



Report No.: SZEM190301170305

Page: 1 of 50

TEST REPORT

Application No.: SZEM1903011703CR
Applicant: Hytera Communications Corporation Limited
Address of Applicant: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, 518057, China
Manufacturer: Hytera Communications Corporation Limited
Address of Manufacturer: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, 518057, China
Equipment Under Test (EUT):
EUT Name: PoC LTE Terminal
Model No.: PNC370
Trade mark: Hytera
FCC ID: YAMPNC370
Standard(s) : 47 CFR Part 2
47 CFR Part 22 subpart H
47 CFR Part 24 subpart E
Date of Receipt: 2019-03-14
Date of Test: 2019-03-15 to 2019-04-01
Date of Issue: 2019-04-04

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-04-04		Original

Authorized for issue by:				
				
		Edison Li /Project Engineer		
				
		Eric Fu /Reviewer		



2 Test Summary

Test Item	FCC Rule No.	Requirements	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913, §24.232	ERP≤7W(GPRS850) EIRP≤2W(GPRS1900)	PASS
Peak-Average Ratio	§24.232	≤13dB	PASS
Modulation Characteristics	§2.1047	Digital modulation	PASS
Bandwidth	§2.1049(h)	OBW: No limit EBW: No limit	PASS
Band Edge Compliance	§2.1051, §22.917, §24.238	≤ -13dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	PASS
Spurious emissions at antenna terminals	§2.1051, §22.917, §24.238	≤ -13dBm	PASS
Field strength of spurious radiation	§2.1051, §22.917, §24.238	≤ -13dBm	PASS
Frequency stability	§2.1055, §22.355, §24.235	≤ ±2.5ppm	PASS



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4 General Information

4.1 Details of E.U.T.

Power supply:	Switching Power Supply Model: S010WU0500200 Input: AC 100-240V, 50/60Hz, 400mA Output: DC 5.0V, 2000mA DC 3.6V, 3100mAh rechargeable battery which charged by USB port
Sample Type:	Portable production
Support Network:	GPRS, EGPRS
Operation Frequency Band:	GPRS850/GPRS1900
Modulation Type:	GMSK for GPRS/EGPRS; 8PSK for EGPRS;
Supported Channel Bandwidth:	200KHz;
GPRS Multi-slots Class:	33
EGPRS Multi-slots Class:	33
Power Class:	4, tested with power level 5(GSM850) 1, tested with power level 0(GSM1900)
Designation of Emissions	GPRS850: 247KGXW, EGPRS850: 248KG7W GPRS1900: 247KGXW, EGPRS1900: 246KG7W
Antenna Type:	LDS Antenna
Antenna Gain:	0dBi
Extreme temp. Tolerance:	-30℃ to +50℃
Extreme vol. Limits:	3.06VDC to 4.14VDC (nominal: 3.6VDC)



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4.2 Test Frequency

Test mode:	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
GPRS850	TX	Channel 128	Channel 190	Channel 251
		824.2MHz	836.6 MHz	848.8 MHz
	RX	Channel 128	Channel 190	Channel 251
		869.2 MHz	881.6 MHz	893.8 MHz
Test mode:	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
GPRS1900	TX	Channel 512	Channel 661	Channel 810
		1850.2MHz	1880.0 MHz	1909.8 MHz
	RX	Channel 512	Channel 661	Channel 810
		1930.2 MHz	1960.0 MHz	1989.8 MHz

4.3 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	52%	
Atmospheric Pressure:	1015Pa	
Temperature:	TN	25 °C
Voltage:	VL	3.06 V
	VN	3.6 V
	VH	4.14 V

NOTE: VL= lower extreme test voltage
 VN= nominal voltage
 VH= upper extreme test voltage
 TN= normal temperature

4.4 Description of Support Units

The EUT has been tested independent unit.

4.5 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.25×10^{-8}
2	Occupied Bandwidth	3%
3	RF conducted power	0.75dB
4	Conducted Spurious emissions	0.75dB
5	RF Radiated power	4.5dB (below 1GHz)
		4.8dB (above 1GHz)
6	Radiated Spurious emission test	4.5dB (Below 1GHz)
		4.8dB (Above 1GHz)
7	Temperature test	1 °C
8	Humidity test	3%
9	Supply voltages	1.5%
10	Time	3%

4.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.7 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None



5 Equipment List

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
DC Power Supply	ZhaoXin	PS-3005D	SEM011-05	2018-09-25	2019-09-24
Spectrum Analyzer (20Hz-43GHz)	Rohde & Schwarz	FSU43	SEM004-08	2018-04-13	2019-04-12
Signal Analyzer (10Hz-40GHz)	Rohde & Schwarz	FSV40	SEM008-04	2018-04-02	2019-04-01
Signal Generator (9kHz-40GHz)	KEYSIGHT	N5173B	SEM006-05	2018-09-27	2019-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.6	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2018-07-12	2019-07-11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Universal Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-03	2018-04-02	2019-04-01
Universal Radio Communication Tester	Rohde & Schwarz	CMU200	SEM010-02	2018-04-02	2019-04-01
Power Splitter	Narda	4324-2	0168	N/A	N/A

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018-03-13	2021-03-12
EXA Signal Analyzer (10Hz-44GHz)	Agilent Technologies Inc	N9010A	SEM004-12	2018-04-13	2019-04-12
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018-04-13	2021-04-12
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017-10-17	2020-10-16
Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2018-09-25	2019-09-24
Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2018-11-12	2019-11-11
Pre-amplifier (26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2018-04-02	2019-04-01
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2018-07-12	2019-07-11



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Substitution Antenna	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26
Signal Generator	R&S	SMA100A	102174	2018-07-12	2019-07-11

RE in Chamber

Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-08-05	2020-08-04
MXE EMI Receiver (20Hz-8.4GHz)	Agilent Technologies	N9038A	SEM004-05	2018-09-25	2019-09-24
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017-06-27	2020-06-26
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2018-04-02	2019-04-01
				2019-04-01	2020-03-31
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2018-07-12	2019-07-11
Substitution Antenna	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26
Signal Generator	R&S	SMA100A	102174	2018-07-12	2019-07-11

General used equipment

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2017-09-29	2018-09-28
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2017-04-18	2018-04-17



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6 Radio Spectrum Matter Test Results

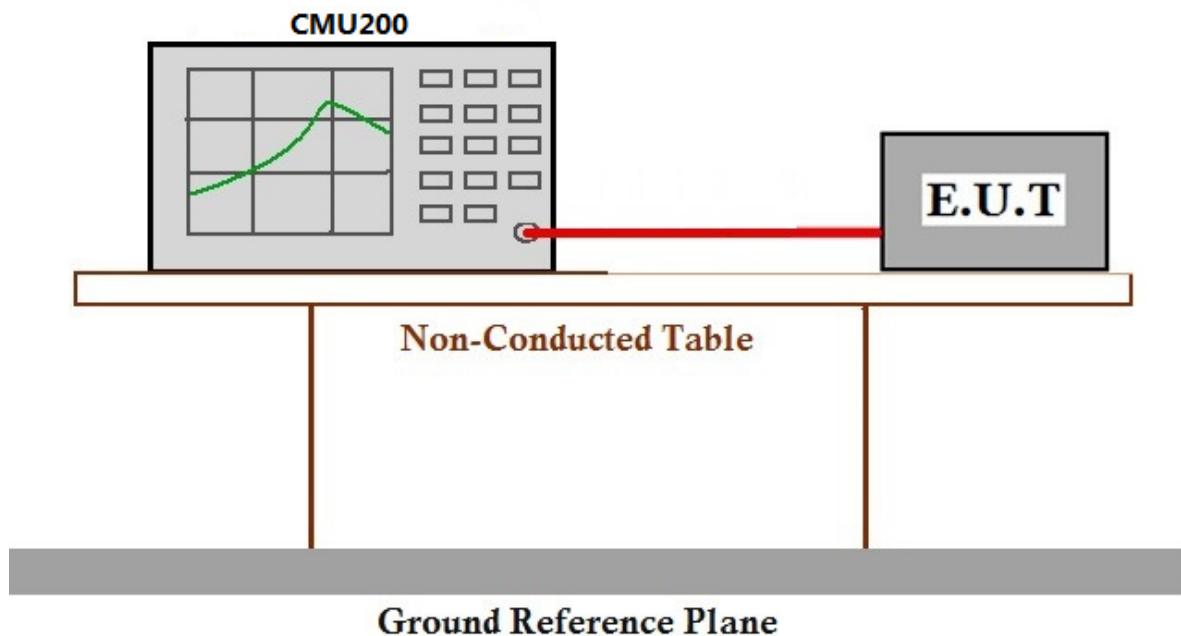
6.1 Effective (Isotropic) Radiated Power Output Data

Test Requirement: §2.1046, §22.913, §24.232
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: ERP≤7W(GPRS850)
EIRP ≤ 2 W(GPRS1900)

6.1.1 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar
Test mode: z: Tx mode, Keep the EUT in transmitting mode.

6.1.2 Test Setup Diagram



6.1.3 Measurement Data



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Test band: GPRS850										
Conducted output power(dBm)					Antenna gain (dBd)	Antenna gain (dBi)	FCC: ERP(dBm)			Limit (dBm)
Channel		128	190	251			128	190	251	
GPRS/EGPRS (GMSK)	1 TX Slot	31.78	31.85	31.82	-2.15	0	29.63	29.7	29.67	38.45
	2 TX Slots	30.53	30.48	30.21	-2.15	0	28.38	28.33	28.06	38.45
	3 TX Slots	29.21	29.12	29.08	-2.15	0	27.06	26.97	26.93	38.45
	4 TX Slots	26.88	26.58	26.47	-2.15	0	24.73	24.43	24.32	38.45
EGPRS(8PSK)	1 TX Slot	26.02	25.94	25.88	-2.15	0	23.87	23.79	23.73	38.45
	2 TX Slots	25.53	25.35	25.32	-2.15	0	23.38	23.2	23.17	38.45
	3 TX Slots	23.33	23.29	23.23	-2.15	0	21.18	21.14	21.08	38.45
	4 TX Slots	22.25	22.14	22.03	-2.15	0	20.1	19.99	19.88	38.45

Note:

1) dBd= dBi-2.15

2) ERP= Conducted output power+Antenna gain (dBd)

3) EIRP= Conducted output power+Antenna gain (dBi)

Test band: GPRS1900									
Conducted output power(dBm)					Antenna gain (dBi)	FCC: EIRP(dBm)			Limit (dBm)
Channel		512	661	810		512	661	810	
GPRS/EGPRS (GMSK)	1 TX Slot	29.83	29.79	29.86	0	29.83	29.79	29.86	33
	2 TX Slots	28.46	28.44	28.51	0	28.46	28.44	28.51	33
	3 TX Slots	27.18	26.87	26.91	0	27.18	26.87	26.91	33
	4 TX Slots	24.79	24.72	24.75	0	24.79	24.72	24.75	33
EGPRS(8PSK)	1 TX Slot	25.66	25.39	25.48	0	25.66	25.39	25.48	33
	2 TX Slots	24.76	24.48	24.61	0	24.76	24.48	24.61	33
	3 TX Slots	22.56	22.27	22.35	0	22.56	22.27	22.35	33
	4 TX Slots	21.42	21.24	21.26	0	21.42	21.24	21.26	33

Note:

1) EIRP= Conducted output power+Antenna gain (dBi)



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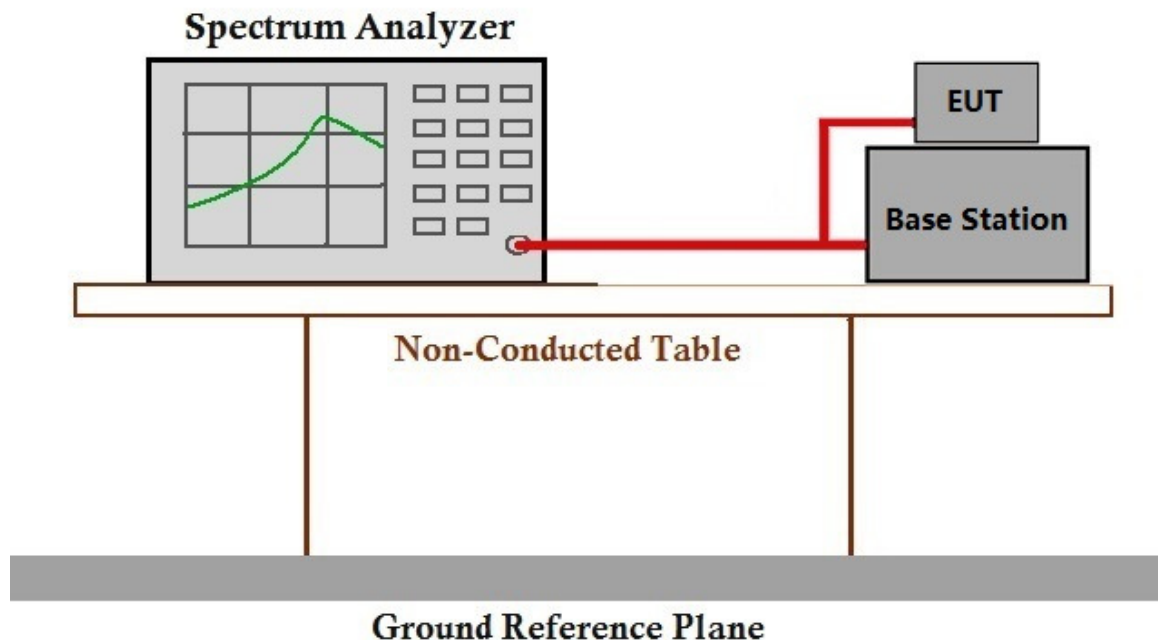
6.2 Peak-Average Ratio

Test Requirement: §24.232
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: ≤13dB

6.2.1 E.U.T. Operation

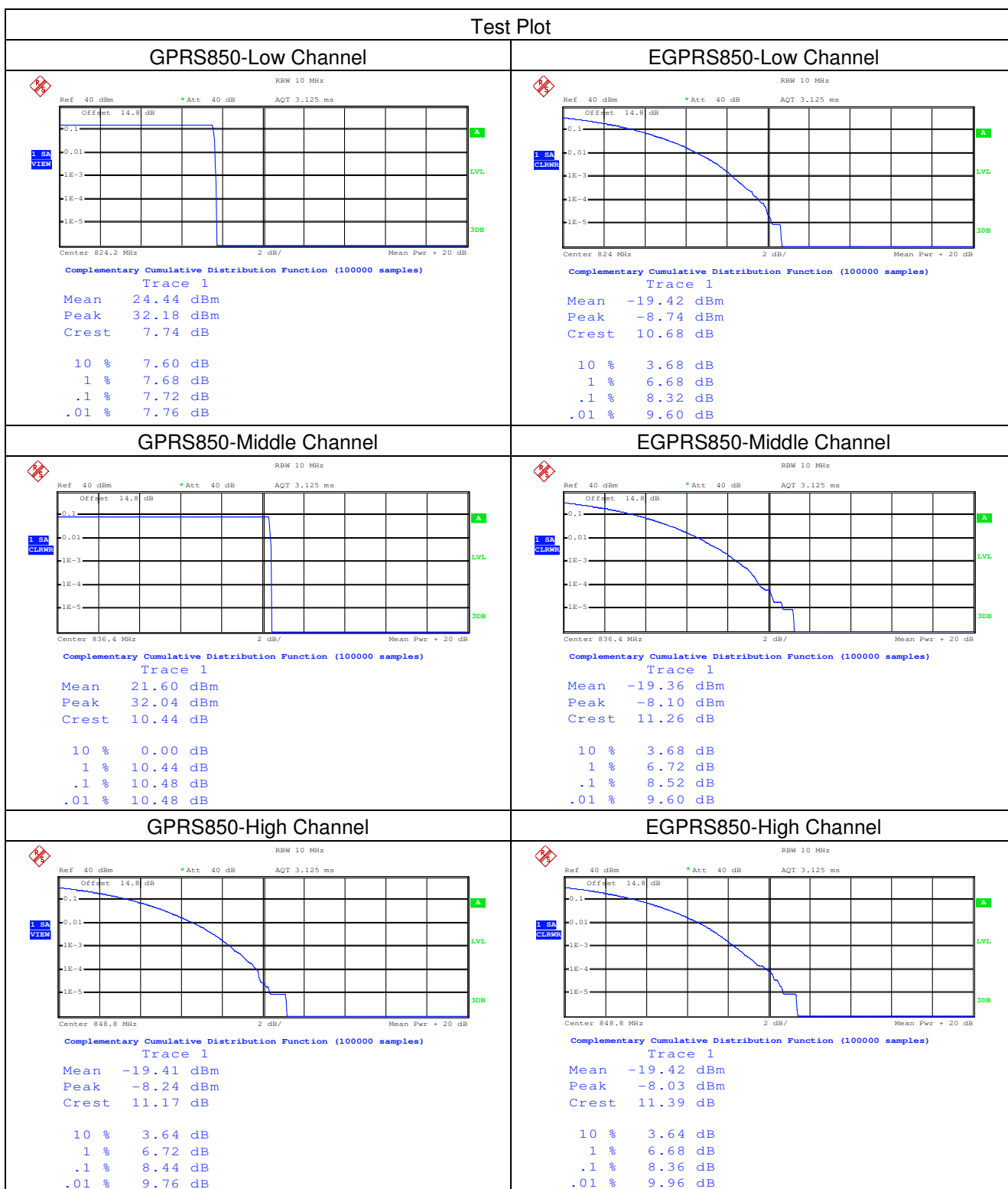
Operating Environment:
Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar
Test mode: z: Tx mode, Keep the EUT in transmitting mode.

6.2.2 Test Setup Diagram



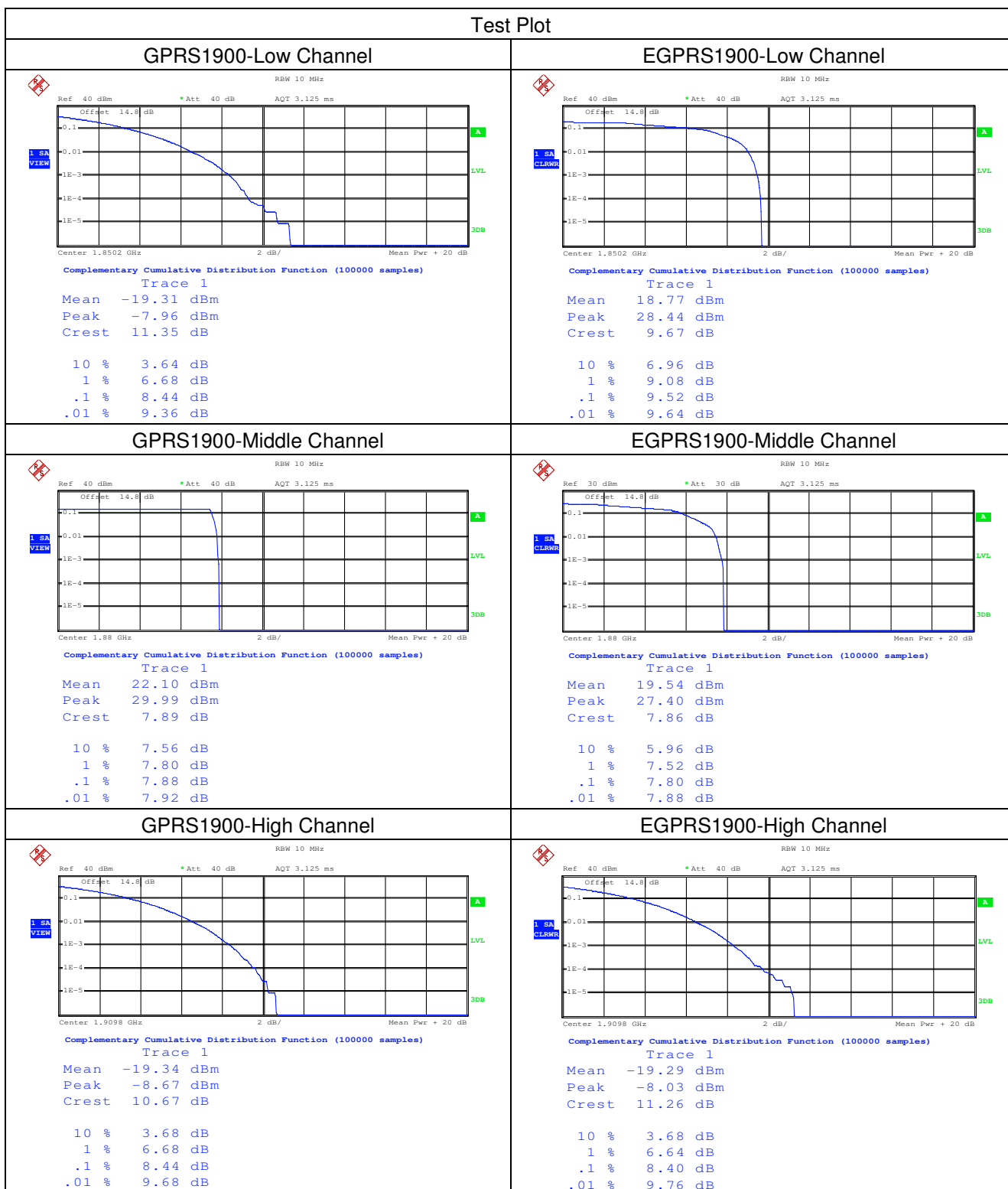
6.2.3 Measurement Data

Test mode	Test Band	Test result (dB)			Limit (dB)	Verdict
		LCH	MCH	HCH		
GSM	GPRS850	7.72	10.48	8.44	13	Pass
	EGPRS850	8.32	8.52	8.36	13	Pass
	GPRS1900	8.44	7.88	8.44	13	Pass
	EGPRS1900	9.52	7.80	8.40	13	Pass



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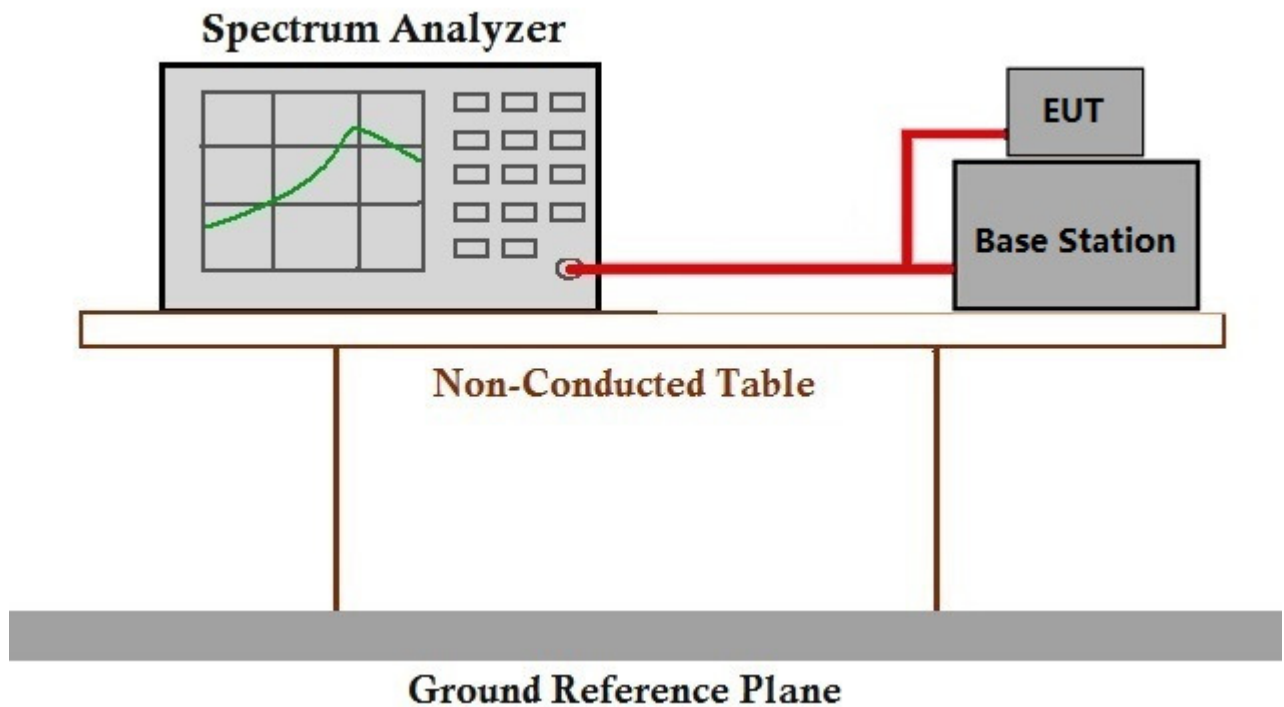
6.3 Bandwidth

Test Requirement: §2.1049(h), §22.917, §24.238
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: OBW: No limit
EBW: No limit

6.3.1 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar
Test mode: z: Tx mode, Keep the EUT in transmitting mode.

6.3.2 Test Setup Diagram



6.3.3 Measurement Data



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Test mode	Test Band	Test result of 26dB Bandwidth (KHz)			Limit (dB)	Verdict
		LCH	MCH	HCH		
GSM	GPRS850	308.00	317.00	320.00	N/A	Pass
	EGPRS850	287.00	312.00	310.00	N/A	Pass
	GPRS1900	312.00	314.00	317.00	N/A	Pass
	EGPRS1900	309.00	317.00	305.00	N/A	Pass

Test mode	Test Band	Test result of Occupied Bandwidth (KHz)			Limit (dB)	Verdict
		LCH	MCH	HCH		
GSM	GPRS850	247.00	242.00	247.00	N/A	Pass
	EGPRS850	240.00	243.00	248.00	N/A	Pass
	GPRS1900	245.00	246.00	247.00	N/A	Pass
	EGPRS1900	246.00	244.00	242.00	N/A	Pass

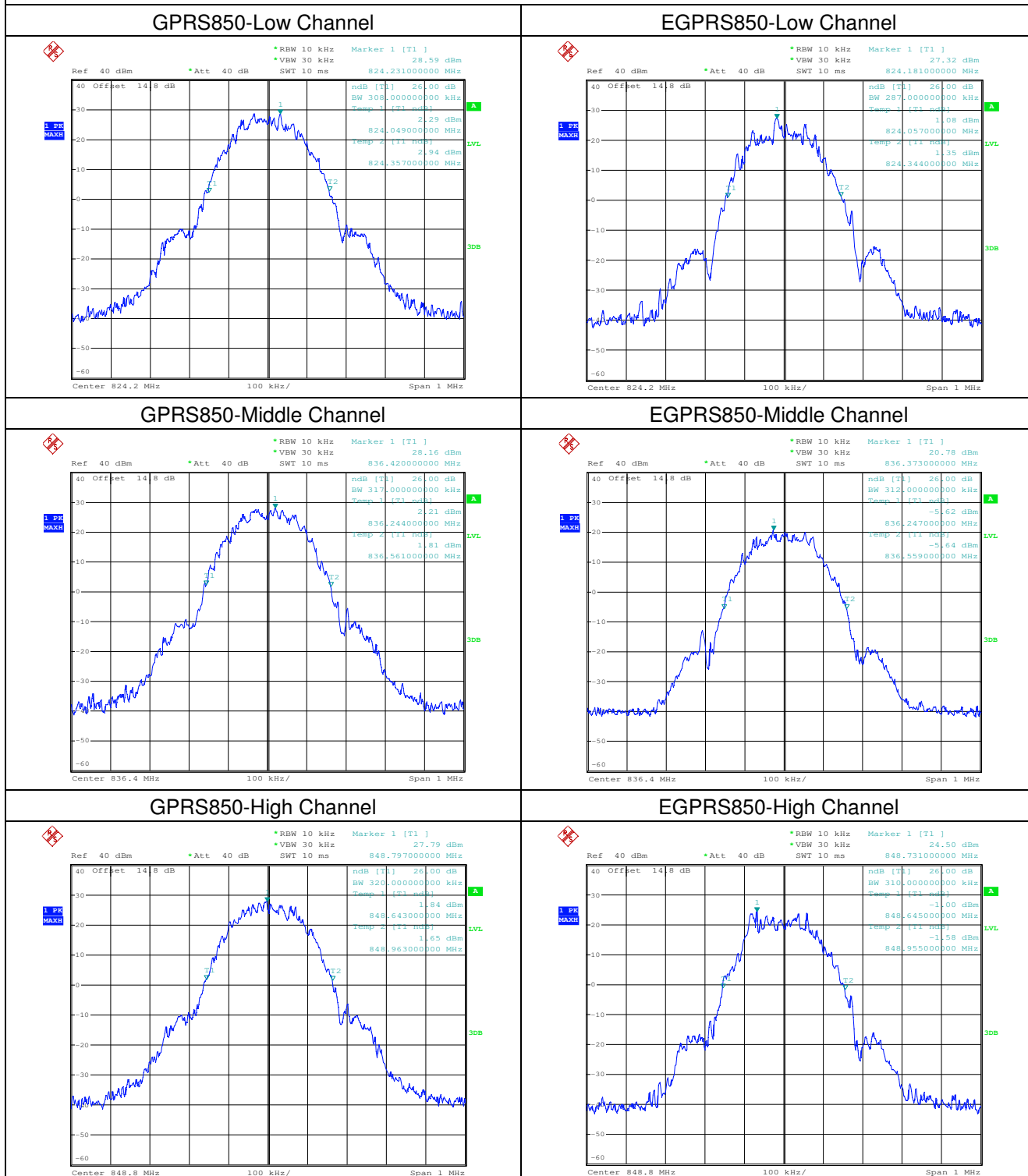


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Test Plot for 26dB Bandwidth



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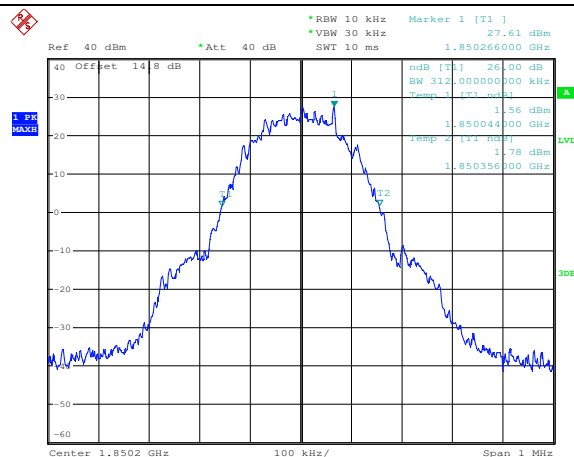
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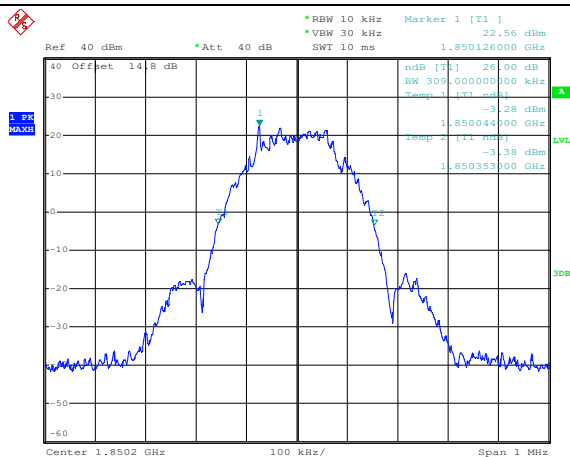


Test Plot for 26dB Bandwidth

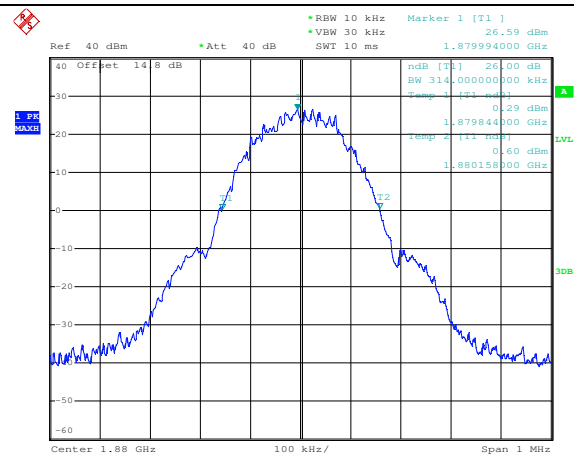
GPRS1900-Low Channel



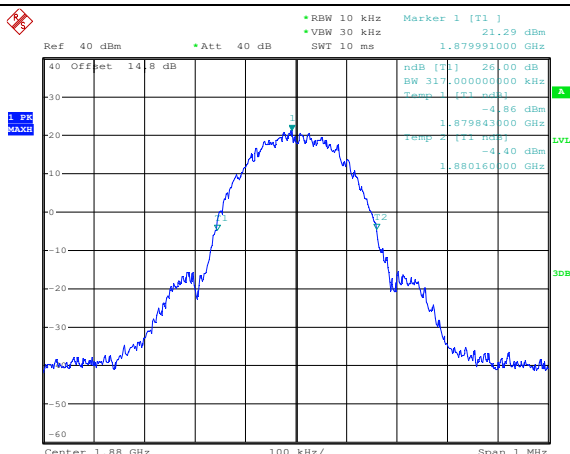
EGPRS1900-Low Channel



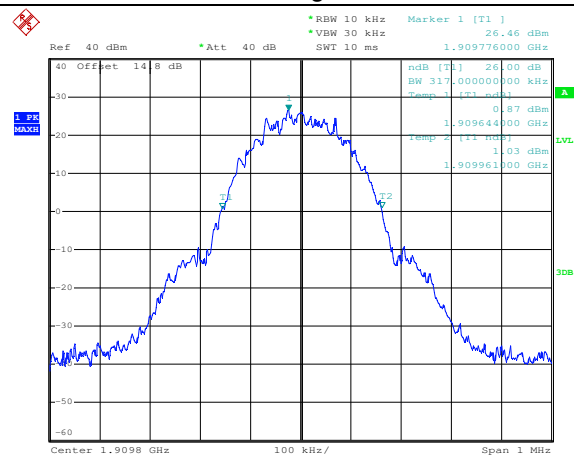
GPRS1900-Middle Channel



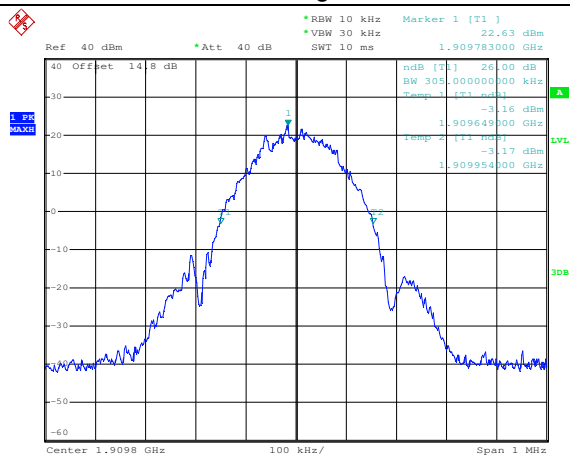
EGPRS1900-Middle Channel



GPRS1900-High Channel



EGPRS1900-High Channel



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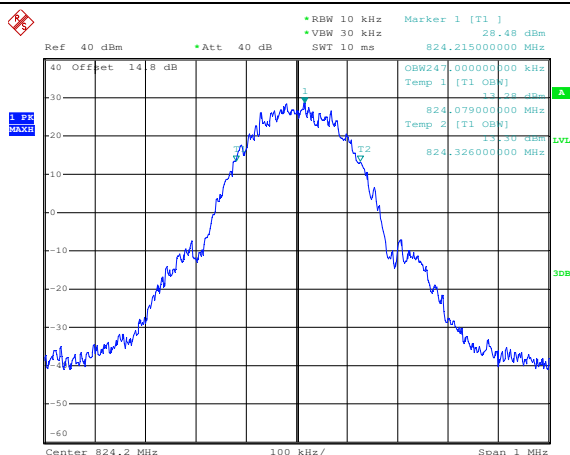
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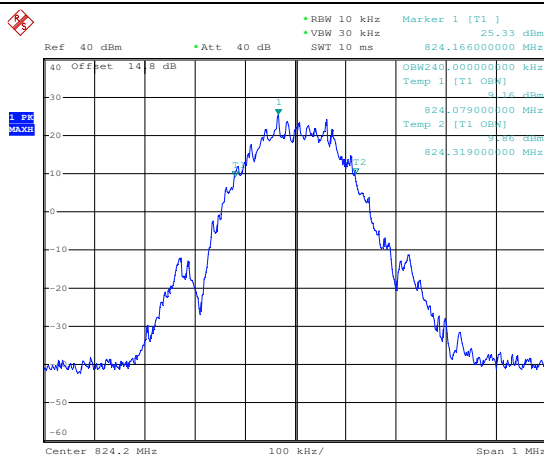


Test Plot for Occupied Bandwidth

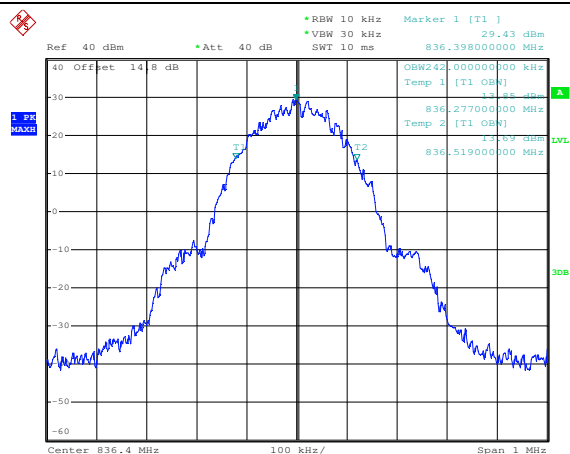
GPRS850-Low Channel



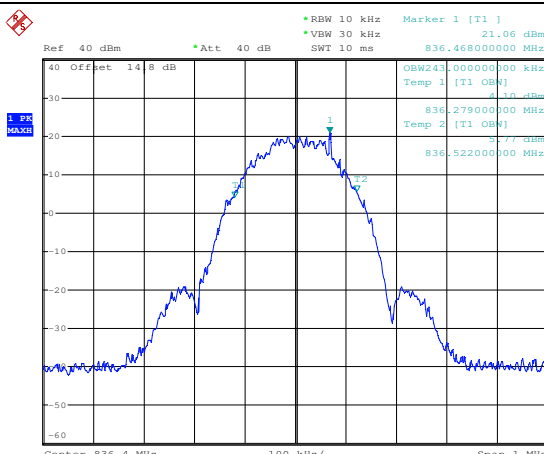
EGPRS850-Low Channel



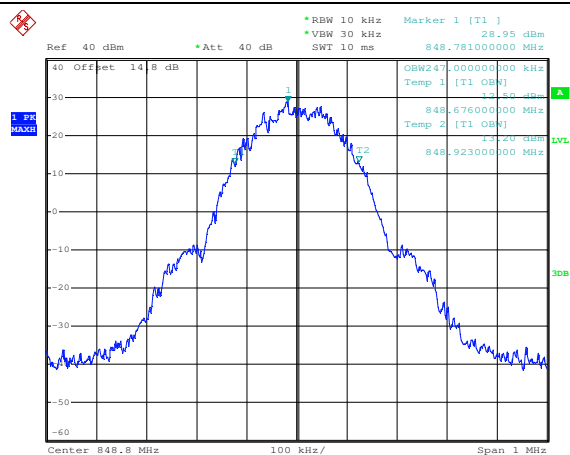
GPRS850-Middle Channel



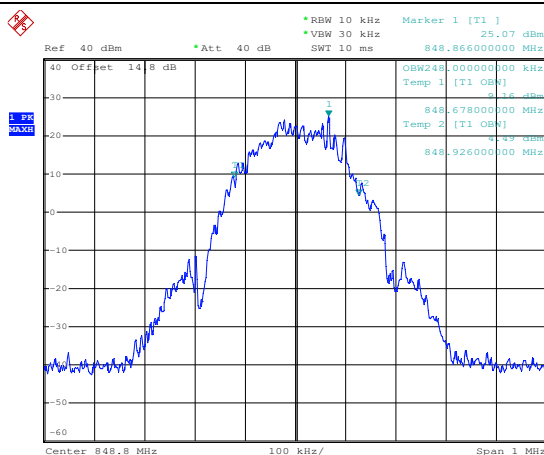
EGPRS850-Middle Channel



GPRS850-High Channel



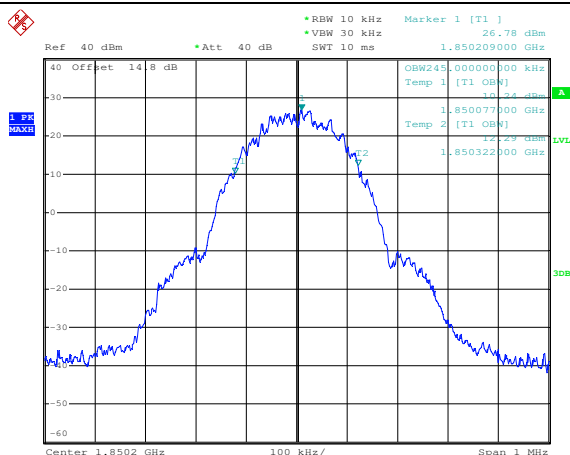
EGPRS850-High Channel



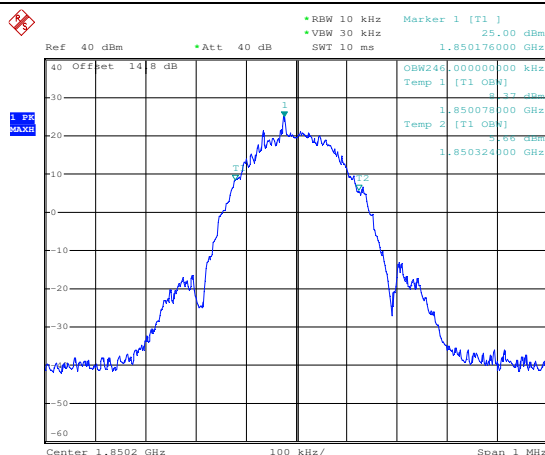


Test Plot for Occupied Bandwidth

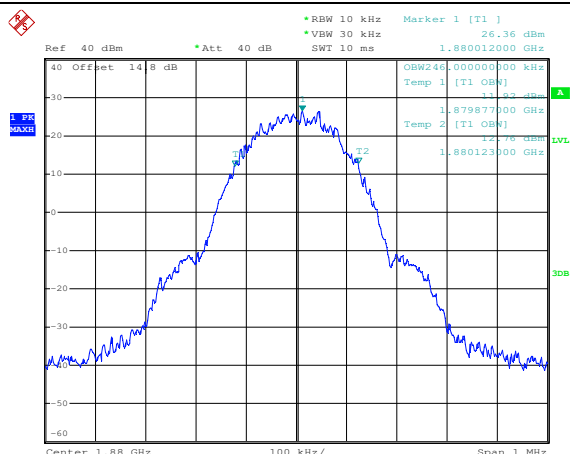
GPRS1900-Low Channel



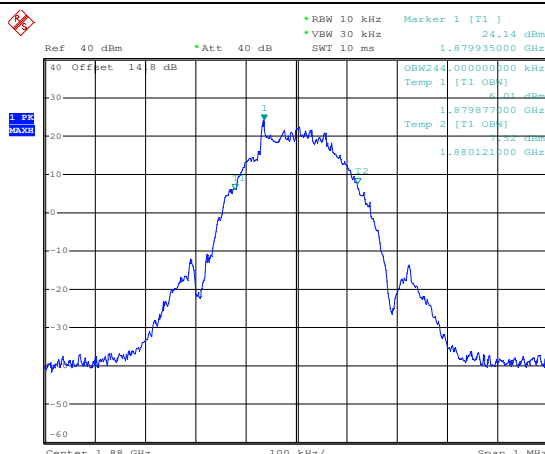
EGPRS1900-Low Channel



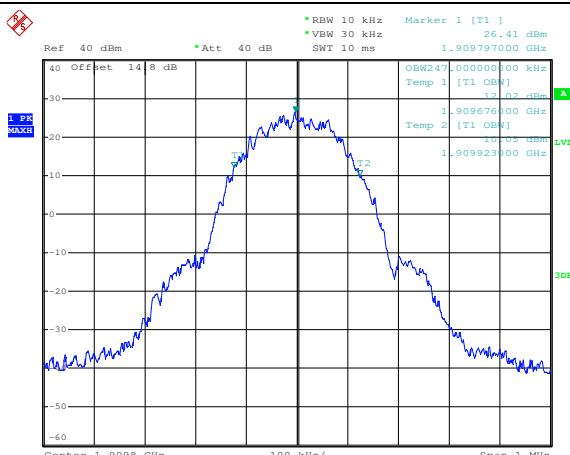
GPRS1900-Middle Channel



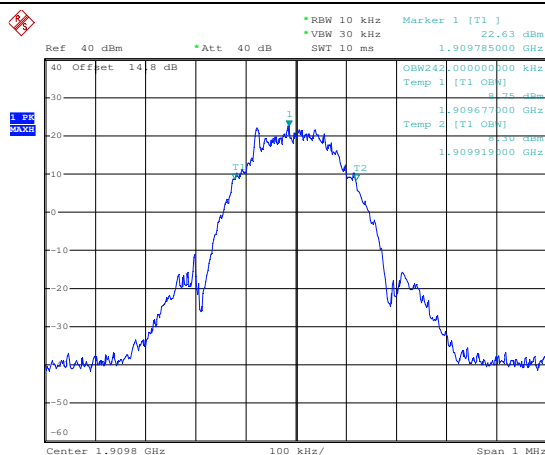
EGPRS1900-Middle Channel



GPRS1900-High Channel



EGPRS1900-High Channel



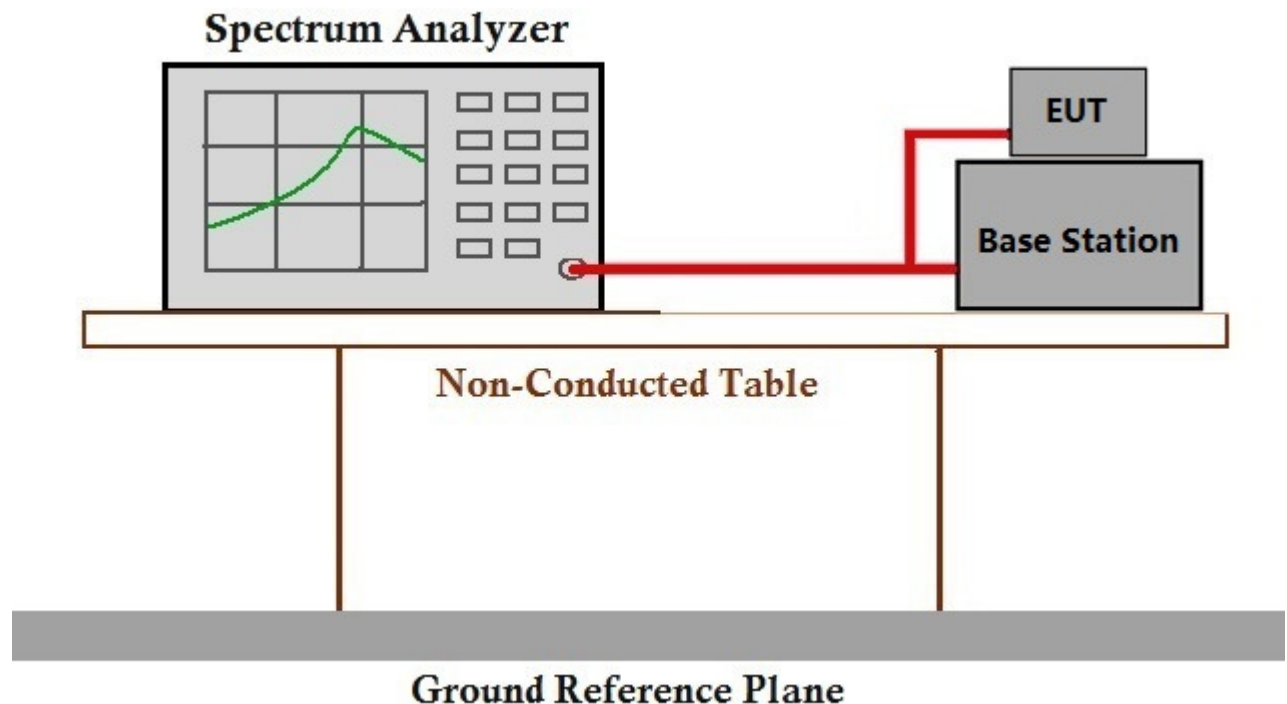
6.4 Band Edge Compliance

Test Requirement: §2.1051, §22.917, §24.238
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: $\leq -13\text{dBm}/1\% \cdot \text{EBW}$, in 1 MHz bands immediately outside and adjacent to the frequency block.

6.4.1 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar
Test mode: z: Tx mode, Keep the EUT in transmitting mode.

6.4.2 Test Setup Diagram



6.4.3 Measurement Data



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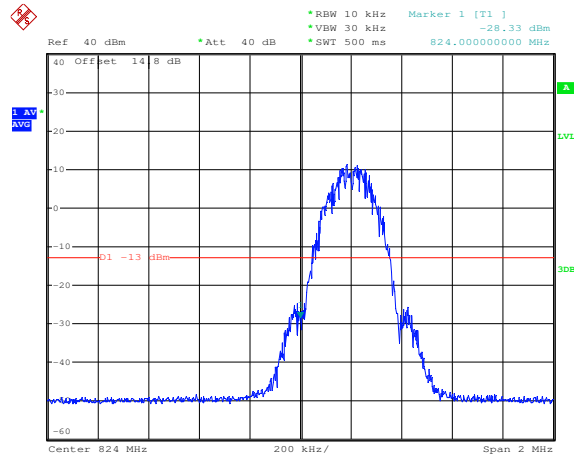
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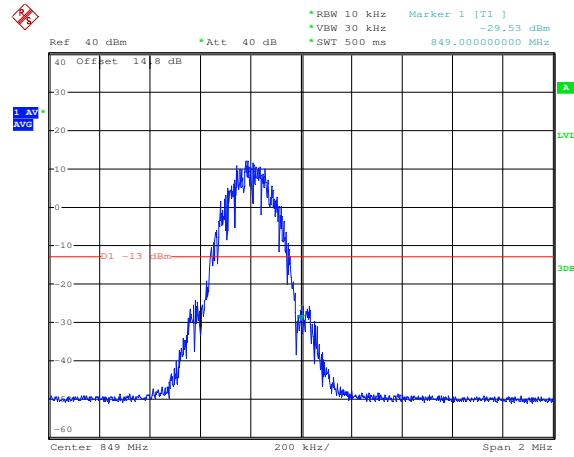
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Test Plot for GPRS

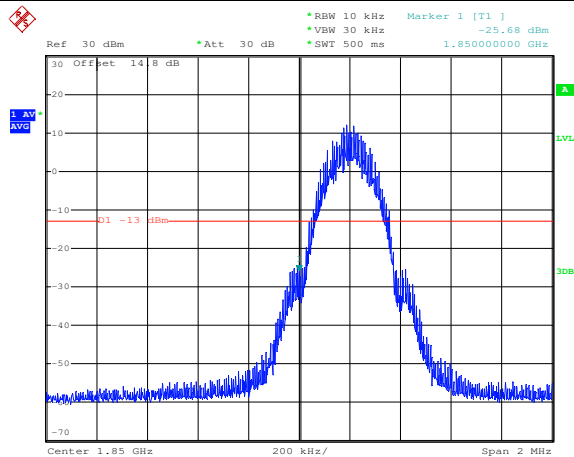
GPRS850-Low Channel



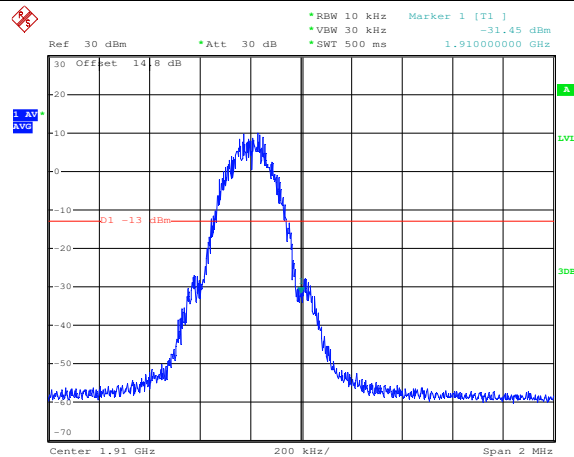
GPRS850-High Channel



GPRS1900-Low Channel

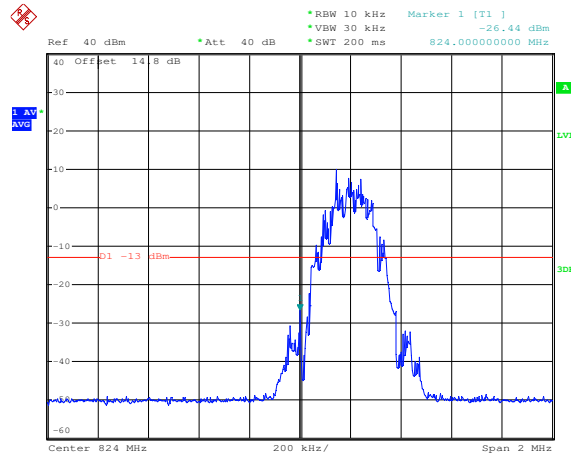


GPRS1900-High Channel

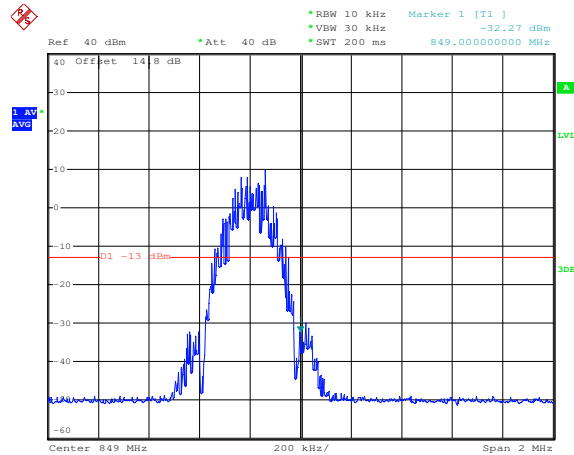


Test Plot for EGPRS

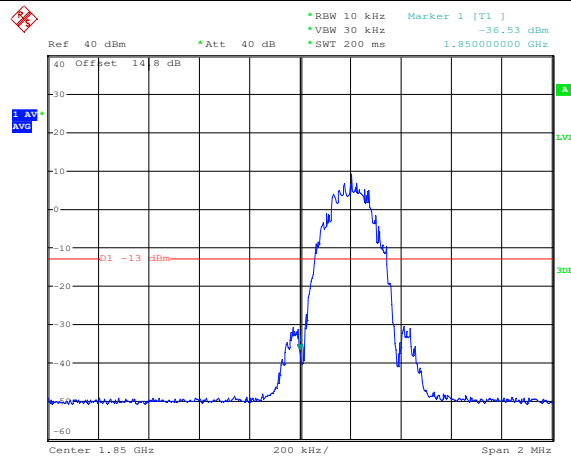
EGPRS850-Low Channel



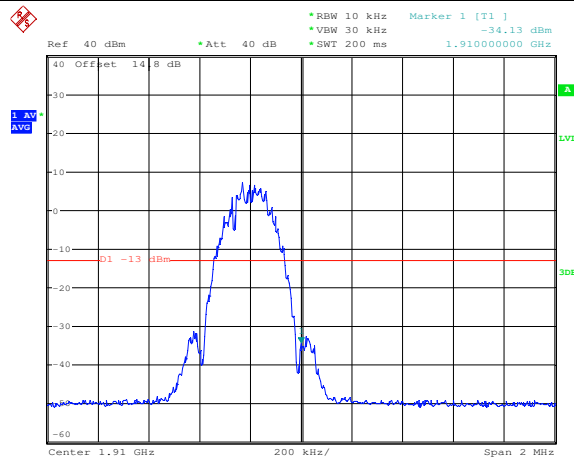
EGPRS850-High Channel



EGPRS1900-Low Channel



EGPRS1900-High Channel



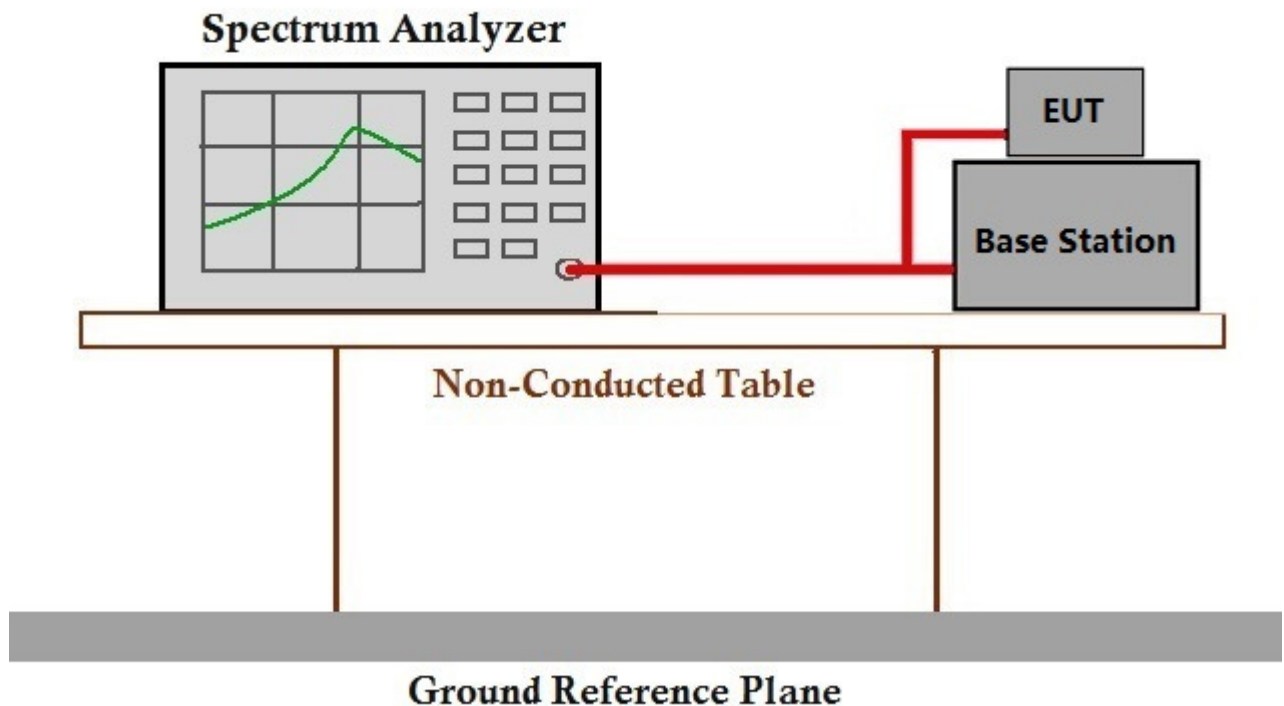
6.5 Spurious emissions at antenna terminals

Test Requirement: §2.1051, §22.917, §24.238
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: $\leq -13\text{dBm}$

6.5.1 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar
Test mode: z: Tx mode, Keep the EUT in transmitting mode.

6.5.2 Test Setup Diagram



6.5.3 Measurement Data



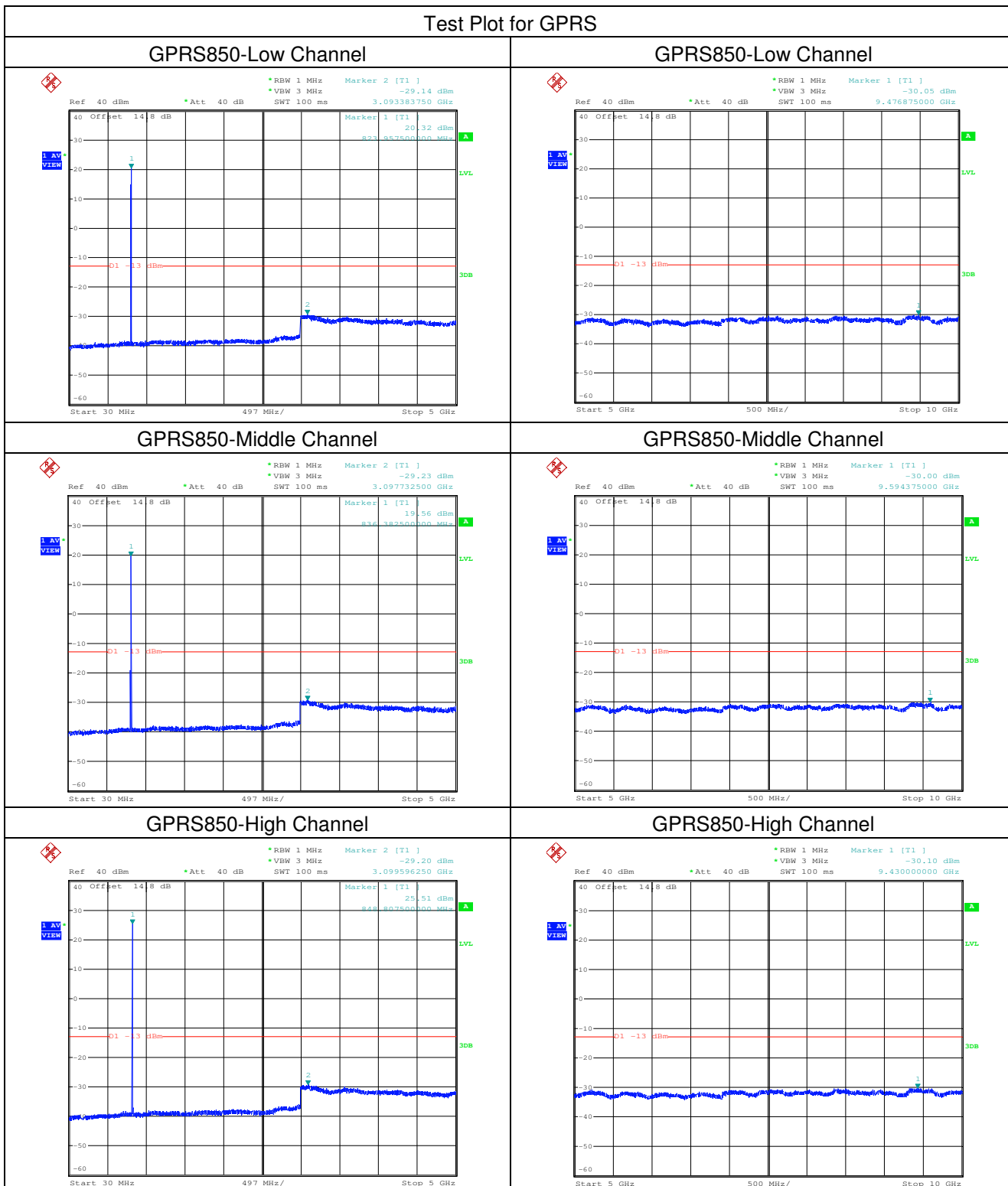
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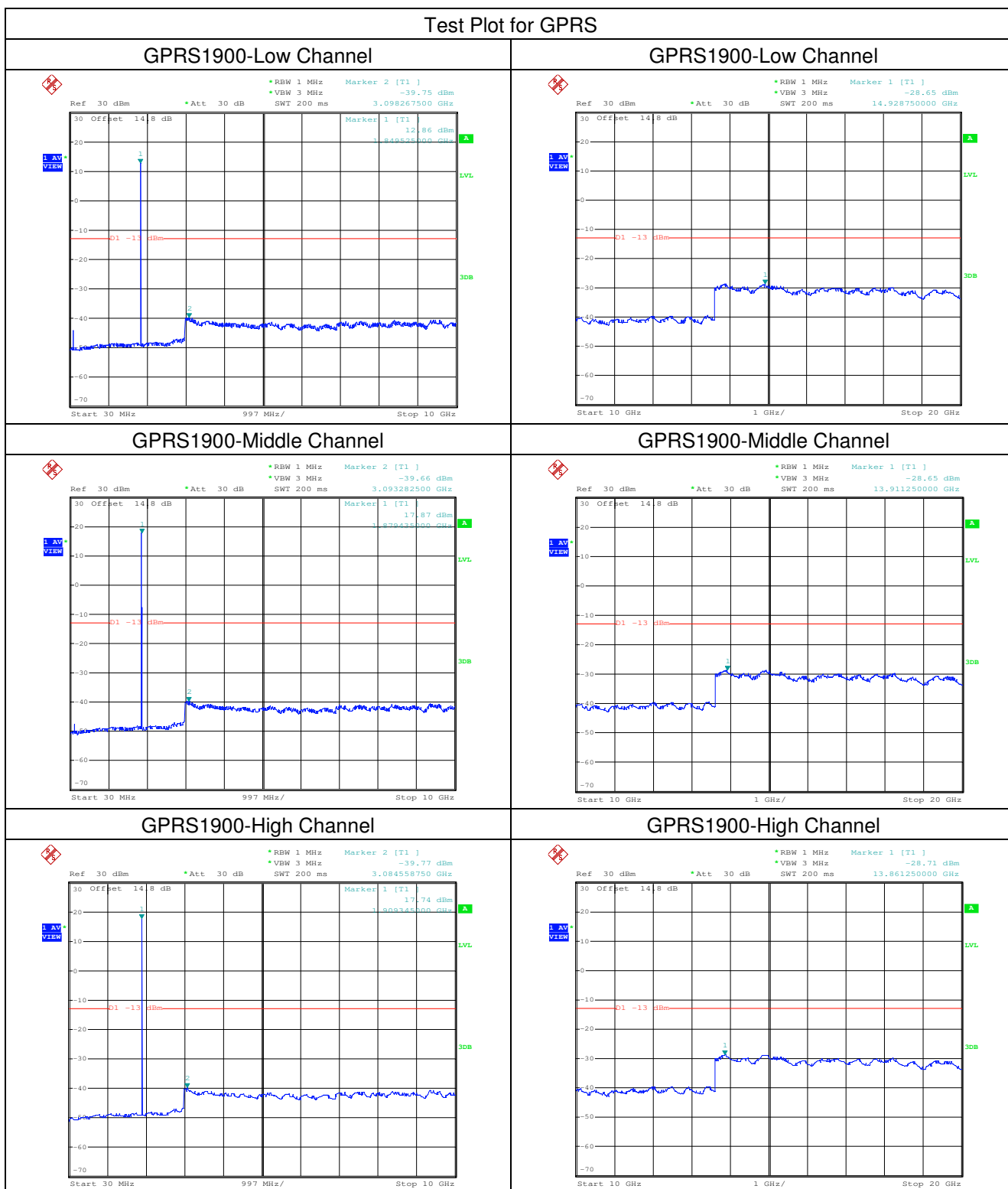


Test Plot for GPRS



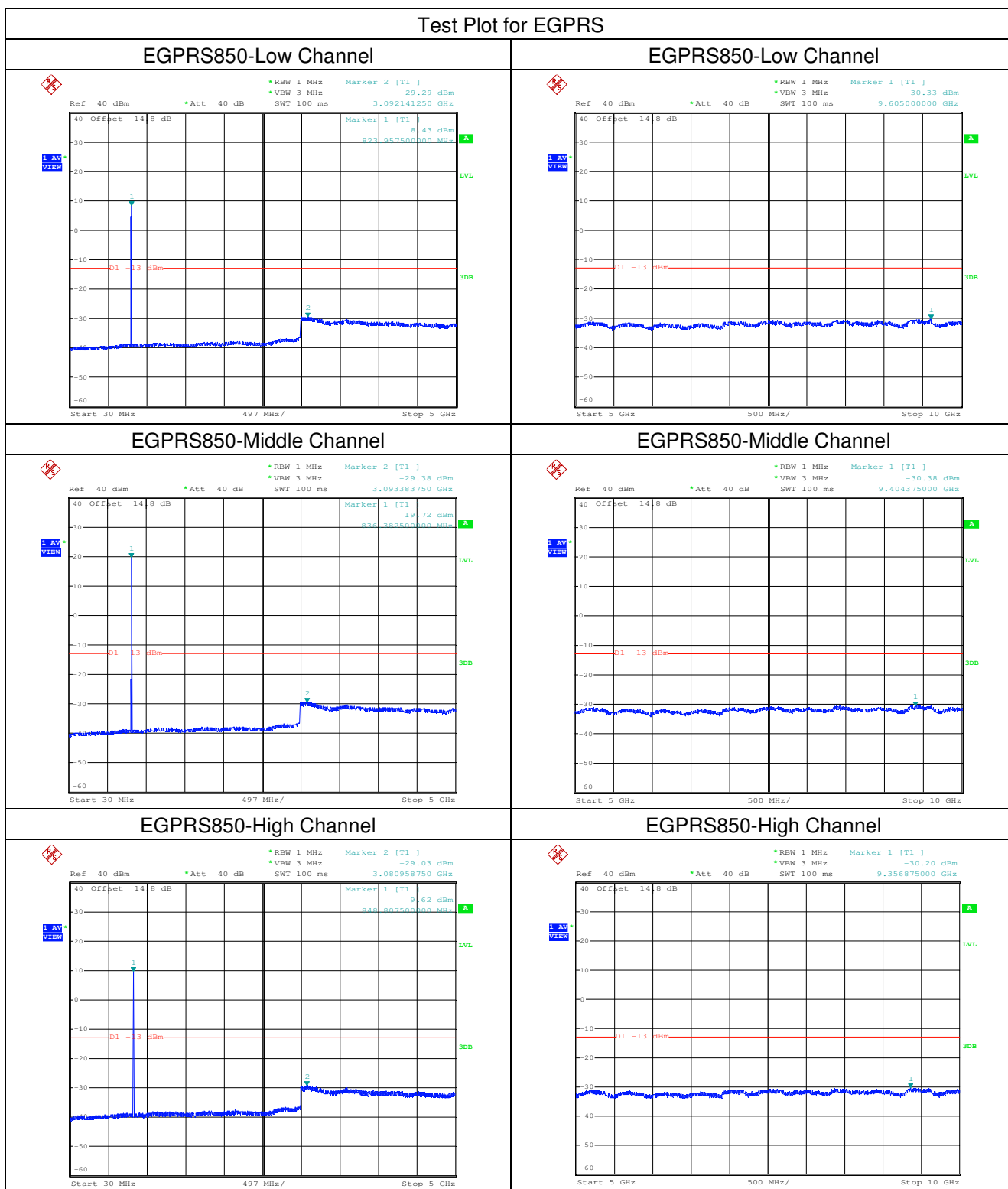
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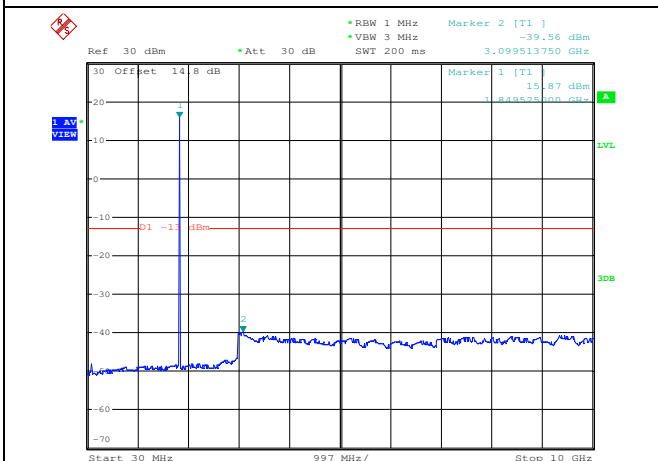
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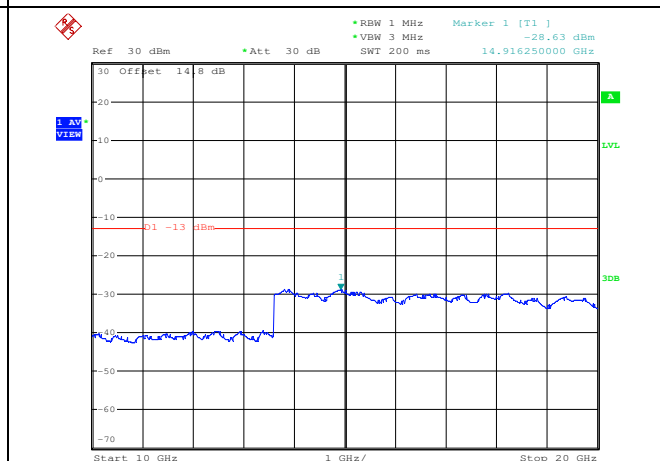


Test Plot for EGPRS

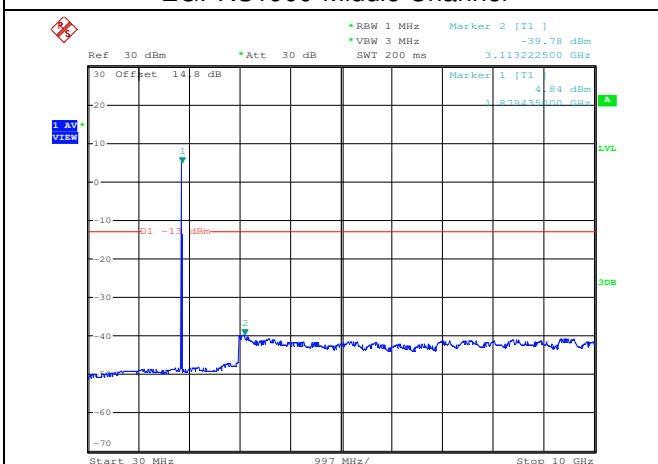
EGPRS1900-Low Channel



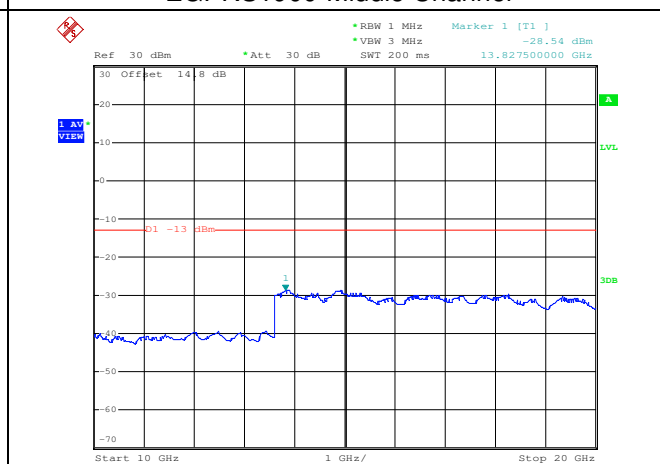
EGPRS1900-Low Channel



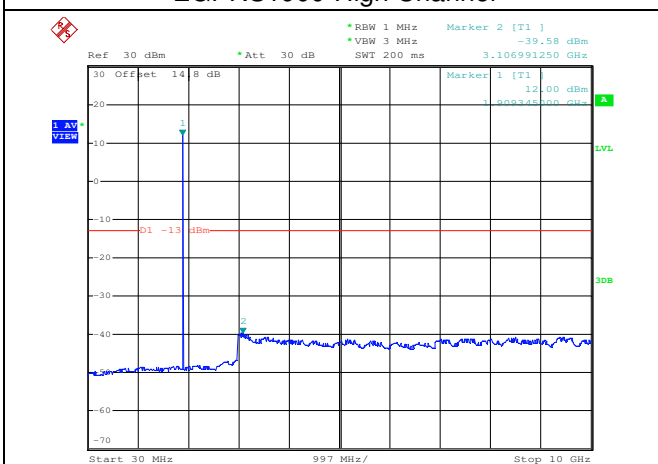
EGPRS1900-Middle Channel



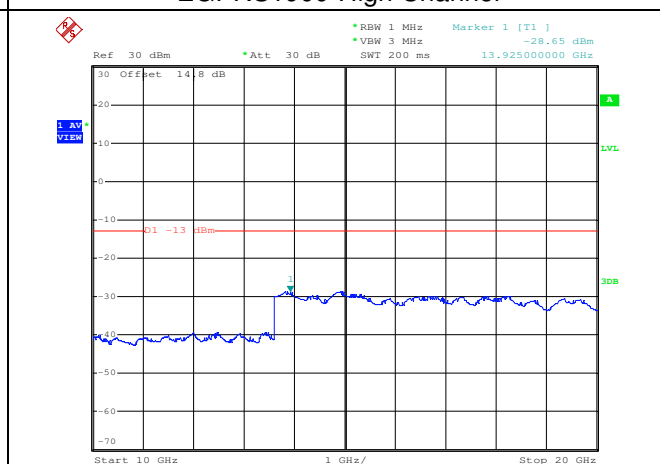
EGPRS1900-Middle Channel



EGPRS1900-High Channel



EGPRS1900-High Channel



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6.6 Field strength of spurious radiation

Test Requirement: §2.1051, §22.917, §24.238,
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: $\leq -13\text{dBm}$

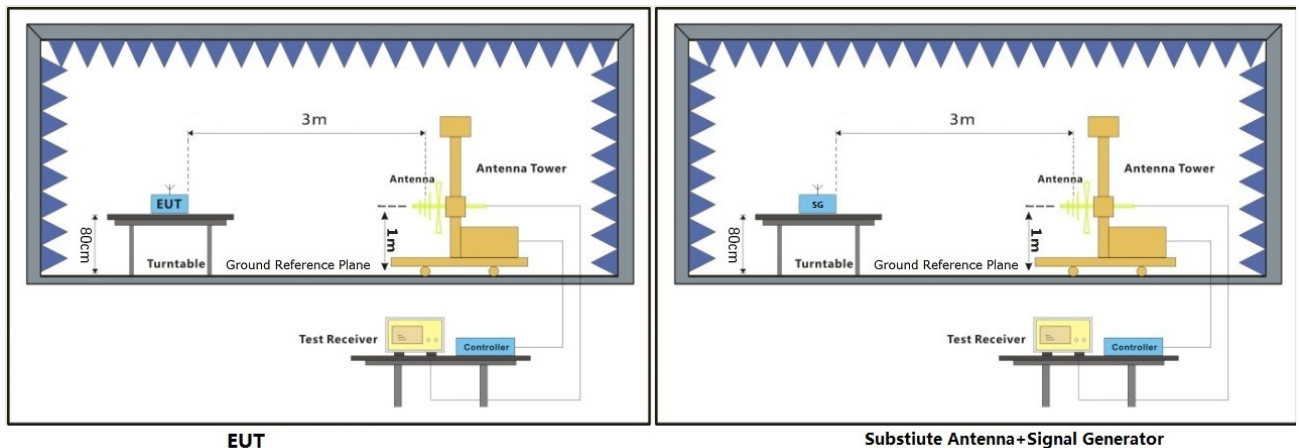
6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar

Test mode: z: Tx mode, Keep the EUT in transmitting mode.

6.6.2 Test Setup Diagram



6.6.3 Measurement Procedure and Data

Test Procedure:

- (1) On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.



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GPRS850-Low channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1648.4	-57.32	0.52	6	-51.84	-13	-38.84	Horizontal	Pass
2472.6	-60.83	0.53	5.8	-55.56	-13	-42.56	Horizontal	Pass
3296.8	-58.14	0.65	6.2	-52.59	-13	-39.59	Horizontal	Pass
1648.4	-60.65	0.52	6	-55.17	-13	-42.17	Vertical	Pass
2472.6	-60.65	0.53	5.8	-55.38	-13	-42.38	Vertical	Pass
3296.8	-58.21	0.65	6.2	-52.66	-13	-39.66	Vertical	Pass

GPRS850-Middle channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1672.8	-60.28	0.52	6	-54.8	-13	-41.8	Horizontal	Pass
2509.2	-62.64	0.59	5.3	-57.93	-13	-44.93	Horizontal	Pass
3345.6	-58.82	0.65	6.2	-53.27	-13	-40.27	Horizontal	Pass
1672.8	-63.44	0.52	6	-57.96	-13	-44.96	Vertical	Pass
2509.2	-62.18	0.59	5.3	-57.47	-13	-44.47	Vertical	Pass
3345.6	-59.09	0.65	6.2	-53.54	-13	-40.54	Vertical	Pass

GPRS850-High channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1697.6	-55.6	0.52	6	-50.12	-13	-37.12	Horizontal	Pass
2546.4	-62.31	0.59	5.3	-57.6	-13	-44.6	Horizontal	Pass
3395.2	-57.55	0.65	6.2	-52	-13	-39	Horizontal	Pass
1697.6	-60.53	0.52	6	-55.05	-13	-42.05	Vertical	Pass
2546.4	-61.37	0.59	5.3	-56.66	-13	-43.66	Vertical	Pass
3395.2	-57.87	0.65	6.2	-52.32	-13	-39.32	Vertical	Pass



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GPRS1900-Low channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3700.4	-57.44	0.71	7.6	-50.55	-13	-37.55	Horizontal	Pass
5550.6	-56.31	0.85	10.3	-46.86	-13	-33.86	Horizontal	Pass
7400.8	-57.4	1	12.9	-45.5	-13	-32.5	Horizontal	Pass
3700.4	-58.96	0.71	7.6	-52.07	-13	-39.07	Vertical	Pass
5550.6	-57.35	0.85	10.3	-47.9	-13	-34.9	Vertical	Pass
7400.8	-58.12	1	12.9	-46.22	-13	-33.22	Vertical	Pass

GPRS1900-Middle channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3760	-58.27	0.71	7.6	-51.38	-13	-38.38	Horizontal	Pass
5640	-55.07	0.85	10.3	-45.62	-13	-32.62	Horizontal	Pass
7520	-57.7	0.99	13.2	-45.49	-13	-32.49	Horizontal	Pass
3760	-59.15	0.71	7.6	-52.26	-13	-39.26	Vertical	Pass
5640	-56.68	0.85	10.3	-47.23	-13	-34.23	Vertical	Pass
7520	-58.21	0.99	13.2	-46	-13	-33	Vertical	Pass

GPRS1900-High channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3819.6	-58.38	0.71	7.6	-51.49	-13	-38.49	Horizontal	Pass
5729.4	-56.36	0.85	10.3	-46.91	-13	-33.91	Horizontal	Pass
7639.2	-58.03	0.99	13.2	-45.82	-13	-32.82	Horizontal	Pass
3819.6	-58.51	0.71	7.6	-51.62	-13	-38.62	Vertical	Pass
5729.4	-57.26	0.85	10.3	-47.81	-13	-34.81	Vertical	Pass
7639.2	-58.28	0.99	13.2	-46.07	-13	-33.07	Vertical	Pass



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EDGE850-Low channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1648.4	-59.7	0.52	6	-54.22	-13	-41.22	Horizontal	Pass
2472.6	-62.37	0.53	5.8	-57.1	-13	-44.1	Horizontal	Pass
3296.8	-58.36	0.65	6.2	-52.81	-13	-39.81	Horizontal	Pass
1648.4	-64.2	0.52	6	-58.72	-13	-45.72	Vertical	Pass
2472.6	-61.67	0.53	5.8	-56.4	-13	-43.4	Vertical	Pass
3296.8	-58.26	0.65	6.2	-52.71	-13	-39.71	Vertical	Pass

EDGE850-Middle channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1672.8	-57.29	-13	-44.29	-57.29	-13	-44.29	Horizontal	Pass
2509.2	-57.02	-13	-44.02	-57.02	-13	-44.02	Horizontal	Pass
3345.6	-53.13	-13	-40.13	-53.13	-13	-40.13	Horizontal	Pass
1672.8	-60.26	-13	-47.26	-60.26	-13	-47.26	Vertical	Pass
2509.2	-56.83	-13	-43.83	-56.83	-13	-43.83	Vertical	Pass
3345.6	-52.53	-13	-39.53	-52.53	-13	-39.53	Vertical	Pass

EDGE850-High channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
1697.6	-59.74	0.52	6	-54.26	-13	-41.26	Horizontal	Pass
2546.4	-60.97	0.59	5.3	-56.26	-13	-43.26	Horizontal	Pass
3395.2	-58.93	0.65	6.2	-53.38	-13	-40.38	Horizontal	Pass
1697.6	-65.37	0.52	6	-59.89	-13	-46.89	Vertical	Pass
2546.4	-61.44	0.59	5.3	-56.73	-13	-43.73	Vertical	Pass
3395.2	-58.29	0.65	6.2	-52.74	-13	-39.74	Vertical	Pass



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EDGE1900-Low channel								
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3700.4	-59.3	0.71	7.6	-52.41	-13	-39.41	Horizontal	Pass
5550.6	-57.55	0.85	10.3	-48.1	-13	-35.1	Horizontal	Pass
7400.8	-58.33	1	12.9	-46.43	-13	-33.43	Horizontal	Pass
3700.4	-59.67	0.71	7.6	-52.78	-13	-39.78	Vertical	Pass
5550.6	-57.59	0.85	10.3	-48.14	-13	-35.14	Vertical	Pass
7400.8	-58.49	1	12.9	-46.59	-13	-33.59	Vertical	Pass

EDGE1900-Middle channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3760	-57.98	0.71	7.6	-51.09	-13	-38.09	Horizontal	Pass
5640	-55.7	0.85	10.3	-46.25	-13	-33.25	Horizontal	Pass
7520	-59.38	0.99	13.2	-47.17	-13	-34.17	Horizontal	Pass
3760	-59.99	0.71	7.6	-53.1	-13	-40.1	Vertical	Pass
5640	-57.04	0.85	10.3	-47.59	-13	-34.59	Vertical	Pass
7520	-58	0.99	13.2	-45.79	-13	-32.79	Vertical	Pass

EDGE1900-High channel								
Frequency (MHz)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Polarization (H/V)	Result
3819.6	-58.95	0.71	7.6	-52.06	-13	-39.06	Horizontal	Pass
5729.4	-56.57	0.85	10.3	-47.12	-13	-34.12	Horizontal	Pass
7639.2	-57.71	0.99	13.2	-45.5	-13	-32.5	Horizontal	Pass
3819.6	-57.91	0.71	7.6	-51.02	-13	-38.02	Vertical	Pass
5729.4	-56.98	0.85	10.3	-47.53	-13	-34.53	Vertical	Pass
7639.2	-57.94	0.99	13.2	-45.73	-13	-32.73	Vertical	Pass



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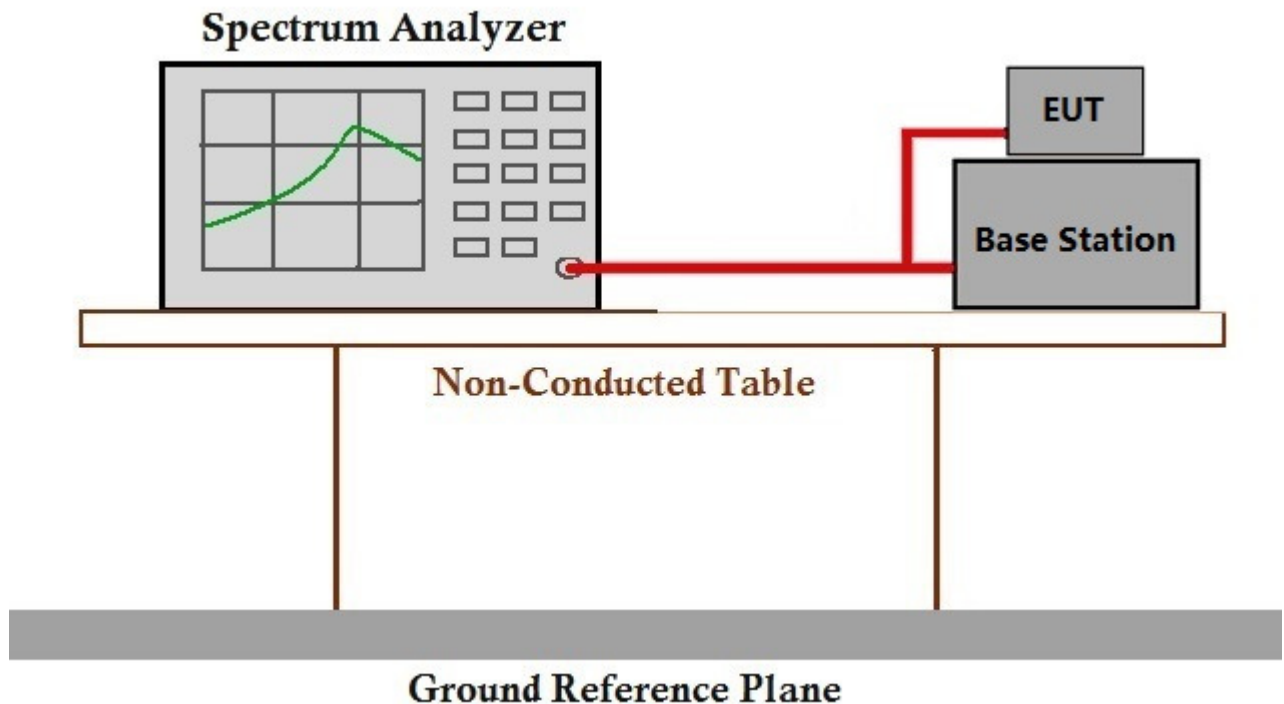
6.7 Frequency stability

Test Requirement: §2.1055, §22.355, §24.235
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: $\leq \pm 2.5\text{ppm}$.

6.7.1 E.U.T. Operation

Operating Environment:
Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar
Test mode: z: Tx mode, Keep the EUT in transmitting mode.

6.7.2 Test Setup Diagram



6.7.3 Measurement Data



Frequency Error VS. Voltage

Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 850	GPRS	LCH	TN	VL	2.65	0.003214	PASS
				VN	1.57	0.001904	PASS
				VH	-3.51	-0.004258	PASS
		MCH	TN	VL	-2.13	-0.002546	PASS
				VN	-1.49	-0.001781	PASS
				VH	-4.18	-0.004996	PASS
		HCH	TN	VL	3.82	0.004500	PASS
				VN	-1.02	-0.001202	PASS
				VH	-2.37	-0.002792	PASS
	EGPRS	LCH	TN	VL	-3.81	-0.004622	PASS
				VN	1.26	0.001528	PASS
				VH	-2.68	-0.003251	PASS
		MCH	TN	VL	3.6	0.004303	PASS
				VN	2.32	0.002773	PASS
				VH	-4.68	-0.005594	PASS
		HCH	TN	VL	0.89	0.001049	PASS
				VN	-3.42	-0.004029	PASS
				VH	2.26	0.002663	PASS



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Test Band	Test mode:	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 1900	GPRS	LCH	TN	VL	-4.34	-0.002346	PASS
				VN	2.59	0.001400	PASS
				VH	2.02	0.001092	PASS
		MCH	TN	VL	1.51	0.000803	PASS
				VN	-2.39	-0.001271	PASS
				VH	3.67	0.001952	PASS
		HCH	TN	VL	-2.36	-0.001236	PASS
				VN	2.59	0.001356	PASS
				VH	-3.98	-0.002084	PASS
	EGPRS	LCH	TN	VL	1.54	0.000832	PASS
				VN	-3.6	-0.001946	PASS
				VH	3.07	0.001659	PASS
		MCH	TN	VL	-3.97	-0.002112	PASS
				VN	2.1	0.001117	PASS
				VH	1.15	0.000612	PASS
		HCH	TN	VL	-2.08	-0.001089	PASS
				VN	4.16	0.002178	PASS
				VH	-4.58	-0.002398	PASS



Frequency Error VS. Temperature

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 850	GPRS	LCH	VN	-30	1.91	0.002317	PASS
				-20	1.83	0.002220	PASS
				-10	2.12	0.002572	PASS
				0	-2.2	-0.002669	PASS
				10	1.11	0.001347	PASS
				20	-4.68	-0.005678	PASS
				30	1.77	0.002148	PASS
				40	-0.56	-0.000679	PASS
				50	-3.48	-0.004222	PASS
		MCH	VN	-30	-2.04	-0.002438	PASS
				-20	-2.11	-0.002522	PASS
				-10	-0.52	-0.000622	PASS
				0	-3.01	-0.003598	PASS
				10	2.01	0.002403	PASS
				20	2.82	0.003371	PASS
				30	1.68	0.002008	PASS
				40	1.07	0.001279	PASS
				50	-4.13	-0.004937	PASS
		HCH	VN	-30	3.95	0.004654	PASS
				-20	3.97	0.004677	PASS
				-10	3.76	0.004430	PASS
				0	-5.2	-0.006126	PASS
				10	1.77	0.002085	PASS
				20	-1.96	-0.002309	PASS
				30	3.79	0.004465	PASS
				40	-0.06	-0.000071	PASS
				50	-4	-0.004713	PASS



Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 850	EGPRS	LCH	VN	-30	-2.18	-0.002645	PASS
				-20	-2.22	-0.002694	PASS
				-10	2.39	0.002900	PASS
				0	-3.91	-0.004744	PASS
				10	1.7	0.002063	PASS
				20	-3.76	-0.004562	PASS
				30	-4.5	-0.005460	PASS
				40	-4.32	-0.005241	PASS
				50	-3.74	-0.004538	PASS
		MCH	VN	-30	-2.22	-0.002654	PASS
				-20	-2.25	-0.002689	PASS
				-10	3.66	0.004375	PASS
				0	-5.03	-0.006012	PASS
				10	1.88	0.002247	PASS
				20	-3.84	-0.004590	PASS
				30	-3.58	-0.004279	PASS
				40	-2.5	-0.002988	PASS
				50	-3.73	-0.004459	PASS
		HCH	VN	-30	-3.84	-0.004524	PASS
				-20	-3.79	-0.004465	PASS
				-10	-2.73	-0.003216	PASS
				0	-2.43	-0.002863	PASS
				10	-2.72	-0.003205	PASS
				20	1.25	0.001473	PASS
				30	-4.73	-0.005573	PASS
				40	-3.55	-0.004182	PASS
				50	-2.99	-0.003523	PASS



Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 1900	GPRS	LCH	VN	-30	-3.07	-0.001659	PASS
				-20	-3.08	-0.001665	PASS
				-10	-4.25	-0.002297	PASS
				0	2.73	0.001476	PASS
				10	-3.53	-0.001908	PASS
				20	-0.46	-0.000249	PASS
				30	1.64	0.000886	PASS
				40	-3.16	-0.001708	PASS
				50	-2.55	-0.001378	PASS
		MCH	VN	-30	-4.27	-0.002271	PASS
				-20	-4.28	-0.002277	PASS
				-10	1.42	0.000755	PASS
				0	-2.45	-0.001303	PASS
				10	4.46	0.002372	PASS
				20	-3.75	-0.001995	PASS
				30	-1.88	-0.001000	PASS
				40	-3.81	-0.002027	PASS
				50	-4.59	-0.002441	PASS
		HCH	VN	-30	-3.16	-0.001655	PASS
				-20	-3.17	-0.001660	PASS
				-10	3.4	0.001780	PASS
				0	1.72	0.000901	PASS
				10	-0.47	-0.000246	PASS
				20	-3.37	-0.001765	PASS
				30	-4.24	-0.002220	PASS
				40	1.53	0.000801	PASS
				50	-3.07	-0.001607	PASS

Test Band	Test mode:	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM 1900	EGPRS	LCH	VN	-30	-2.87	-0.001551	PASS
				-20	-2.88	-0.001557	PASS
				-10	-4.75	-0.002567	PASS
				0	1.65	0.000892	PASS
				10	-2.55	-0.001378	PASS
				20	-2.24	-0.001211	PASS
				30	-4.53	-0.002448	PASS
				40	1.64	0.000886	PASS
				50	-3.78	-0.002043	PASS
		MCH	VN	-30	-3.46	-0.001840	PASS
				-20	-3.45	-0.001835	PASS
				-10	-2.63	-0.001399	PASS
				0	-4.27	-0.002271	PASS
				10	1.43	0.000761	PASS
				20	-3.25	-0.001729	PASS
				30	-2.13	-0.001133	PASS
				40	-3.75	-0.001995	PASS
				50	0.82	0.000436	PASS
		HCH	VN	-30	-3.05	-0.001597	PASS
				-20	-3.06	-0.001602	PASS
				-10	2.92	0.001529	PASS
				0	1.76	0.000922	PASS
				10	-3.44	-0.001801	PASS
				20	-4.76	-0.002492	PASS
				30	-3.86	-0.002021	PASS
				40	-2.65	-0.001388	PASS
				50	-2.34	-0.001225	PASS

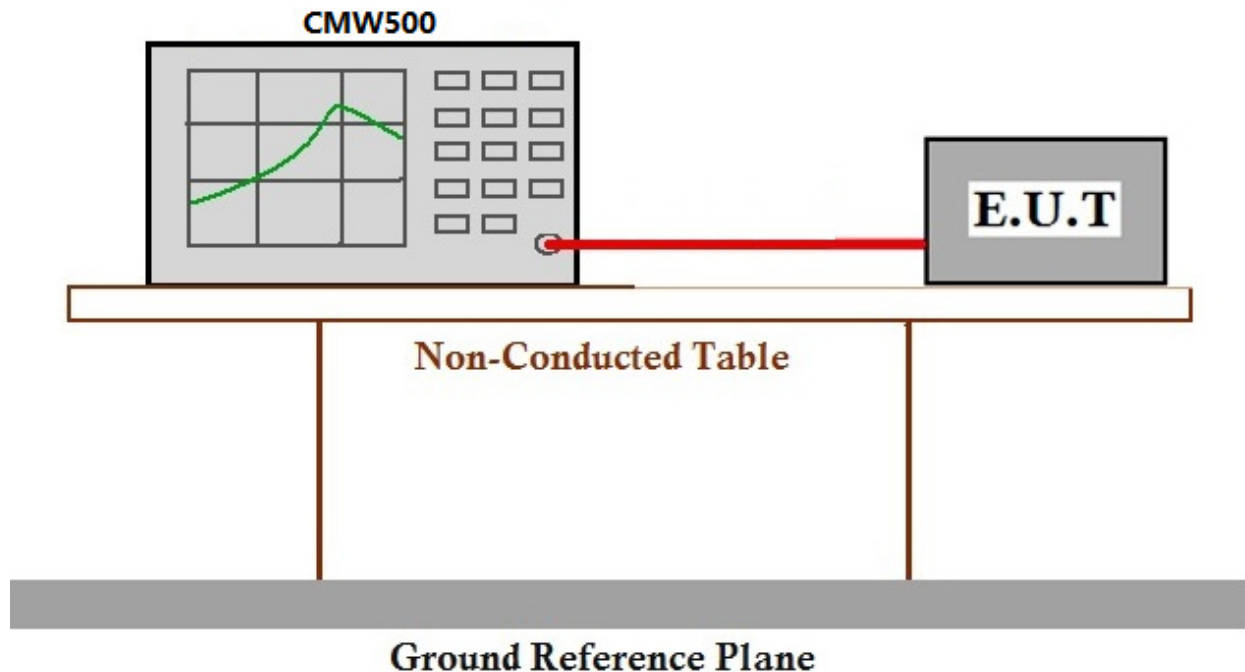
6.8 Modulation Characteristics

Test Requirement: §2.1047
 Test Method: ANSI C63.26, KDB 971168 D01 v03
 Limit: Digital modulation

6.8.1 E.U.T. Operation

Operating Environment:
 Temperature: 25 °C Humidity: 57 % RH Atmospheric Pressure: 1015 mbar
 Test mode: z: Tx mode, Keep the EUT in transmitting mode.

6.8.2 Test Setup Diagram



6.8.3 Measurement Data



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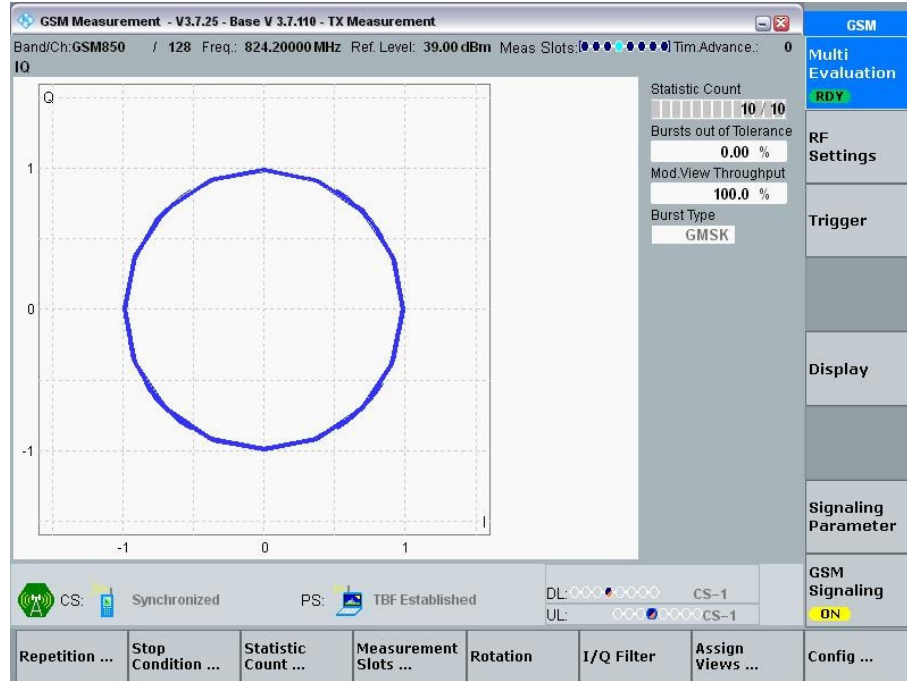
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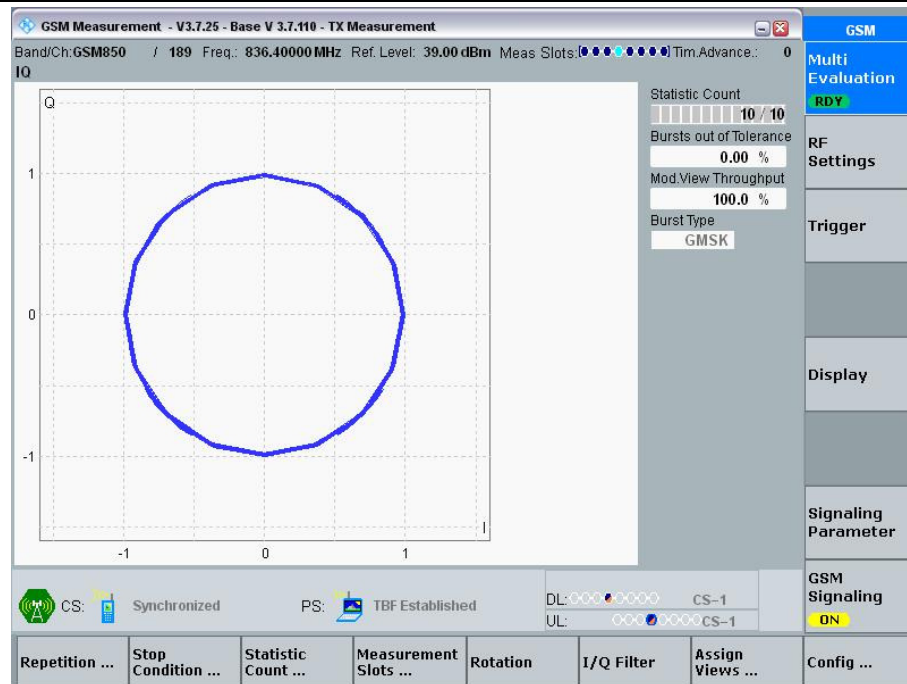
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Test Plot

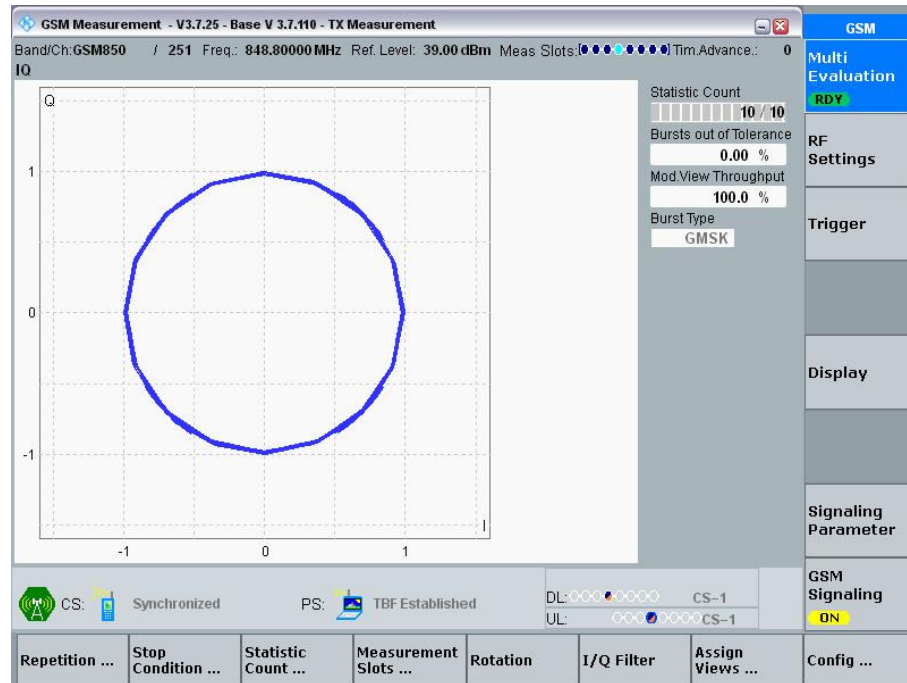
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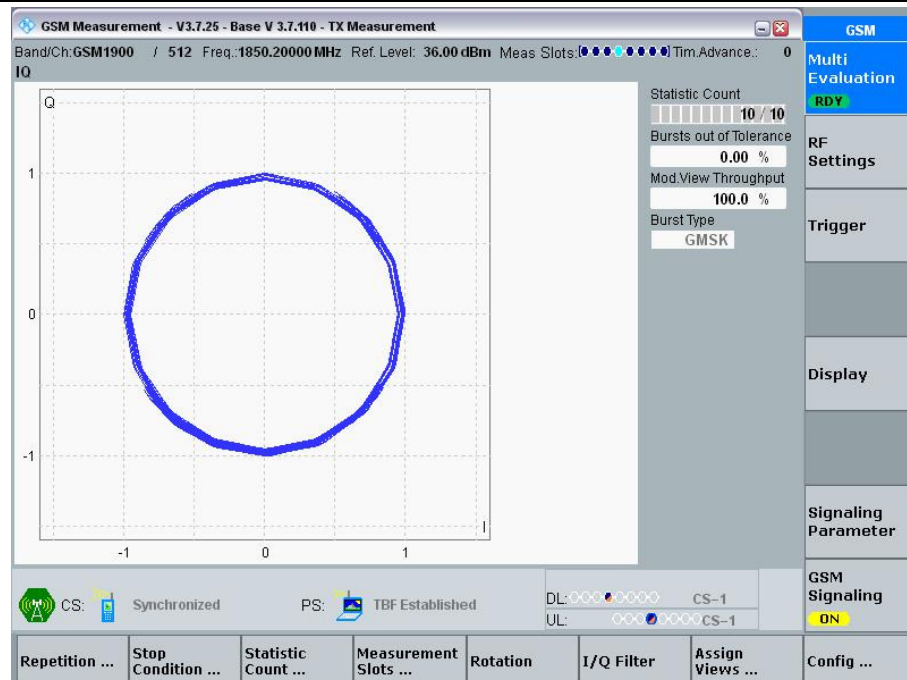
GPRS850-Middle



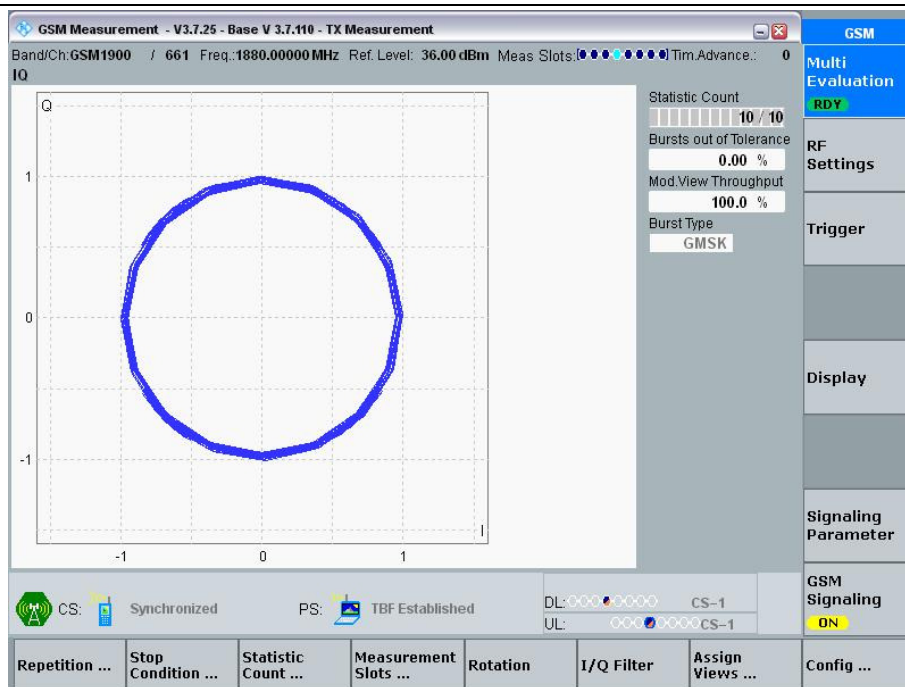
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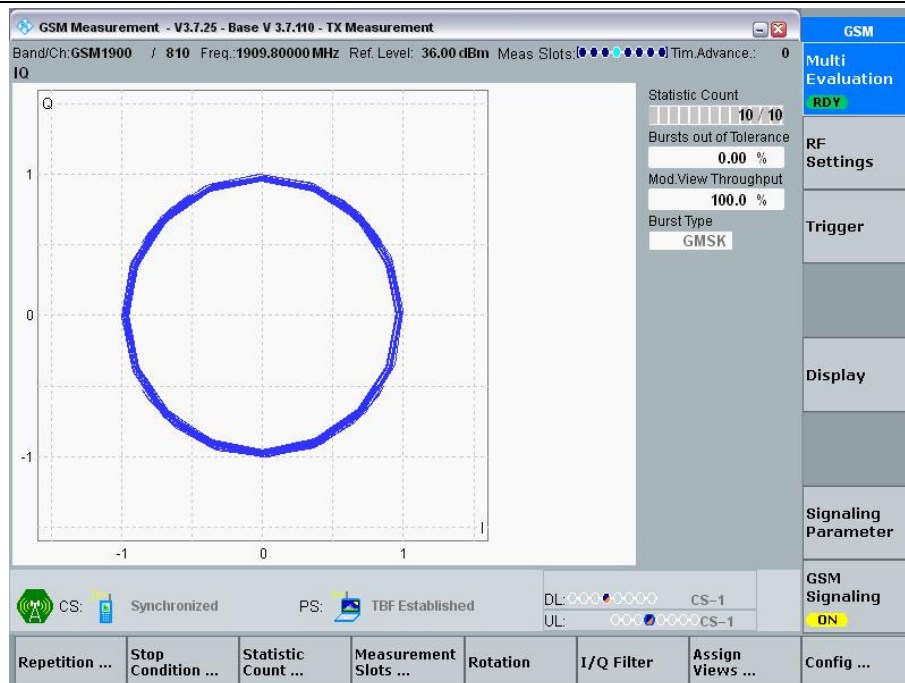
GPRS1900-Low



GPRS1900-Middle



GPRS1900-High



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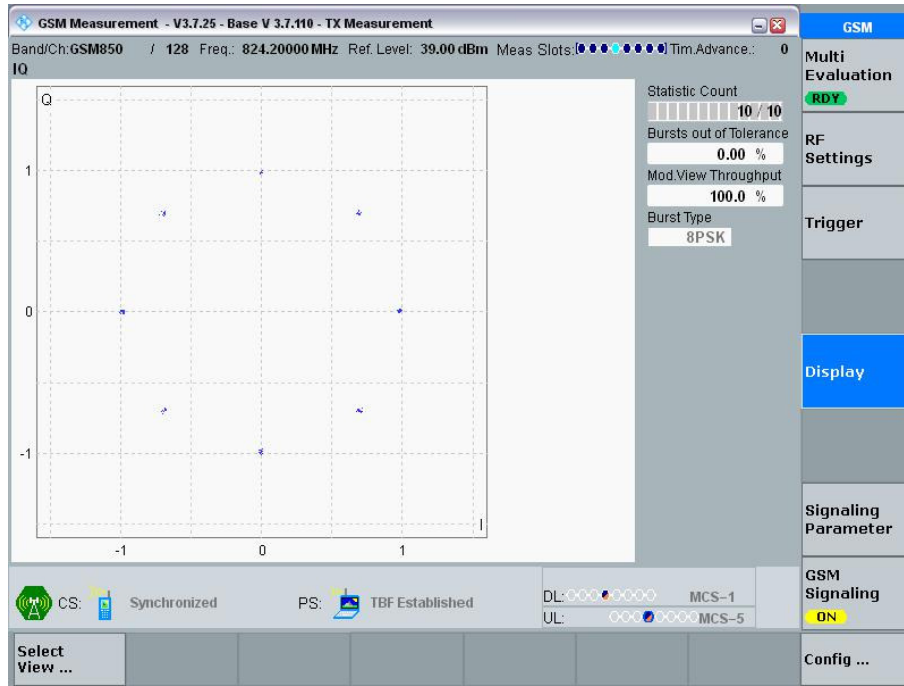
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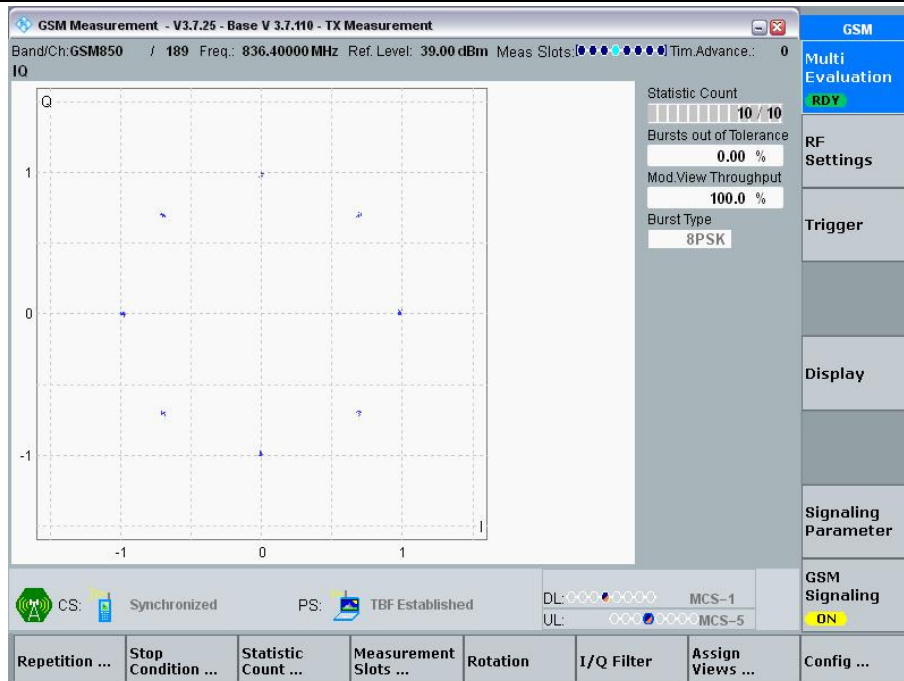
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Test Plot

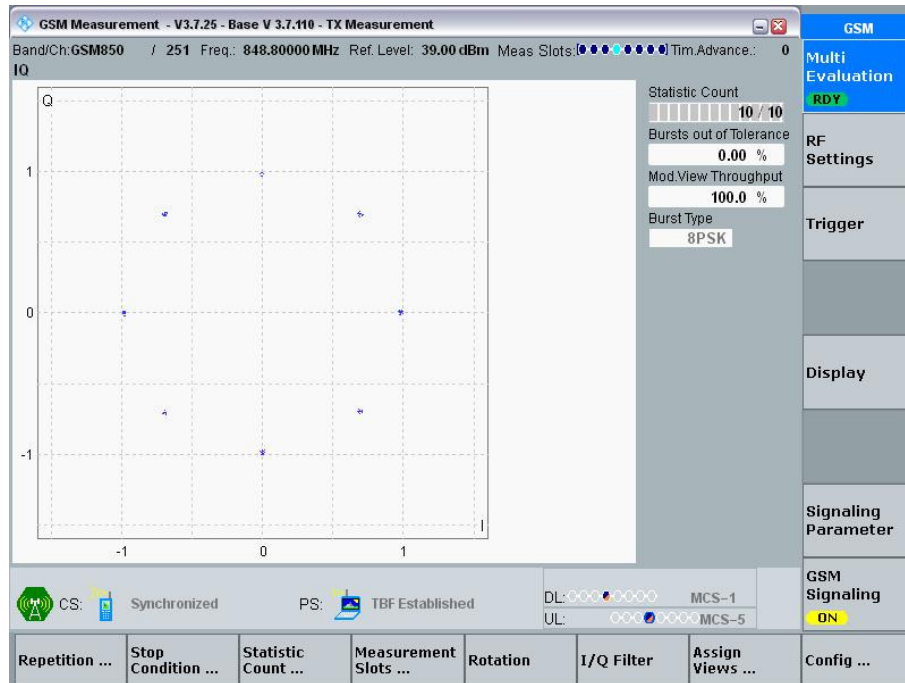
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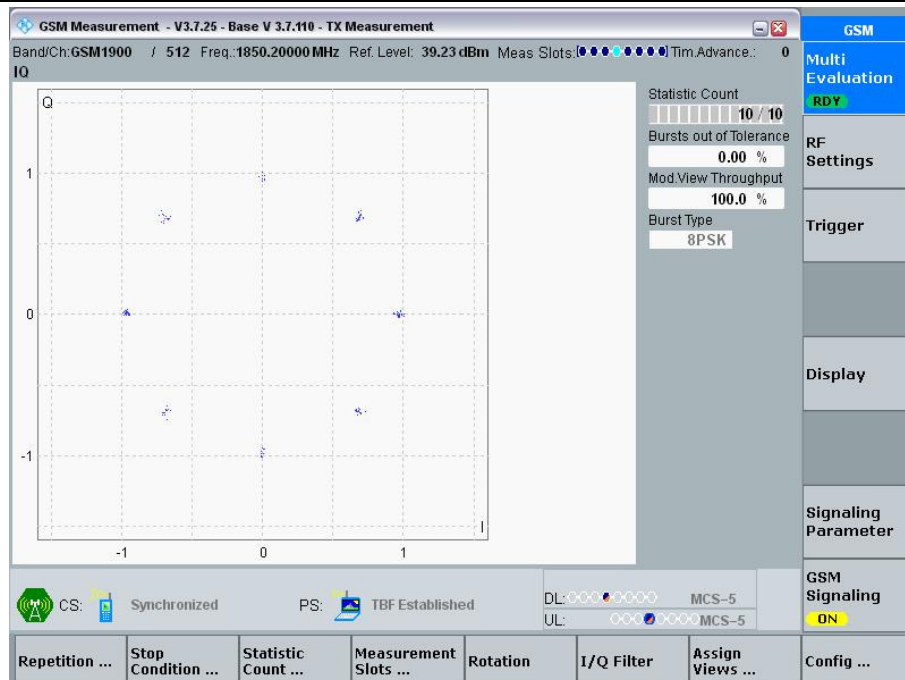
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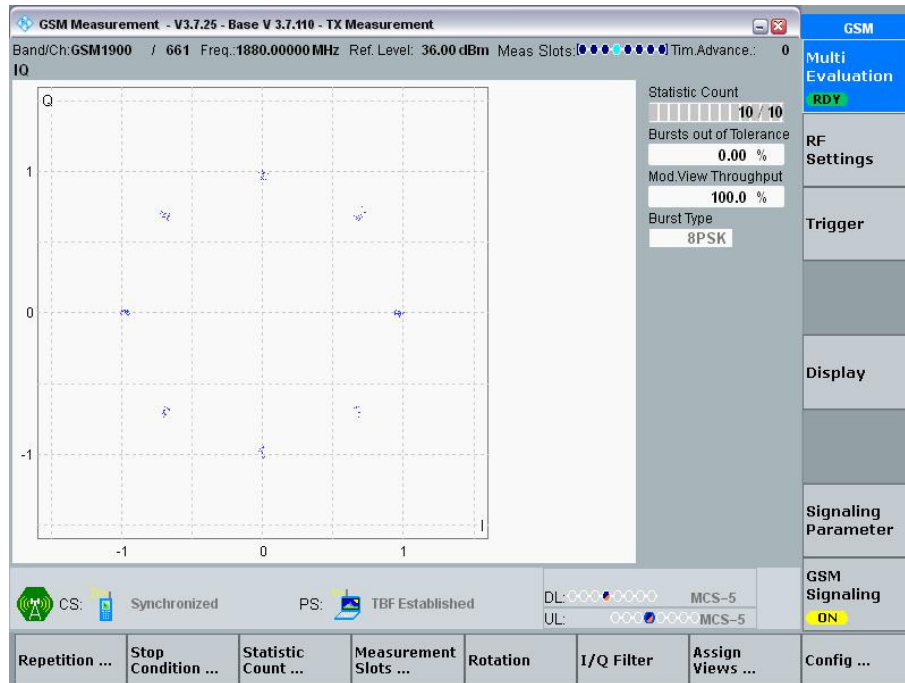
EGPRS850-High



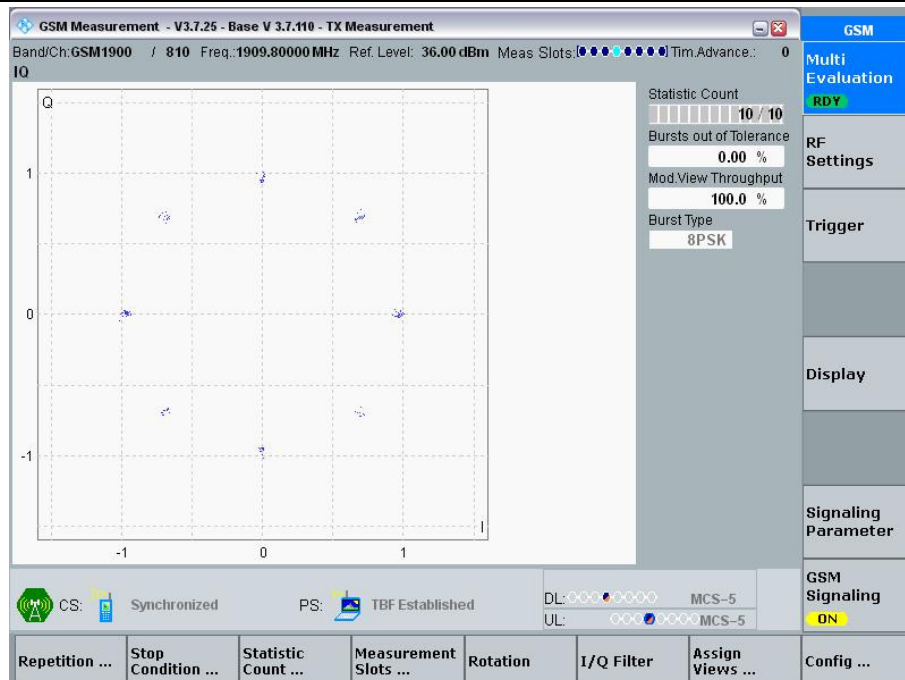
EGPRS1900-Low



EGPRS1900-Middle



EGPRS1900-High



- End of the Report -

