FCC Test Report

FOR:

Model Name: HAA
Handheld Mobile Telemetry device
FCC ID: YCVBRHA01

47 CFR Part 2, 22, 24

TEST REPORT #: EMC_BIOME_001_10001_FCC_22_24_rev1
DATE: 2010-06-21

ilac-MRA

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 2135.01

Bluetooth
Bluetooth Qualification Test Facility (BQTF)

CTIA Authorized Test Lab
LAB CODE 20020328-00

FCC listed: A2LA accredited

IC recognized # 3462B-1

***CETECOM* Inc.**
411 Dixon Landing Road ◆ Milpitas, CA 95035 ◆ U.S.A.
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CETECOM Inc. is a Delaware Corporation with Corporation number: 2113686
Board of Directors: Dr. Harald Ansorge, Dr. Klaus Matkey, Hans Peter May

Table of Contents

1 Assessment

The following is in compliance with the applicable criteria specified in FCC rules Parts 2, 22 and 24 of Title 47 of the Code of Federal Regulations.

Company	Description	Model #
Biomedical Systems Corporation	**Handheld Mobile Telemetry device**	**HAA**

Responsible for Testing Laboratory:

Date	Section	Name	Signature
2010-06-21	Compliance	Marc Douat (Test Lab Manager)	

Responsible for the Report:

Date	Section	Name	Signature
2010-06-21	Compliance	Josie Sabado (EMC Project Engineer)	Josie Sabado I am the author of this document

The test results of this test report relate exclusively to the test item specified in Section3.
CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM Inc USA.

2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Address:	411 Dixon Landing Road Milpitas, CA 95035 U.S.A.
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
Responsible Test Lab Manager:	Marc Douat
Responsible Project Leader:	Satya Radhakrishna

2.2 Identification of the Client

Applicant's Name:	Biomedical Systems Corporation
Street Address:	77 Progress Parkway
City/Zip Code	St. Louis/ 63043
Country	United States of America
Contact Person:	Kenneth Kroehnke
Phone No.	314-576-6800
Fax:	877-581-7858
e-mail:	kmk@biomedsys.com

2.3 Identification of the Manufacturer

Same as above

3 Equipment under Test (EUT)

3.1 Specification of the Equipment under Test

Marketing Name:	TrueVue™ Handheld
Model No:	HAA
Product Type:	Handheld Mobile Telemetry device
Hardware Version :	3.0
Software Version :	V0.28.02.HW3
FCC-ID:	YCVBRHA01
Frequency:	GSM 850: 824.2-848.8MHz; PCS 1900: 1850.2-1909.8MHz
Type(s) of Modulation:	GMSK; 8-PSK
Number of channels:	GSM850: 125 and PCS 1900: 300
Antenna Type/Gain:	Planar Inverted F/0 dBi average gain
Power Supply:	3.7V Lithium Ion battery
Temperature Range:	0ºC-70ºC

3.2 Identification of the Equipment Under Test (EUT)

EUT #	Serial Number	HW Version	SW Version
1	HAADEV51	3.0	V0.28.02.HW3

4 Subject of Investigation

The objective of the measurements done by Cetecom Inc. was to measure the performance of the EUT as specified by requirements listed in the following test standards:

- 47 CFR Part 2: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communications Commission Frequency allocations and radio treaty matters; general rules and regulations.
- 47 CFR Part 22: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communications Commission subchapter B- common carrier services; Part 22- Public mobile services
- 47 CFR Part 24: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communications Commission subchapter B- common carrier services; Part 24- Personal communication services

This device contains pre certified Wavecom Q2687 GSM Module with FCC ID O9EQ2687. This report only contains the radiated test results. Conducted test results can be obtained from test report# 2-4299-01-02/06.

The device is powered by an internal battery and according to 15.207c, “Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines“therefore the conducted emissions test is not applicable.

This document replaces EMC_BIOME_001_10001_FCC22_24 issued 2010-05-12.

5 Measurements

5.1 RF Power Output

5.1.1 References

FCC: CFR Part 2.1046, CFR Part 22.913, CFR Part 24.232

5.1.2 FCC 2.1046 Measurements required: RF power output.

Power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on circuit elements as specified. The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

5.1.3 Limits:

5.1.3.1 FCC 22.913 (a) Effective radiated power limits.

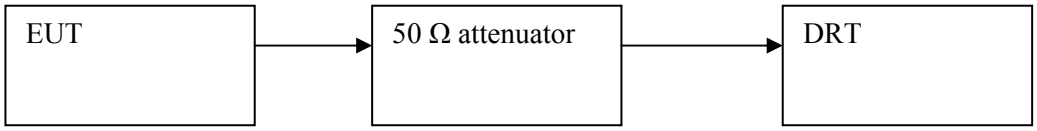
The effective radiated power (ERP) of mobile transmitters must not exceed 7 Watts.

5.1.3.2 FCC 24.232 (b)(c) Power limits.

(b) Mobile/portable stations are limited to 2 Watts effective isotropic radiated power (EIRP).
(c) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms equivalent voltage. The measurement results shall be properly adjusted for any limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement over the full bandwidth of the channel.

5.1.4 Conducted Output Power Measurement procedure

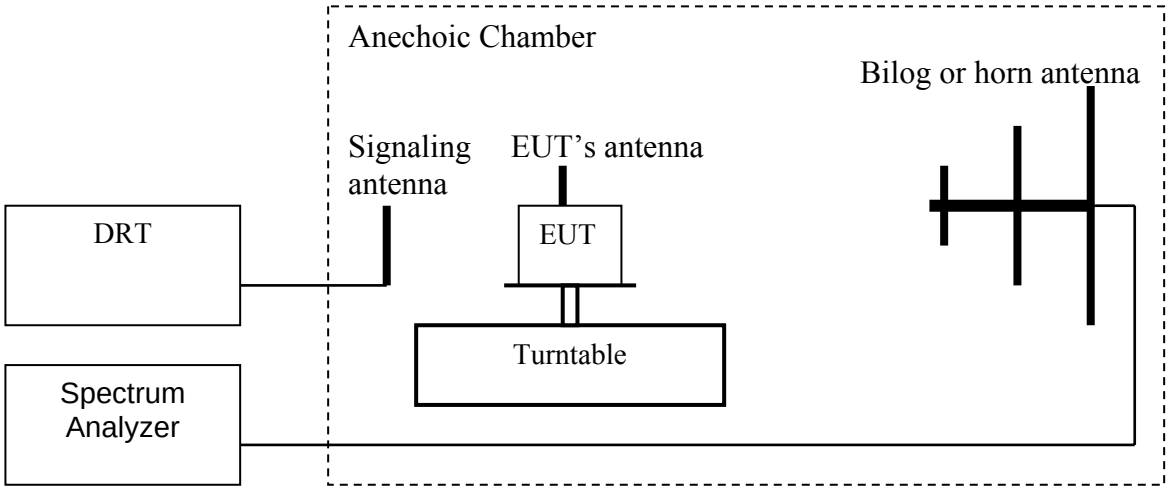
Ref: TIA-603C 2004 2.2.1 Conducted Carrier Output Power Rating



1. Connect the equipment as shown in the above diagram. A Digital RadioCommunication Tester (DRT) is used to enable the EUT to transmit and to measure the output power.
2. Adjust the settings of the DRT to set the EUT to its maximum power at the required channel.
3. Record the output power level measured by the DRT.
4. Correct the measured level for all losses in the RF path.
5. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.

5.1.5 Radiated Output Power Measurement procedure

Ref: TIA-603C 2004 -2.2.17.2 Effective Radiated Power (ERP) or Effective Isotropic Radiated Power (EIRP)



1. Connect the equipment as shown in the above diagram with the EUT's antenna in a vertical orientation.
2. Adjust the settings of the Digital RadioCommunication Tester (DRT) to set the EUT to its maximum power at the required channel.
3. Set the spectrum analyzer to the channel frequency. Set the analyzer to measure peak hold with the required settings.
4. Rotate the EUT 360°. Record the peak level in dBm (**LVL**).
5. Replace the EUT with a vertically polarized half wave dipole or known gain antenna. The center of the antenna should be at the same location as the center of the EUT's antenna.
6. Connect the antenna to a signal generator with known output power and record the path loss in dB (**LOSS)**. **LOSS** = Generator Output Power (dBm) – Analyzer reading (dBm).
7. Determine the ERP using the following equation:
   ERP (dBm) = **LVL** (dBm) + **LOSS** (dB)
8. Determine the EIRP using the following equation:
   EIRP (dBm) = **ERP** (dBm) + 2.14 (dB)
9. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.

Spectrum analyzer settings: RBW=VBW=3MHz

(**Note:** Steps 5 and 6 above are performed prior to testing and **LOSS** is recorded by test software. Steps 3, 4, 7 and 8 above are performed with test software.)

5.1.6 RF Power Output 850MHz band

Limit: Nominal Peak Output Power < 38.45 dBm (7W)
Measurement Uncertainty: ±0.5 dB
Note: Effective Radiated Power = Effective Isotropic Radiated Power – 2.14

Frequency (MHz)	Effective Radiated Power (dBm)	
	GSM: GMSK Mode	EGPRS: 8PSK Mode
824.2	33.66	30.96
836.6	31.76	29.06
848.8	31.66	29.36

5.1.7 RF Power Output 1900MHz band

Limit: Nominal Peak Output Power < 33 dBm (2W)

Measurement Uncertainty: ±0.5 dB

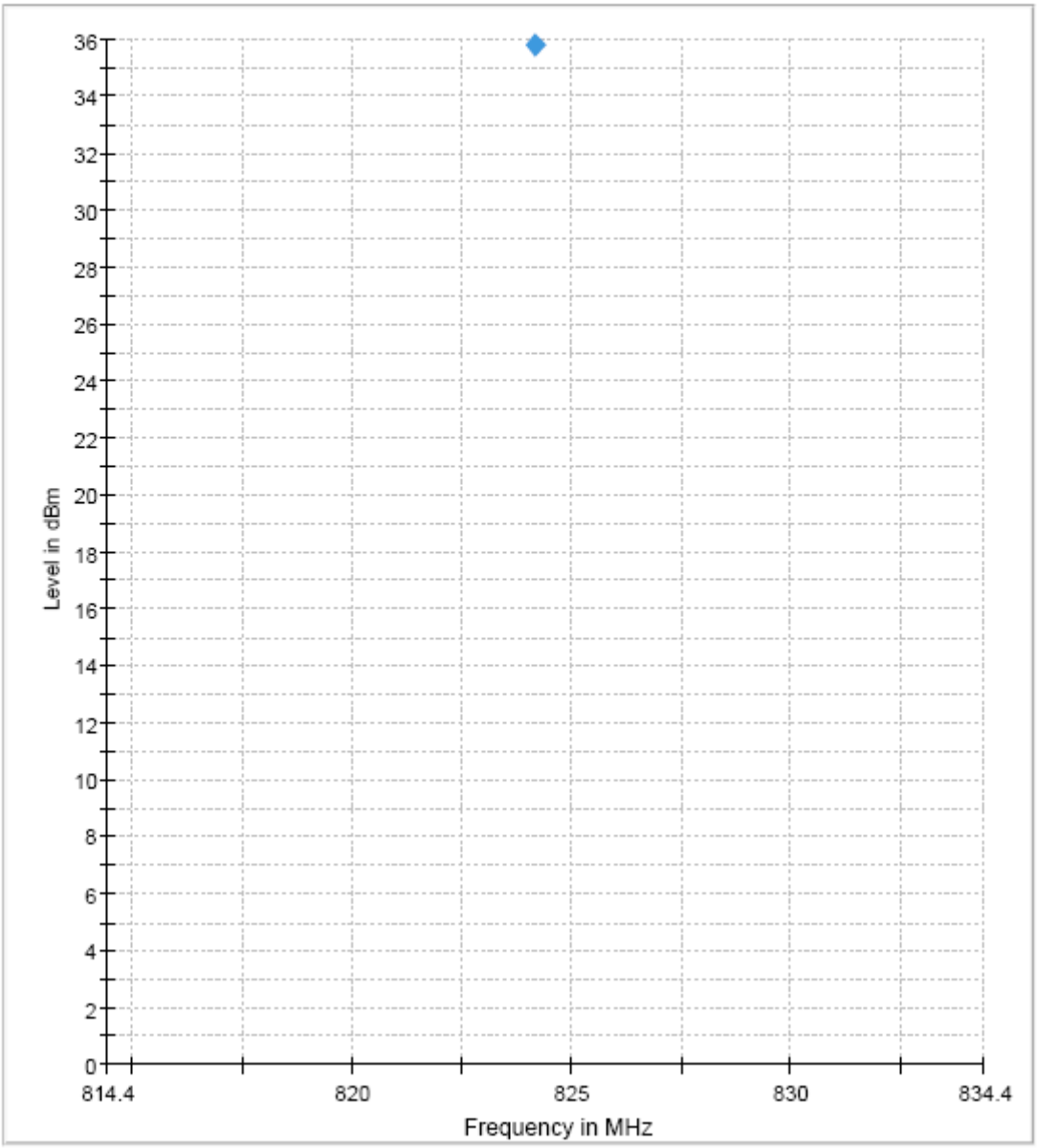
Frequency (MHz)	Effective Isotropic Radiated Power (dBm)	
	GSM: GMSK Mode	EGPRS: 8PSK Mode
1850.2	30.751	26.932
1880.0	31.998	27.375
1909.8	30.867	26.924

5.1.8 Results

EIRP (GSM 850) CHANNEL 128 §22.913(a)

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
824.200000	35.8	50.0	10000.000	0.0	H	130.0	201.0	-53.2	

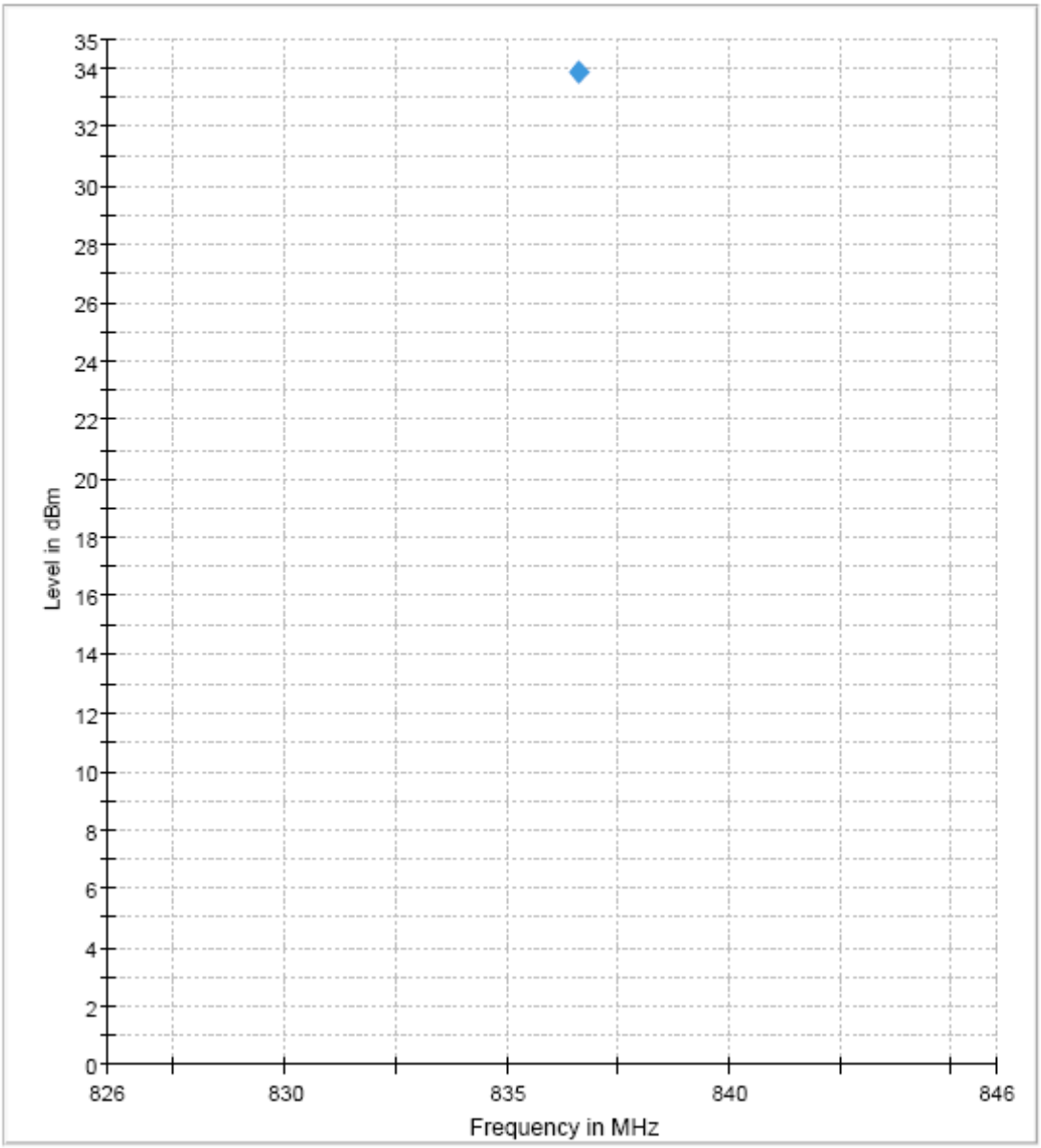
EIRP 824



EIRP (GSM 850) CHANNEL 190 §22.913(a)

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
836.600000	33.9	50.0	10000.000	0.0	H	30.0	262.0	-53.0	

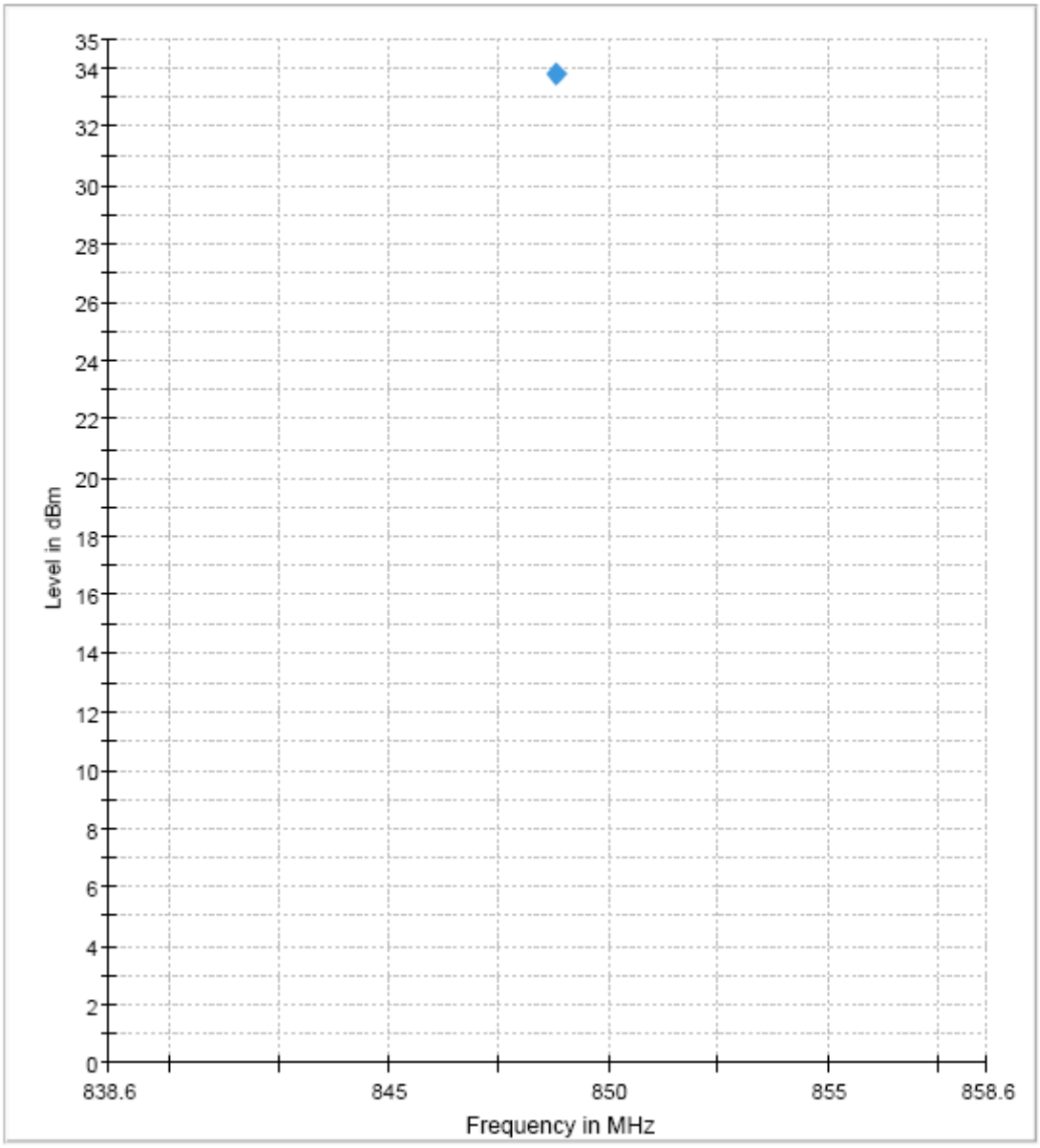
EIRP 836



EIRP (GSM 850) CHANNEL 251 §22.913(a)

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
848.800000	33.8	50.0	10000.000	0.0	H	30.0	254.0	-53.0	

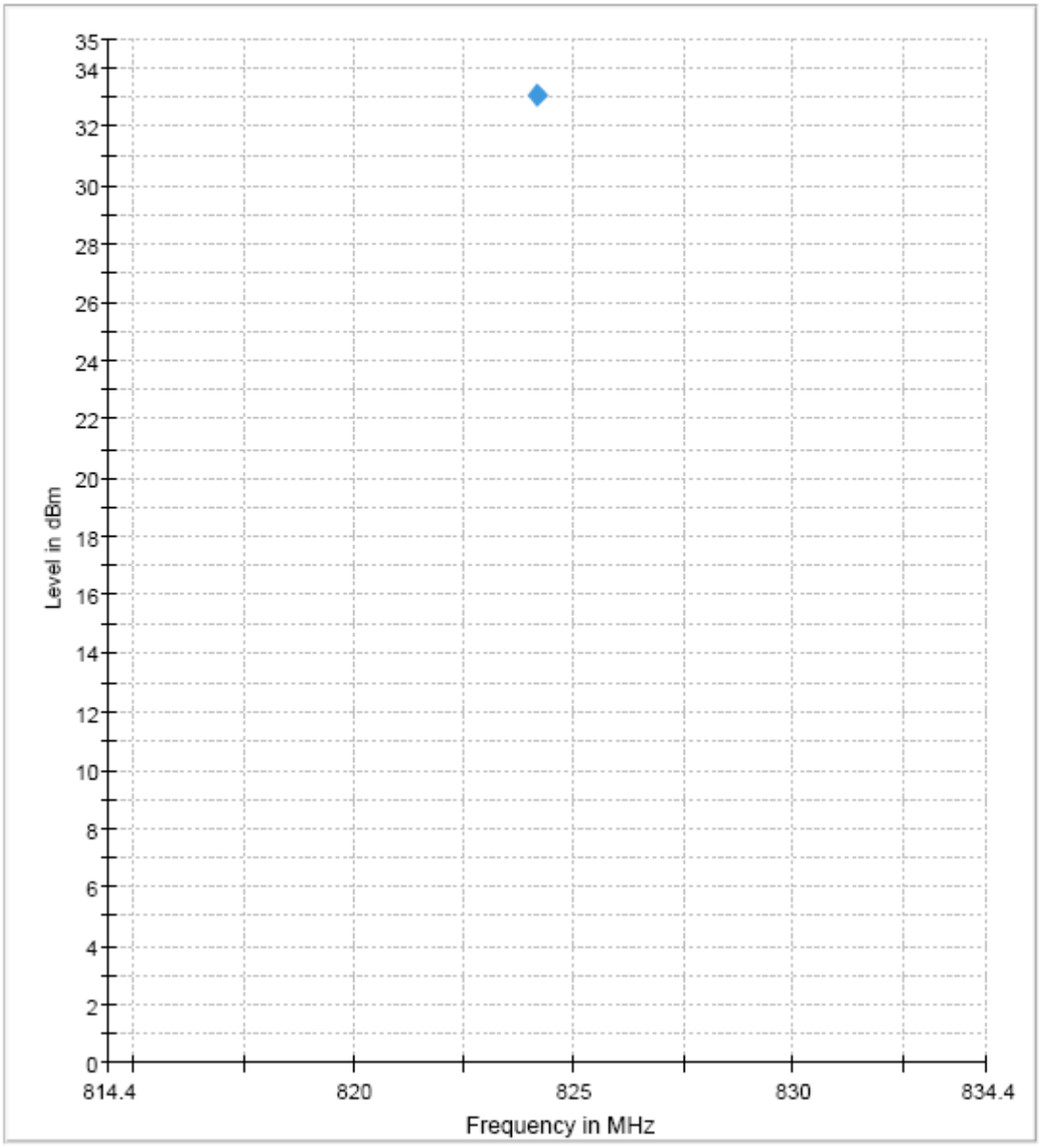
EIRP 848



EIRP (EGPRS 850) CHANNEL 128 §22.913(a)

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
824.200000	33.1	50.0	1000.000	0.0	H	112.0	308.0	-53.2	

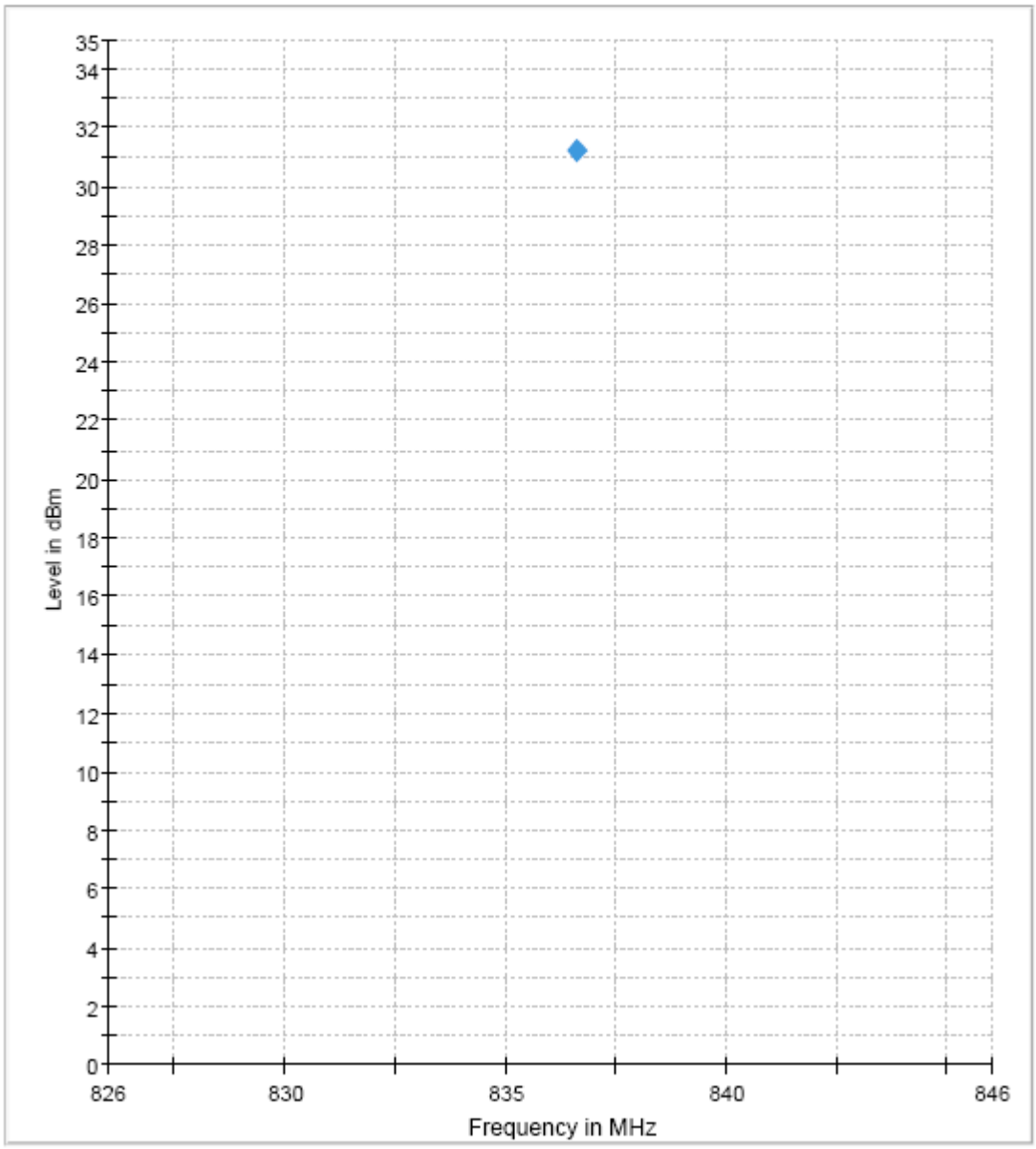
EIRP 824



EIRP (EGPRS 850) CHANNEL 190 §22.913(a)

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
836.600000	31.2	50.0	10000.000	0.0	H	27.0	244.0	-53.0	

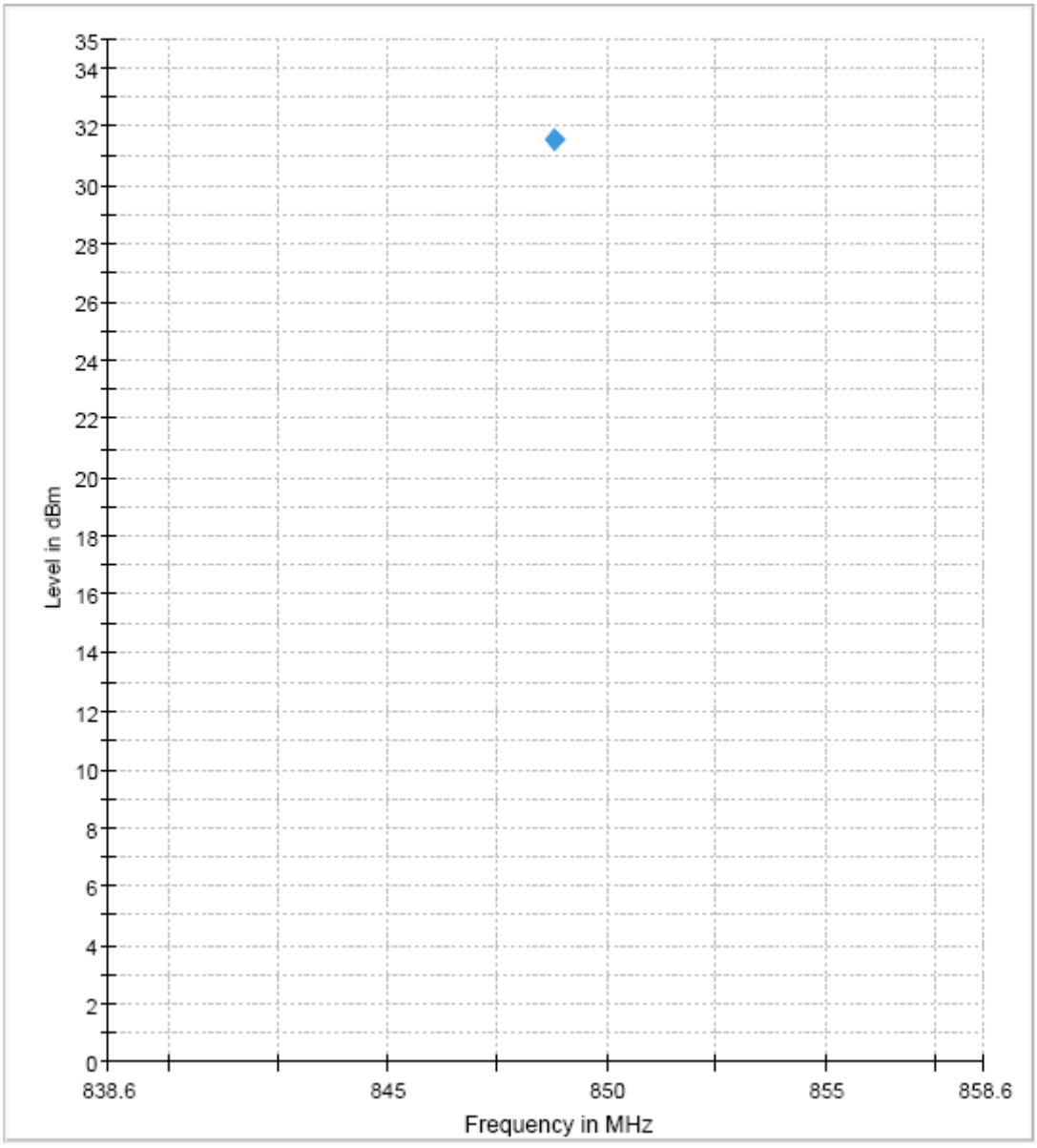
EIRP 836



EIRP (EGPRS 850) CHANNEL 251 §22.913(a)

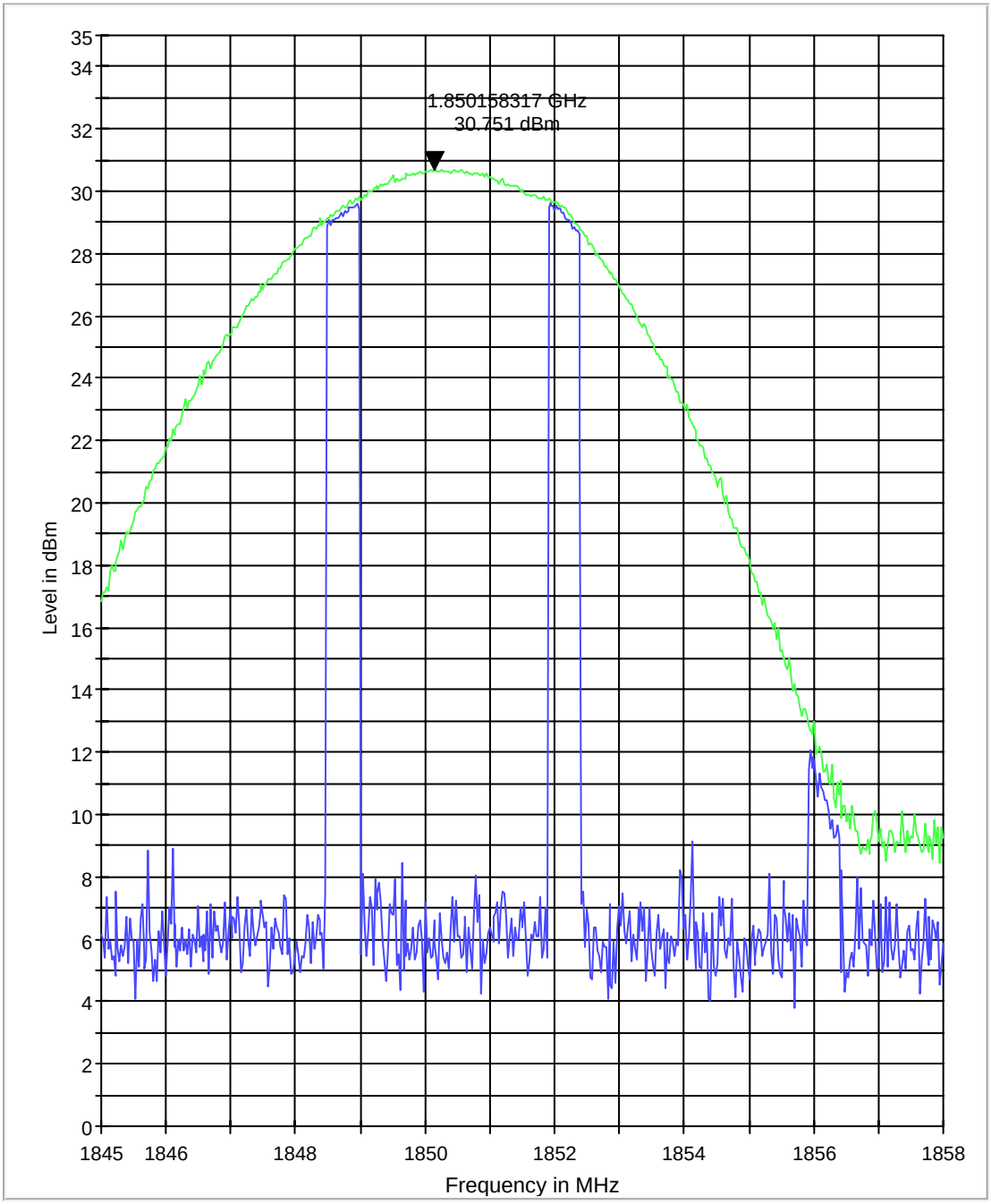
Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
848.800000	31.5	50.0	10000.000	0.0	H	34.0	262.0	-53.0	

EIRP 848



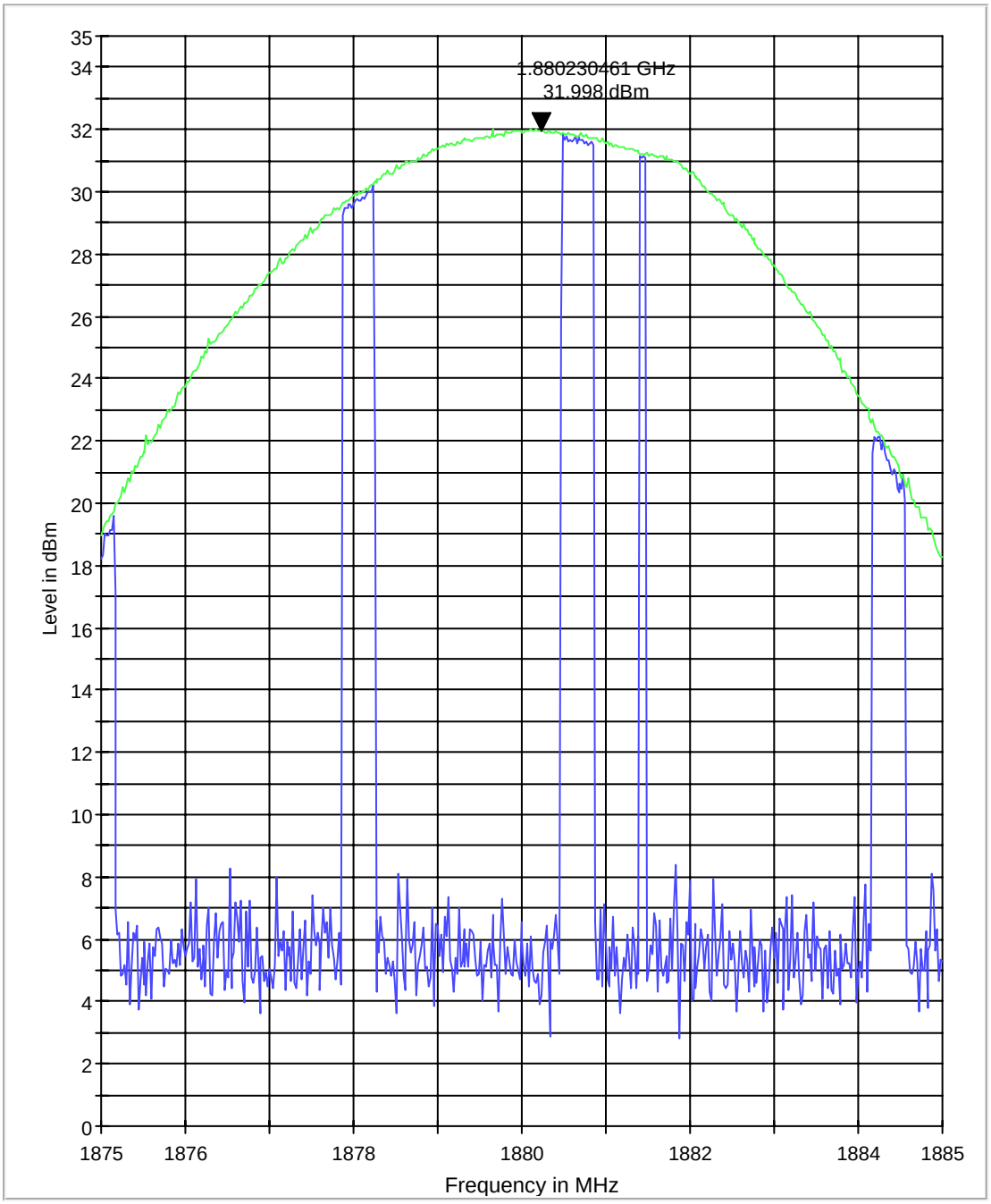
EIRP (PCS-1900) CHANNEL 512 §24.232(b)

EIRP 1900 L



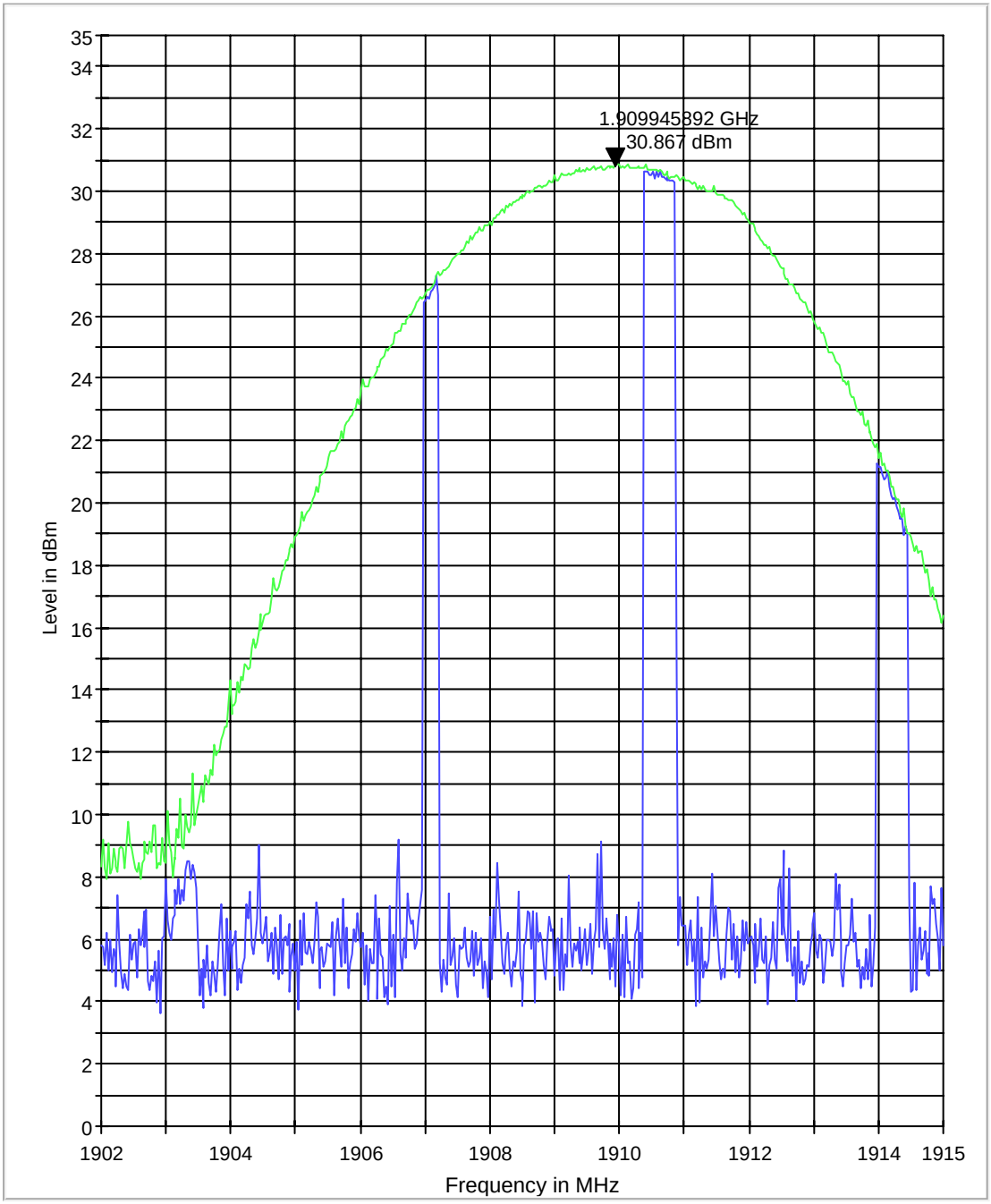
EIRP (PCS-1900) CHANNEL 661 §24.232(b)

EIRP 1900 M



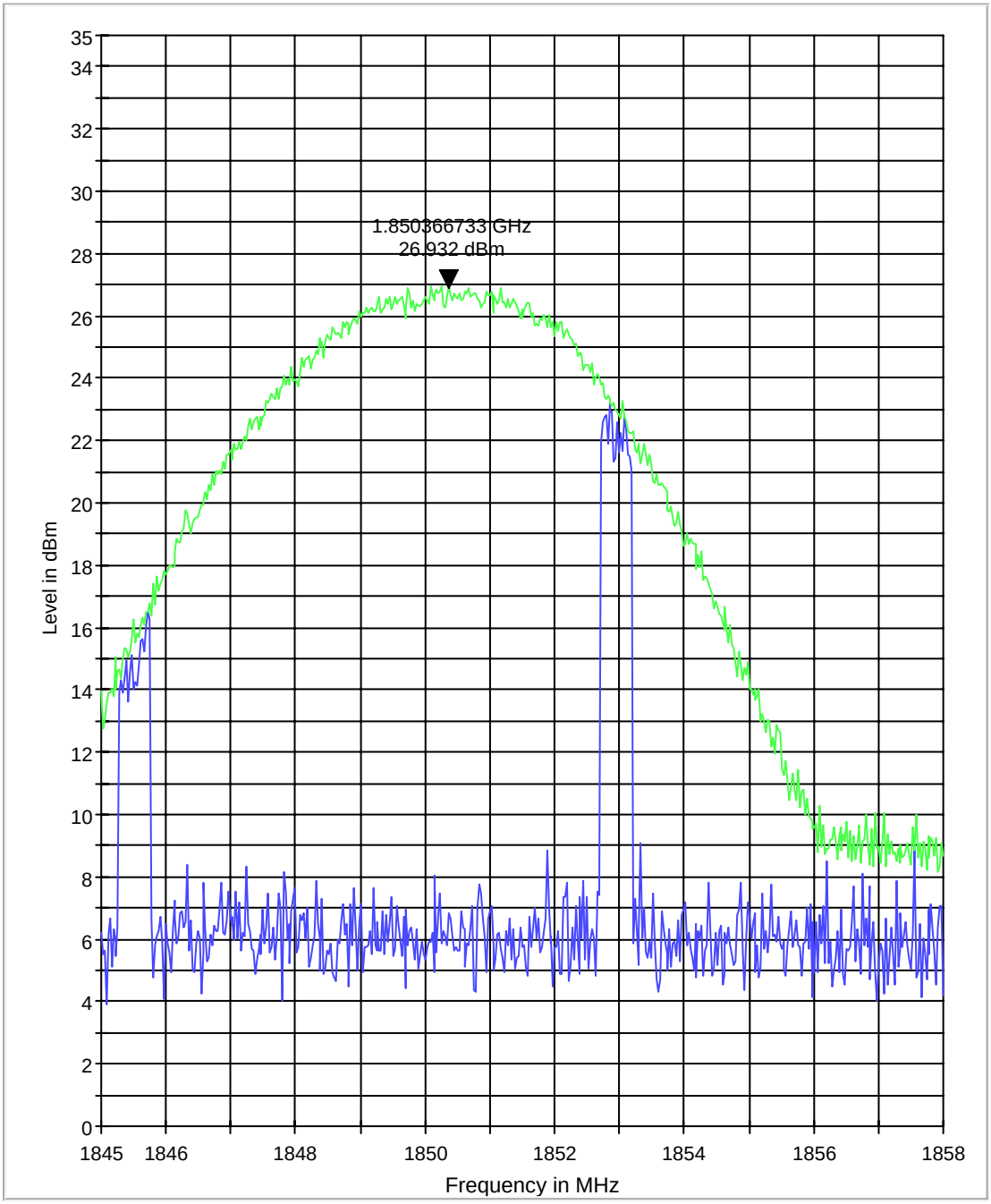
EIRP (PCS-1900) CHANNEL 810 §24.232(b)

EIRP 1900 H



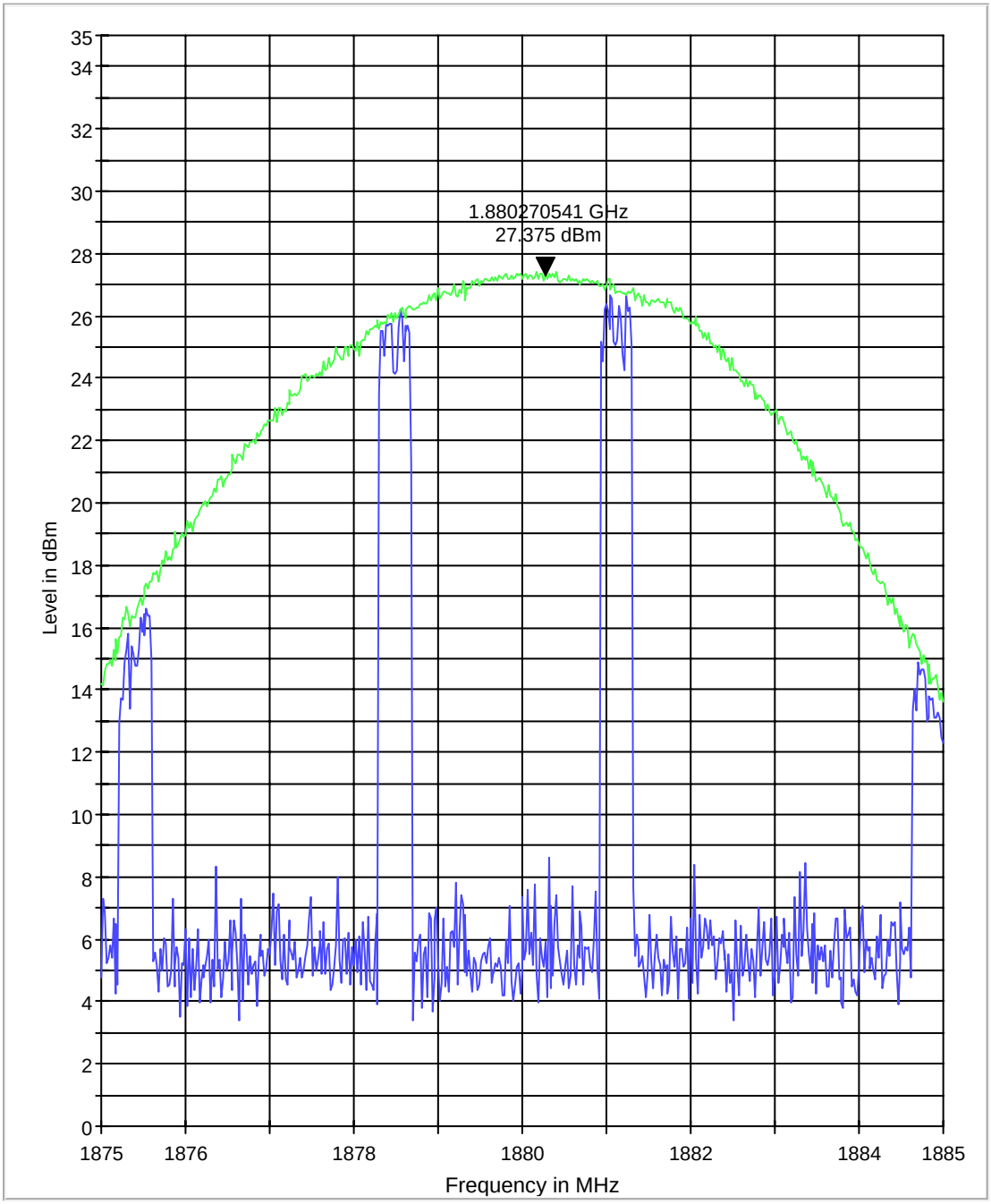
EIRP (EGPRS 1900) CHANNEL 512 §24.232(b)

EIRP 1900 L



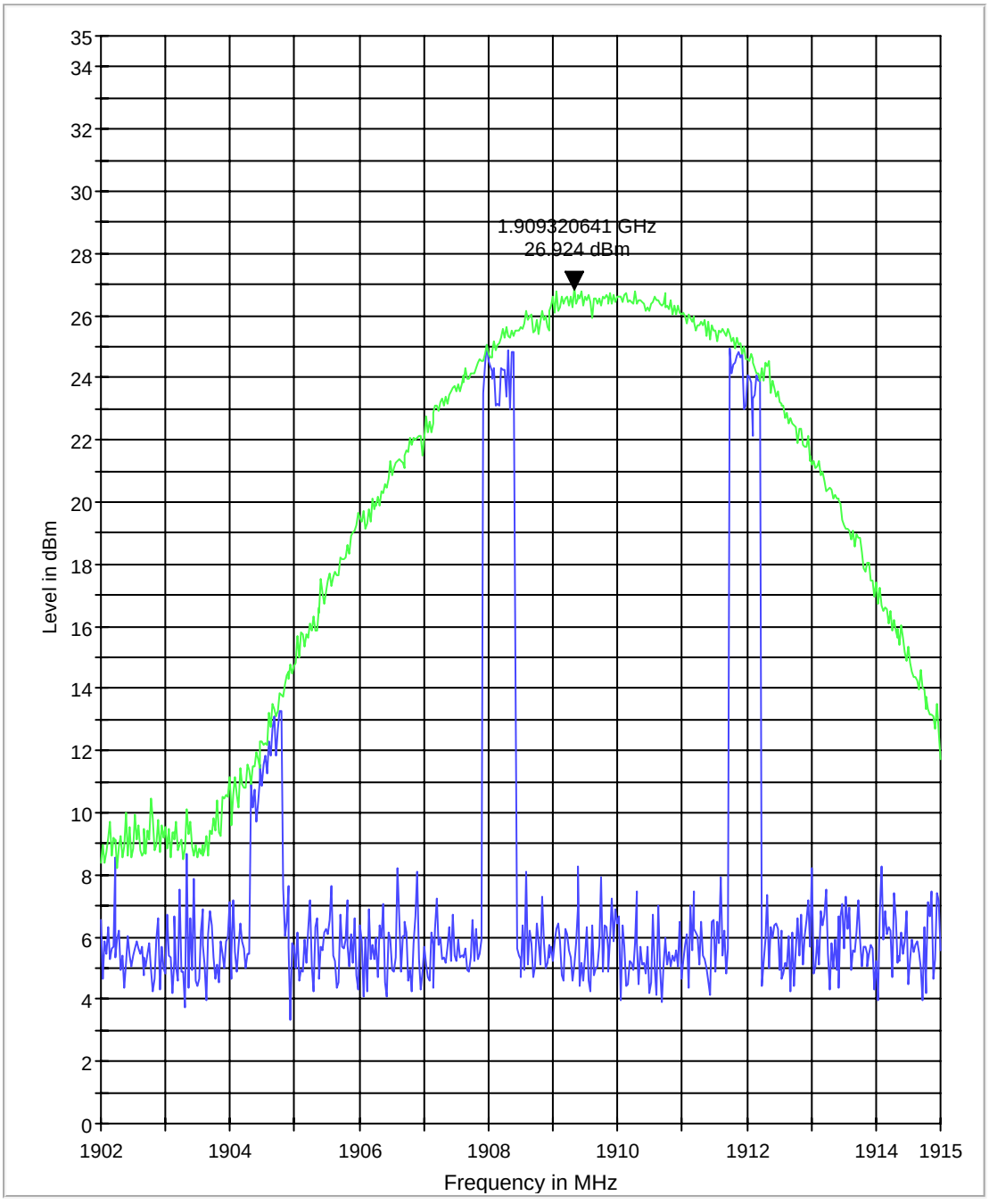
EIRP (EGPRS 1900) CHANNEL 661 §24.232(b)

EIRP 1900 M



EIRP (EGPRS 1900) CHANNEL 810 §24.232(b)

EIRP 1900 H



5.2 Spurious Emissions Radiated

5.2.1 References

FCC: CFR Part 2.1053, CFR Part 22.917, CFR Part 24.238

5.2.2 FCC 2.1053 Measurements required: Field strength of spurious radiation.

Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission.

5.2.3 Limits:

(a) *Out of band emissions*. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
For all power levels +30dBm to 0dBm, this becomes a constant specification of -13dBm.

5.2.3.1 FCC 22.917 Emission limitations for cellular equipment.

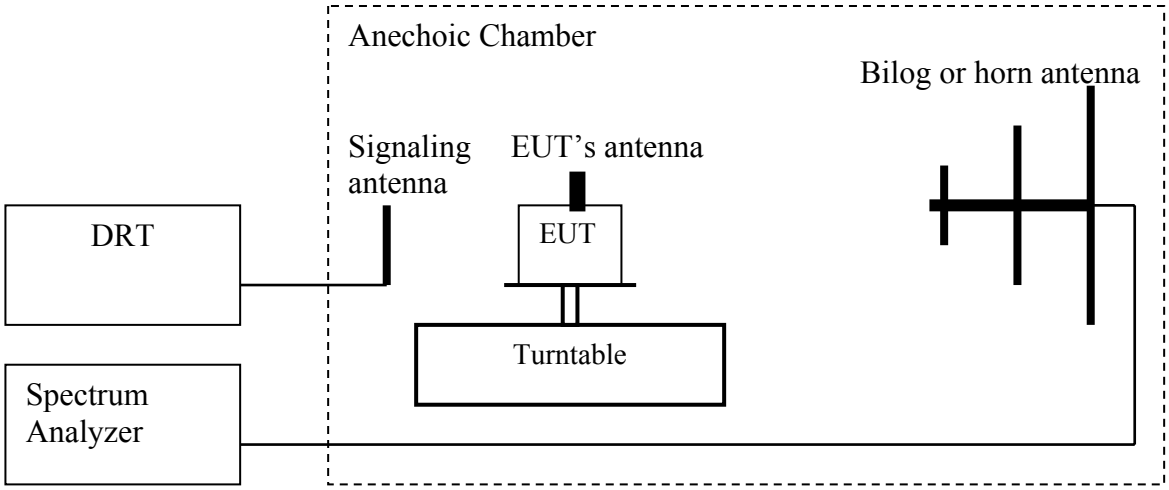
The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.
(b) *Measurement procedure.* Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands 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. 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.* 100 kHz of 1 percent of emission bandwidth, as specified). 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.

5.2.3.2 FCC 24.238 Emission limitations for Broadband PCS equipment.

The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service.
(b) Measurement procedure. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz 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. 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.* 100 kHz of 1 percent of emission bandwidth, as specified). 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.

5.2.4 Radiated out of band measurement procedure:

Ref: TIA-603C 2004- 2.2.12 Unwanted emissions: Radiated Spurious



1. Connect the equipment as shown in the above diagram with the EUT's antenna in a horizontal orientation.
2. Adjust the settings of the Digital RadioCommunication Tester (DRT) to set the EUT to its maximum power at the required channel.
3. Set the spectrum analyzer to measure peak hold with the required settings.
4. Place the measurement antenna in a horizontal orientation. Rotate the EUT 360°. Raise the measurement antenna up to 4 meters in 0.5 meters increments and rotate the EUT 360° at each height to maximize all emissions. Measure and record all spurious emissions (**LVL**) up to the tenth harmonic of the carrier frequency.
5. Replace the EUT with a horizontally polarized half wave dipole or known gain antenna. The center of the antenna should be at the same location as the center of the EUT's antenna.
6. Connect the antenna to a signal generator with known output power and record the path loss in dB (**LOSS)**. **LOSS** = Generator Output Power (dBm) – Analyzer reading (dBm).
7. Determine the level of spurious emissions using the following equation: **Spurious** (dBm) = **LVL** (dBm) + **LOSS** (dB):
8. Repeat steps 4, 5 and 6 with all antennas vertically polarized.
9. Determine the level of spurious emissions using the following equation: **Spurious** (dBm) = **LVL** (dBm) + **LOSS** (dB):
10. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.
    (N**ote:** Steps 5 and 6 above are performed prior to testing and **LOSS** is recorded by test software. Steps 3, 4 and 7 above are performed with test software.)

Spectrum analyzer settings: RBW=VBW=1MHz

Measurement Survey:

The site is constructed in accordance with ANSI C63.4 requirements and is recognized by the FCC to be in compliance for a 3m site. The spectrum is scanned from 30MHz to the 10th harmonic of the highest frequency generated by the EUT.
Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the GSM-850 & PCS-1900 bands. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the GSM-850 & PCS-1900 band into any of the other blocks respectively. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this.

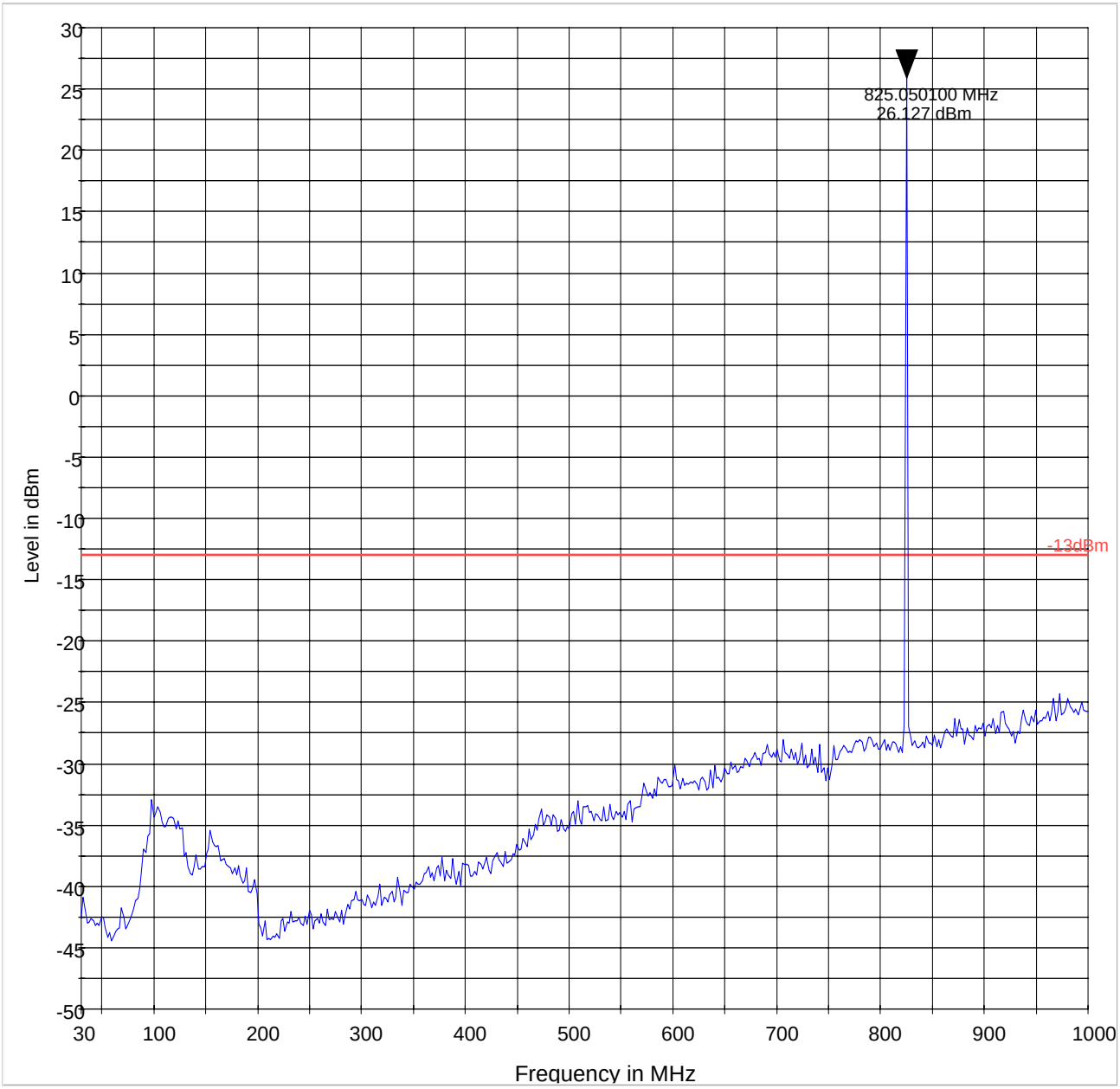
Radiated emission measurements were made only with Circuit Switched mode GMSK modulation because this mode represents the worse case emission for all the modulations for GSM. All measurements are done in horizontal and vertical polarization; the plots show the worst case where it is not indicated otherwise.
Unless mentioned otherwise, the peaks in the plots are from the carrier frequency.

5.2.5 Radiated out of band emissions results on EUT- Transmit Mode:

5.2.5.1 Test Results Transmitter Spurious Emission GSM850:

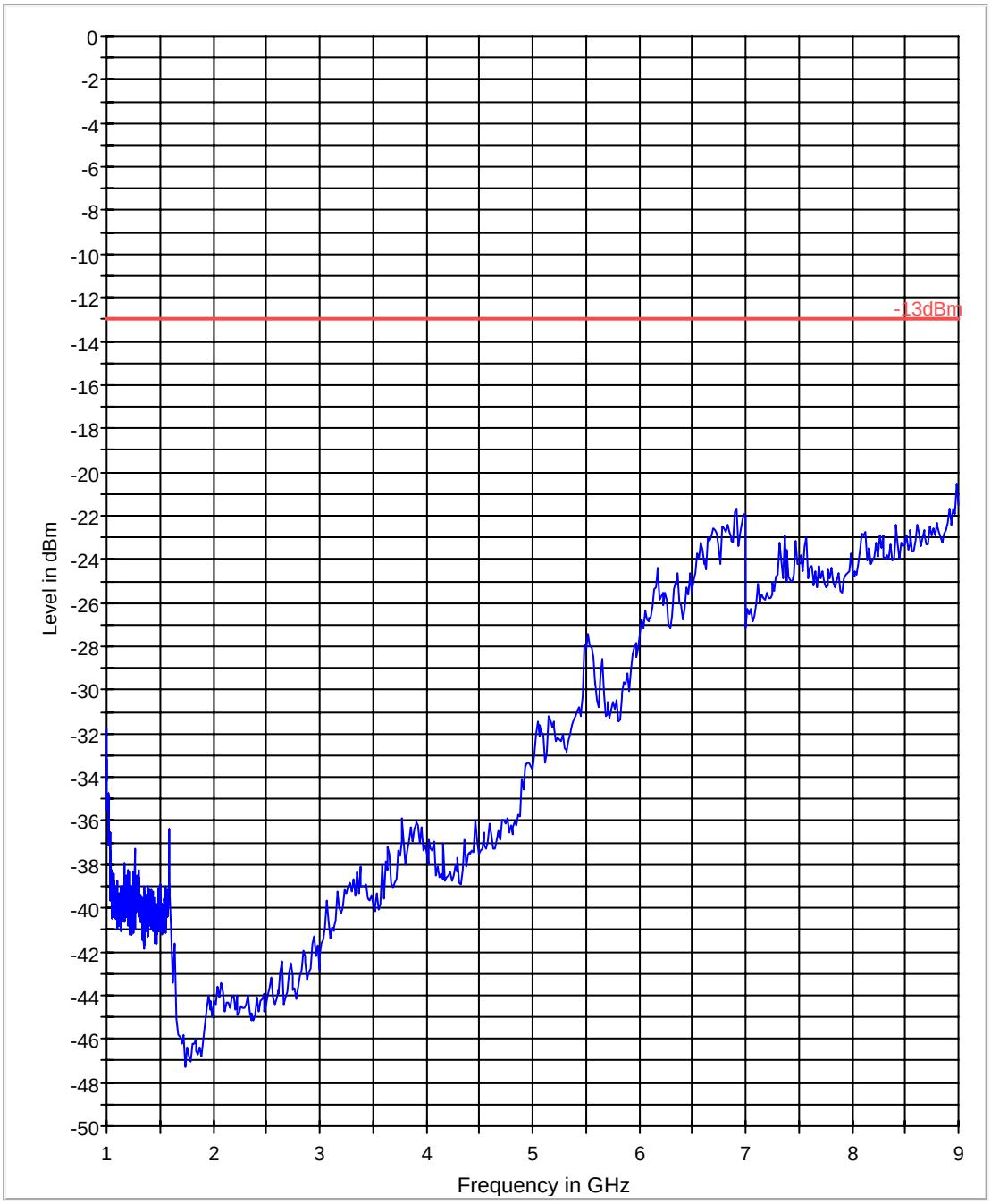
Harmonic	Tx ch-128 Freq. (MHz)	Level (dBm)	Tx ch-190 Freq. (MHz)	Level (dBm)	Tx ch-251 Freq. (MHz)	Level (dBm)
1	**824.2**	-	**836.6**	-	**848.8**	-
2	**1648.4**	NF	**1673.2**	NF	**1697.6**	NF
3	**2472.6**	NF	**2509.8**	NF	**2546.4**	NF
4	**3296.8**	NF	**3346.4**	NF	**3395.2**	NF
5	**4121**	NF	**4183**	NF	**4244**	NF
6	**4945.2**	NF	**5019.6**	NF	**5092.8**	NF
7	**5769.4**	NF	**5856.2**	NF	**5941.6**	NF
8	**6593.6**	NF	**6692.8**	NF	**6790.4**	NF
9	**7417.8**	NF	**7529.4**	NF	**7639.2**	NF
10	**8242**	NF	**8366**	NF	**8488**	NF
NF = Noise Floor						

Radiated Spurious Emissions (GSM-850) Tx: Low Channel
Test results 30M-1GHz
Note: Marker placed on transmit signal

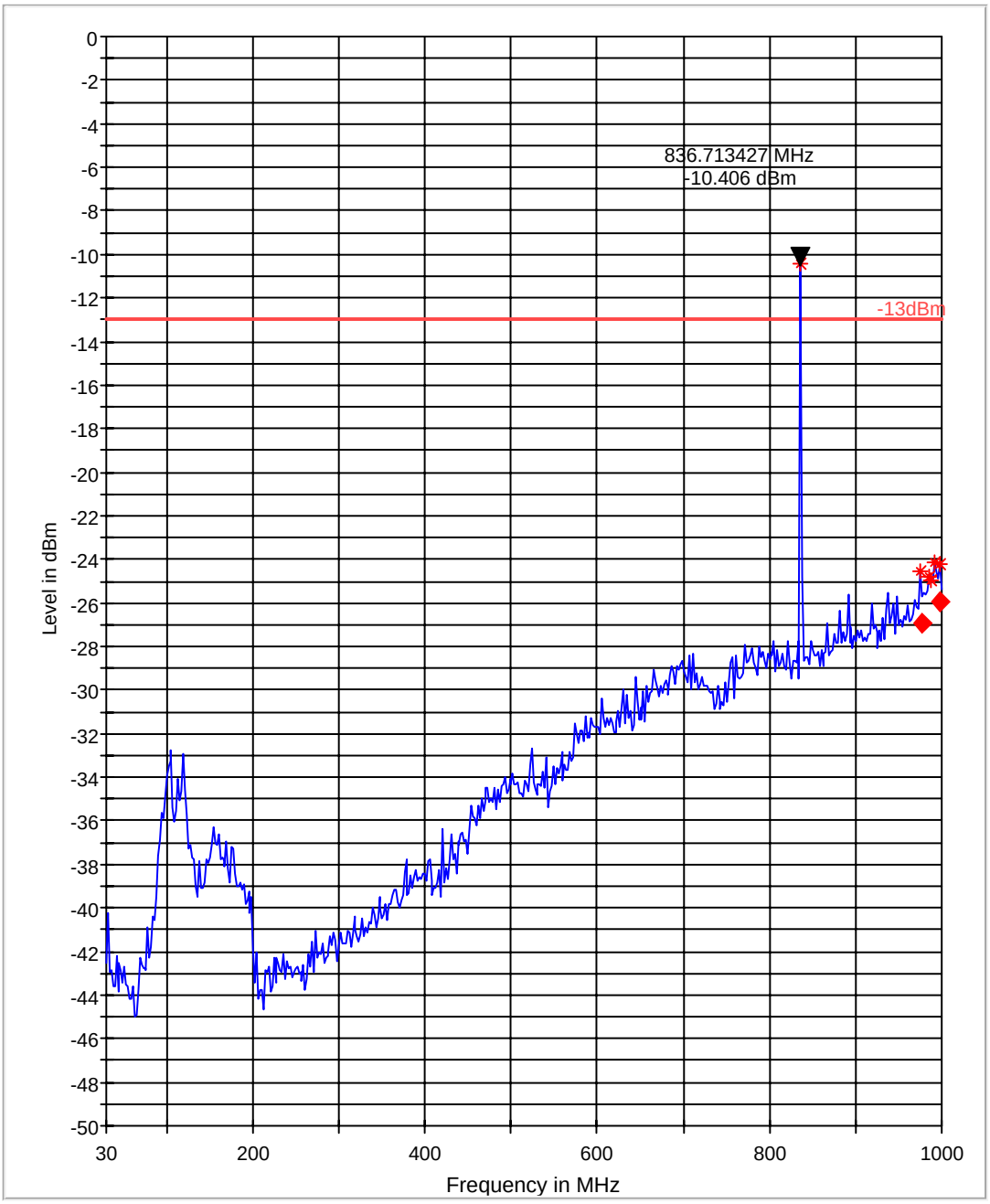


Test results 1GHz-9GHz

FCC 22 1-9GHz

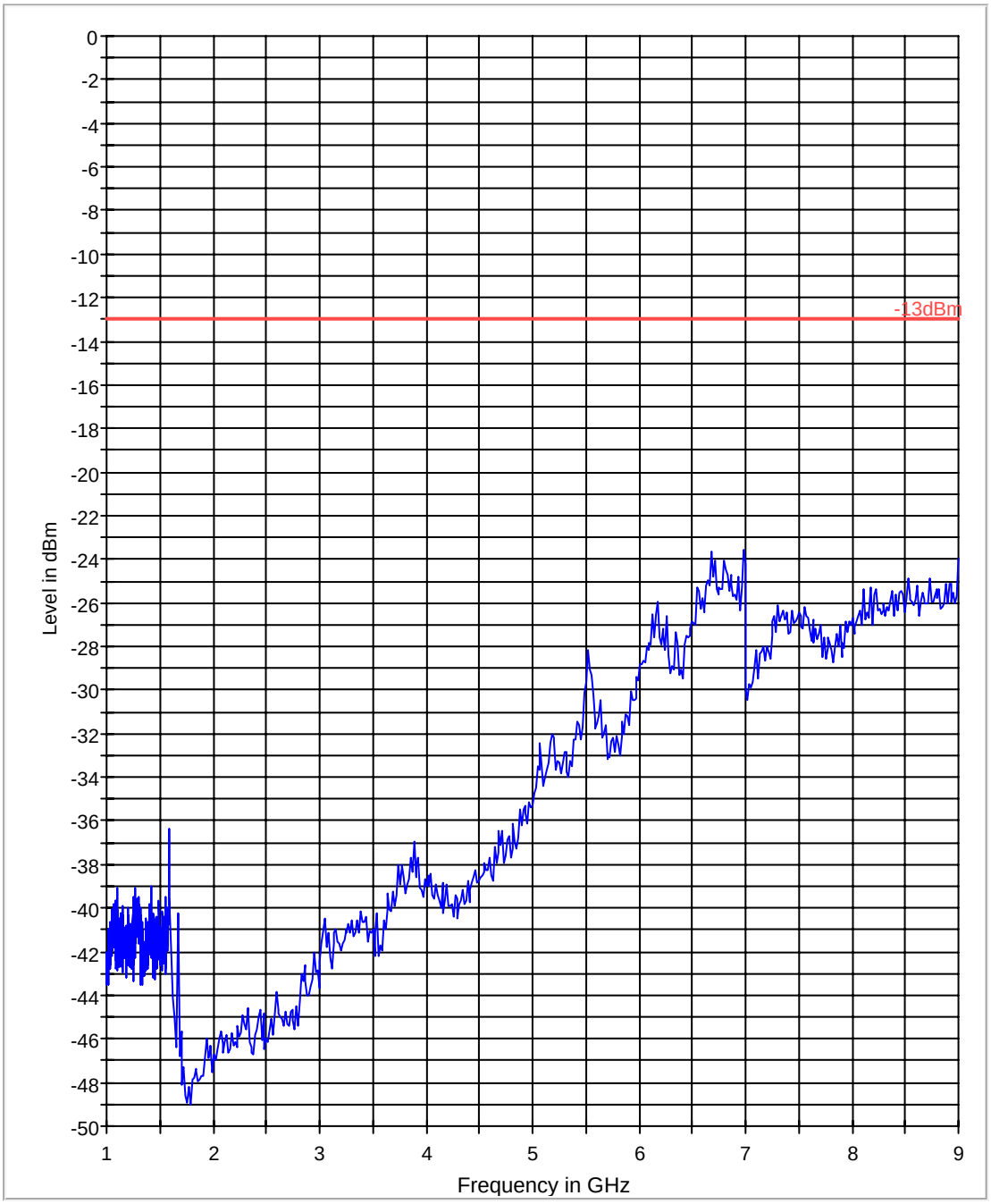


Radiated Spurious Emissions (GSM-850) Tx: Mid Channel
Test results 30M-1GHz
Note: Marker placed on transmit signal



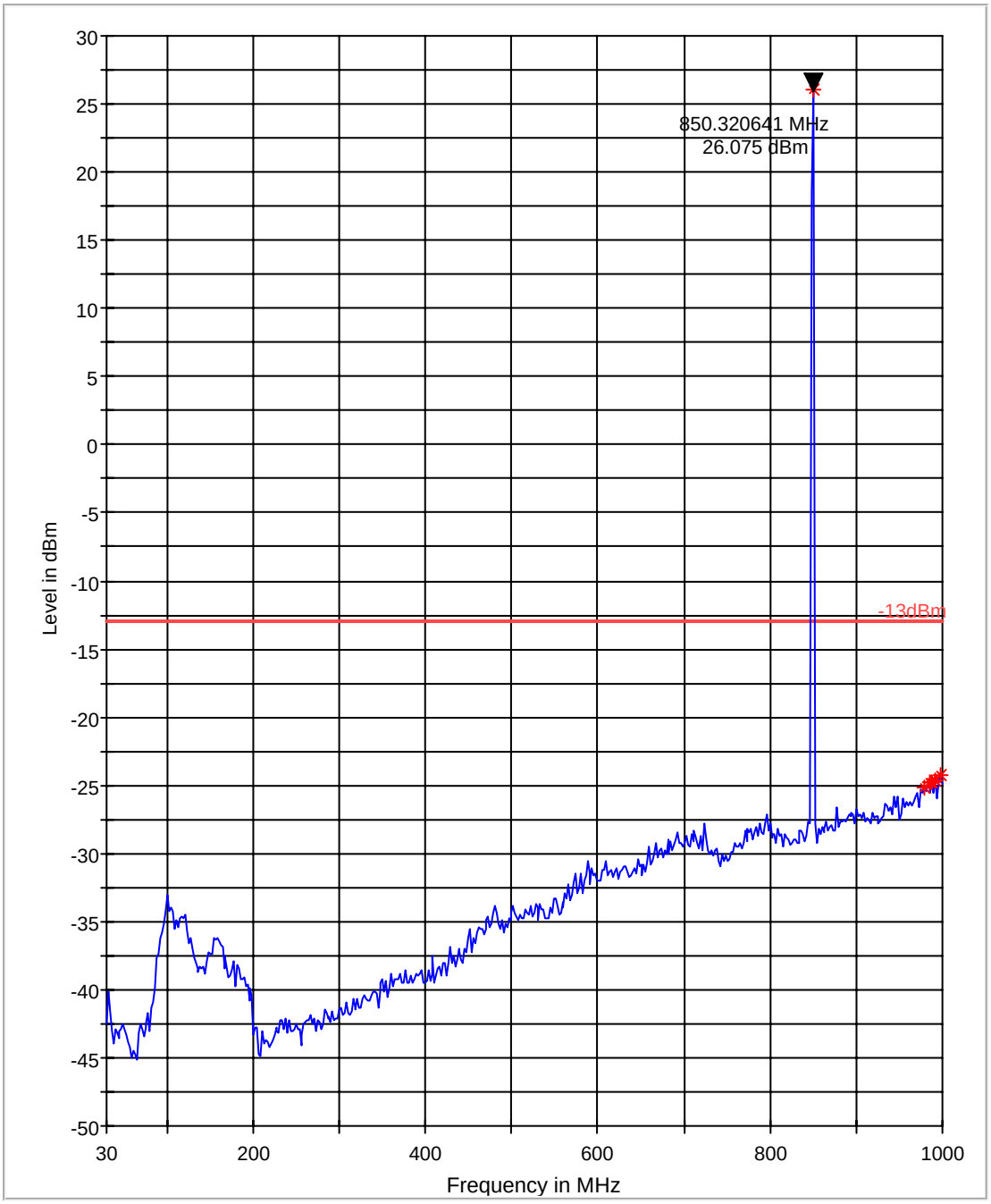
Test results 1GHz-9GHz

FCC 22 1-9GHz



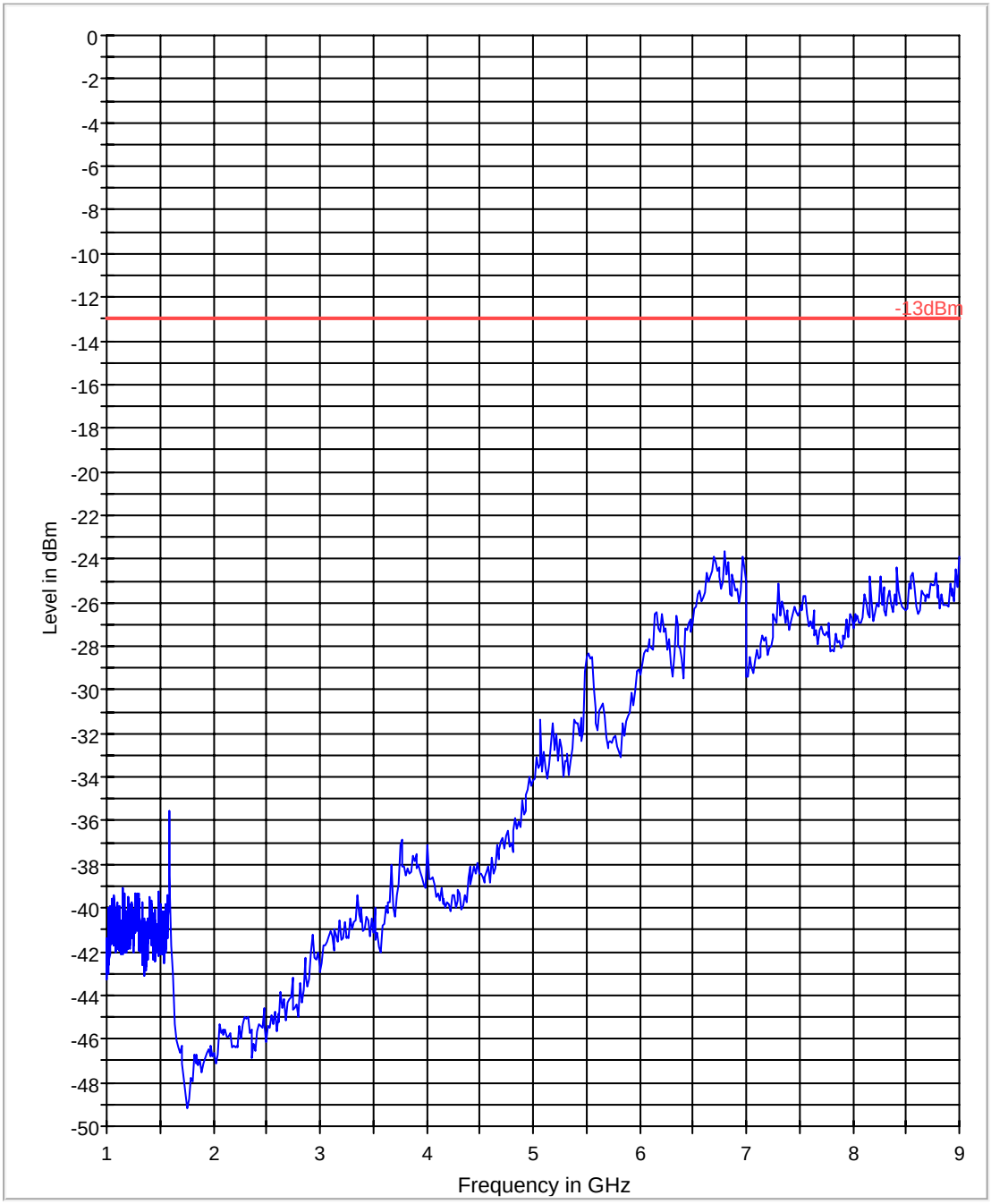
Radiated Spurious Emissions (GSM-850) Tx: High Channel
Test results 30M-1GHz
Note: Marker placed on transmit signal

FCC 22 30-1000MHz



Test results 1GHz-9GHz

FCC 22 1-9GHz

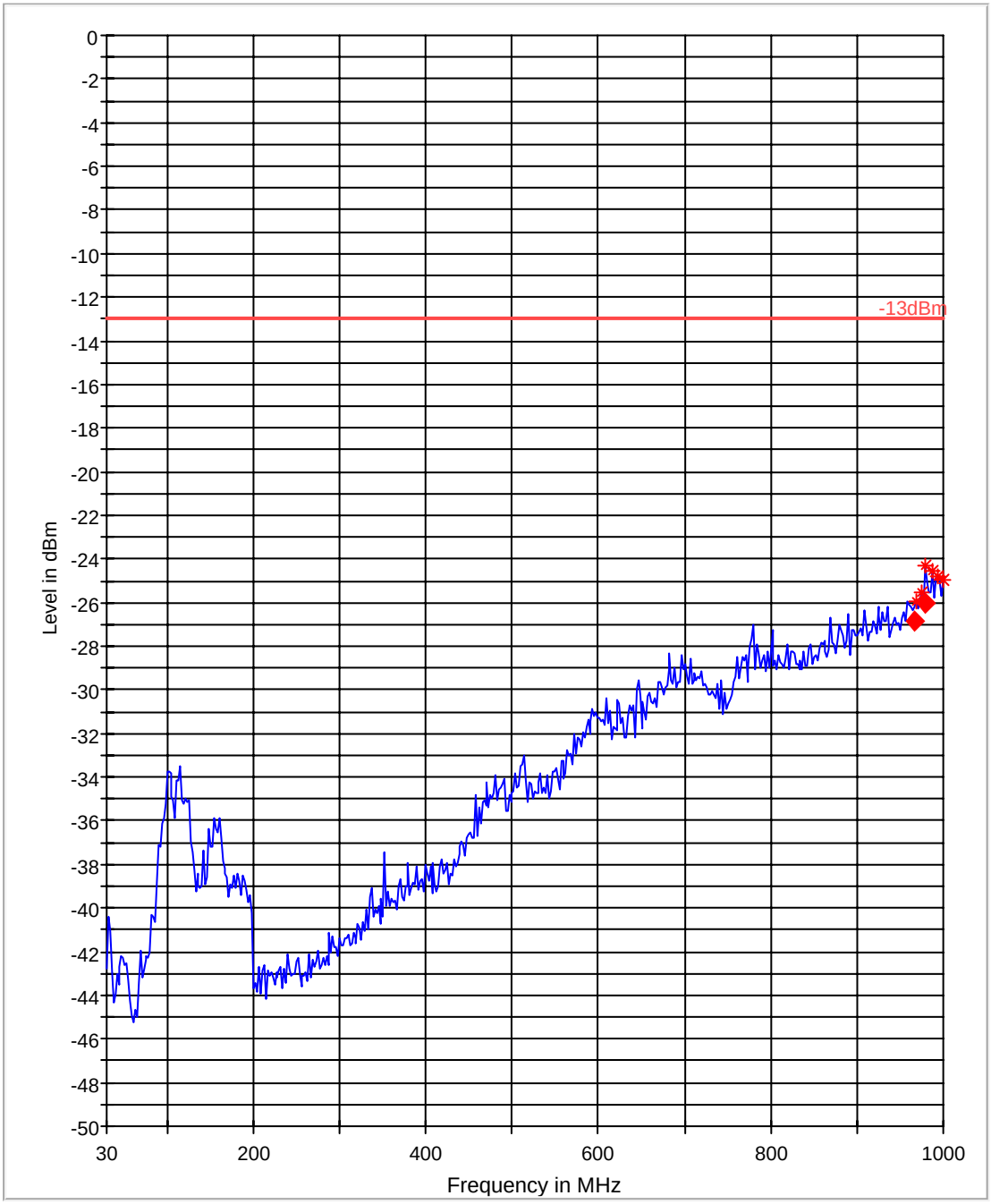


5.2.5.2 Test Results Transmitter Spurious Emission PCS-1900:

Harmonic	Tx ch-512 Freq.(MHz)	Level (dBm)	Tx ch-661 Freq. (MHz)	Level (dBm)	Tx ch-810 Freq. (MHz)	Level (dBm)
1	**1850.2**	-	**1880.0**	-	**1909.8**	-
2	**3700.4**	NF	**3760**	NF	**3819.6**	NF
3	**5550.6**	NF	**5640**	NF	**5729.4**	NF
4	**7400.8**	NF	**7520**	NF	**7639.2**	NF
5	**9251**	NF	**9400**	NF	**9549**	NF
6	**11101.2**	NF	**11280**	NF	**11458.8**	NF
7	**12951.4**	NF	**13160**	NF	**13368.6**	NF
8	**14801.6**	NF	**15040**	NF	**15278.4**	NF
9	**16651.8**	NF	**16920**	NF	**17188.2**	NF
10	**18502**	NF	**18800**	NF	**19098**	NF
NF = Noise Floor						

Radiated Spurious Emissions (GSM-1900) Tx: Low Channel
Test results 30M-1GHz

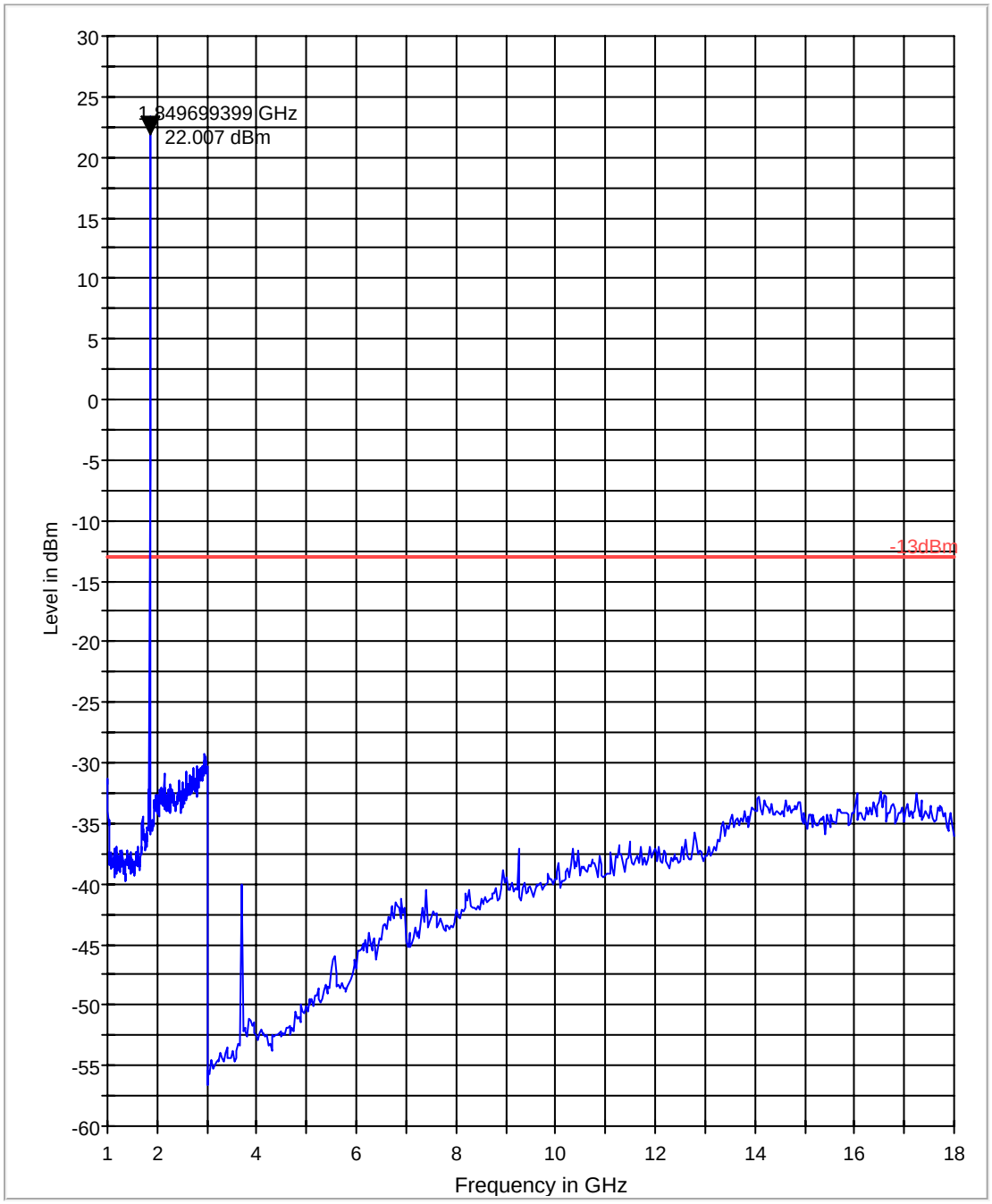
FCC 22 30-1000MHz



Test results 1GHz-18GHz

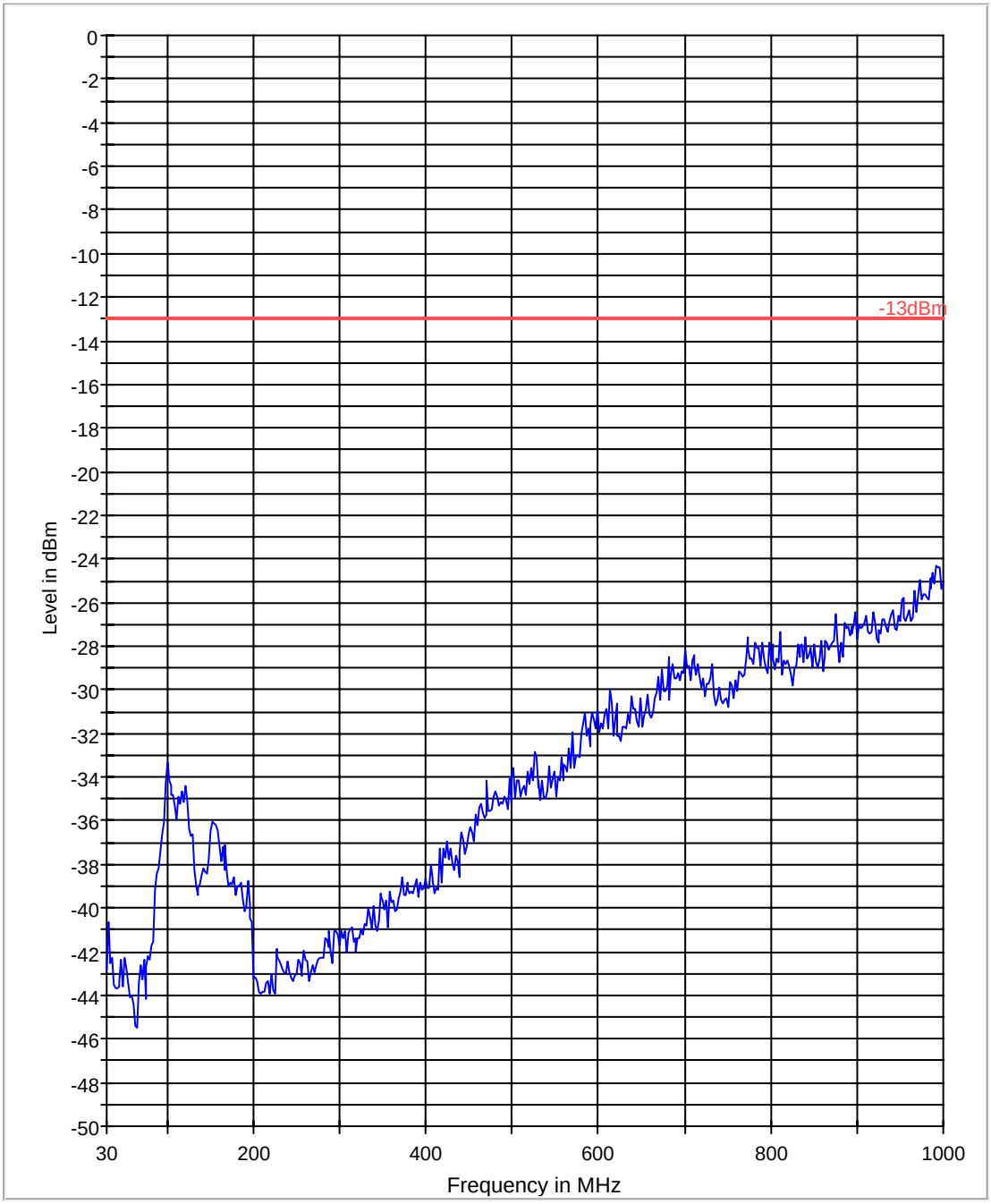
Note: Marker placed on transmit signal

FCC 24 1-18GHz



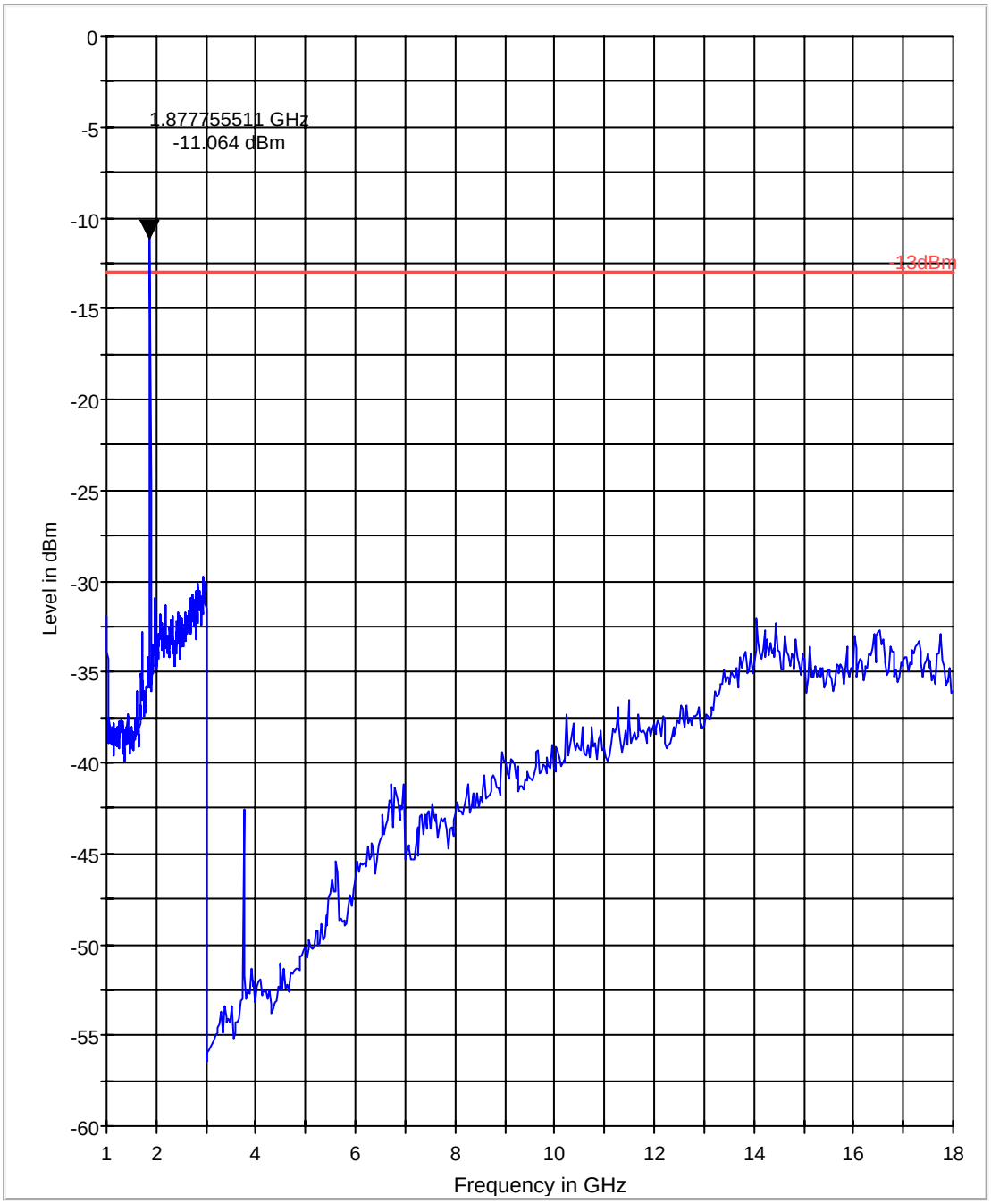
Radiated Spurious Emissions (GSM-1900) Tx: Mid Channel
Test results 30M-1GHz

FCC 22 30-1000MHz

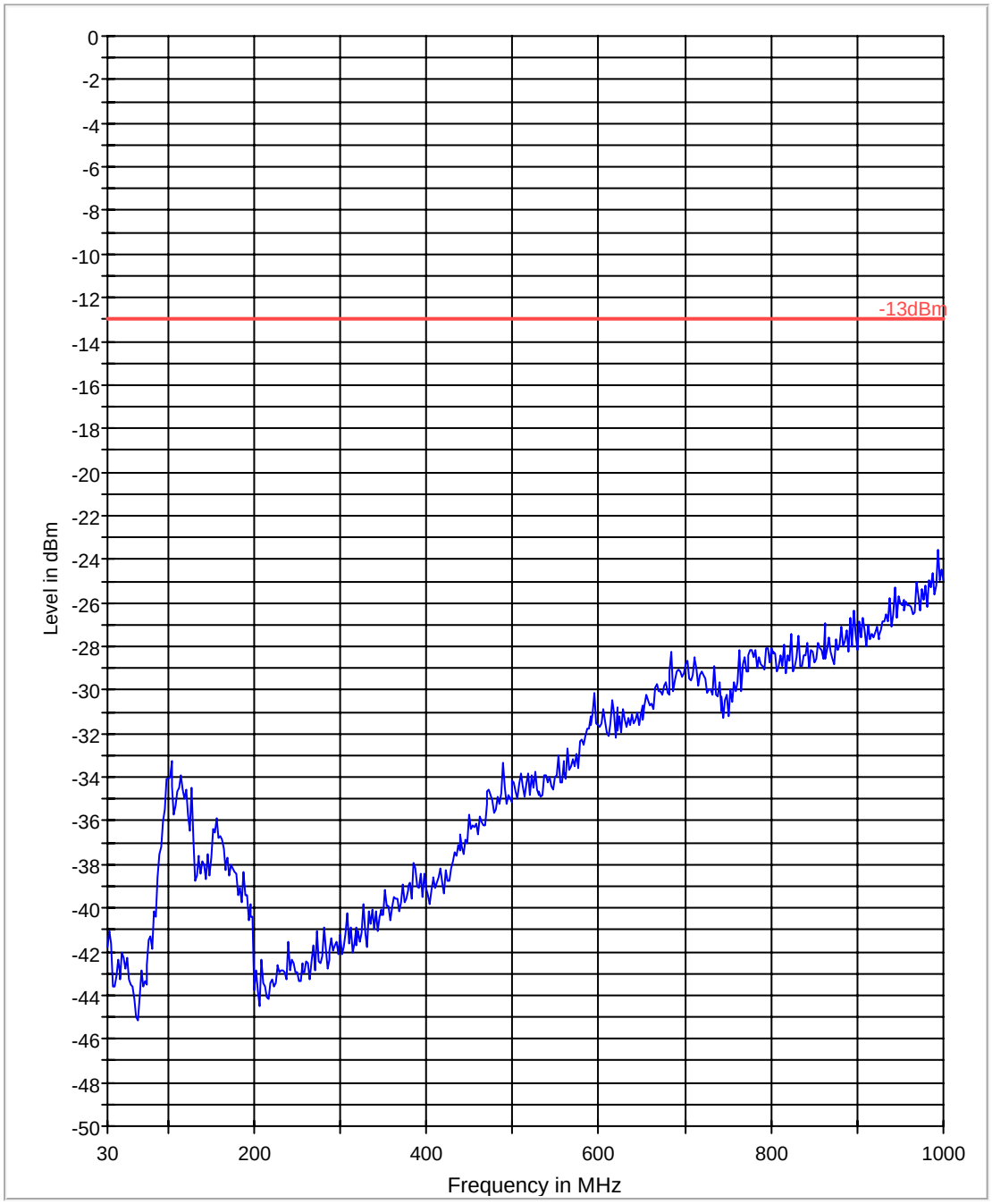


Test results 1GHz-18GHz
Note: Marker placed on transmit signal

FCC 24 1-18GHz

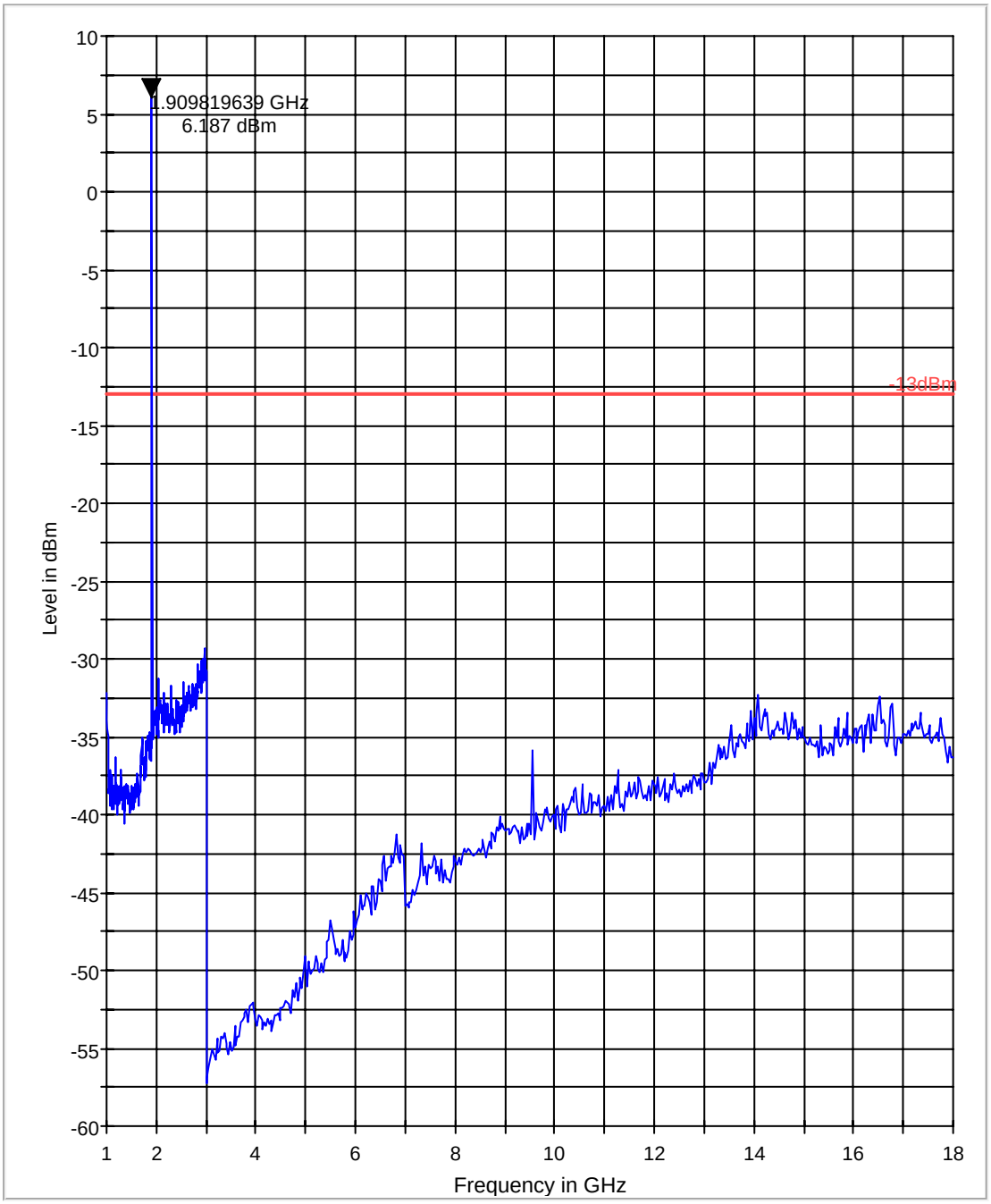


Radiated Spurious Emissions (GSM-1900) Tx: High Channel
Test results 30M-1GHz



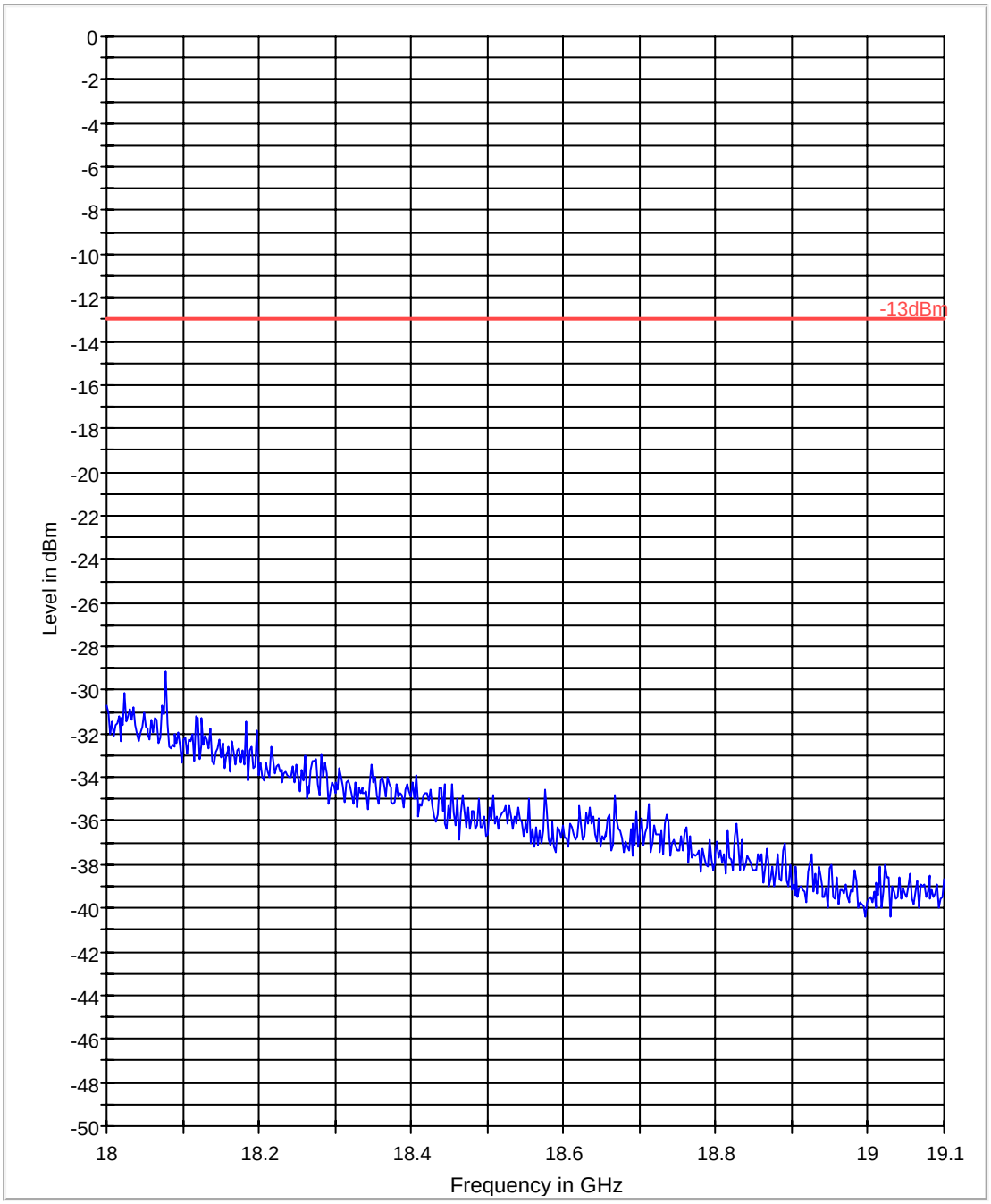
Test results 1GHz-18GHz
Note: Marker placed on transmit signal

FCC 24 1-18GHz



Test results 18GHz-19.1GHz
Note: Plot is worst case measurement result among low, mid and high channels

FCC 24 18-19.1GHz



5.3 Radiated out of band emissions results on EUT- Receive Mode:

5.3.1.1 References

FCC: CFR Part 15.109, 2.1053

5.3.1.2 §15.109 Radiated emission limits- Unintentional Radiators:

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission (MHz)	Field strength (µV/m)
30–88	100 (40dBµV/m)
88–216	150 (43.5 dBµV/m)
216–960	200 (46 dBµV/m)
Above 960	500 (54 dBµV/m)

(b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency of emission (MHz)	Field strength (µV/m)
30–88	90
88–216	150
216–960	210
Above 960	300

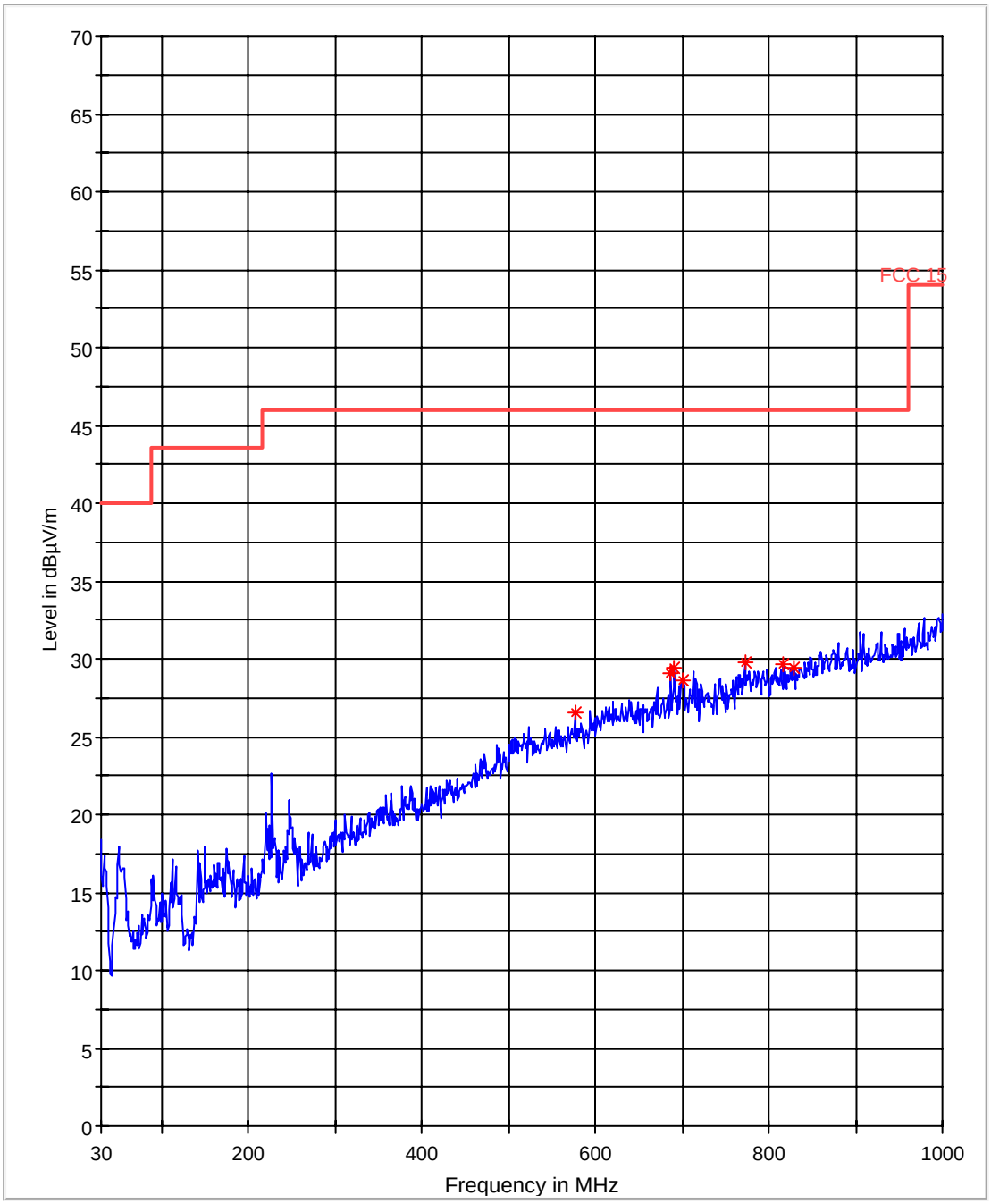
5.3.1.3 Results

No significant emissions measurable. Plots reported here represent the worse case emissions.

5.3.1.4 Test Results Receiver Spurious Emission

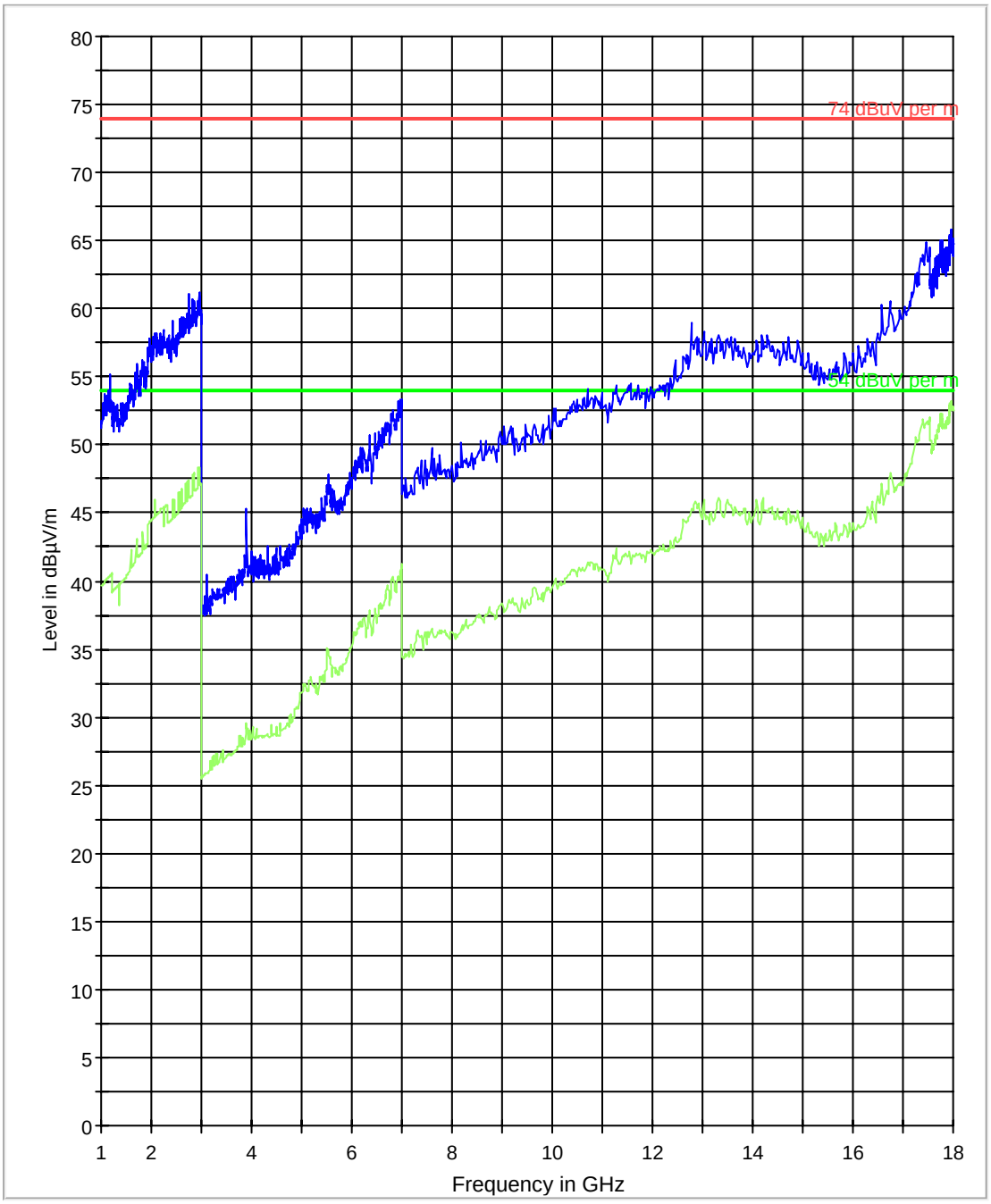
Receive Mode: 30MHz-1GHz

FCC 15 30-1000MHz



Receive Mode: 1GHz-18GHz

FCC 15 1-18GHz

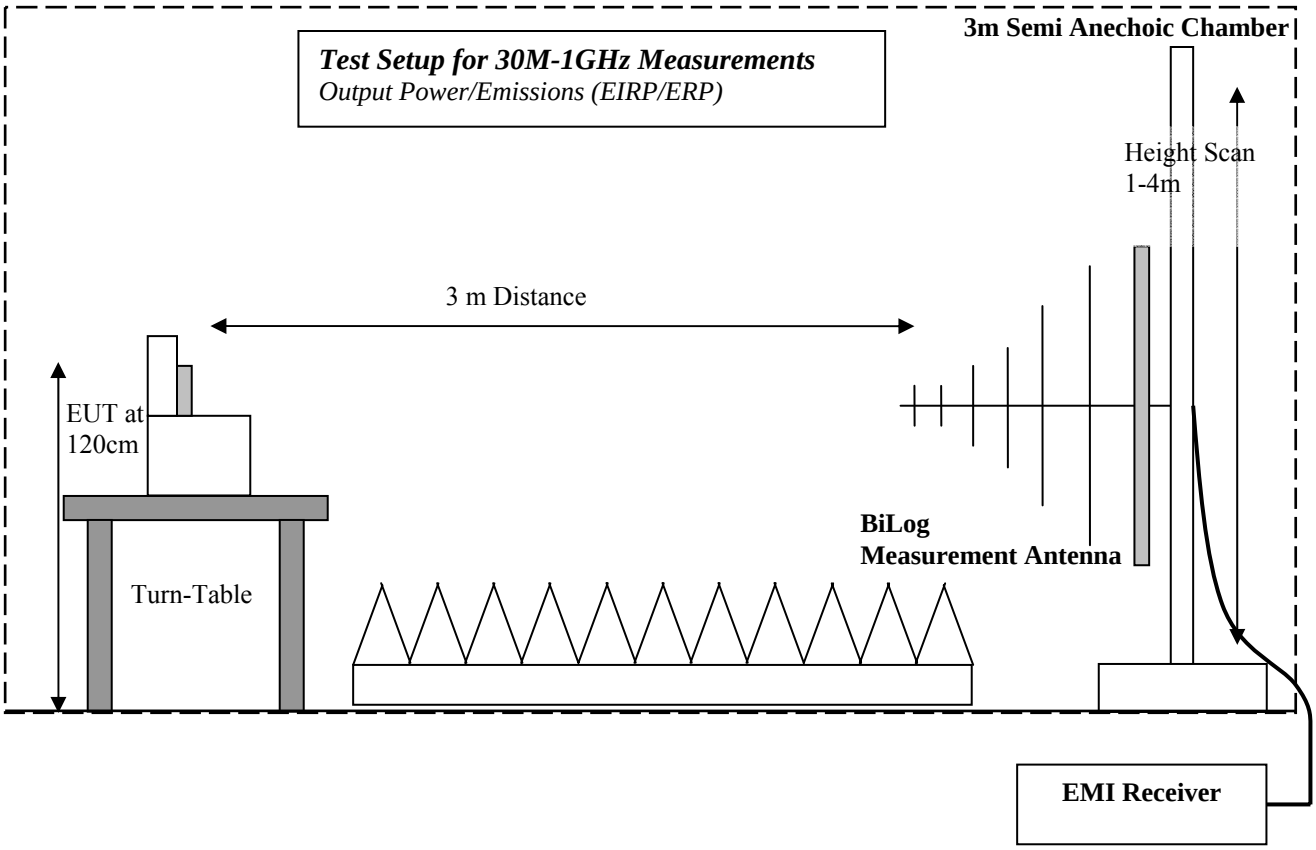


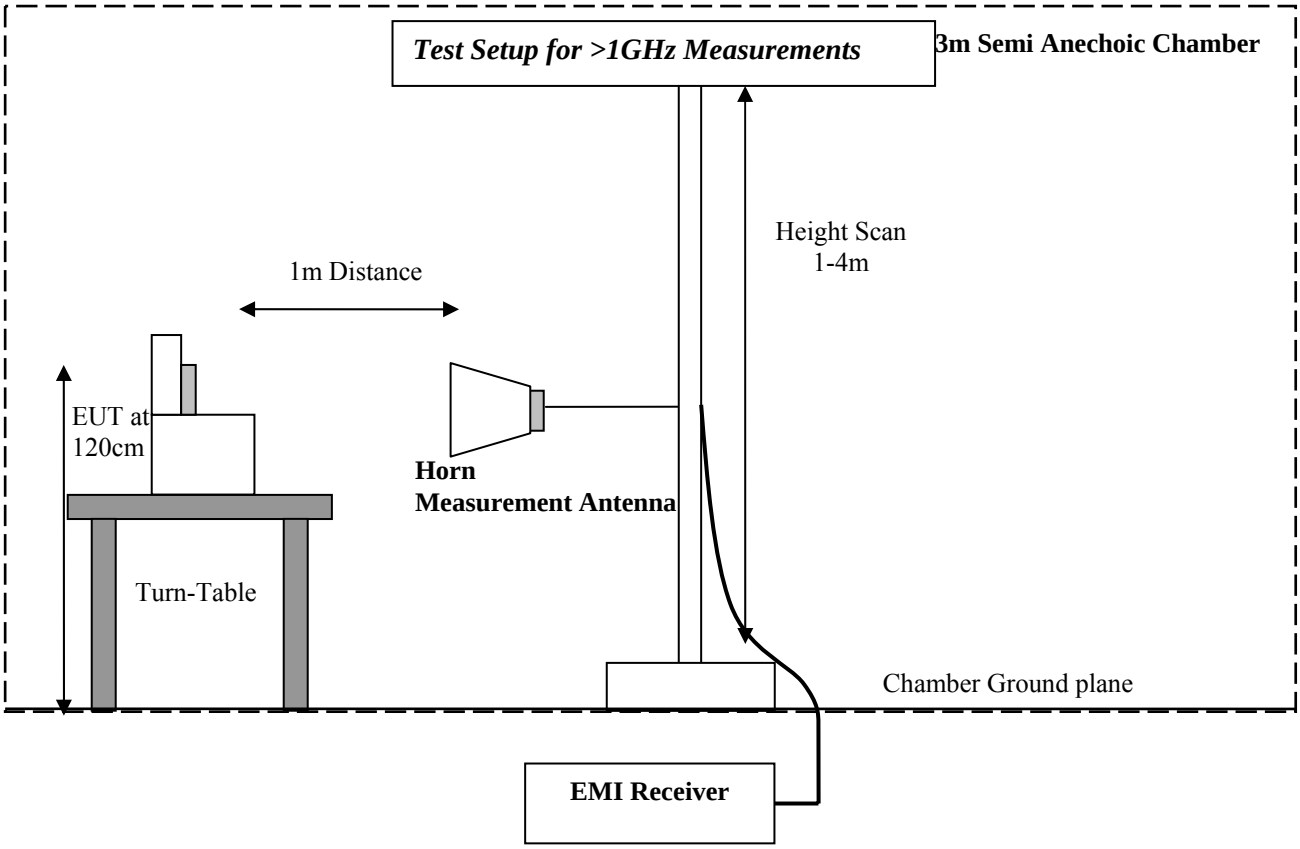
6 Test Equipment And Ancillaries Used For Tests

Instrument/Ancillary	Model	Manufacturer	Serial No.	Cal Date	Cal Interval
Radio Communication Tester	CMU 200	Rohde & Schwarz	101821	May 2009	1 year
Radio Communication Tester	CMU 200	Rohde & Schwarz	109879	May 2009	1 year
Radio Communication Tester	CMU 200	Rohde & Schwarz	110759	May 2009	1 year
Bluetooth Tester	CBT	Rohde & Schwarz	100212	May 2009	1 year
EMI Receiver/Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2009	1 year
Spectrum Analyzer	FSU	Rohde & Schwarz	200302	Dec 2009	1 year
Loop Antenna	6512	EMCO	00049838	July 2008	2 years
Biconilog Antenna	3141	EMCO	0005-1186	June 2009	2 years
Horn Antenna (1-18GHz)	3115	ETS	00035111	Jan 2009	3 years
Horn Antenna (18-40GHz)	3116	ETS	00070497	Jan 2009	3 years
Communication Antenna	IBP5-900/1940	Kathrein	n/a	n/a	n/a
High Pass Filter	5HC2700	Trilithic Inc.	9926013	n/a	n/a
High Pass Filter	4HC1600	Trilithic Inc.	9922307	n/a	n/a
6GHz High Pass Filter	HPM50106	Microtronics	001	n/a	n/a
Pre-Amplifier	JS4-00102600	Miteq	00616	May 2009	1 year
LISN	50-25-2-08	FCC	08014	Apr 2009	1 year
Power Smart Sensor	R&S	NRP-Z81	100161	May 2009	1 Year
Power Smart Sensor	R&S	NRP-Z22	100223	May 2009	1 Year
Upconverter	PXI-5610	NI	E93740	Aug 2008	2 years
Waveform Generator	PXI-5421	NI	E965F1	Aug 2008	2 years
10dB attenuator	ATT-0298-10	MidwestMicrowav	n/a	n/a	n/a
Power Splitter	11667B	Hewlett Packard	645348	n/a	n/a
DC Power Supply	E3610A	Hewlett Packard	KR83021224	n/a	n/a
DC Power Supply	E3610A	Hewlett Packard	KR83023316	n/a	n/a
DC Power Supply	6632A	Hewlett Packard	3524A-12822	n/a	n/a
DC Power Supply	6655A	Hewlett Packard	3403A-00487	n/a	n/a
Multimeter	179	Fluke	N/A	Feb 2010	1 Year
Temp Hum Logger	TM320	Dickson	03280063	Feb 2010	1 Year
Temp Hum Logger	TM325	Dickson	5285354	Feb 2010	1 Year
Climatic Chamber	VT4004	Votsch	G1115	May 2009	1 year

Note:
Equipment calibration is performed by an accredited calibration lab according to ISO 17025 requirements.
Calibration intervals are determined from manufacturer recommendation and/or lab discretion.
Cetecom Inc takes all measures to calibrate equipment before the due date; for instances when the equipment has to be used beyond the calibration due date, necessary steps are taken for calibration verification and documented until accredited calibration can be performed- to meet the Quality System requirements

7 Block Diagrams




Test Setup for >1GHz Measurements
3m Semi Anechoic Chamber
Height Scan
1-4m
1m Distance
EUT at
120cm
Horn
Measurement Antenna
Turn-Table
Chamber Ground plane
EMI Receiver

8 Revision History

Date	Report Name	Changes to report	Report prepared by
2010-05-12	EMC_BIOME_001_10001_FCC22_24	Original report	Satya Radhakrishna
2010-06-21	EMC_BIOME_001_10001_FCC22_24_rev1	Remeasured plots and values for GPRS 850 and EGPRS 850 included in the report. Removed references to WCDMA.	Josie Sabado