CTC Laboratories, Inc.

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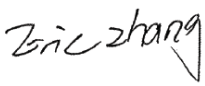
TEST REPORT

Report No. ·····:	**CTC20221207E07**
FCC ID·····:	**2AYD5-I22T01**
Applicant·····:	**Imin Technology Pte Ltd**
Address·····:	11 Bishan Street 21, #03-05 Bosch Building, Singapore 573943
Manufacturer·····:	Imin Technology Pte Ltd
Address·····:	11 Bishan Street 21, #03-05 Bosch Building, Singapore 573943
Product Name·····:	**POS Device**
Trade Mark·····:	/
Model/Type reference·····:	I22T01
Listed Model(s) ·····:	/
Standard·····:	**FCC CFR47 PART 22H, 24E, 27L**
Date of receipt of test sample.:	Jul. 06, 2022
Date of testing……..:	Jul. 07, 2022 ~ Jul. 29, 2022
Date of issue……....:	Jul. 30, 2022
Result……:	**PASS**

Compiled by: (Printed name+signature)	Terry Su	
Supervised by: (Printed name+signature)	Eric Zhang	
Approved by: (Printed name+signature)	Totti Zhao	

Testing Laboratory Name…:	**CTC Laboratories, Inc.**
Address……..:	1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

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1. SUMMARY

1.1. Test Standards

FCC Rules Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS
FCC Rules Part 22: PRIVATE LAND MOBILE RADIO SERVICES.
FCC Rules Part 24: PUBLIC MOBILE SERVICES
FCC Rules Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES
FCC Rules Part 90S: Regulations Governing Licensing and Use of Frequencies in the 806-824, 851-869, 896-901, and 935-940 MHz Bands
TIA/EIA 603 E March 2016: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
ANSI C63.26: 2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
KDB 971168 D01 Power Meas License Digital Systems v03: MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS
RSS-Gen Issue 5: General Requirements for Compliance of Radio Apparatus.
RSS-132 Issue 3: Cellular Telephone Systems Operating in the Bands 824-849MHz and 869-894MHz.
RSS-133 Issue 6: 2 GHz Personal Communications Services.
RSS-139 Issue 3: Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2180 MHz.

1.2. Report version

Revised No.	Date of issue	Description
01	Jul. 30, 2022	Original

1.3. Test Description

Test Item	Section in CFR 47	RSS Rule	Result	Test Engineer
Conducted Output Power	Part 2.1046 Part 22.913(a) Part 24.232(c) Part 27.50	RSS-132(5.4) RSS-133(6.4) RSS-139(6.5)	Pass	Alicia Liu
Peak-to-Average Ratio	Part 24.232 Part 27.50	RSS-132(5.4) RSS-133(6.4)	Pass	Alicia Liu
99% Occupied Bandwidth & 26 dB Bandwidth	Part 2.1049 Part 22.917(b) Part 24.238(b) Part 27.53	RSS-GEN(6.6) RSS-133(6.5)	Pass	Alicia Liu
Band Edge	Part 2.1051 Part 22.917 Part 24.238 Part 27.53	RSS-132(5.5) RSS-133(6.5)	Pass	Alicia Liu
Conducted Spurious Emissions	Part 2.1051 Part 22.917 Part 24.238 Part 27.53	RSS-132(5.5) RSS-133(6.5) RSS-139(6.6)	Pass	Alicia Liu
Frequency stability vs temperature	Part 2.1055(a)(1)(b) Part 22.355 Part 24.235 Part 27.54	RSS-GEN(6.11) RSS-132(5.3) RSS-139(6.4)	Pass	Alicia Liu
Frequency stability vs voltage	Part 2.1055(d)(1)(2) Part 22.355 Part 24.235 Part 27.54	RSS-GEN(6.11) RSS-132(5.3) RSS-139(6.4)	Pass	Alicia Liu
ERP and EIRP	Part 22.913(a) Part 24.232(b) Part 27.50	RSS-132(5.4) RSS-133(6.4) RSS-139(6.5)	Pass	Alicia Liu
Radiated Spurious Emissions	Part 2.1053 Part 22.917 Part 24.238 Part 27.53	RSS-132(5.5) RSS-133(6.5) RSS-139(6.6)	Pass	Alicia Liu
Receiver Spurious Emissions	/	RSS-GEN(7.1.3)	N/A	N/A

Note: The measurement uncertainty is not included in the test result.
The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, Part 22, Part 24, Part 27, and Part 90, FCC KDB 971168 D01 v03r01/ D02 v02r01, KDB 412172 D01 v01r01, ANSI C63.26:2015, IC RSS-132, RSS-133 and RSS-139.

1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in th e identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC)Federal Communications Commission. The acceptance letter from the FCC is maintained inour fi les. Registration 951311, Aug 26, 2017.

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTC Laboratories, Inc. is reported:

Test Items	Measurement Uncertainty	Notes
Frequency stability	25 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-12.75 GHz	1.60 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	---------	(1)
Emission Mask	---------	(1)
Modulation Characteristic	---------	(1)
Transmitter Frequency Behavior	---------	(1)

Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	20°C-25°C
Relative Humidity:	50 %-55 %
Air Pressure:	101kPa

2. GENERAL INFORMATION

2.1. Client Information

Applicant:	Imin Technology Pte Ltd
Address:	11 Bishan Street 21, #03-05 Bosch Building, Singapore 573943
Manufacturer:	Imin Technology Pte Ltd
Address:	11 Bishan Street 21, #03-05 Bosch Building, Singapore 573943

2.2. General Description of EUT

Product Name:	POS Device
Trade Mark:	/
Model/Type reference:	I22T01
Listed Model(s):	/
Power supply:	24Vdc/2.5A from AC/DC Adapter
Adapter Model:	AD65CM240250A Input: 100-240V~ 50/60Hz 1.5A Max Output: 24Vdc/2.5A
Hardware version:	/
Software version:	/
GSM	
Operation Band:	GSM 850: UL: 824MHz~849MHz, DL: 869MHz~894MHz PCS 1900: UL: 1850MHz~1910, DL: 1930MHz~1990MHz
Supported Type:	GPRS/EGPRS
Modulation Type:	GMSK for GPRS, 8PSK for EGPRS
Antenna Type:	FPC Antenna
Antenna Gain:	Main Antenna: GSM 850: -0.4dBi PCS 1900: 1.2dBi
WCDMA	
Operation Band:	Band II: UL: 1852.4MHz~1907.6MHz, DL: 1932.6MHz~1987.4MHz Band V: UL: 826.4MHz~846.6MHz, DL: 871.6MHz~1891.4MHz
Modulation Type:	QPSK for WCDMA/HSUPA/HSDPA
Antenna Type:	FPC Antenna
Antenna Gain:	Main Antenna: WCDMA II: 1.1dBi WCDMA V: 0.4dBi

2.3. Description of Test Modes and Test Frequency

The EUT has been tested under typical operating condition. The CMW500 used to control the EUT staying in continuous transmitting and receiving mode for testing.

Test Frequency:

GSM 850		PCS 1900	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.20	512	1850.20
190	836.60	661	1880.00
251	848.80	810	1909.80

WCDMA Band II		WCDMA Band V	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
9262	1852.40	4132	826.40
9400	1880.00	4183	836.60
9538	1907.60	4233	846.60

2.4. Measurement Instruments List

Tonscend JS0806-2 Test system					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Spectrum Analyzer	KEYSIGHT	N9020A	100231	Dec. 23, 2022
2	Spectrum Analyzer	Rohde & Schwarz	FUV40-N	101331	Mar. 15, 2023
3	Spectrum Analyzer	Rohde & Schwarz	FSU26	100105	Dec. 23, 2022
4	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 23, 2022
5	Signal Generator	Agilent	E8257D	MY46521908	Dec. 23, 2022
6	Power Sensor	Agilent	U2021XA	MY5365004	Mar. 15, 2023
7	Power Sensor	Agilent	U2021XA	MY5365006	Mar. 15, 2023
8	Simultaneous Sampling DAQ	Agilent	U2531A	TW54493510	Mar. 15, 2023
9	Climate Chamber	TABAI	PR-4G	A8708055	Dec. 23, 2022
10	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	116410	Dec. 23, 2022
11	Climate Chamber	ESPEC	MT3065	/	Dec. 23, 2022
12	300328 v2.2.2 test system	TONSCEND	v2.6	/	/

Radiated emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-759	Nov. 09, 2022
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 23, 2022
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 23, 2022
4	Broadband Premplifier	SCHWARZBECK	BBV9743B	259	Dec. 23, 2022
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 23, 2022
6	Loop Antenna	LAPLAC	RF300	9138	Dec. 23, 2022
7	Ultra-Broadband Antenna	Schwarzbeck	BBHA9170	25841	Dec. 23, 2022
8	Mirowave Broadband Amplifier	Schwarzbeck	BBV 9717	154	Dec. 23, 2022
9	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	116410	Dec. 23, 2022

Note: 1. The Cal. Interval was one year.
2. The cable loss has calculated in test result which connection between each test instruments.

3. TEST ITEM AND RESULTS

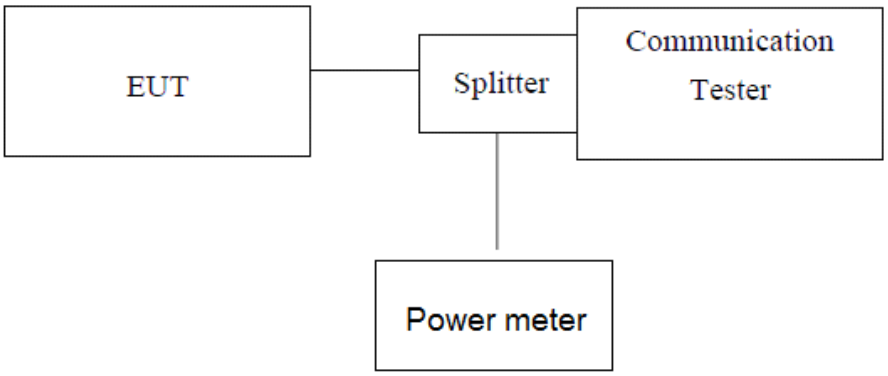
3.1. Conducted Output Power

LIMIT

FCC: §2.1046, §22.913, §24.232, §27.50 and §90.635

IC: RSS132§5.4; RSS133§6.4 and RSS139§6.5.

TEST CONFIGURATION



Note: Measurement setup for testing on Antenna connector

TEST PROCEDURE

1. The transmitter output port was connected to base station.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
3. Set EUT at maximum power through base station.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure the maximum PK burst power and maximum Avg. burst power.

TEST RESULTS

GSM850		Conducted Power (dBm)		
		CH128	CH190	CH251
		824.20MHz	836.60MHz	848.80MHz
GPRS (GMSK)	1TXslot	33.19	33.21	33.25
	2TXslots	31.16	31.13	31.12
	3TXslots	29.11	29.07	29.06
	4TXslots	26.97	26.92	26.93
EGPRS (8PSK)	1TXslot	27.77	27.59	27.71
	2TXslots	27.54	27.46	27.61
	3TXslots	25.75	25.72	25.85
	4TXslots	23.70	23.67	23.78

GSM1900		Conducted Power (dBm)		
		CH512	CH661	CH810
		1850.2MHz	1880.0MHz	1909.8MHz
GPRS (GMSK)	1TXslot	29.19	29.43	29.75
	2TXslots	27.10	27.24	27.38
	3TXslots	25.65	25.80	25.94
	4TXslots	23.59	23.74	23.87
EGPRS (8PSK)	1TXslot	26.63	26.81	26.77
	2TXslots	24.67	24.98	24.92
	3TXslots	22.53	22.83	22.83
	4TXslots	20.29	20.63	20.65

WCDMA Band II		Conducted Power (dBm)		
		CH9262	CH9400	CH9538
		1852.40	1880.00	1907.60
RMC 12.2K		21.56	21.67	21.90
HSDPA	Subtest-1	21.61	21.67	21.88
	Subtest-2	21.58	21.68	21.89
	Subtest-3	21.61	21.68	21.88
	Subtest-4	21.60	21.67	21.90
HSUPA	Subtest-1	17.25	18.22	18.86
	Subtest-2	18.16	18.63	18.95
	Subtest-3	19.50	19.83	20.25
	Subtest-4	18.52	18.99	19.53
	Subtest-5	20.50	20.81	21.39

WCDMA Band V		Conducted Power (dBm)		
		CH4132	CH4182	CH4233
		826.40	836.40	846.60
RMC 12.2K		23.25	23.22	23.24
HSDPA	Subtest-1	23.27	23.23	23.19
	Subtest-2	23.26	23.24	23.26
	Subtest-3	23.20	23.19	23.20
	Subtest-4	23.25	23.16	23.19
HSUPA	Subtest-1	20.61	21.25	20.71
	Subtest-2	20.64	21.35	20.79
	Subtest-3	20.66	21.30	20.81
	Subtest-4	20.10	20.73	20.16
	Subtest-5	22.32	22.81	22.25

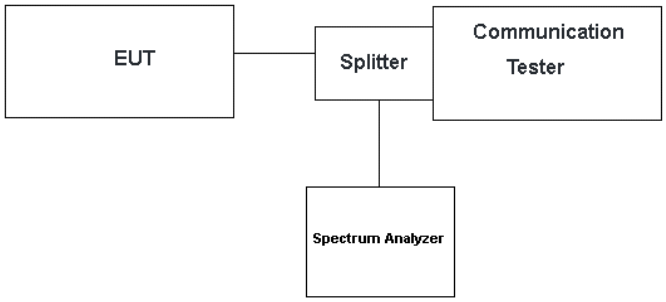
3.2. Peak-to-Average Ratio

LIMIT

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

TEST CONFIGURATION

- For Peak-to-Average Ratio



TEST PROCEDURE

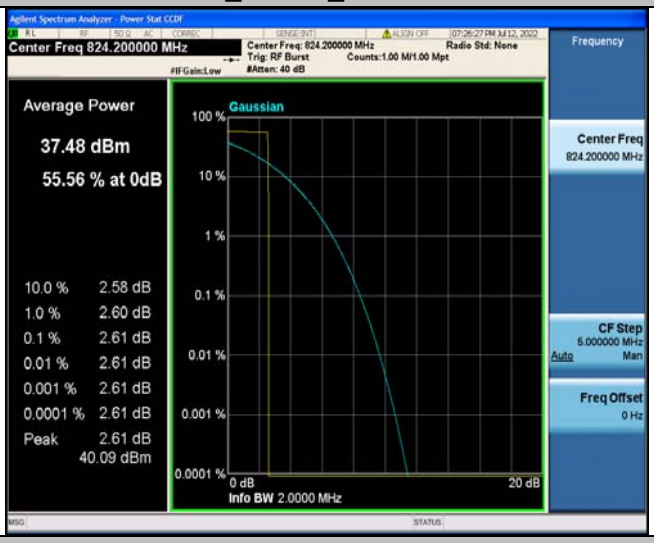
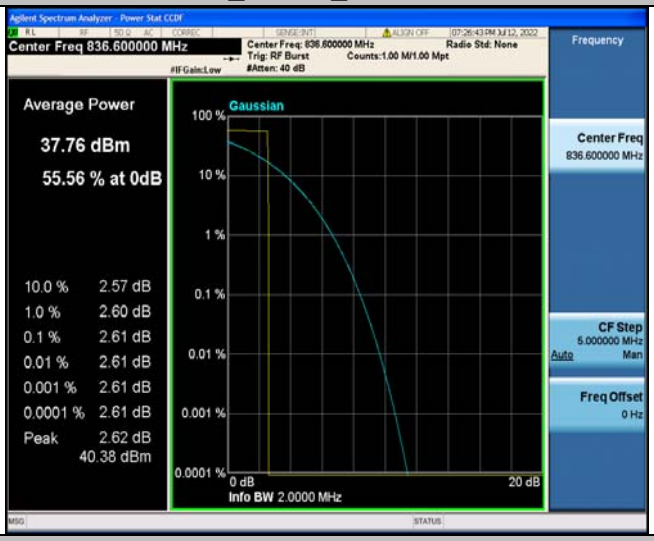
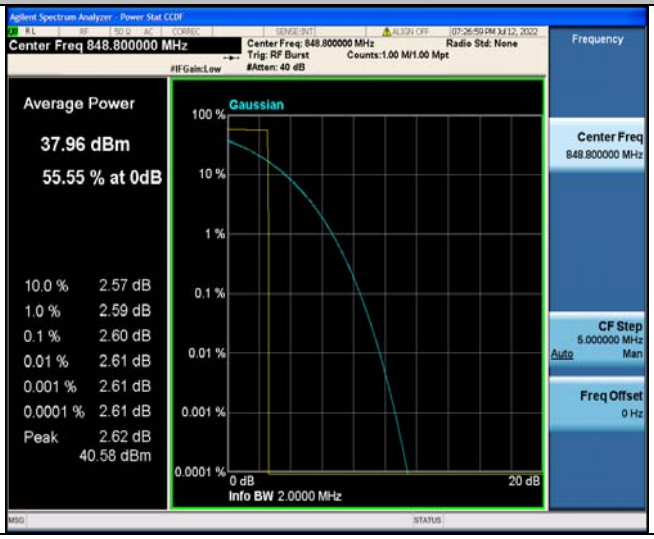
- For Peak-to-Average Ratio

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum and communication tester via a splitter
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyser.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
6. Record the deviation as Peak to Average Ratio.

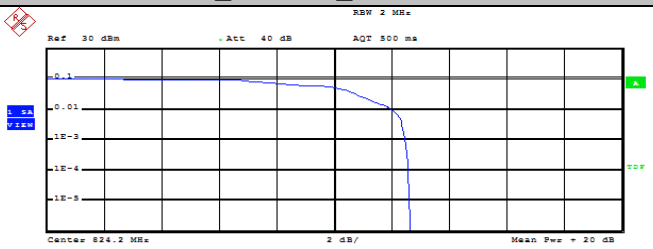
TEST RESULTS

EUT Mode	Channel	Frequency (MHz)	Peak-to-Average Ratio(dB)	Limit (dB)	Result
GSM 850 GPRS	128	824.20	2.61	13	PASS
	190	836.60	2.61	13	
	251	848.80	2.60	13	
GSM 850 EGPRS	128	824.20	12.47	13	
	190	836.60	12.21	13	
	251	848.80	8.49	13	
PCS 1900 GPRS	512	1850.20	2.61	13	
	661	1880.00	2.60	13	
	810	1909.80	2.60	13	
PCS 1900 EGPRS	512	1850.20	12.50	13	
	661	1880.00	12.21	13	
	810	1909.80	8.43	13	

EUT Mode	Channel	Frequency (MHz)	Peak-to-Average Ratio(dB)	Limit (dB)	Result
WCDMA Band II WCDMA	9262	1852.40	2.92	13	PASS
	9400	1880.00	2.70	13	
	9538	1907.60	2.85	13	
WCDMA Band II HSDPA	9262	1852.40	2.92	13	
	9400	1880.00	2.69	13	
	9538	1907.60	2.85	13	
WCDMA Band II HSUPA	9262	1852.40	2.92	13	
	9400	1880.00	4.26	13	
	9538	1907.60	4.24	13	
WCDMA Band V WCDMA	4132	826.40	3.33	13	
	4183	836.60	3.40	13	
	4233	846.60	3.56	13	
WCDMA Band V HSDPA	4132	826.40	3.33	13	
	4183	836.60	3.39	13	
	4233	846.60	3.59	13	
WCDMA Band V HSUPA	4132	826.40	3.32	13	
	4183	836.60	3.40	13	
	4233	846.60	3.56	13	

GSM 850_ GPRS_ Lowest channel

GSM 850_ GPRS_ Middle channel

GSM 850_ GPRS_ Highest channel


GSM 850_ EGPRS_ Lowest channel



Complementary Cumulative Distribution Function (1000000 samples)

	Trace 1
Mean	20.25 dBm
Peak	32.88 dBm
Crest	12.64 dB
10% @	4.17 dB
1% @	11.99 dB
.1% @	12.47 dB

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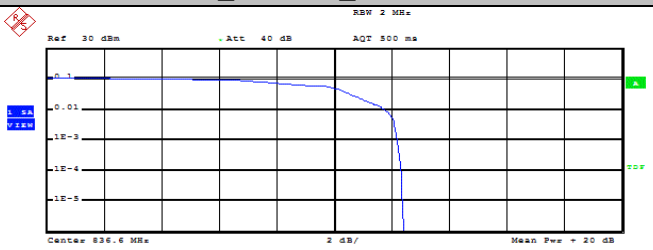
GSM 850_ EGPRS_ Middle channel



Complementary Cumulative Distribution Function (1000000 samples)

	Trace 1
Mean	20.48 dBm
Peak	32.88 dBm
Crest	12.40 dB
10% @	6.12 dB
1% @	11.76 dB
.1% @	12.21 dB

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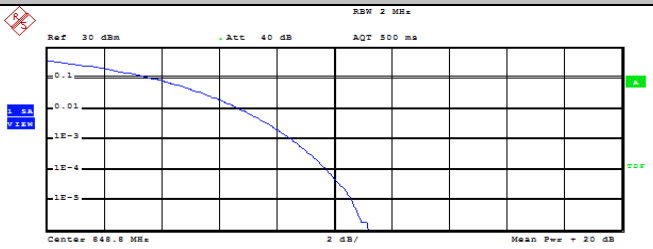
GSM 850_ EGPRS_ Highest channel

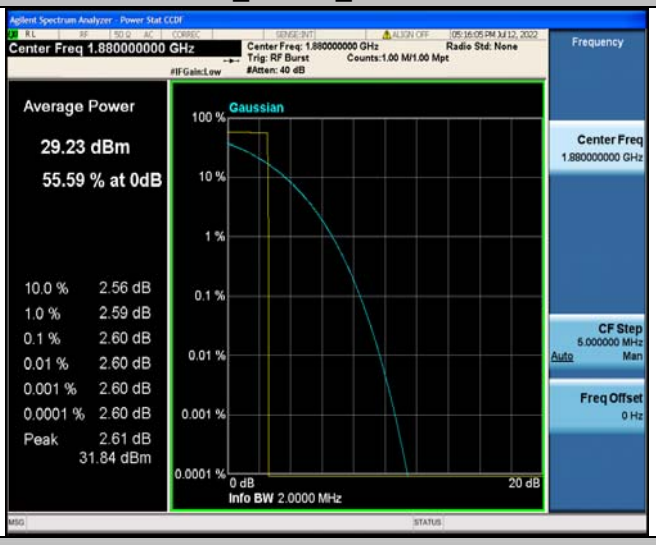
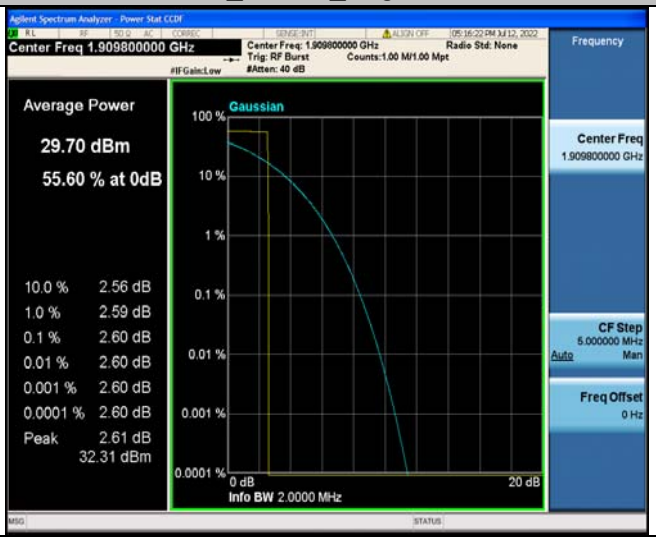


Complementary Cumulative Distribution Function (1000000 samples)

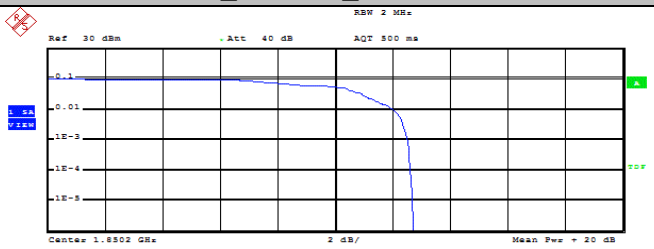
	Trace 1
Mean	-32.06 dBm
Peak	-20.52 dBm
Crest	11.54 dB
10% @	3.65 dB
1% @	6.70 dB
.1% @	8.49 dB

Date: 14.JUL.2022 16:48:34

PCS 1900_ GPRS_ Lowest channel

PCS 1900_ GPRS_ Middle channel

PCS 1900_ GPRS_ Highest channel


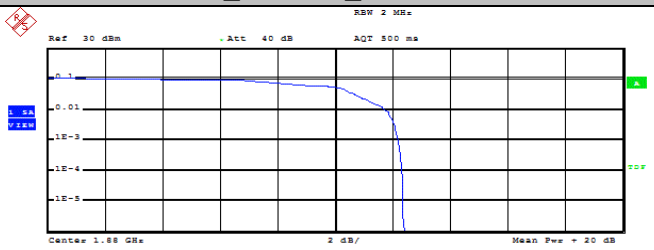
PCS 1900_ EGPRS_ Lowest channel



	Trace 1
Mean	20.11 dBm
Peak	32.81 dBm
Crest	12.71 dB
10% @	2.69 dB
1% @	11.99 dB
.1% @	12.50 dB

Date: 14.JUL.2022 17:15:56

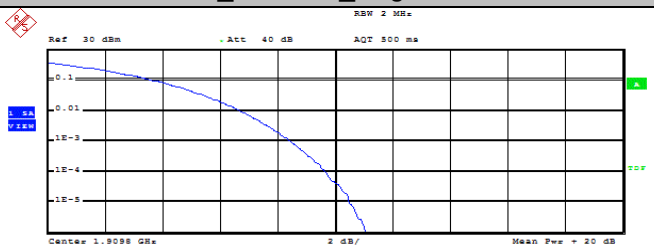
PCS 1900_ EGPRS_ Middle channel



	Trace 1
Mean	20.69 dBm
Peak	33.10 dBm
Crest	12.41 dB
10% @	5.38 dB
1% @	11.73 dB
.1% @	12.21 dB

Date: 14.JUL.2022 17:16:07

PCS 1900_ EGPRS_ Highest channel



	Trace 1
Mean	-30.31 dBm
Peak	-19.25 dBm
Crest	11.06 dB
10% @	3.65 dB
1% @	6.70 dB
.1% @	8.43 dB

Date: 14.JUL.2022 17:16:17

WCDMA Band II_ WCDMA_ Lowest channel

WCDMA Band II_ WCDMA_ Middle channel

WCDMA Band II_ WCDMA_ Highest channel


WCDMA Band II_ HSDPA _ Lowest channel

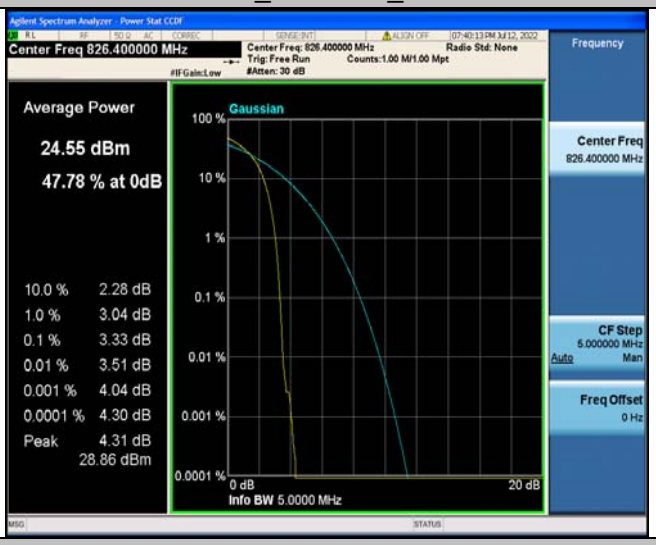
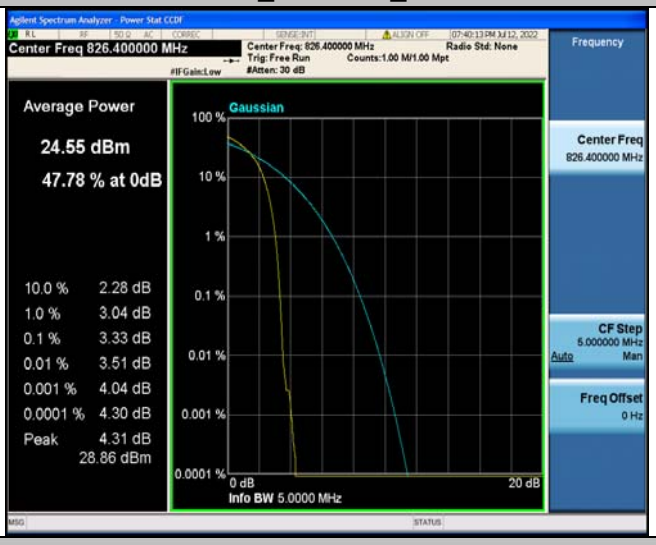
WCDMA Band II_ HSDPA _ Middle channel

WCDMA Band II_ HSDPA _ Highest channel


WCDMA Band II_ HSUPA _ Lowest channel

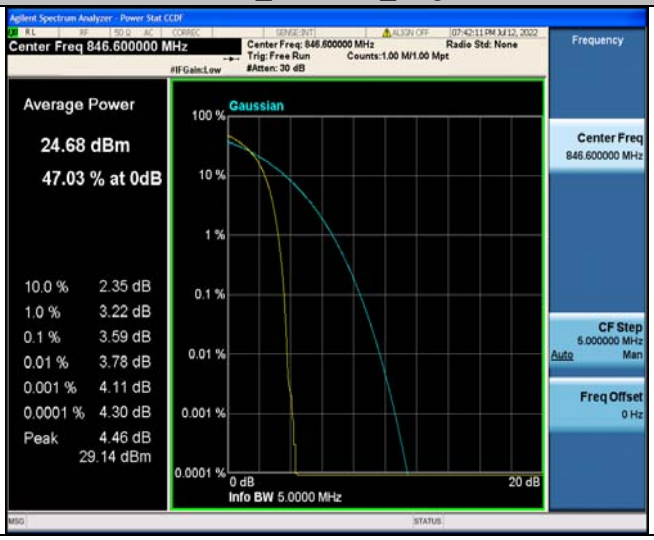
WCDMA Band II_ HSUPA _ Middle channel

WCDMA Band II_ HSUPA _ Highest channel

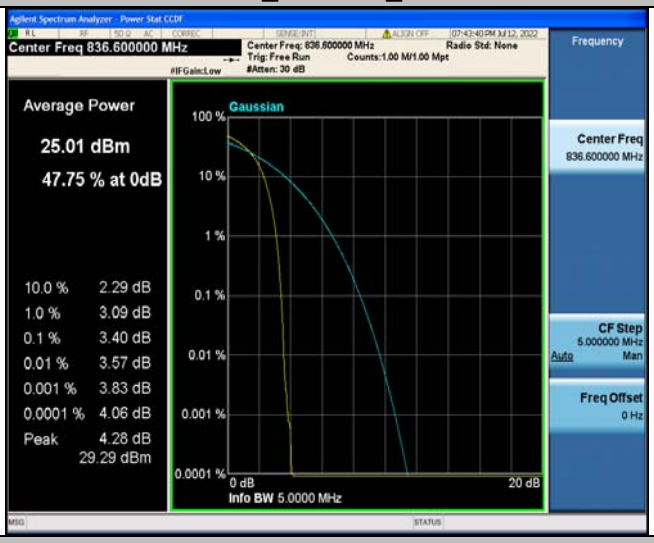
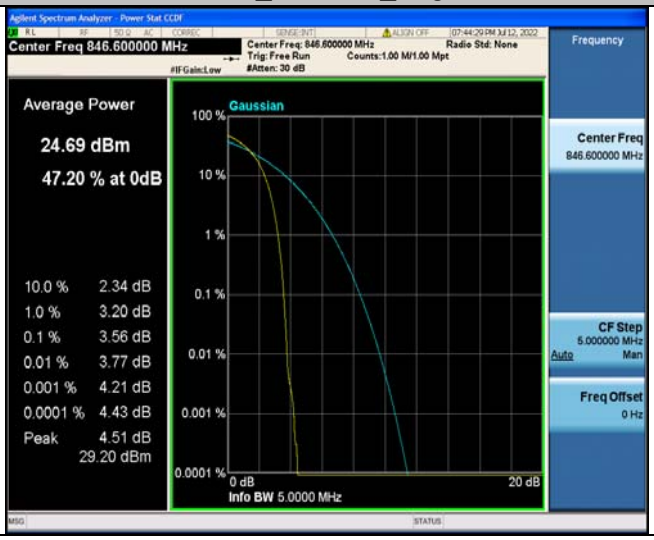

WCDMA Band V_ WCDMA_ Lowest channel

WCDMA Band V_ WCDMA_ Middle channel

WCDMA Band V_ WCDMA_ Highest channel


WCDMA Band V_ HSDPA _ Lowest channel

WCDMA Band V_ HSDPA _ Middle channel

WCDMA Band V_ HSDPA _ Highest channel


WCDMA Band V_ HSUPA _ Lowest channel

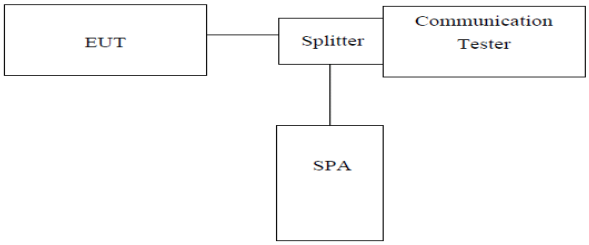
WCDMA Band V_ HSUPA _ Middle channel

WCDMA Band V_ HSUPA _ Highest channel


3.3. Occupy Bandwidth

LIMIT

For reporting purposes only.

TEST CONFIGURATION



Note: Measurement setup for testing on Antenna connector

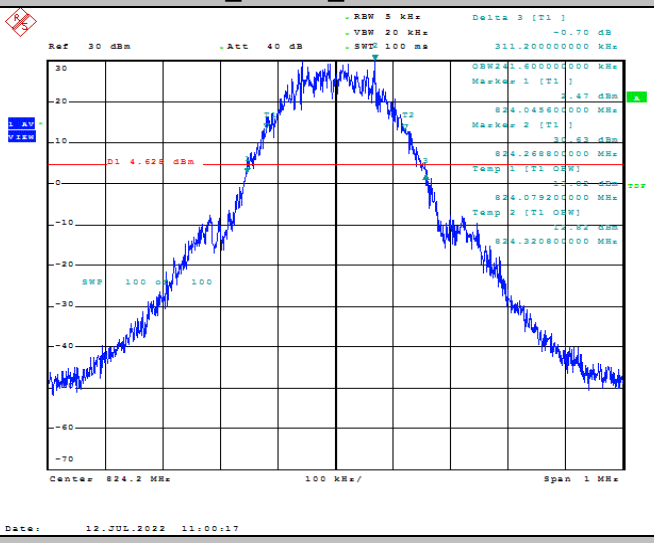
TEST PROCEDURE

1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer
2. RBW was set to about 1% of emission BW, VBW≥3 times RBW.
3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

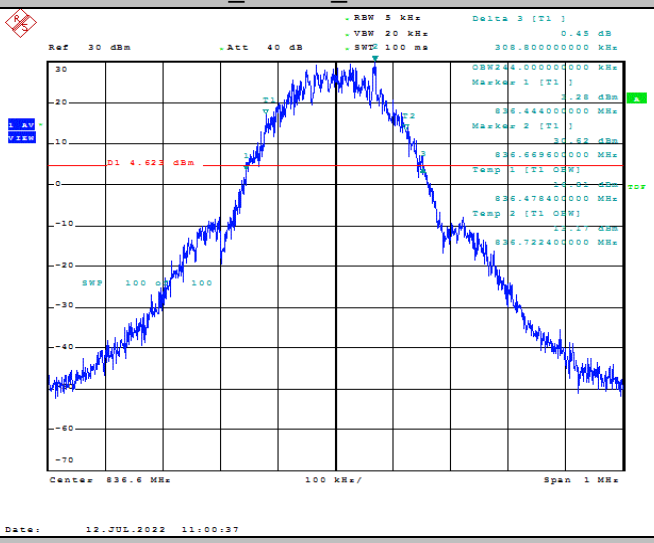
TEST RESULTS

EUT Mode	Channel	Frequency (MHz)	99% Occupy bandwidth (MHz)	-26dB bandwidth (MHz)
GSM 850 (GPRS)	128	824.20	0.242	0.311
	190	836.60	0.244	0.309
	251	848.80	0.244	0.307
EGPRS 850 (8PSK,1Slot)	128	824.20	0.250	0.303
	190	836.60	0.248	0.307
	251	848.80	0.250	0.307
PCS1900 (GPRS)	512	1850.20	0.242	0.310
	661	1880.00	0.240	0.308
	810	1909.80	0.242	0.313
EGPRS 1900 (8PSK,1Slot)	512	1850.20	0.252	0.317
	661	1880.00	0.250	0.322
	810	1909.80	0.251	0.323
WCDMA Band II (QPSK)	9262	1852.40	4.168	4.704
	9400	1880.00	4.168	4.696
	9538	1907.60	4.168	4.696
WCDMA Band V (QPSK)	4132	826.40	4.168	4.680
	4183	836.60	4.176	4.680
	4233	846.60	4.168	4.680

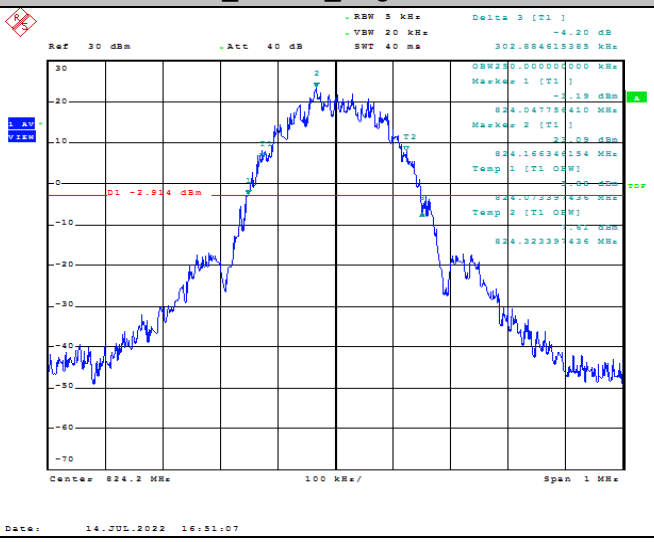
GSM 850_ GPRS_ Lowest channel



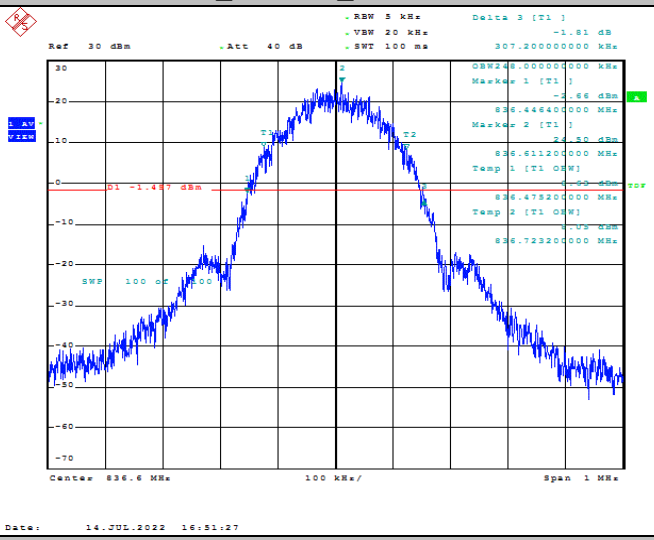
GSM 850_ GPRS_ Middle channel



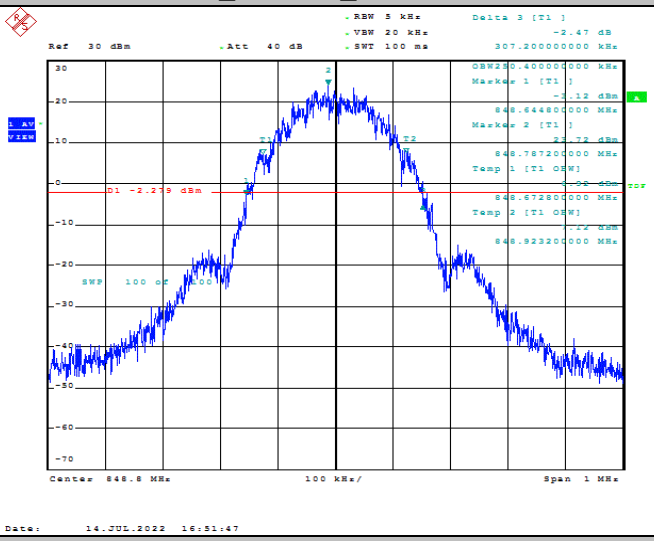
GSM 850_ GPRS_ Highest channel



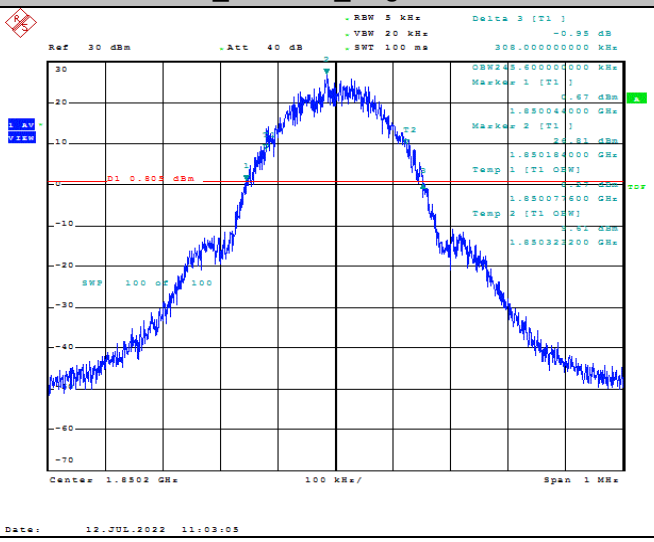
GSM 850_ EGPRS_ Lowest channel

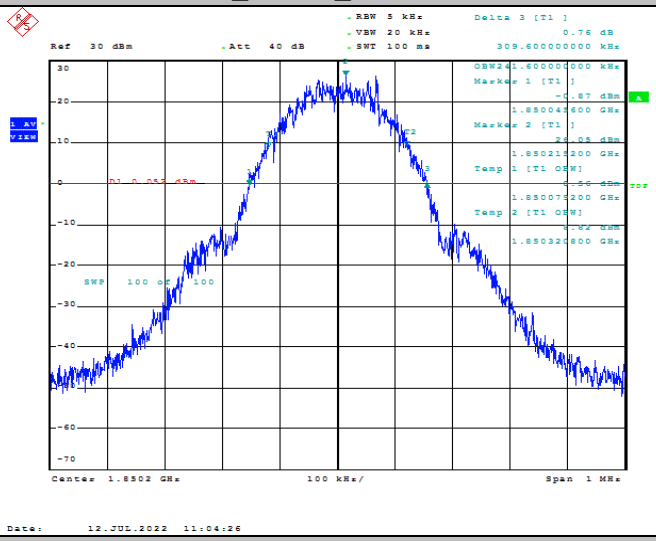
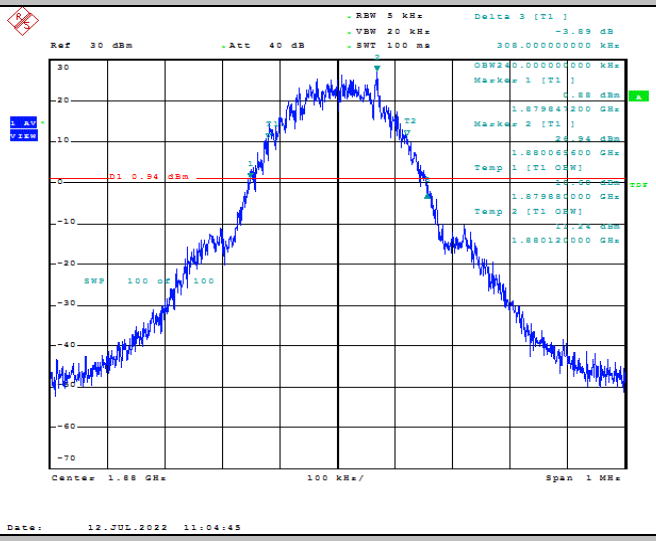
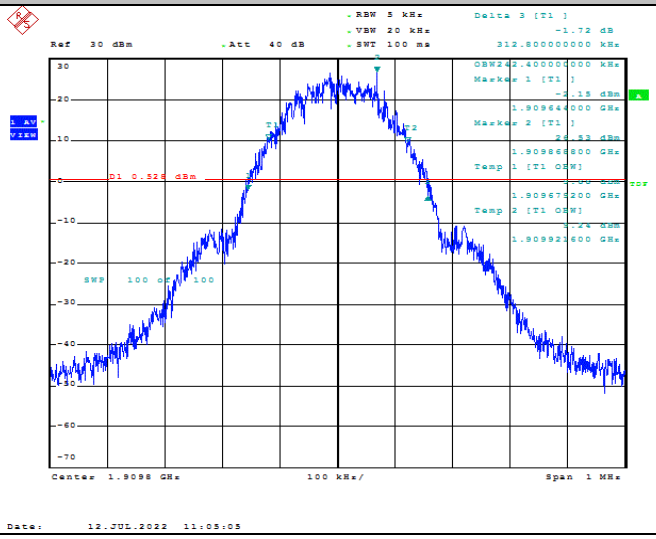


GSM 850_ EGPRS_ Middle channel

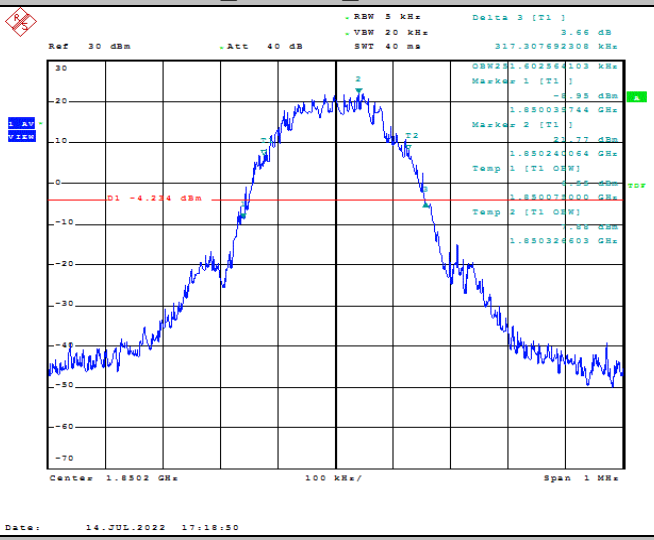


GSM 850_ EGPRS_ Highest channel

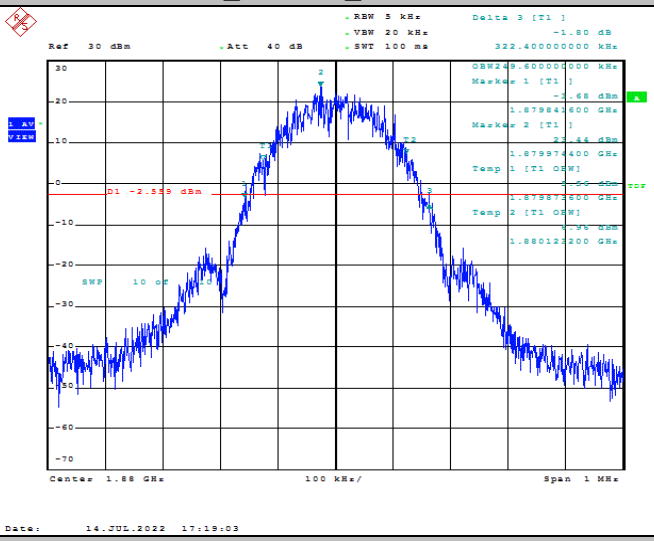


PCS 1900_ GPRS_ Lowest channel

PCS 1900_ GPRS_ Middle channel

PCS 1900_ GPRS_ Highest channel


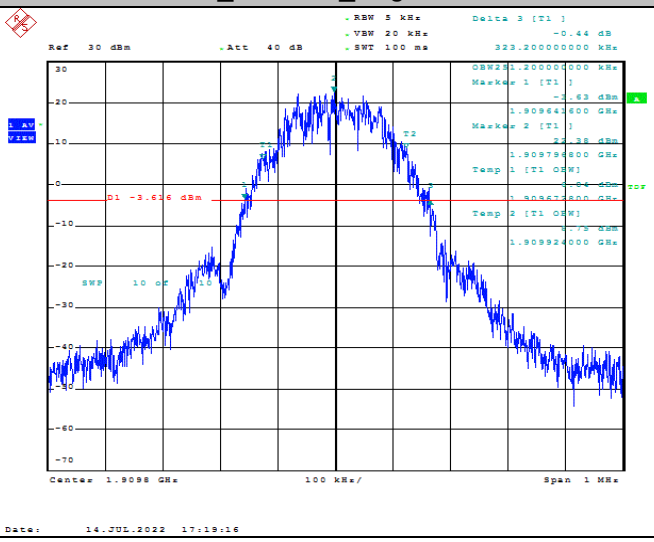
PCS 1900_ EGPRS_ Lowest channel

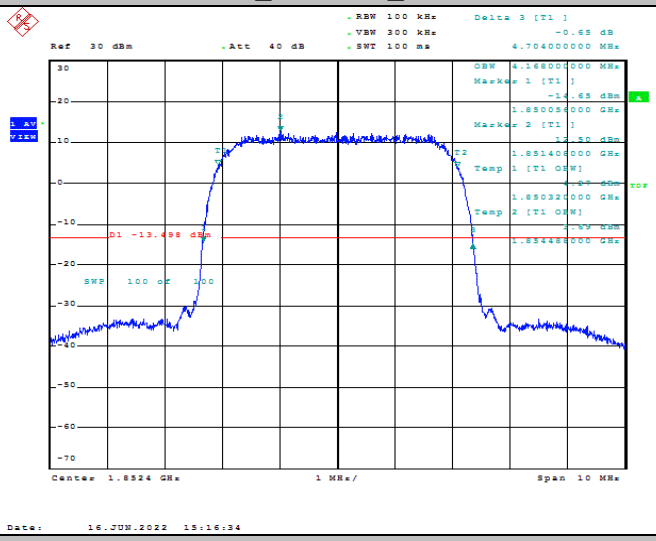


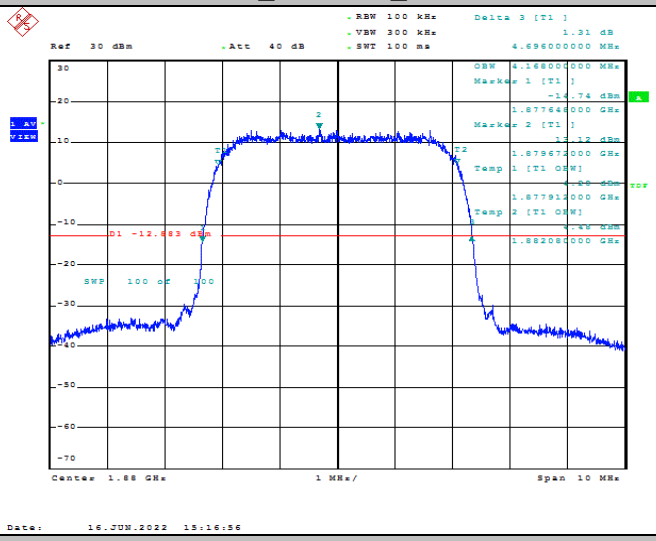
PCS 1900_ EGPRS_ Middle channel

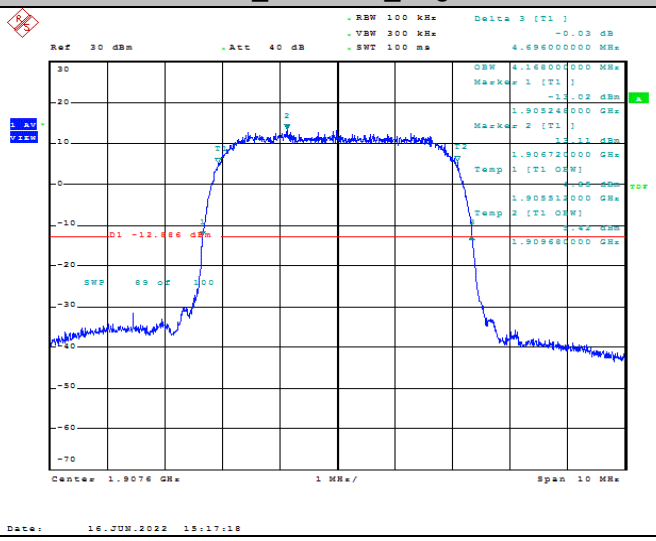


PCS 1900_ EGPRS_ Highest channel

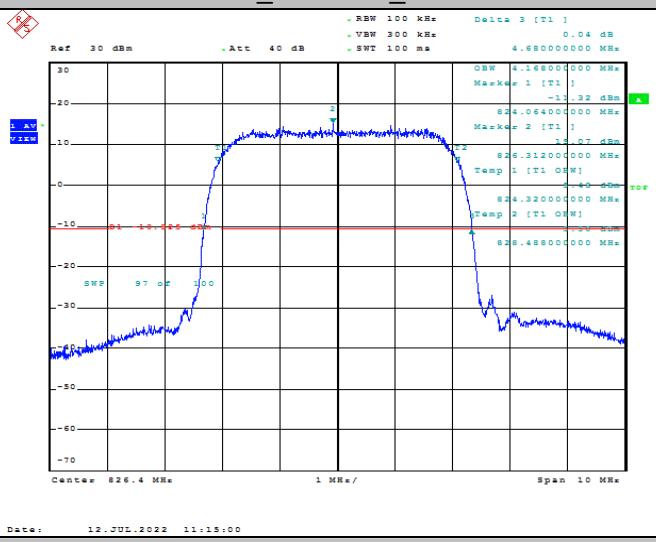


WCDMA Band II_ WCDMA_ Lowest channel


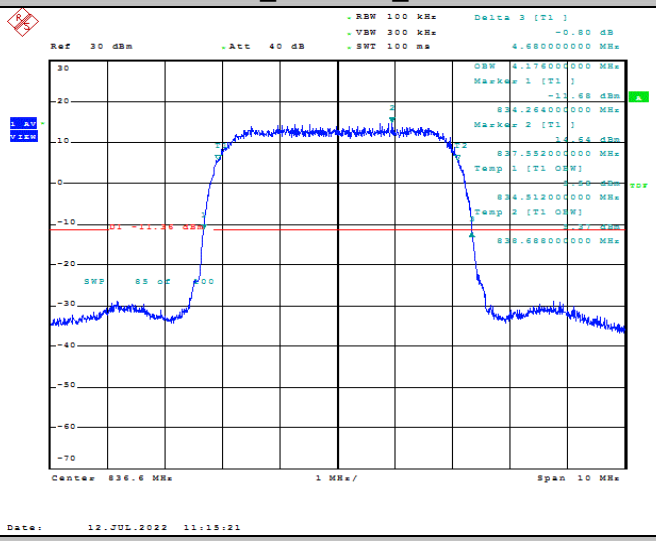
WCDMA Band II_ WCDMA_ Middle channel


WCDMA Band II_ WCDMA_ Highest channel


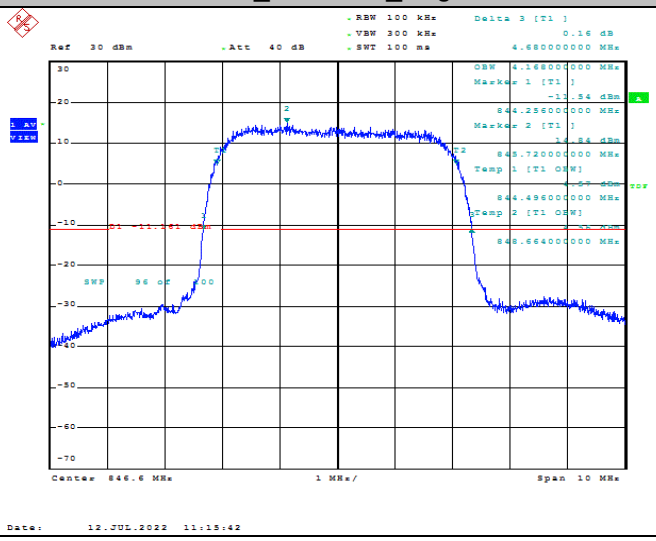
WCDMA Band V_ WCDMA_ Lowest channel



WCDMA Band V_ WCDMA_ Middle channel



WCDMA Band V_ WCDMA_ Highest channel



3.4. Out Of Band Emissions

LIMIT

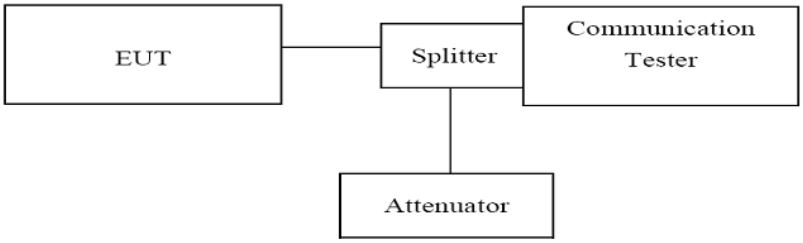
FCC: §22.917, §24.238, §27.53 (h), §90.691

The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.

RSS132§5.5, RSS133§6.5, RSS139§6.6

The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.

TEST CONFIGURATION



TEST PROCEDURE

1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. Sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

TEST RESULTS

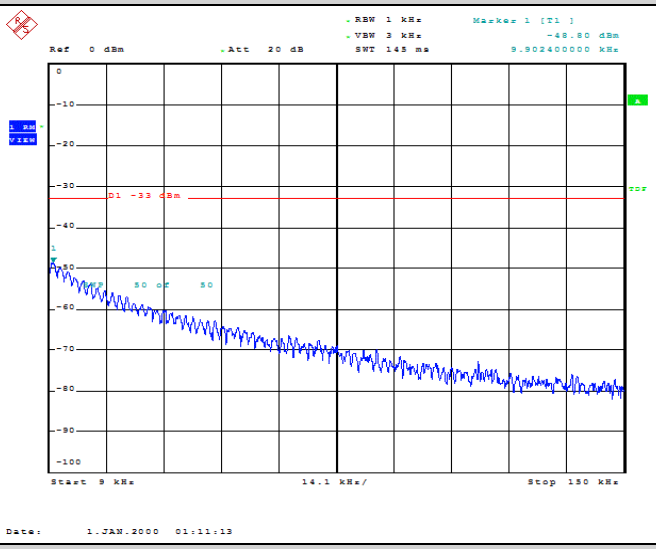
Band	Channel	PCL	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GPRS 850	128	3	0.009~0.15MHz	0.01	-48.8	-33	PASS
GPRS 850	128	3	0.15~30MHz	0.68	-48.94	-13	PASS
GPRS 850	128	3	30~1000MHz	591.57	-39.8	-13	PASS
GPRS 850	128	3	1000~3000MHz	1697.47	-28.8	-13	PASS
GPRS 850	128	3	3000~10000MHz	3395.27	-33.08	-13	PASS
GPRS 850	190	3	0.009~0.15MHz	0.01	-48.34	-33	PASS
GPRS 850	190	3	0.15~30MHz	0.64	-48.51	-13	PASS
GPRS 850	190	3	30~1000MHz	964.5	-39.34	-13	PASS
GPRS 850	190	3	1000~3000MHz	1697.6	-28.37	-13	PASS
GPRS 850	190	3	3000~10000MHz	3395.27	-32.99	-13	PASS
GPRS 850	251	3	0.009~0.15MHz	0.01	-48.66	-33	PASS
GPRS 850	251	3	0.15~30MHz	0.66	-48.5	-13	PASS
GPRS 850	251	3	30~1000MHz	970.9	-40	-13	PASS
GPRS 850	251	3	1000~3000MHz	1697.33	-29.59	-13	PASS
GPRS 850	251	3	3000~10000MHz	3395.27	-33.04	-13	PASS
EGPRS 850	128	8	0.009~0.15MHz	0.04	-38.87	-33	PASS
EGPRS 850	128	8	0.15~30MHz	0.68	-47.87	-13	PASS
EGPRS 850	128	8	30~1000MHz	949.88	-40.09	-13	PASS

EGPRS 850	128	8	1000~3000MHz	2725.67	-44.53	-13	PASS
EGPRS 850	128	8	3000~10000MHz	4942.03	-48.01	-13	PASS
EGPRS 850	190	8	0.009~0.15MHz	0.02	-40.12	-33	PASS
EGPRS 850	190	8	0.15~30MHz	0.62	-47.39	-13	PASS
EGPRS 850	190	8	30~1000MHz	994.92	-39.3	-13	PASS
EGPRS 850	190	8	1000~3000MHz	1697.53	-28.41	-13	PASS
EGPRS 850	190	8	3000~10000MHz	3395.27	-43.89	-13	PASS
EGPRS 850	251	8	0.009~0.15MHz	0.03	-39.69	-33	PASS
EGPRS 850	251	8	0.15~30MHz	0.63	-46.98	-13	PASS
EGPRS 850	251	8	30~1000MHz	949.98	-38.45	-13	PASS
EGPRS 850	251	8	1000~3000MHz	1698	-30.1	-13	PASS
EGPRS 850	251	8	3000~10000MHz	4941.1	-46.5	-13	PASS
GPRS 1900	512	0	0.009~0.15MHz	0.01	-52.76	-43	PASS
GPRS 1900	512	0	0.15~30MHz	0.63	-47.09	-23	PASS
GPRS 1900	512	0	30~1000MHz	958.81	-39.62	-13	PASS
GPRS 1900	512	0	1000~3000MHz	2986.47	-44.35	-13	PASS
GPRS 1900	512	0	3000~10000MHz	5729.53	-48.02	-13	PASS
GPRS 1900	512	0	10000~18000MHz	17972.8	-50.29	-13	PASS
GPRS 1900	661	0	0.009~0.15MHz	0.01	-52.94	-43	PASS
GPRS 1900	661	0	0.15~30MHz	0.68	-46.87	-23	PASS
GPRS 1900	661	0	30~1000MHz	769.63	-39.27	-13	PASS
GPRS 1900	661	0	1000~3000MHz	2429.8	-44.2	-13	PASS
GPRS 1900	661	0	3000~10000MHz	7639.37	-42.88	-13	PASS
GPRS 1900	661	0	10000~18000MHz	17985.6	-50.12	-13	PASS
GPRS 1900	810	0	0.009~0.15MHz	0.01	-52.99	-43	PASS
GPRS 1900	810	0	0.15~30MHz	0.68	-47.05	-23	PASS
GPRS 1900	810	0	30~1000MHz	954.05	-39.34	-13	PASS
GPRS 1900	810	0	1000~3000MHz	2599.93	-44.4	-13	PASS
GPRS 1900	810	0	3000~10000MHz	7639.83	-45.53	-13	PASS
GPRS 1900	810	0	10000~18000MHz	17965.33	-50.31	-13	PASS
EGPRS 1900	512	2	0.009~0.15MHz	0.01	-47.76	-43	PASS
EGPRS 1900	512	2	0.15~30MHz	0.6	-47.73	-23	PASS
EGPRS 1900	512	2	30~1000MHz	798.27	-39.44	-13	PASS
EGPRS 1900	512	2	1000~3000MHz	2550	-44.46	-13	PASS
EGPRS 1900	512	2	3000~10000MHz	4690.27	-47.23	-13	PASS
EGPRS 1900	512	2	10000~18000MHz	17976.27	-48.19	-13	PASS
EGPRS 1900	661	2	0.009~0.15MHz	0.03	-50.27	-43	PASS
EGPRS 1900	661	2	0.15~30MHz	0.7	-47.84	-23	PASS
EGPRS 1900	661	2	30~1000MHz	879.07	-39.53	-13	PASS
EGPRS 1900	661	2	1000~3000MHz	2628.87	-44.51	-13	PASS
EGPRS 1900	661	2	3000~10000MHz	3819.47	-39.26	-13	PASS
EGPRS 1900	661	2	10000~18000MHz	17961.6	-48.21	-13	PASS
EGPRS 1900	810	2	0.009~0.15MHz	0.01	-48.69	-43	PASS
EGPRS 1900	810	2	0.15~30MHz	0.63	-45.84	-23	PASS

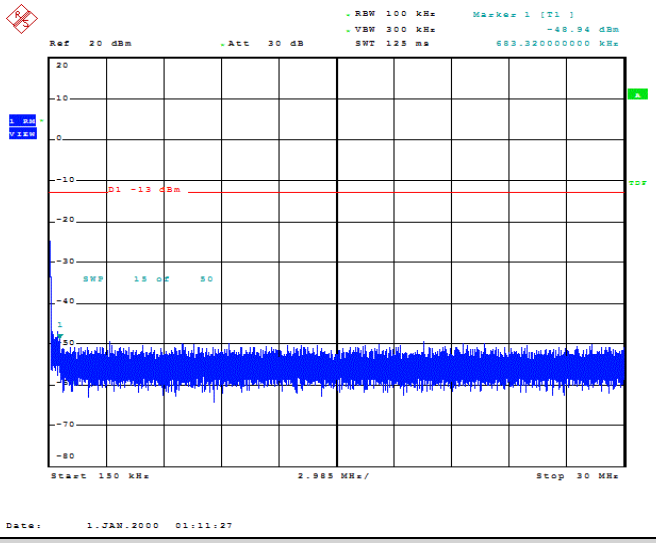
EGPRS 1900	810	2	30~1000MHz	837.88	-39.76	-13	PASS
EGPRS 1900	810	2	1000~3000MHz	2671.93	-44.49	-13	PASS
EGPRS 1900	810	2	3000~10000MHz	3819.47	-39.38	-13	PASS
EGPRS 1900	810	2	10000~18000MHz	17988.8	-48.2	-13	PASS

Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band 2	9262	0.15~30MHz	0.63	-46.35	-23	PASS
Band 2	9262	30~1000MHz	959.45	-39.37	-13	PASS
Band 2	9262	1000~3000MHz	2717.6	-35.59	-13	PASS
Band 2	9262	3000~10000MHz	3703.27	-38.17	-13	PASS
Band 2	9262	10000~20000MHz	17952	-40.86	-13	PASS
Band 2	9262	0.009~0.15MHz	0.02	-71.19	-43	PASS
Band 2	9400	30~1000MHz	870.41	-39.38	-13	PASS
Band 2	9400	10000~20000MHz	19164.33	-41.43	-13	PASS
Band 2	9400	1000~3000MHz	2614	-35.39	-13	PASS
Band 2	9400	0.15~30MHz	0.63	-47.96	-23	PASS
Band 2	9400	0.009~0.15MHz	0.01	-69.15	-43	PASS
Band 2	9400	3000~10000MHz	3757.4	-41.16	-13	PASS
Band 2	9538	10000~20000MHz	19087.33	-41.2	-13	PASS
Band 2	9538	3000~10000MHz	3817.13	-38.21	-13	PASS
Band 2	9538	0.009~0.15MHz	0.01	-71.19	-43	PASS
Band 2	9538	0.15~30MHz	0.66	-48.71	-23	PASS
Band 2	9538	30~1000MHz	930.55	-38.82	-13	PASS
Band 2	9538	1000~3000MHz	2328.27	-35.14	-13	PASS
Band 5	4132	0.15~30MHz	0.67	-48.42	-13	PASS
Band 5	4132	30~1000MHz	970.93	-34.55	-13	PASS
Band 5	4132	1000~3000MHz	2757.87	-34.4	-13	PASS
Band 5	4132	3000~10000MHz	9968.03	-47.41	-13	PASS
Band 5	4132	10000~18000MHz	17893.07	-41.9	-13	PASS
Band 5	4132	0.009~0.15MHz	0.01	-68.99	-33	PASS
Band 5	4183	30~1000MHz	949.43	-34.94	-13	PASS
Band 5	4183	10000~18000MHz	17927.2	-42.57	-13	PASS
Band 5	4183	1000~3000MHz	2435.4	-35.35	-13	PASS
Band 5	4183	0.15~30MHz	0.64	-46.18	-13	PASS
Band 5	4183	0.009~0.15MHz	0.01	-70.92	-33	PASS
Band 5	4183	3000~10000MHz	5026.03	-44.86	-13	PASS
Band 5	4233	10000~18000MHz	17888.53	-41.74	-13	PASS
Band 5	4233	0.009~0.15MHz	0.01	-70.21	-33	PASS
Band 5	4233	0.15~30MHz	0.68	-48.03	-13	PASS
Band 5	4233	30~1000MHz	991.3	-35.55	-13	PASS
Band 5	4233	1000~3000MHz	2404.13	-35.49	-13	PASS
Band 5	4233	3000~10000MHz	5072.47	-48.69	-13	PASS

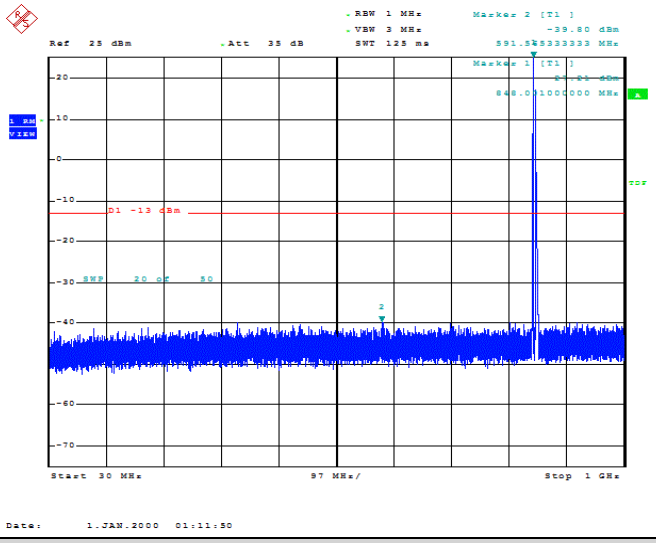
GPRS 850-128-0.009~0.15MHz



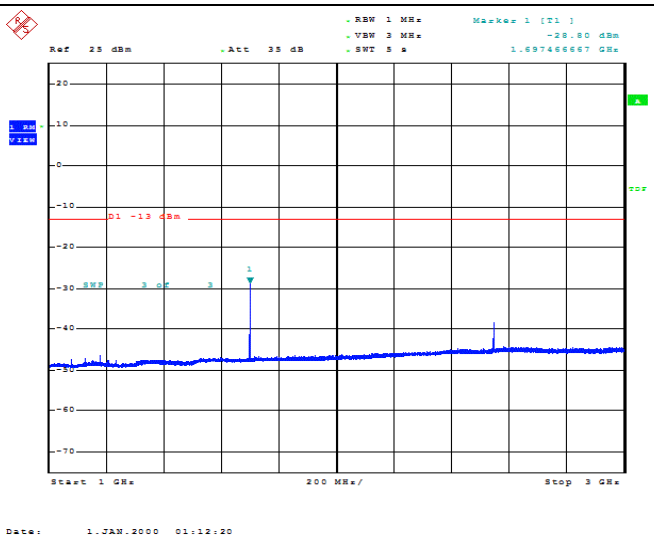
GPRS 850-128-0.15~30MHz



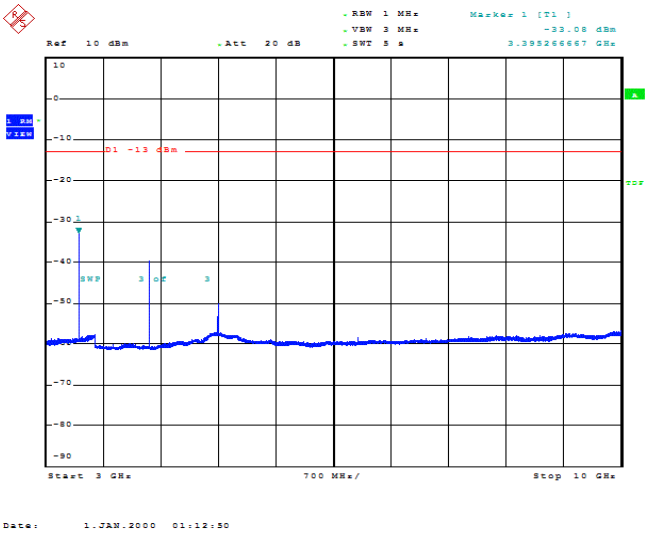
GPRS 850-128-30~1000MHz



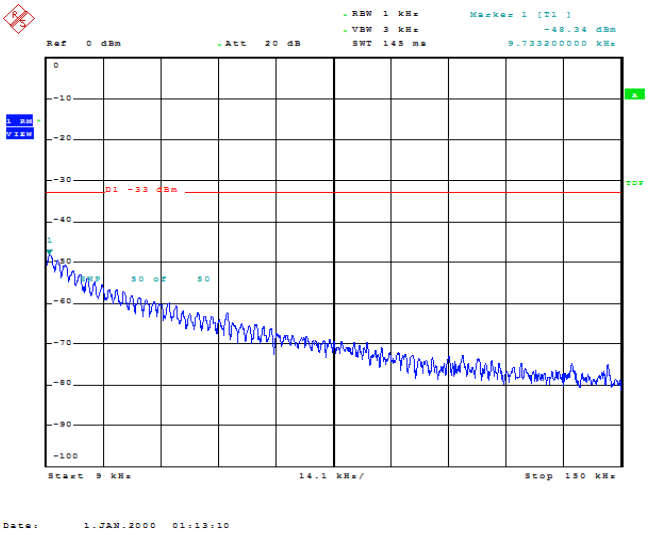
GPRS 850-128-1000~3000MHz



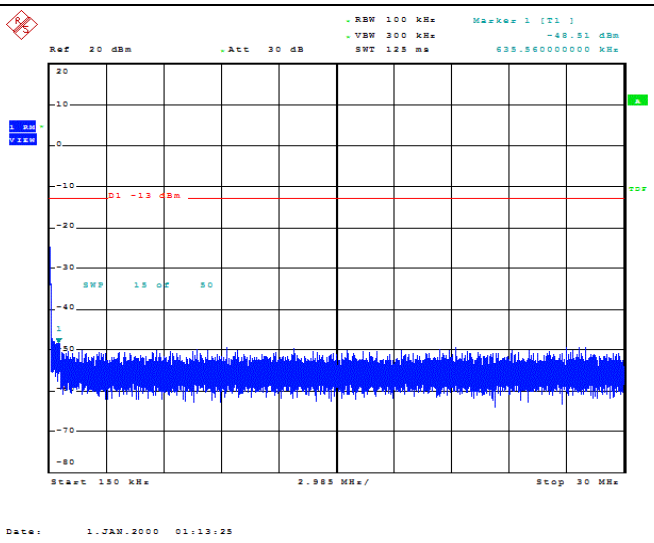
GPRS 850-128-3000~10000MHz



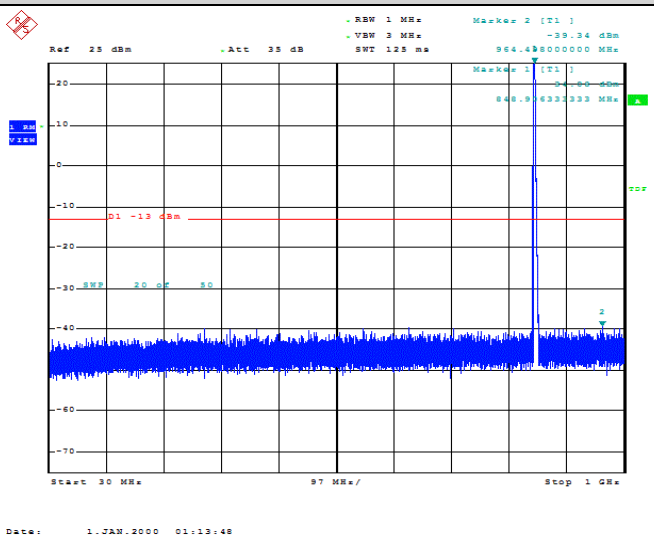
GPRS 850-190-0.009~0.15MHz



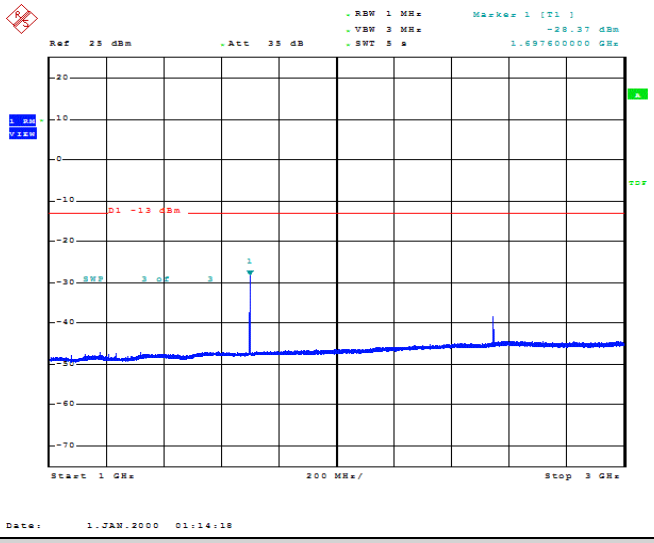
GPRS 850-190-0.15~30MHz



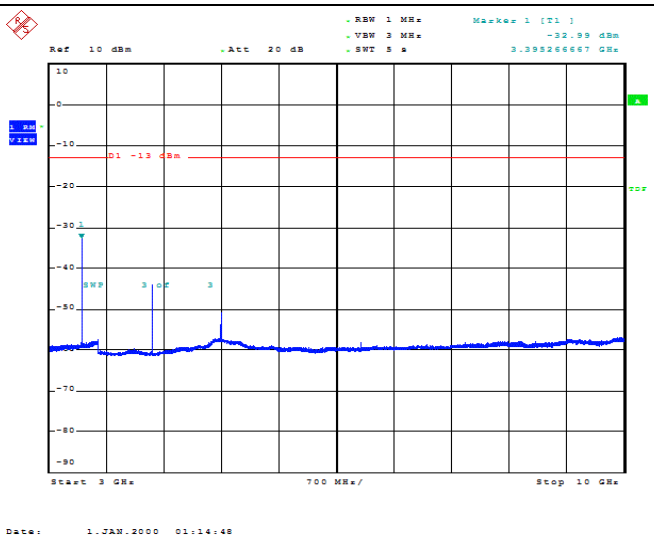
GPRS 850-190-30~1000MHz



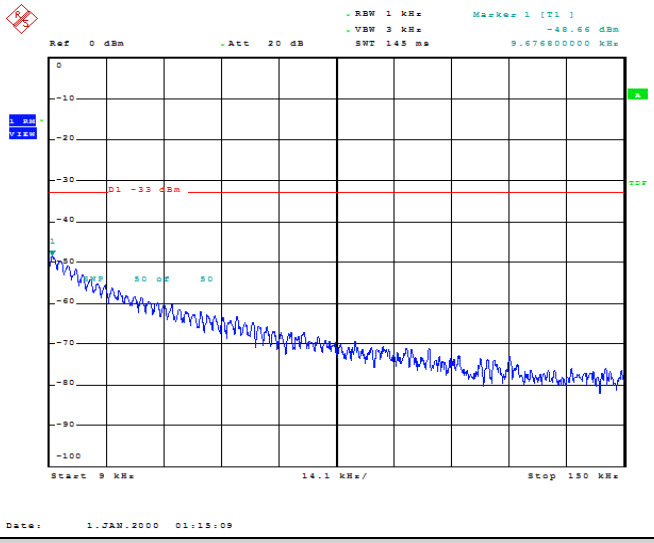
GPRS 850-190-1000~3000MHz



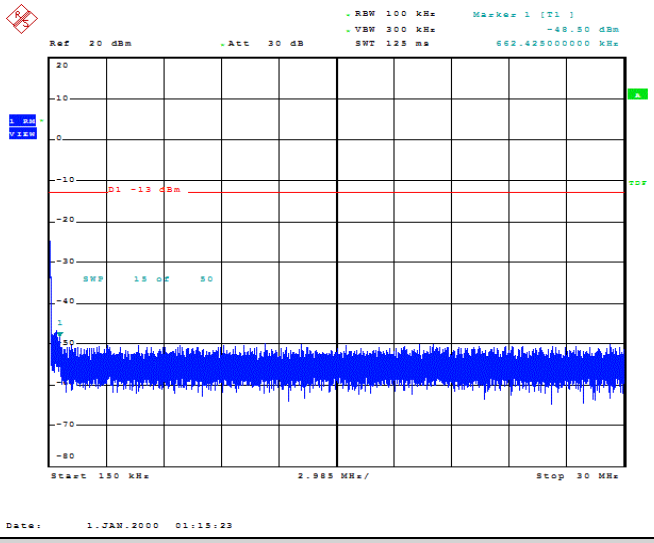
GPRS 850-190-3000~10000MHz



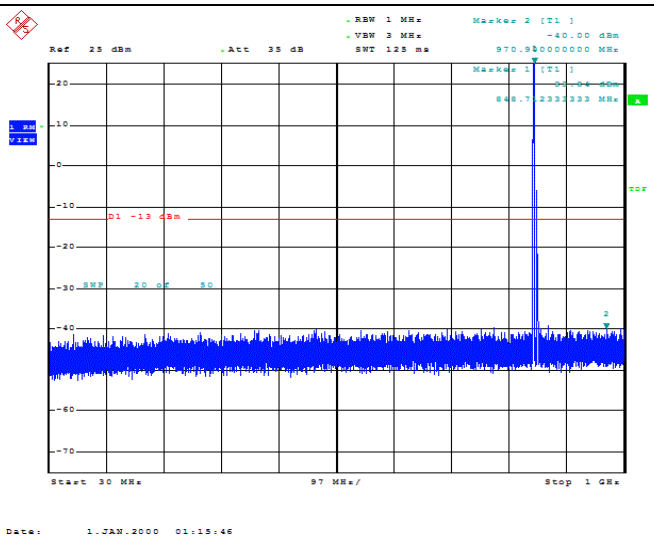
GPRS 850-251-0.009~0.15MHz



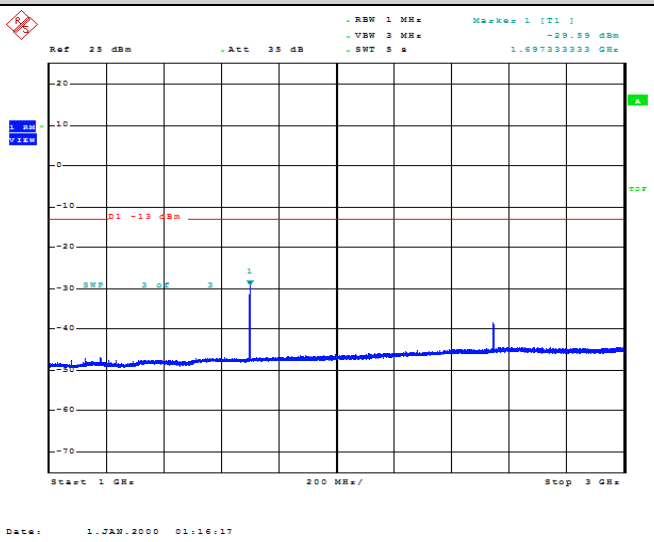
GPRS 850-251-0.15~30MHz



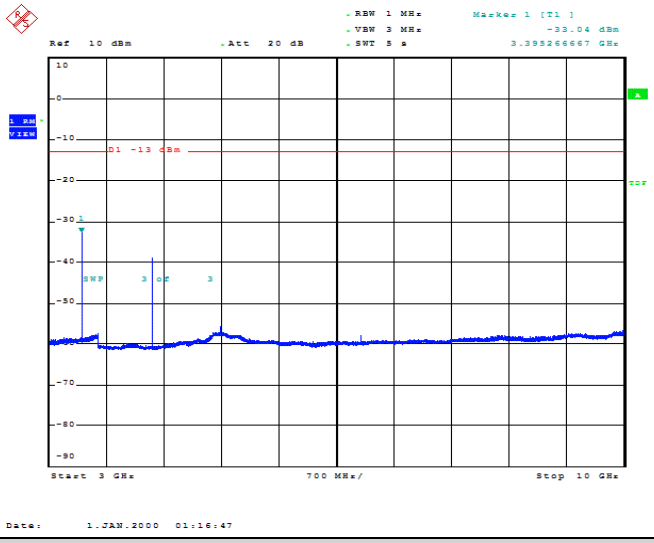
GPRS 850-251-30~1000MHz



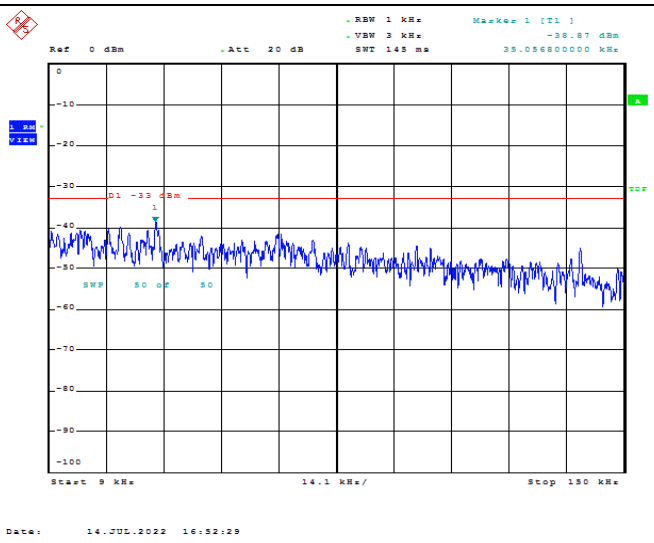
GPRS 850-251-1000~3000MHz



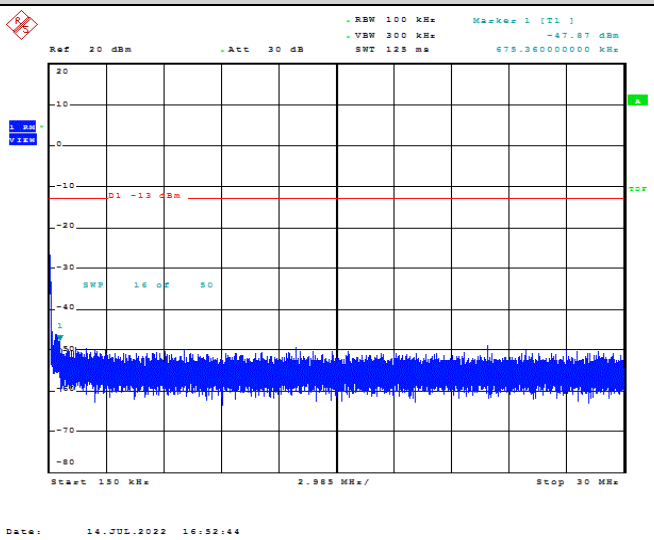
GPRS 850-251-3000~10000MHz



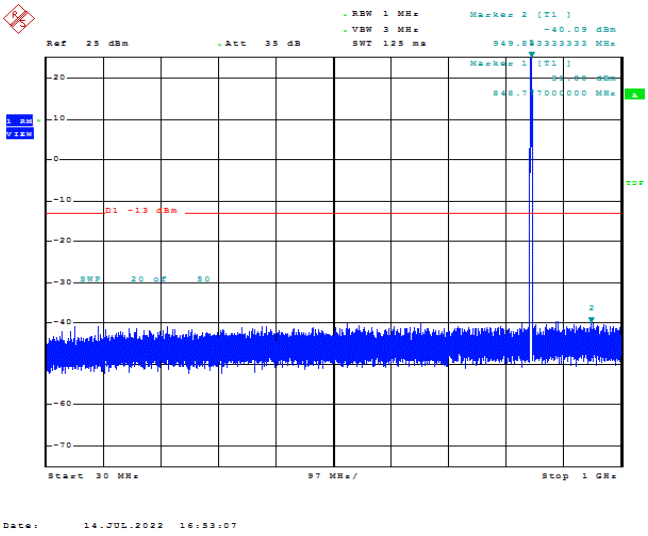
EGPRS 850-128-0.009~0.15MHz



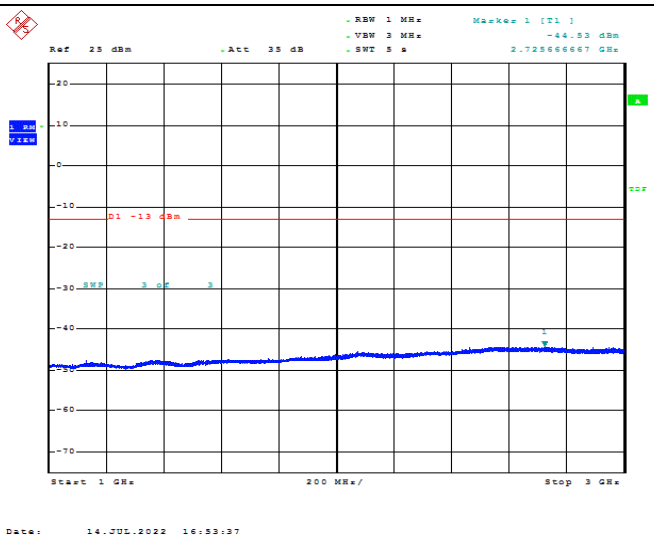
EGPRS 850-128-0.15~30MHz



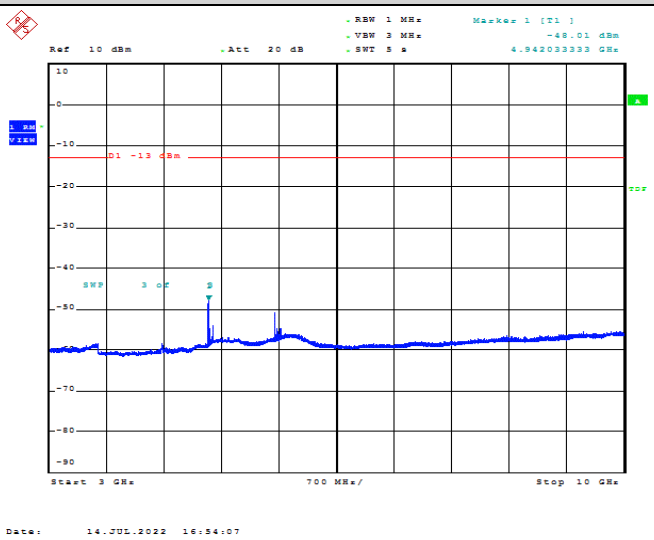
EGPRS 850-128-30~1000MHz



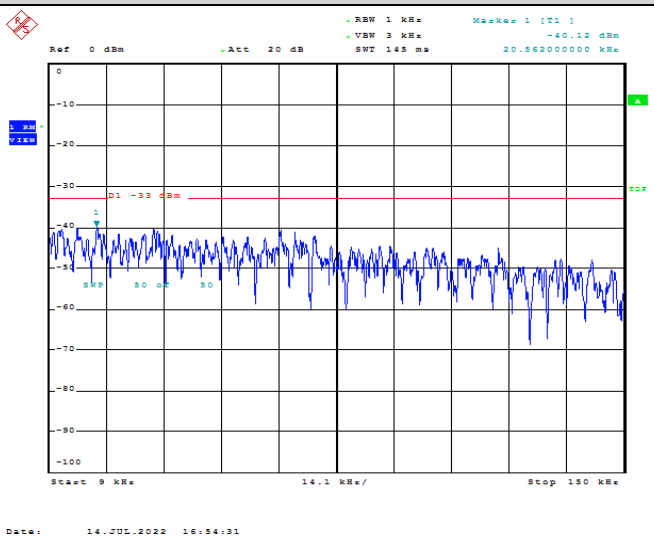
EGPRS 850-128-1000~3000MHz



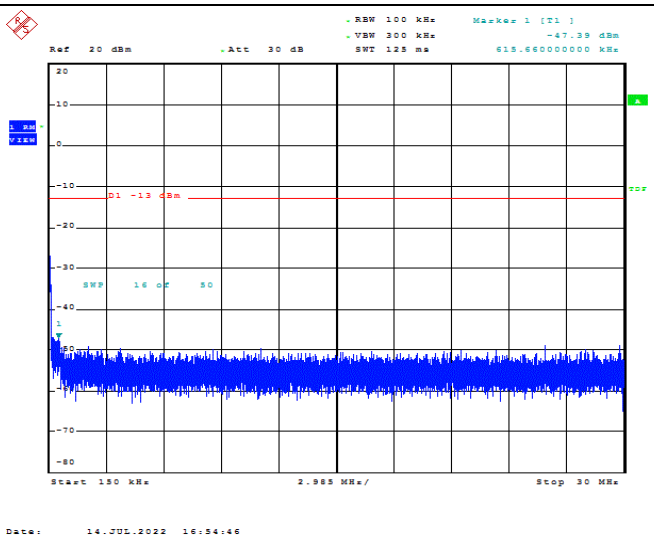
EGPRS 850-128-3000~10000MHz



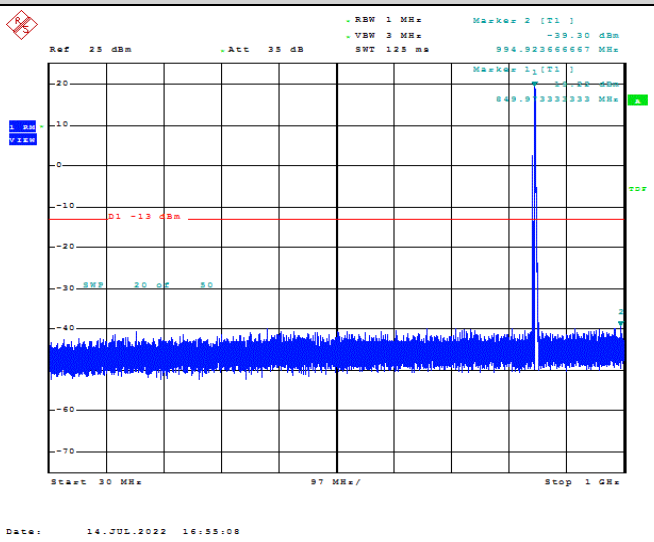
EGPRS 850-190-0.009~0.15MHz



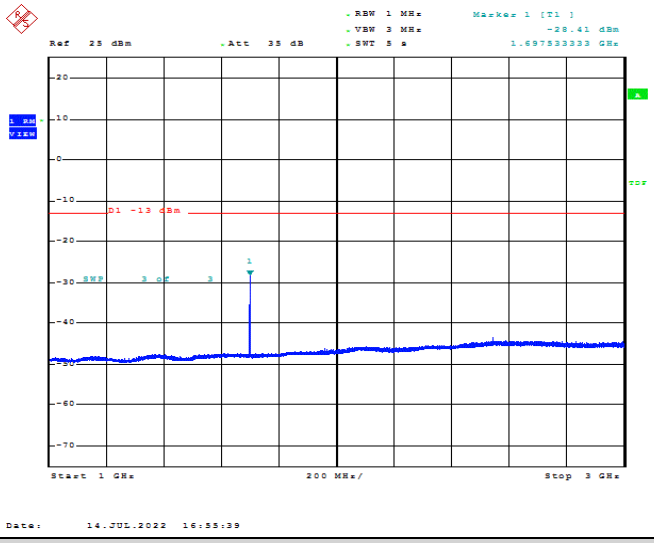
EGPRS 850-190-0.15~30MHz



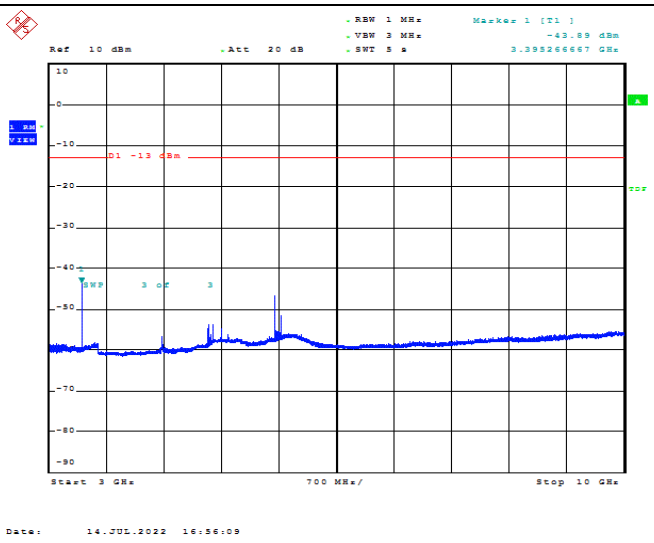
EGPRS 850-190-30~1000MHz



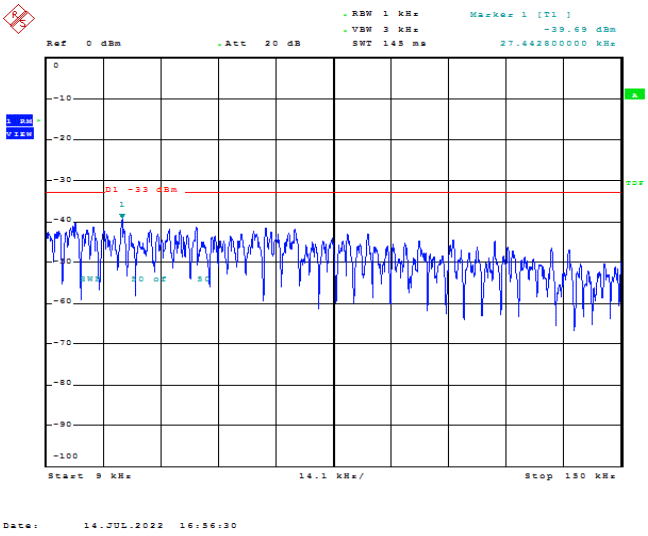
EGPRS 850-190-1000~3000MHz



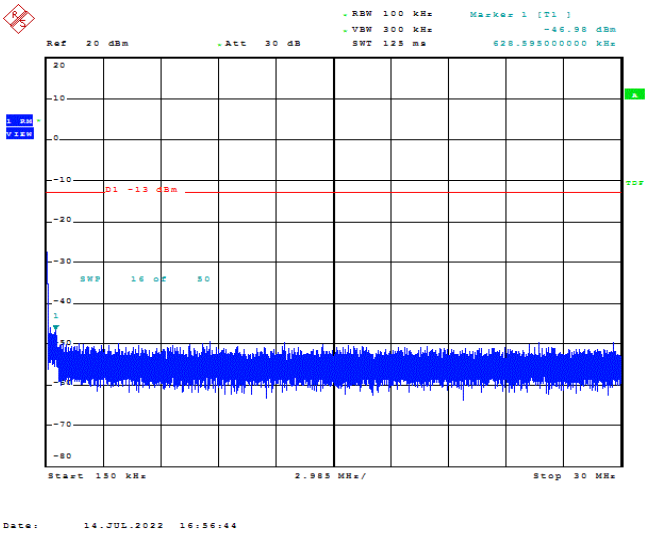
EGPRS 850-190-3000~10000MHz



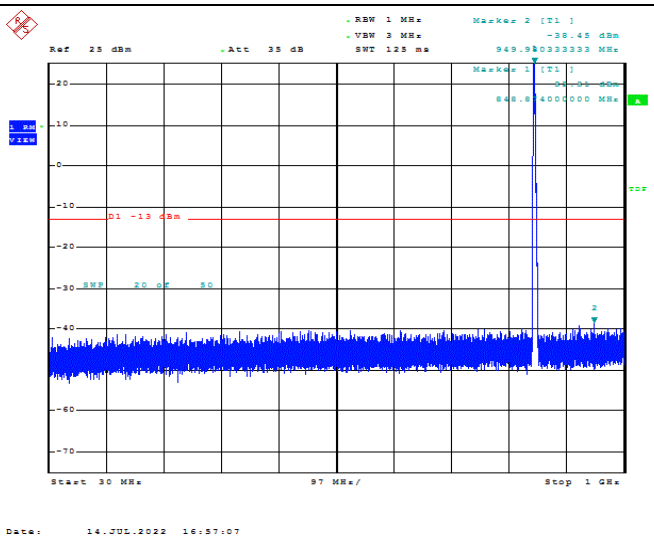
EGPRS 850-251-0.009~0.15MHz



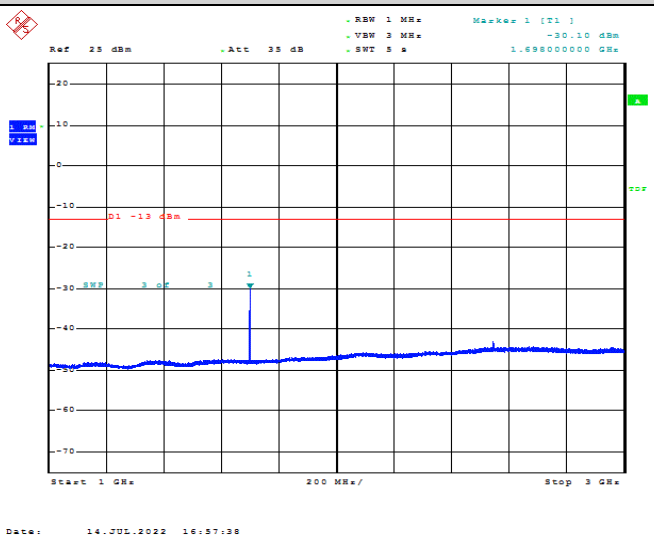
EGPRS 850-251-0.15~30MHz



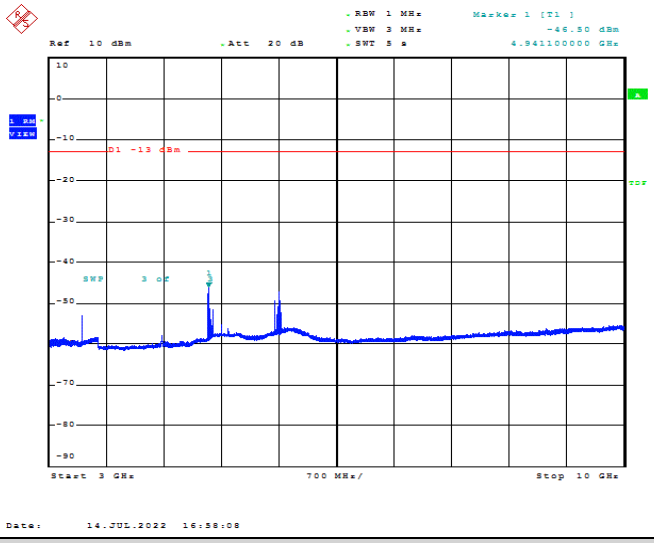
EGPRS 850-251-30~1000MHz



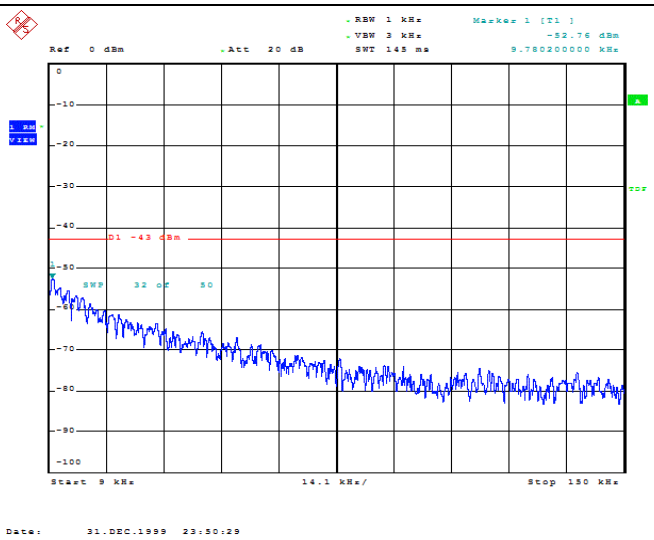
EGPRS 850-251-1000~3000MHz



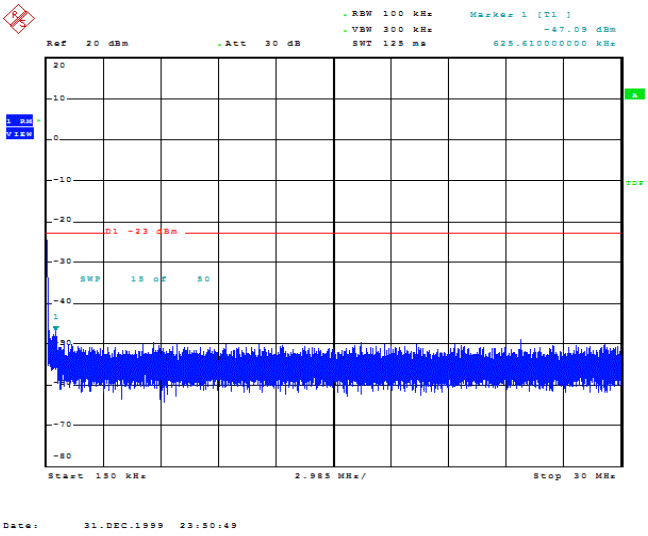
EGPRS 850-251-3000~10000MHz



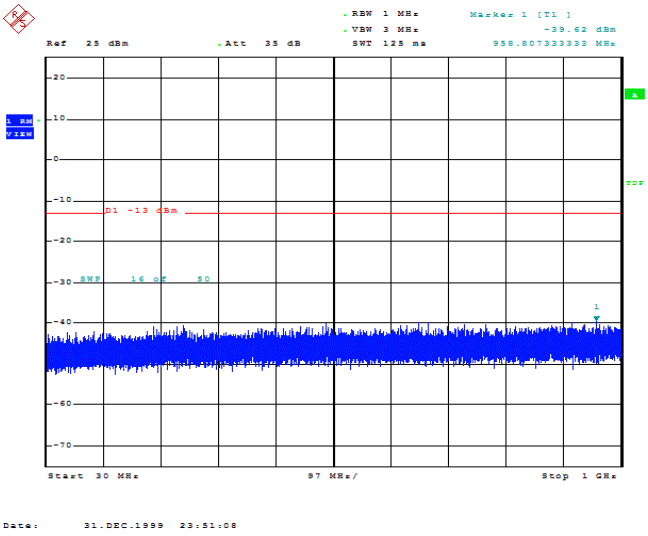
GPRS 1900-512-0.009~0.15MHz



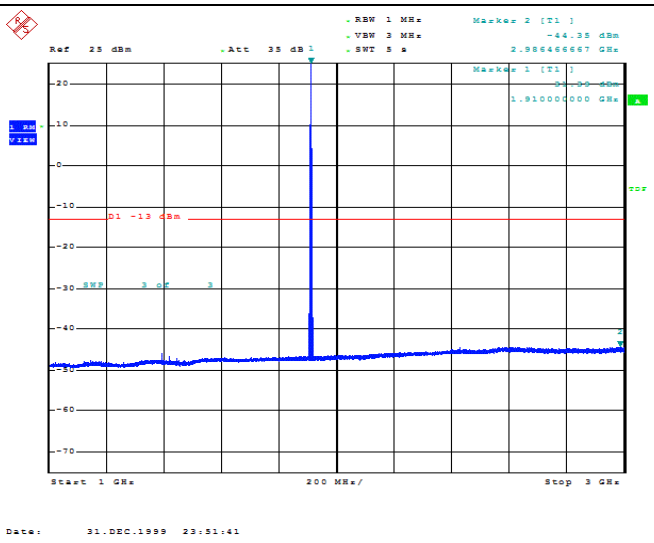
GPRS 1900-512-0.15~30MHz



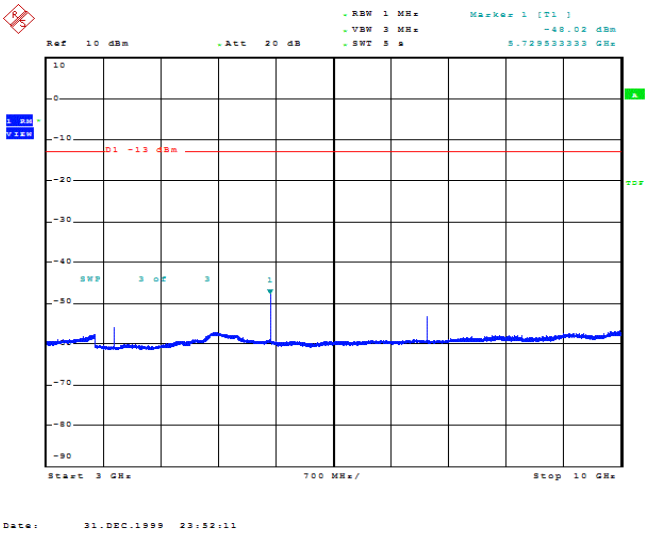
GPRS 1900-512-30~1000MHz



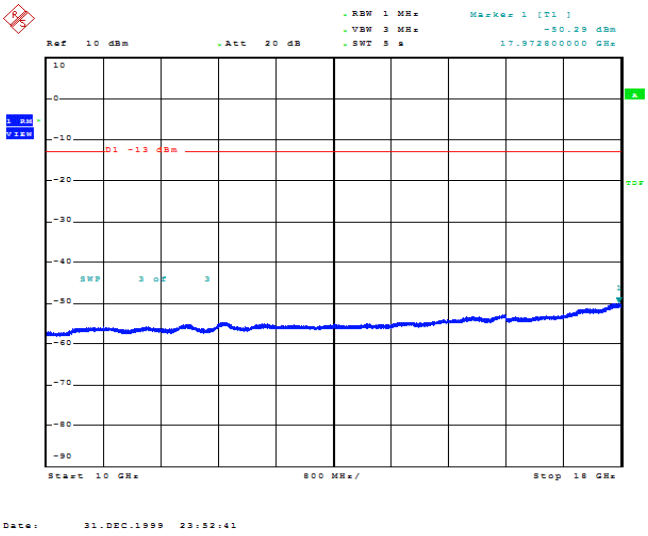
GPRS 1900-512-1000~3000MHz



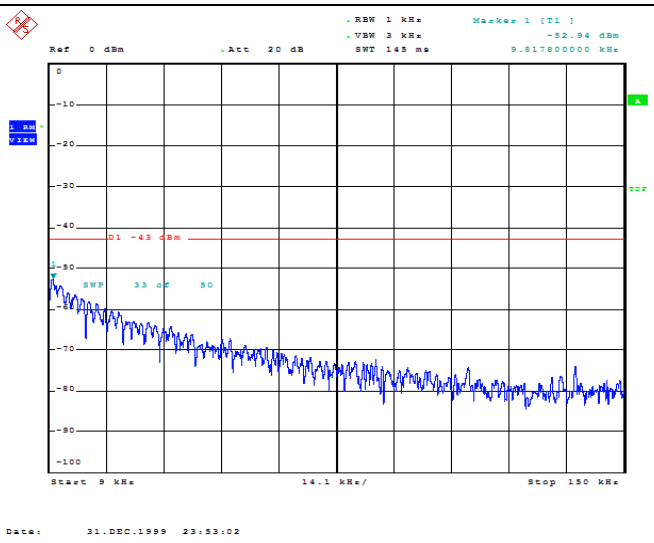
GPRS 1900-512-3000~10000MHz



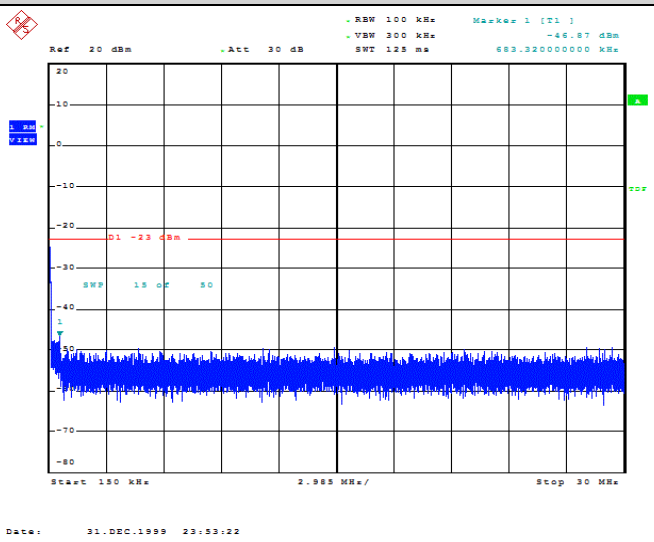
GPRS 1900-512-10000~18000MHz



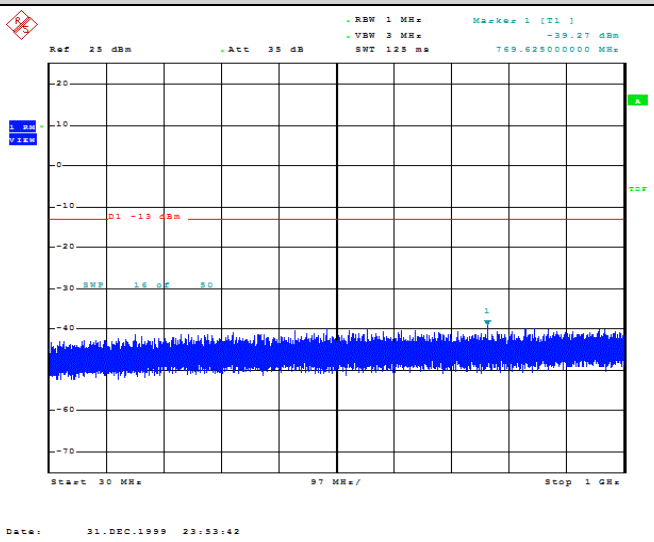
GPRS 1900-661-0.009~0.15MHz



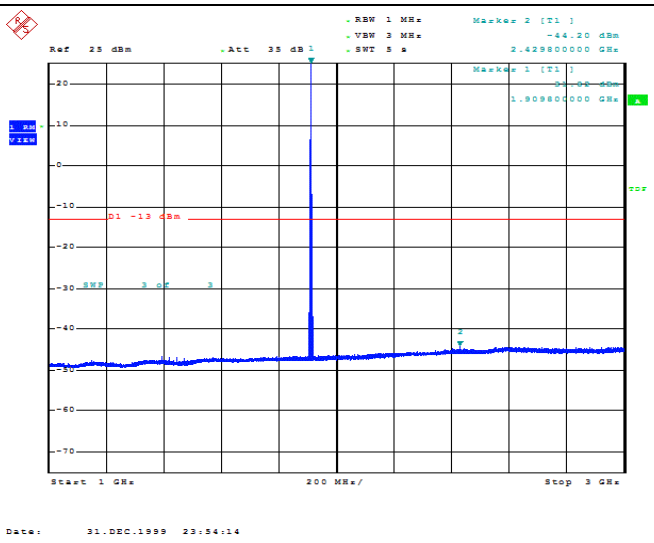
GPRS 1900-661-0.15~30MHz



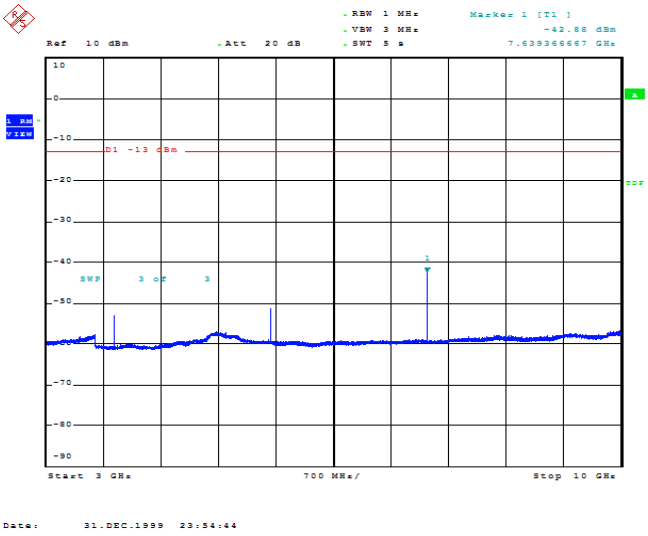
GPRS 1900-661-30~1000MHz



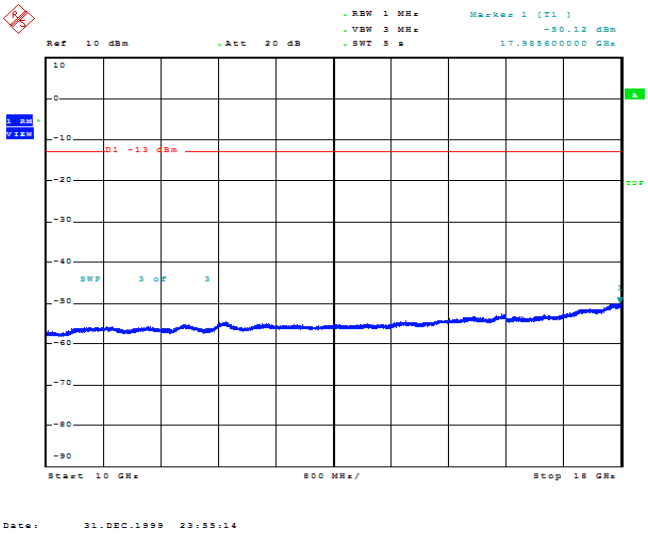
GPRS 1900-661-1000~3000MHz



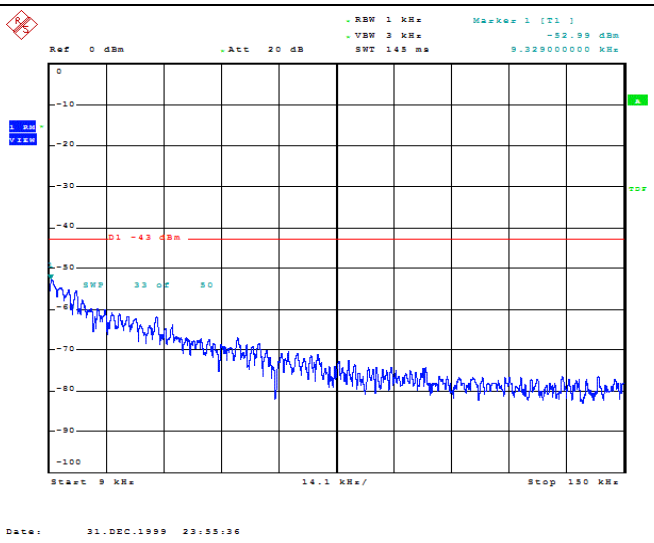
GPRS 1900-661-3000~10000MHz



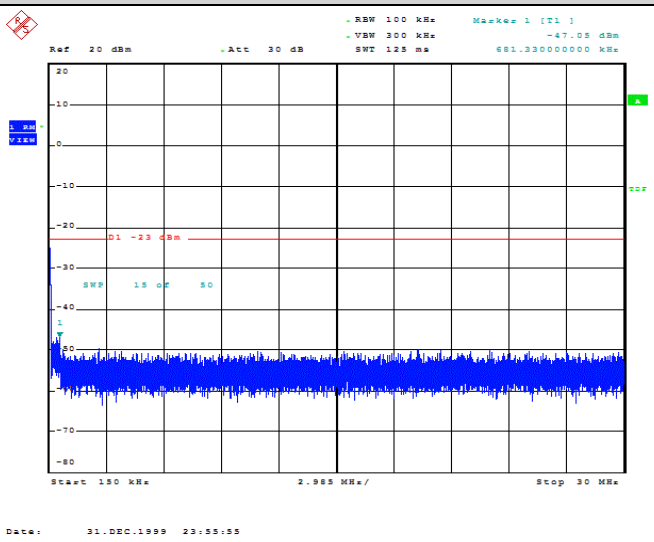
GPRS 1900-661-10000~18000MHz



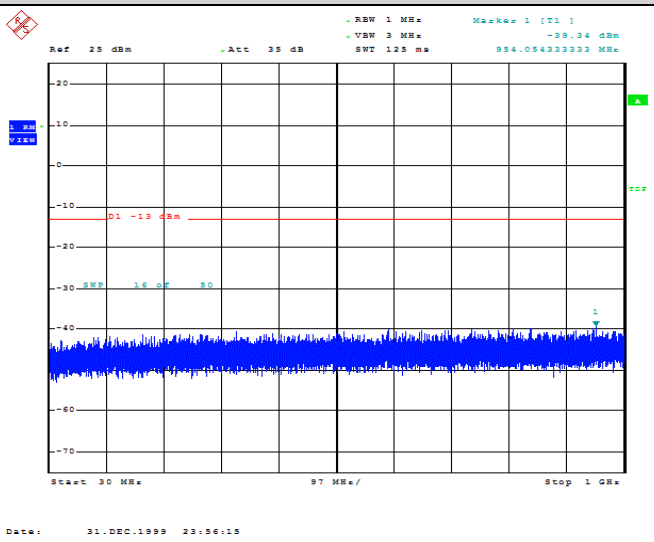
GPRS 1900-810-0.009~0.15MHz



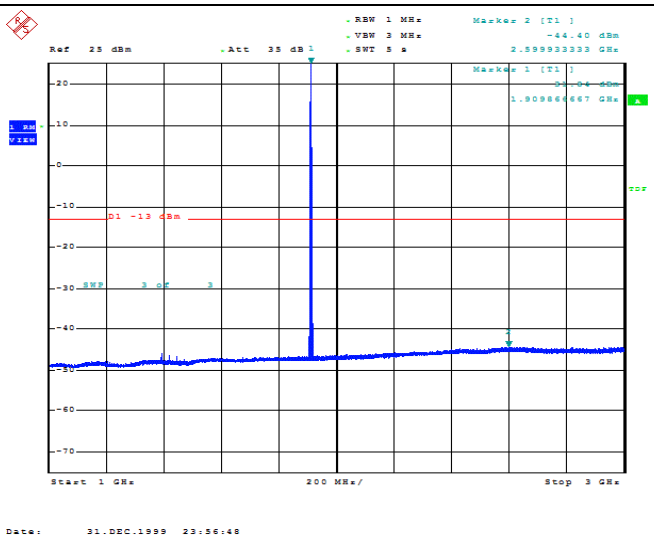
GPRS 1900-810-0.15~30MHz



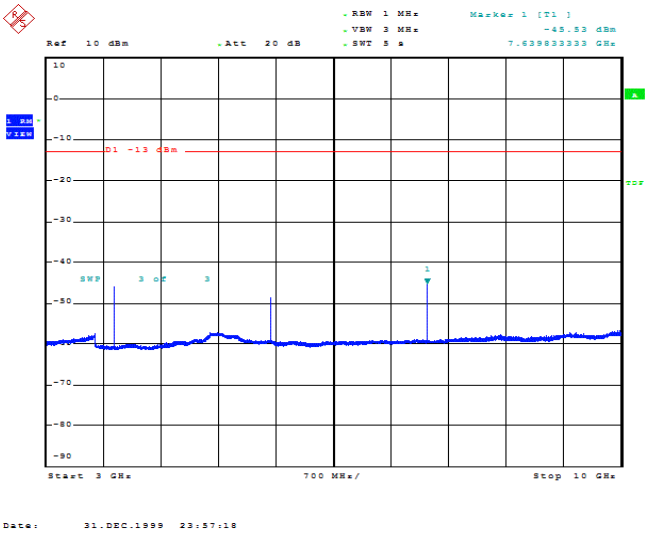
GPRS 1900-810-30~1000MHz



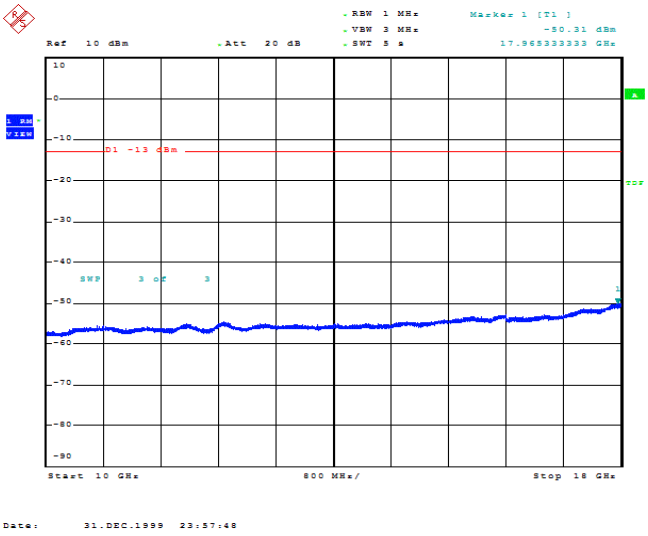
GPRS 1900-810-1000~3000MHz



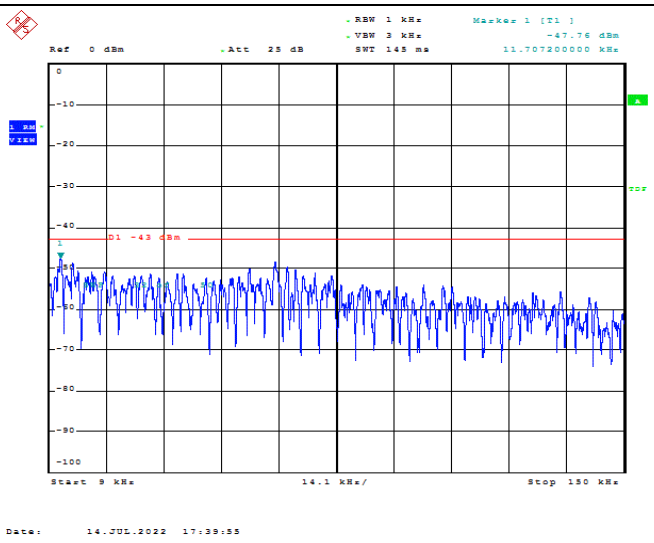
GPRS 1900-810-3000~10000MHz



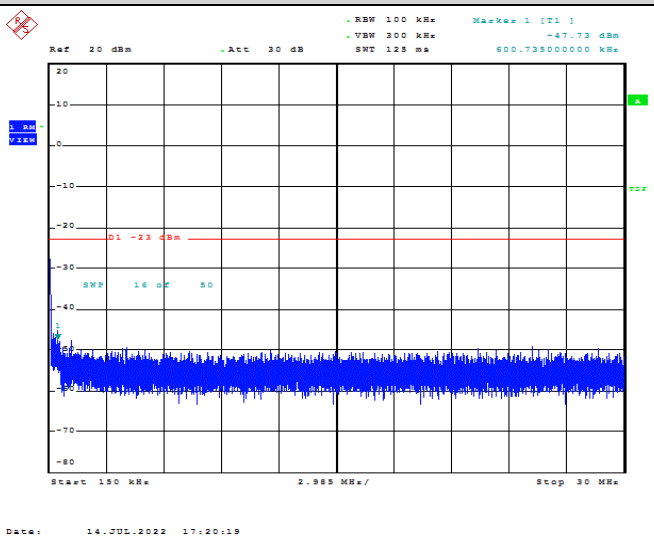
GPRS 1900-810-10000~18000MHz



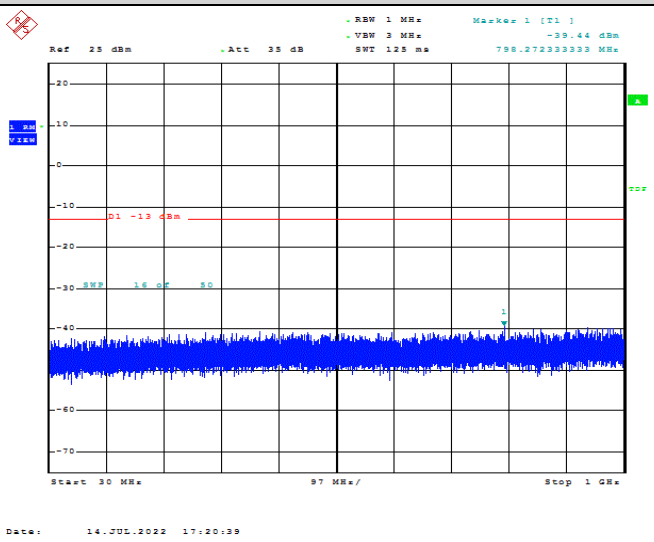
EGPRS 1900-512-0.009~0.15MHz



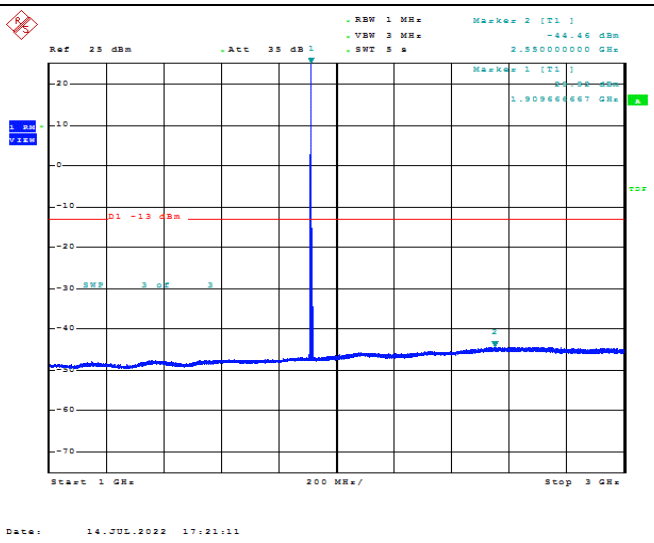
EGPRS 1900-512-0.15~30MHz



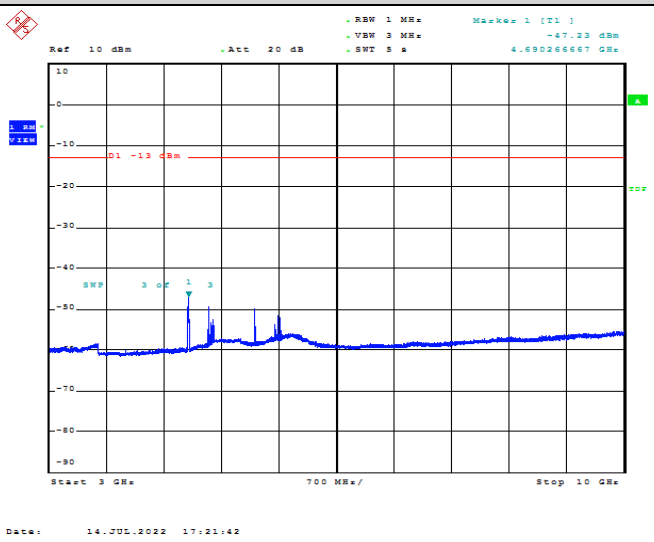
EGPRS 1900-512-30~1000MHz



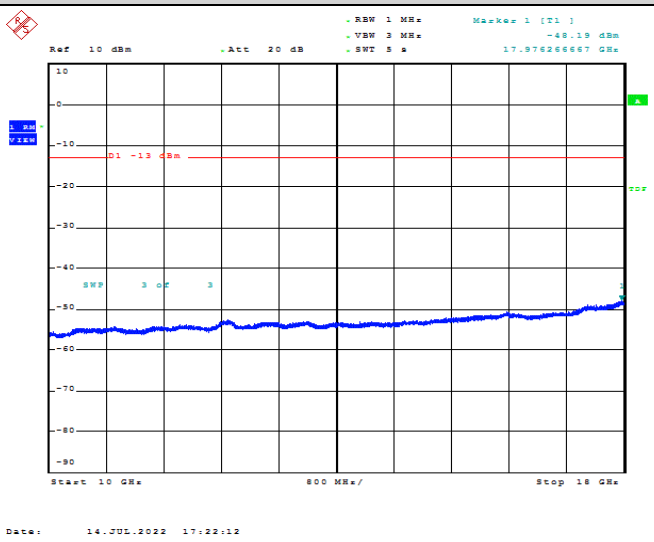
EGPRS 1900-512-1000~3000MHz



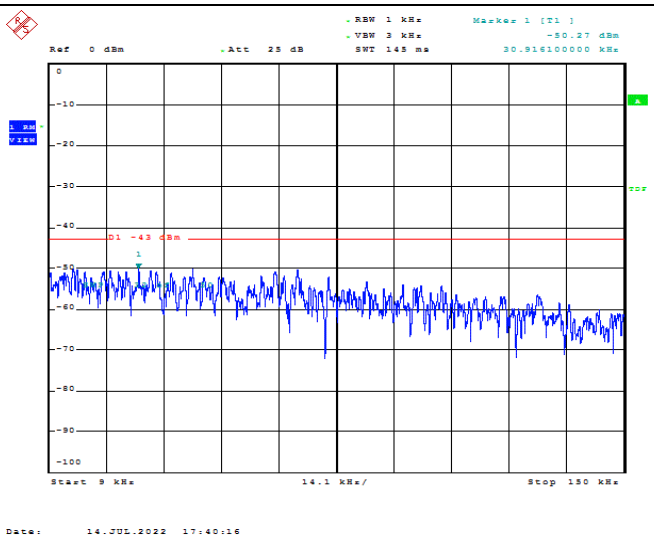
EGPRS 1900-512-3000~10000MHz



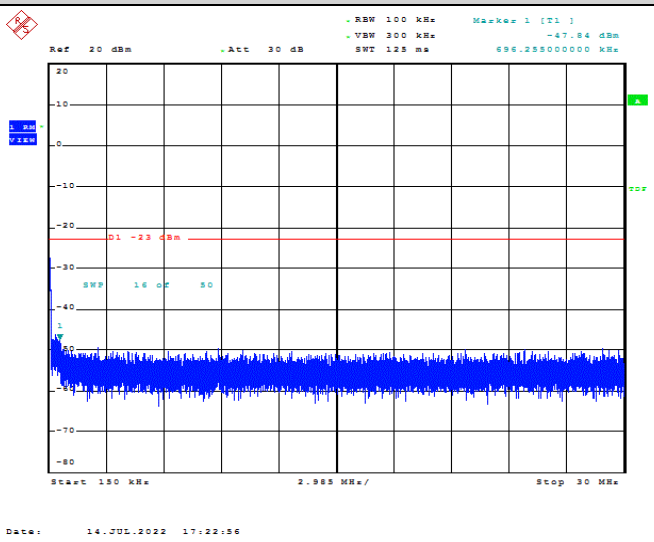
EGPRS 1900-512-10000~18000MHz



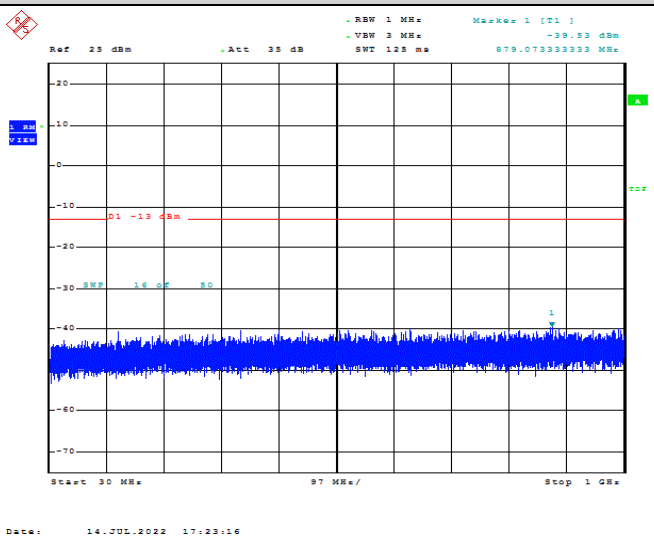
EGPRS 1900-661-0.009~0.15MHz



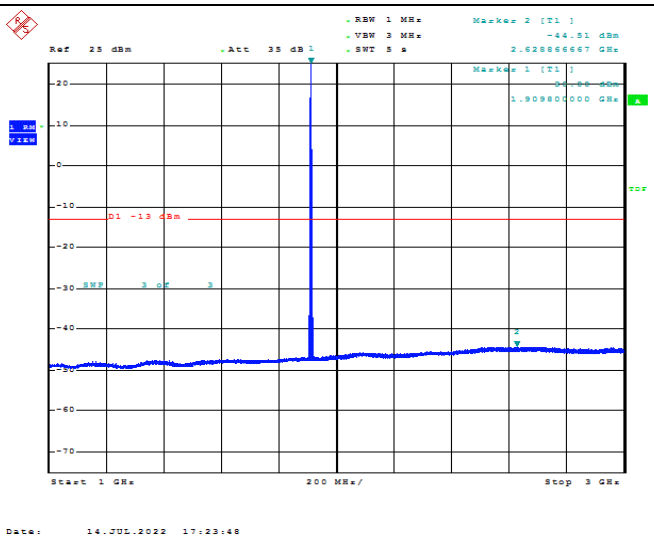
EGPRS 1900-661-0.15~30MHz



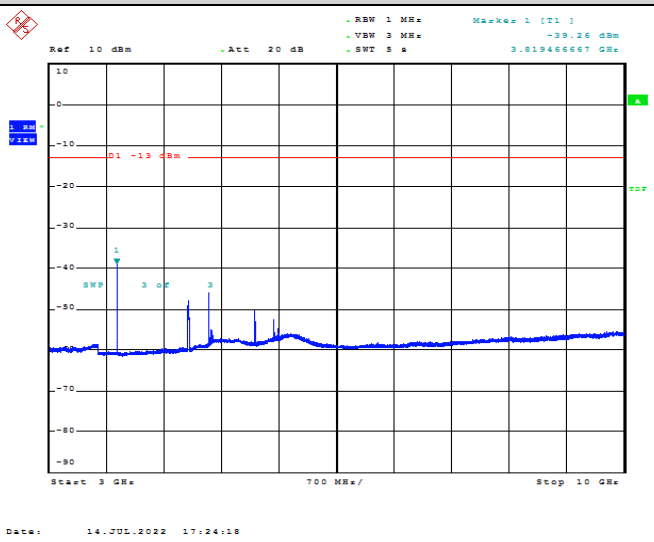
EGPRS 1900-661-30~1000MHz



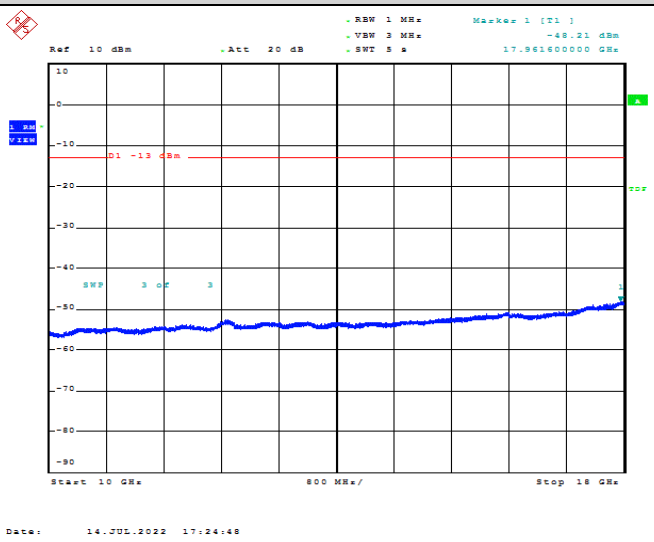
EGPRS 1900-661-1000~3000MHz



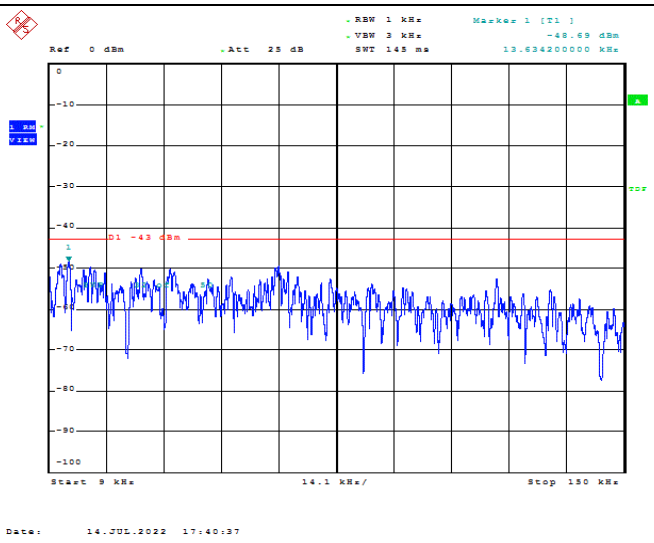
EGPRS 1900-661-3000~10000MHz



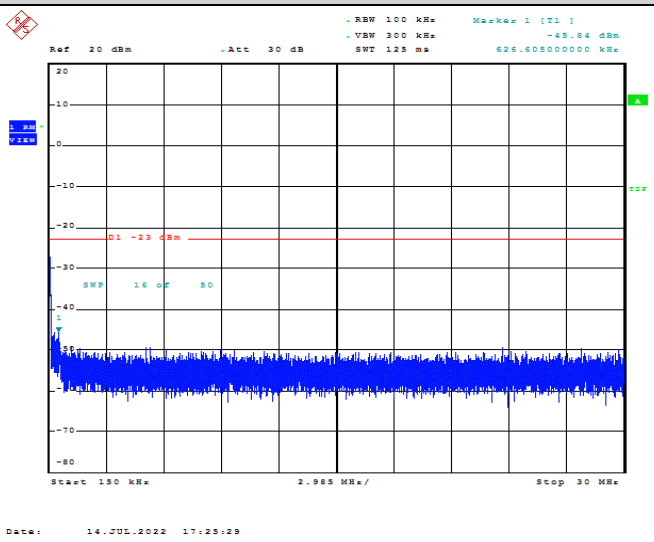
EGPRS 1900-661-10000~18000MHz



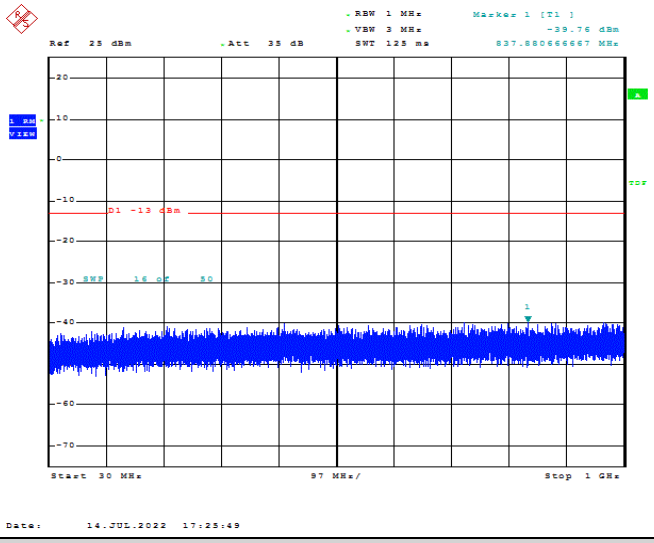
EGPRS 1900-810-0.009~0.15MHz



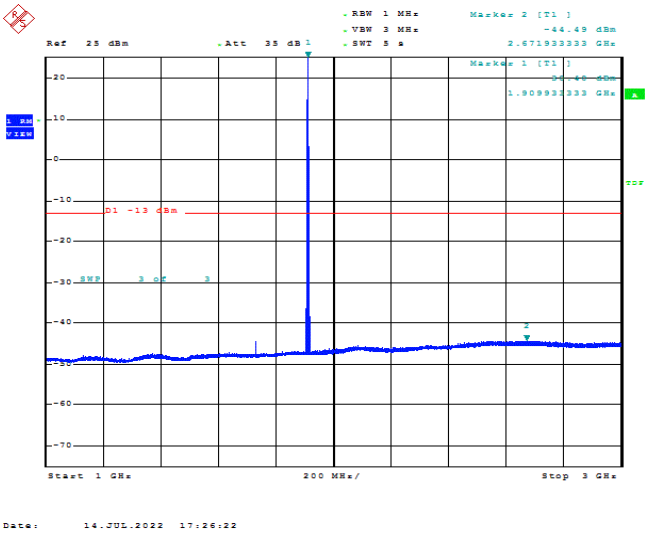
EGPRS 1900-810-0.15~30MHz



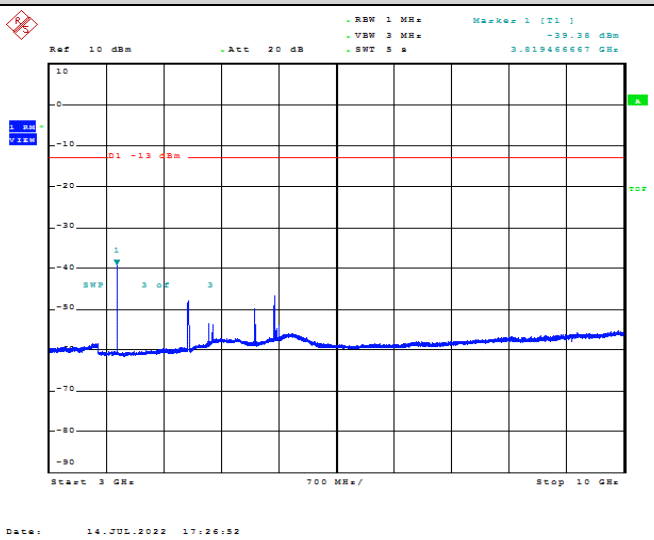
EGPRS 1900-810-30~1000MHz



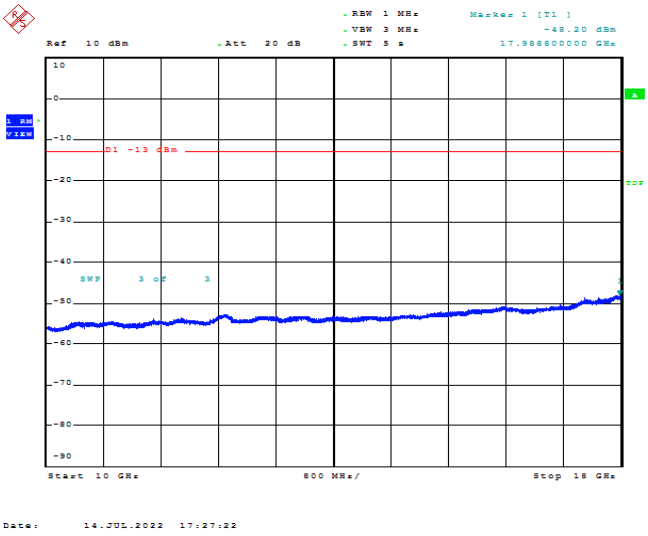
EGPRS 1900-810-1000~3000MHz

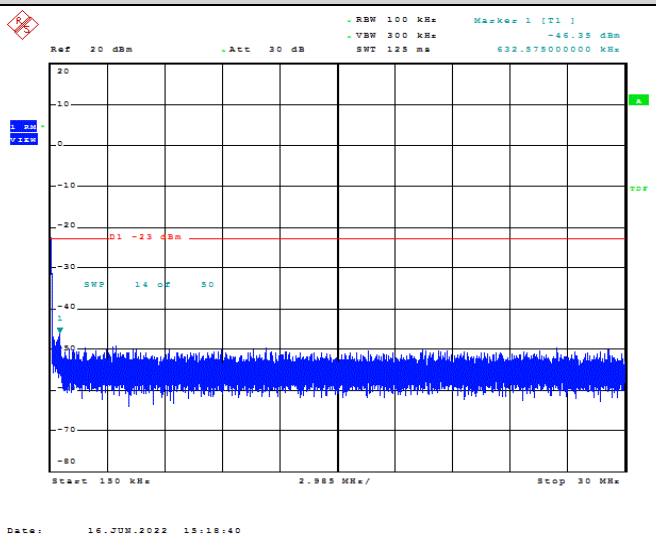
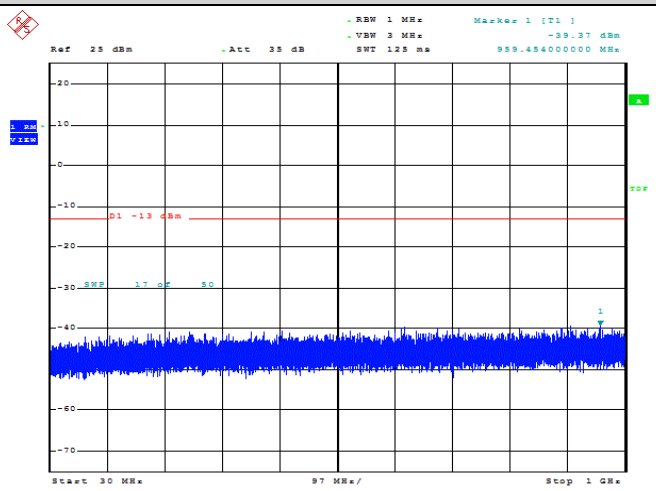
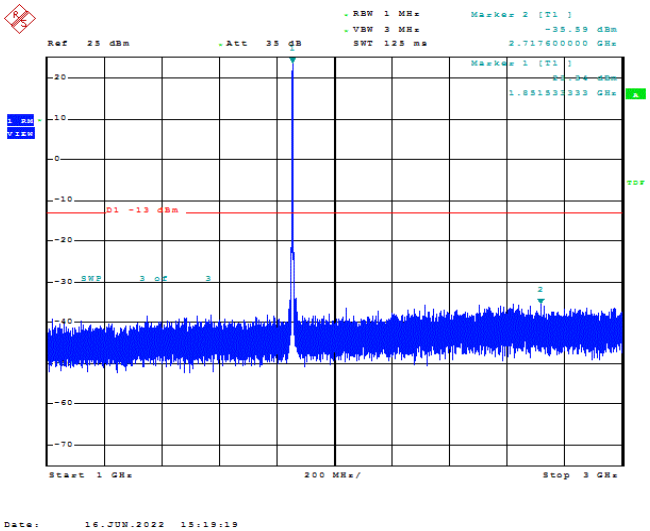


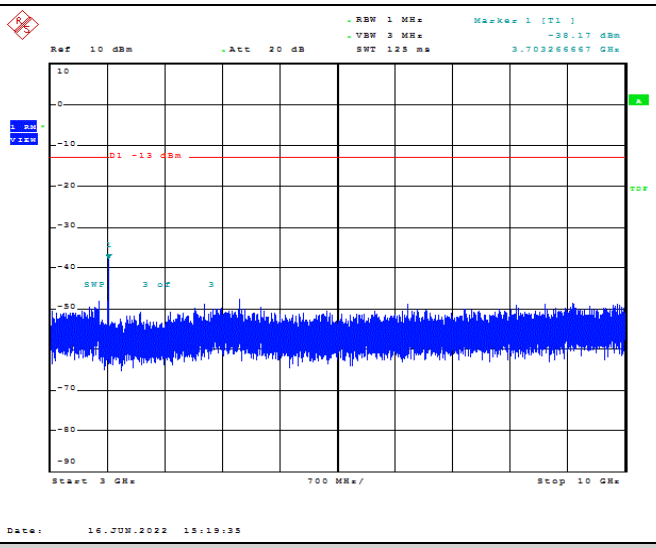
EGPRS 1900-810-3000~10000MHz



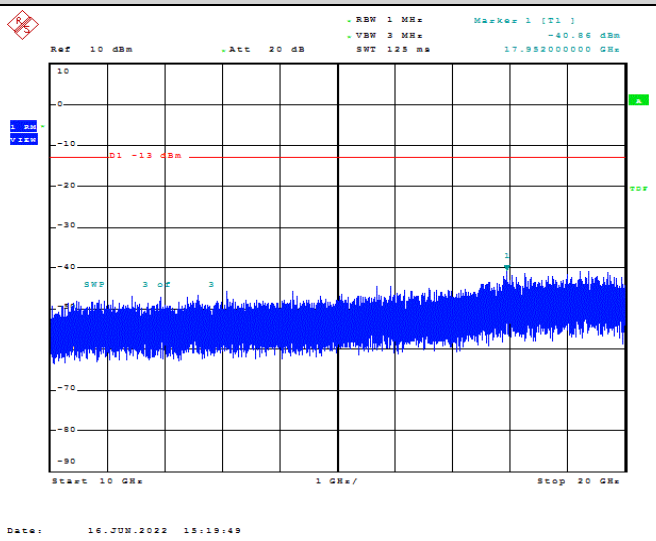
EGPRS 1900-810-10000~18000MHz



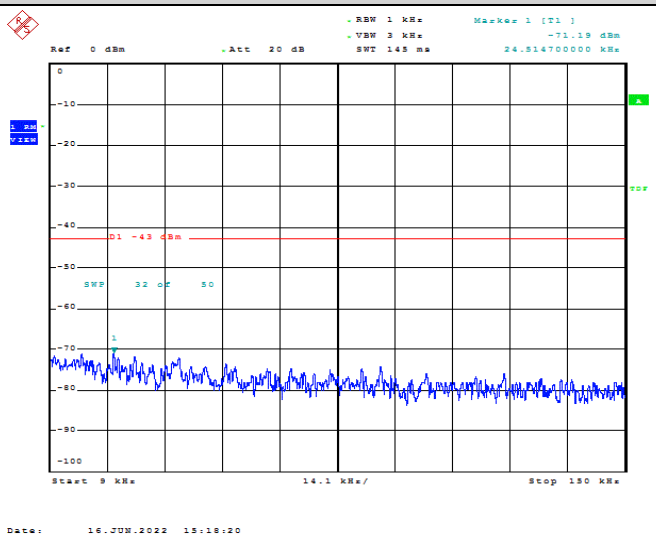
Band 2-9262-0.15~30MHz

Band 2-9262-30~1000MHz

Band 2-9262-1000~3000MHz

Band 2-9262-3000~10000MHz



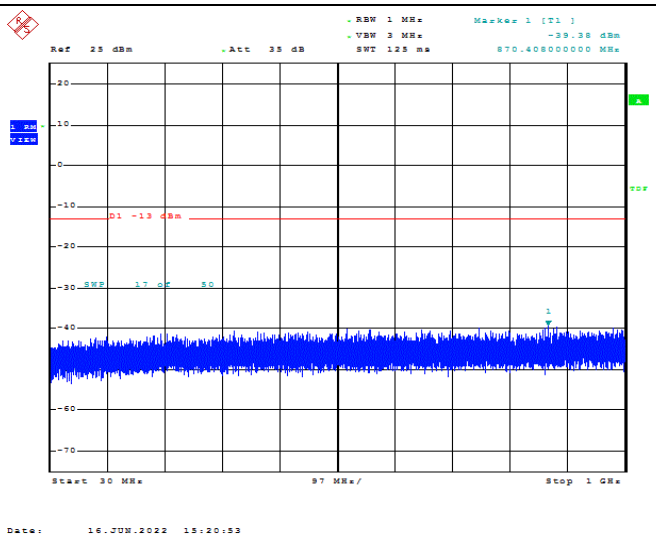
Band 2-9262-10000~20000MHz



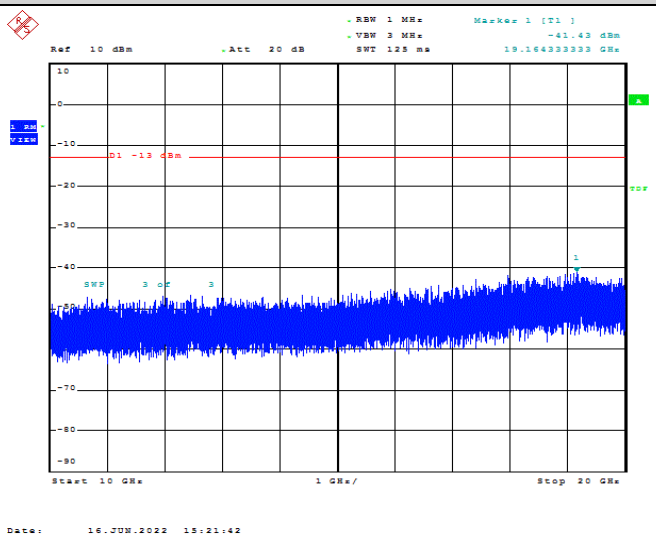
Band 2-9262-0.009~0.15MHz



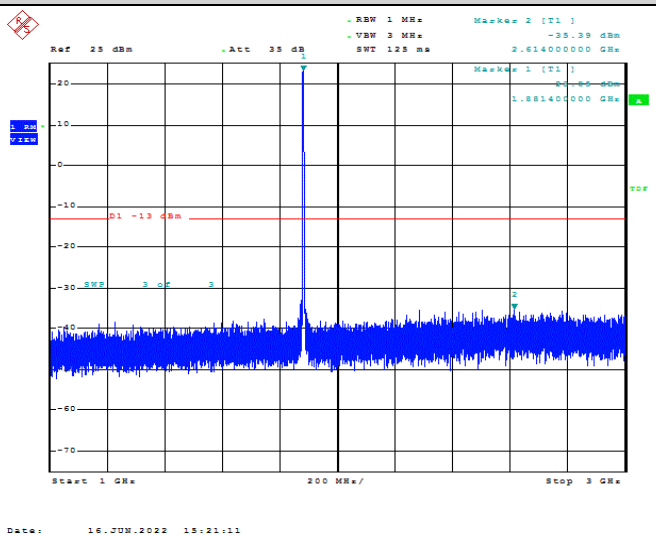
Band 2-9400-30~1000MHz



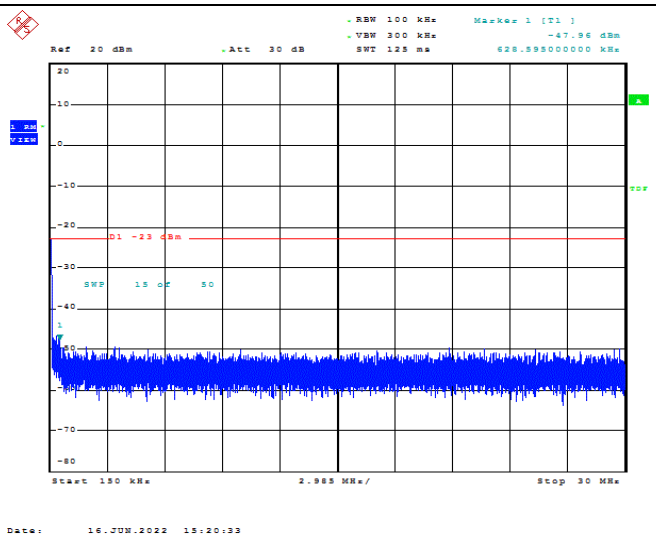
Band 2-9400-10000~20000MHz



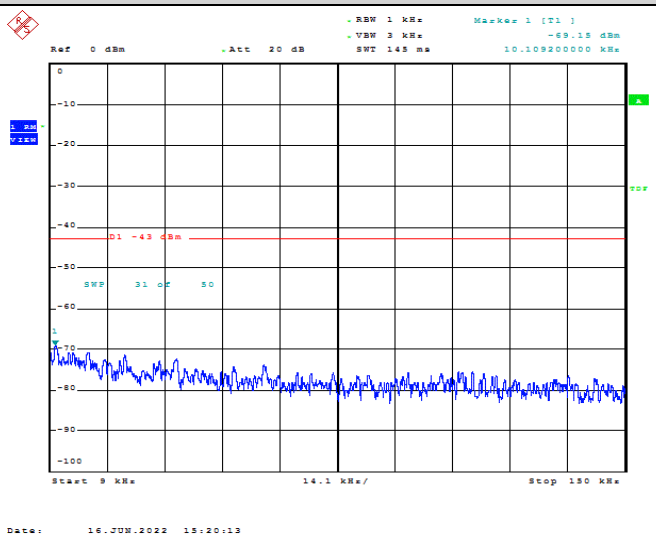
Band 2-9400-1000~3000MHz



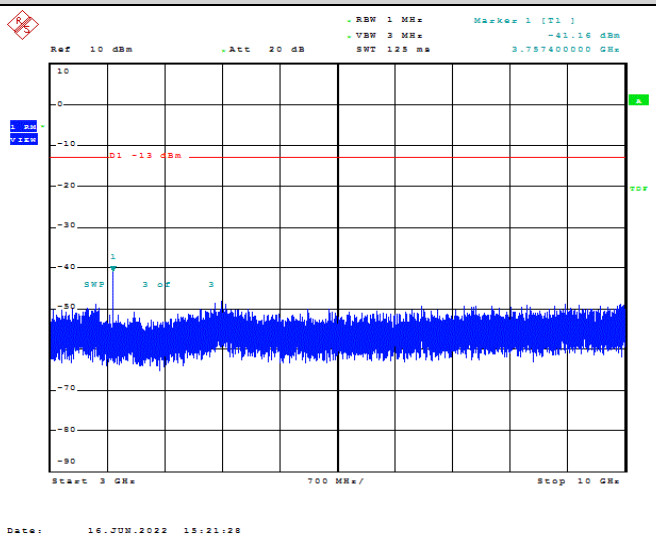
Band 2-9400-0.15~30MHz



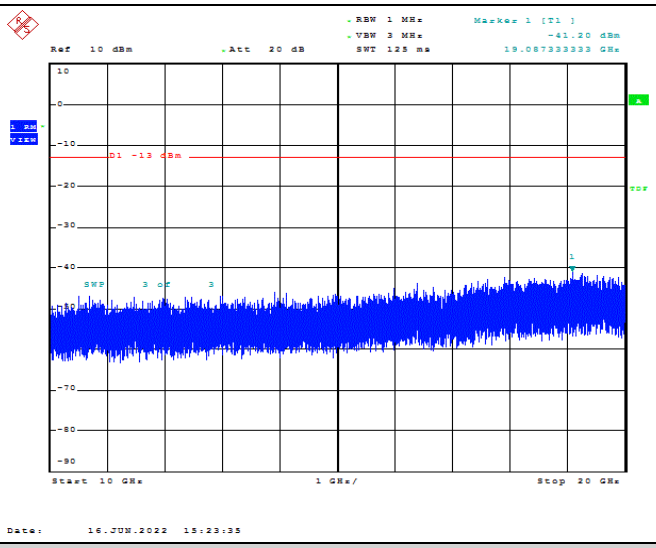
Band 2-9400-0.009~0.15MHz



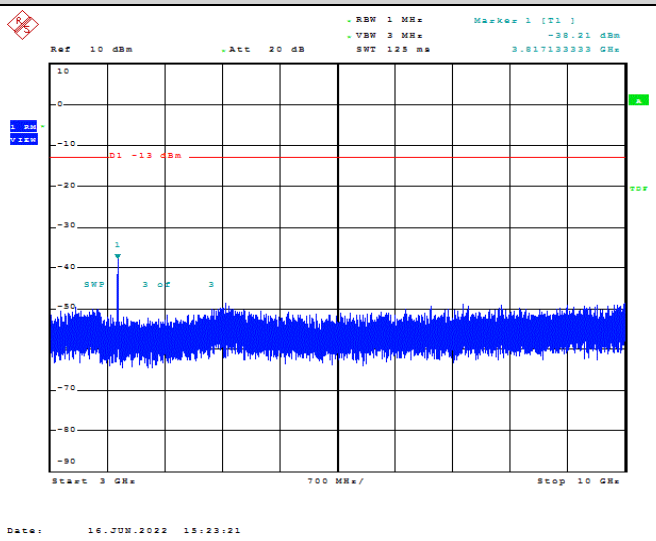
Band 2-9400-3000~10000MHz



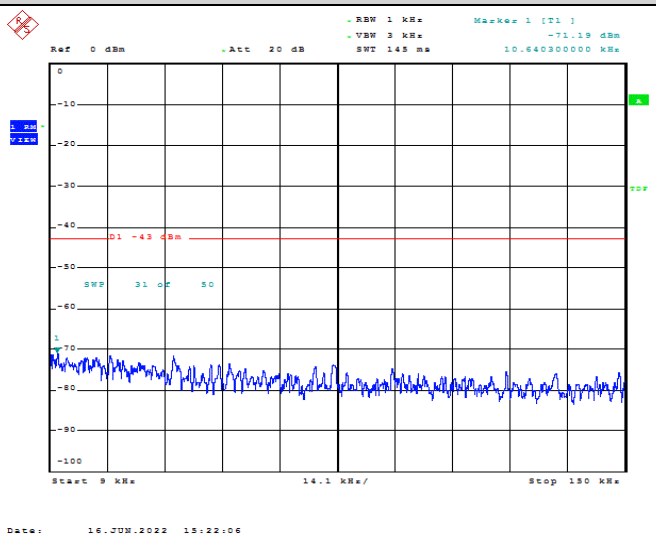
Band 2-9538-10000~20000MHz



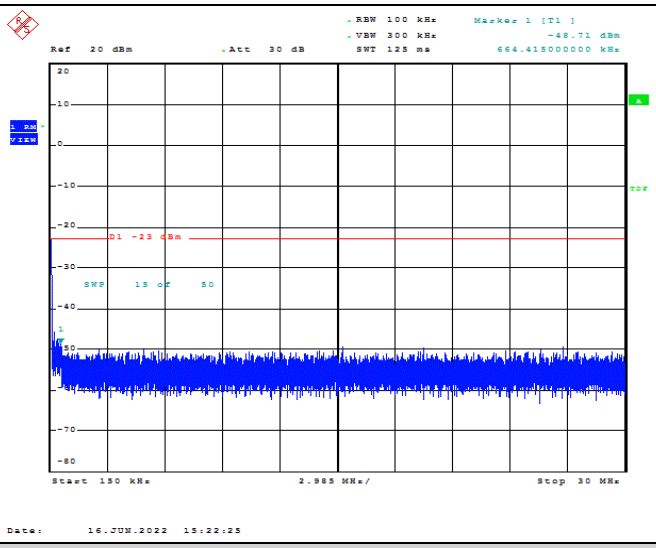
Band 2-9538-3000~10000MHz



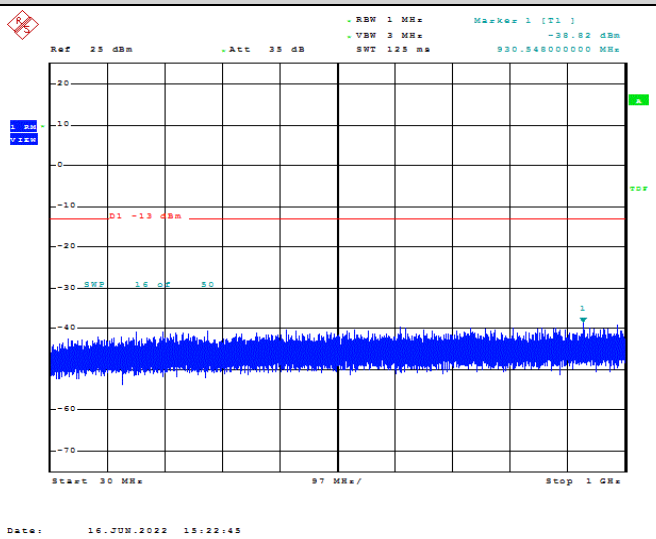
Band 2-9538-0.009~0.15MHz



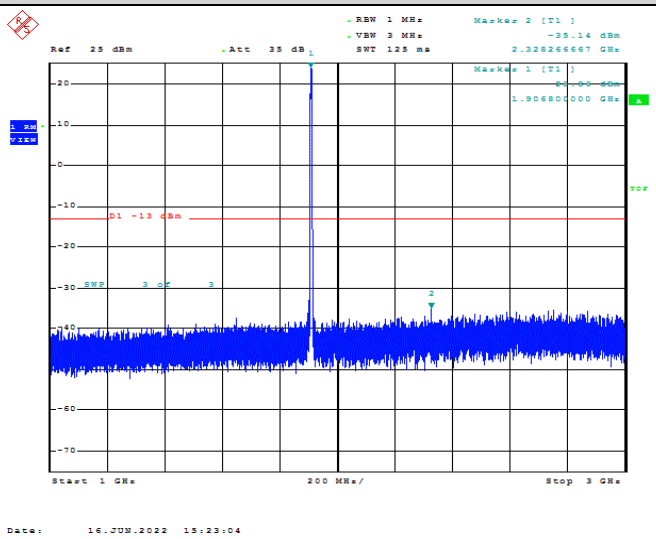
Band 2-9538-0.15~30MHz



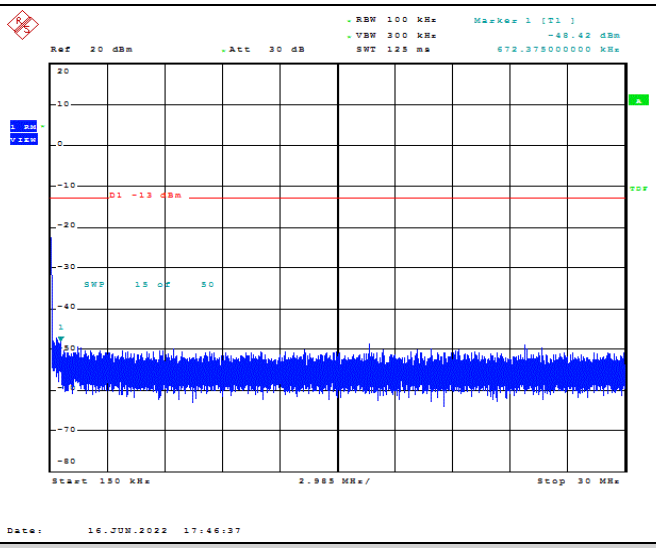
Band 2-9538-30~1000MHz



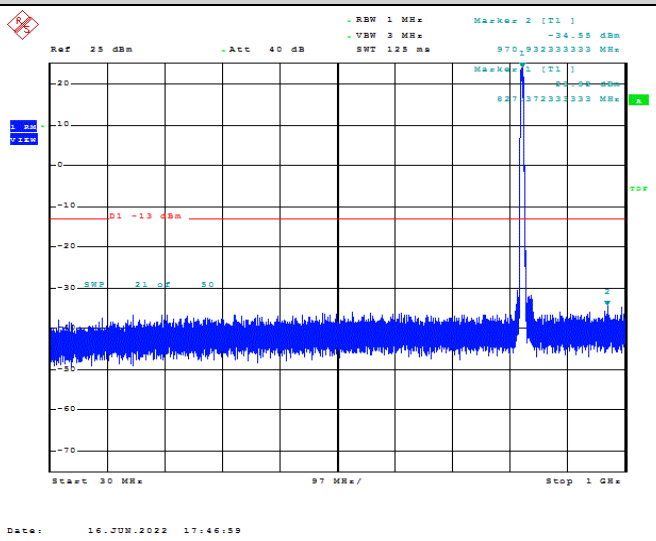
Band 2-9538-1000~3000MHz



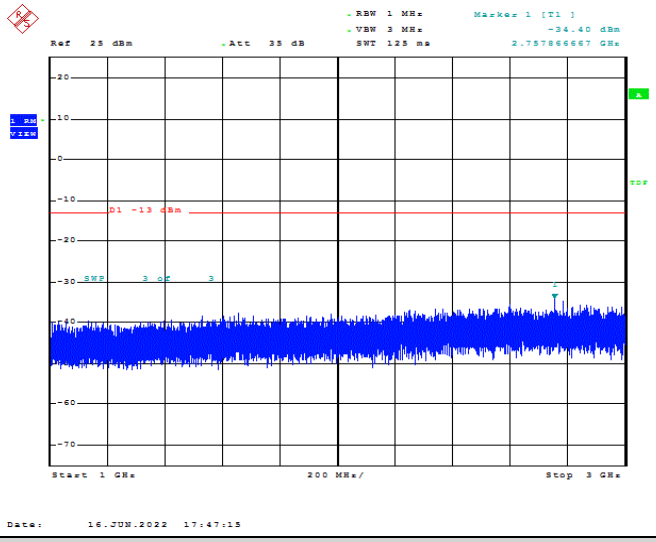
Band 5-4132-0.15~30MHz



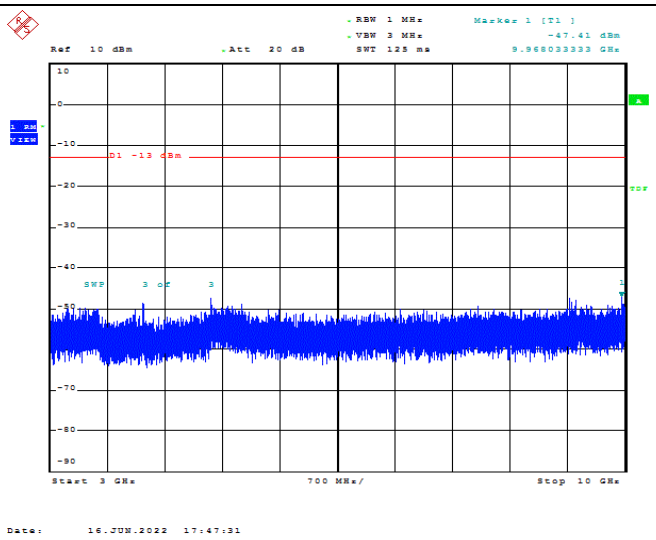
Band 5-4132-30~1000MHz



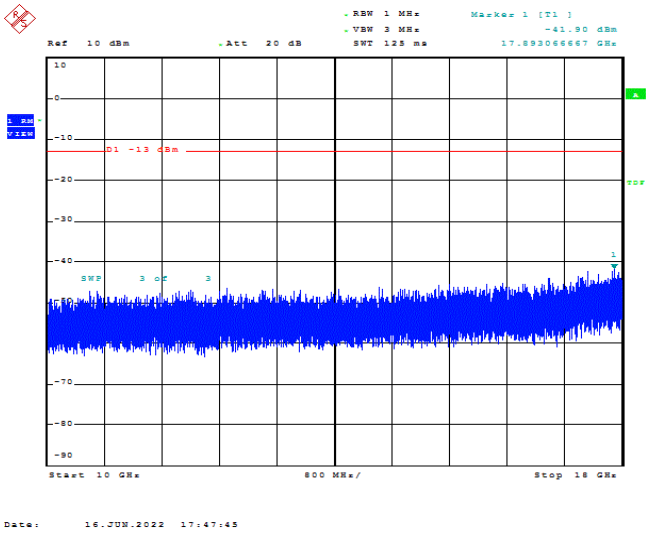
Band 5-4132-1000~3000MHz



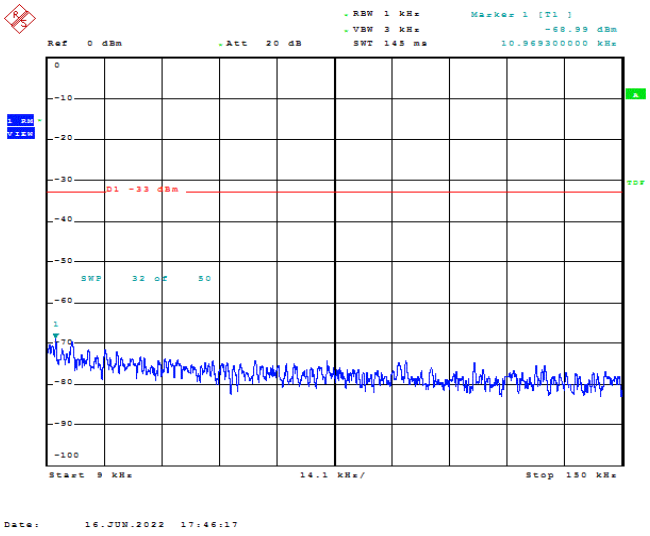
Band 5-4132-3000~10000MHz



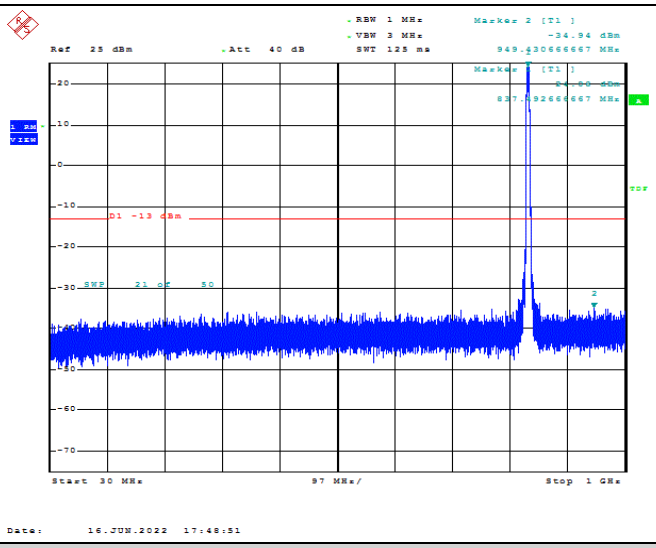
Band 5-4132-10000~18000MHz



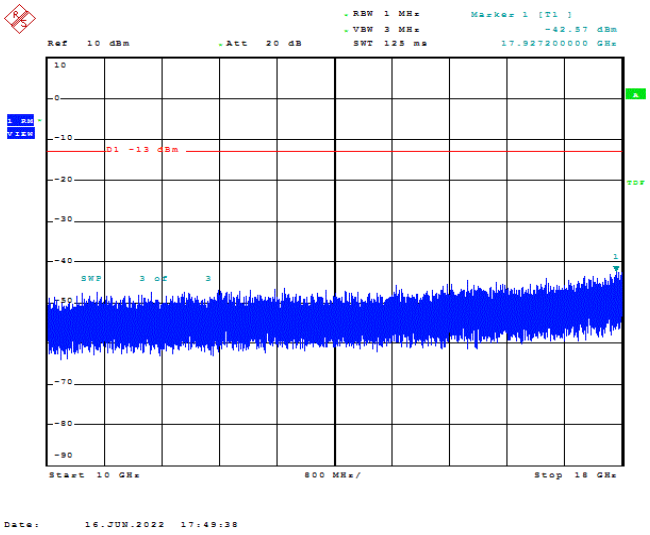
Band 5-4132-0.009~0.15MHz



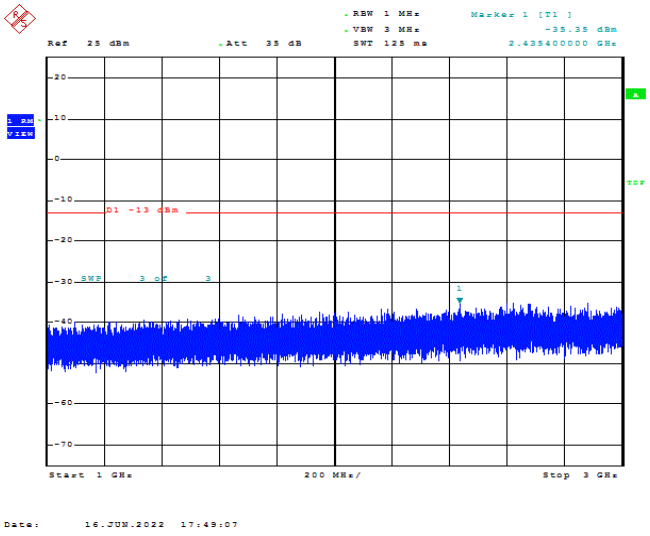
Band 5-4183-30~1000MHz



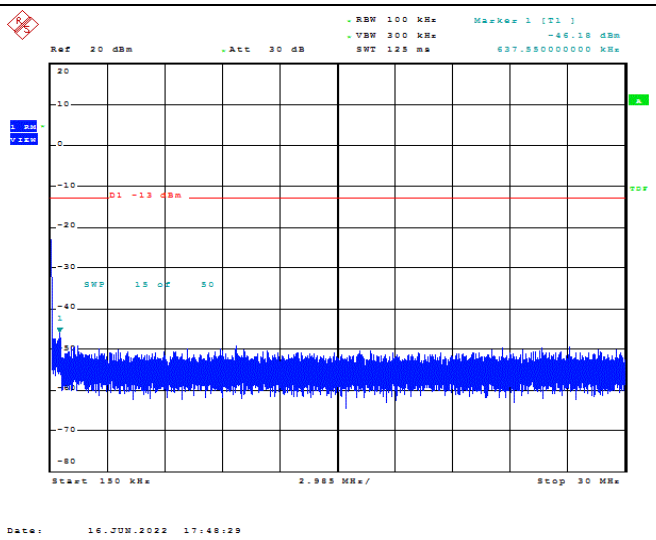
Band 5-4183-10000~18000MHz



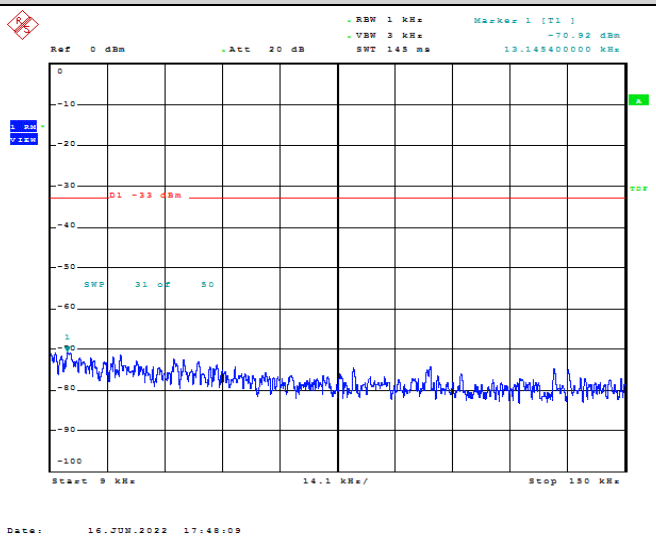
Band 5-4183-1000~3000MHz



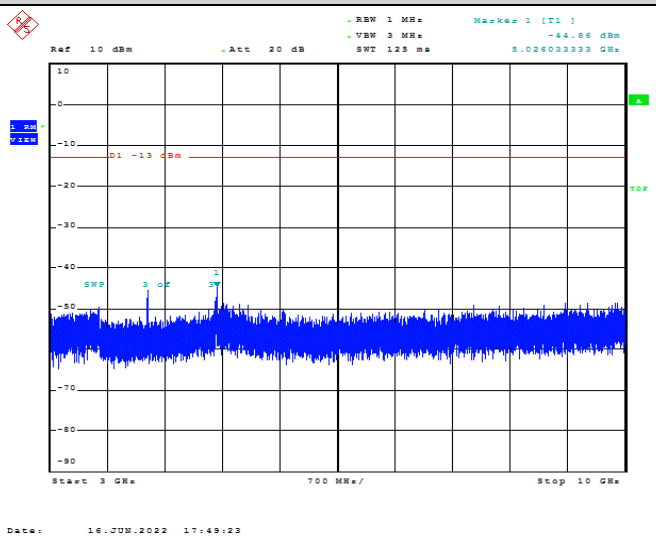
Band 5-4183-0.15~30MHz



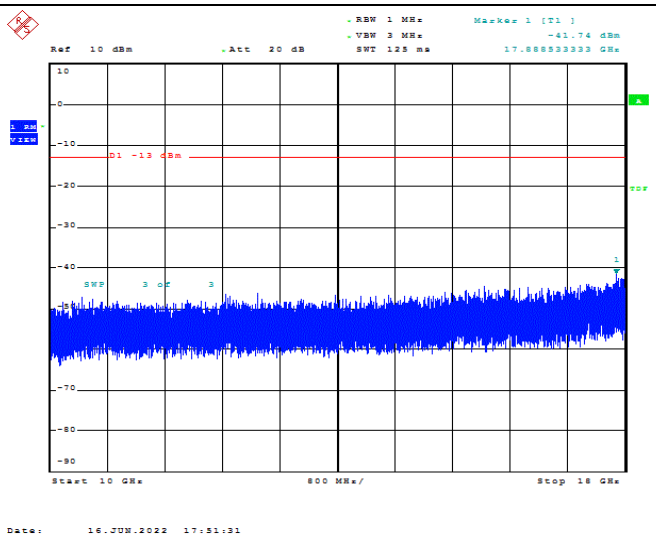
Band 5-4183-0.009~0.15MHz



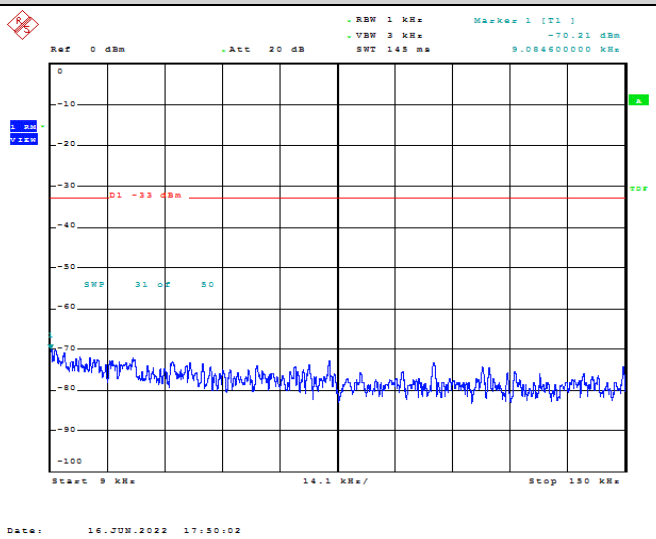
Band 5-4183-3000~10000MHz



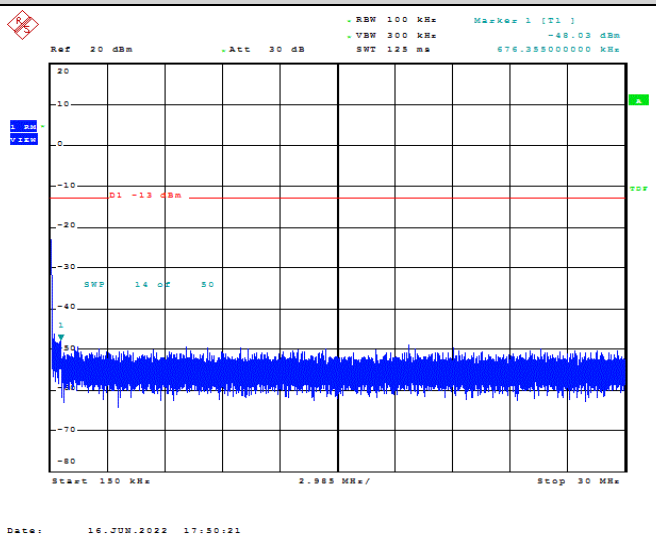
Band 5-4233-10000~18000MHz



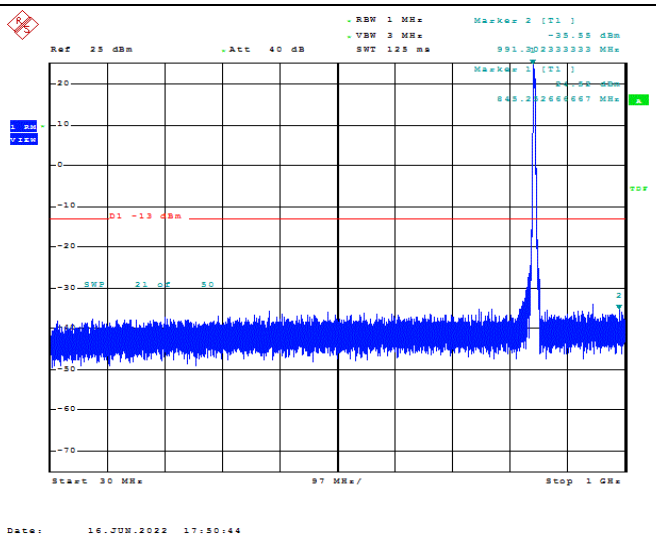
Band 5-4233-0.009~0.15MHz



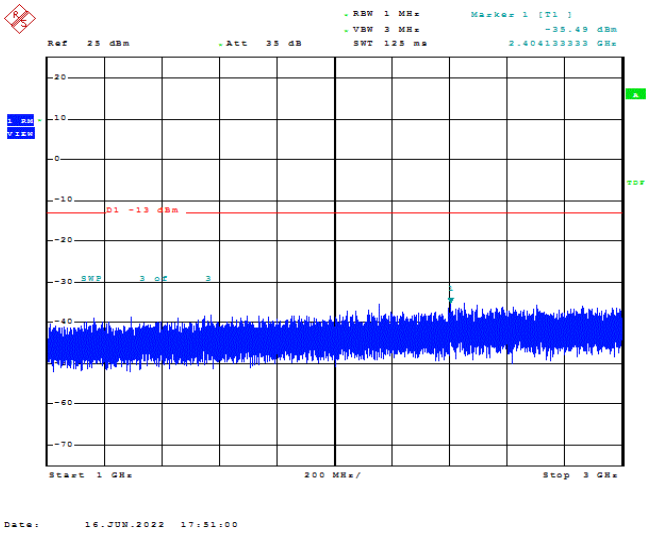
Band 5-4233-0.15~30MHz



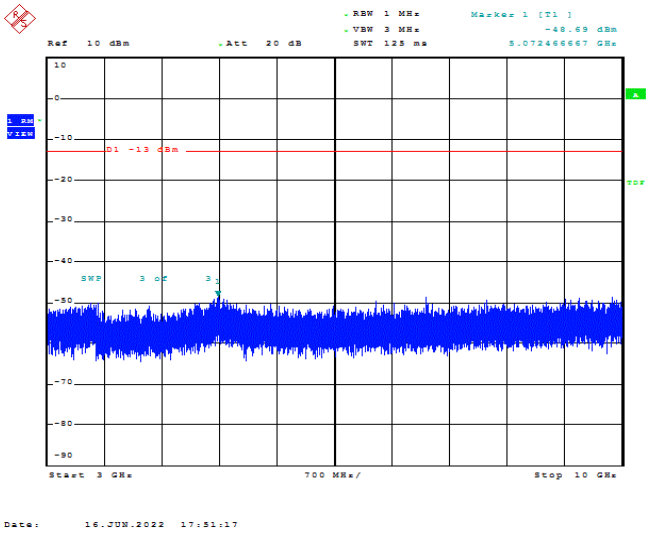
Band 5-4233-30~1000MHz



Band 5-4233-1000~3000MHz



Band 5-4233-3000~10000MHz

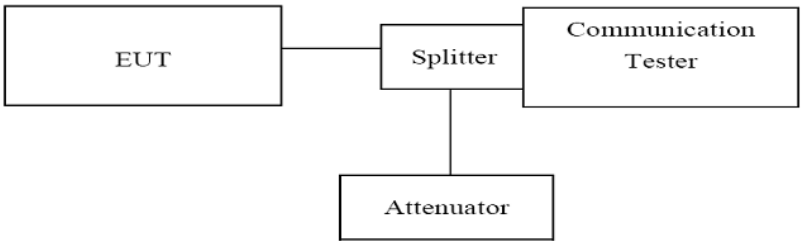


3.5. Receiver Spurious Emissions at Antenna Terminal

LIMIT

RSS-GEN7.1.3, Receiver-spurious emissions at any discrete frequency shall not exceed 2 nW in the band 30-1000 MHz, nor 5 nW above 1000 MHz.

TEST CONFIGURATION



TEST PROCEDURE

1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.
3. Set the RBW= 100kHz, VBW =300kHz, Below 1GHz
4. Set the RBW= 1MHz, VBW = 3MHz, Above1GHz,
5. Start=30MHz, Stop= 10th harmonic.

TEST RESULTS

Note: Not Applicable.

3.6. Band Edge compliance

LIMIT

FCC: §22.917, §24.238, §27.53 (h)

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.

FCC: §90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

RSS132§5.5

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1,the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least43 +10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

RSS133§6.5

Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment’s operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).

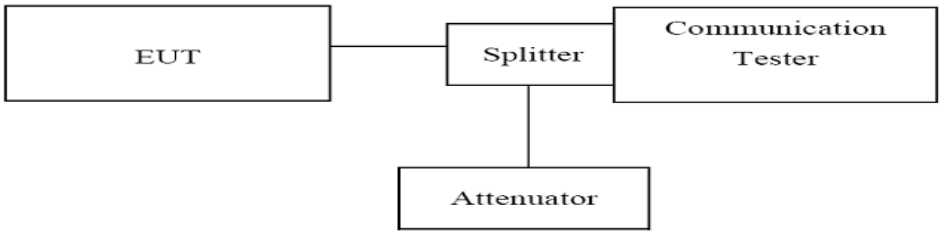
(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS139§6.6

(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment’s smallest operating frequency block,Footnote2 which can contain the equipment’s occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least43 + 10 log10 p (watts) dB.

(ii) After the first 1.0 MHz outside the equipment’s smallest operating frequency block, which can contain the equipment’s occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output was connected to a R&S CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

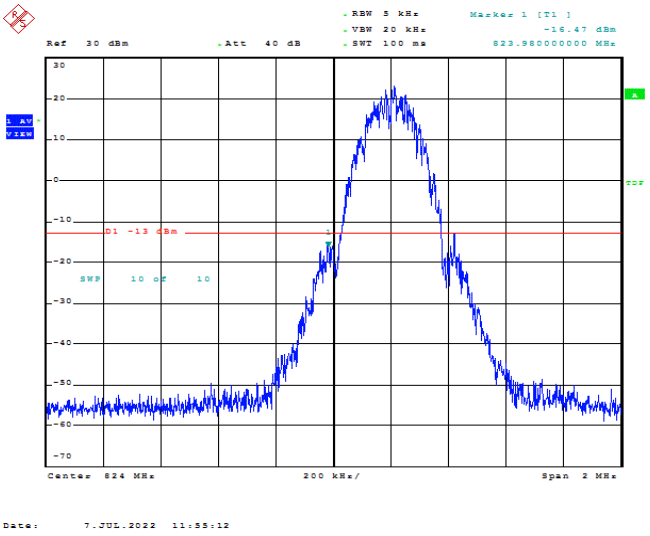
For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency.
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

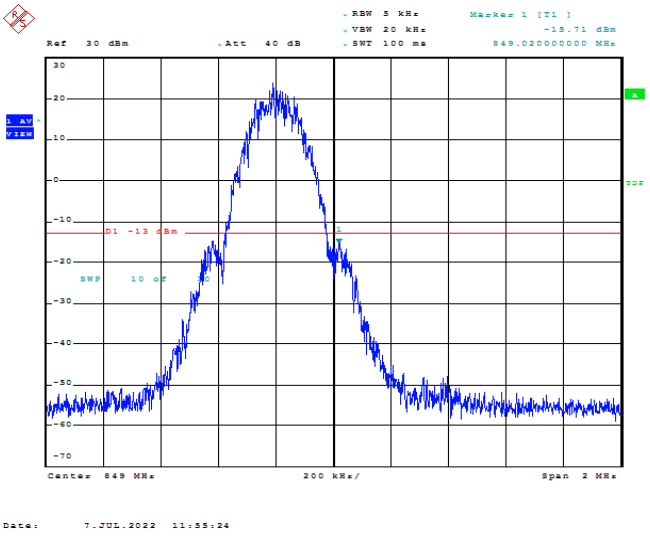
TEST RESULTS

Band	Channel	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GPRS 850	128	823.98	-15.65	-13	PASS
GPRS 850	251	849.02	-14.64	-13	PASS
EGPRS 850	128	823.98	-16.02	-13	PASS
EGPRS 850	251	849.03	-17.57	-13	PASS
GPRS 1900	512	1849.98	-17.49	-13	PASS
GPRS 1900	810	1910.02	-18.66	-13	PASS
EGPRS 1900	512	1849.98	-16.20	-13	PASS
EGPRS 1900	810	1910.01	-13.84	-13	PASS
Band 2	9262	1850.00	-25.21	-13	PASS
Band 2	9538	1910.00	-24.89	-13	PASS
Band 5	4132	824.00	-28.64	-13	PASS
Band 5	4233	849.00	-27.56	-13	PASS

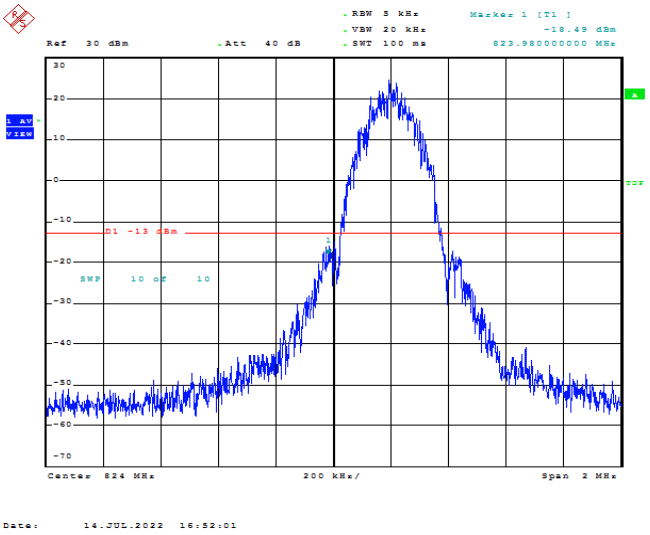
GPRS 850-128



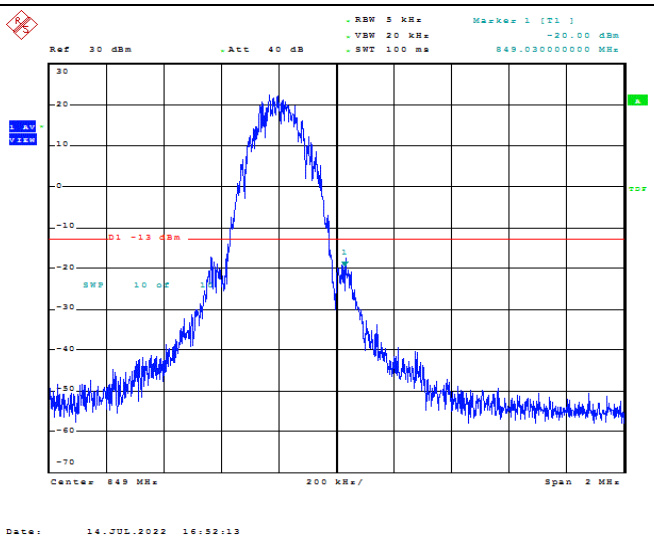
GPRS 850-251



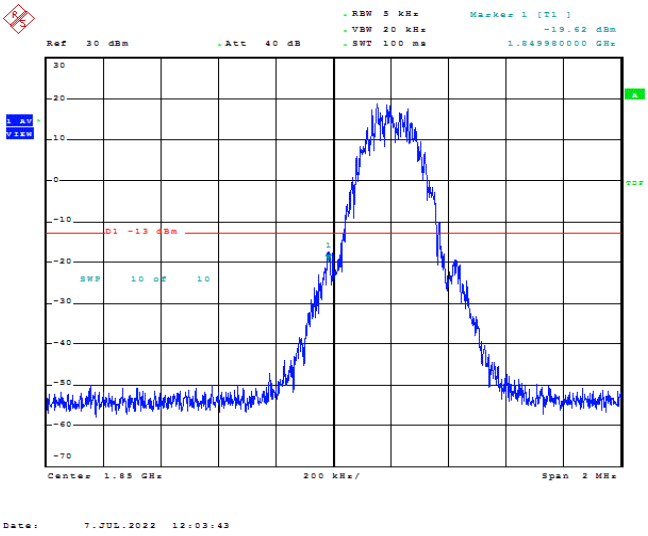
EGPRS 850-128



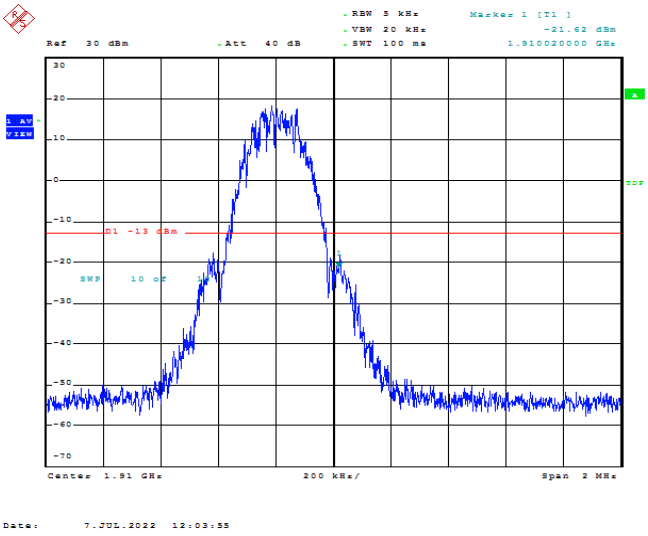
EGPRS 850-251



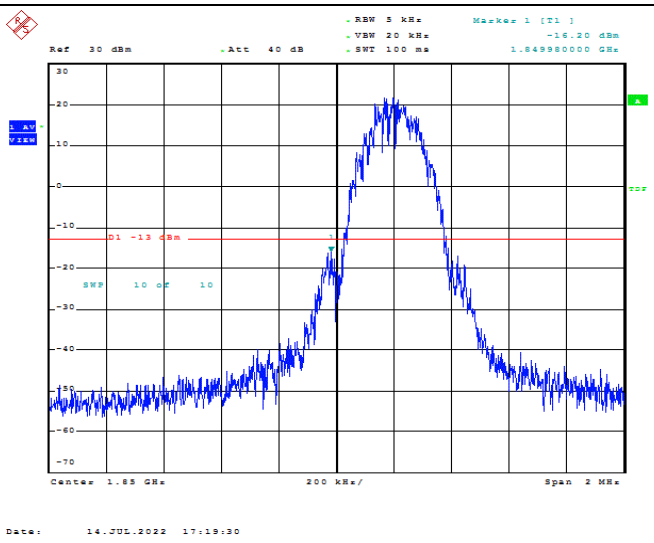
GPRS 1900-512



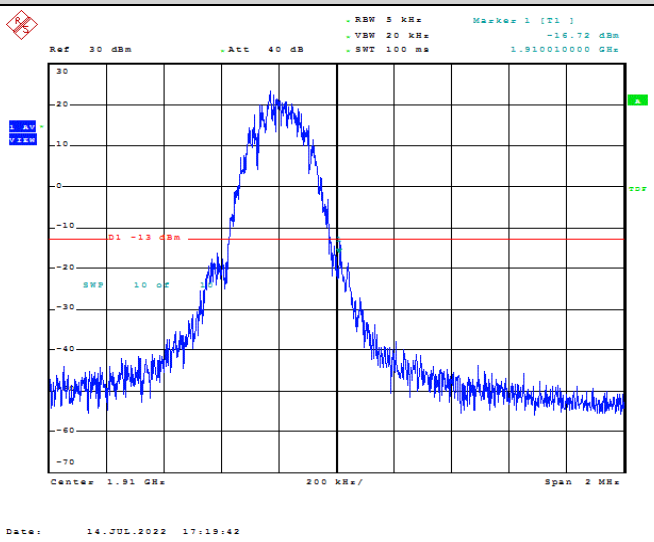
GPRS 1900-810



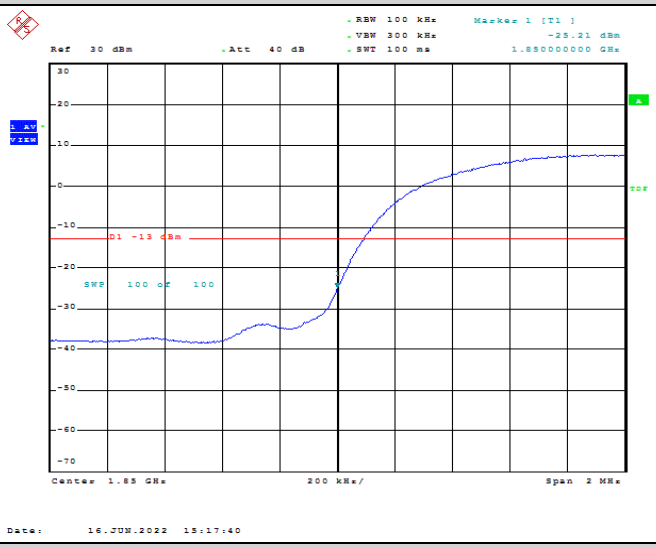
EGPRS 1900-512



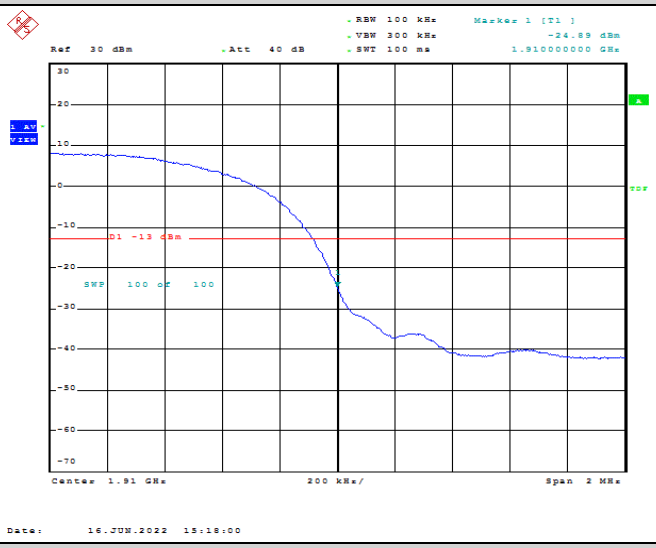
EGPRS 1900-810



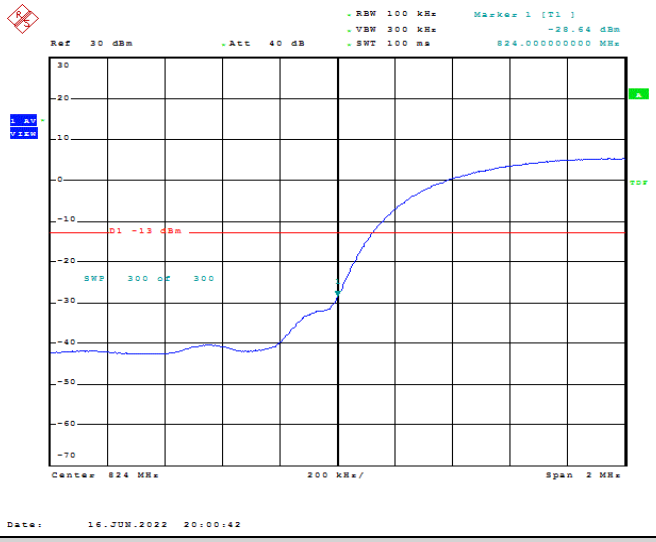
Band 2-9262



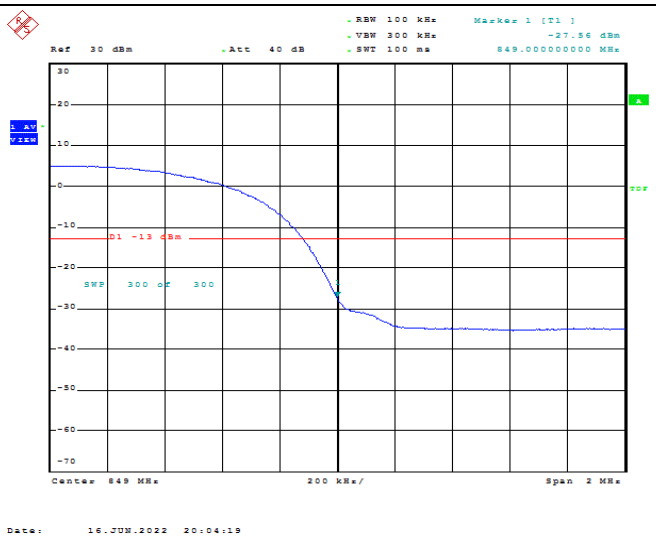
Band 2-9538



Band 5-4132



Band 5-4233


RBW 100 kHz
VBW 300 kHz
SWT 100 ms
Marker 1 [T1]
-27.56 dBm
849.000000000 MHz
Ref 30 dBm
Att 40 dB
D1 -13 dBm
SWP 300 of 300
Center 849 MHz
200 kHz/
Span 2 MHz
Date: 16.JUN.2022 20:04:19

3.7. Radiated Power Measurement

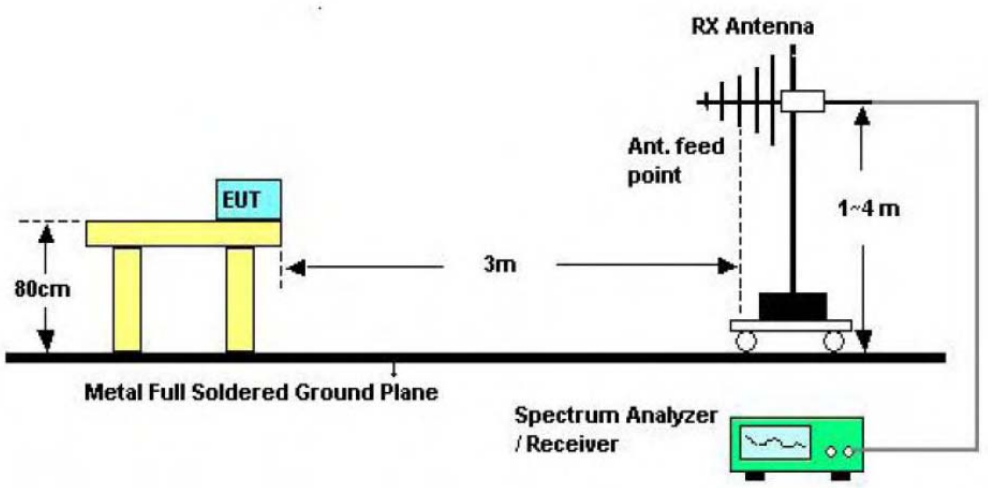
LIMIT

FCC: §2.1046, §22.913, §24.232, §27.50 and §90.635

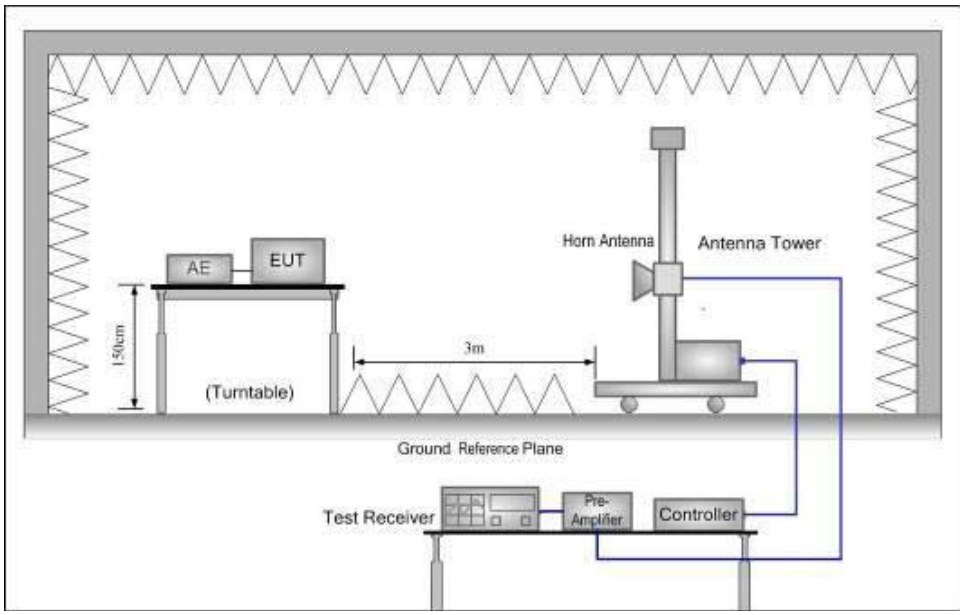
IC: RSS132§5.4; RSS133§6.4 and RSS139§6.5.

TEST CONFIGURATION

For the actual test configuration, please refer to the related Item – EUT Test Photos.



Below 1GHz



Above 1GHz

TEST PROCEDURE

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, and the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. An amplifier should be connected to the Signal Source output port. And the cable should be connecting between the Amplifier and the Substitution Antenna. The cable loss (Pcl), the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
6. The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl + Ga
   We used N5182A microwave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substitution test; The measurement results are amend as described below:
   Power(EIRP)=PMea- Pcl + Ga
7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST RESULTS

Remark:
1. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “X axis” position was the worst, and test data recorded in this report.
2. Pre-scan all antenna, only show the test data for worse case antenna on the test report.

Measurement Data (worst case):

Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
GPRS 850	128	V	32.64	38.45	Pass
		H	26.15		
	190	V	32.70		
		H	26.70		
	251	V	31.44		
		H	25.34		
EGPRS 850	128	V	28.49	38.45	Pass
		H	24.31		
	190	V	28.51		
		H	24.88		
	251	V	29.61		
		H	28.49		

Mode	Channel	Antenna Pol.	ERIP	Limit (dBm)	Result
GPRS 1900	512	V	30.00	33.00	Pass
		H	25.77		
	661	V	30.57		
		H	25.73		
	810	V	30.55		
		H	25.01		
EGPRS 1900	512	V	27.86	33.00	Pass
		H	23.07		
	661	V	27.58		
		H	23.17		
	810	V	27.68		
		H	23.52		

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
WCDMA Band II (QPSK)	9262	V	22.83	33.00	Pass
		H	20.71		
	9400	V	22.22		
		H	20.65		
	9538	V	22.87		
		H	20.56		

Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
WCDMA Band V (QPSK)	4132	V	24.18	38.45	Pass
		H	22.02		
	4183	V	24.96		
		H	22.72		
	4233	V	24.14		
		H	22.00		

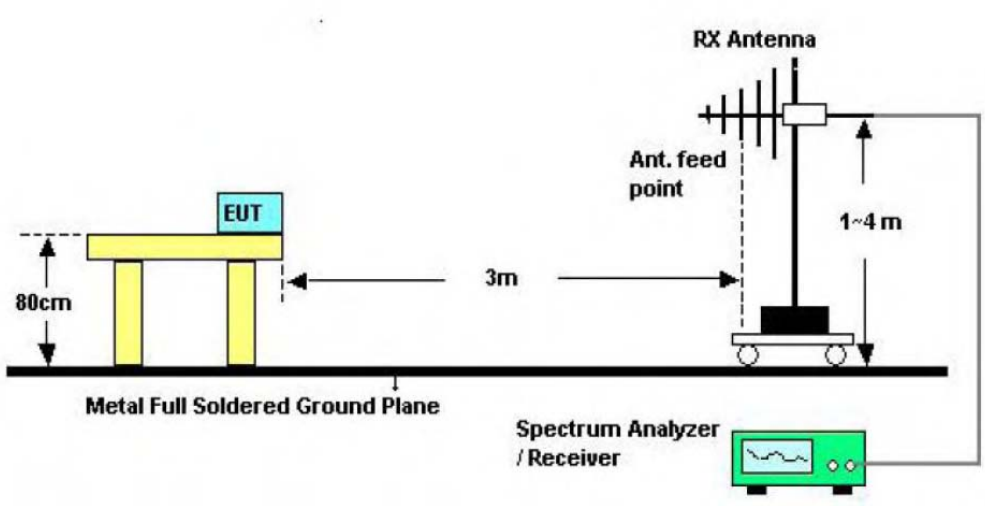
3.8. Radiated Spurious Emission

LIMIT

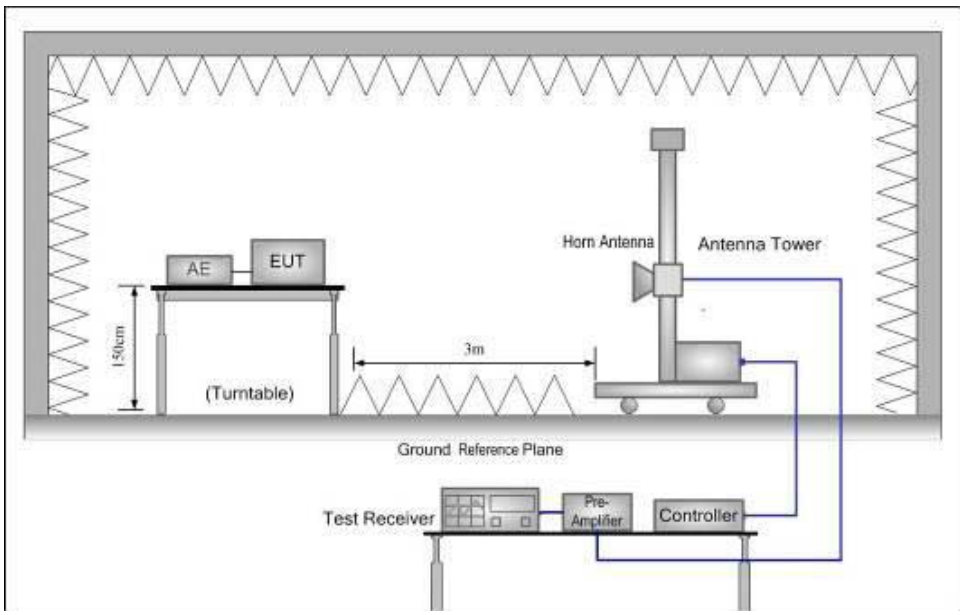
FCC: §22.917(a), §24.238(a), §27.53 (h), §90.691
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.
RSS132§5.5
Mobile and base station equipment shall comply with the limits in (i) and (ii) below.
(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts).
(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least43 +10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.
RSS133§6.5
Equipment shall comply with the limits in (i) and (ii) below.
(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).
(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.
RSS139§6.6
(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block,Footnote2 which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least43 + 10log10 p (watts) dB.
(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.

TEST CONFIGURATION

For the actual test configuration, please refer to the related Item – EUT Test Photos.



Below 1GHz



Above 1GHz

TEST PROCEDURE

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, and the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. An amplifier should be connected to the Signal Source output port. And the cable should be connecting between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
6. The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl + Ga
   We used SMF100A microwave signal generator which signal level can up to 33dBm,so we not used

power Amplifier for substitution test; The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga

7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.
8. Test frequency range should extend to 10th harmonic of highest fundamental frequency.

TEST RESULTS

Remark:
1. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Z axis” position was the worst, and test data recorded in this report.
2. Pre-scan all antenna, only show the test data for worse case antenna on the test report.

GPRS 850					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
128	1648.8	Horizontal	-36.52	-13.00	Pass
	2473.2	Horizontal	-47.02		
	1648.8	Vertical	-47.43		
	2473.2	Vertical	-50.48		
190	1673.2	Horizontal	-40.96		
	2509.8	Horizontal	-45.31		
	1673.2	Vertical	-41.03		
	2509.8	Vertical	-51.72		
251	1697.6	Horizontal	-33.29		
	2546.4	Horizontal	-42.82		
	1697.6	Vertical	-40.05		
	2546.4	Vertical	-45.61		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

EGPRS 850					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
128	1648.8	Horizontal	-37.80	-13.00	Pass
	2473.2	Horizontal	-46.69		
	1648.8	Vertical	-48.17		
	2473.2	Vertical	-54.15		
190	1673.2	Horizontal	-40.85		
	2509.8	Horizontal	-48.61		
	1673.2	Vertical	-43.87		
	2509.8	Vertical	-50.19		
251	1697.6	Horizontal	-36.82		
	2546.4	Horizontal	-40.58		
	1697.6	Vertical	-41.19		
	2546.4	Vertical	-48.13		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

GPRS 1900					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
512	3700.4	Horizontal	-46.14	-13.00	Pass
	5550.6	Horizontal	-49.39		
	3700.4	Vertical	-49.04		
	5550.6	Vertical	-56.62		
661	3760	Horizontal	-43.33		
	5640	Horizontal	-54.13		
	3760	Vertical	-44.60		
	5640	Vertical	-52.03		
810	3819.6	Horizontal	-37.78		
	5729.4	Horizontal	-43.61		
	3819.6	Vertical	-45.55		
	5729.4	Vertical	-52.27		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

EGPRS 1900					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
512	3700.4	Horizontal	-42.19	-13.00	Pass
	5550.6	Horizontal	-50.31		
	3700.4	Vertical	-50.65		
	5550.6	Vertical	-55.21		
661	3760	Horizontal	-46.47		
	5640	Horizontal	-50.75		
	3760	Vertical	-46.06		
	5640	Vertical	-54.44		
810	3819.6	Horizontal	-35.73		
	5729.4	Horizontal	-45.66		
	3819.6	Vertical	-46.63		
	5729.4	Vertical	-50.16		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

WCDMA Band II					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
9262	3705.20	Vertical	-36.65	-13.00	Pass
	5557.80	Vertical	-50.98		
	3705.20	Horizontal	-49.16		
	5557.80	Horizontal	-52.80		
9400	3760.00	Vertical	-42.04		
	5640.00	Vertical	-51.97		
	3760.00	Horizontal	-43.62		
	5640.00	Horizontal	-50.39		
9538	3814.80	Vertical	-42.15		
	5722.20	Vertical	-52.54		
	3814.80	Horizontal	-41.08		
	5722.20	Horizontal	-47.56		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

WCDMA Band V					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
4132	1653.20	Vertical	-40.84	-13.00	Pass
	2479.80	Vertical	-53.12		
	1653.20	Horizontal	-48.86		
	2479.80	Horizontal	-52.59		
4183	1672.80	Vertical	-40.84		
	2509.20	Vertical	-52.36		
	1672.80	Horizontal	-47.11		
	2509.20	Horizontal	-54.33		
4233	1692.80	Vertical	-41.01		
	2539.20	Vertical	-51.01		
	1692.80	Horizontal	-44.42		
	2539.20	Horizontal	-53.58		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

3.9. Frequency stability

LIMIT

FCC §22.355, §90.213

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

FCC §24.235 & §27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

RSS132§5.3

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 SRSP for mobile stations and±1.5 ppm for base stations.

In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 5.1) when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS133§6.3

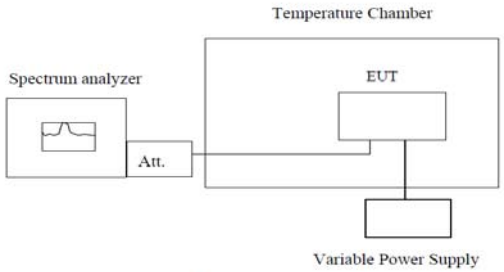
The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and±1.0 ppm for base stations.

In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the emission bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS139§6.4

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

TEST CONFIGURATION



Note : Measurement setup for testing on Antenna connector

TEST PROCEDURE

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed inside the temperature chamber.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency.
5. Turn EUT off and set the chamber temperature to 0℃. After the temperature stabilized for

approximately 30 minutes recorded the frequency.

6. Repeat step measure with 0℃ increased per stage until the highest temperature of +50℃ reached.
7. Reduce the input voltage to specified extreme voltage variation (+/- 10%) and endpoint, record the maximum frequency change.

TEST RESULTS

Voltage								
Band	Channel	PCL	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GPRS 850	128	3	VL	NT	-1.23	-0.001492	±2.5	PASS
GPRS 850	128	3	VN	NT	-2.68	-0.003252	±2.5	PASS
GPRS 850	128	3	VH	NT	-3.00	-0.003640	±2.5	PASS
GPRS 850	190	3	VL	NT	3.42	0.004088	±2.5	PASS
GPRS 850	190	3	VN	NT	8.72	0.010423	±2.5	PASS
GPRS 850	190	3	VH	NT	1.74	0.002080	±2.5	PASS
GPRS 850	251	3	VL	NT	3.07	0.003617	±2.5	PASS
GPRS 850	251	3	VN	NT	10.75	0.012665	±2.5	PASS
GPRS 850	251	3	VH	NT	5.00	0.005891	±2.5	PASS
EGPRS 850	128	8	VL	NT	16.66	0.020214	±2.5	PASS
EGPRS 850	128	8	VN	NT	14.92	0.018102	±2.5	PASS
EGPRS 850	128	8	VH	NT	18.21	0.022094	±2.5	PASS
EGPRS 850	190	8	VL	NT	18.05	0.021575	±2.5	PASS
EGPRS 850	190	8	VN	NT	15.79	0.018874	±2.5	PASS
EGPRS 850	190	8	VH	NT	16.37	0.019567	±2.5	PASS
EGPRS 850	251	8	VL	NT	14.75	0.017377	±2.5	PASS
EGPRS 850	251	8	VN	NT	16.53	0.019475	±2.5	PASS
EGPRS 850	251	8	VH	NT	13.30	0.015669	±2.5	PASS
GPRS 1900	512	0	VL	NT	5.46	0.002951	±2.5	PASS
GPRS 1900	512	0	VN	NT	0.61	0.000330	±2.5	PASS
GPRS 1900	512	0	VH	NT	0.55	0.000297	±2.5	PASS
GPRS 1900	661	0	VL	NT	-1.52	-0.000809	±2.5	PASS
GPRS 1900	661	0	VN	NT	2.16	0.001149	±2.5	PASS
GPRS 1900	661	0	VH	NT	-2.23	-0.001186	±2.5	PASS
GPRS 1900	810	0	VL	NT	-5.49	-0.002875	±2.5	PASS
GPRS 1900	810	0	VN	NT	-1.10	-0.000576	±2.5	PASS
GPRS 1900	810	0	VH	NT	0.58	0.000304	±2.5	PASS
EGPRS 1900	512	2	VL	NT	15.76	0.008518	±2.5	PASS
EGPRS 1900	512	2	VN	NT	14.59	0.007886	±2.5	PASS
EGPRS 1900	512	2	VH	NT	18.53	0.010015	±2.5	PASS
EGPRS 1900	661	2	VL	NT	15.40	0.008191	±2.5	PASS
EGPRS 1900	661	2	VN	NT	13.43	0.007144	±2.5	PASS
EGPRS 1900	661	2	VH	NT	12.14	0.006457	±2.5	PASS
EGPRS 1900	810	2	VL	NT	17.89	0.009367	±2.5	PASS

EGPRS 1900	810	2	VN	NT	15.59	0.008163	±2.5	PASS
EGPRS 1900	810	2	VH	NT	19.82	0.010378	±2.5	PASS

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band 2	9262	VL	NT	4.54	0.002451	±2.5	PASS
Band 2	9262	VN	NT	1.89	0.001020	±2.5	PASS
Band 2	9262	VH	NT	-8.38	-0.004524	±2.5	PASS
Band 2	9400	VL	NT	6.93	0.003686	±2.5	PASS
Band 2	9400	VN	NT	4.30	0.002287	±2.5	PASS
Band 2	9400	VH	NT	-2.93	-0.001559	±2.5	PASS
Band 2	9538	VL	NT	11.82	0.006196	±2.5	PASS
Band 2	9538	VN	NT	-0.92	-0.000482	±2.5	PASS
Band 2	9538	VH	NT	2.41	0.001263	±2.5	PASS
Band 5	4132	VL	NT	-0.31	-0.000375	±2.5	PASS
Band 5	4132	VN	NT	-2.92	-0.003533	±2.5	PASS
Band 5	4132	VH	NT	-0.16	-0.000194	±2.5	PASS
Band 5	4183	VL	NT	1.54	0.001841	±2.5	PASS
Band 5	4183	VN	NT	2.51	0.003000	±2.5	PASS
Band 5	4183	VH	NT	0.38	0.000454	±2.5	PASS
Band 5	4233	VL	NT	1.19	0.001406	±2.5	PASS
Band 5	4233	VN	NT	1.30	0.001536	±2.5	PASS
Band 5	4233	VH	NT	-1.32	-0.001559	±2.5	PASS

Temperature								
Band	Channel	PCL	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GPRS 850	128	3	NV	0	-2.94	-0.003567	±2.5	PASS
GPRS 850	128	3	NV	10	-3.81	-0.004623	±2.5	PASS
GPRS 850	128	3	NV	20	-4.75	-0.005763	±2.5	PASS
GPRS 850	128	3	NV	30	-0.74	-0.000898	±2.5	PASS
GPRS 850	128	3	NV	40	1.45	0.001759	±2.5	PASS
GPRS 850	128	3	NV	50	-1.42	-0.001723	±2.5	PASS
GPRS 850	190	3	NV	0	7.17	0.008570	±2.5	PASS
GPRS 850	190	3	NV	10	6.81	0.008140	±2.5	PASS
GPRS 850	190	3	NV	20	2.84	0.003395	±2.5	PASS
GPRS 850	190	3	NV	30	3.68	0.004399	±2.5	PASS
GPRS 850	190	3	NV	40	7.72	0.009228	±2.5	PASS
GPRS 850	190	3	NV	50	7.65	0.009144	±2.5	PASS
GPRS 850	251	3	NV	0	6.20	0.007304	±2.5	PASS
GPRS 850	251	3	NV	10	-1.84	-0.002168	±2.5	PASS
GPRS 850	251	3	NV	20	1.39	0.001638	±2.5	PASS
GPRS 850	251	3	NV	30	6.49	0.007646	±2.5	PASS
GPRS 850	251	3	NV	40	2.45	0.002886	±2.5	PASS
GPRS 850	251	3	NV	50	4.33	0.005101	±2.5	PASS
EGPRS 850	128	8	NV	0	12.46	0.015118	±2.5	PASS
EGPRS 850	128	8	NV	10	16.30	0.019777	±2.5	PASS
EGPRS 850	128	8	NV	20	13.95	0.016926	±2.5	PASS
EGPRS 850	128	8	NV	30	18.34	0.022252	±2.5	PASS
EGPRS 850	128	8	NV	40	13.33	0.016173	±2.5	PASS
EGPRS 850	128	8	NV	50	16.37	0.019862	±2.5	PASS
EGPRS 850	190	8	NV	0	14.88	0.017786	±2.5	PASS
EGPRS 850	190	8	NV	10	11.14	0.013316	±2.5	PASS
EGPRS 850	190	8	NV	20	16.82	0.020105	±2.5	PASS
EGPRS 850	190	8	NV	30	16.24	0.019412	±2.5	PASS
EGPRS 850	190	8	NV	40	14.59	0.017440	±2.5	PASS
EGPRS 850	190	8	NV	50	15.27	0.018252	±2.5	PASS
EGPRS 850	251	8	NV	0	12.14	0.014303	±2.5	PASS
EGPRS 850	251	8	NV	10	15.30	0.018025	±2.5	PASS
EGPRS 850	251	8	NV	20	14.95	0.017613	±2.5	PASS
EGPRS 850	251	8	NV	30	9.69	0.011416	±2.5	PASS
EGPRS 850	251	8	NV	40	15.72	0.018520	±2.5	PASS
EGPRS 850	251	8	NV	50	15.30	0.018025	±2.5	PASS
GPRS 1900	512	0	NV	0	3.33	0.001800	±2.5	PASS
GPRS 1900	512	0	NV	10	4.81	0.002600	±2.5	PASS
GPRS 1900	512	0	NV	20	6.17	0.003335	±2.5	PASS
GPRS 1900	512	0	NV	30	18.47	0.009983	±2.5	PASS

GPRS 1900	512	0	NV	40	15.27	0.008253	±2.5	PASS
GPRS 1900	512	0	NV	50	7.59	0.004102	±2.5	PASS
GPRS 1900	661	0	NV	0	10.04	0.005340	±2.5	PASS
GPRS 1900	661	0	NV	10	8.94	0.004755	±2.5	PASS
GPRS 1900	661	0	NV	20	9.01	0.004793	±2.5	PASS
GPRS 1900	661	0	NV	30	4.68	0.002489	±2.5	PASS
GPRS 1900	661	0	NV	40	13.43	0.007144	±2.5	PASS
GPRS 1900	661	0	NV	50	-4.55	-0.002420	±2.5	PASS
GPRS 1900	810	0	NV	0	1.26	0.000660	±2.5	PASS
GPRS 1900	810	0	NV	10	7.81	0.004089	±2.5	PASS
GPRS 1900	810	0	NV	20	5.55	0.002906	±2.5	PASS
GPRS 1900	810	0	NV	30	10.85	0.005681	±2.5	PASS
GPRS 1900	810	0	NV	40	8.07	0.004226	±2.5	PASS
GPRS 1900	810	0	NV	50	1.81	0.000948	±2.5	PASS
EGPRS 1900	512	2	NV	0	13.33	0.007205	±2.5	PASS
EGPRS 1900	512	2	NV	10	15.63	0.008448	±2.5	PASS
EGPRS 1900	512	2	NV	20	15.53	0.008394	±2.5	PASS
EGPRS 1900	512	2	NV	30	10.40	0.005621	±2.5	PASS
EGPRS 1900	512	2	NV	40	16.72	0.009037	±2.5	PASS
EGPRS 1900	512	2	NV	50	10.01	0.005410	±2.5	PASS
EGPRS 1900	661	2	NV	0	11.53	0.006133	±2.5	PASS
EGPRS 1900	661	2	NV	10	16.11	0.008569	±2.5	PASS
EGPRS 1900	661	2	NV	20	12.17	0.006473	±2.5	PASS
EGPRS 1900	661	2	NV	30	13.14	0.006989	±2.5	PASS
EGPRS 1900	661	2	NV	40	7.91	0.004207	±2.5	PASS
EGPRS 1900	661	2	NV	50	14.66	0.007798	±2.5	PASS
EGPRS 1900	810	2	NV	0	17.72	0.009278	±2.5	PASS
EGPRS 1900	810	2	NV	10	17.60	0.009216	±2.5	PASS
EGPRS 1900	810	2	NV	20	8.65	0.004529	±2.5	PASS
EGPRS 1900	810	2	NV	30	17.27	0.009043	±2.5	PASS
EGPRS 1900	810	2	NV	40	19.69	0.010310	±2.5	PASS
EGPRS 1900	810	2	NV	50	19.11	0.010006	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band 2	9262	NV	0	2.20	0.001188	±2.5	PASS
Band 2	9262	NV	10	-9.92	-0.005355	±2.5	PASS
Band 2	9262	NV	20	7.40	0.003995	±2.5	PASS
Band 2	9262	NV	30	-3.27	-0.001765	±2.5	PASS
Band 2	9262	NV	40	-0.85	-0.000459	±2.5	PASS
Band 2	9262	NV	50	0.50	0.000270	±2.5	PASS
Band 2	9400	NV	0	4.97	0.002644	±2.5	PASS
Band 2	9400	NV	10	-5.87	-0.003122	±2.5	PASS
Band 2	9400	NV	20	-0.79	-0.000420	±2.5	PASS
Band 2	9400	NV	30	-0.36	-0.000191	±2.5	PASS
Band 2	9400	NV	40	1.38	0.000734	±2.5	PASS
Band 2	9400	NV	50	-8.65	-0.004601	±2.5	PASS
Band 2	9538	NV	0	1.58	0.000828	±2.5	PASS
Band 2	9538	NV	10	13.55	0.007103	±2.5	PASS
Band 2	9538	NV	20	0.06	0.000031	±2.5	PASS
Band 2	9538	NV	30	1.81	0.000949	±2.5	PASS
Band 2	9538	NV	40	5.27	0.002763	±2.5	PASS
Band 2	9538	NV	50	5.18	0.002715	±2.5	PASS
Band 5	4132	NV	0	1.31	0.001585	±2.5	PASS
Band 5	4132	NV	10	-1.67	-0.002021	±2.5	PASS
Band 5	4132	NV	20	-3.14	-0.003800	±2.5	PASS
Band 5	4132	NV	30	-0.12	-0.000145	±2.5	PASS
Band 5	4132	NV	40	0.72	0.000871	±2.5	PASS
Band 5	4132	NV	50	-0.01	-0.000012	±2.5	PASS
Band 5	4183	NV	0	-2.37	-0.002833	±2.5	PASS
Band 5	4183	NV	10	-2.10	-0.002510	±2.5	PASS
Band 5	4183	NV	20	0.05	0.000060	±2.5	PASS
Band 5	4183	NV	30	0.45	0.000538	±2.5	PASS
Band 5	4183	NV	40	0.54	0.000645	±2.5	PASS
Band 5	4183	NV	50	1.92	0.002295	±2.5	PASS
Band 5	4233	NV	0	-0.12	-0.000142	±2.5	PASS
Band 5	4233	NV	10	-0.63	-0.000744	±2.5	PASS
Band 5	4233	NV	20	-0.39	-0.000461	±2.5	PASS
Band 5	4233	NV	30	0.54	0.000638	±2.5	PASS
Band 5	4233	NV	40	0.87	0.001028	±2.5	PASS
Band 5	4233	NV	50	1.30	0.001536	±2.5	PASS

**********THE END**********