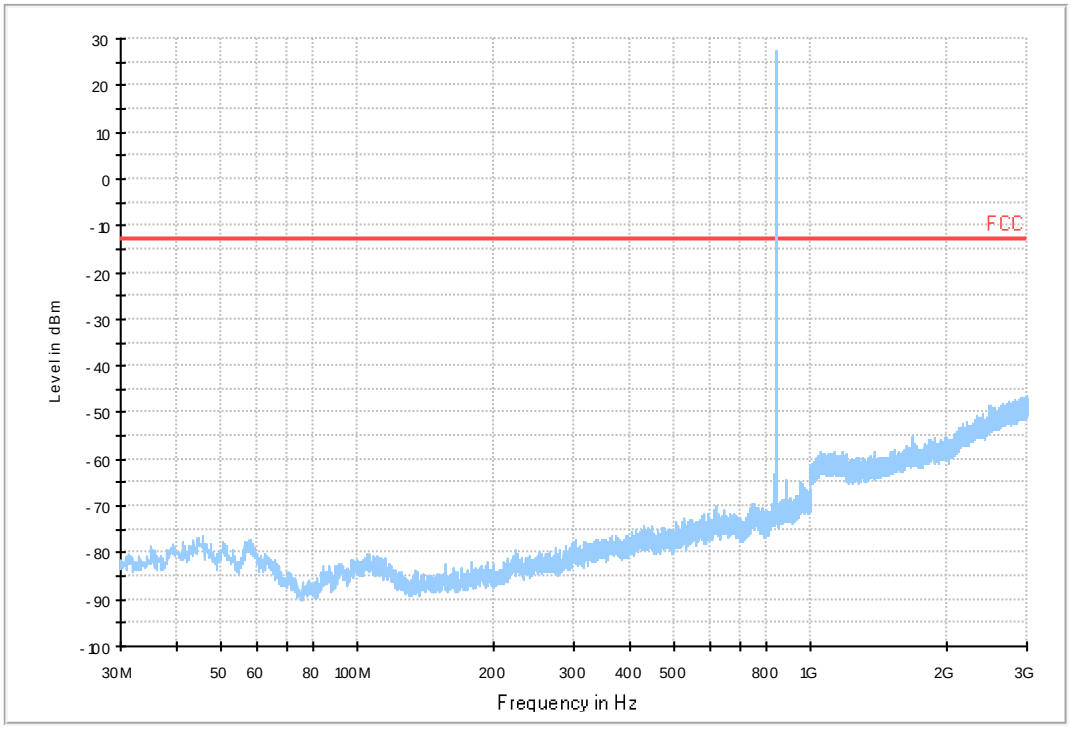
03 FCC PART 22 GSM850_H

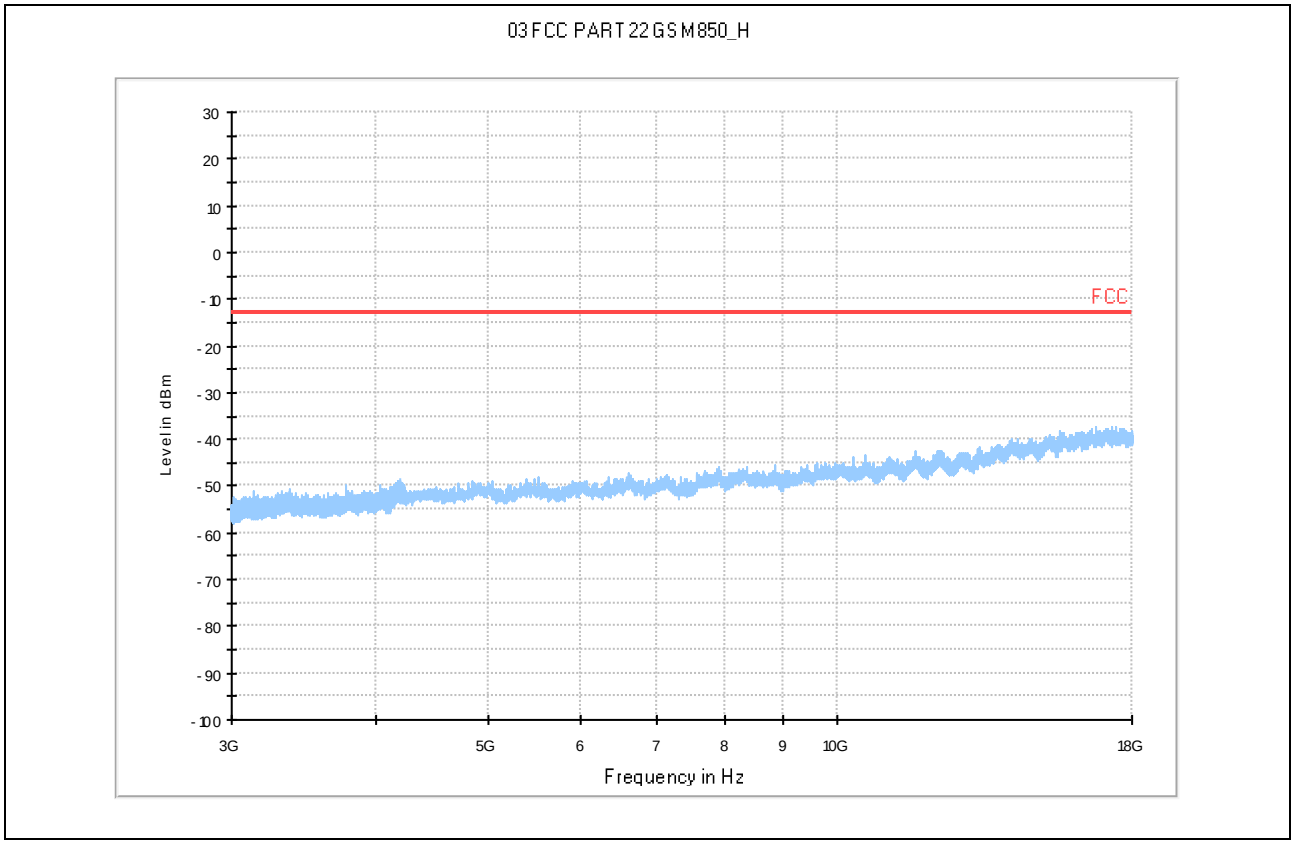


GSM850/TM1_Ant2



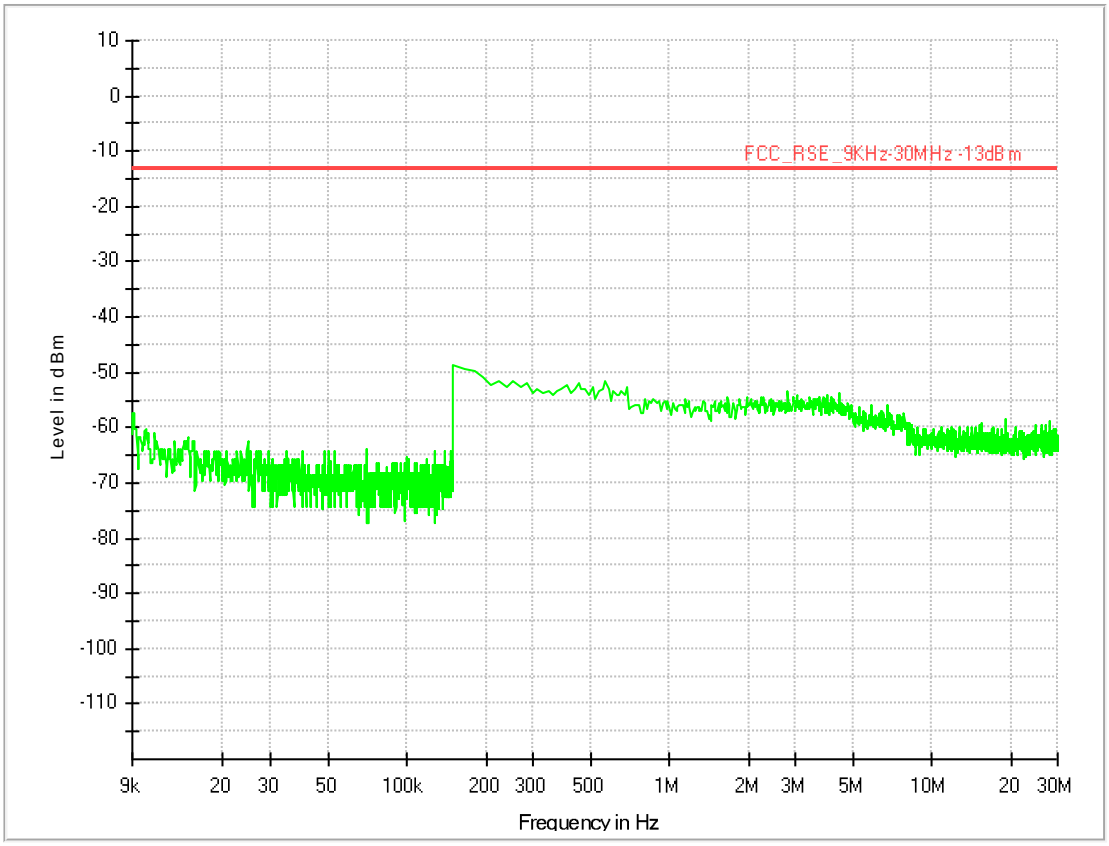
04 FCC PART 22 GSM 850_L



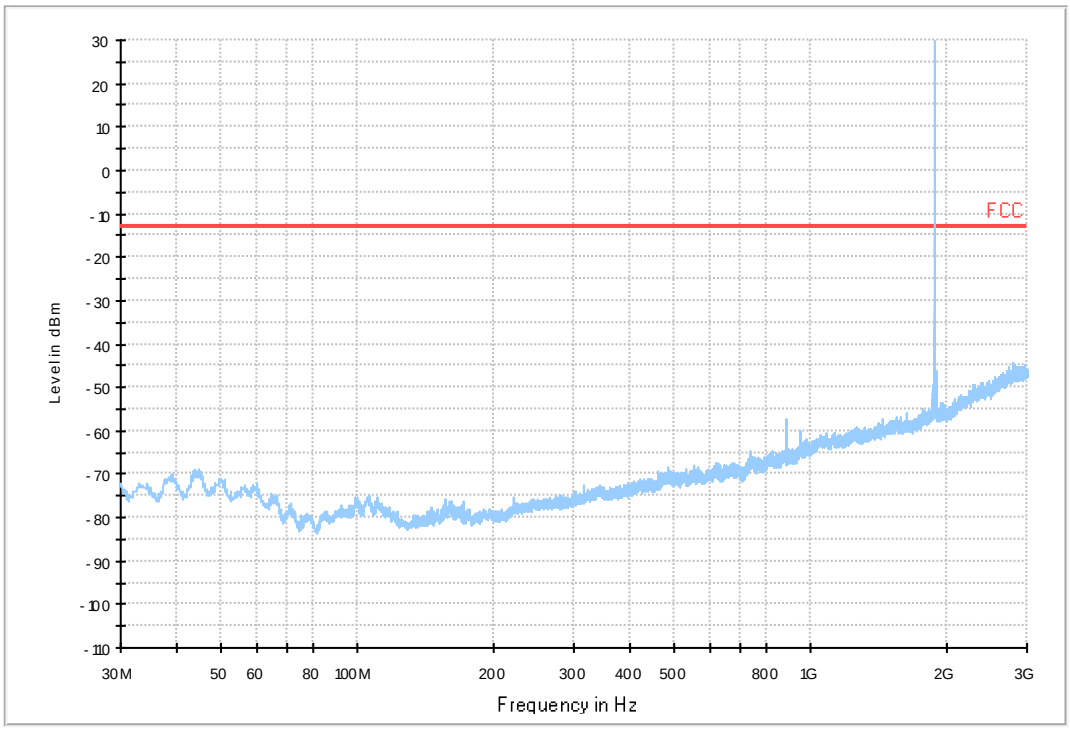

03FCC PART22GSM850_H
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
FCC
Level in dBm
3G
5G
6
7
8
9
10G
18G
Frequency in Hz

7.1.2 Test Band = PCS1900

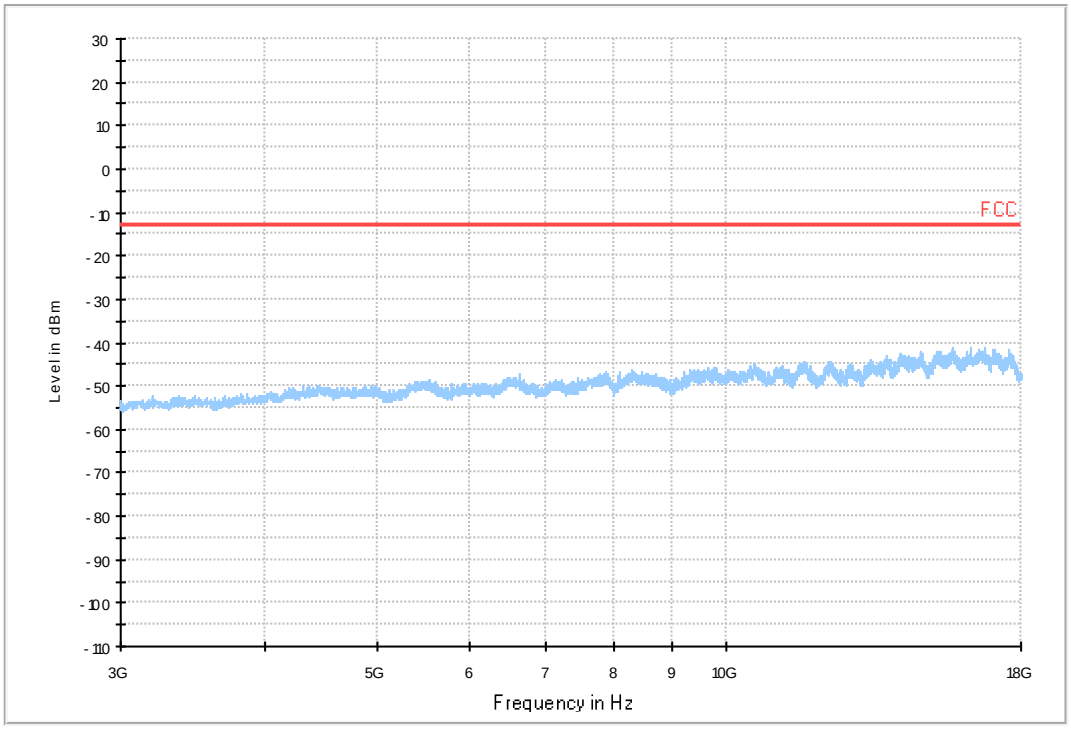
PCS1900/TM1_Ant1



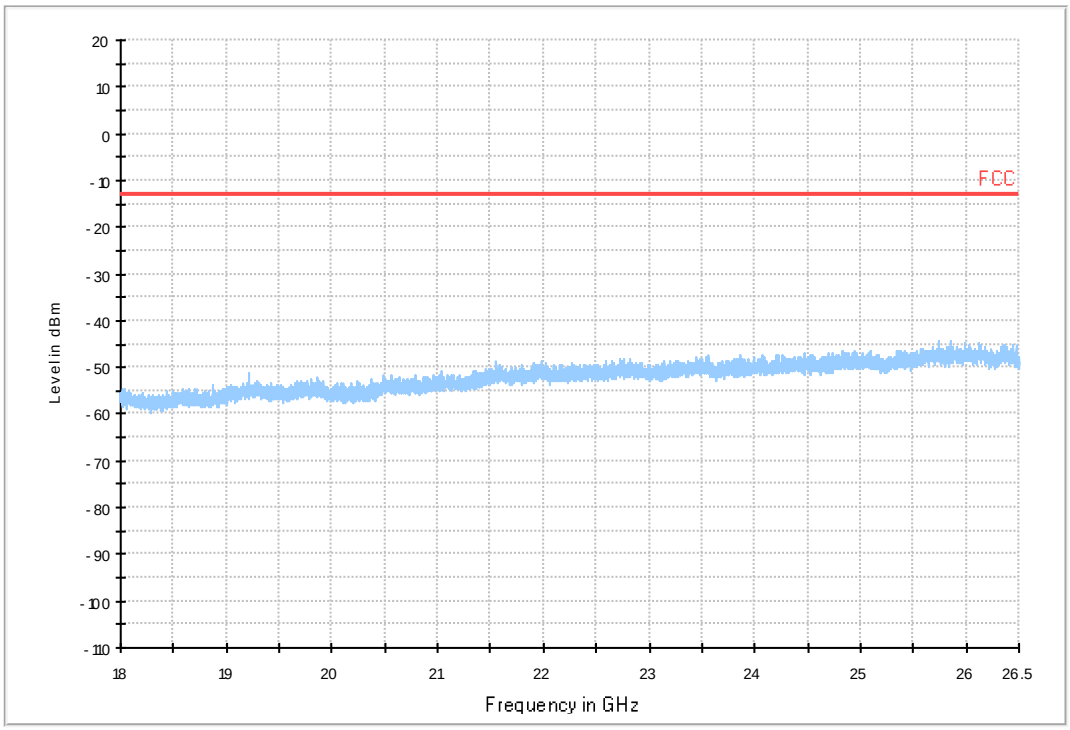
10 FCC PART 24 GSM1900_L



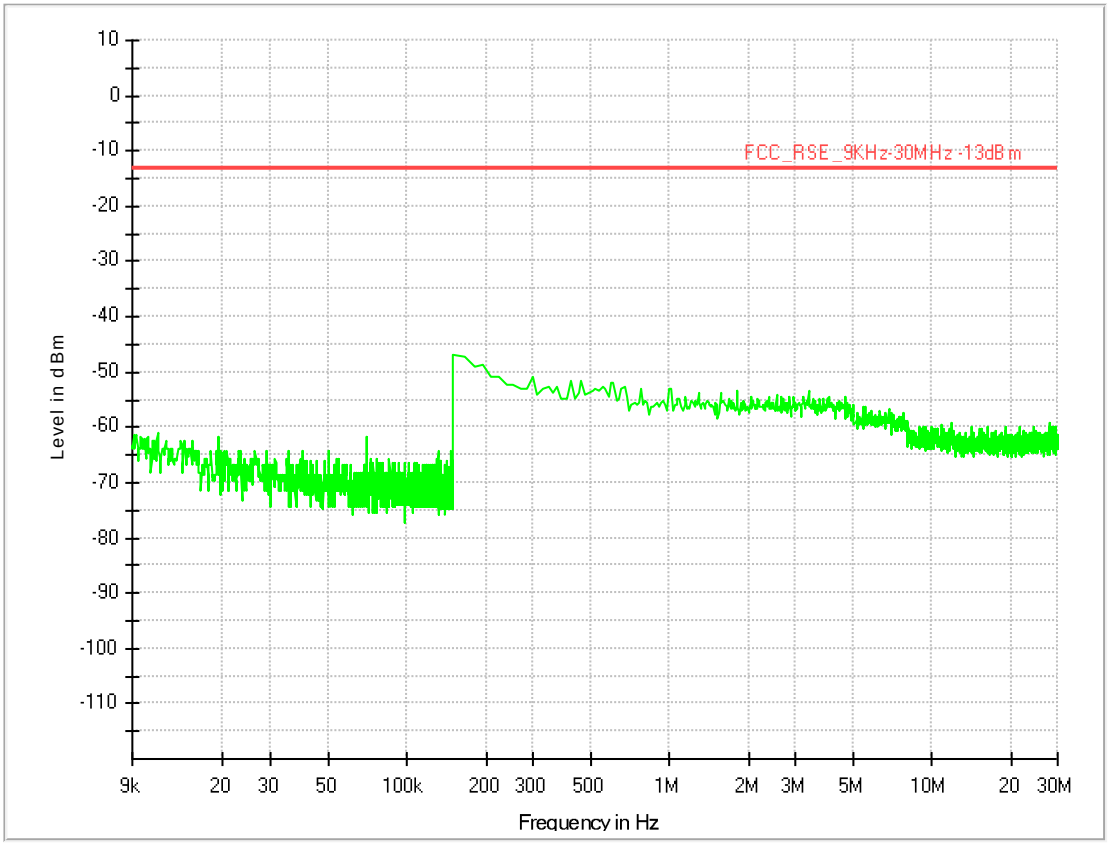
09 FCC PART 24 GSM1900_H



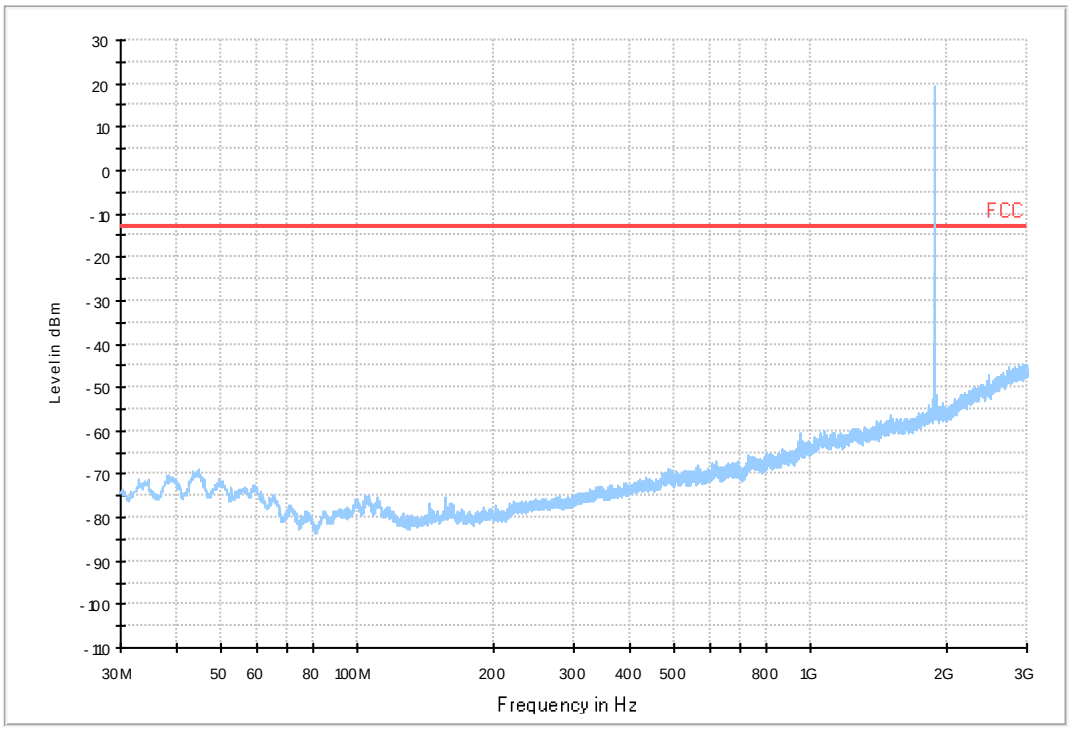
FCC 18-26.5G -13dBm



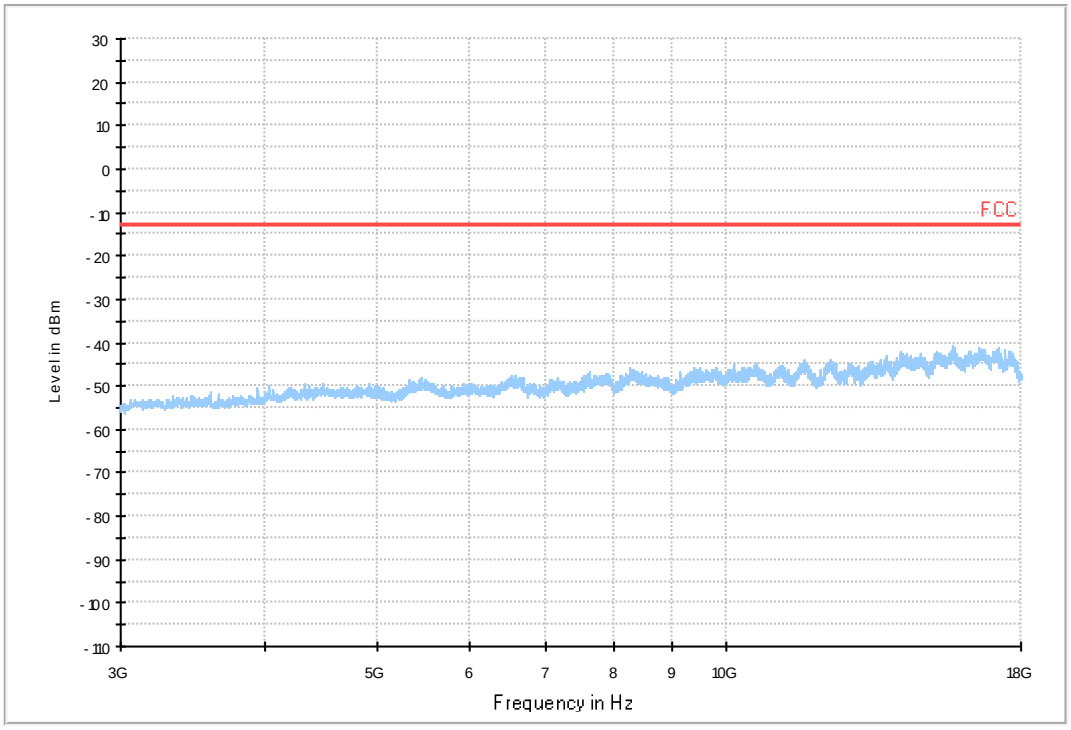
PCS1900/TM1_Ant2

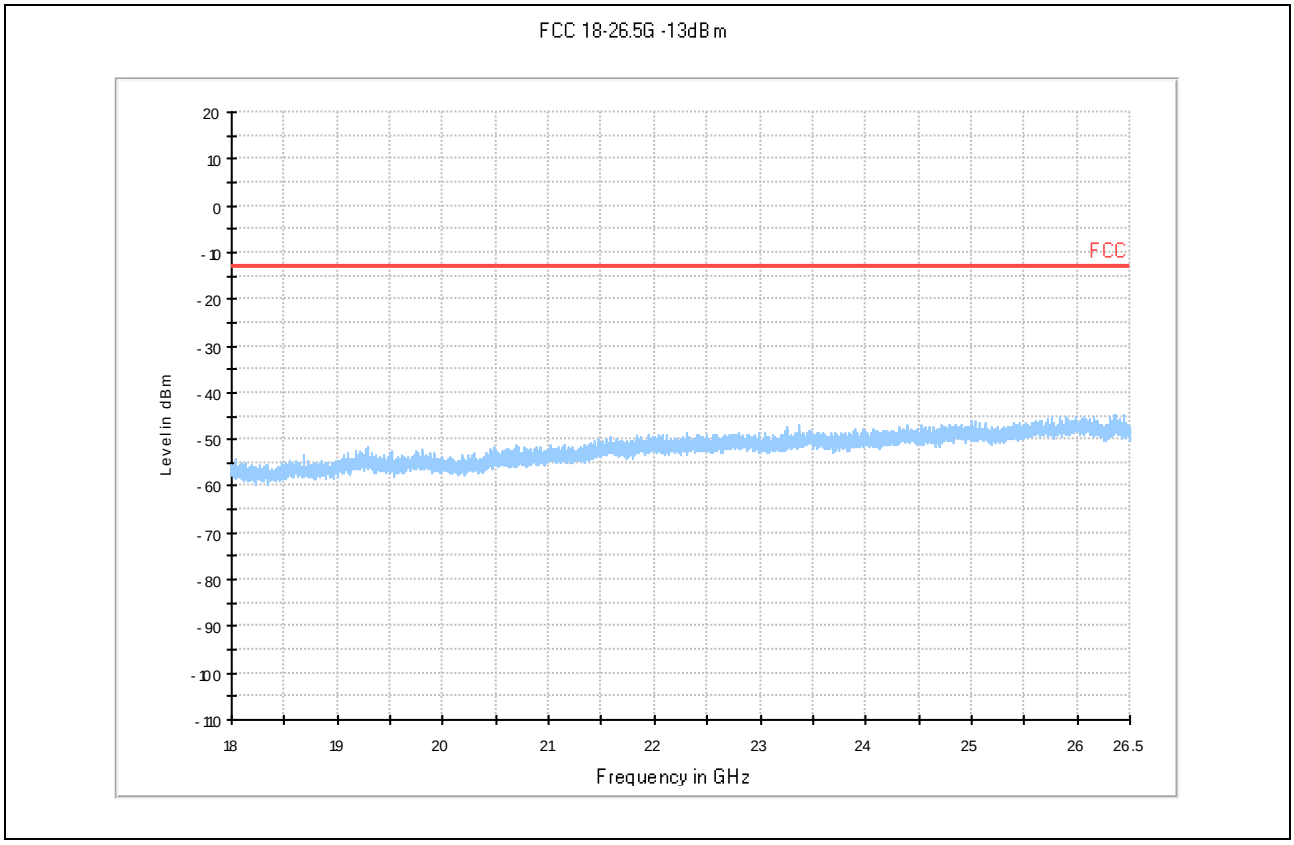


10 FCC PART 24 GSM1900_L



09 FCC PART 24 GSM1900_H





8Appendix_H: Frequency Stability

8.1 For GSM

8.1.1Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM850	GSM/TM1	LCH	TN	VL	2.64744	0.00321	PASS
				VN	1.22686	0.00149	PASS
				VH	-2.35687	-0.00286	PASS
		MCH	TN	VL	1.03315	0.00123	PASS
				VN	-1.03315	-0.00123	PASS
				VH	2.29230	0.00274	PASS
		HCH	TN	VL	0.35514	0.00042	PASS
				VN	-1.16229	-0.00137	PASS
				VH	-0.06457	-0.00008	PASS
	GSM/TM2	LCH	TN	VL	-0.93629	-0.00114	PASS
				VN	-1.00086	-0.00121	PASS
				VH	-0.16143	-0.00020	PASS
		MCH	TN	VL	-0.83943	-0.00100	PASS
				VN	-1.61429	-0.00193	PASS
				VH	-0.48429	-0.00058	PASS
		HCH	TN	VL	-3.61601	-0.00426	PASS
				VN	-1.00086	-0.00118	PASS
				VH	-1.06543	-0.00126	PASS
PCS1900	GSM/TM1	LCH	TN	VL	3.48687	0.00188	PASS
				VN	1.13000	0.00061	PASS
				VH	1.19458	0.00065	PASS
		MCH	TN	VL	1.45286	0.00077	PASS
				VN	2.35687	0.00125	PASS
				VH	0.64572	0.00034	PASS
		HCH	TN	VL	-1.93715	0.00188	PASS
				VN	0.64572	0.00061	PASS
				VH	0.06457	0.00065	PASS
	GSM/TM2	LCH	TN	VL	-1.42058	-0.00077	PASS
				VN	-2.26001	-0.00122	PASS
				VH	-3.26087	-0.00176	PASS
		MCH	TN	VL	-2.77658	-0.00148	PASS
				VN	-1.48515	-0.00079	PASS
				VH	0.35514	0.00019	PASS
		HCH	TN	VL	-5.16574	-0.00077	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VN	-2.93801	-0.00122	PASS
				VH	-4.00345	-0.00176	PASS

8.1.2Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM850	GSM/TM1	LCH	VN	-30	-1.64658	-0.00200	PASS
				-20	-1.48515	-0.00180	PASS
				-10	-3.00258	-0.00364	PASS
				0	3.22858	0.00392	PASS
				10	0.45200	0.00055	PASS
				20	1.22686	0.00149	PASS
				30	-0.83943	-0.00102	PASS
				40	-0.61343	-0.00074	PASS
				50	-3.35773	-0.00407	PASS
		MCH	VN	-30	-1.38829	-0.00166	PASS
				-20	-4.06802	-0.00486	PASS
				-10	-3.58373	-0.00428	PASS
				0	2.48601	0.00297	PASS
				10	1.38829	0.00166	PASS
				20	-1.03315	-0.00123	PASS
				30	-1.84029	-0.00220	PASS
				40	-2.42144	-0.00289	PASS
				50	-2.00172	-0.00239	PASS
		HCH	VN	-30	-1.09772	-0.00129	PASS
				-20	-4.22945	-0.00498	PASS
				-10	-1.71115	-0.00202	PASS
				0	1.71115	0.00202	PASS
				10	-0.61343	-0.00072	PASS
				20	-1.16229	-0.00137	PASS
				30	-1.22686	-0.00145	PASS
				40	-1.96944	-0.00232	PASS
				50	-3.26087	-0.00384	PASS
	GSM/TM2	LCH	VN	-30	-0.54886	-0.00067	PASS
				-20	0.71029	0.00086	PASS
				-10	-3.00258	-0.00364	PASS
				0	-2.45372	-0.00298	PASS
				10	-0.12914	-0.00016	PASS
				20	-1.00086	-0.00121	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				30	-2.00172	-0.00243	PASS
				40	-0.32286	-0.00039	PASS
				50	-1.19458	-0.00145	PASS
		MCH	VN	-30	-0.74257	-0.00089	PASS
				-20	-1.06543	-0.00127	PASS
				-10	-2.71201	-0.00324	PASS
				0	-1.48515	-0.00178	PASS
				10	0.29057	0.00035	PASS
				20	-1.61429	-0.00193	PASS
				30	0.87172	0.00104	PASS
				40	-0.45200	-0.00054	PASS
				50	-2.93801	-0.00351	PASS
		HCH	VN	-30	-1.29143	-0.00152	PASS
				-20	-1.35601	-0.00160	PASS
				-10	-3.51916	-0.00415	PASS
				0	-3.06716	-0.00361	PASS
				10	-2.03401	-0.00240	PASS
				20	-1.00086	-0.00118	PASS
				30	0.41972	0.00049	PASS
				40	-1.38829	-0.00164	PASS
				50	-0.83943	-0.00099	PASS
PCS1900	GSM/TM1	LCH	VN	-30	0.29057	0.00016	PASS
				-20	-1.93715	-0.00105	PASS
				-10	2.61515	0.00141	PASS
				0	-0.51657	-0.00028	PASS
				10	1.61429	0.00087	PASS
				20	1.13000	0.00061	PASS
				30	2.64744	0.00143	PASS
				40	-0.19372	-0.00010	PASS
				50	-0.03229	-0.00002	PASS
		MCH	VN	-30	1.45286	0.00077	PASS
				-20	2.84116	0.00151	PASS
				-10	2.35687	0.00125	PASS
				0	0.61343	0.00033	PASS
				10	0.80715	0.00043	PASS
				20	2.35687	0.00125	PASS
				30	1.42058	0.00076	PASS
				40	0.54886	0.00029	PASS
				50	0.41972	0.00022	PASS
		HCH	VN	-30	-2.93801	-0.00154	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-20	-2.80887	-0.00147	PASS
				-10	-0.19372	-0.00010	PASS
				0	0.64572	0.00034	PASS
				10	-2.55058	-0.00134	PASS
				20	0.64572	0.00034	PASS
				30	0.25829	0.00014	PASS
				40	-1.71115	-0.00090	PASS
				50	-1.80801	-0.00095	PASS
	GSM/TM2	LCH	VN	-30	1.77572	0.00096	PASS
				-20	-0.35514	-0.00019	PASS
				-10	1.71115	0.00092	PASS
				0	-2.22772	-0.00120	PASS
				10	-3.90659	-0.00211	PASS
				20	-2.26001	-0.00122	PASS
				30	-3.55144	-0.00192	PASS
				40	2.09858	0.00113	PASS
				50	0.19372	0.00010	PASS
		MCH	VN	-30	2.00172	0.00106	PASS
				-20	2.51830	0.00134	PASS
				-10	1.22686	0.00065	PASS
				0	0.22600	0.00012	PASS
				10	-2.61515	-0.00139	PASS
				20	-1.48515	-0.00079	PASS
				30	-2.48601	-0.00132	PASS
				40	1.54972	0.00082	PASS
				50	1.42058	0.00076	PASS
		HCH	VN	-30	-0.19372	-0.00010	PASS
				-20	-2.84116	-0.00149	PASS
				-10	-0.32286	-0.00017	PASS
				0	-3.29316	-0.00172	PASS
				10	-4.90745	-0.00257	PASS
				20	-2.93801	-0.00154	PASS
				30	-4.71373	-0.00247	PASS
				40	-3.39001	-0.00178	PASS
				50	-5.84374	-0.00306	PASS

END