RF Test Report

Report No.: AGC00552190802EE03

PRODUCT DESIGNATION	:	Smart Phone
BRAND NAME	:	CUBOT
MODEL NAME	:	X20 PRO
APPLICANT	:	Shenzhen Huafurui Technology Co., Ltd.
DATE OF ISSUE	:	Sep. 20, 2019
STANDARD(S)	:	EN 301 511 V12.5.1: 2017-03
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep. 20, 2019	Valid	Initial release

TABLE OF CONTENTS

1. TEST REPORT CERTIFICATION

Applicant	Shenzhen Huafurui Technology Co., Ltd.
Address	Unit 1401 & 1402, 14/F, Jin qi zhi gu mansion (No. 4 building of Chong wen Garden), Crossing of the Liu xian street and Tang ling road, Tao yuan street, Nan shan district, Shenzhen, P.R. China
Manufacturer	Shenzhen Huafurui Technology Co., Ltd.
Address	Unit 1401 & 1402, 14/F, Jin qi zhi gu mansion (No. 4 building of Chong wen Garden), Crossing of the Liu xian street and Tang ling road, Tao yuan street, Nan shan district, Shenzhen, P.R. China
Factory Name	Shenzhen Huafurui Technology Co., Ltd.
Address	Unit 1401 & 1402, 14/F, Jin qi zhi gu mansion (No. 4 building of Chong wen Garden), Crossing of the Liu xian street and Tang ling road, Tao yuan street, Nan shan district, Shenzhen, P.R. China
Product Designation	Smart Phone
Brand Name	CUBOT
Test Model	X20 PRO
Date of test	Aug. 20, 2019 to Sep. 18, 2019
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-EC-2.5G2/RF

We, Attestation of Global Compliance (Shenzhen) Co., Ltd., for compliance with the requirements set forth in the European Standard ETSI EN 301 511 V12.5.1. The results of testing in this report apply to the product/ system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.
The test results of this report relate only to the tested sample identified in this report.

Prepared By	Donjon Huang (Project Engineer)	Sep. 18, 2019
Reviewed By	Max Zhang (Reviewer)	Sep. 20, 2019
Approved By	Forrest Lei (Authorized Officer)	Sep. 20, 2019

2. GENERAL INFORMATION

2.1. DESCRIPTION OF EUT

2.1.1. FINAL EQUIPMENT BUILD STATUS

Details of technical specification refer to the description in follows:

Product Name	Smart Phone
Brand Name	CUBOT
Test Model	X20 PRO
Product Type	GSM
Hardware Version	E966_MAIN_PCB_V1.0
Software Version	CUBOT_X20 PRO_9071C_V01_20190807
Frequency Bands	☒GSM 900 ☒DCS 1800 (EU Frequency) ☒GSM 850 ☒PCS1900 (none EU Frequency)
Modulation Mode	GMSK, 8PSK
Antenna Type	Hardware antenna
Antenna Gain	GSM900:0.65dBi; DCS1800:0.86dBi
Power Class	GSM900: 4, DCS1800: 1
GSM Release Version	N/A
GPRS Class	Class 12
SIM Card Description	There are dual-SIM cards, just one for GSM/WCDMA/LTE and the other only for GSM.

2.1.2. PHOTOGRAPHS OF THE EUT

Please see Photo report for photographs of the EUT.

2.1.3. IDENTIFICATION OF SAMPLES EUT

The EUT Identity consists of numerical and letter characters (see the table below), the first five numerical characters indicates the Type of the EUT defined by AGC, the next letter character indicates the test sample, and the following two numerical characters indicates the software version of the test sample.

SAMPLE A01

Sample Reference Number	A01
Factory Name	Shenzhen Huafurui Technology Co., Ltd.
Test Model	X20 PRO
Product Type	GSM
Frequency Bands	GSM 900: 880 -915 MHz (TX); 925 - 960 MHz (RX) DCS1800: 1710 -1785 MHz (TX); 1805-1880 MHz (RX)

2.2. TYPE OF MOBILE STATION AND ADDITIONAL INFORMATION

Table A.2: Type of Mobile Station (Re. ETSI EN 301 511 Annex A)

Item	Type of Mobile Station	Support	Mnemonic
1	HSCSD Multislot MS	NO	Type_HSCSD_Multislot
2	R-GSM MS	NO	Type_R-GSM
3	Support of GPRS Multislot class on the uplink	YES	Type_GPRS_Multislot_uplink
4	EGPRS	YES	Type_EGPRS
5	EGPRS capable of 8PSK in Uplink, of all Multislot classes	YES	Type_EGPRS_8PSK_uplink
6	ER-GSM MS	NO	Type-GSM
7	DLMC MS	NO	Type DLMC

Type A.3: Additional information (Re. ETSI EN 301 511 Annex A)

Item	Additional Information	Support	Mnemonic
1	Telephony	YES	TSPC_Serv_TS11
2	Permanent Antenna Connector	YES	TSPC_AddInfo_PermAntenna

Note: Telephony means make a phone call.

3. IDENTIFICATION OF THE RESPONSIBLE TESTING LOCATION

Test Site-1	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao 'an District, Shenzhen, Guangdong, China

Note: Blocking and spurious response test within the scope of TAF approval.

LIST OF EQUIPMENTS USED OF AGC

No.	Type	Manufacturer	S/N	Cal. Date	Cal. Due
1	H & T Chamber ETH225-40A	Test EQ	WIT-05121302	Feb. 27, 2019	Feb. 26, 2020
2	CMU200	R&S	120237	Feb. 27, 2019	Feb. 26, 2020
3	Wireless communication test set 8960	Agilent	GB46200384	Jul. 11, 2019	Jul. 10, 2020
4	Power Splitter 11636A	Agilent	34	Sep.20, 2018	Sep.19, 2019
5	Attenuator	JFW	50FHC-006-50	Jun. 12, 2019	Jun. 11, 2020
6	Vector Signal Generator SMU200A	R&S	104332	Sep.20, 2018	Sep.19, 2019
7	VECTOR ANALYZER E4440A	Agilent	MY44303916	Jun. 12, 2019	Jun. 11, 2020
8	MXG Vector Signal Generator N5182A	AGILENT	MY50140530	Sep.20, 2018	Sep.19, 2019
9	PSG Analog Signal Generator E8257D	AGILENT	MY45141029	Sep.20, 2018	Sep.19, 2019
10	MXA Signal Analyzer N9020A	AGILENT	W1312-60196	Feb. 27, 2019	Feb. 28, 2020
11	Universal Switch Control Unit	JS TONSCEND	N/A	---	---
12	Programmable Power Supply PPT-1830	GW INSTEK	EM907629	Sep.20, 2018	Sep.19, 2019
13	DC Power Source	N/A	GBD-60V30A	Feb. 27, 2019	Feb. 26, 2020
14	Attenuator	JFW	50FHC-006-50	Jun. 12, 2019	Jun. 11, 2020
15	EMI Test Receiver ESCI	R&S	100694	Jun. 12, 2019	Jun. 11, 2020
16	Double-Ridged Waveguide Horn Antenna 3117	ETS LINDGREN	00034609	Mar. 01, 2018	Feb. 28, 2020
17	Trilog Broadband Antenna VULB 9168	SCHWARZBECK	494	Mar. 01, 2018	Feb. 28, 2020
18	LOOP ANTENNA SAS-562B	A.H	/	Mar. 01, 2018	Feb. 28, 2020
19	Artificial Mains Network	R&S	101116	Jul. 11, 2019	Jul. 10, 2020

No.	Type	Manufacturer	S/N	Cal. Date	Cal. Due
	ENV4200				
20	Artificial Mains Network ENV216	R&S	101242	Jul. 11, 2019	Jul. 10, 2020
21	Filter Bank Notch 1(880-915MHz)	MICRO-TRONICS	010	Feb. 27, 2019	Feb. 26, 2020
22	Filter Bank Notch 2(1710-1785MHz)	MICRO-TRONICS	009	Feb. 27, 2019	Feb. 26, 2020
23	Filter Bank Notch 3(1920-1980MHz)	MICRO-TRONICS	008	Feb. 27, 2019	Feb. 26, 2020

4. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO.

- Uncertainty of Radio Frequency, Uc=±1 x 10^{-5}
- Uncertainty of total RF power, conducted, Uc = ±1.5dB
- Uncertainty of RF power density, conducted, Uc = ±3dB
- Uncertainty of spurious emissions, conducted, Uc = ±3dB
- Uncertainty of spurious emissions, radiated, Uc = ±6dB
- Uncertainty of Temperature: ±1°C
- Uncertainty of Humidity: ±5 %
- Uncertainty of DC and low frequency voltages: ±3 %

5. TEST RESULT

5.1. APPLIED REFERENCE DOCUMENTS

Leading reference documents for testing:

No.	Identity	Document Title
1	ETSI EN 301 511	Global System for Mobile communications (GSM); Mobile Stations (MS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

Specific reference documents for testing:

No.	Identity	Document Title
2	ETSI TS 151 010-1	3rd Generation Partnership Project; Technical Specification Group GSM/EDGE Radio Access Network Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification

5.2. TEST ENVIRONMENT/CONDITIONS

Normal Temperature (NT)	15 ... 35 °C
Relative Humidity	30 ... 75 %
Air Pressure	980 ... 1020 kPa
Adapter Test Model Name	HJ-0502000W2-EU
Details of Power Supply (Rated Input)	AC100-240V, 50/60Hz, 0.3A
Details of Power Supply (Rated Output)	DC5V, 2000mA
Extreme Temperature	Low Temperature (TL) = -10°C High Temperature (TH) = +40°C
Extreme Voltage of the EUT	Low Voltage = DC 3.45V Normal Voltage= DC 3.85V High Voltage = DC 4.40V
Note: The Limit Voltage 4.40V was declared by manufacturer, The EUT couldn't be operate normally with higher voltage. The maximum temperature of 40℃ is not a standard requirement and is measured according to the maximum service temperature stated by the manufacturer.	

5.3. ITEMS USED IN THE TEST RESULTS LIST

Terms in the column “Verdict” for the test results list of the section:

Verdict	Description
PASS	EUT passed this test case
FAIL	EUT failed this test case
INC.	EUT did not pass and did not fail this test case, therefore the verdict is inconclusive
N/A	Test case not applicable for the EUT, see the column “Note” for detailed

5.4. TEST RESULTS LIST

Table A.1: The EN Requirements Table (EN-RT) (Re. ETSI EN 301 511 Annex A) for SIM Card 1

Test Case (ETSI TS 151010-1)	Test Case (EN 301 511)	Parameter	GSM 900		GSM 1800		Note
			Sample	Result	Sample	Result	
12.1.1	4.2.12	Conducted spurious emissions - MS allocated a channel					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
12.1.2	4.2.13	Conducted spurious emissions - MS in idle mode					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
12.2.1	4.2.16	Radiated spurious emissions - MS allocated a channel					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
12.2.2	4.2.17	Radiated spurious emissions - MS in idle mode					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
13.1	4.2.1	Transmitter - Frequency error and phase error					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
		Vibration X-axis	A01	PASS	A01	PASS	
		Vibration Y-axis	A01	PASS	A01	PASS	
		Vibration Z-axis	A01	PASS	A01	PASS	
13.2	4.2.2	Transmitter - Frequency error under multipath and interference conditions					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	

13.3	4.2.5	Transmitter output power and burst timing					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
13.4	4.2.6	Transmitter - Output RF spectrum					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
13.16.1	4.2.4	Frequency error and phase error in GPRS multislot configuration					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
		Vibration X-axis	A01	PASS	A01	PASS	
		Vibration Y-axis	A01	PASS	A01	PASS	
		Vibration Z-axis	A01	PASS	A01	PASS	
13.16.2	4.2.10	Transmitter output power in GPRS multislot configuration					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT/HV	A01	PASS	A01	PASS	
13.16.3	4.2.11	Output RF spectrum in GPRS multislot configuration					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT/HV	A01	PASS	A01	PASS	
14.2.1	4.2.42	Reference sensitivity - TCH/FS					
		NT / NV	A01	PASS	A01	PASS	

		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.2.3	4.2.43	Reference sensitivity - FACCH/F					
		NT / NV	A01	PASS	A01	PASS	
14.16.1	4.2.44	Minimum Input level for Reference Performance - GPRS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.6.1	4.2.32	Intermodulation rejection-speech channels					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.8.1	4.2.35	AM suppression-speech channels					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.5.1	4.2.38	Adjacent channel rejection-speech channels (TCH/FS)					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.7.1	4.2.20	Blocking and spurious response – speech channels					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.18.3	4.2.40	Adjacent channel rejection - EGPRS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.18.4	4.2.34	Intermodulation rejection - EGPRS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
13.17.1	4.2.26	Frequency error and Modulation accuracy in EGPRS Configuration					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	

		NT / HV	A01	PASS	A01	PASS	
13.17.2	4.2.27	Frequency error under multipath and interference conditions in EGPRS Configuration					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
13.17.3	4.2.28	EGPRS Transmitter output power					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
13.17.4	4.2.29	Output RF spectrum in EGPRS configuration					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.18.1	4.2.45	Minimum Input level for Reference Performance - EGPRS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.18.5	4.2.30	Blocking and spurious response in EGPRS configuration					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	

Table A.2: The EN Requirements Table (EN-RT) (Re. ETSI EN 301 511 Annex A) for SIM Card 2

Test Case (ETSI TS 151010-1)	Test Case (EN 301 511)	Parameter	GSM 900		GSM 1800		Note
			Sample	Result	Sample	Result	
12.1.1	4.2.12	Conducted spurious emissions - MS allocated a channel					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
12.1.2	4.2.13	Conducted spurious emissions - MS in idle mode					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
12.2.1	4.2.16	Radiated spurious emissions - MS allocated a channel					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
12.2.2	4.2.17	Radiated spurious emissions - MS in idle mode					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
13.1	4.2.1	Transmitter - Frequency error and phase error					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
		Vibration X-axis	A01	PASS	A01	PASS	
		Vibration Y-axis	A01	PASS	A01	PASS	
		Vibration Z-axis	A01	PASS	A01	PASS	
13.2	4.2.2	Transmitter - Frequency error under multipath and interference conditions					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
13.3	4.2.5	Transmitter output power and burst timing					

		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
13.4	4.2.6	Transmitter - Output RF spectrum					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
13.16.1	4.2.4	Frequency error and phase error in GPRS multislot configuration					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT / HV	A01	PASS	A01	PASS	
		Vibration X-axis	A01	PASS	A01	PASS	
		Vibration Y-axis	A01	PASS	A01	PASS	
		Vibration Z-axis	A01	PASS	A01	PASS	
13.16.2	4.2.10	Transmitter output power in GPRS multislot configuration					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT/HV	A01	PASS	A01	PASS	
13.16.3	4.2.11	Output RF spectrum in GPRS multislot configuration					
		NT / NV	A01	PASS	A01	PASS	
		LT / LV	A01	PASS	A01	PASS	
		LT / HV	A01	PASS	A01	PASS	
		HT / LV	A01	PASS	A01	PASS	
		HT/HV	A01	PASS	A01	PASS	
14.2.1	4.2.42	Reference sensitivity - TCH/FS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	

		NT / HV	A01	PASS	A01	PASS	
14.2.3	4.2.43	Reference sensitivity - FACCH/F					
		NT / NV	A01	PASS	A01	PASS	
14.16.1	4.2.44	Minimum Input level for Reference Performance - GPRS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.6.1	4.2.32	Intermodulation rejection-speech channels					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.8.1	4.2.35	AM suppression-speech channels					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.5.1	4.2.38	Adjacent channel rejection-speech channels (TCH/FS)					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.7.1	4.2.20	Blocking and spurious response – speech channels					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.18.3	4.2.40	Adjacent channel rejection - EGPRS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.18.4	4.2.34	Intermodulation rejection - EGPRS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
13.17.1	4.2.26	Frequency error and Modulation accuracy in EGPRS Configuration					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	

		NT / HV	A01	PASS	A01	PASS	
13.17.2	4.2.27	Frequency error under multipath and interference conditions in EGPRS Configuration					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
13.17.3	4.2.28	EGPRS Transmitter output power					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
13.17.4	4.2.29	Output RF spectrum in EGPRS configuration					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.18.1	4.2.45	Minimum Input level for Reference Performance - EGPRS					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	
14.18.5	4.2.30	Blocking and spurious response in EGPRS configuration					
		NT / NV	A01	PASS	A01	PASS	
		NT / LV	A01	PASS	A01	PASS	
		NT / HV	A01	PASS	A01	PASS	

Note: The worst test case is SIM Card 1.

Appendix A. Transmitter - Frequency error and phase error

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

RMS phase error(degree)	Power control LEVEL	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	5	0.7	0.5	0.5	PASS
	19	0.6	0.5	0.5	PASS
When the MS is being vibrated	5	0.5	0.5	0.5	PASS
	19	0.5	0.5	0.5	PASS

Peak phase error(degree)	Power control LEVEL	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	5	1.9	1.6	1.6	PASS
	19	1.6	1.3	1.5	PASS
When the MS is being vibrated	5	1.6	1.4	1.5	PASS
	19	1.5	1.5	1.5	PASS

frequency error(Hz)	Power control LEVEL	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	5	15	14	14	PASS
	19	12	14	12	PASS
When the MS is being vibrated	5	15	13	13	PASS
	19	14	15	15	PASS

DCS1800

RMS phase error(degree)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	0.7	0.6	0.5	PASS
	15	0.5	0.5	0.5	PASS
When the MS is being vibrated	0	0.7	0.6	0.5	PASS
	15	0.5	0.5	0.6	PASS

Peak phase error(degree)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	4.9	3.1	1.9	PASS
	15	1.6	1.7	1.7	PASS
When the MS is being vibrated	0	4.7	2.9	1.6	PASS
	15	1.7	1.5	1.8	PASS

frequency error(Hz)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	10	19	12	PASS
	15	10	14	11	PASS
When the MS is being vibrated	0	14	13	15	PASS
	15	14	16	17	PASS

Appendix B. Frequency error under multipath and interference conditions

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

Fading set	Test conditions	Power control LEVEL	Result			
			GSM900			
			ARFCN			
			LCH	MCH	HCH	Result
RA250	TNVN	5	18	17	14	PASS
		19	15	13	13	PASS
HT100	TNVN	5	14	14	17	PASS
		19	14	13	16	PASS
TU50	TNVN	5	15	16	9	PASS
		19	17	13	13	PASS
TU3	TNVN	5	13	16	14	PASS
		19	12	15	13	PASS

DCS1800

Fading set	Test conditions	Power control LEVEL	Result			
			DCS1800			
			ARFCN			
			LCH	MCH	HCH	Result
RA130	TNVN	0	9	9	11	PASS
		15	17	14	14	PASS
HT100	TNVN	0	11	13	10	PASS
		15	11	14	11	PASS
TU50	TNVN	0	10	15	12	PASS
		15	14	13	12	PASS
TU1.5	TNVN	0	11	13	15	PASS
		15	13	15	12	PASS

Appendix C. Frequency error and phase error in GPRS multislot configuration

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

RMS phase error(degree)	Power control LEVEL	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	5	0.7	0.5	0.6	PASS
	19	0.6	0.5	0.5	PASS
When the MS is being vibrated	5	0.6	0.5	0.5	PASS
	19	0.6	0.5	0.6	PASS

Peak phase error(degree)	Power control LEVEL	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	5	1.9	1.4	1.7	PASS
	19	1.7	1.4	1.4	PASS
When the MS is being vibrated	5	1.8	1.6	1.6	PASS
	19	1.6	1.5	1.7	PASS

frequency error(Hz)	Power control LEVEL	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	5	13	10	13	PASS
	19	9	12	12	PASS
When the MS is being vibrated	5	14	11	13	PASS
	19	13	12	10	PASS

DCS1800

RMS phase error(degree)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	0.6	0.5	0.5	PASS
	15	0.5	0.5	0.6	PASS
When the MS is being vibrated	0	0.6	0.5	0.5	PASS
	15	0.6	0.5	0.6	PASS

Peak phase error(degree)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	1.7	1.5	1.6	PASS
	15	1.7	1.5	1.7	PASS
When the MS is being vibrated	0	2.0	1.6	1.6	PASS
	15	1.9	1.4	1.8	PASS

frequency error(Hz)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	7	8	9	PASS
	15	7	6	11	PASS
When the MS is being vibrated	0	4	5	9	PASS
	15	5	6	9	PASS

Appendix D. Transmitter output power and burst timing

Note: All the modes had been tested, but only the worst data recorded in the report.

A. output power

Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
GSM900		LCH	MCH	HCH	Result
TN,VN	5	33.40	33.32	33.32	PASS
	12	20.29	20.26	20.16	PASS
	19	5.15	5.11	4.89	PASS

Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
DCS1800		LCH	MCH	HCH	Result
TN,VN	0	30.84	31.04	30.96	PASS
	8	14.61	15.32	15.53	PASS
	15	1.14	1.47	1.35	PASS

B. Power VS Time

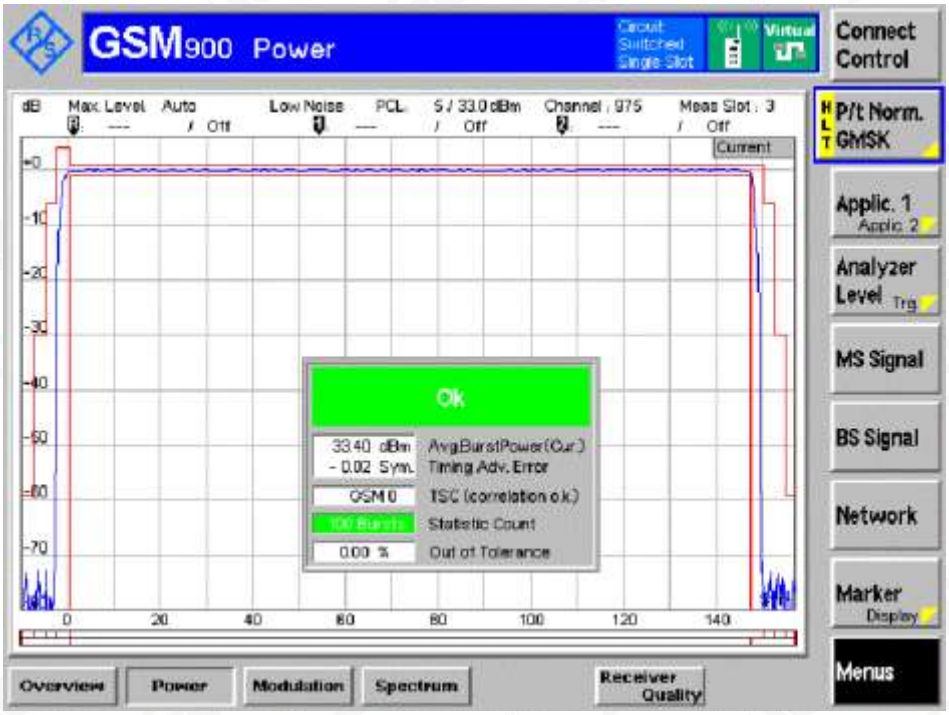
Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
GSM900	Power level	LCH	MCH	HCH
TN,VN	5	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
DCS1800	Power level	LCH	MCH	HCH
TN,VN	0	PASS	PASS	PASS
	8	PASS	PASS	PASS
	15	PASS	PASS	PASS

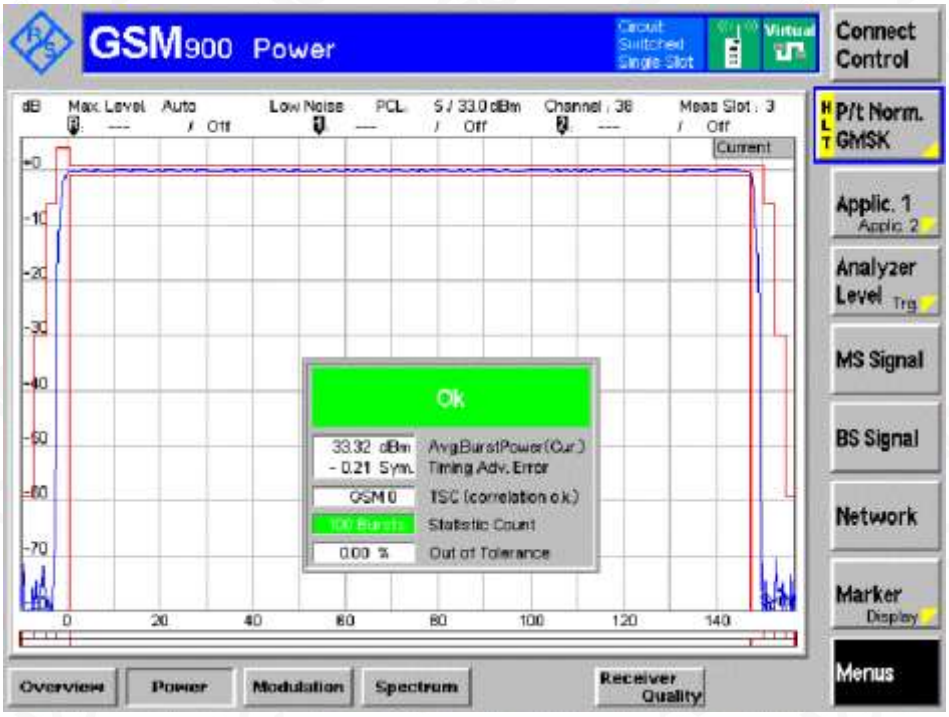
Graphs of output power and burst timing

GSM 900 TN,VN

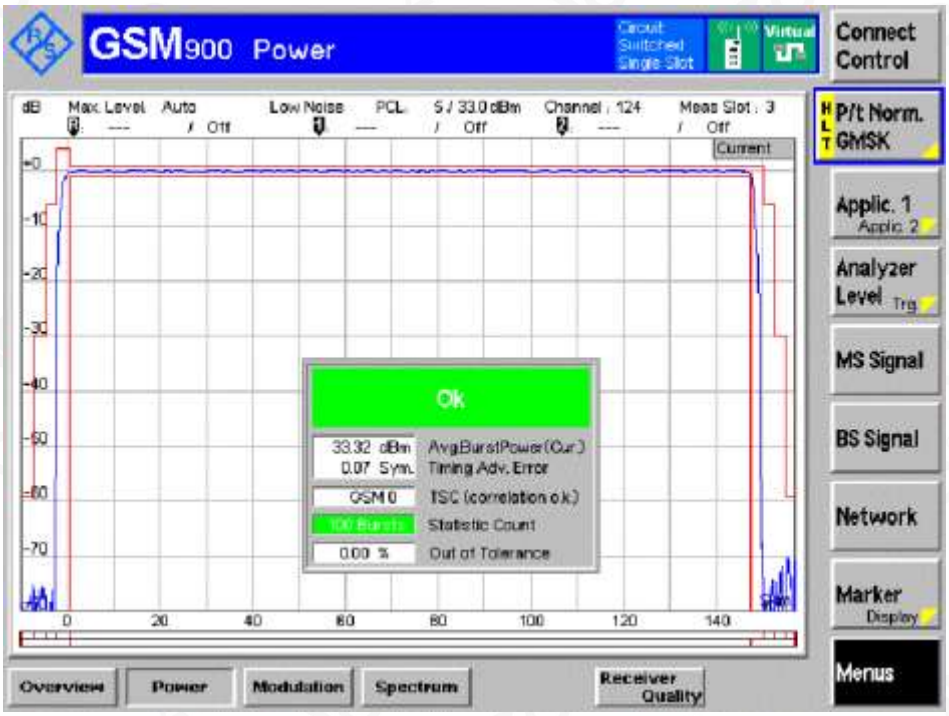
Channel LCH PCL 5



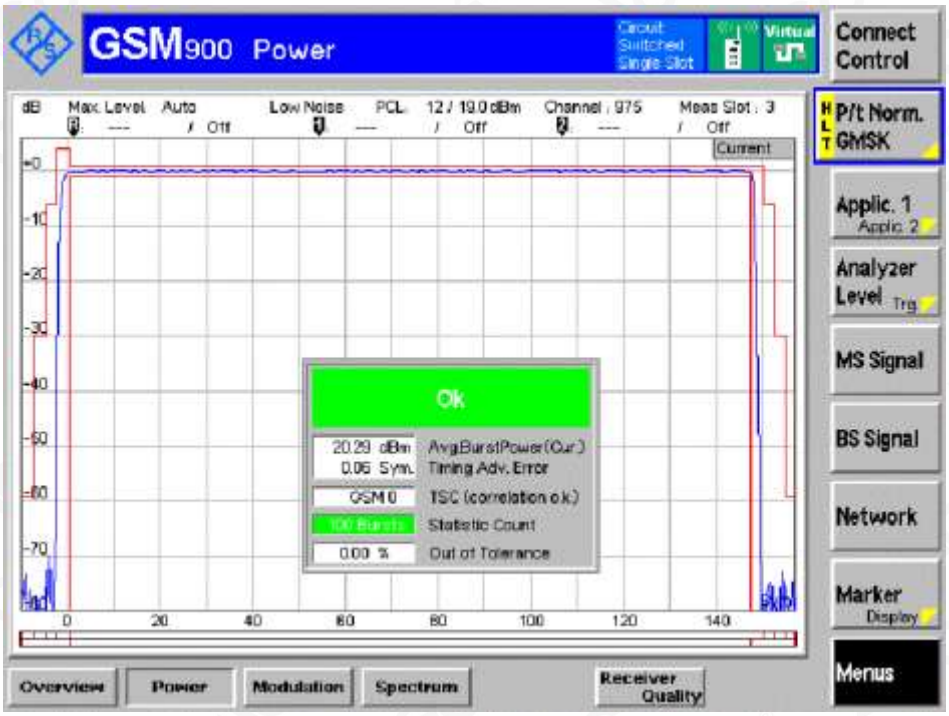
Channel MCH PCL 5



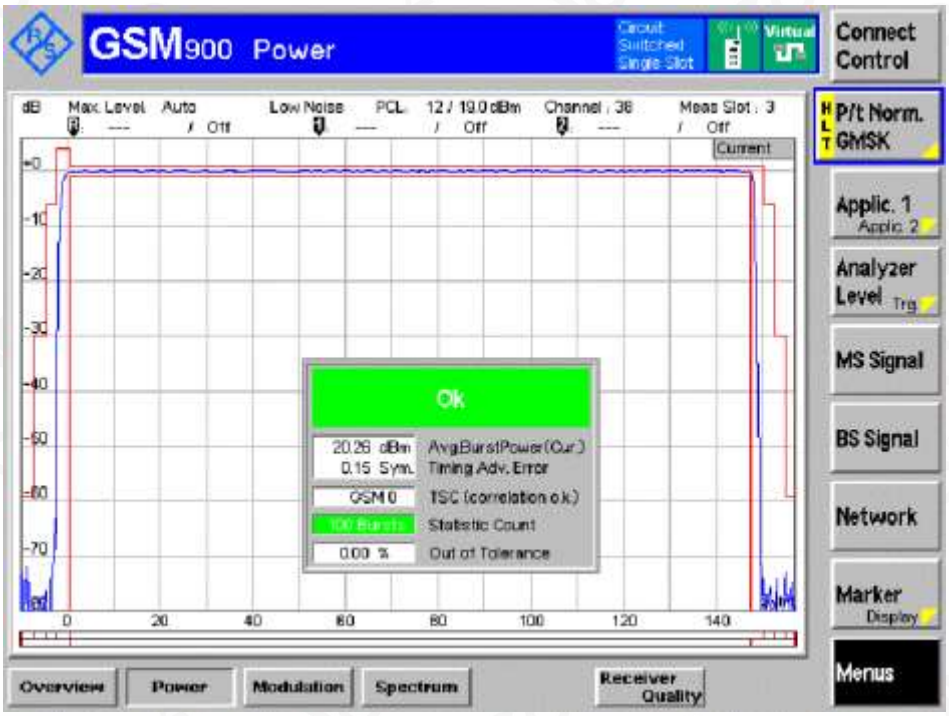
Channel HCH PCL 5



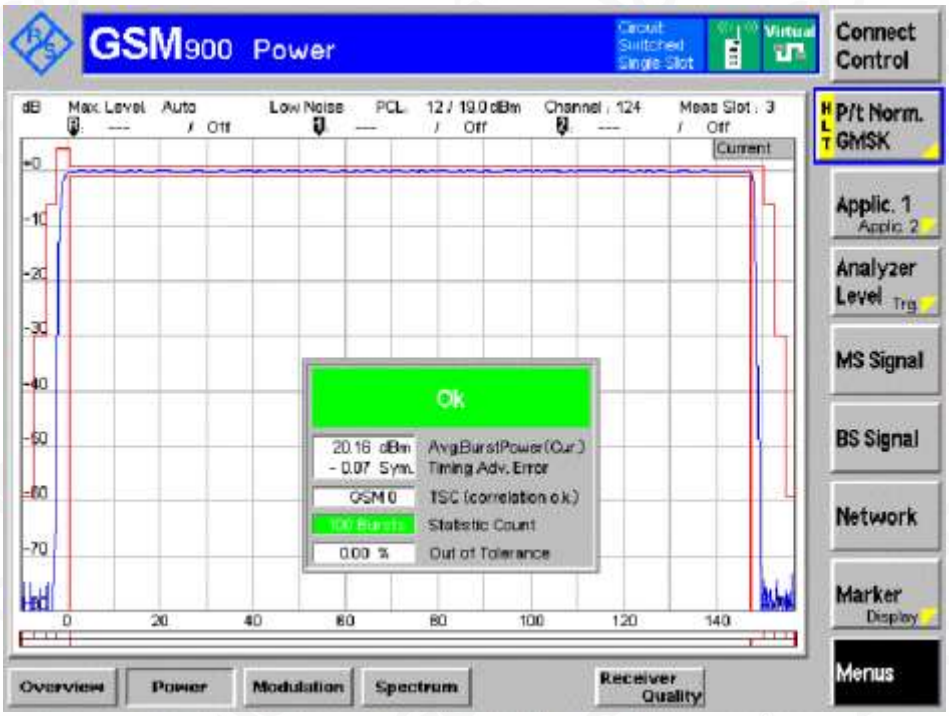
Channel LCH PCL 12



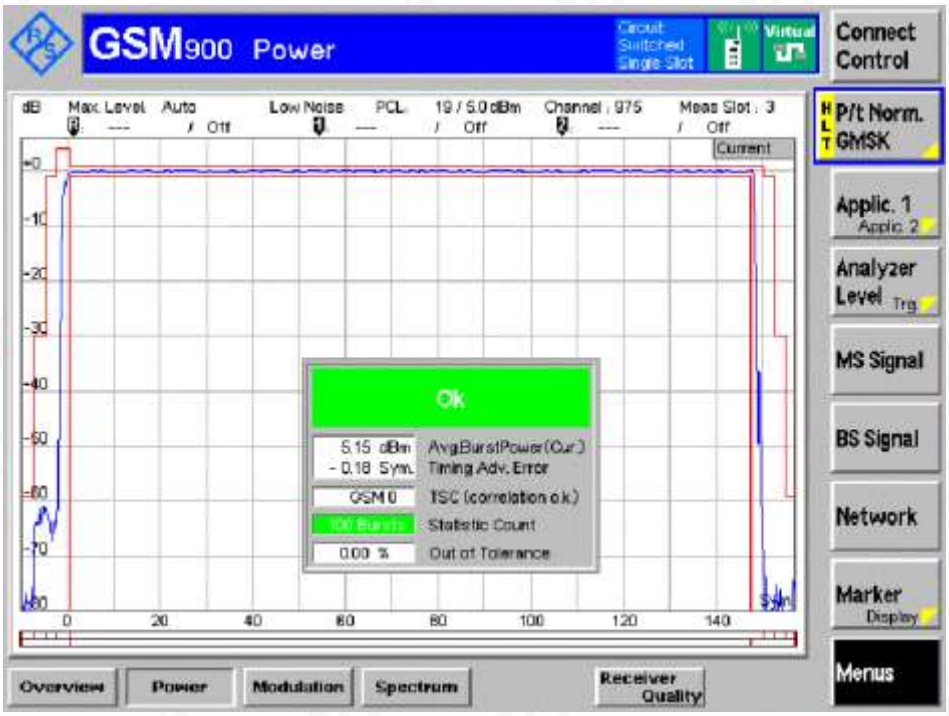
Channel MCH PCL 12



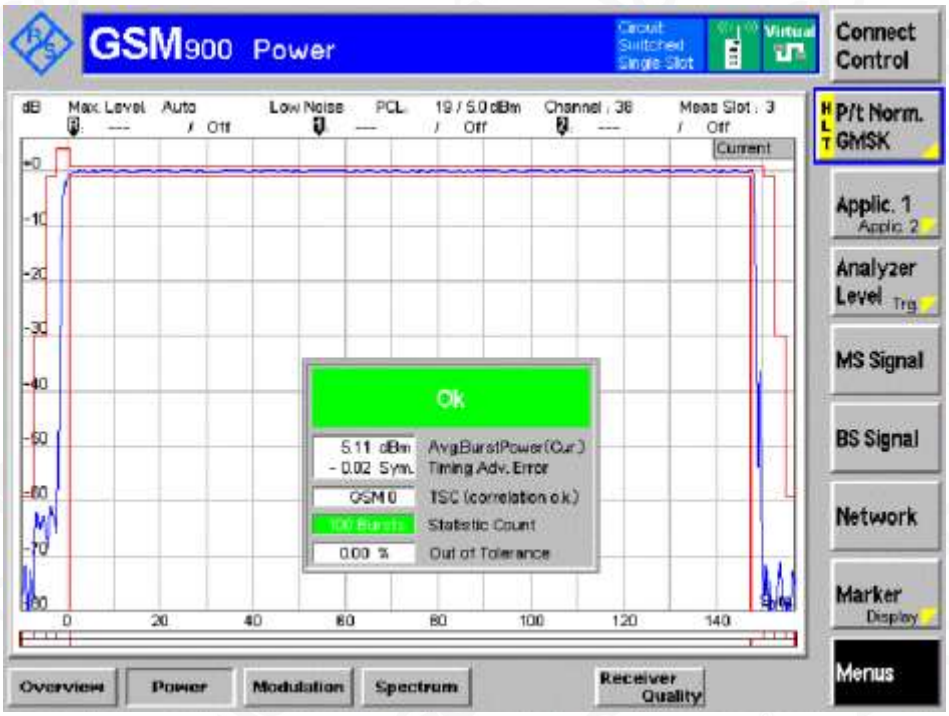
Channel HCH PCL 12



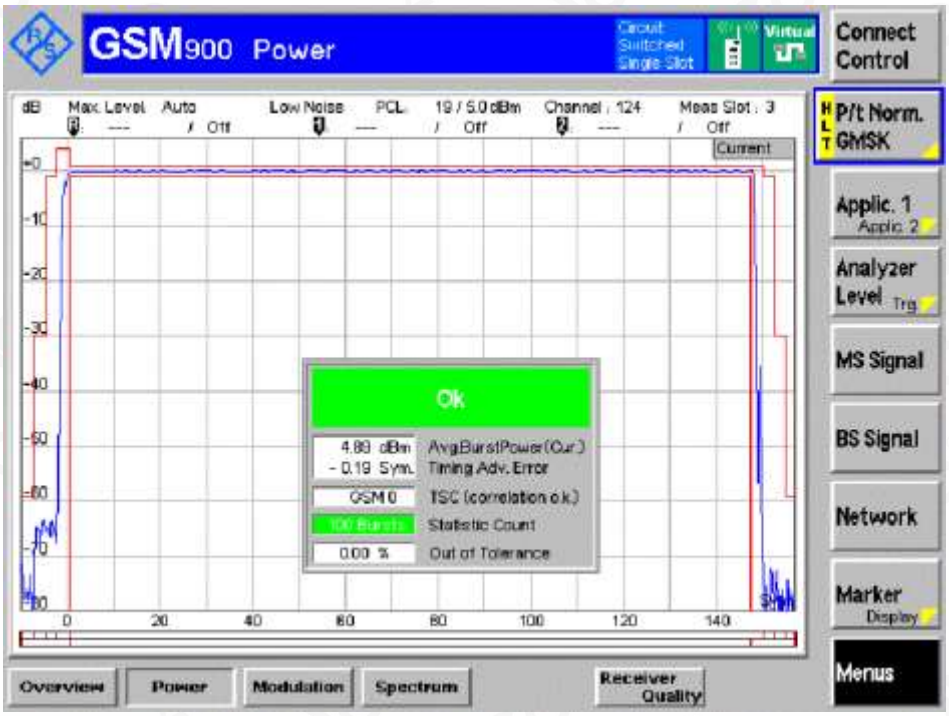
Channel LCH PCL 19



Channel MCH PCL 19

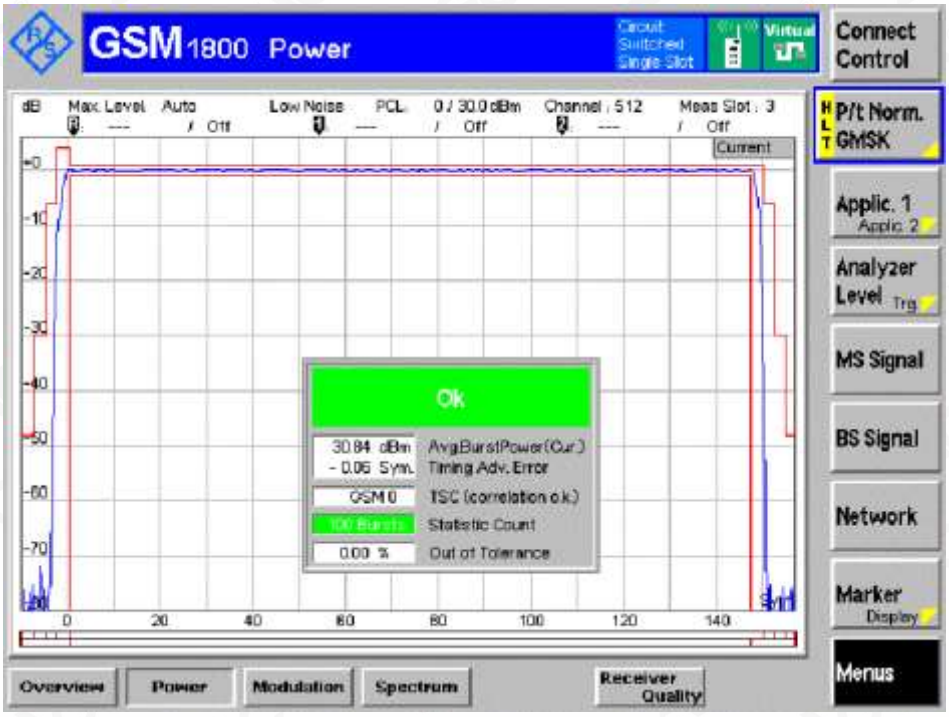


Channel HCH PCL 19

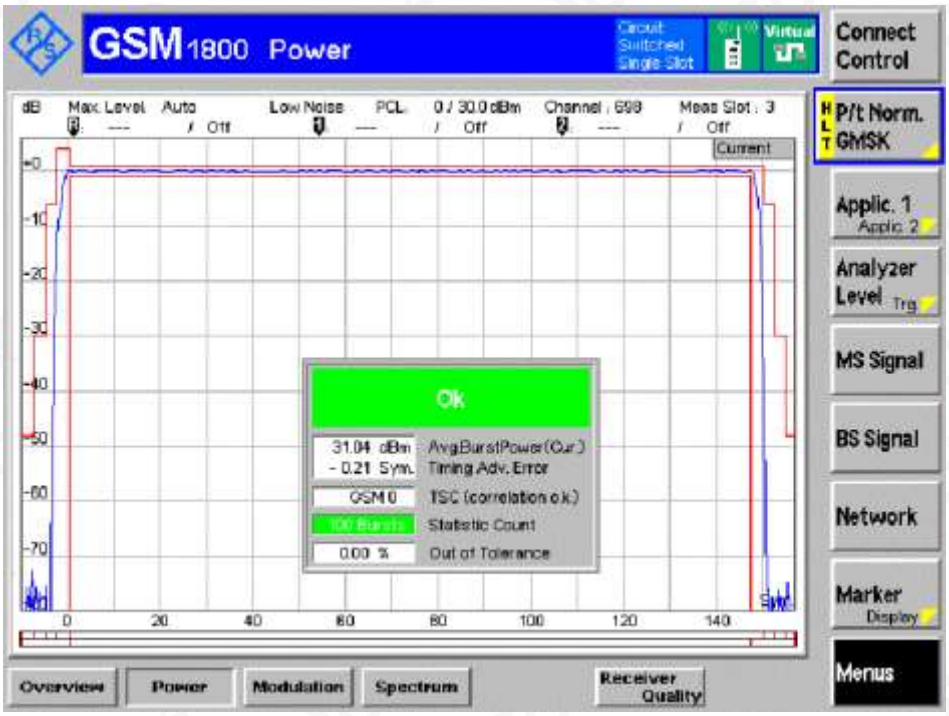


DCS1800 TN,VN

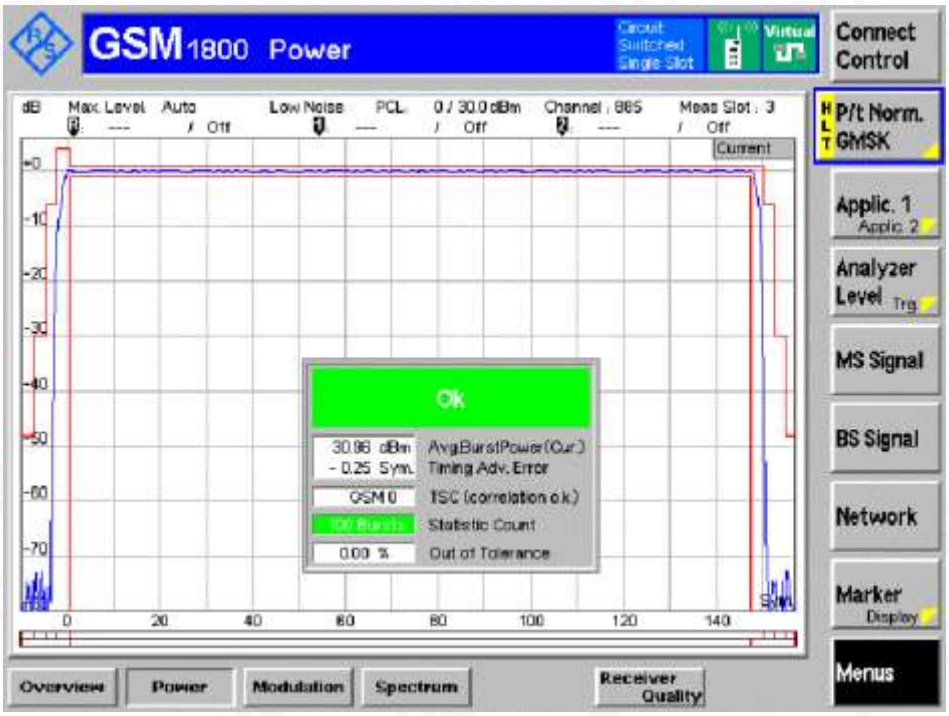
Channel LCH PCL 0



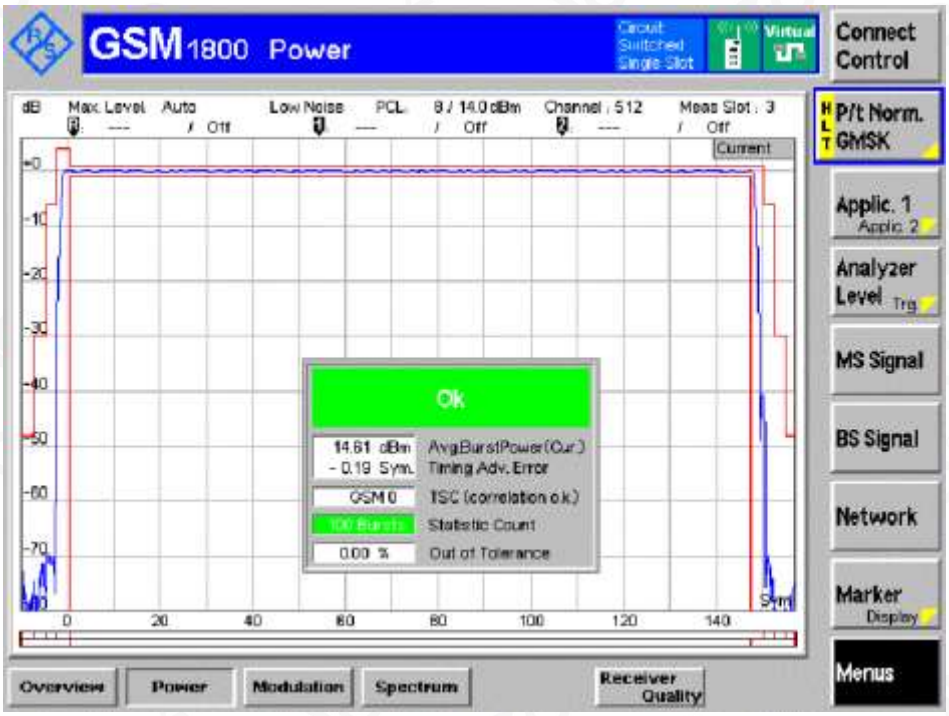
Channel MCH PCL 0



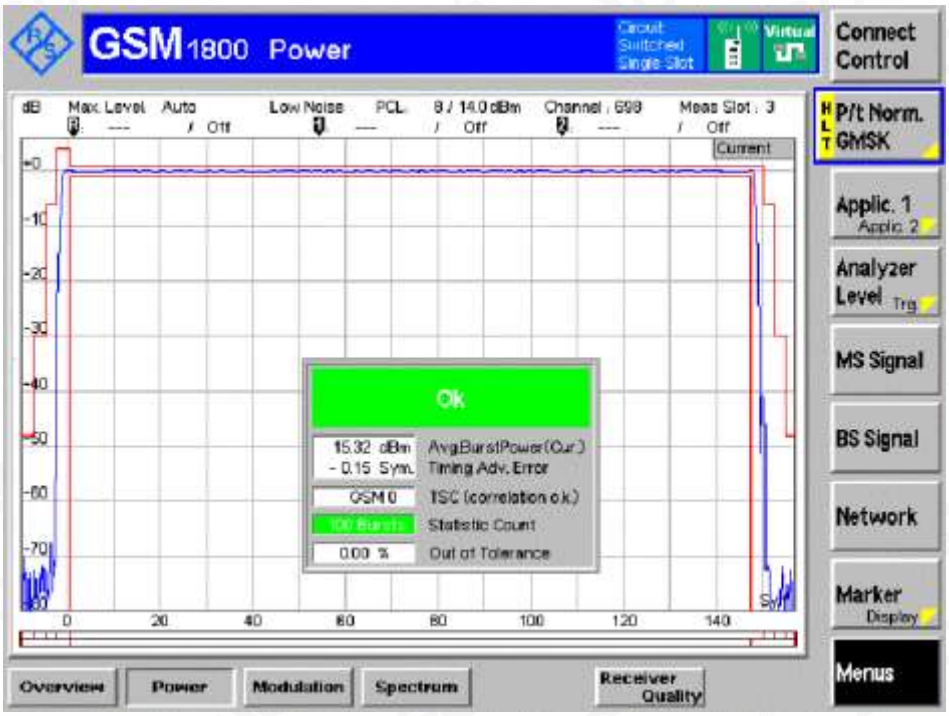
Channel HCH PCL 0



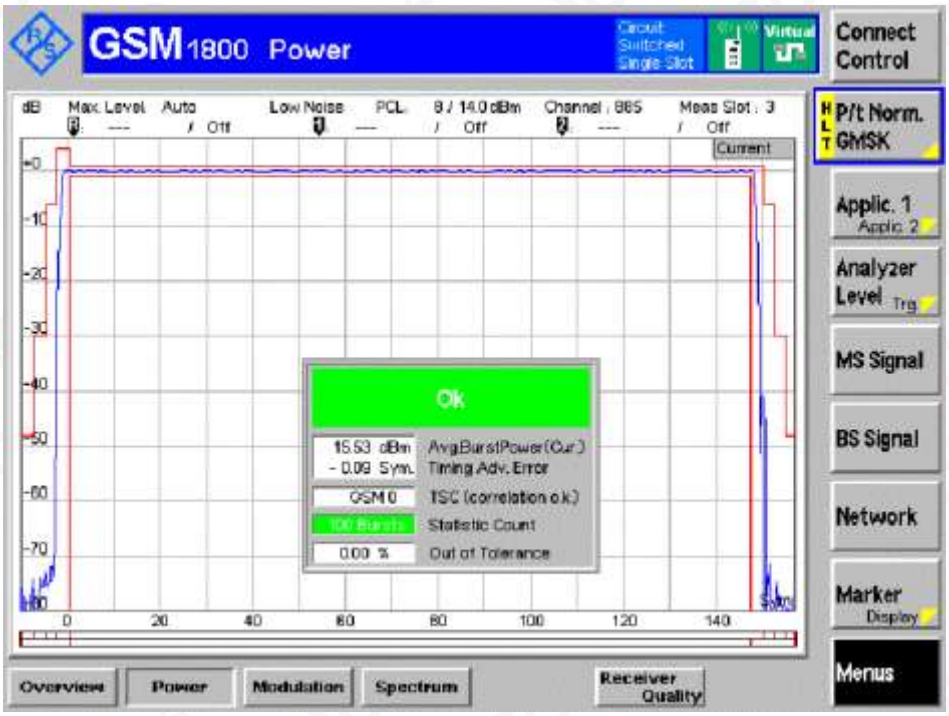
Channel LCH PCL 8



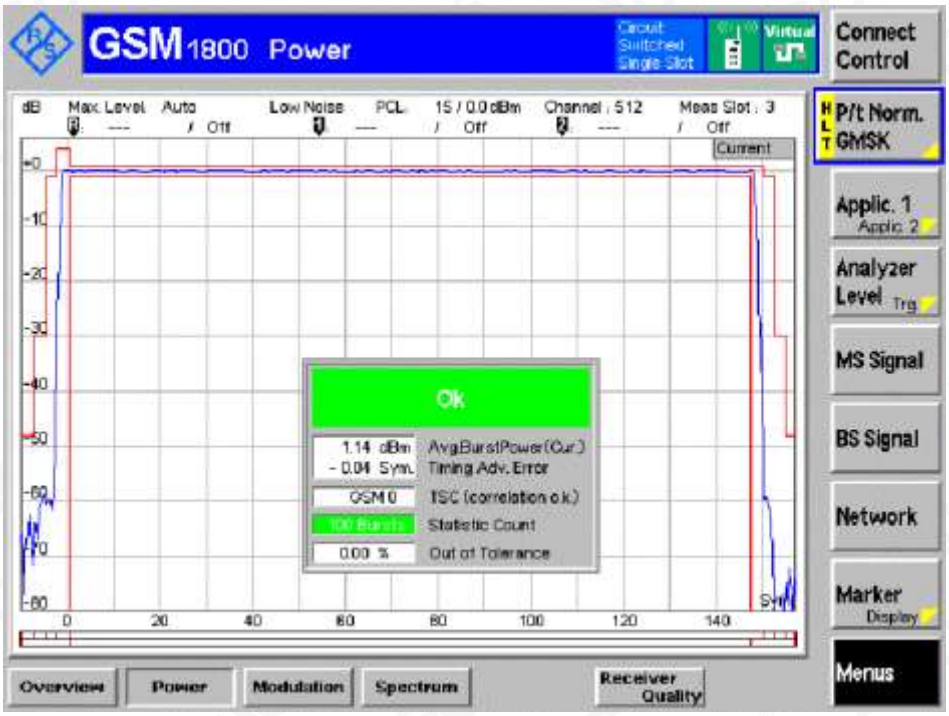
Channel MCH PCL 8



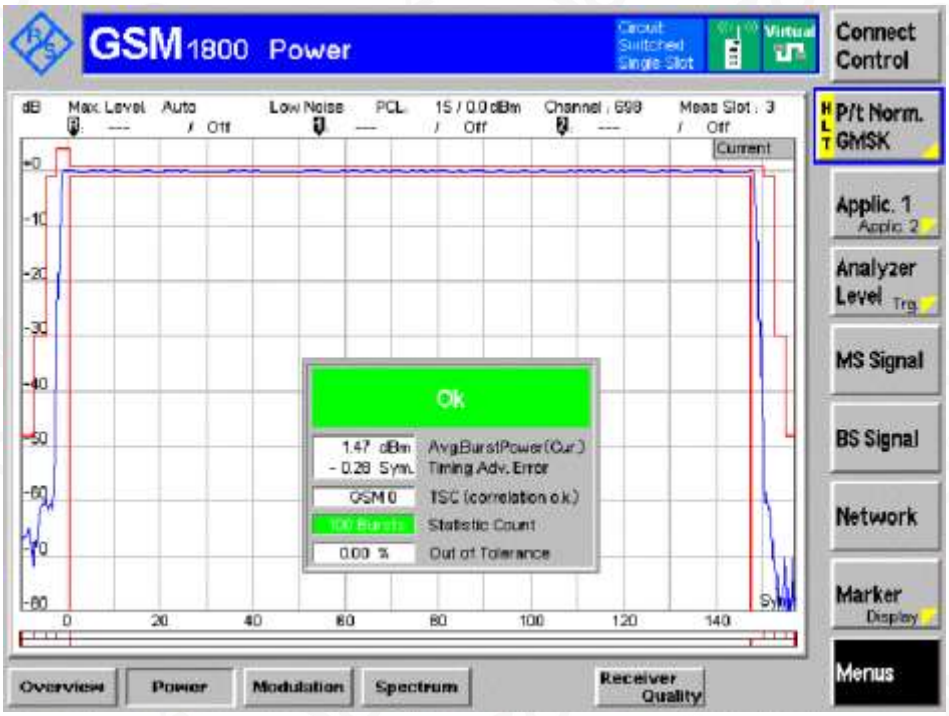
Channel HCH PCL 8



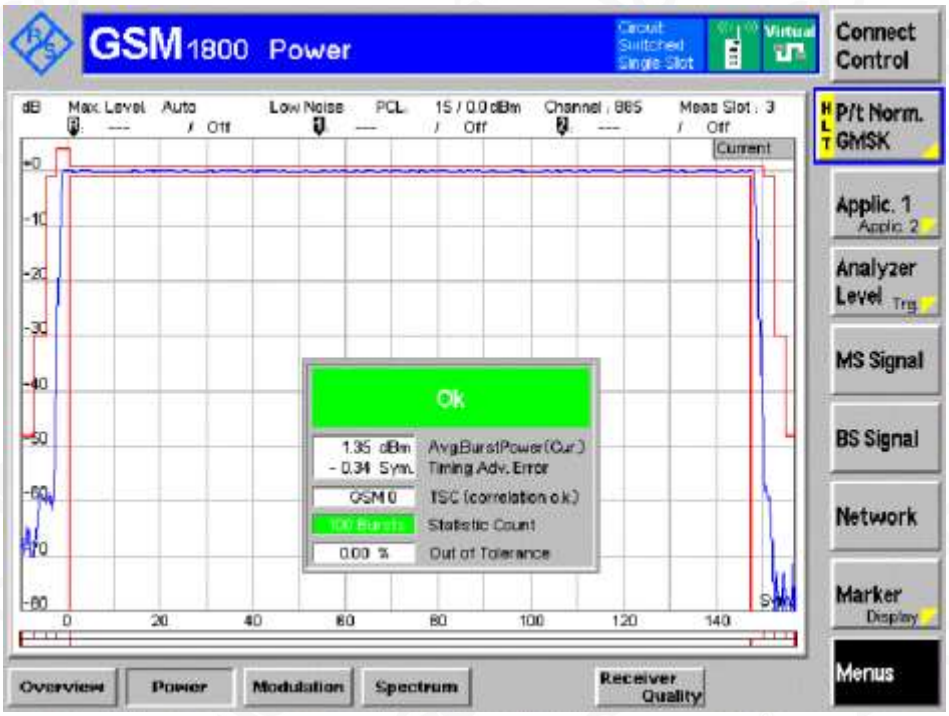
Channel LCH PCL 15



Channel MCH PCL 15



Channel HCH PCL 15



Appendix E. Transmitter – Output RF spectrum

Note: All the modes had been tested, but only the worst data recorded in the report.

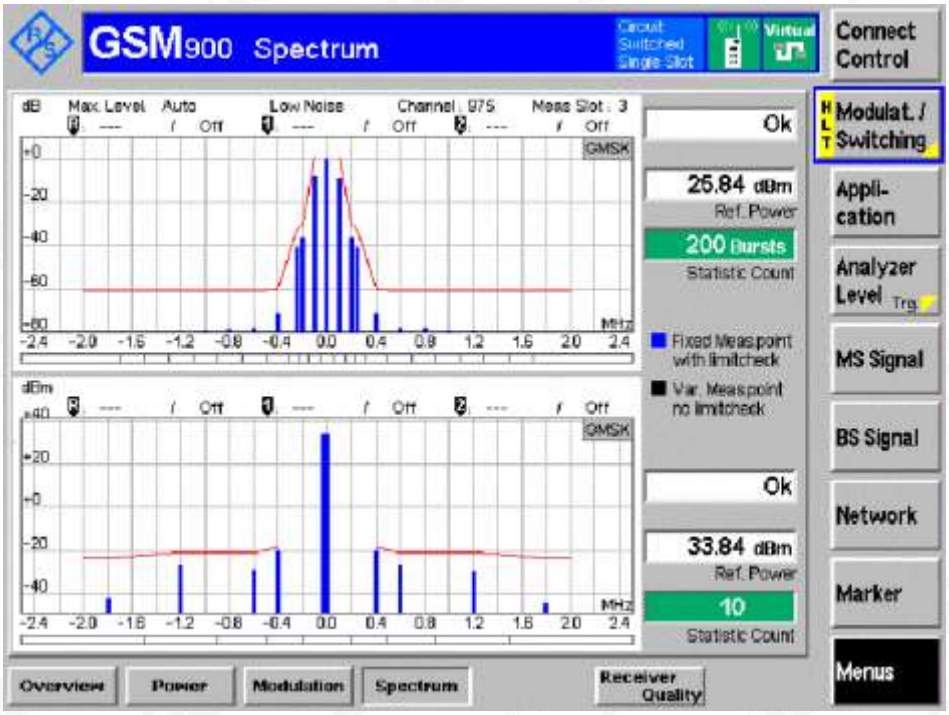
Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
GSM900		LCH	MCH	HCH
TN,VN	5	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
DCS1800		LCH	MCH	HCH
TN,VN	0	PASS	PASS	PASS
	8	PASS	PASS	PASS
	15	PASS	PASS	PASS

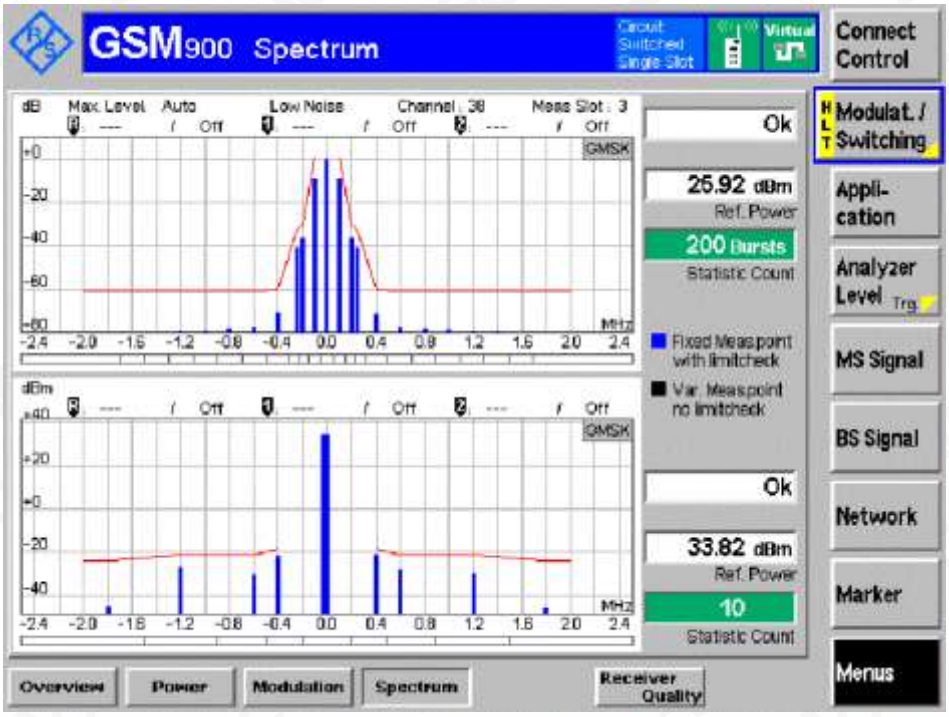
Graphs of output RF spectrum

GSM 900 TN,VN

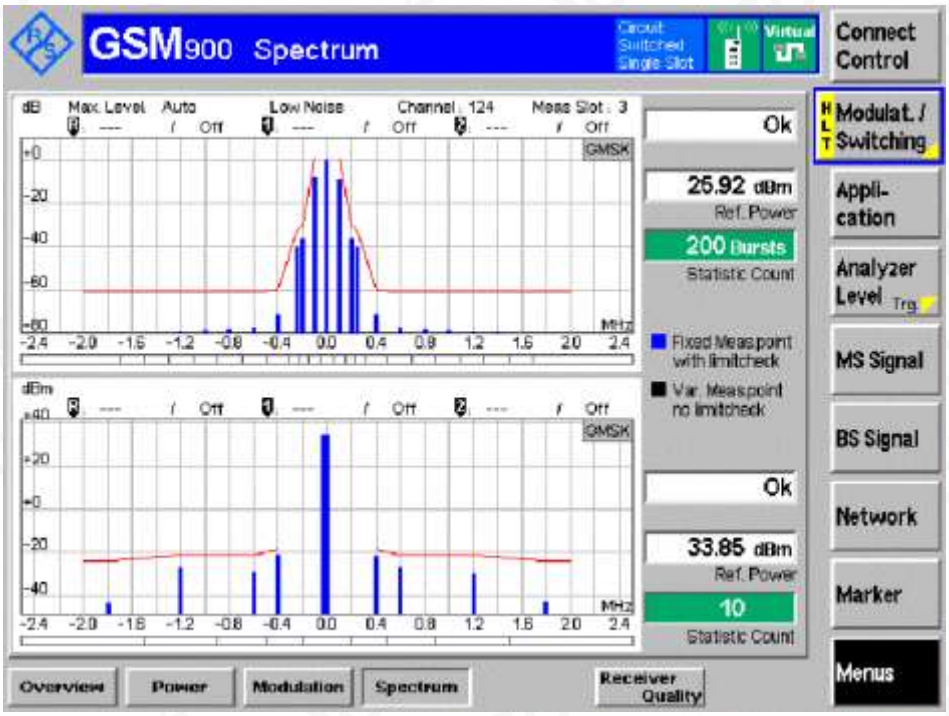
Channel LCH PCL 5



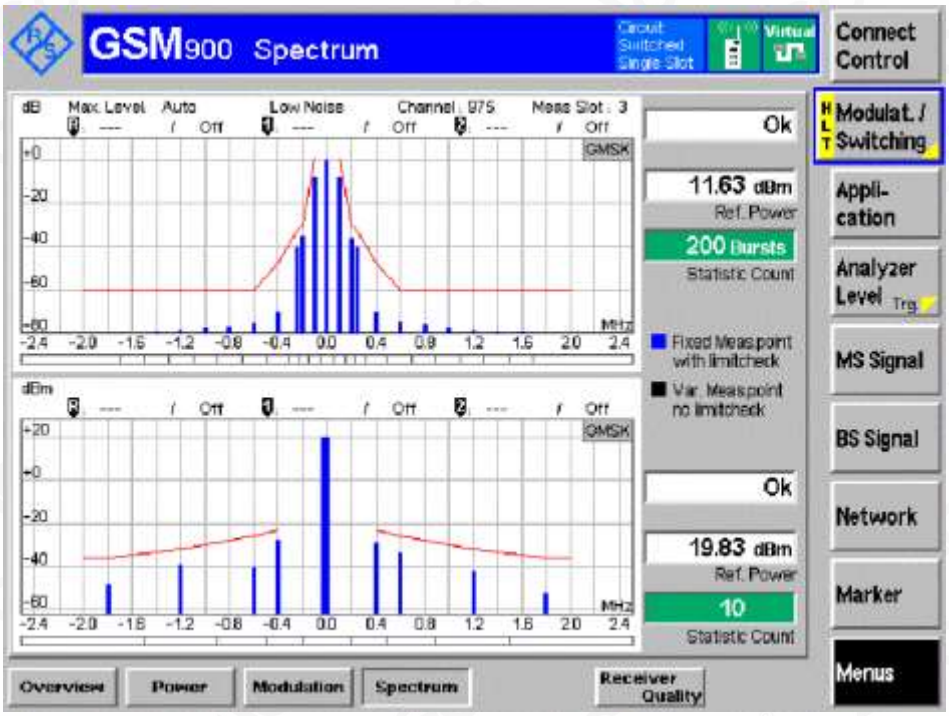
Channel MCH PCL 5



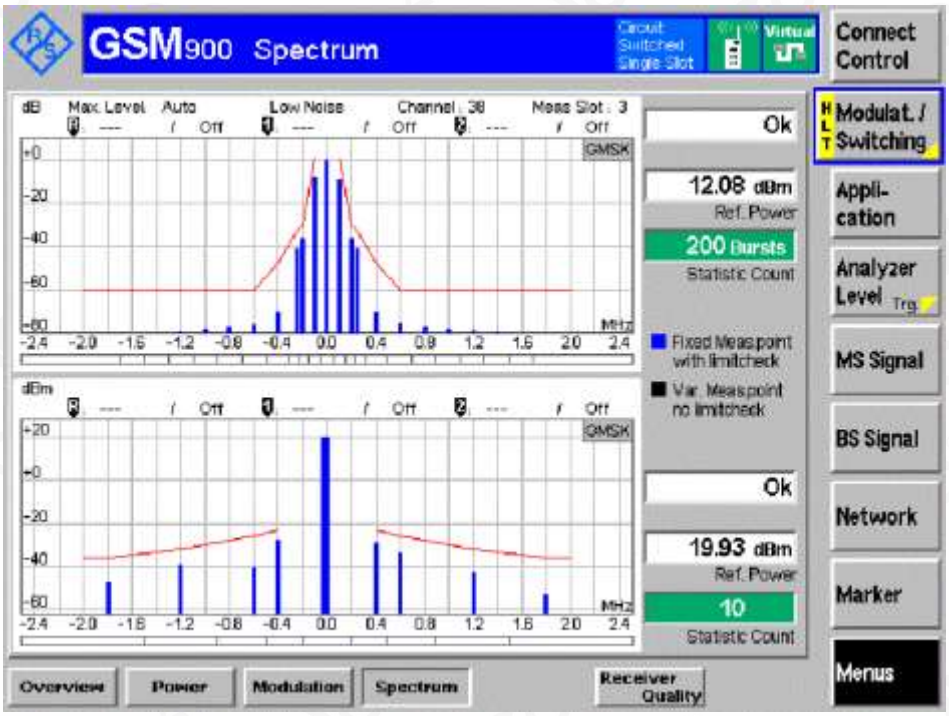
Channel HCH PCL 5



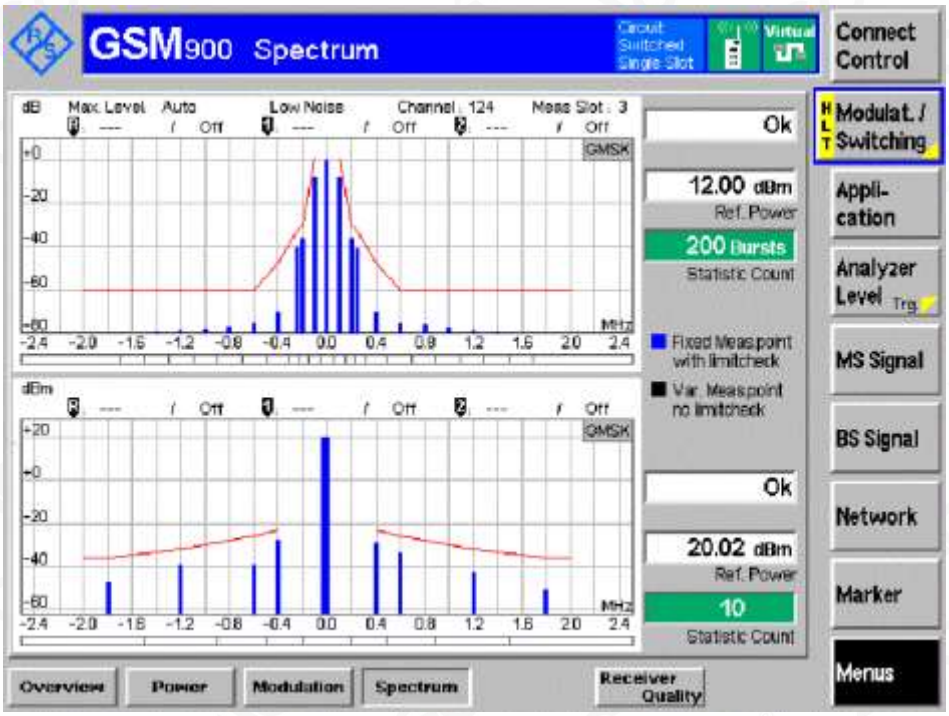
Channel LCH PCL 12



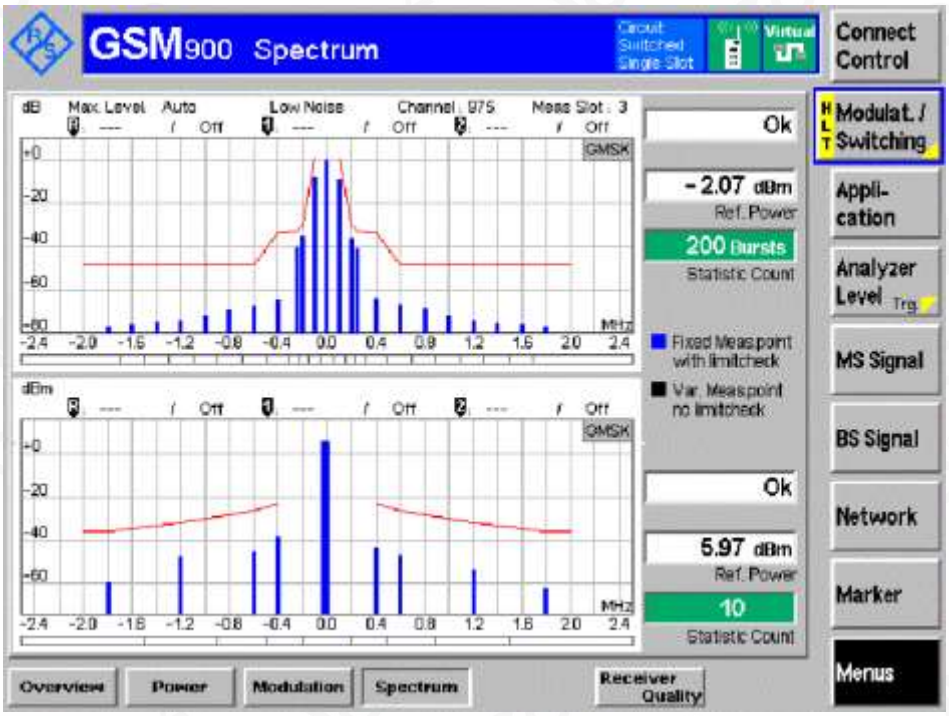
Channel MCH PCL 12



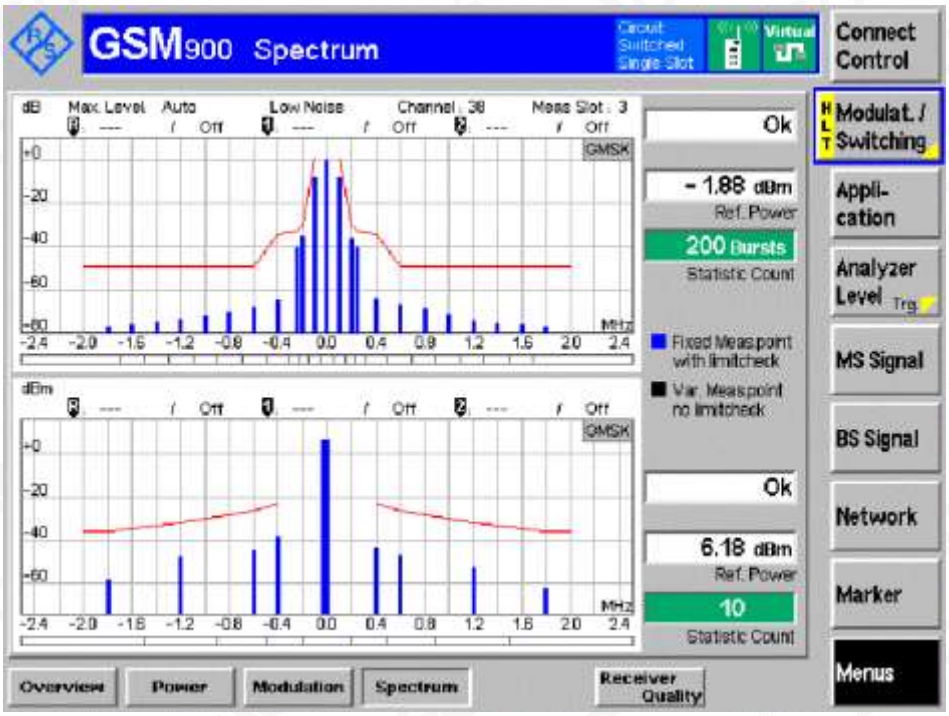
Channel HCH PCL 12



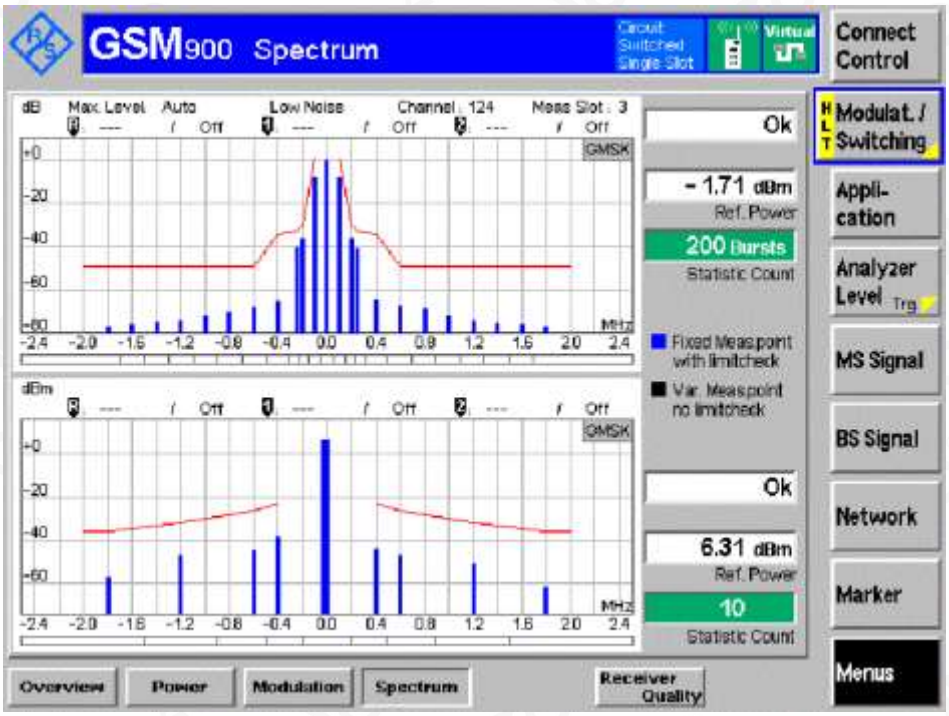
Channel LCH PCL 19



Channel MCH PCL 19

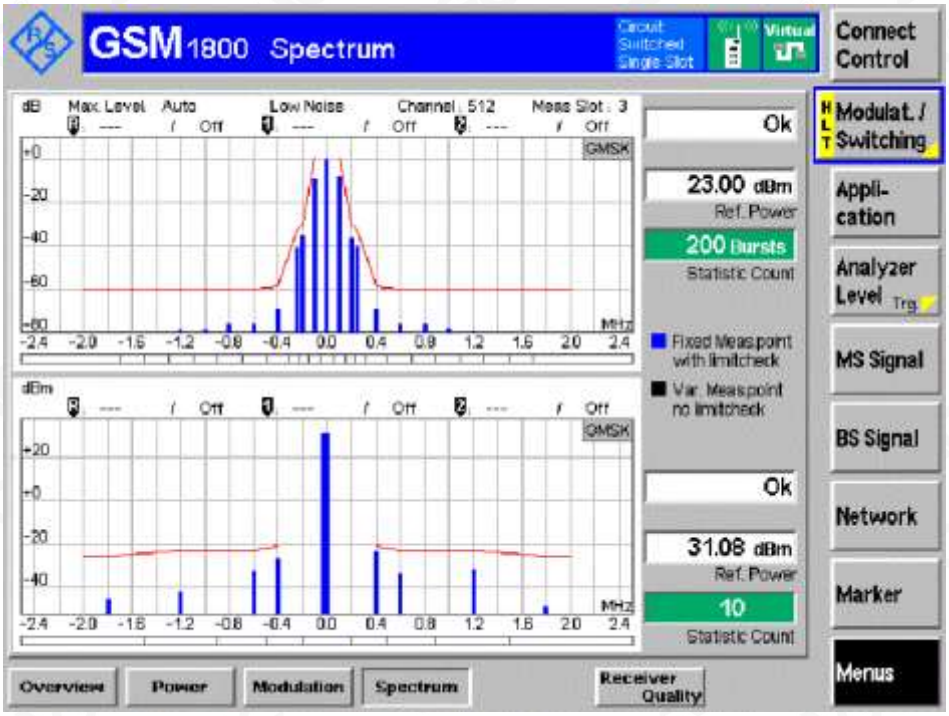


Channel HCH PCL 19

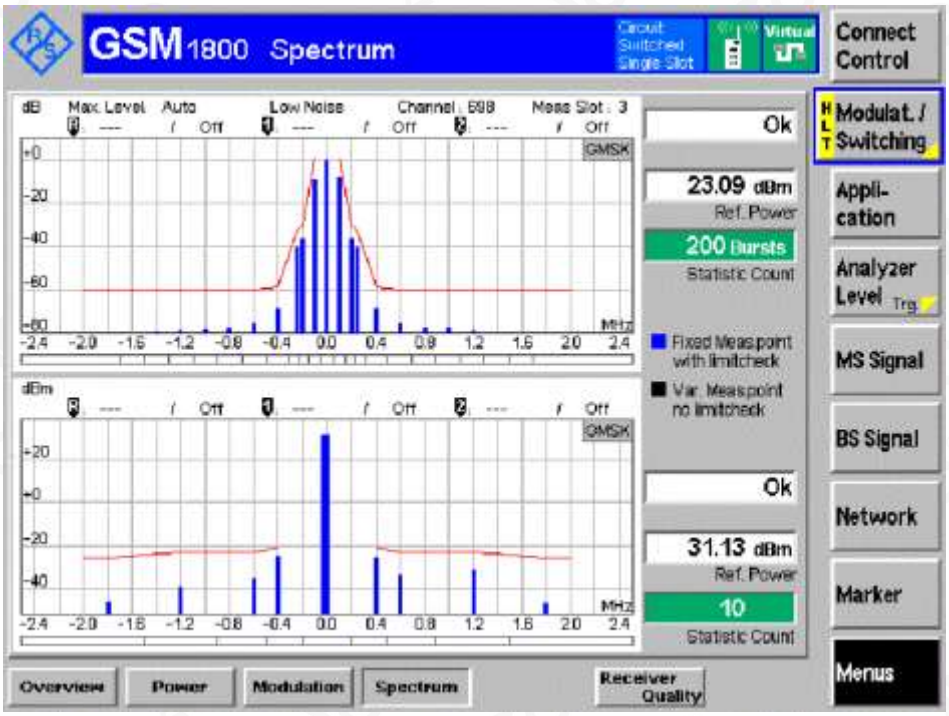


DCS1800 TN,VN

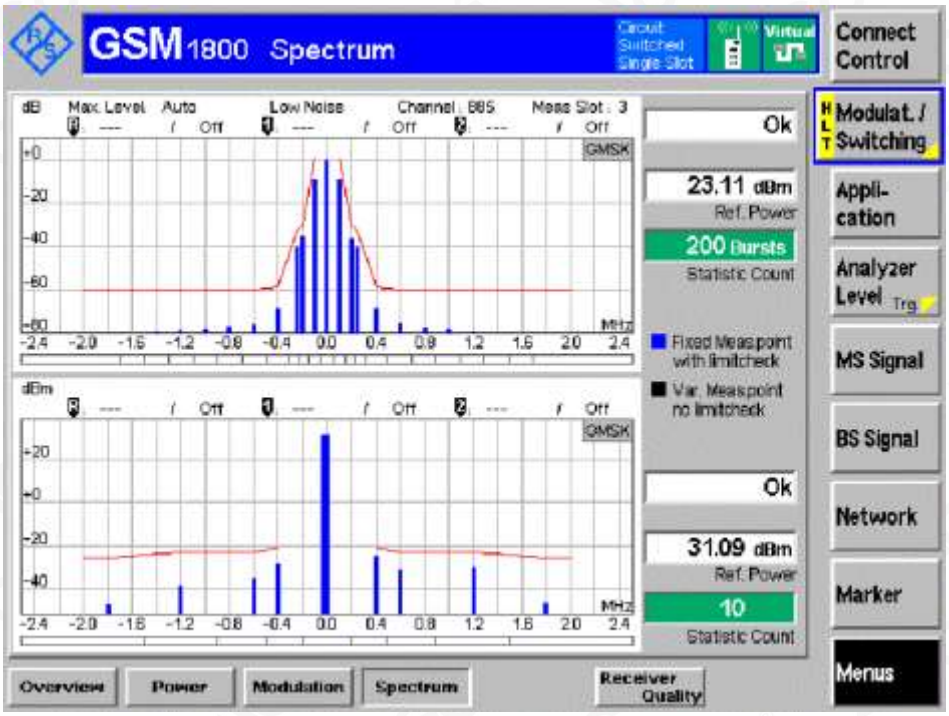
Channel LCH PCL 0



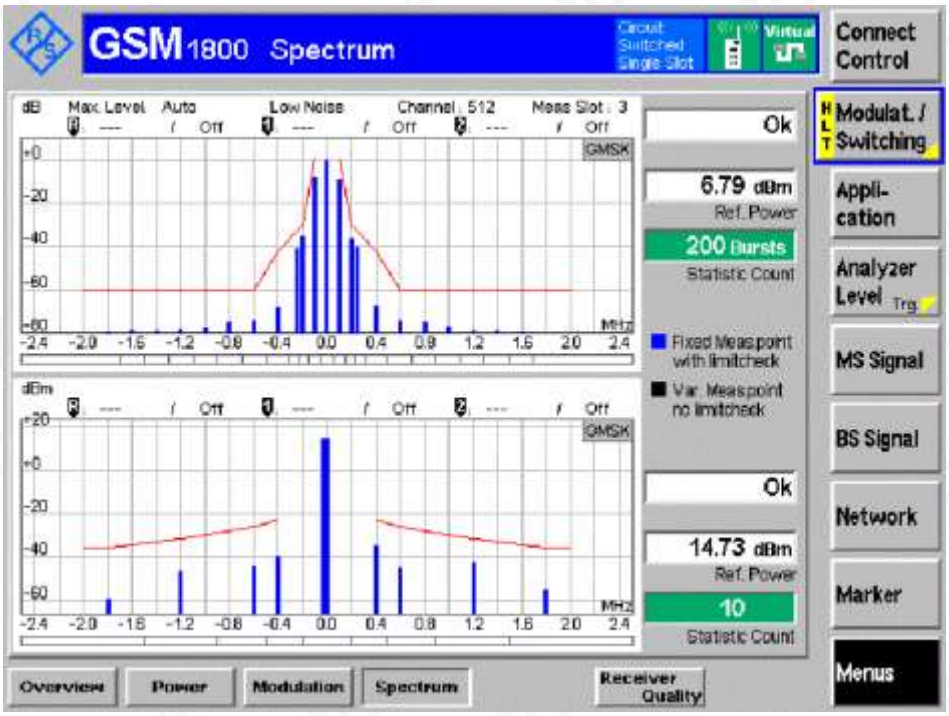
Channel MCH PCL 0



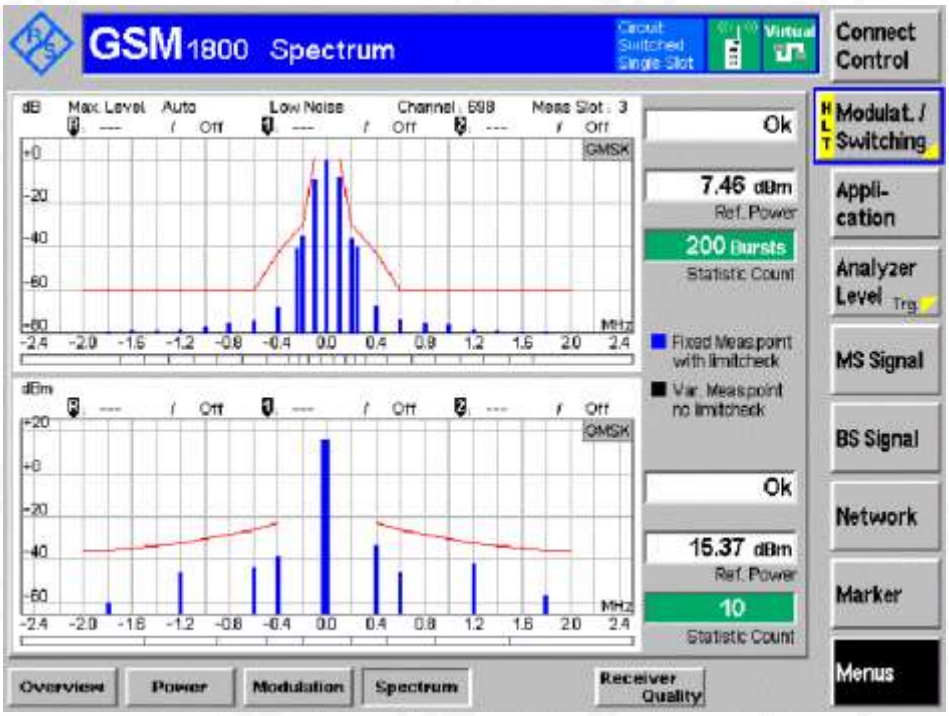
Channel HCH PCL 0



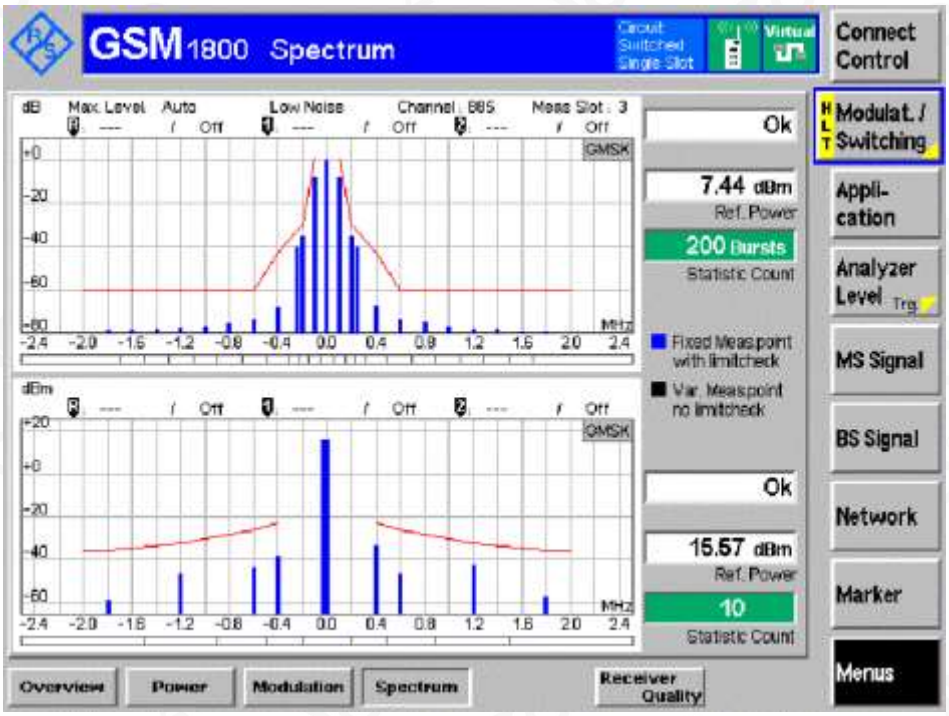
Channel LCH PCL 8



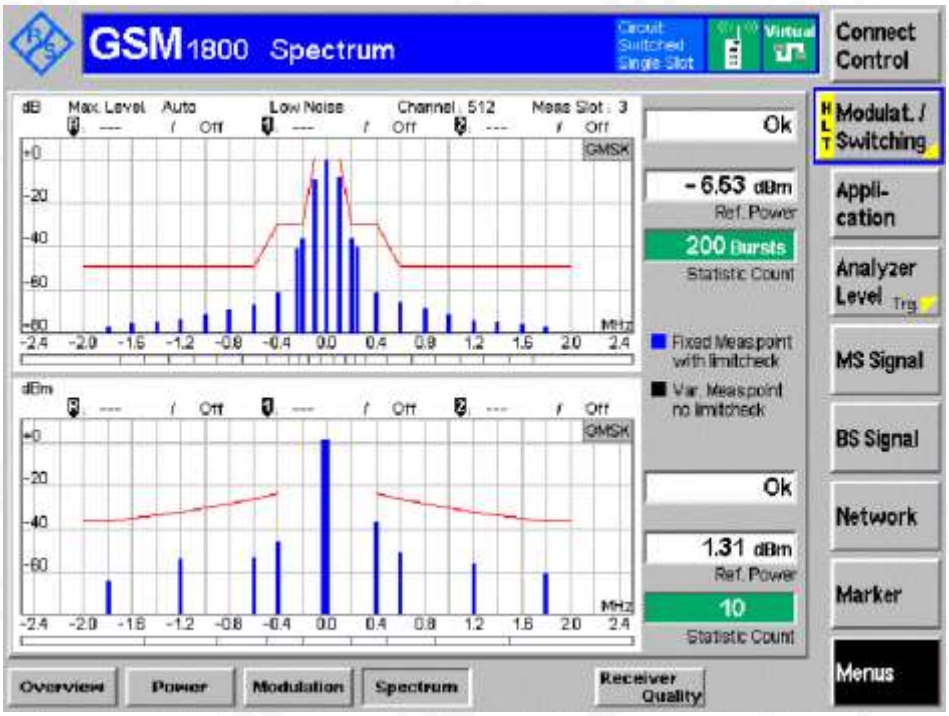
Channel MCH PCL 8



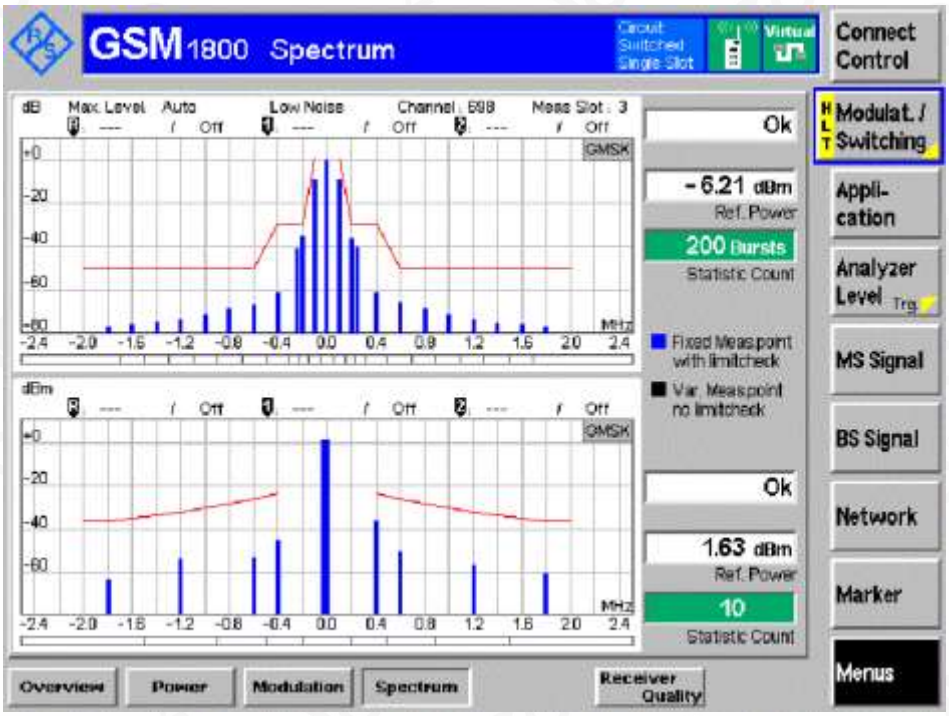
Channel HCH PCL 8



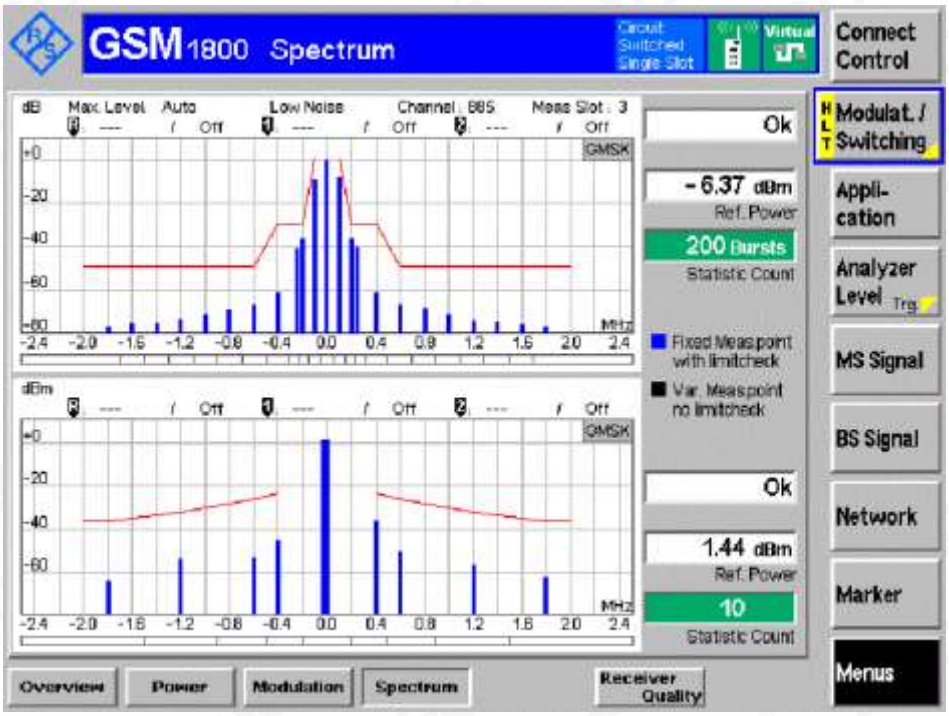
Channel LCH PCL 15



Channel MCH PCL 15



Channel HCH PCL 15



Appendix F. Transmitter output power in GPRS multislot configuration

Note: All the modes had been tested, but only the worst data recorded in the report.

A. output power

Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
GSM900		LCH	MCH	HCH	Result
TN,VN	5	29.79	29.82	29.86	PASS
	12	19.64	19.72	19.81	PASS
	19	5.89	6.11	6.23	PASS

Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
DCS1800		LCH	MCH	HCH	Result
TN,VN	0	27.34	27.53	27.55	PASS
	8	14.77	15.42	15.65	PASS
	15	1.49	1.81	1.62	PASS

B. Power VS Time

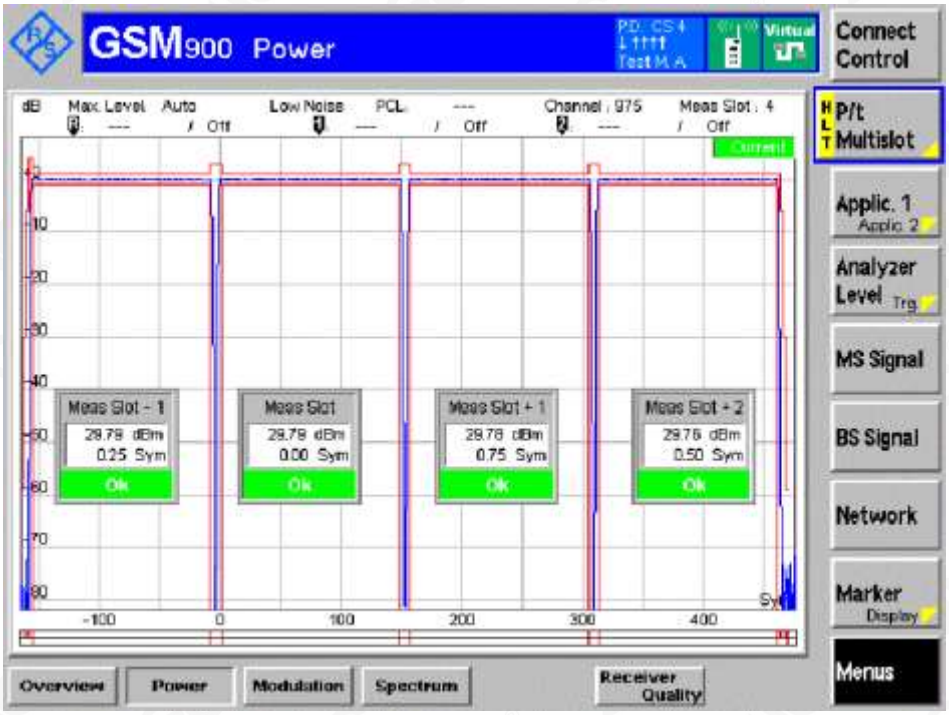
Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
GSM900	Power level	LCH	MCH	HCH
TN,VN	5	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
DCS1800	Power level	LCH	MCH	HCH
TN,VN	0	PASS	PASS	PASS
	8	PASS	PASS	PASS
	15	PASS	PASS	PASS

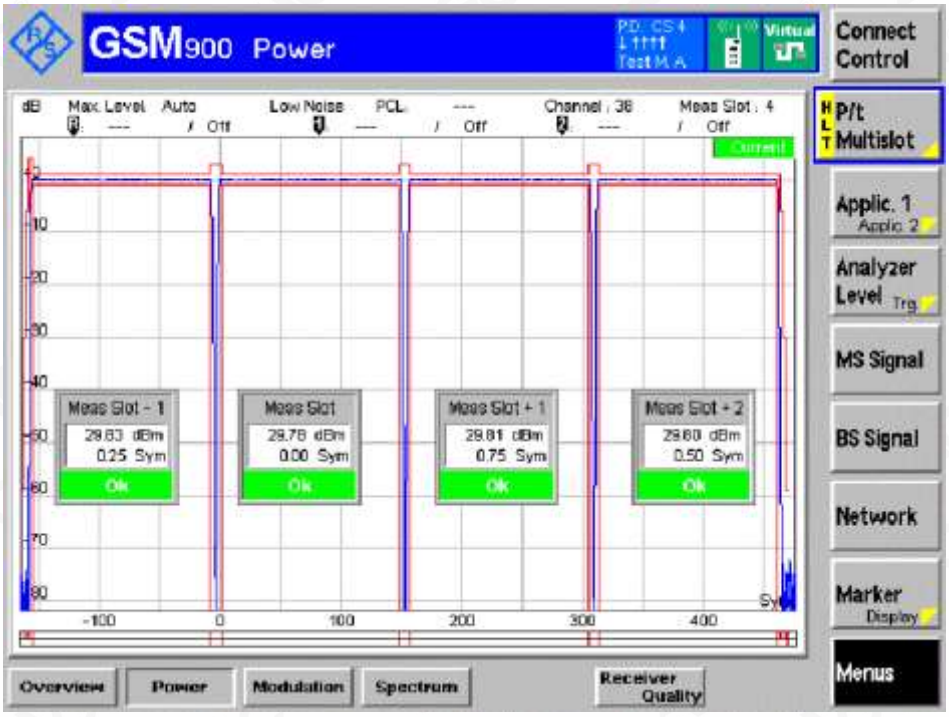
Graphs of output power in GPRS multislot configuration

GSM 900 TN,VN

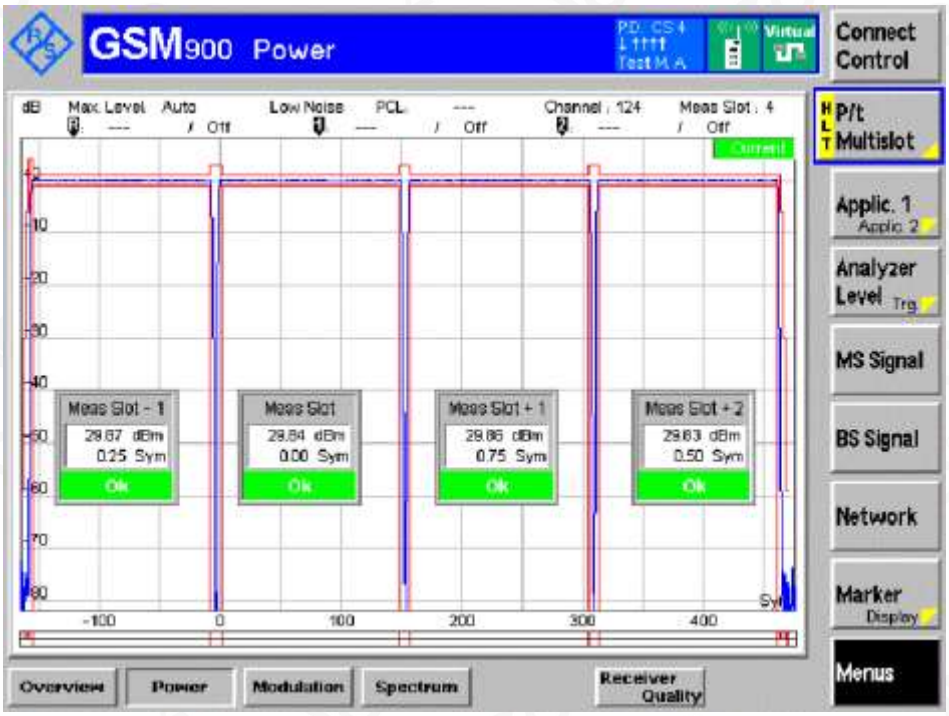
Channel LCH PCL 5



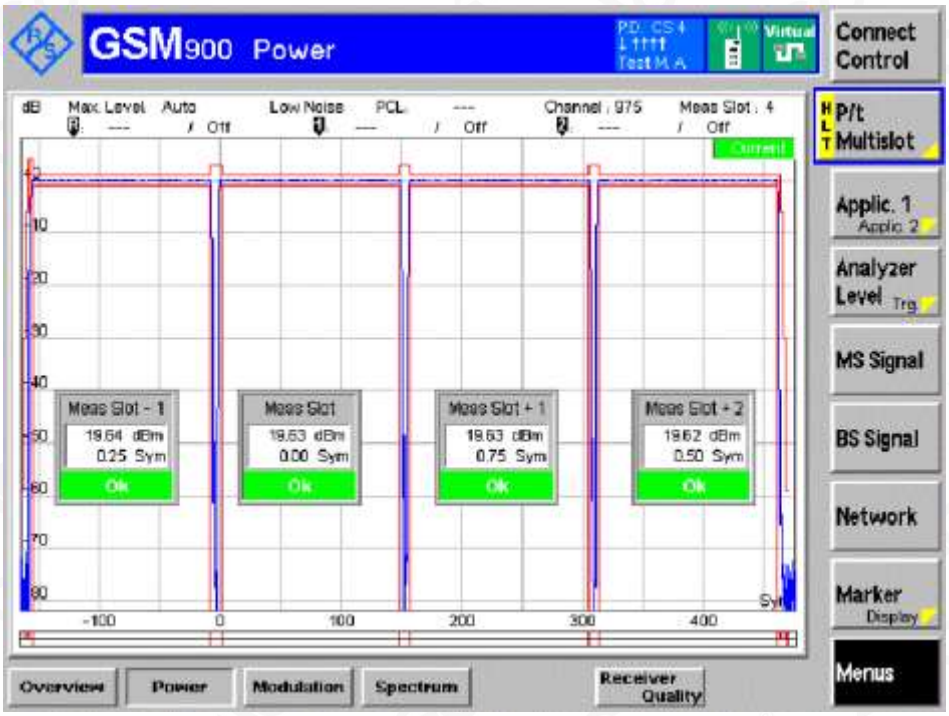
Channel MCH PCL 5



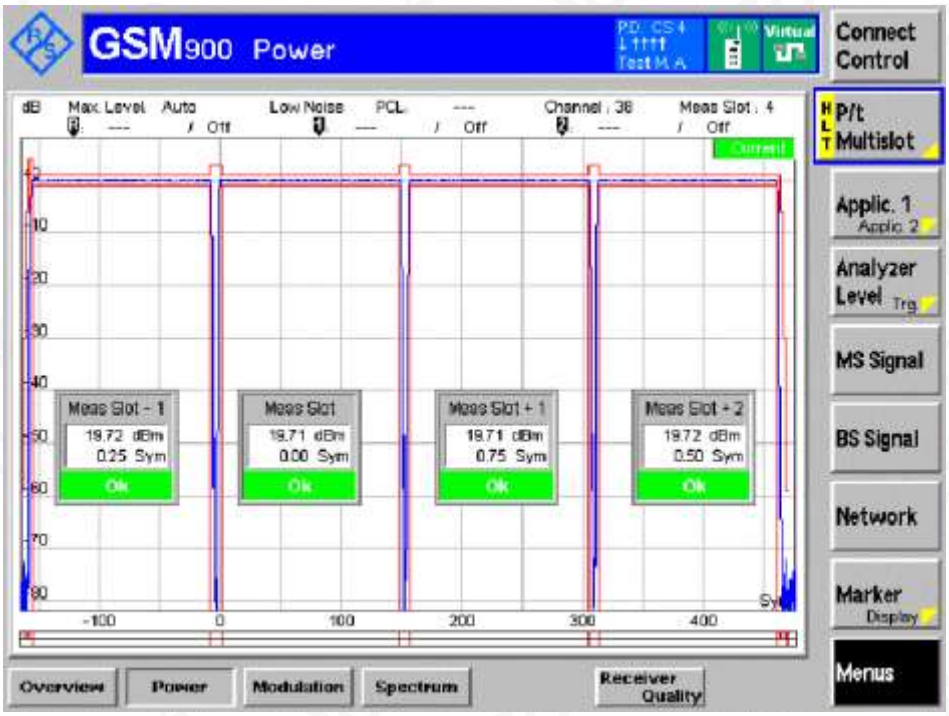
Channel HCH PCL 5



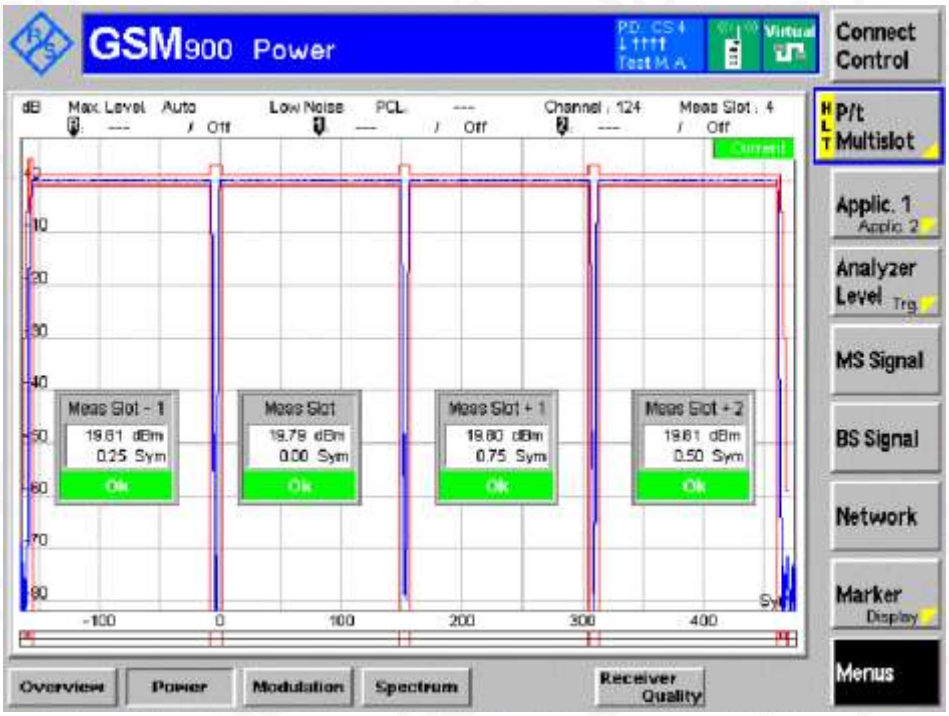
Channel LCH PCL 12



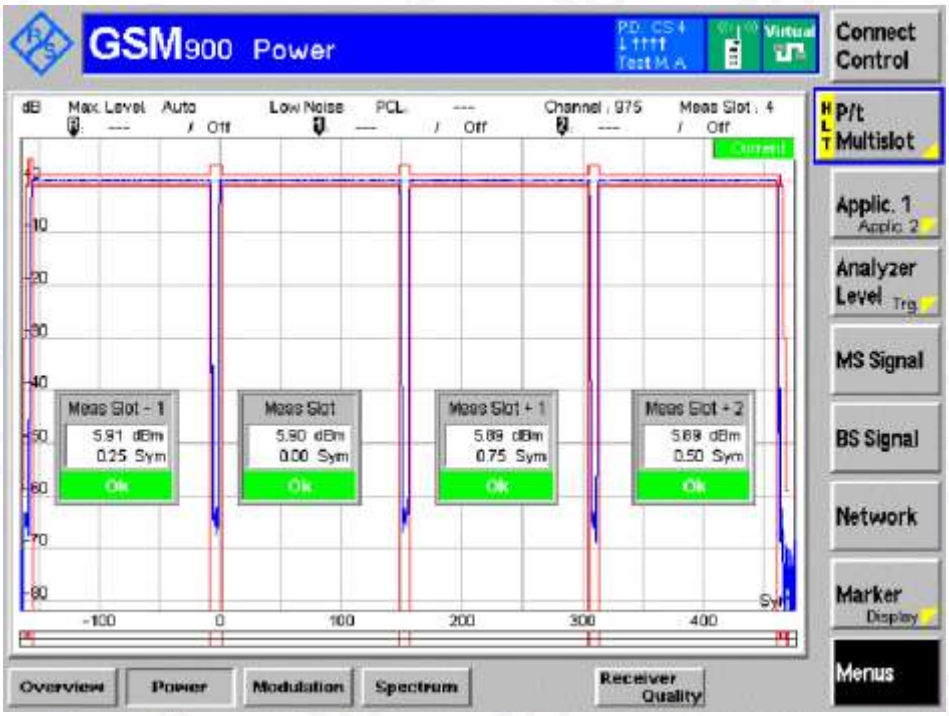
Channel MCH PCL 12



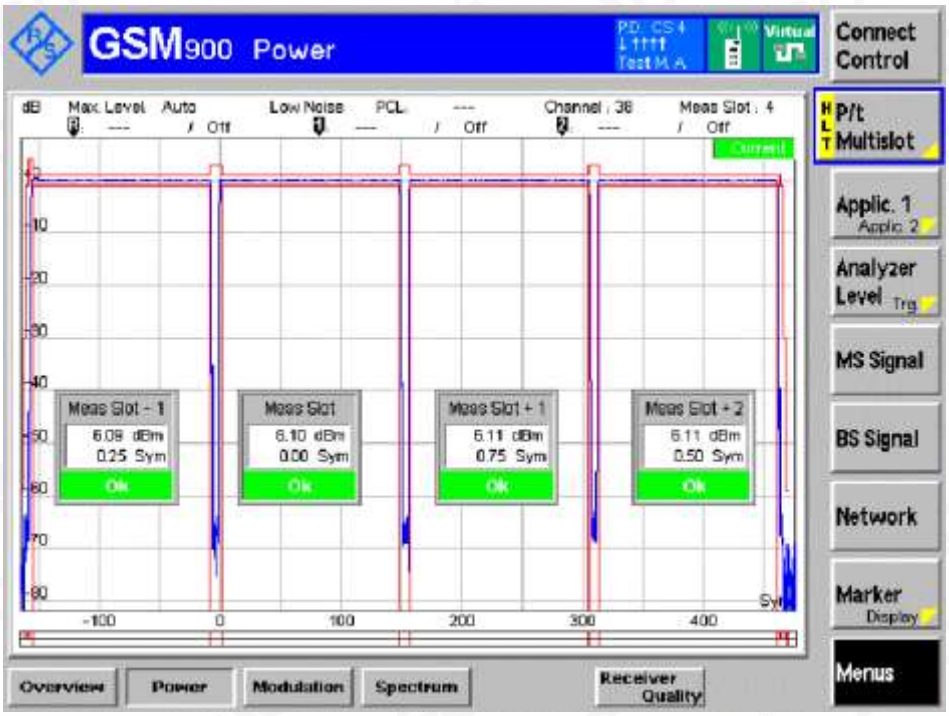
Channel HCH PCL 12



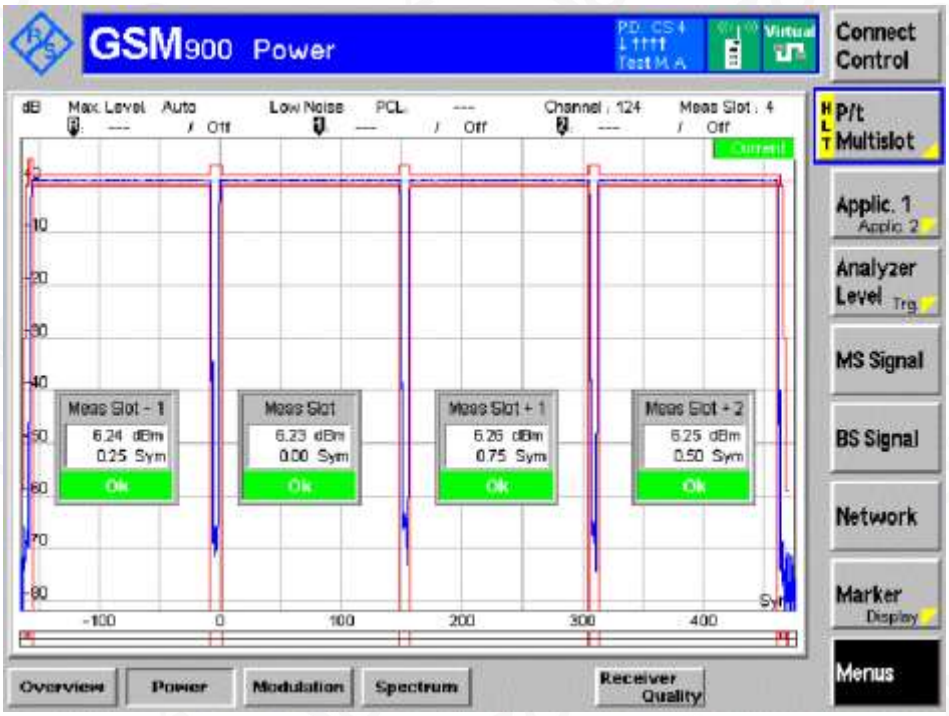
Channel LCH PCL 19



Channel MCH PCL 19

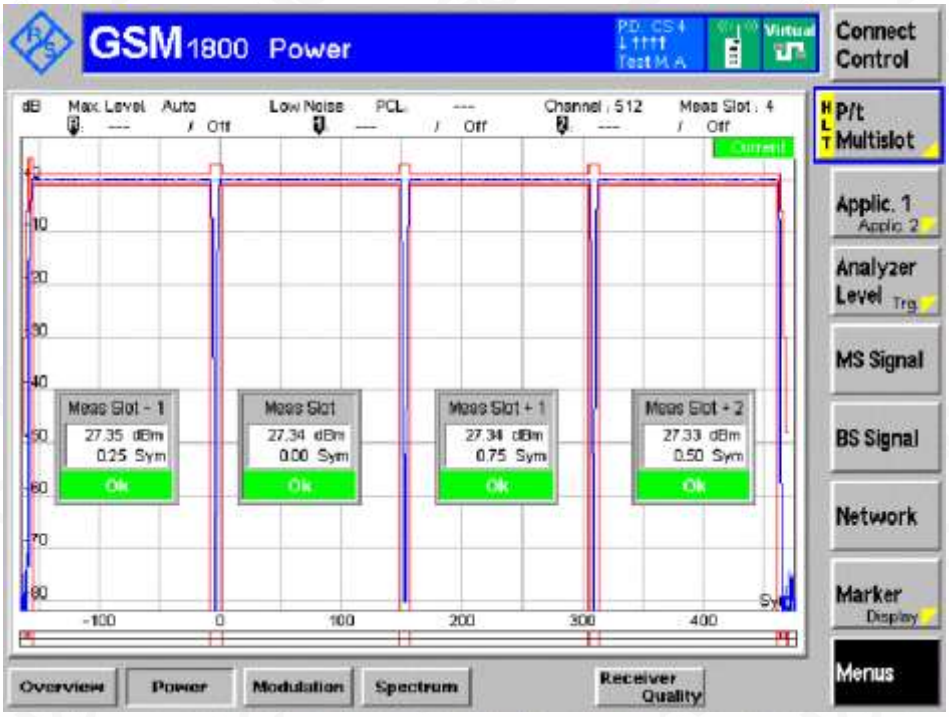


Channel HCH PCL 19

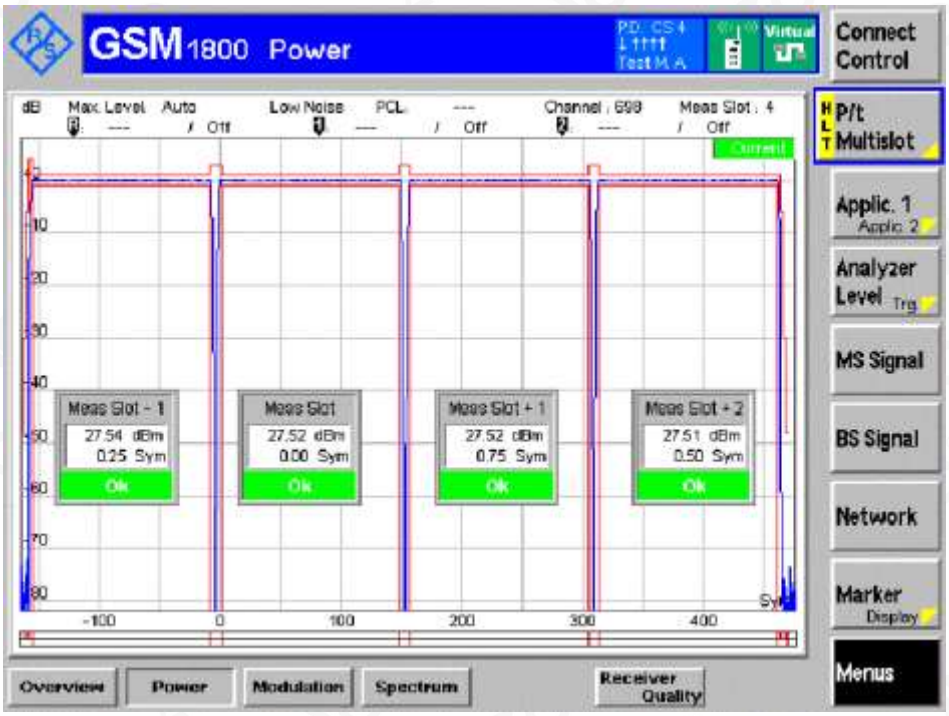


DCS1800 TN,VN

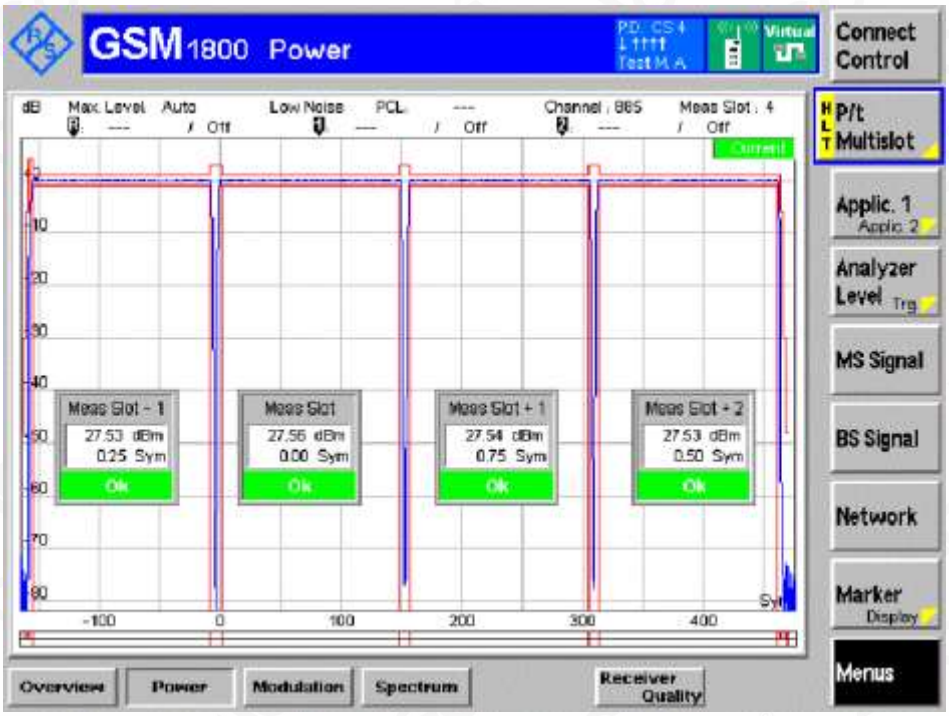
Channel LCH PCL 0



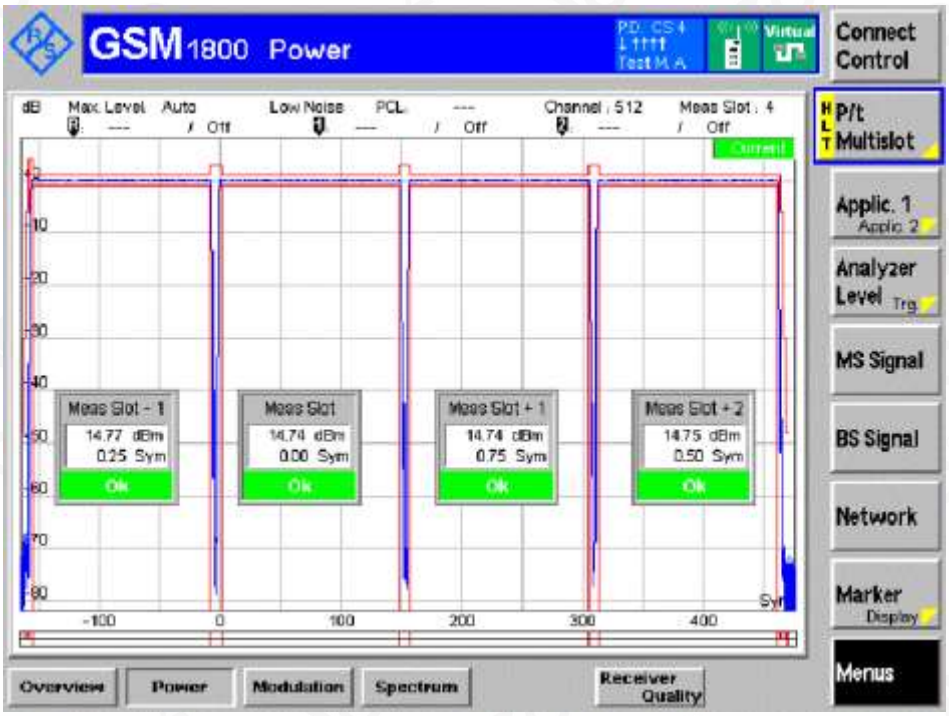
Channel MCH PCL 0



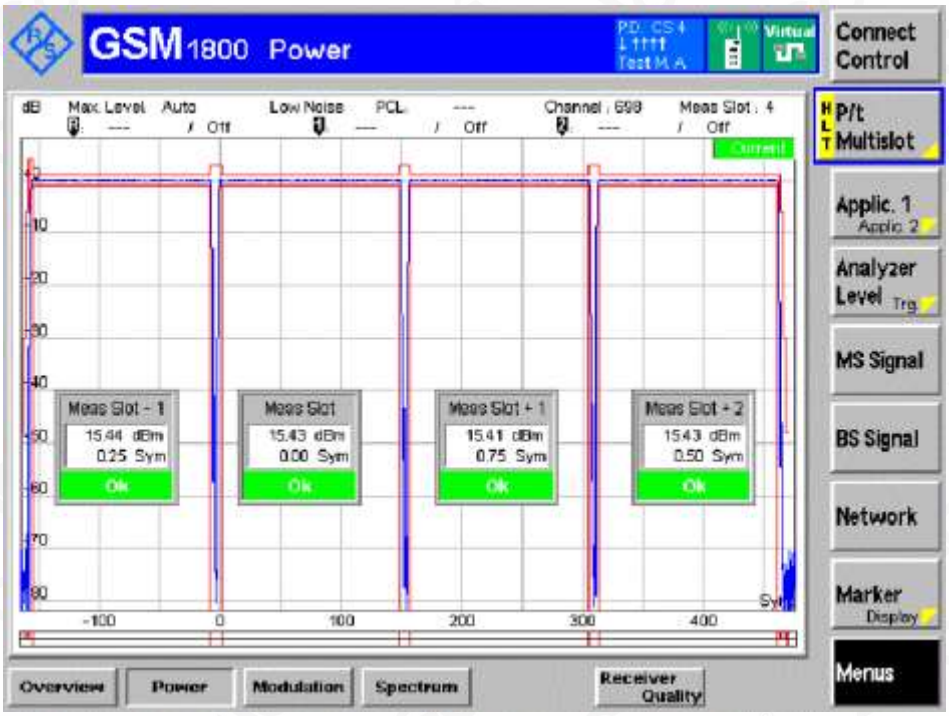
Channel HCH PCL 0



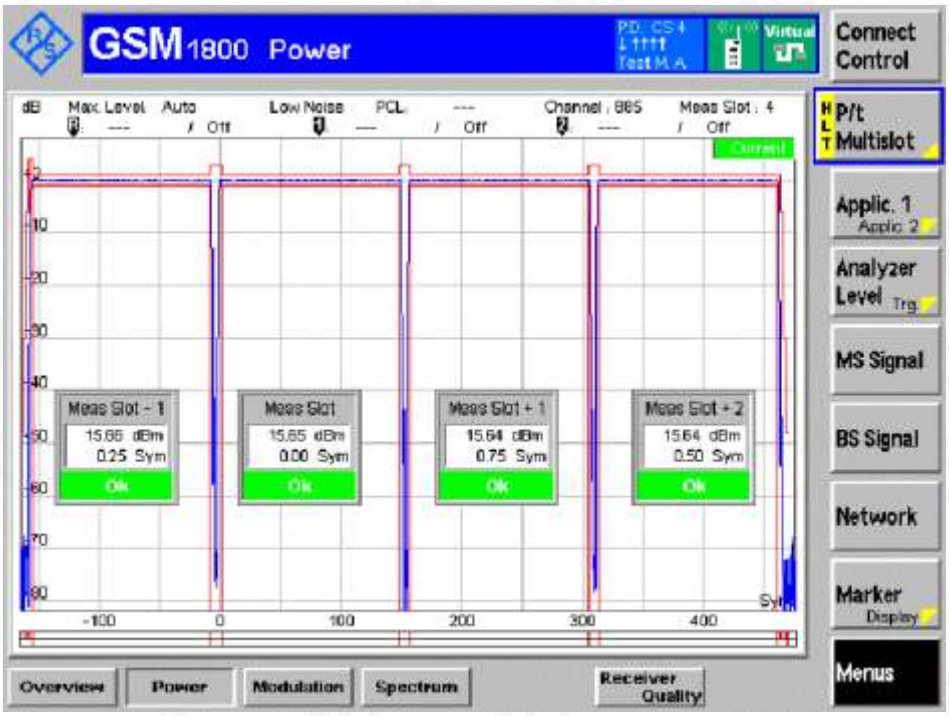
Channel LCH PCL 8



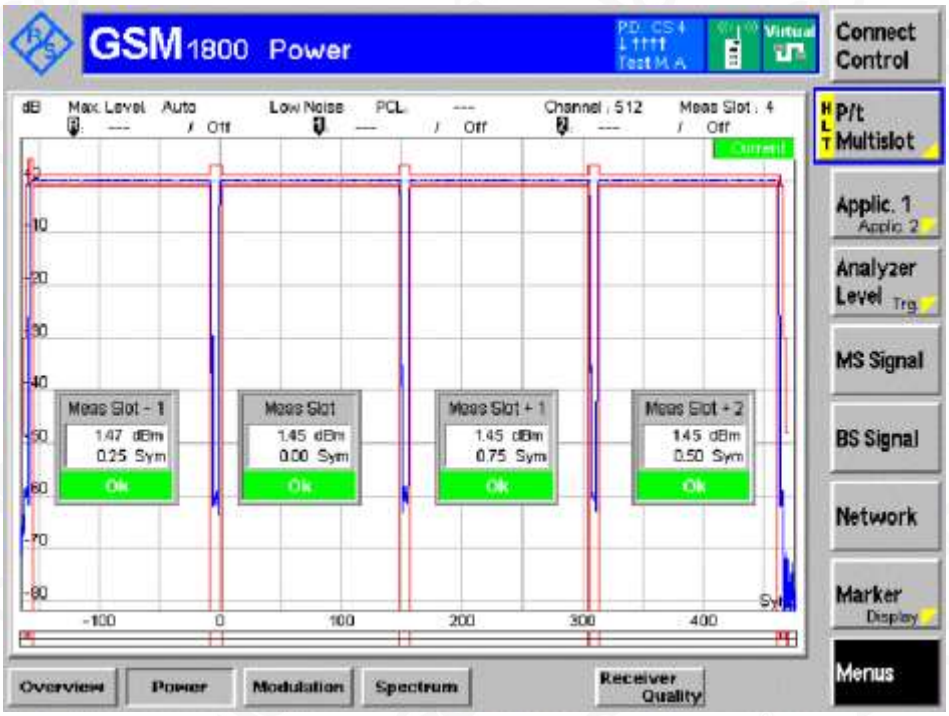
Channel MCH PCL 8



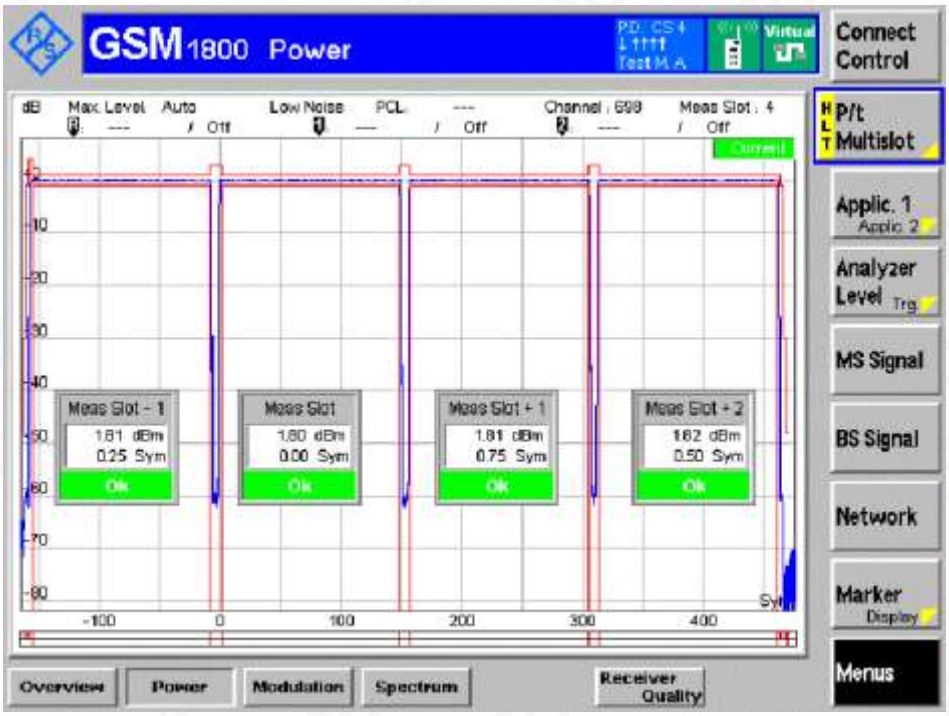
Channel HCH PCL 8



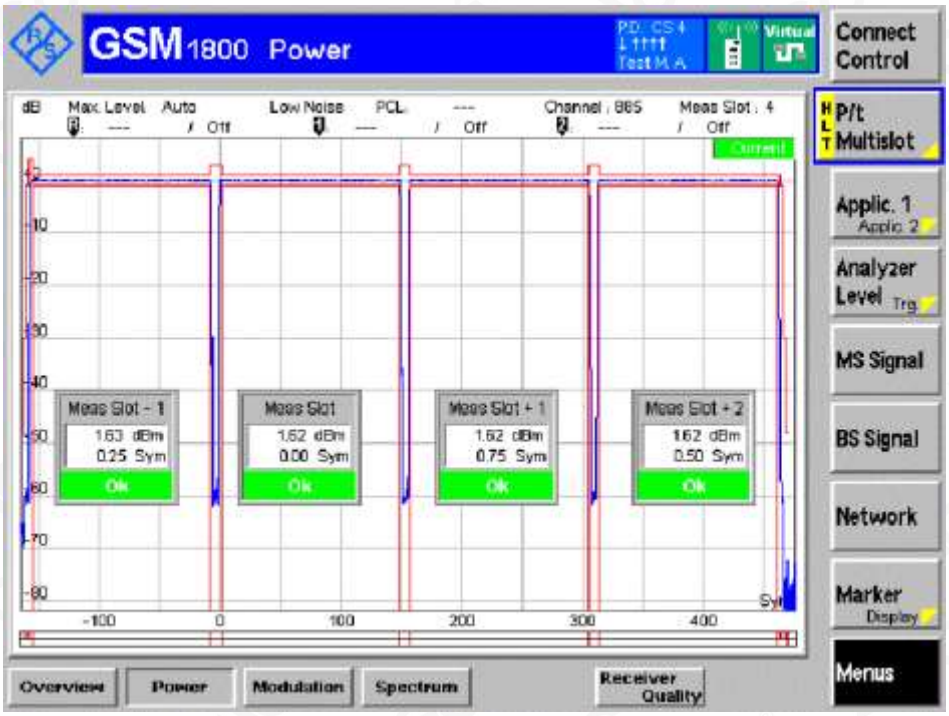
Channel LCH PCL 15



Channel MCH PCL 15



Channel HCH PCL 15



Appendix G. Output RF spectrum in GPRS multislot configuration

Note: All the modes had been tested, but only the worst data recorded in the report.

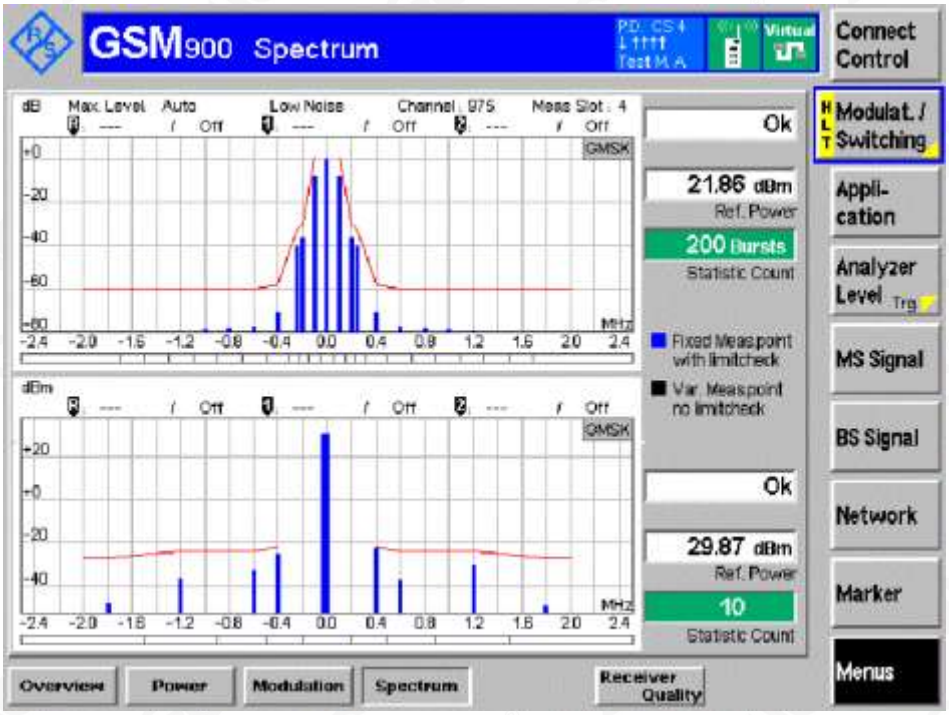
Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
GSM900		LCH	MCH	HCH
TN,VN	5	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
DCS1800		LCH	MCH	HCH
TN,VN	0	PASS	PASS	PASS
	8	PASS	PASS	PASS
	15	PASS	PASS	PASS

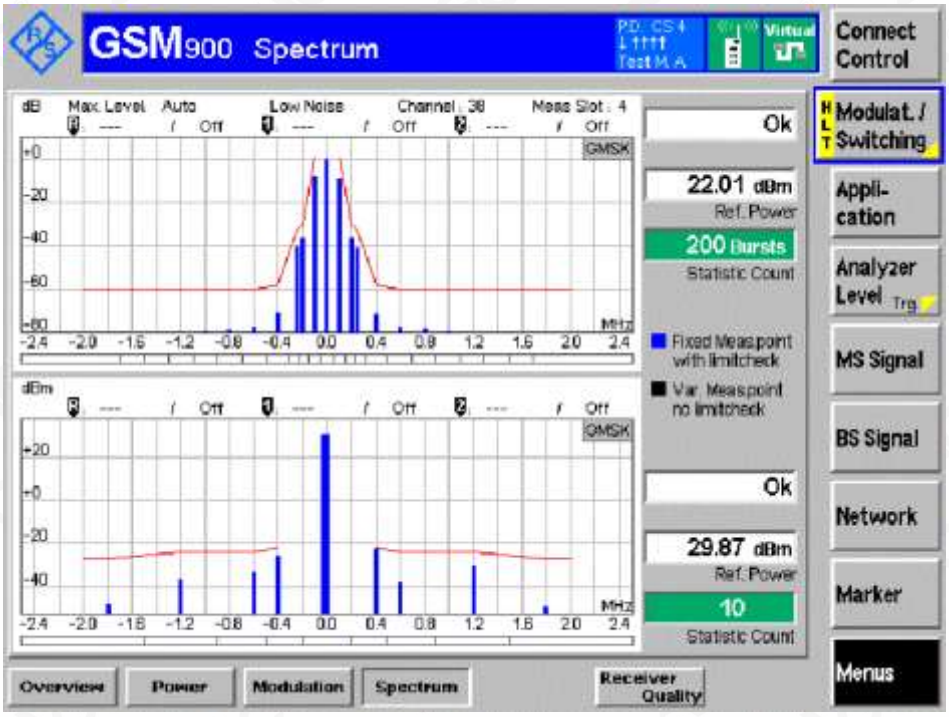
Graphs of output RF spectrum in GPRS multislot configuration

GSM 900 TN,VN

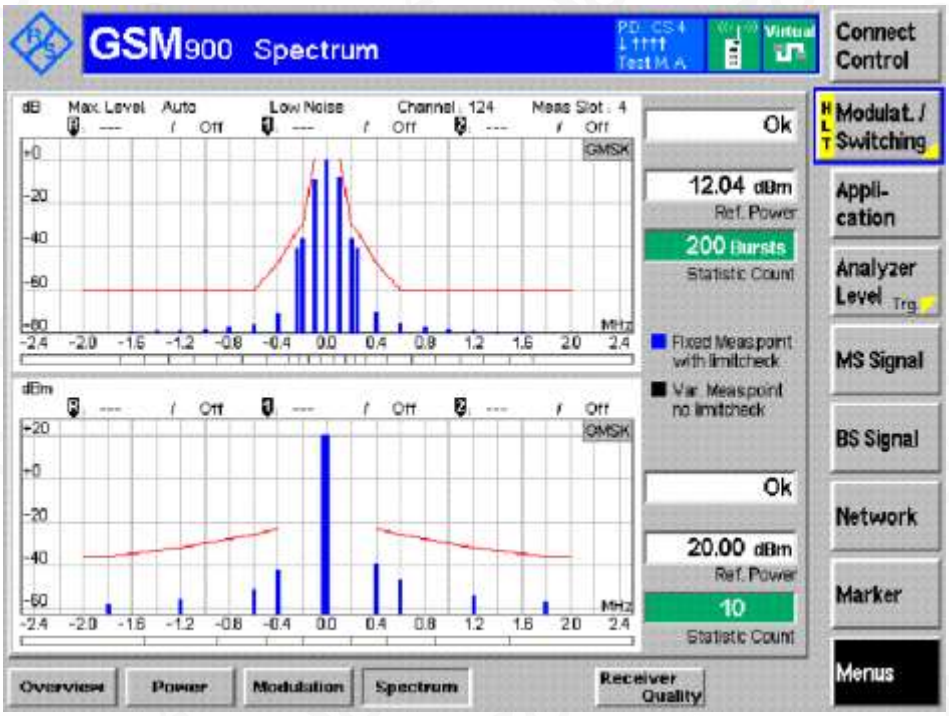
Channel LCH PCL 5



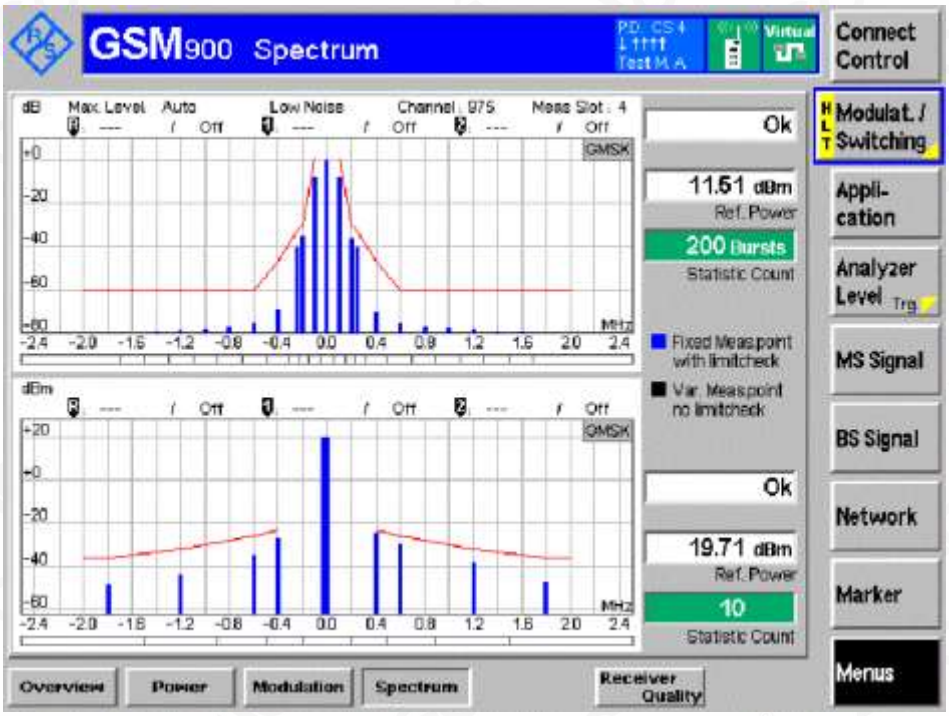
Channel MCH PCL 5



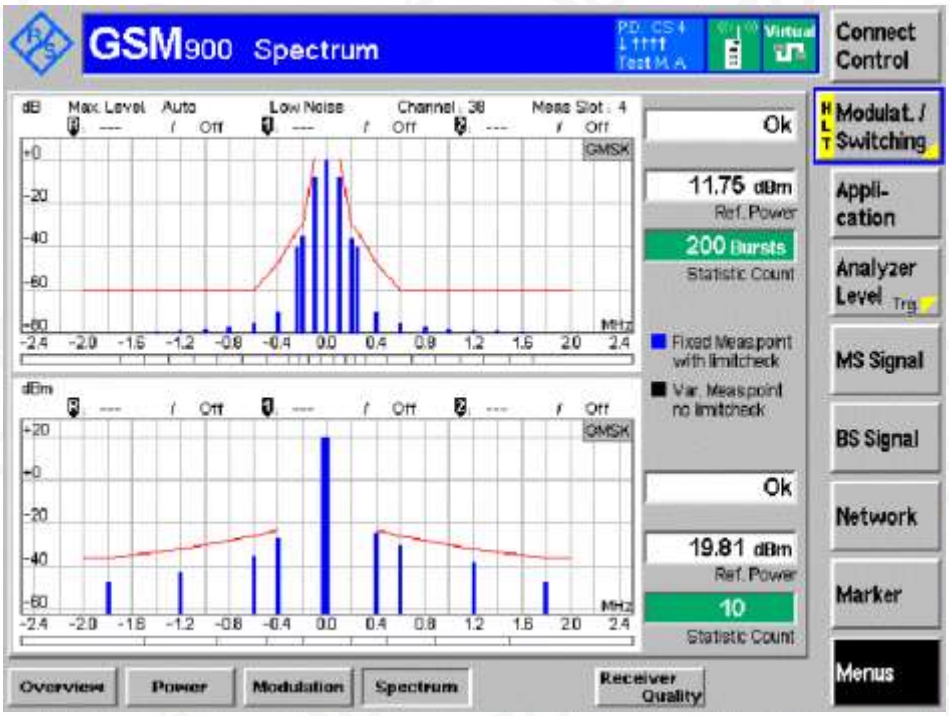
Channel HCH PCL 5



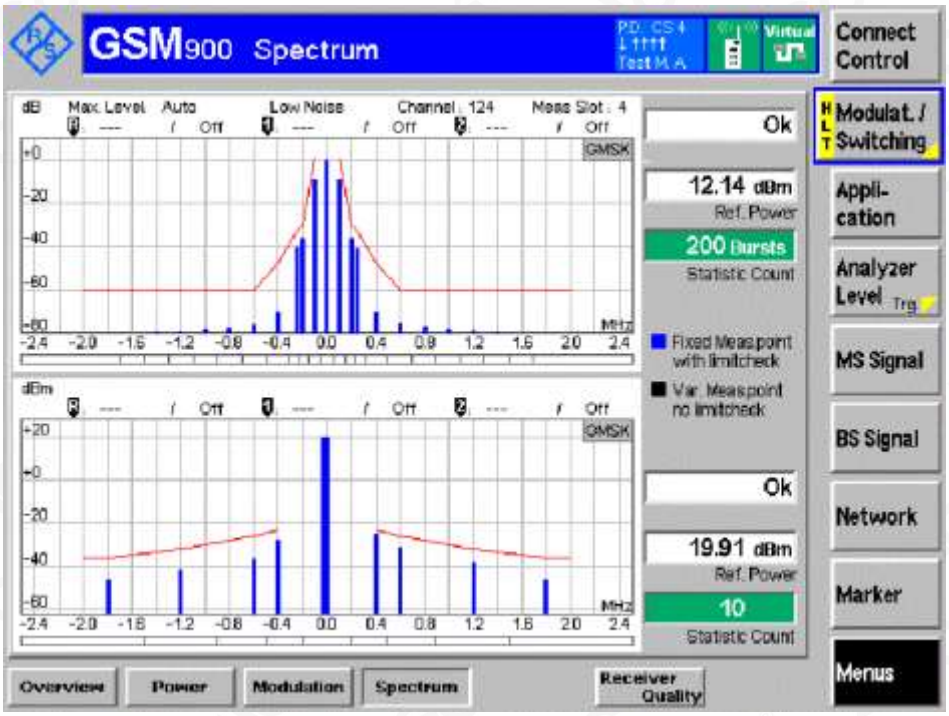
Channel LCH PCL 12



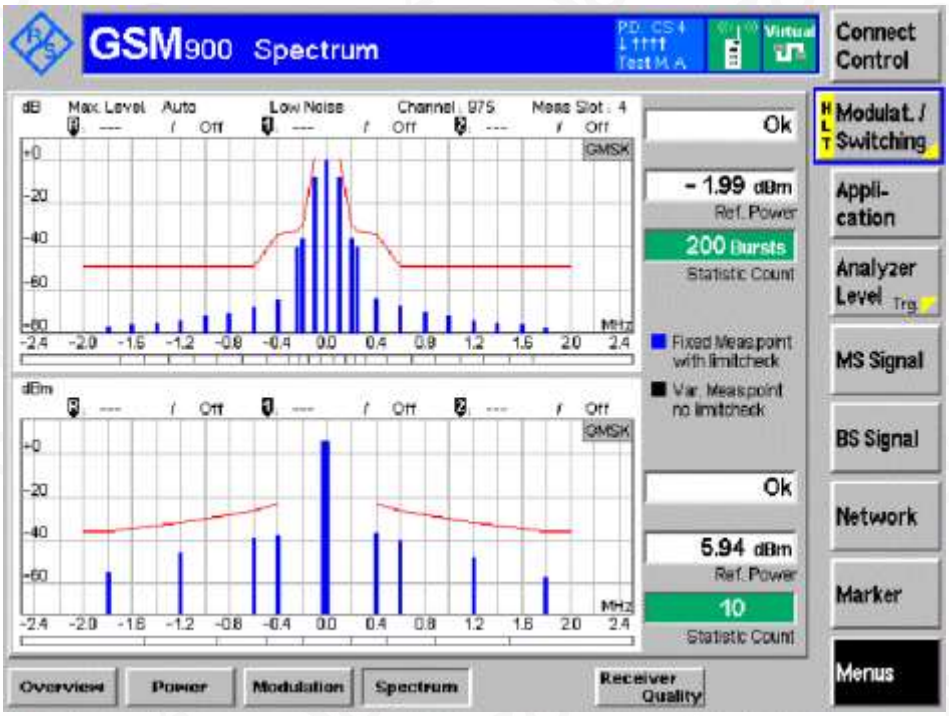
Channel MCH PCL 12



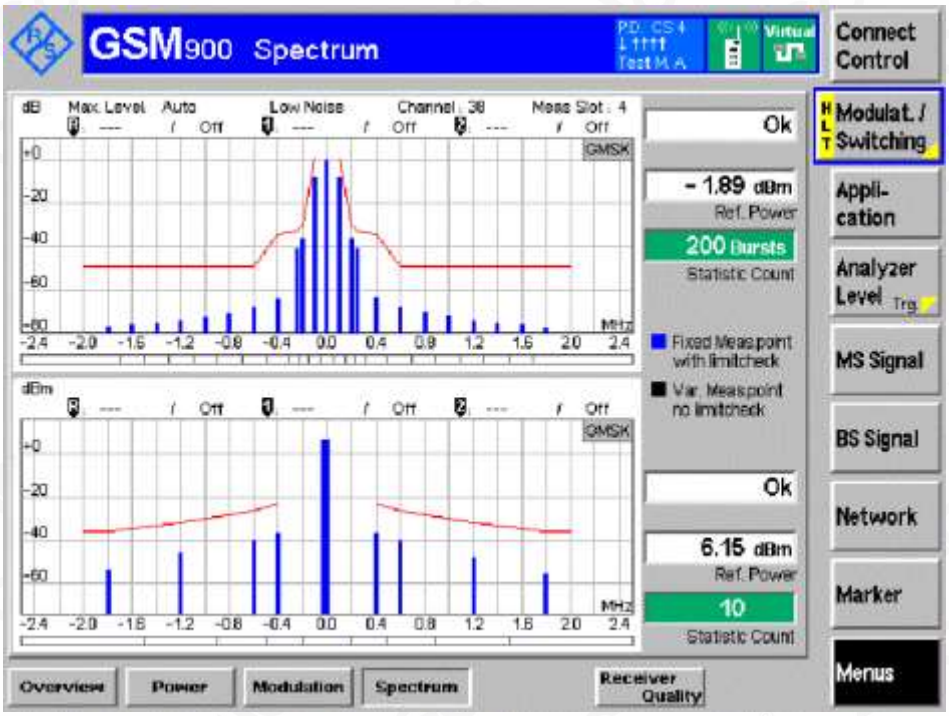
Channel HCH PCL 12



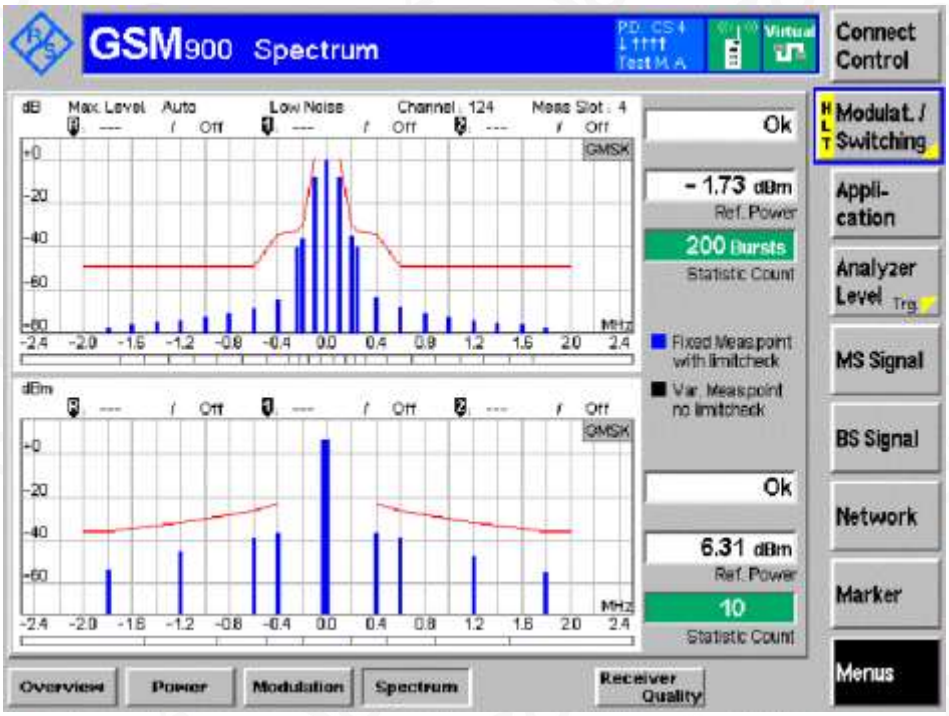
Channel LCH PCL 19



Channel MCH PCL 19

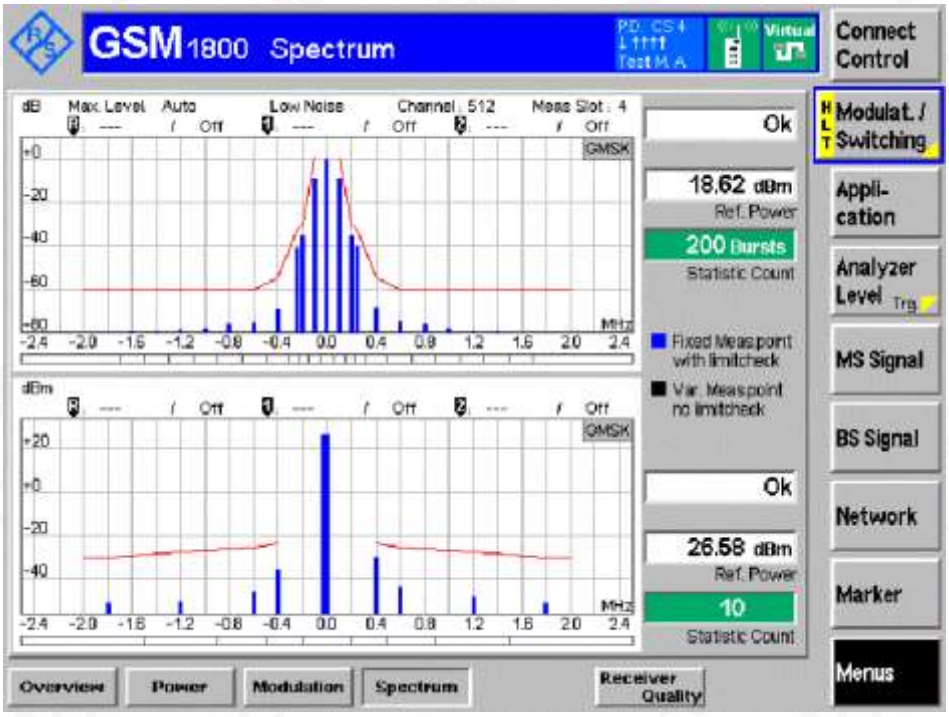


Channel HCH PCL 19

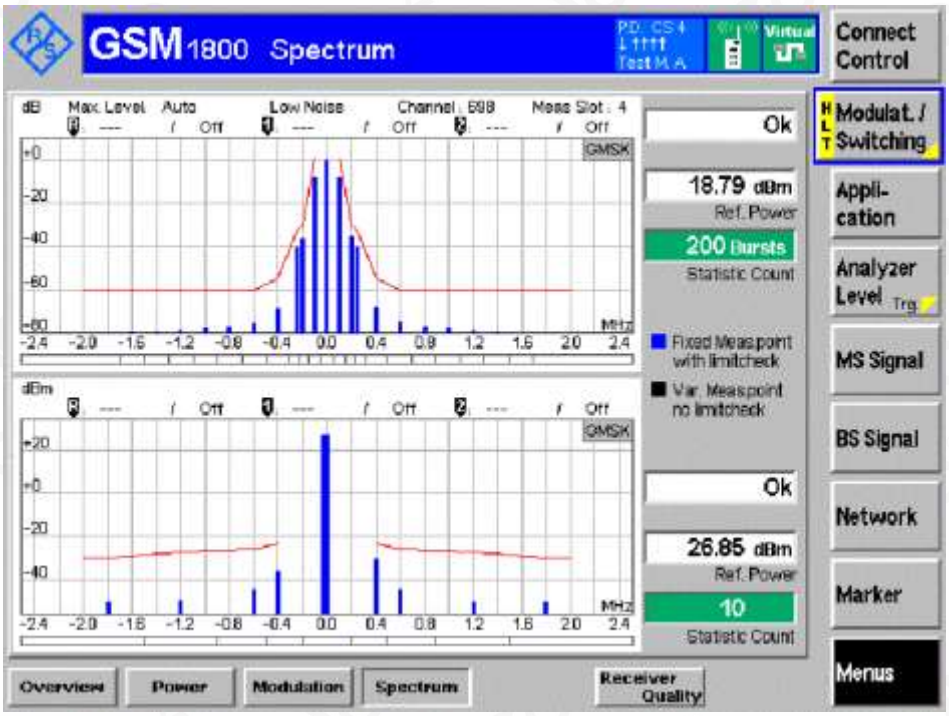


DCS1800 TN,VN

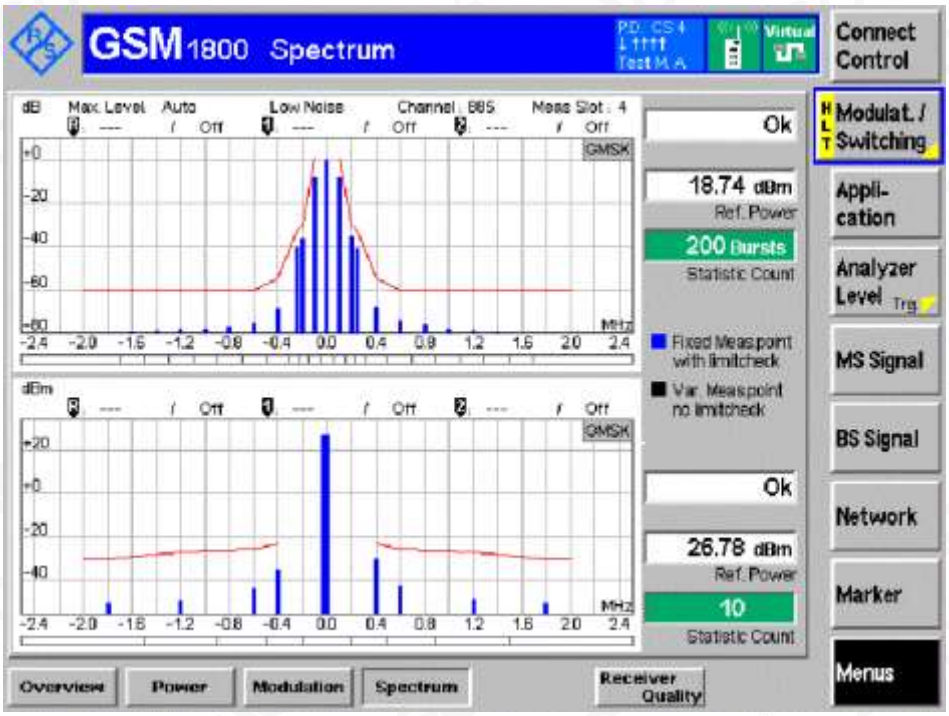
Channel LCH PCL 0



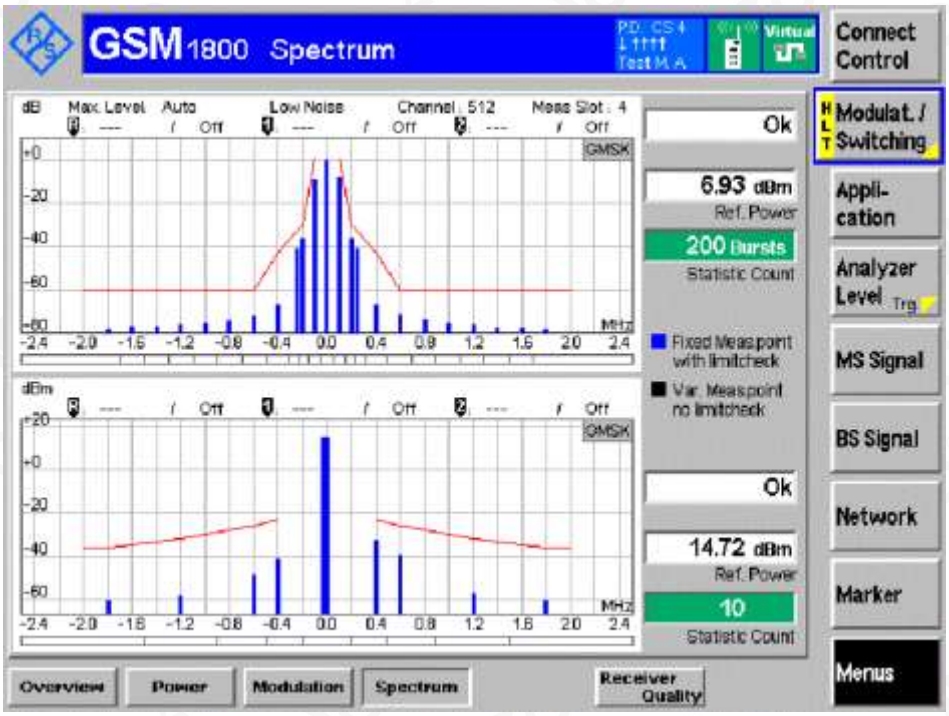
Channel MCH PCL 0



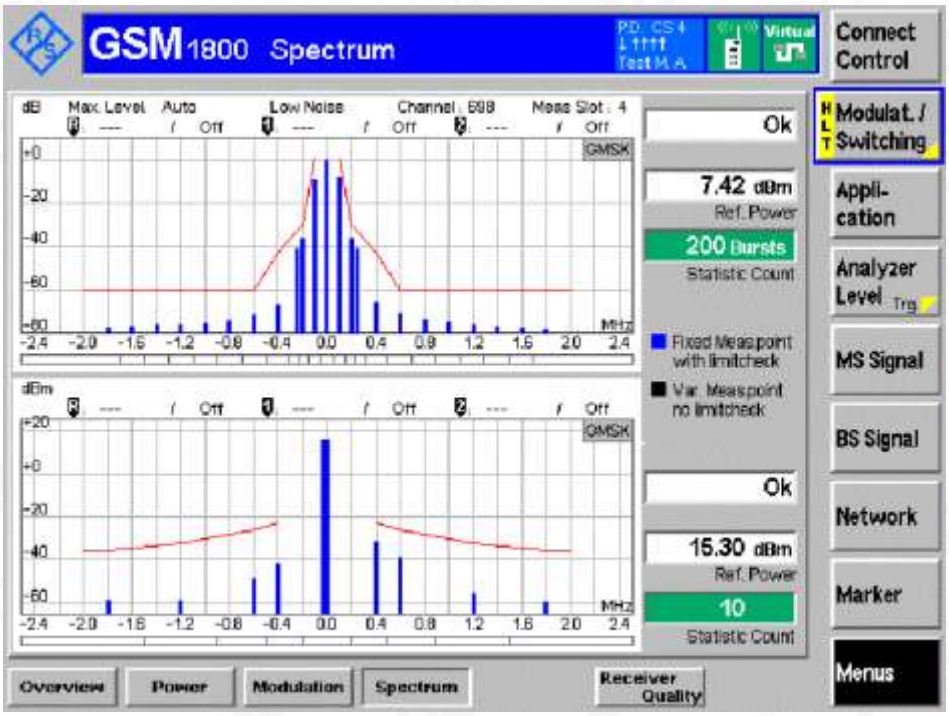
Channel HCH PCL 0



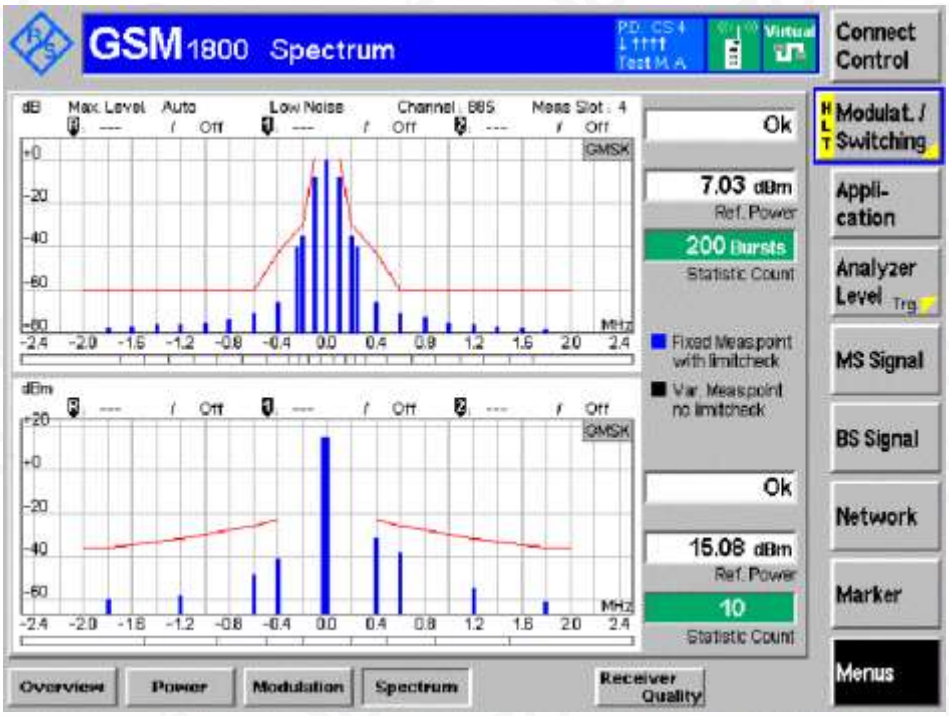
Channel LCH PCL 8



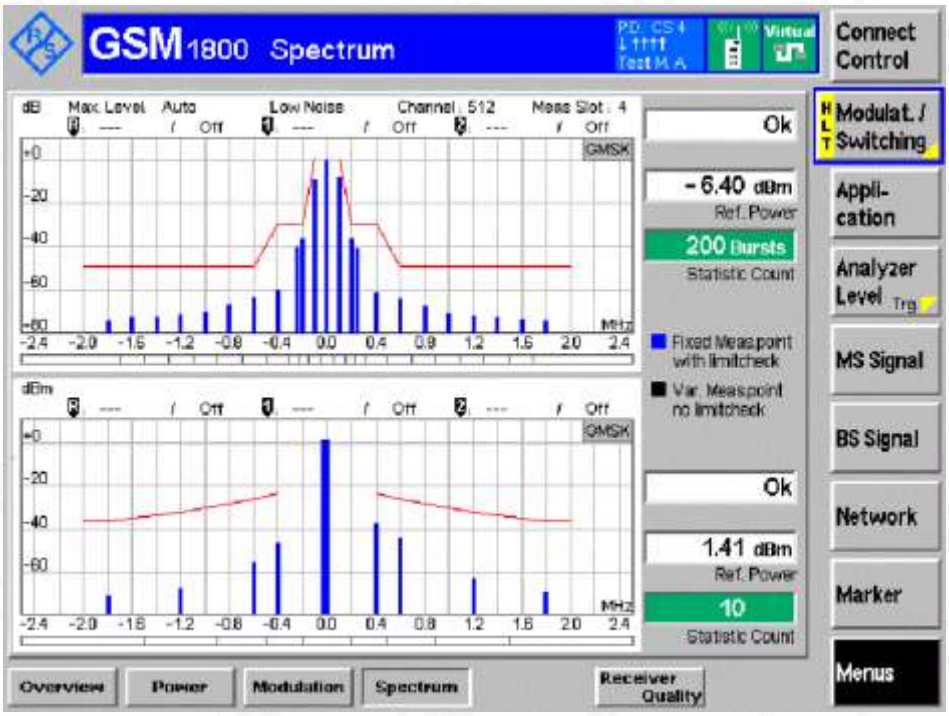
Channel MCH PCL 8



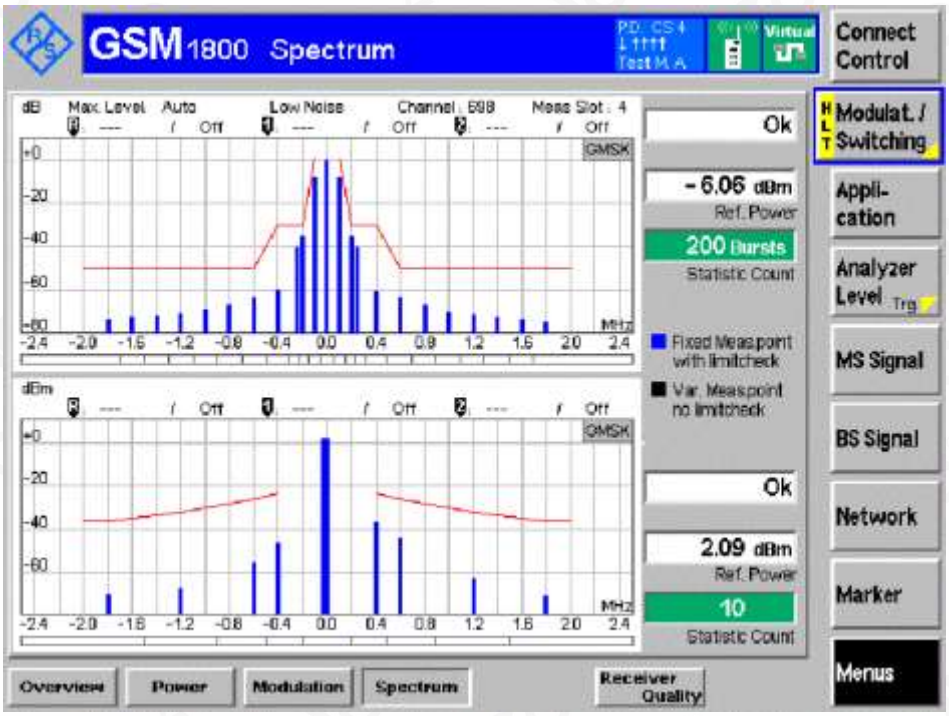
Channel HCH PCL 8



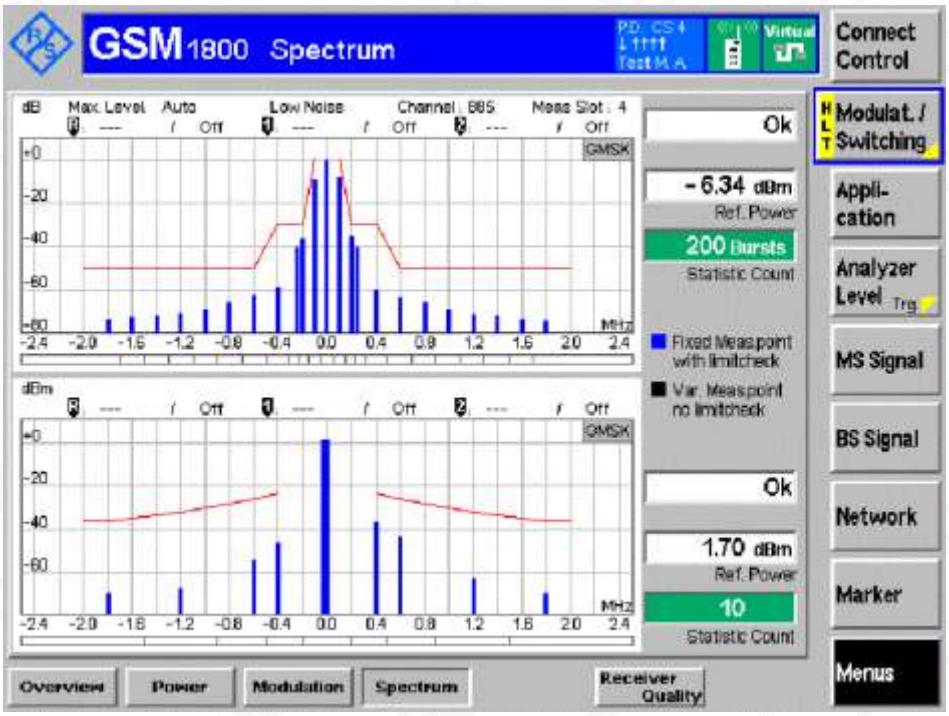
Channel LCH PCL 15



Channel MCH PCL 15



Channel HCH PCL 15



Appendix H. Conducted spurious emissions - MS allocated a channel

Note: All the modes had been tested, but only the worst data recorded in the report.

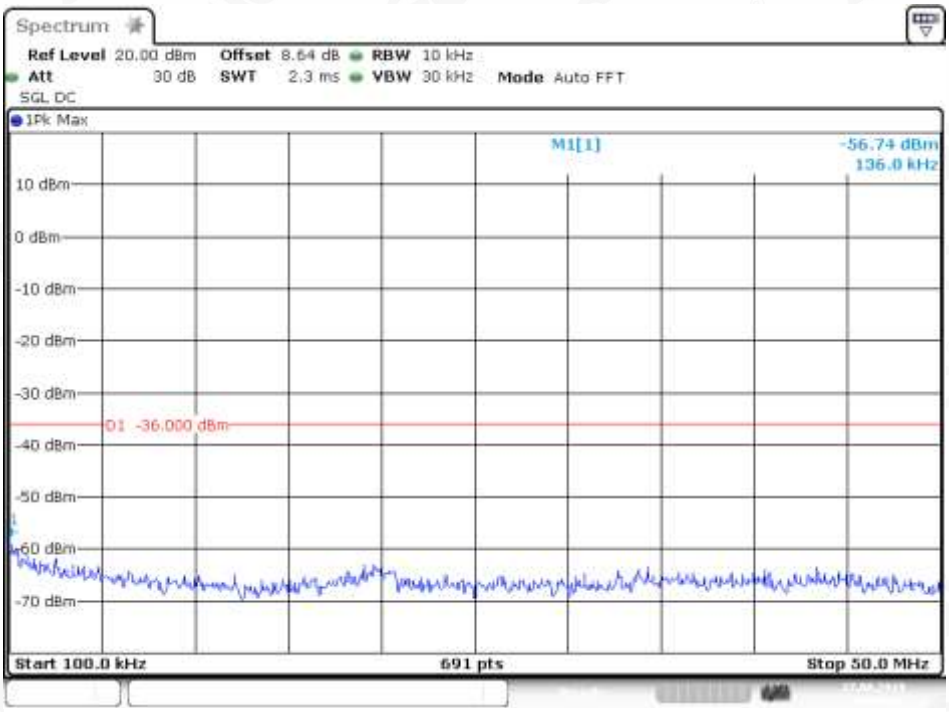
Conducted spurious emissions	GSM900;VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
100kHz~50MHz	10k	-36	-56.74	PASS
50MHz~500MHz	100k	-36	-54.25	PASS
500MHz~850MHz	3M	-36	-43.30	PASS
850MHz~860MHz	1M	-36	-48.46	PASS
860MHz~870MHz	300k	-36	-52.43	PASS
870MHz~880MHz	100k	-36	-57.66	PASS
915MHz~925MHz	100k	-36	-57.59	PASS
960MHz~1GHz	3M	-36	-44.77	PASS
1GHz~1805MHz	3M	-30	-44.57	PASS
1880MHz~12.75GHz	3M	-30	-33.09	PASS
896.6MHz~900.8MHz	30K	-36	-63.04	PASS
904.4MHz~908.6MHz	30K	-36	-63.04	PASS
880MHz~896.6MHz	100K	-36	-57.89	PASS
908.6MHz~915MHz	100K	-36	-57.82	PASS

Conducted spurious emissions	DCS1800;VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
100kHz~50MHz	10k	-36	-58.18	PASS
50MHz~500MHz	100k	-36	-55.09	PASS
500MHz~925MHz	3M	-36	-43.13	PASS
960MHz~1GHz	3M	-36	-48.34	PASS
1GHz~1680MHz	3M	-30	-44.67	PASS
1680MHz~1690MHz	1M	-30	-49.64	PASS
1690MHz~1700MHz	300k	-30	-54.19	PASS
1700MHz~1710MHz	100k	-30	-59.35	PASS
1785MHz~1795MHz	100K	-30	-59.12	PASS
1795MHz~1805MHz	300k	-30	-54.76	PASS
1880MHz~12.75GHz	3M	-30	-32.95	PASS
1741.4MHz~1745.6MHz	30K	-36	-64.22	PASS
1749.2MHz~1753.4MHz	30K	-36	-63.60	PASS
1710MHz~1741.4MHz	100K	-36	-58.63	PASS
1753.4MHz~1785MHz	100K	-36	-58.84	PASS

Graphs of conducted spurious emission-MS allocated a channel

GSM900: channel MCH VN

100kHz~50MHz



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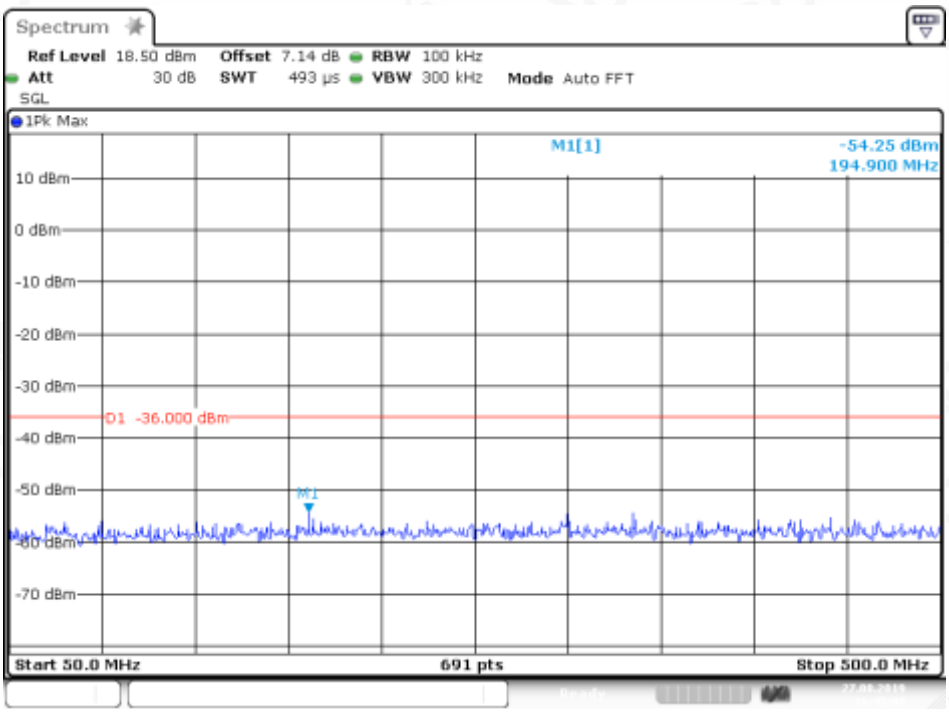
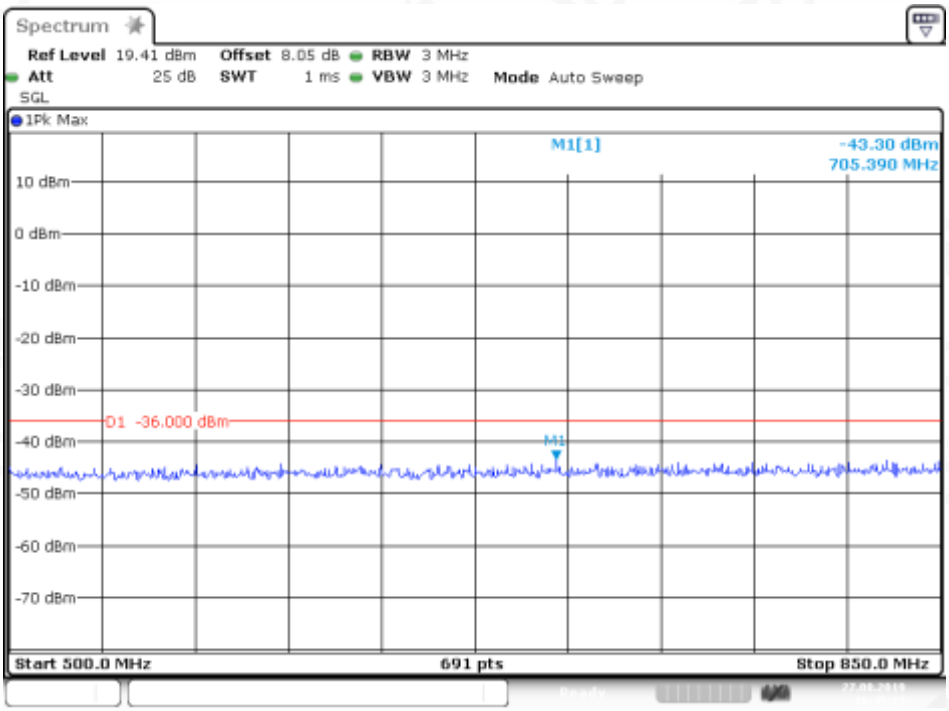
50MHz~500MHz



Date: 27.AUG.2019 16:45:00

500MHz~850MHz



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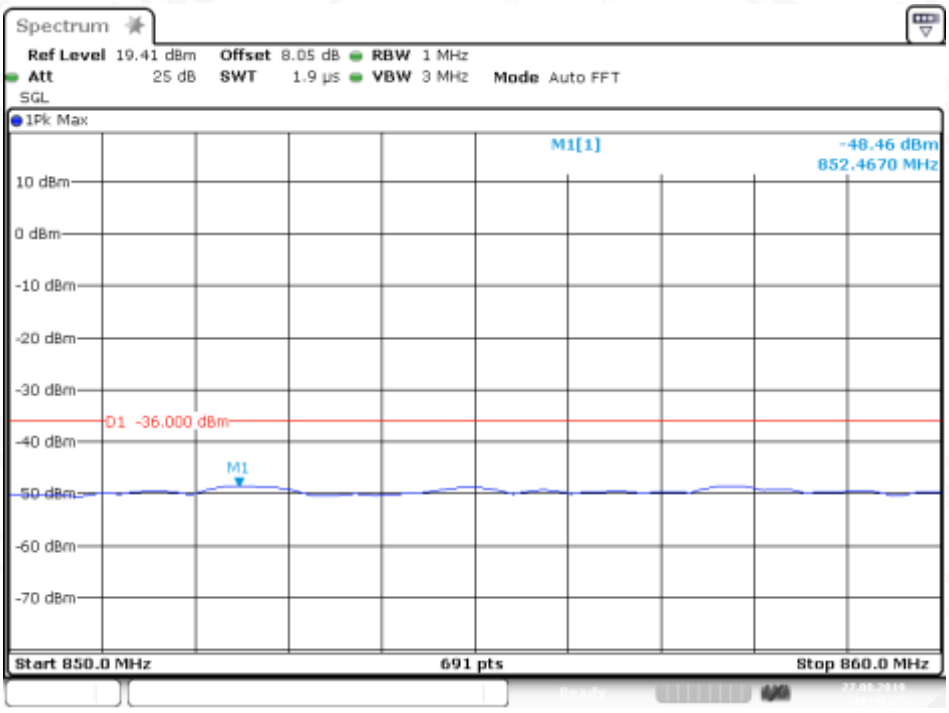
850MHz~860MHz



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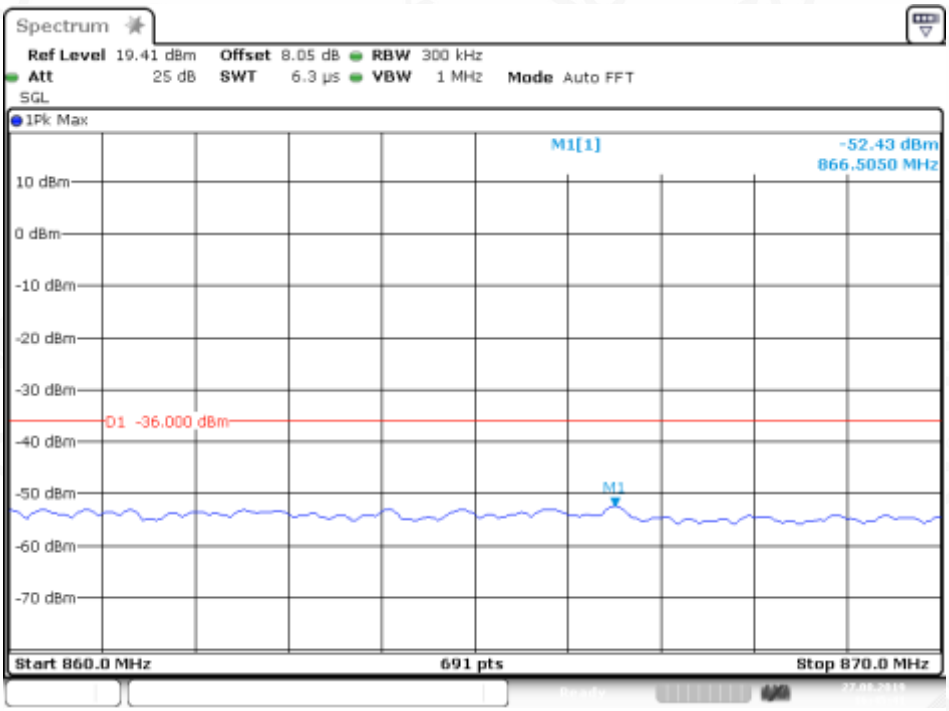
860MHz~870MHz



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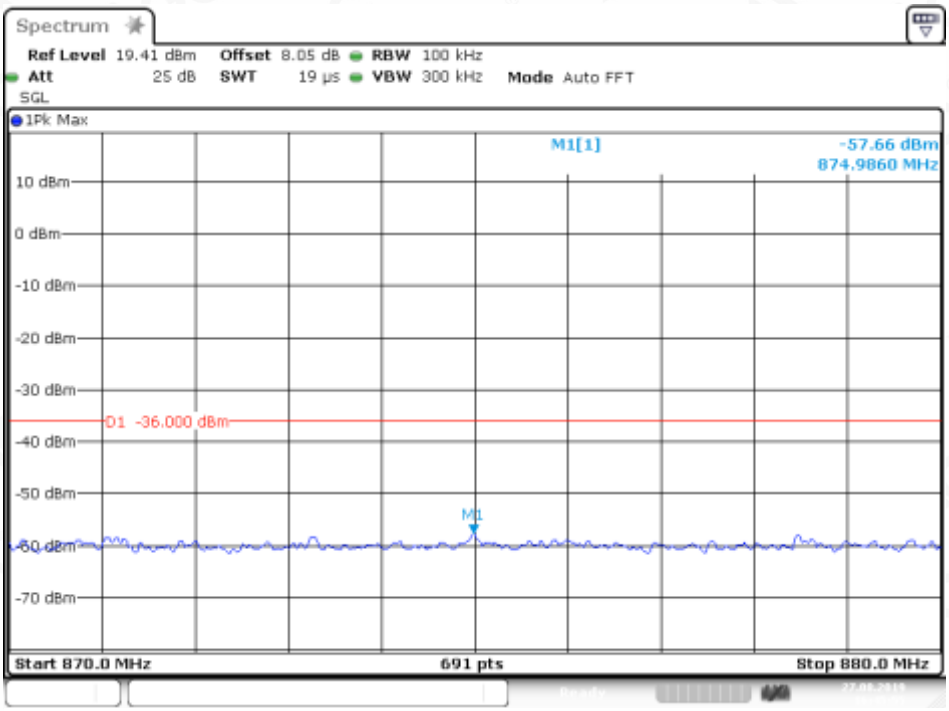
870MHz~880MHz



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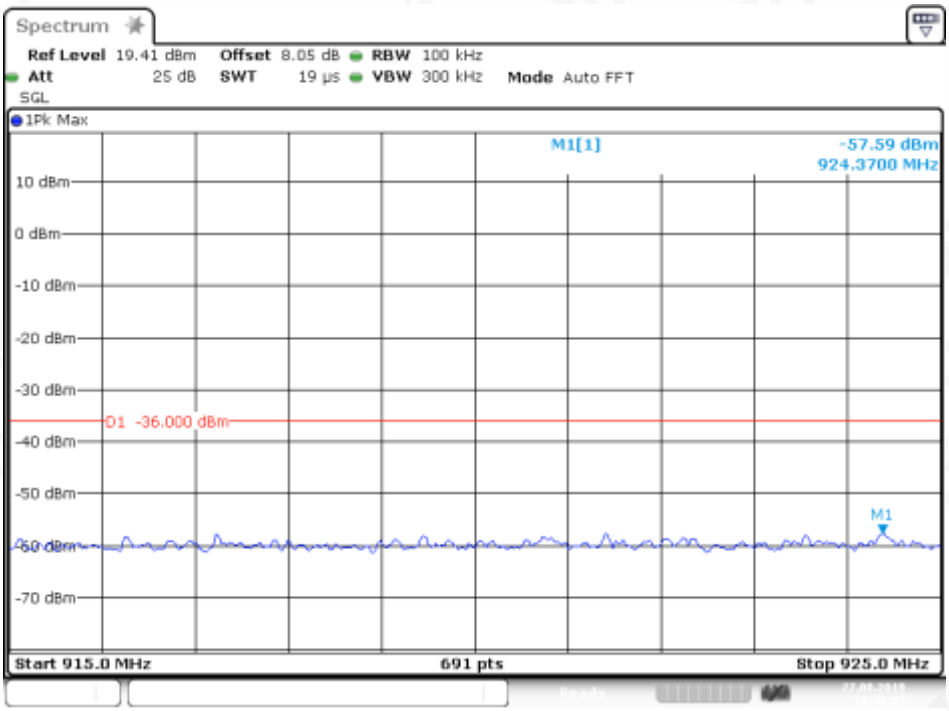
915MHz~925MHz



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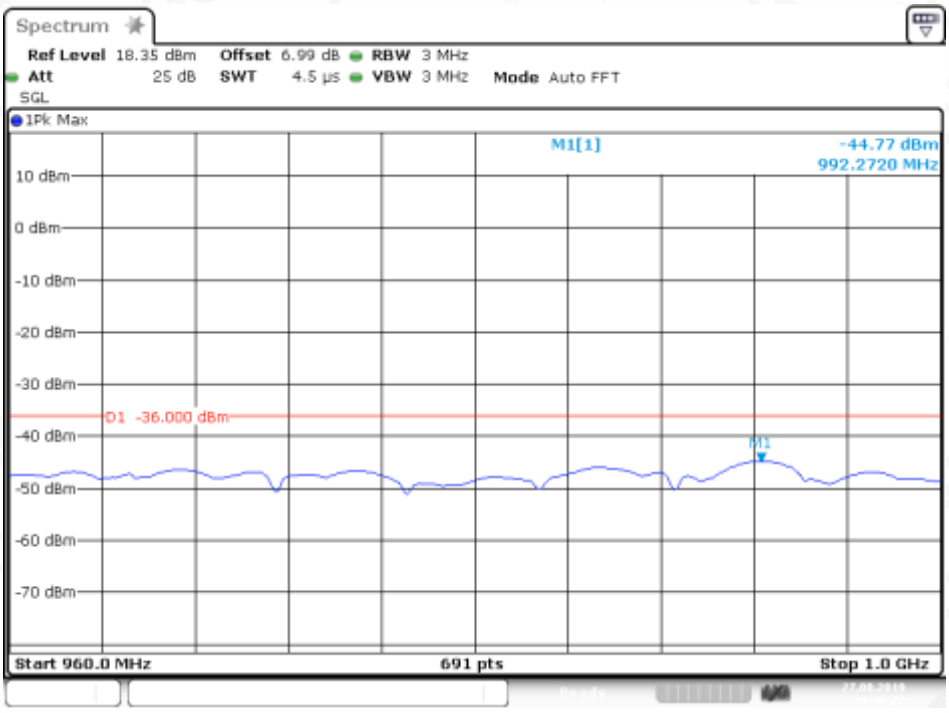
960MHz~1GHz



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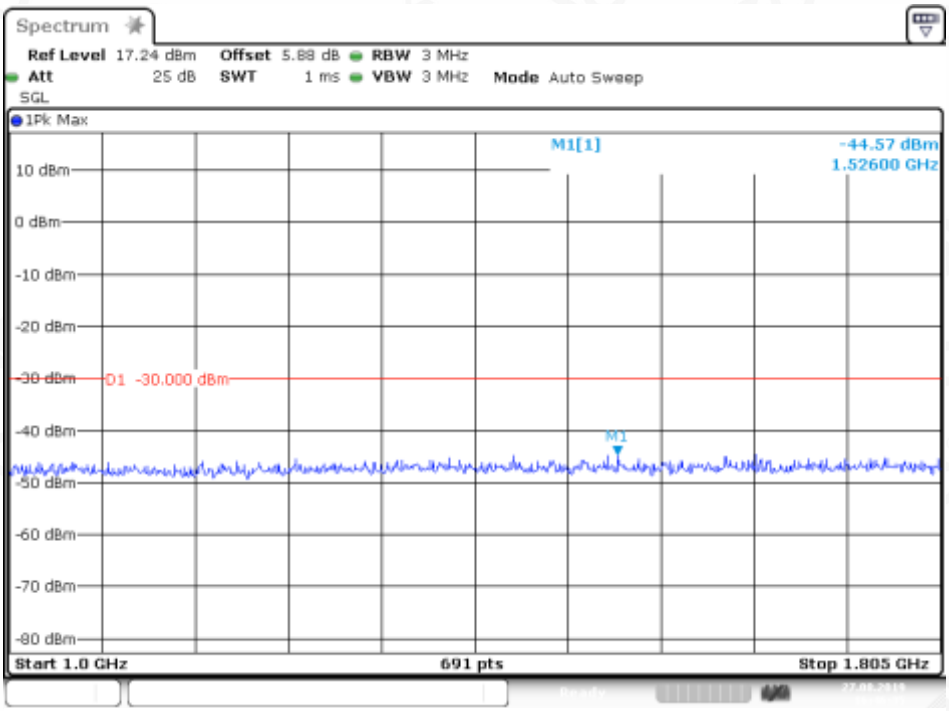
1GHz~1805MHz



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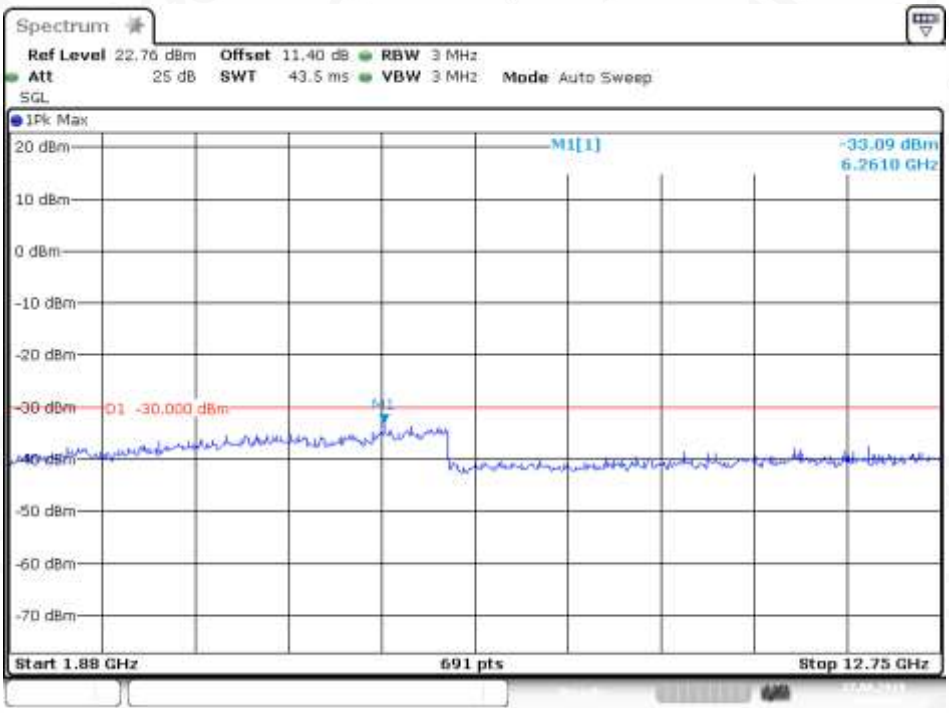
1880MHz~12.75GHz



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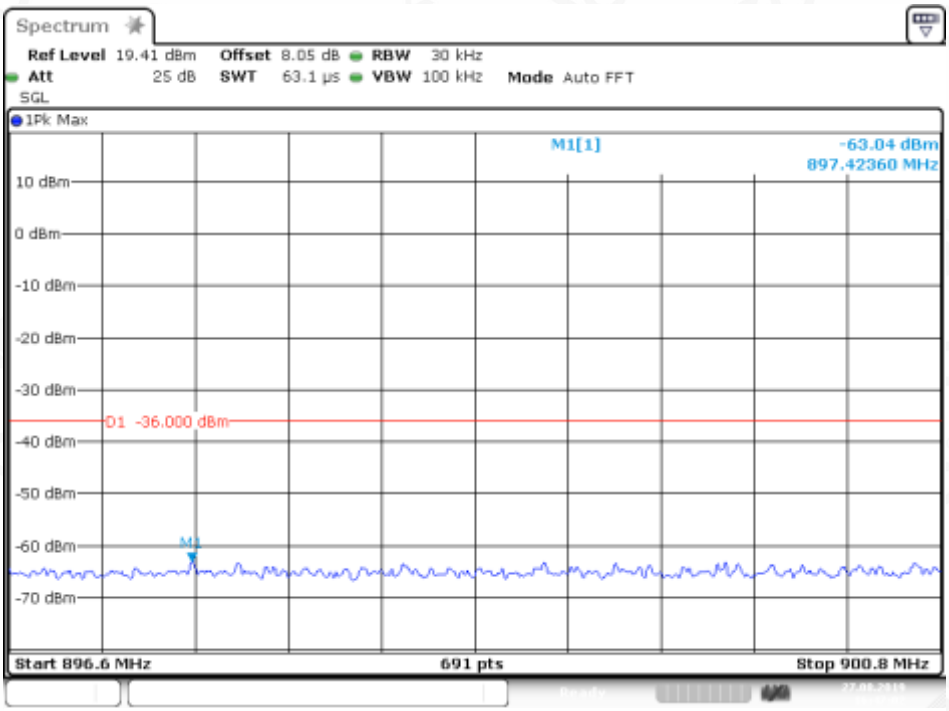
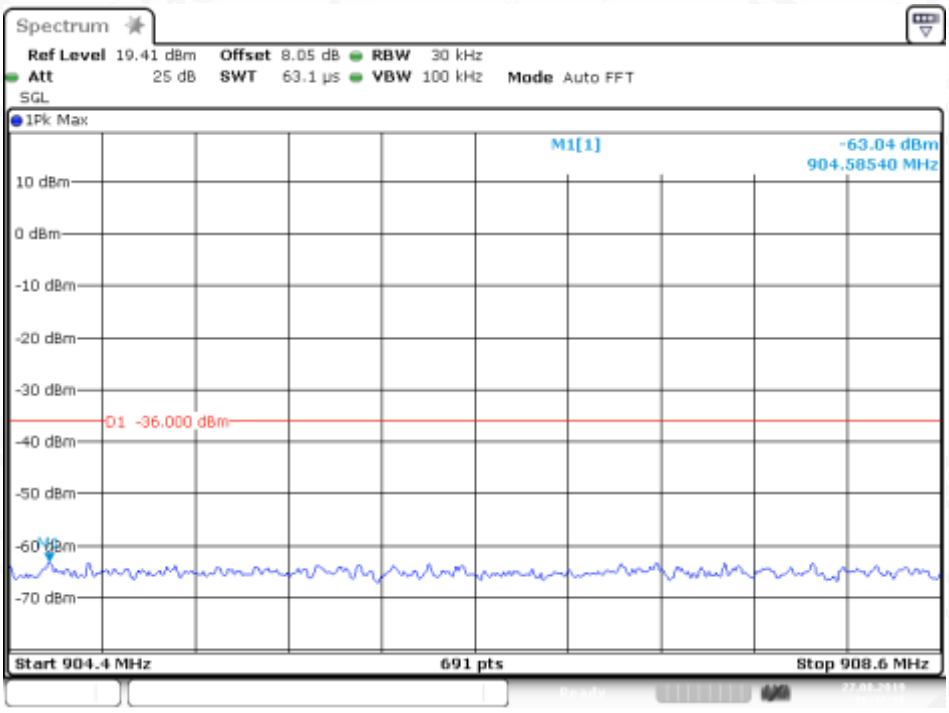
896.6MHz~900.8MHz



Date: 27.AUG.2019 16:47:02

904.4MHz~908.6MHz



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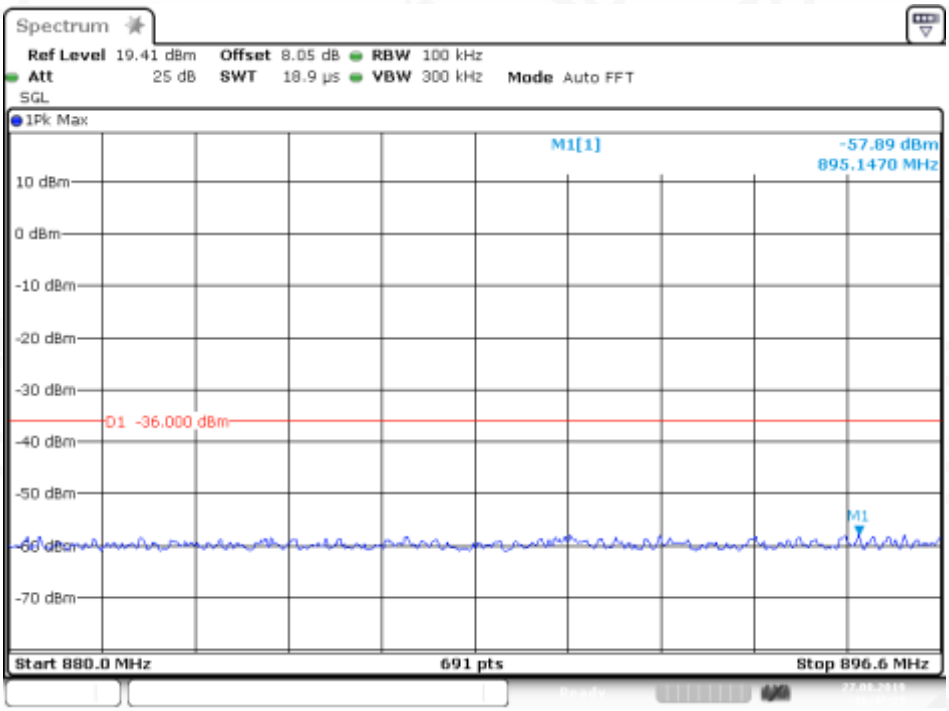
880MHz~896.6MHz



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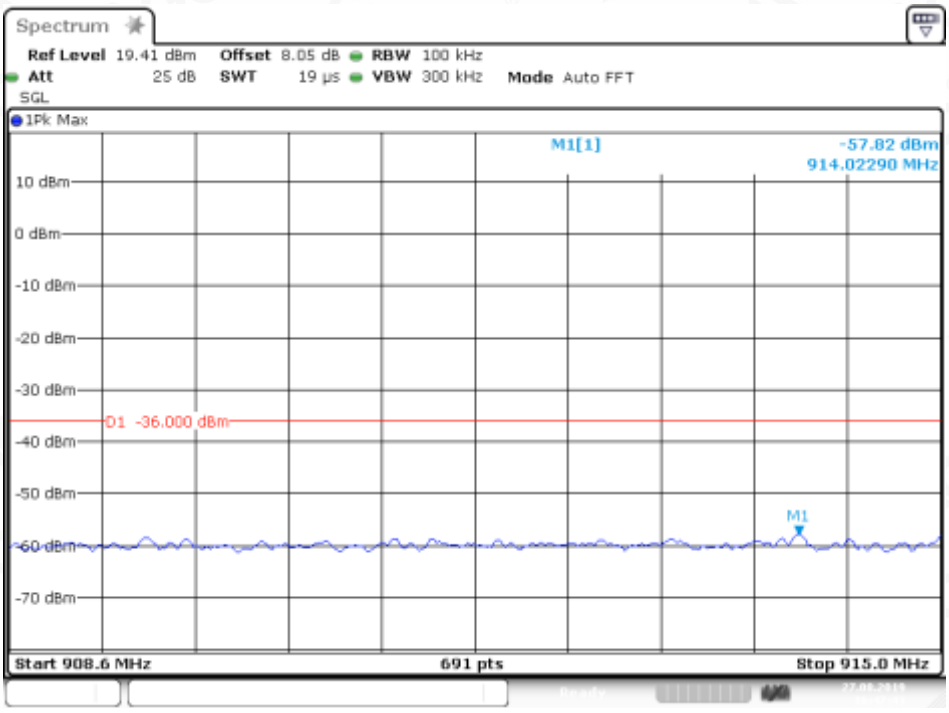
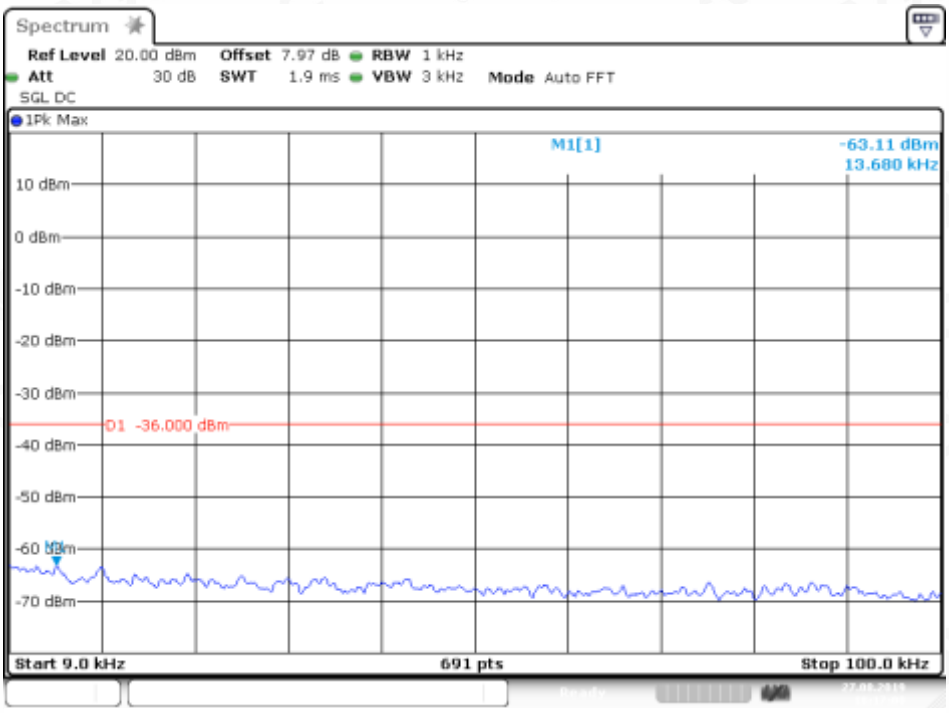
908.6MHz~915MHz



Date: 27.AUG.2019 16:47:43

DCS1800: channel MCH VN

9kHz~100kHz



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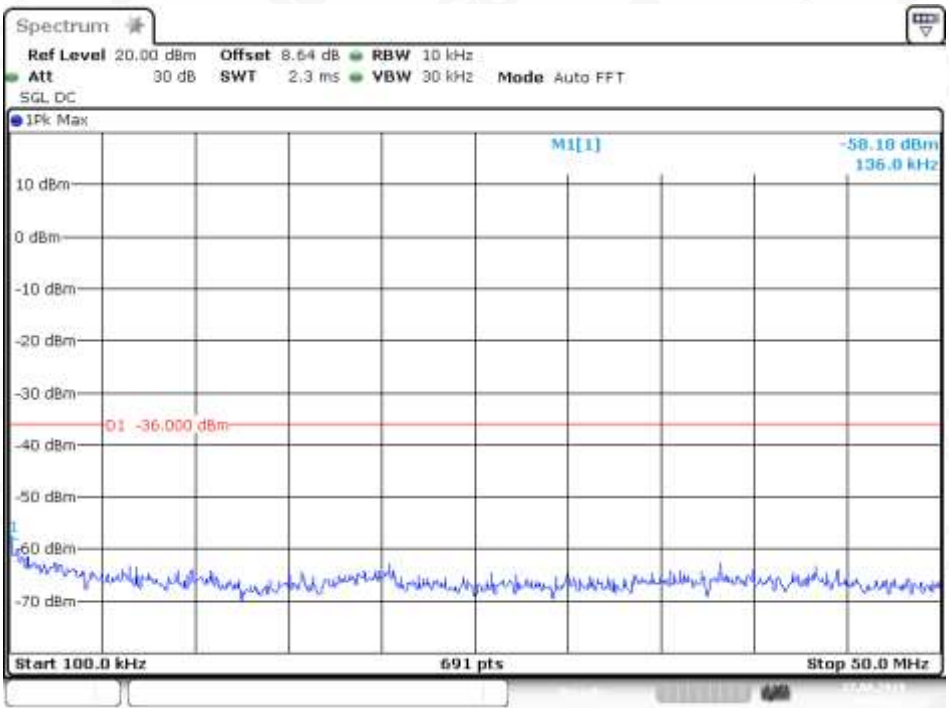
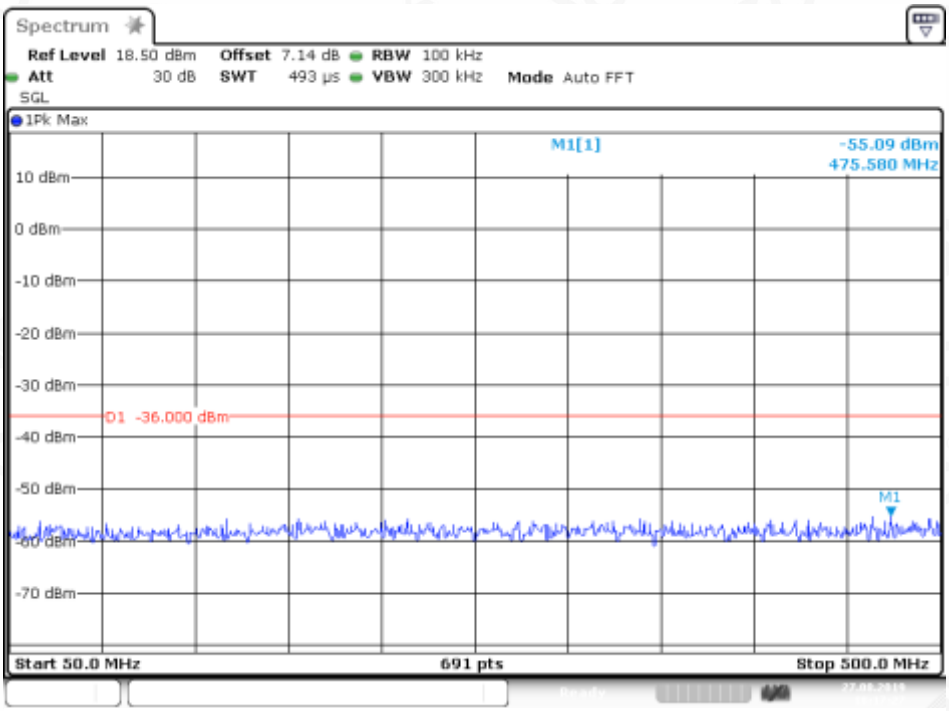
100kHz~50MHz



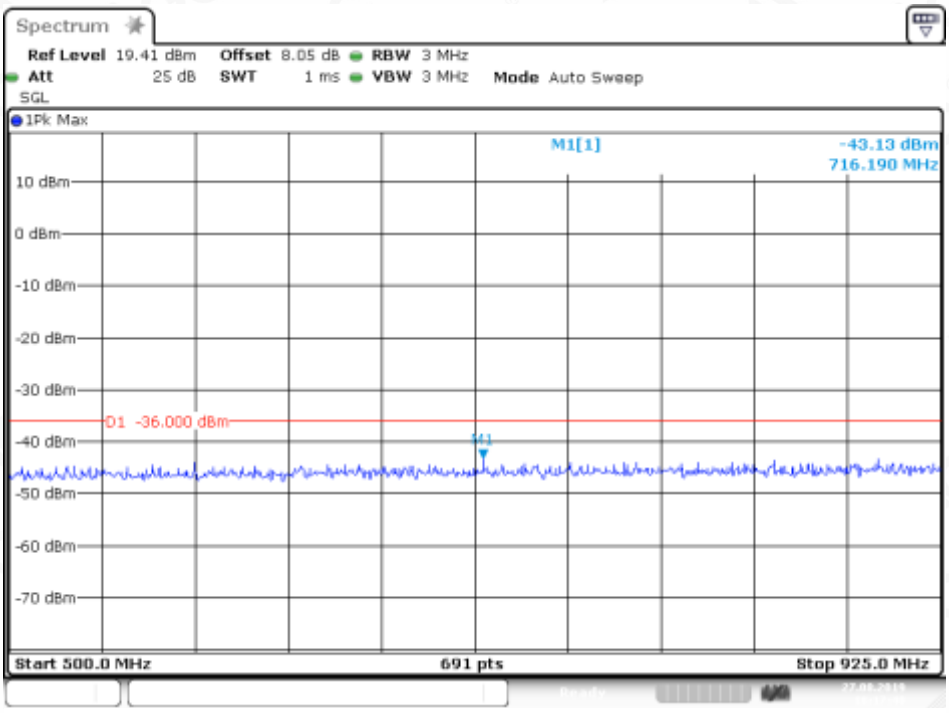
Date: 27.AUG.2019 18:17:13

50MHz~500MHz



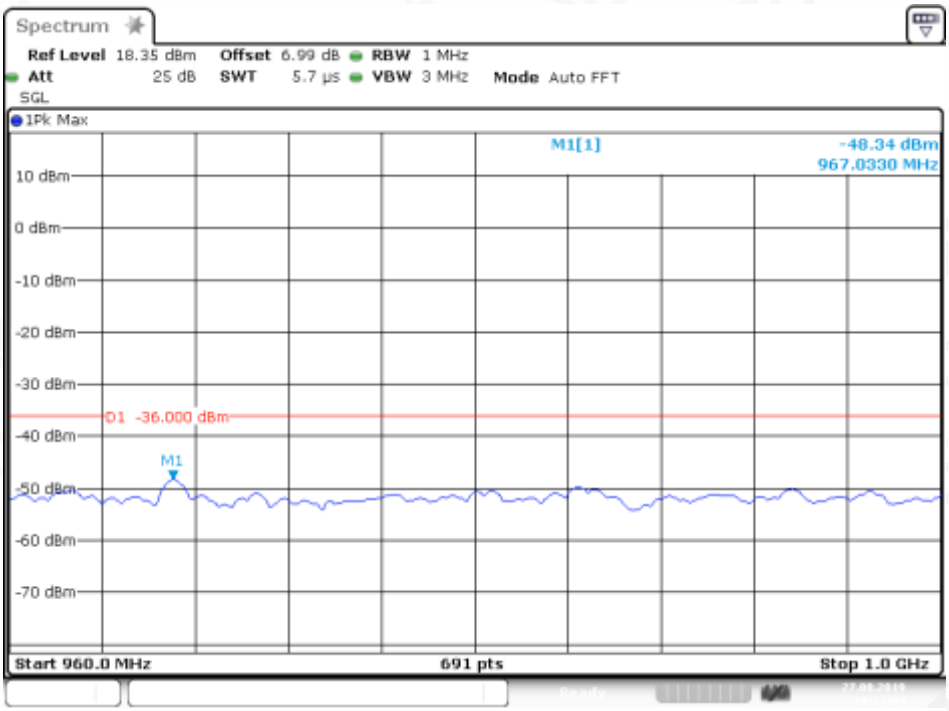
Date: 27.AUG.2019 18:17:27

500MHz~925MHz



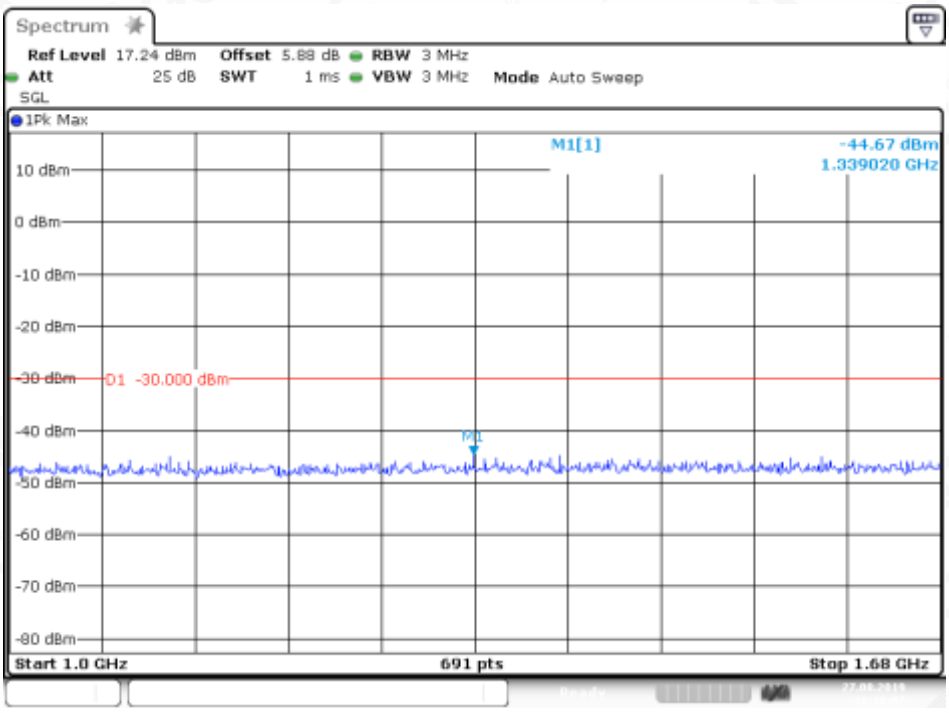
Date: 27.AUG.2019 18:17:40

960MHz~1GHz



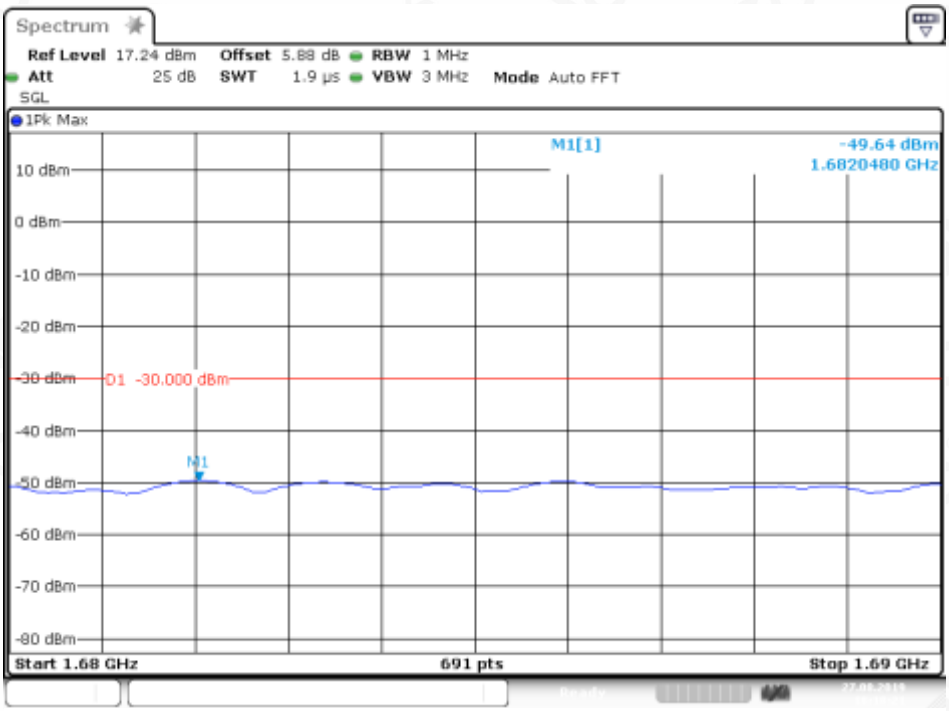
Date: 27.AUG.2019 18:17:54

1GHz~1680MHz



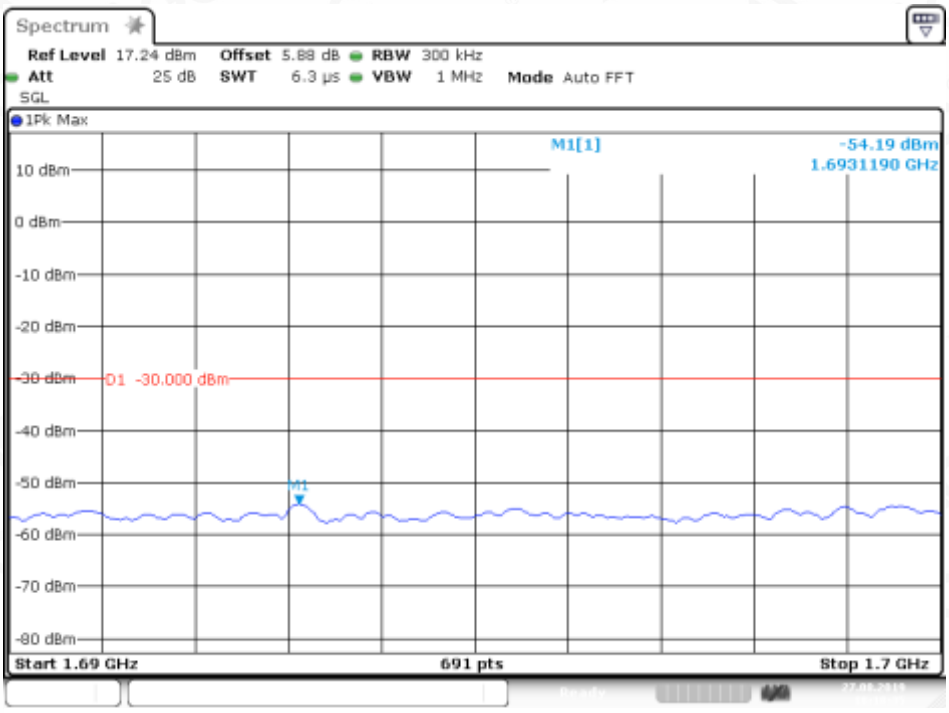
Date: 27.AUG.2019 18:18:08

1680MHz~1690MHz



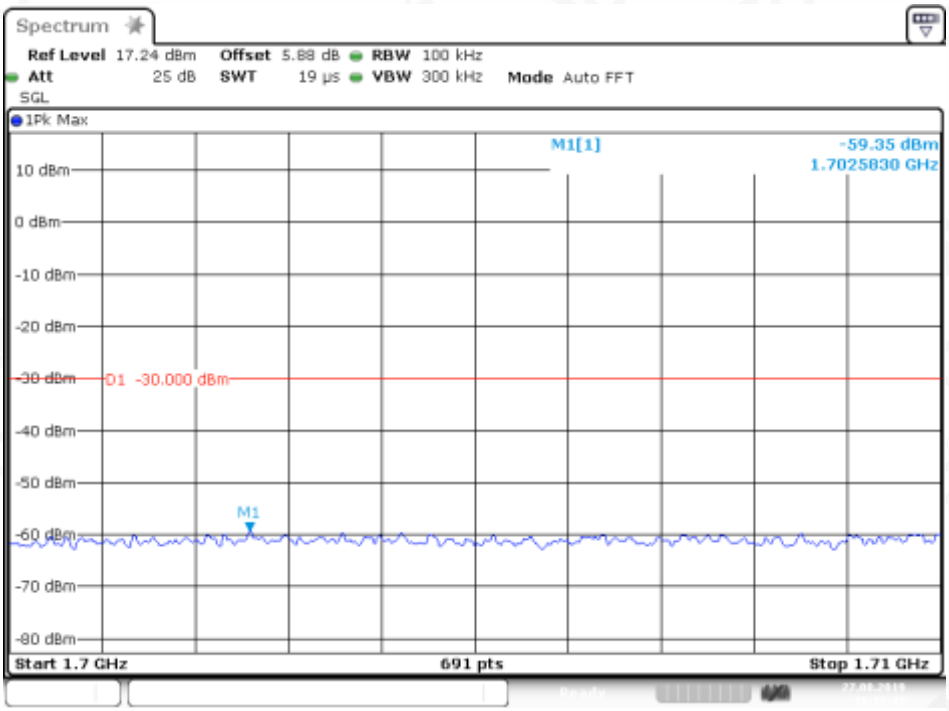
Date: 27.AUG.2019 18:18:21

1690MHz~1700MHz



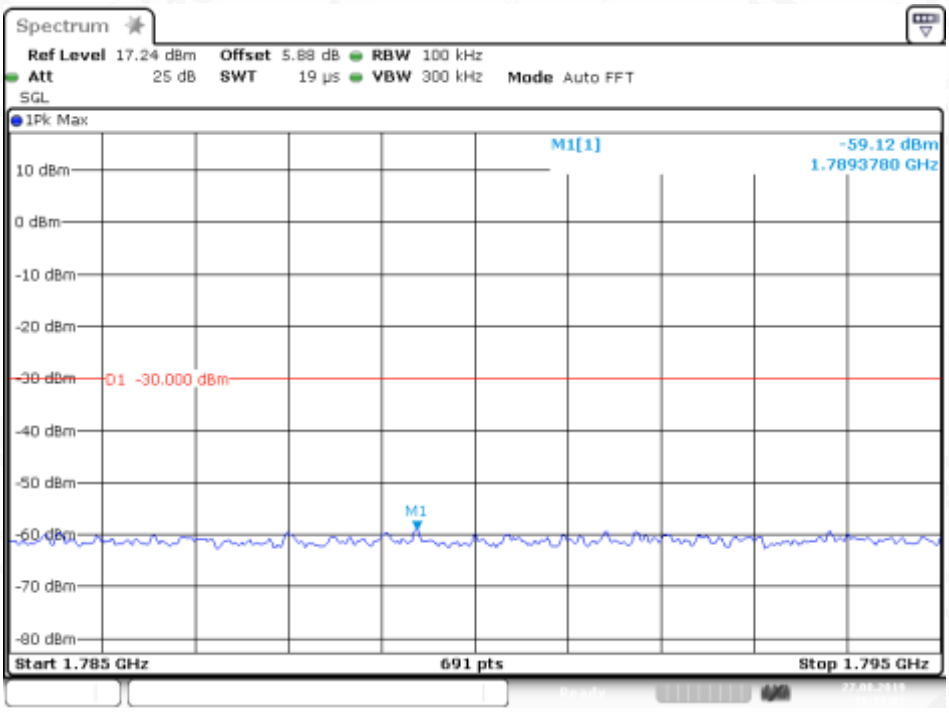
Date: 27.AUG.2019 18:18:35

1700MHz~1710MHz



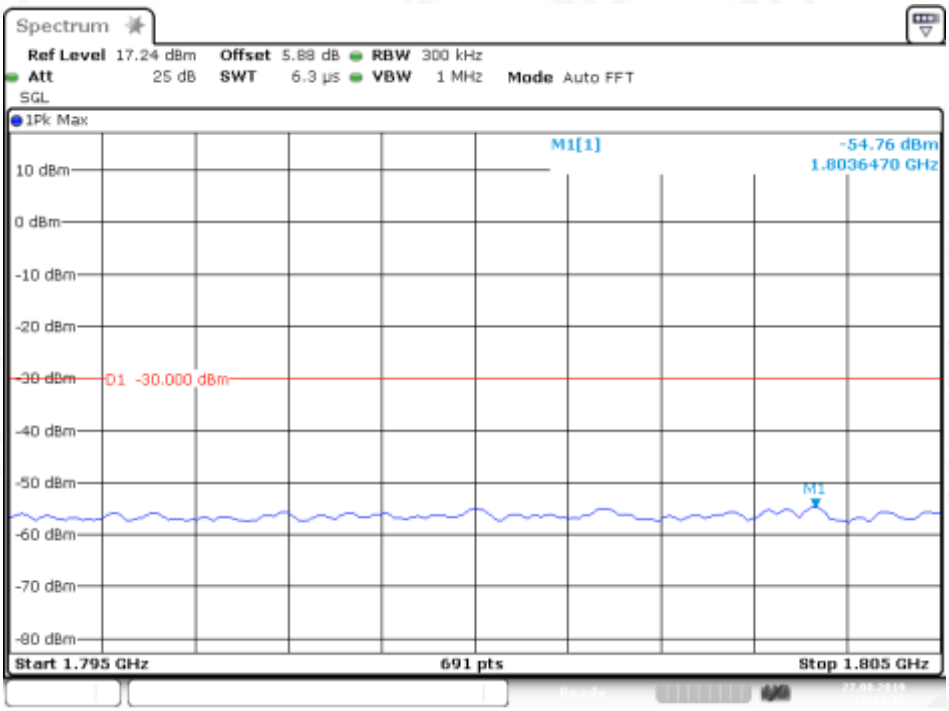
Date: 27.AUG.2019 18:18:48

1785MHz~1795MHz



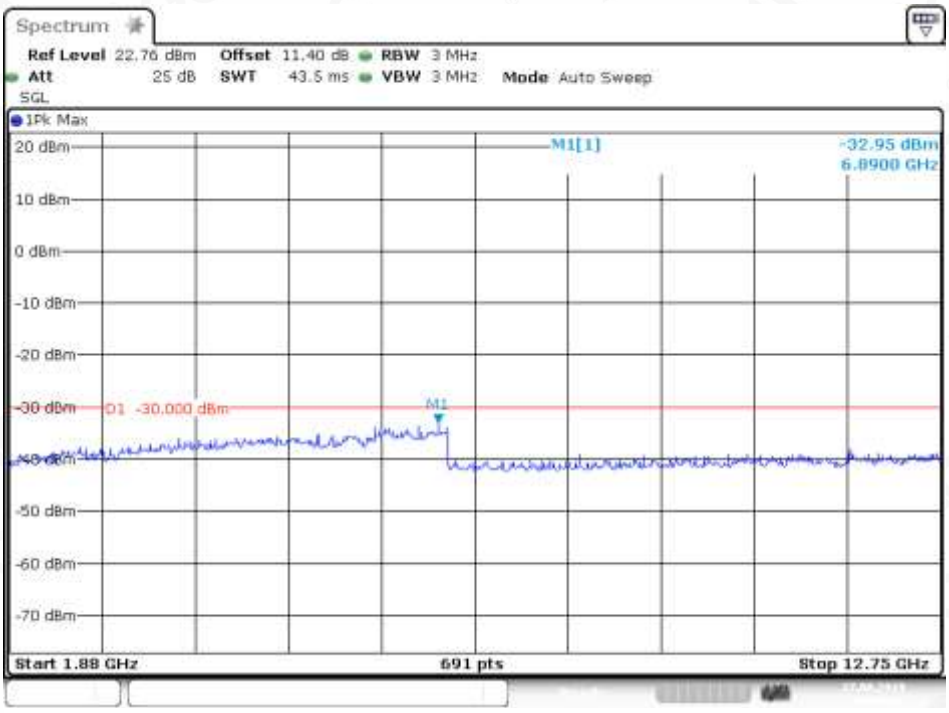
Date: 27.AUG.2019 18:19:02

1795MHz~1805MHz



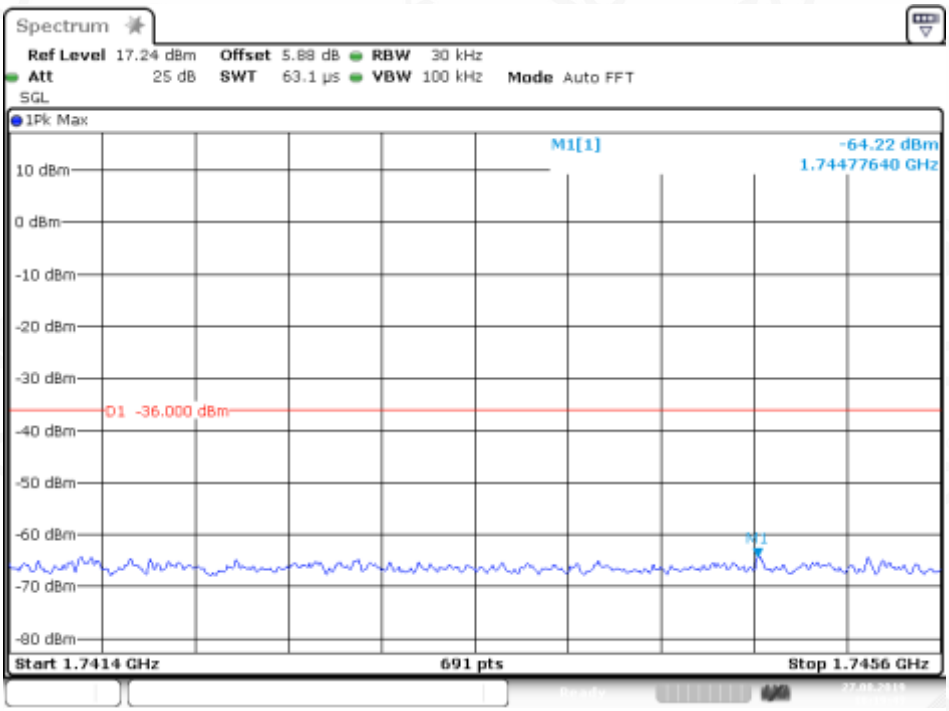
Date: 27.AUG.2019 18:19:15

1880MHz~12.75GHz



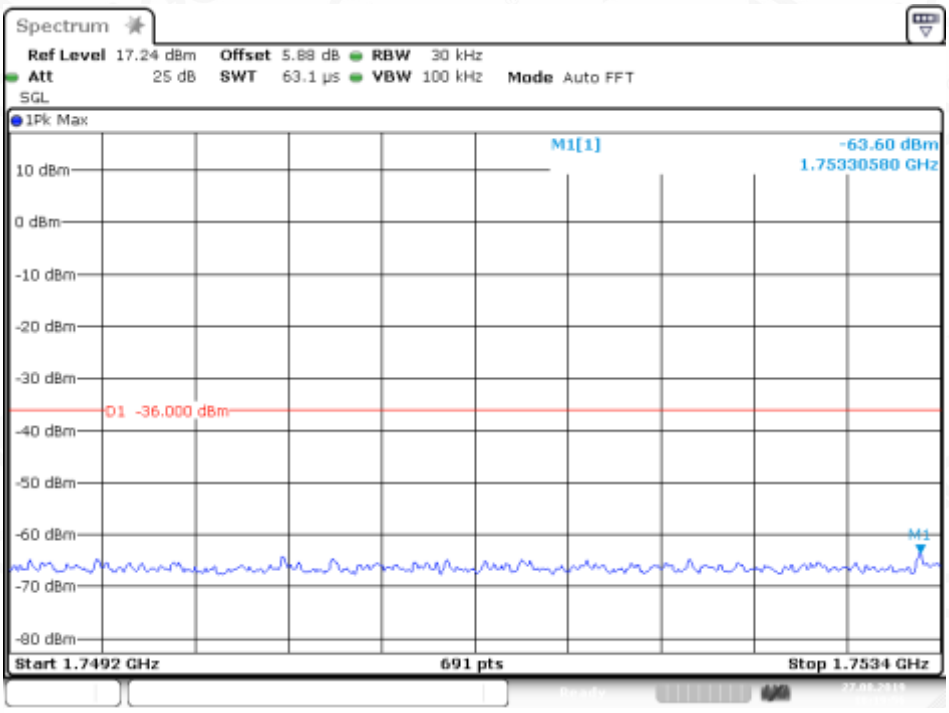
Date: 27.AUG.2019 18:19:29

1741.4MHz~1745.6MHz



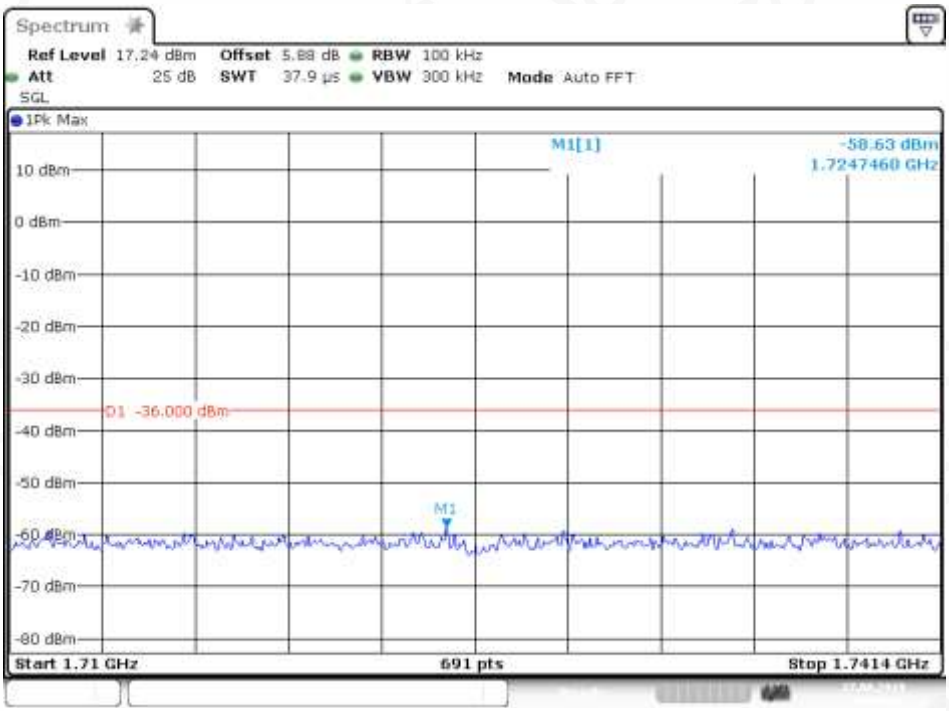
Date: 27.AUG.2019 18:19:42

1749.2MHz~1753.4MHz



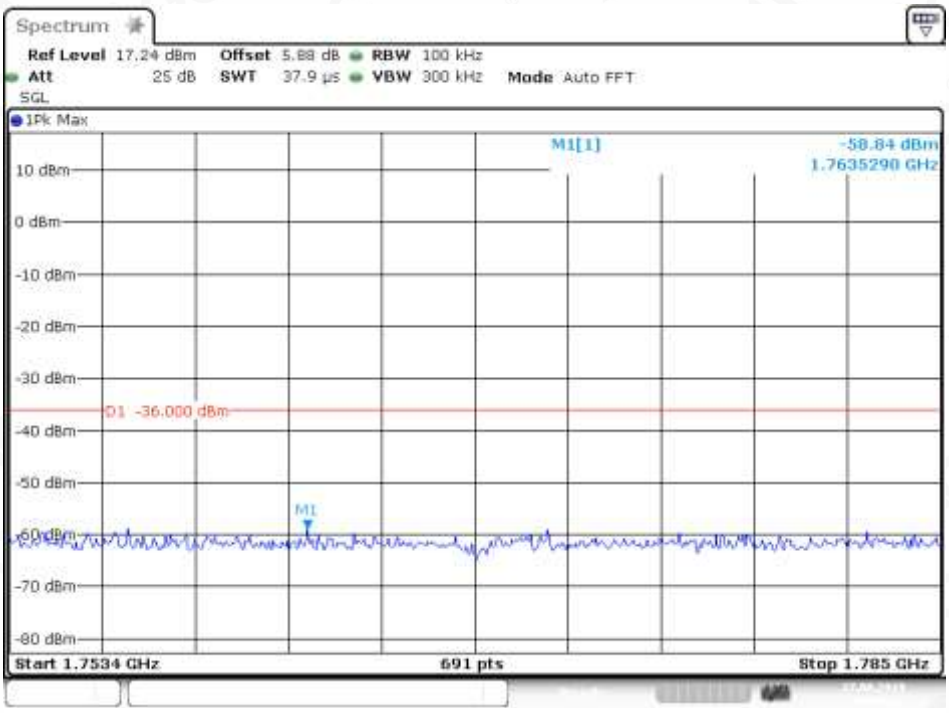
Date: 27.AUG.2019 18:19:56

1710MHz~1741.4MHz



Date: 27.AUG.2019 18:20:10

1753.4MHz~1785MHz



Date: 27.AUG.2019 18:20:23

Appendix I. Conducted spurious emissions- MS in idle mode

Note: All the modes had been tested, but only the worst data recorded in the report.

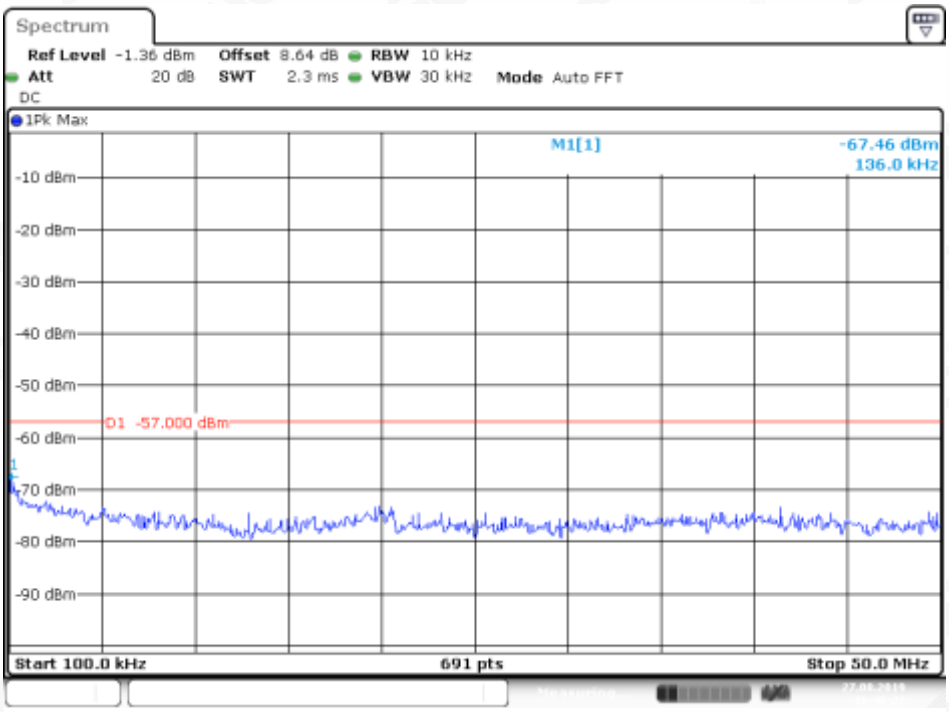
Conducted spurious emissions	GSM900;VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
100kHz~50MHz	10k	-57	-67.46	PASS
50MHz~880MHz	100k	-57	-63.10	PASS
880MHz~915MHz	100k	-59	-62.75	PASS
915MHz~1000MHz	100k	-57	-58.07	PASS
1GHz~1710MHz	100k	-47	-59.34	PASS
1710MHz~1785MHz	100k	-53	-58.15	PASS
1785MHz~12.75GHz	100k	-47	-47.46	PASS

Conducted spurious emissions	DCS1800;VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
100kHz~50MHz	10k	-57	-67.75	PASS
50MHz~880MHz	100k	-57	-63.55	PASS
880MHz~915MHz	100k	-59	-62.56	PASS
915MHz~1000MHz	100k	-57	-57.91	PASS
1GHz~1710MHz	100k	-47	-59.20	PASS
1710MHz~1785MHz	100k	-53	-59.38	PASS
1785MHz~12.75GHz	100k	-47	-48.28	PASS

Graphs of conducted spurious emission-MS in idle mode

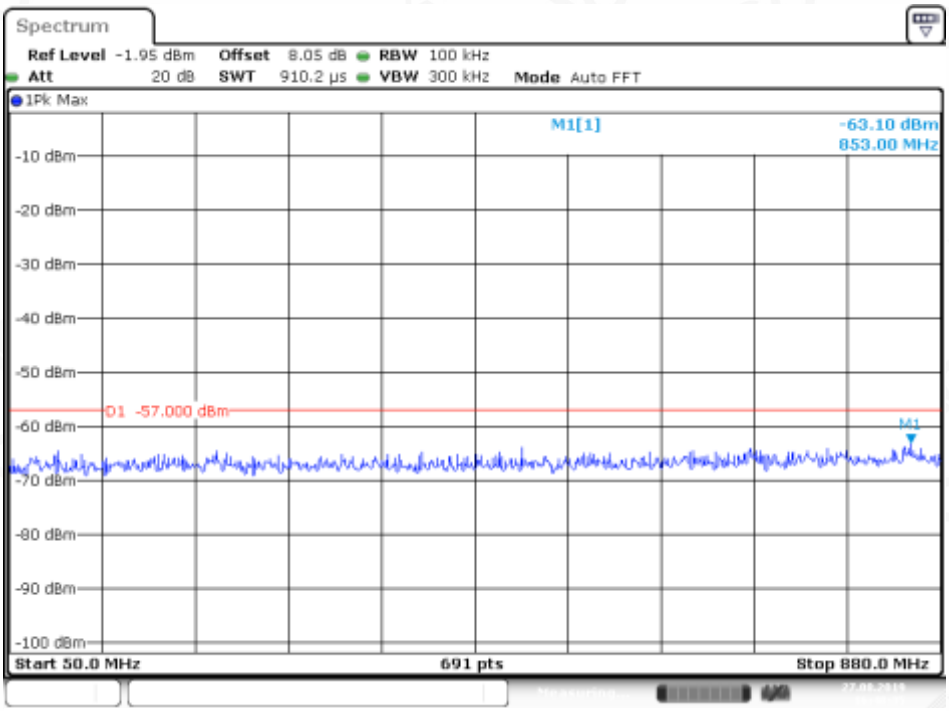
GSM900: channel MCH VN

100kHz~50MHz



Date: 27.AUG.2019 16:48:22

50MHz~880MHz



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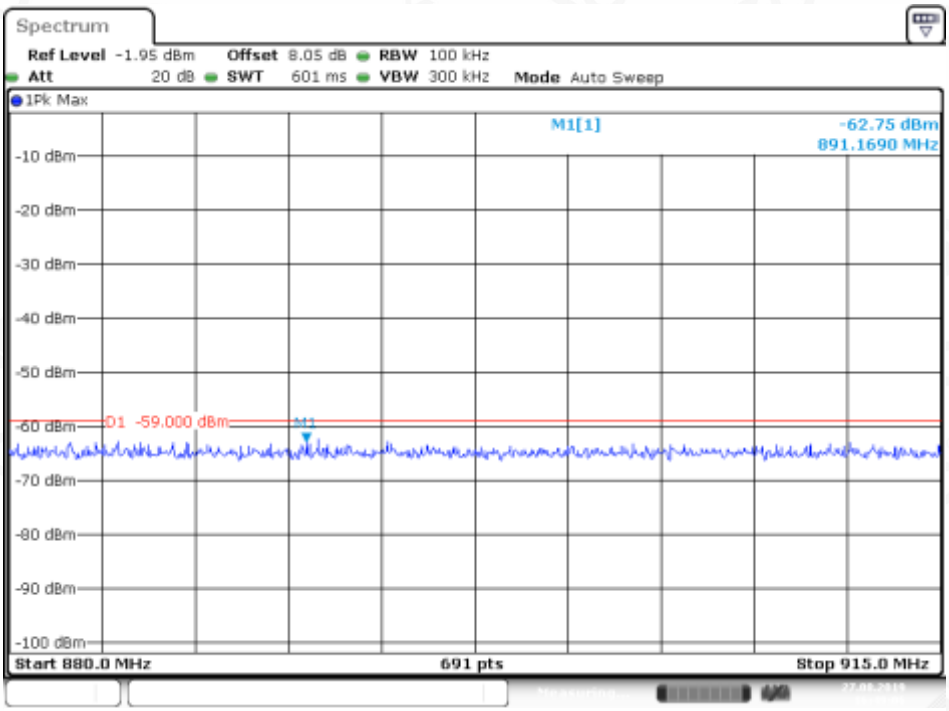
880MHz~915MHz



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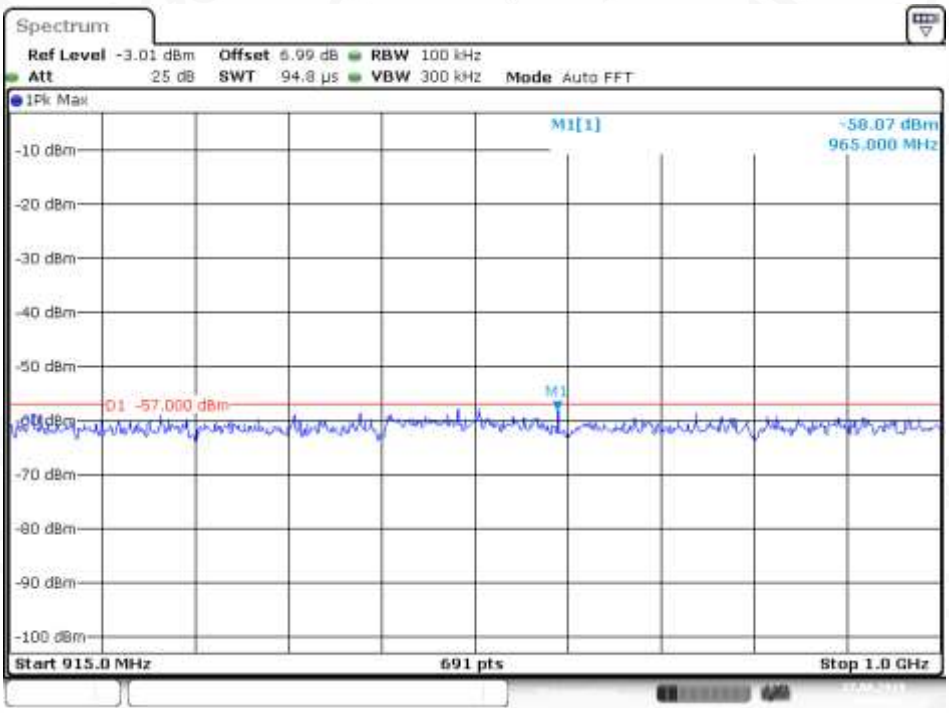
915MHz~1000MHz



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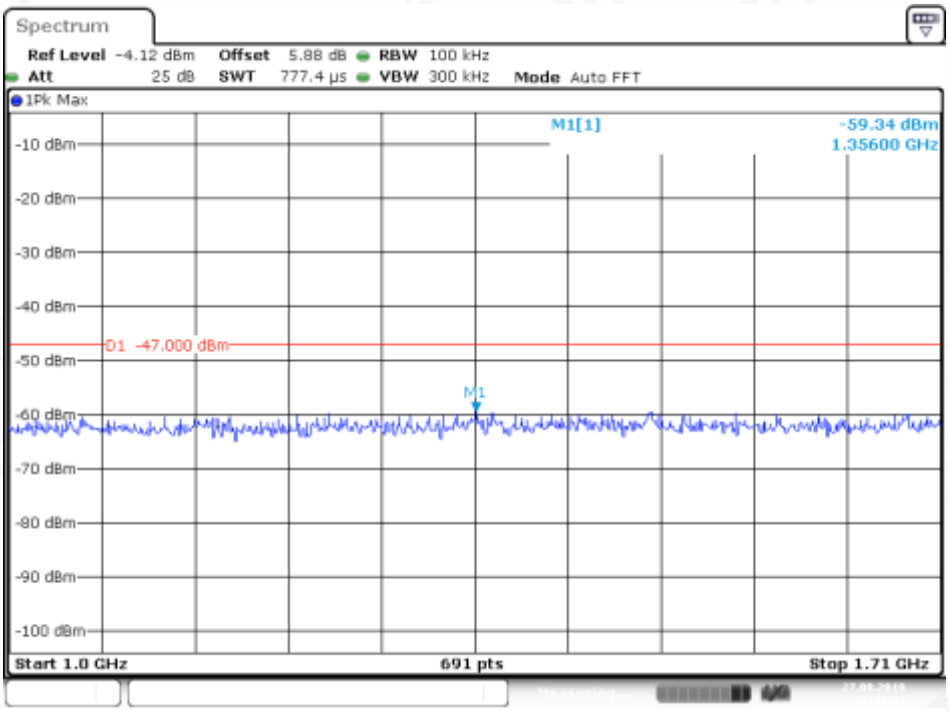
1GHz~1710MHz



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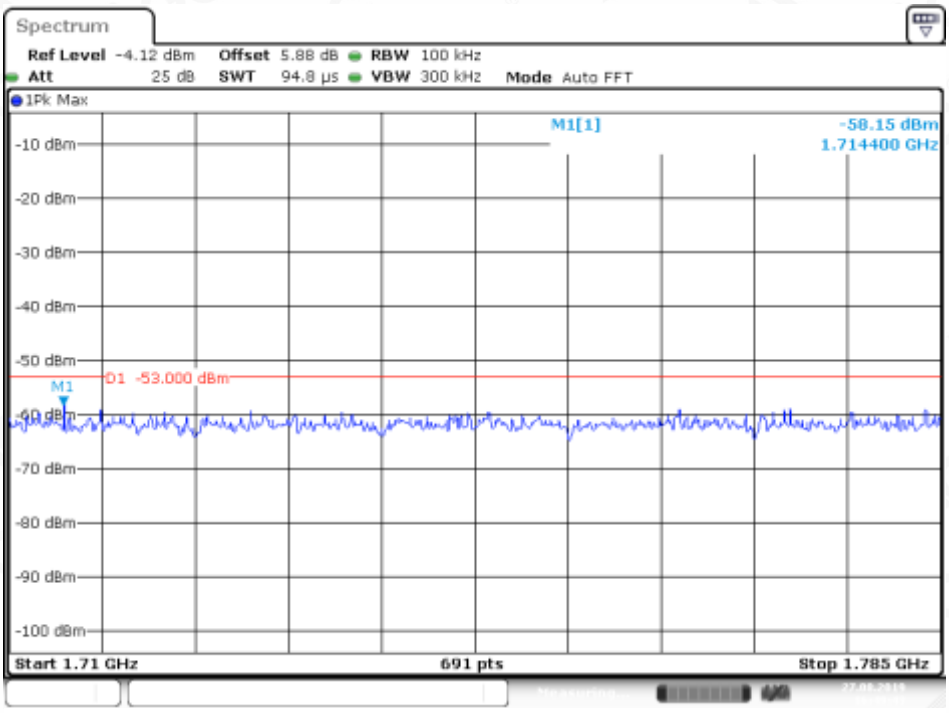
1710MHz~1785MHz



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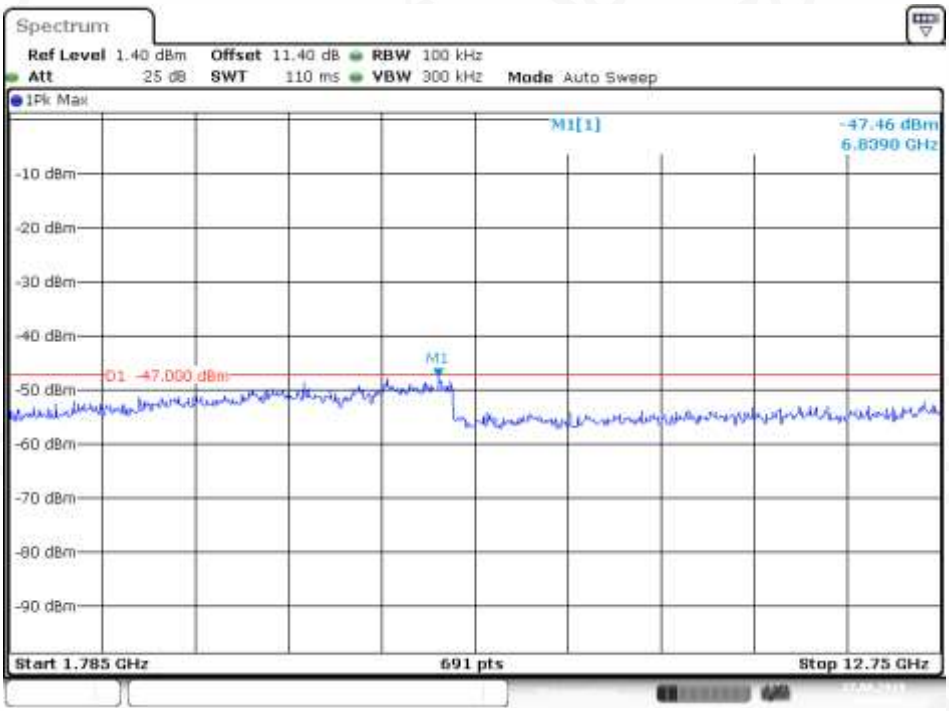
1785MHz~12.75GHz



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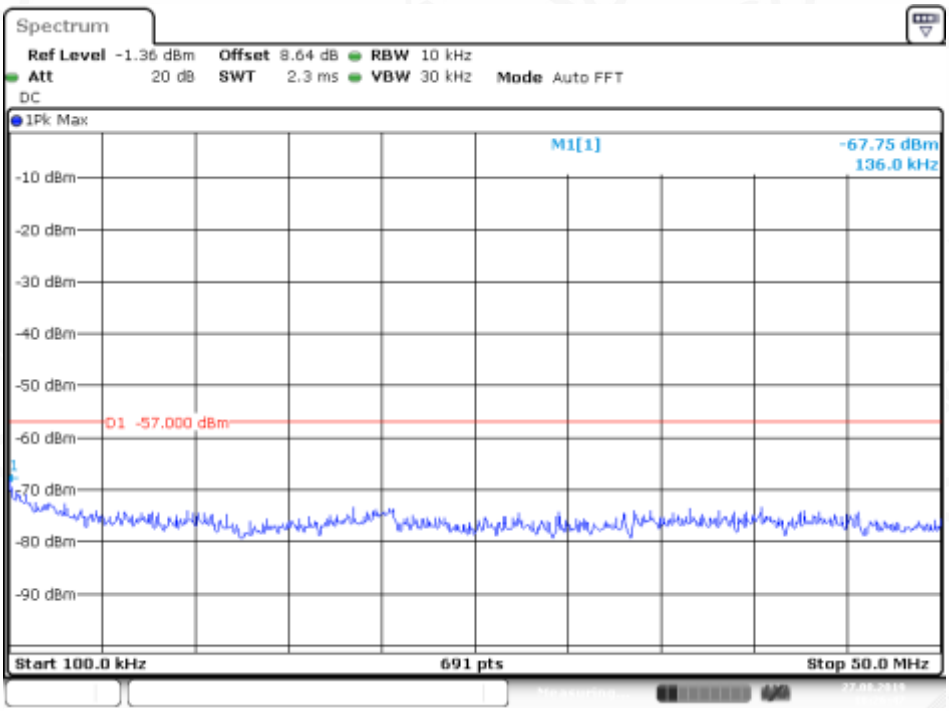
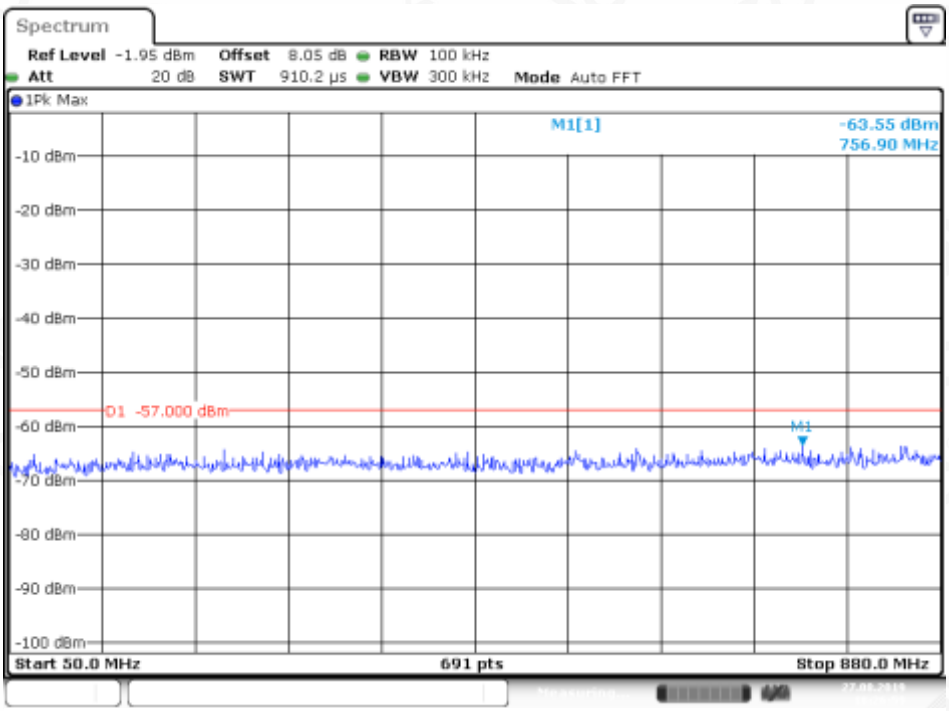
DCS1800: channel MCH VN

100kHz~50MHz



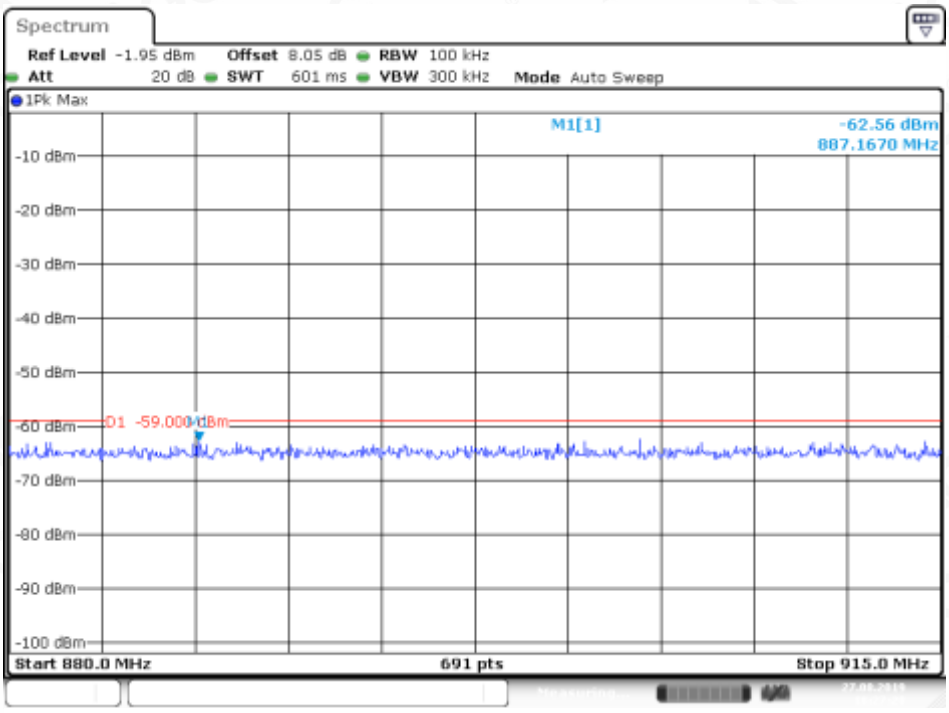
Date: 27.AUG.2019 18:26:46

50MHz~880MHz



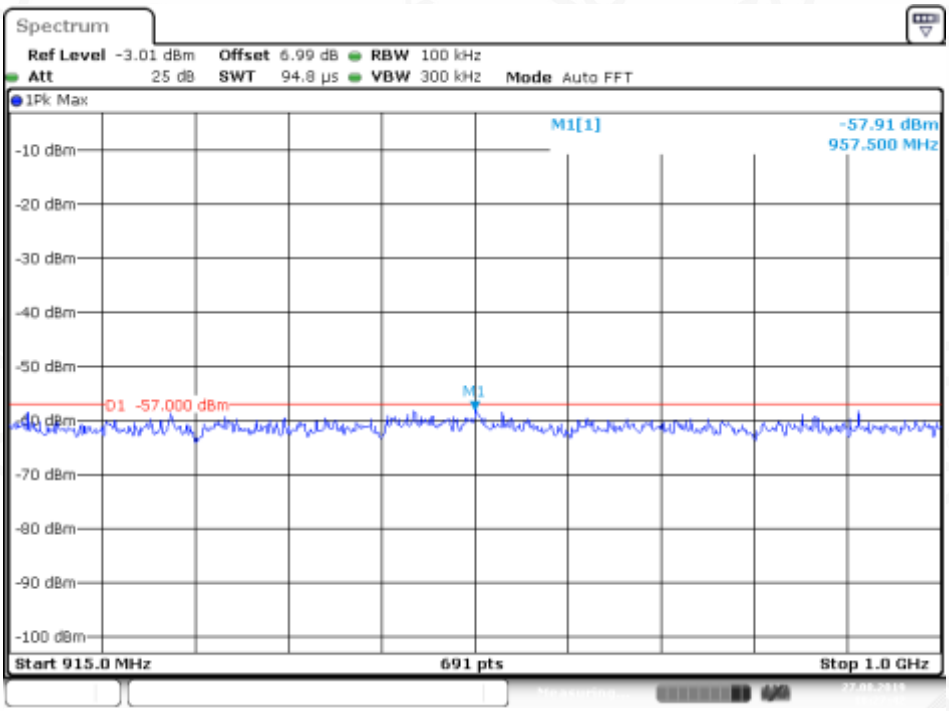
Date: 27.AUG.2019 18:26:59

880MHz~915MHz



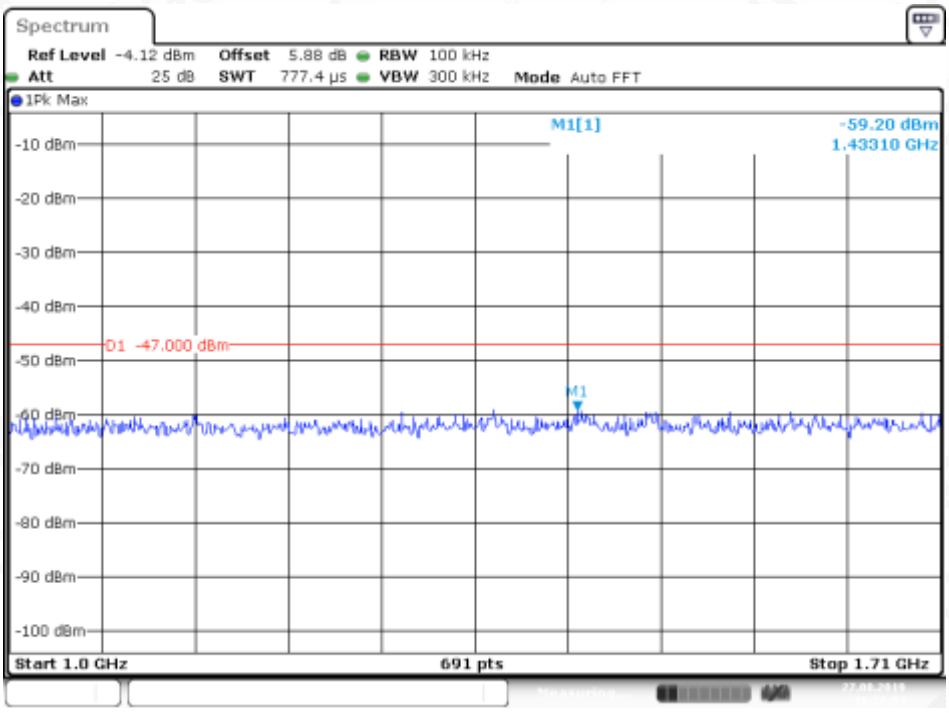
Date: 27.AUG.2019 18:27:29

915MHz~1000MHz



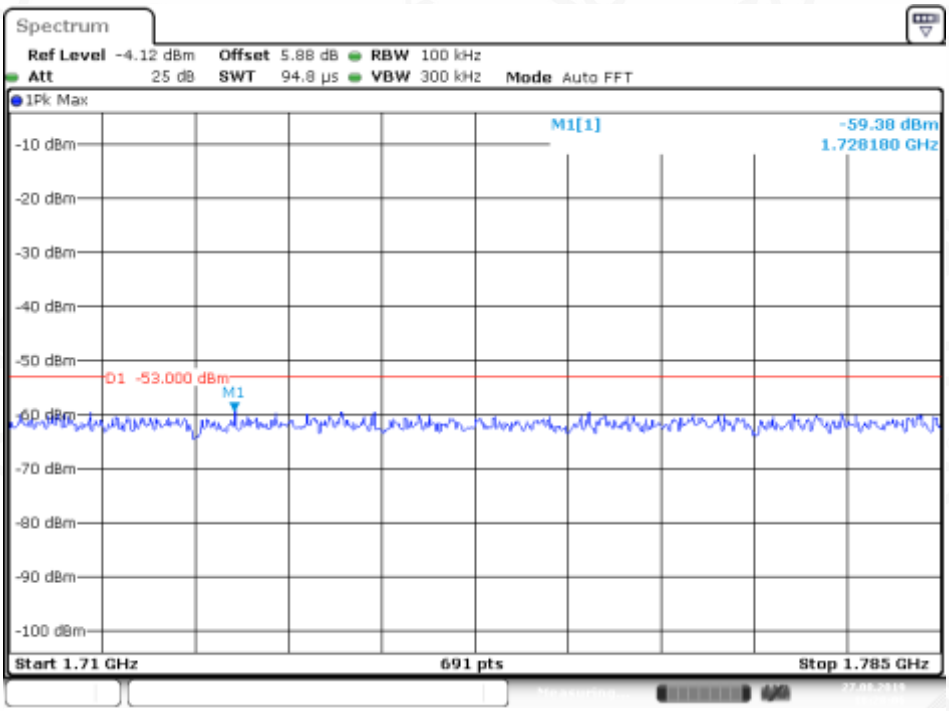
Date: 27.AUG.2019 18:27:41

1GHz~1710MHz



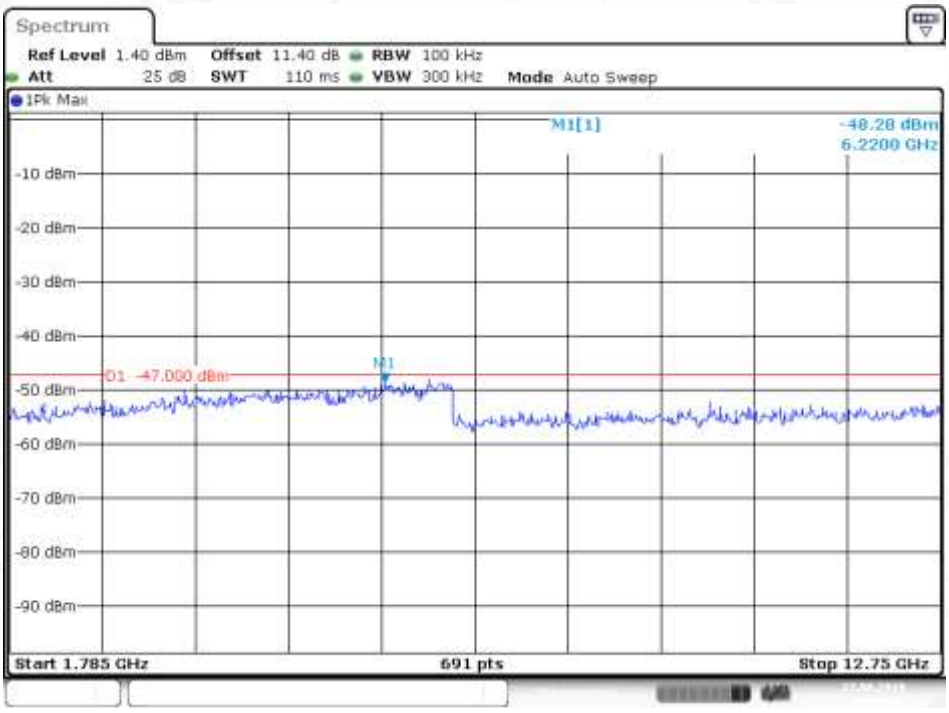
Date: 27.AUG.2019 18:27:54

1710MHz~1785MHz



Date: 27.AUG.2019 18:28:07

1785MHz~12.75GHz



Date: 27.AUG.2019 18:28:19

Appendix J. Receiver Blocking and spurious response – speech channel

GSM900

FREQUENCY	Measurement Result	
	GSM900	
	Small MS	
	Interference Level in dBµVemf()	Result
FR +/- 600 kHz to FR +/- 800 kHz	70	PASS
FR +/- 800 kHz to FR +/- 1.6 MHz	70	PASS
FR +/- 1.6 MHz to FR +/- 3 MHz	80	PASS
915 MHz to FR - 3 MHz	90	PASS
FR + 3 MHz to 980 MHz	90	PASS
835 MHz to <915 MHz	113	PASS
>980 MHz to 1000 MHz	113	PASS
100 kHz to <835 MHz	90	PASS
>1000 MHz to 12.75 GHz	90	PASS

DCS1800

FREQUENCY	Measurement Result	
	DCS1800	
	Small MS	
	Interference Level in dBµVemf()	Result
FR +/- 600 kHz to FR +/- 800 kHz	70	PASS
FR +/- 800 kHz to FR +/- 1.6 MHz	70	PASS
FR +/- 1.6 MHz to FR +/- 3 MHz	80	PASS
1785 MHz to FR - 3 MHz	87	PASS
FR + 3 MHz to 1920 MHz	87	PASS
100 kHz to 1705 MHz	113	PASS
>1705 MHz to <1785 MHz	101	PASS
>1920 MHz to 1980 MHz	101	PASS
>1980 MHz to 12.75 GHz	90	PASS

Appendix K. Frequency error and Modulation accuracy in EGPRS Configuration

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

TN,VN			≤9%	≤15%	≤30%	≤10E-7	Result
BAND	ARFCN	PCL	RMS EVM	the 95% EVM	Peak EVM	Frequency error	
GSM900	LCH	8	1.1	2.0	3.1	15	PASS
		19	1.0	1.8	2.5	14	PASS
	MCH	8	1.1	2.0	3.1	12	PASS
		19	1.0	1.8	2.5	12	PASS
	HCH	8	1.2	2.1	3.2	12	PASS
		19	1.0	1.7	2.4	12	PASS

DCS1800

TN,VN			≤9%	≤15%	≤30%	≤10E-7	Result
BAND	ARFCN	PCL	RMS EVM	the 95% EVM	Peak EVM	Frequency error	
DCS1800	LCH	2	1.2	2.3	3.3	5	PASS
		15	1.0	1.9	2.7	4	PASS
	MCH	2	1.2	2.2	3.2	6	PASS
		15	1.0	1.9	2.7	4	PASS
	HCH	2	1.1	2.1	3.0	5	PASS
		15	1.0	1.9	2.7	5	PASS

Appendix L. Frequency error under multipath and interference conditions in EGPRS Configuration

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

Fading set	Test conditions	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
RA250	TNVN	14	15	15	PASS
HT100	TNVN	13	13	13	PASS
TU50	TNVN	13	14	13	PASS
TU3	TNVN	14	11	14	PASS

DCS1800

Fading set	Test conditions	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
RA130	TNVN	9	6	8	PASS
HT100	TNVN	3	7	8	PASS
TU50	TNVN	1	8	9	PASS
TU1.5	TNVN	5	7	9	PASS

Appendix M.EGPRS Transmitter output power

Note: All the modes had been tested, but only the worst data recorded in the report.

A. output power

Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
GSM900		LCH	MCH	HCH	Result
TN,VN	8	22.51	22.04	22.07	PASS
	12	19.73	19.52	19.74	PASS
	19	5.71	5.48	5.92	PASS

Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
DCS1800		LCH	MCH	HCH	Result
TN,VN	2	23.61	23.37	22.82	PASS
	8	15.79	15.66	15.17	PASS
	15	0.04	-0.08	-0.47	PASS

B. Power VS Time

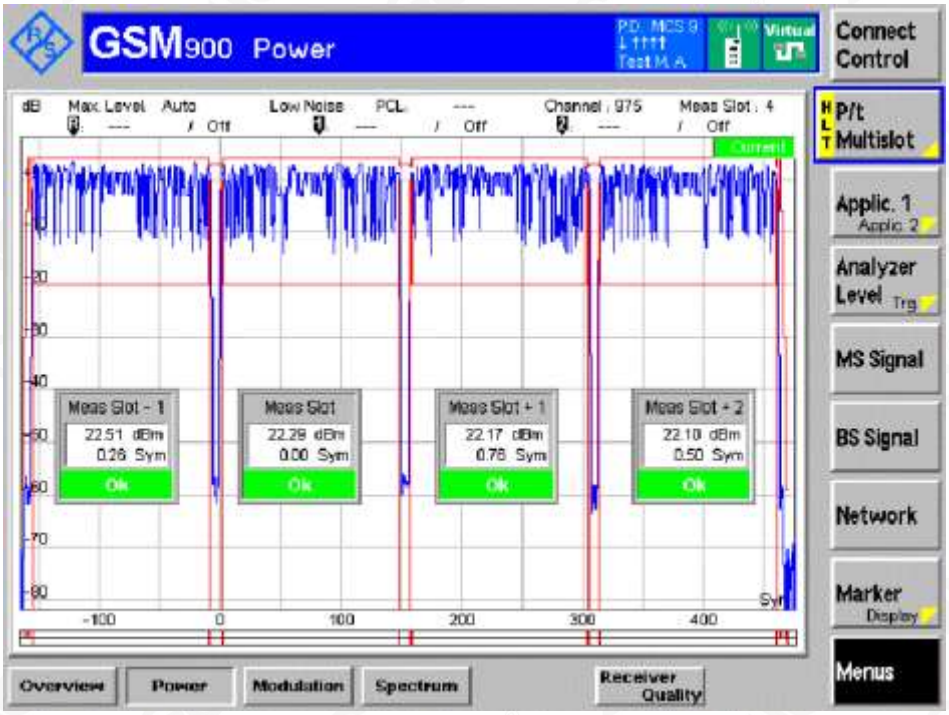
Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
GSM900	Power level	LCH	MCH	HCH
TN,VN	8	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
DCS1800	Power level	LCH	MCH	HCH
TN,VN	2	PASS	PASS	PASS
	8	PASS	PASS	PASS
	15	PASS	PASS	PASS

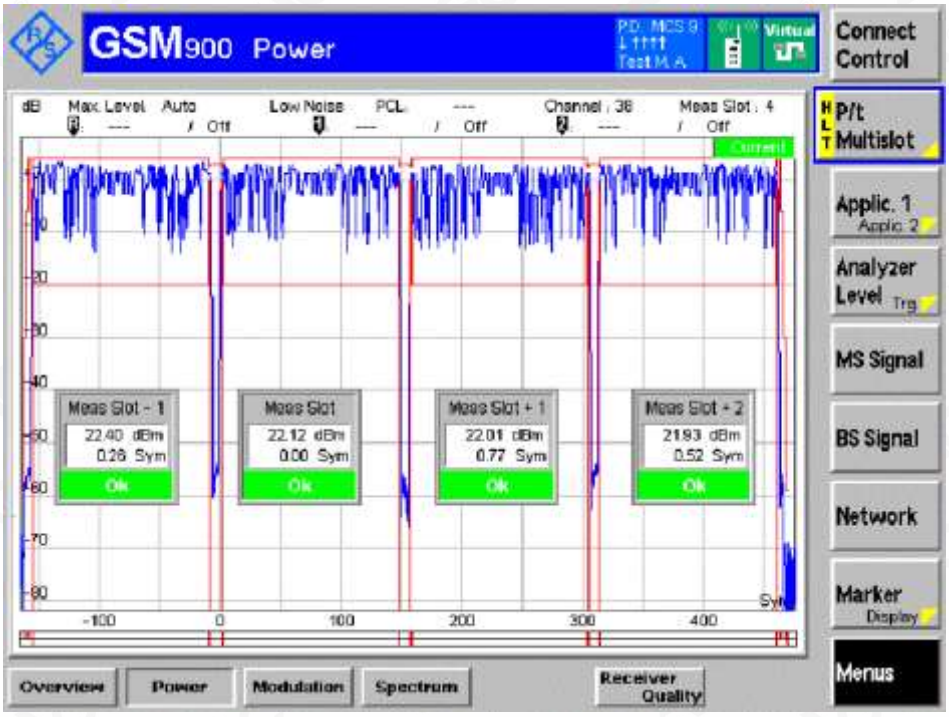
Graphs of EGPRS Transmitter output power

GSM 900 TN,VN

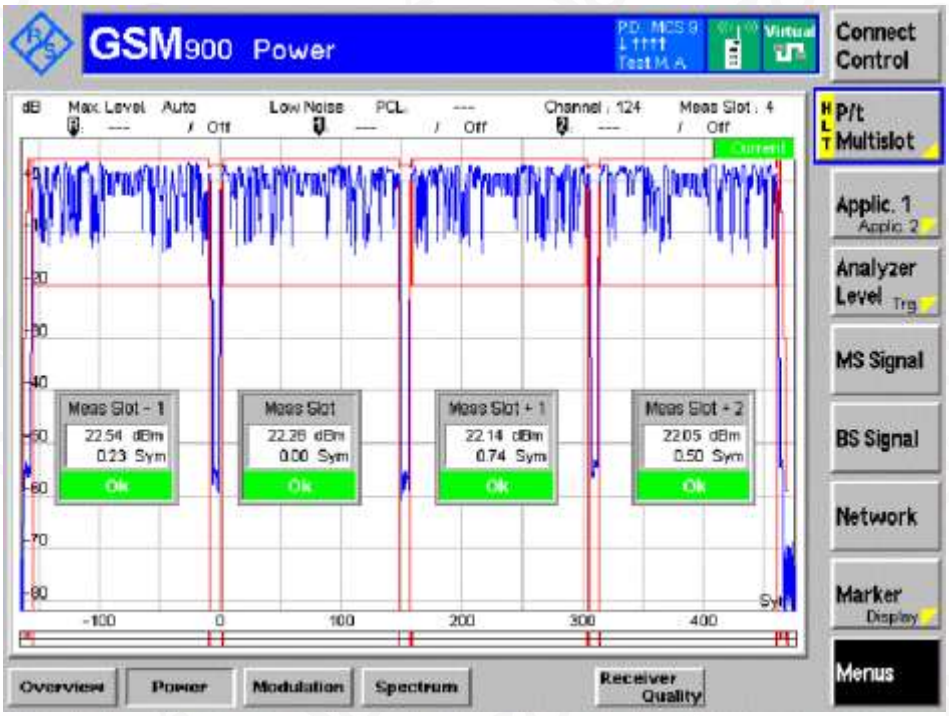
Channel LCH PCL 8



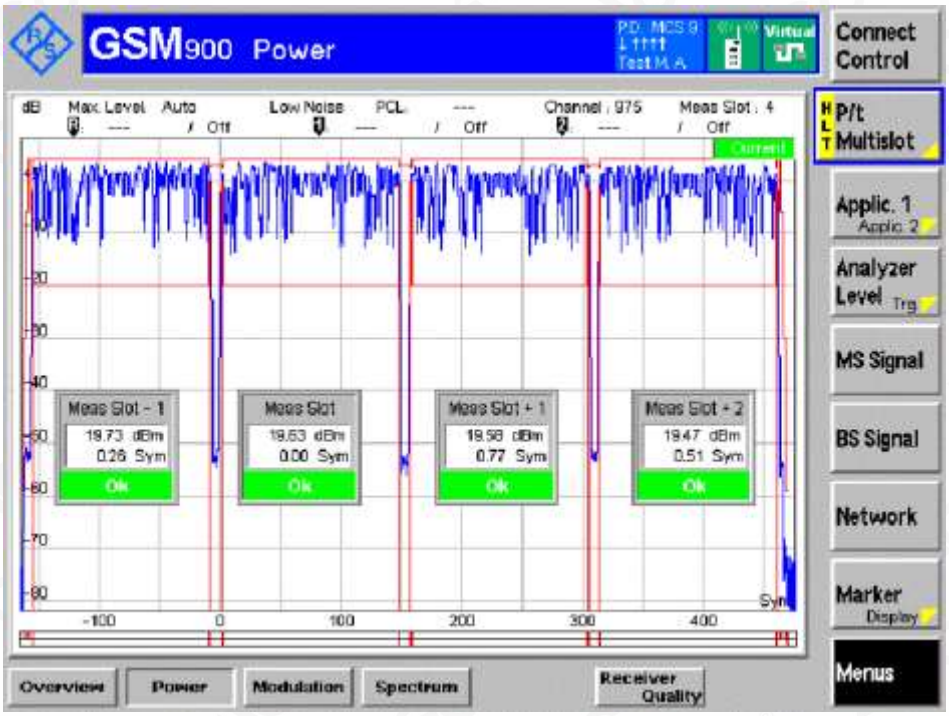
Channel MCH PCL 8



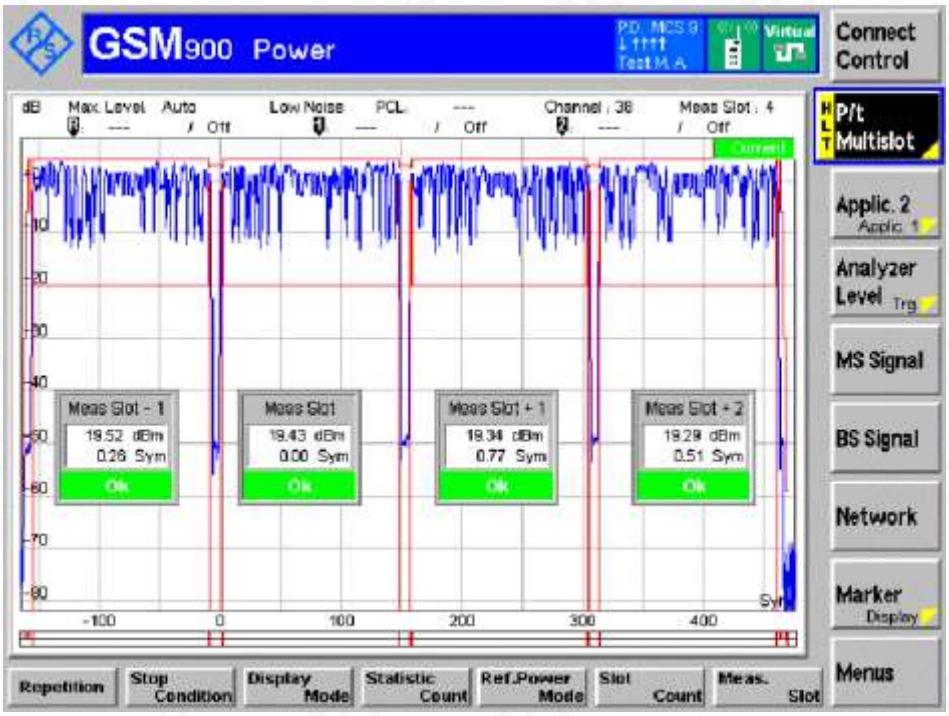
Channel HCH PCL 8



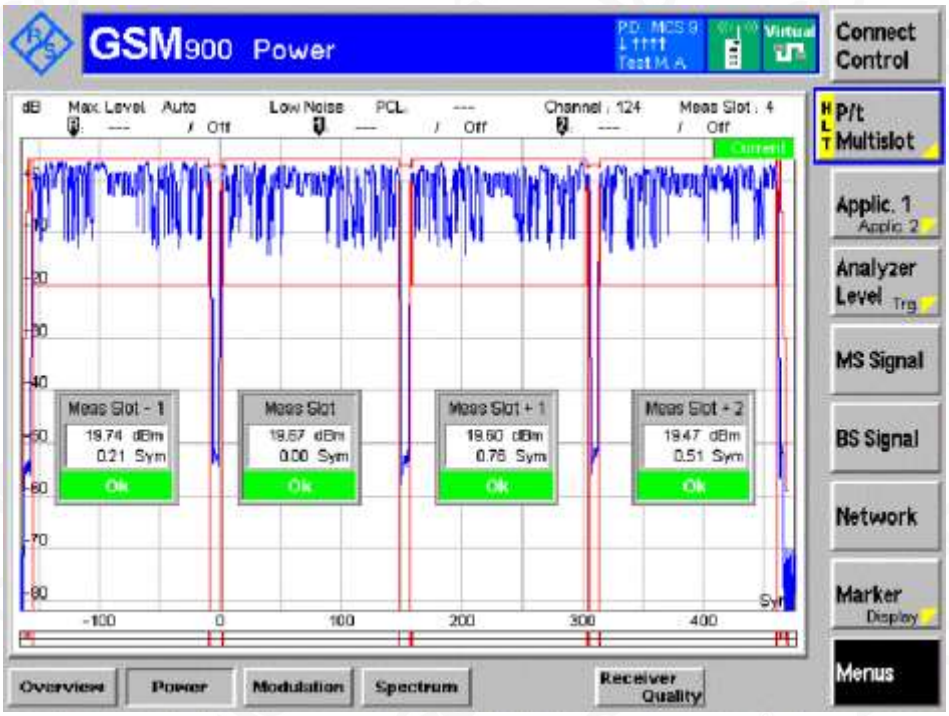
Channel LCH PCL 12



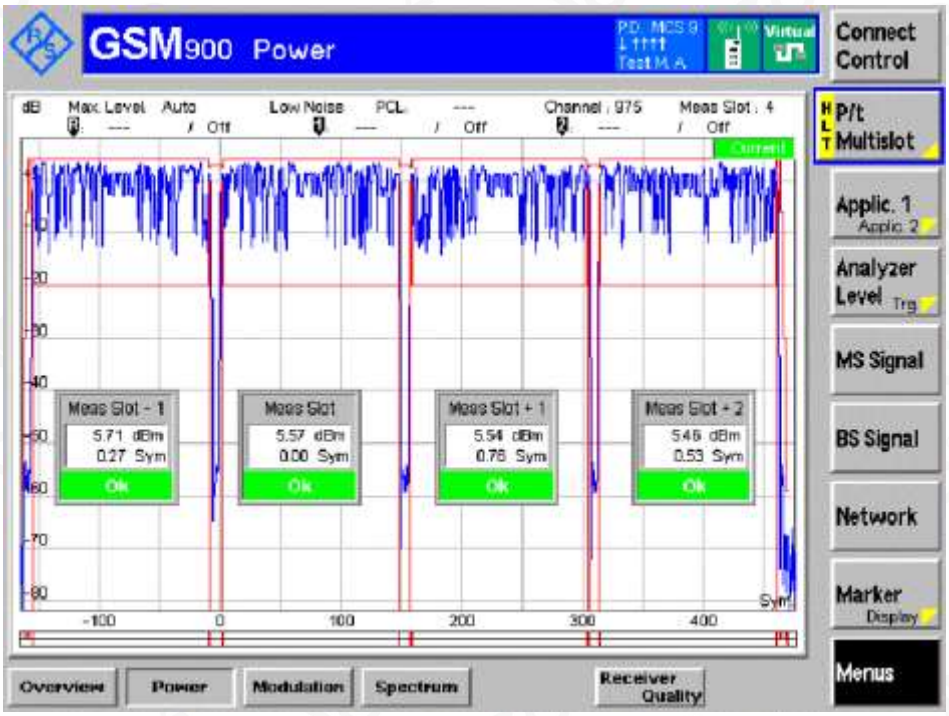
Channel MCH PCL 12



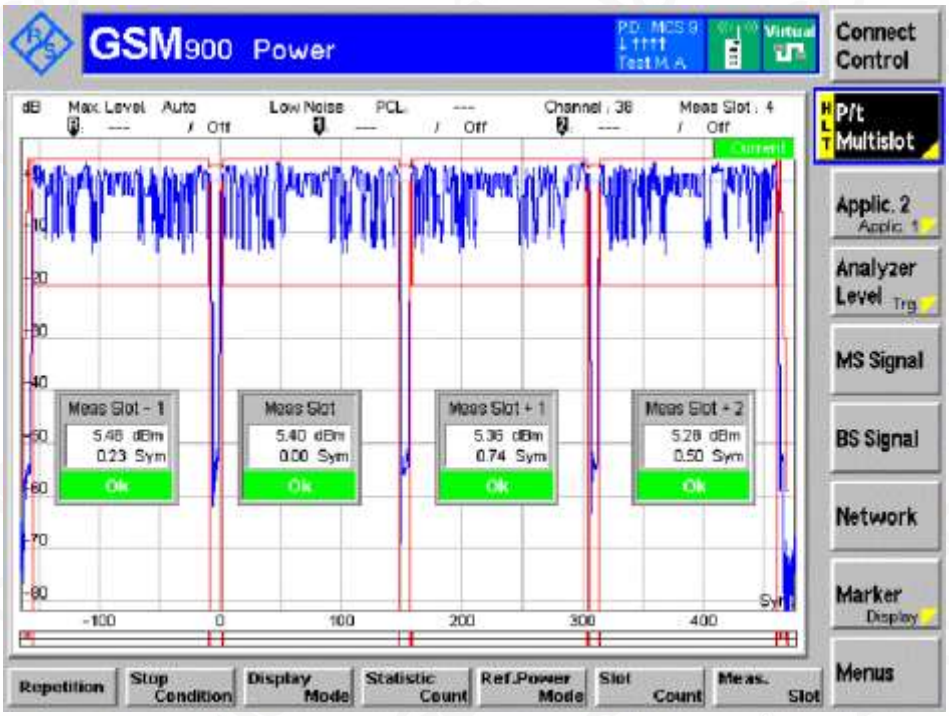
Channel HCH PCL 12



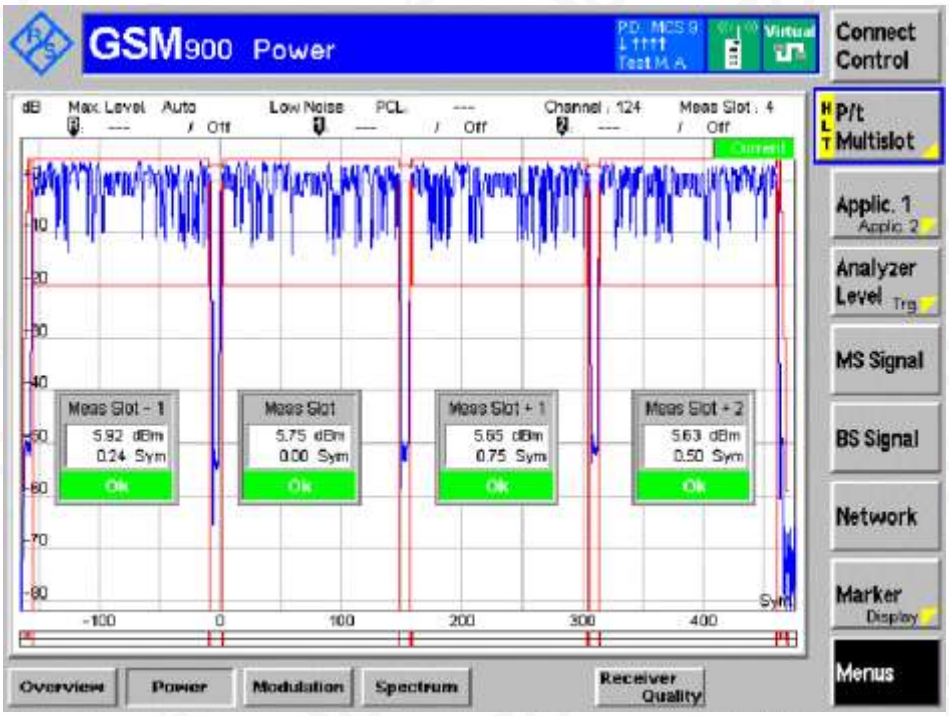
Channel LCH PCL 19



Channel MCH PCL 19

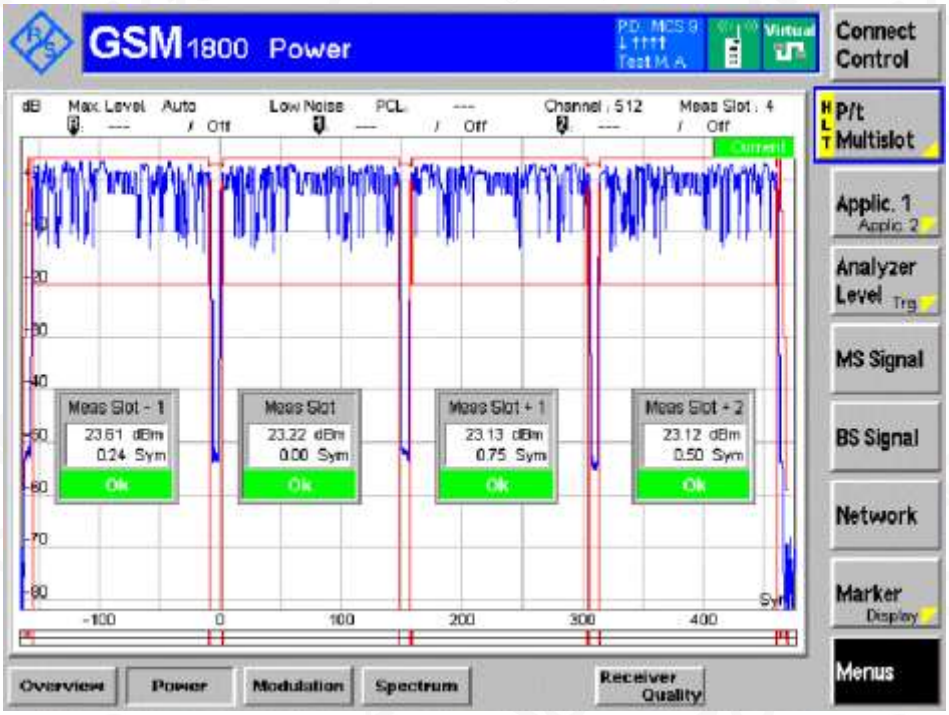


Channel HCH PCL 19

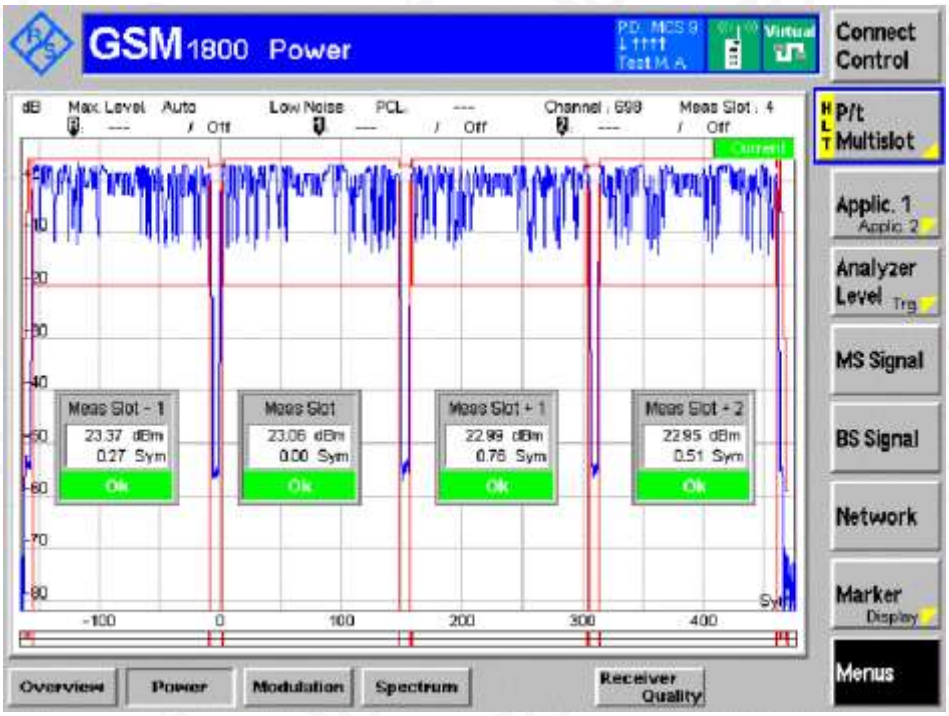


DCS1800 TN,VN

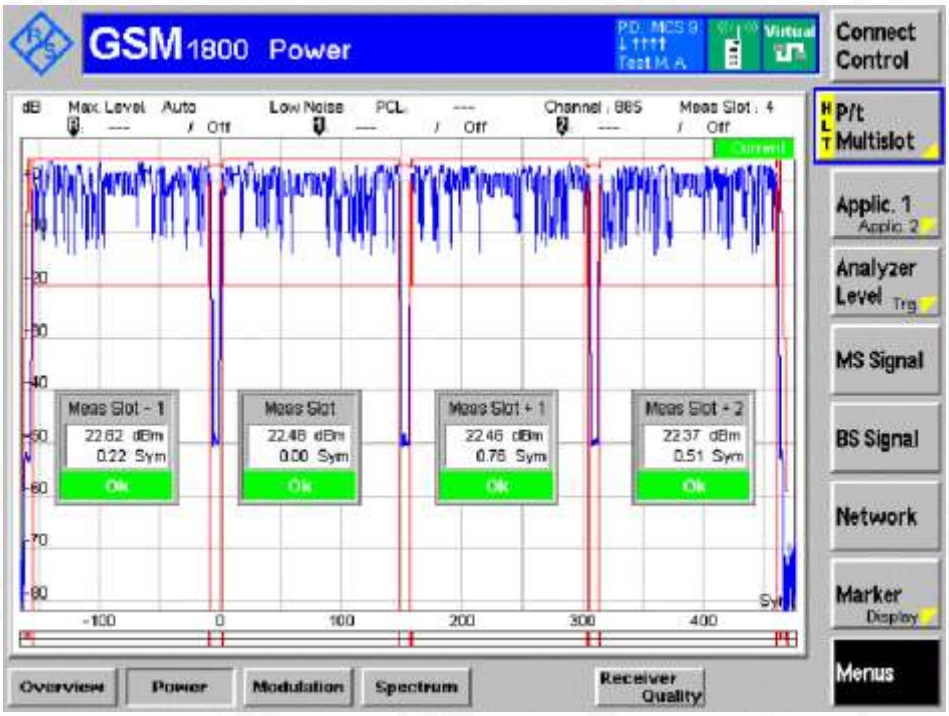
Channel LCH PCL 2



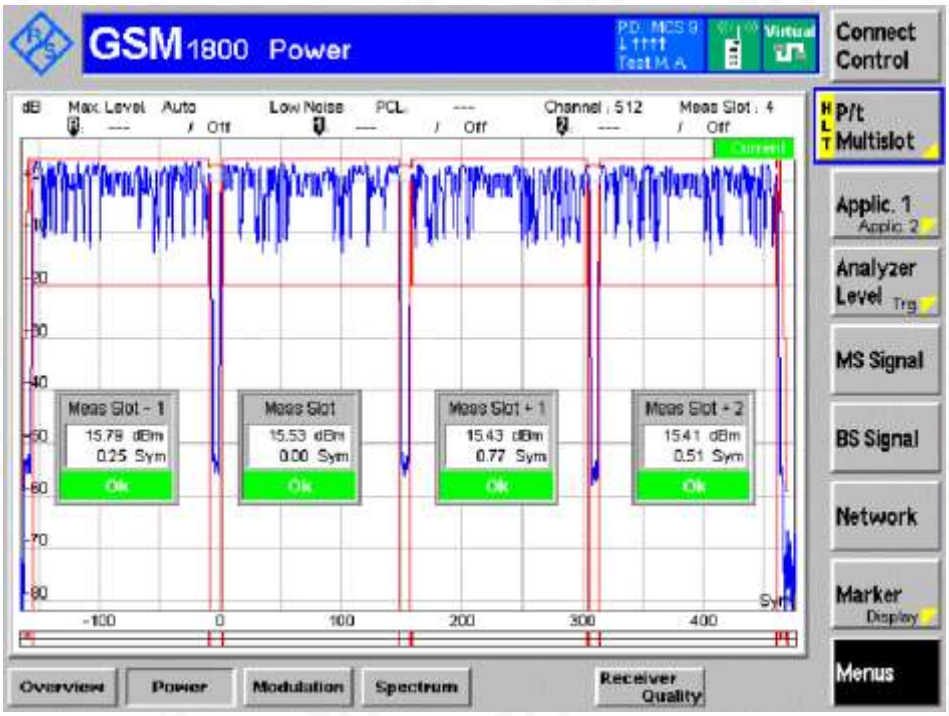
Channel MCH PCL 2



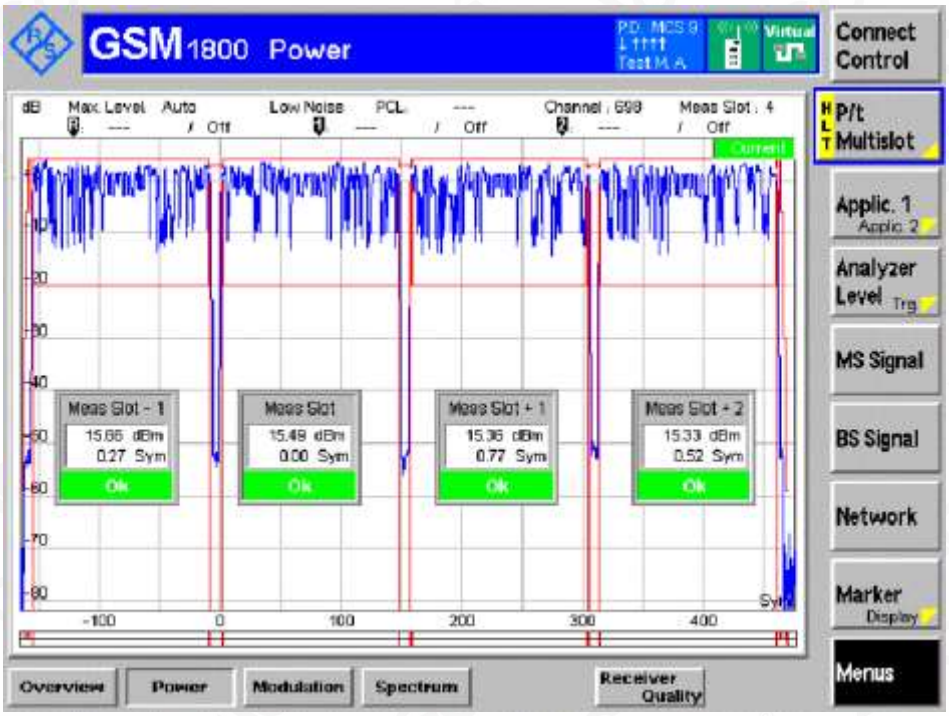
Channel HCH PCL 2



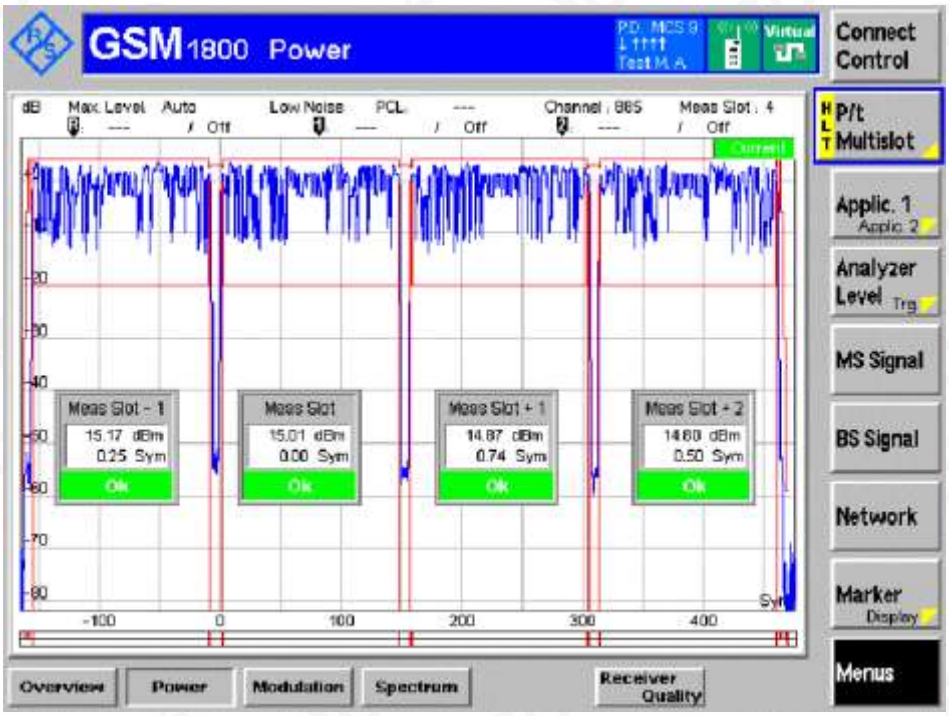
Channel LCH PCL 8



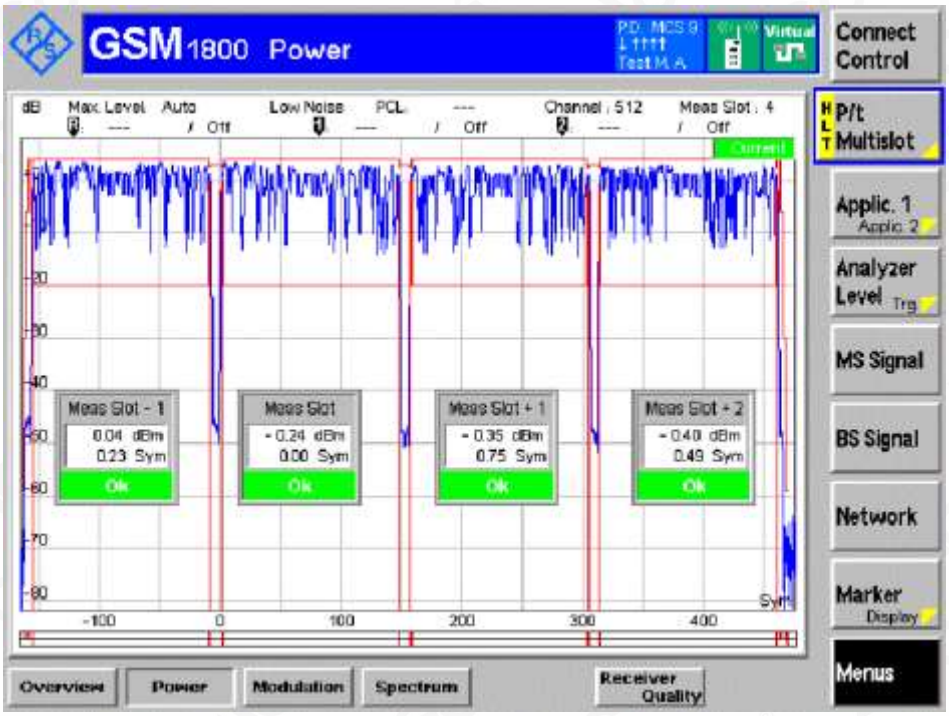
Channel MCH PCL 8



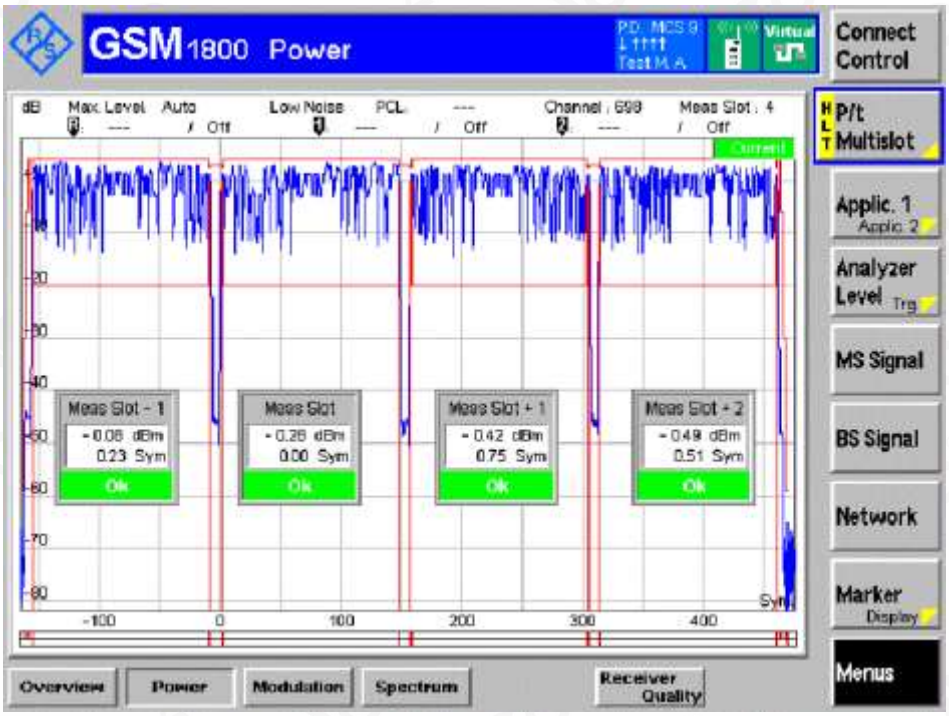
Channel HCH PCL 8



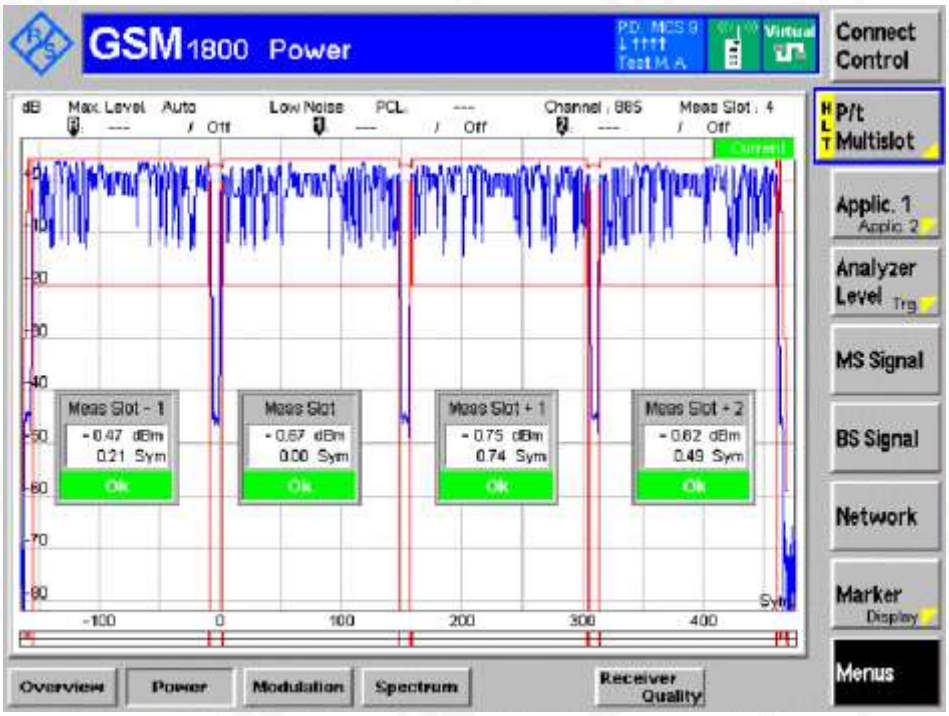
Channel LCH PCL 15



Channel MCH PCL 15



Channel HCH PCL 15



Appendix N. Output RF spectrum in EGPRS configuration

Note: All the modes had been tested, but only the worst data recorded in the report.

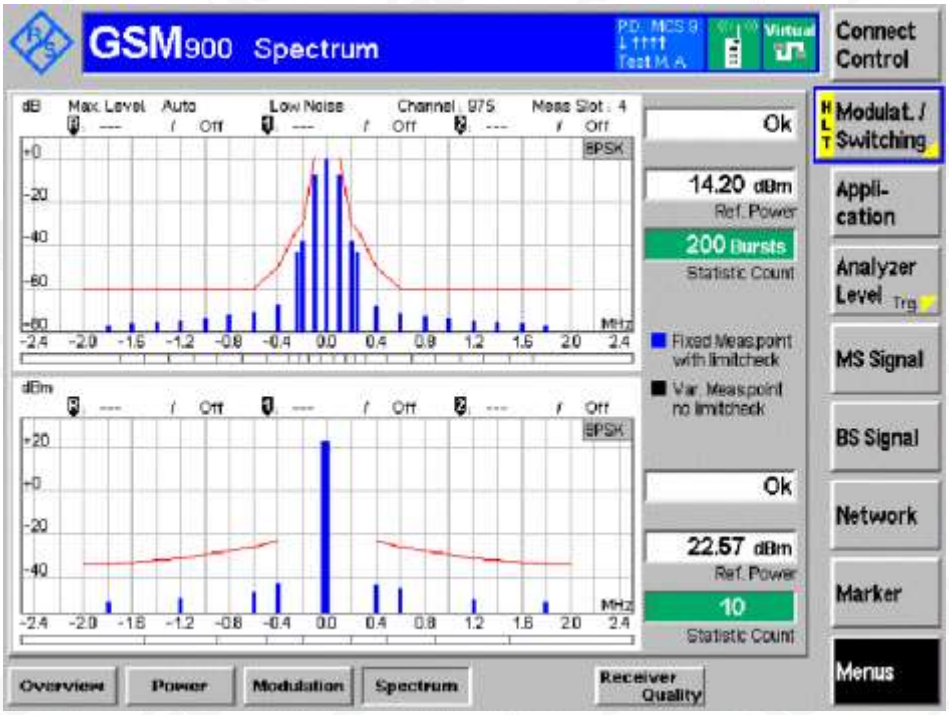
Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
GSM900		LCH	MCH	HCH
TN,VN	8	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
DCS1800		LCH	MCH	HCH
TN,VN	2	PASS	PASS	PASS
	8	PASS	PASS	PASS
	15	PASS	PASS	PASS

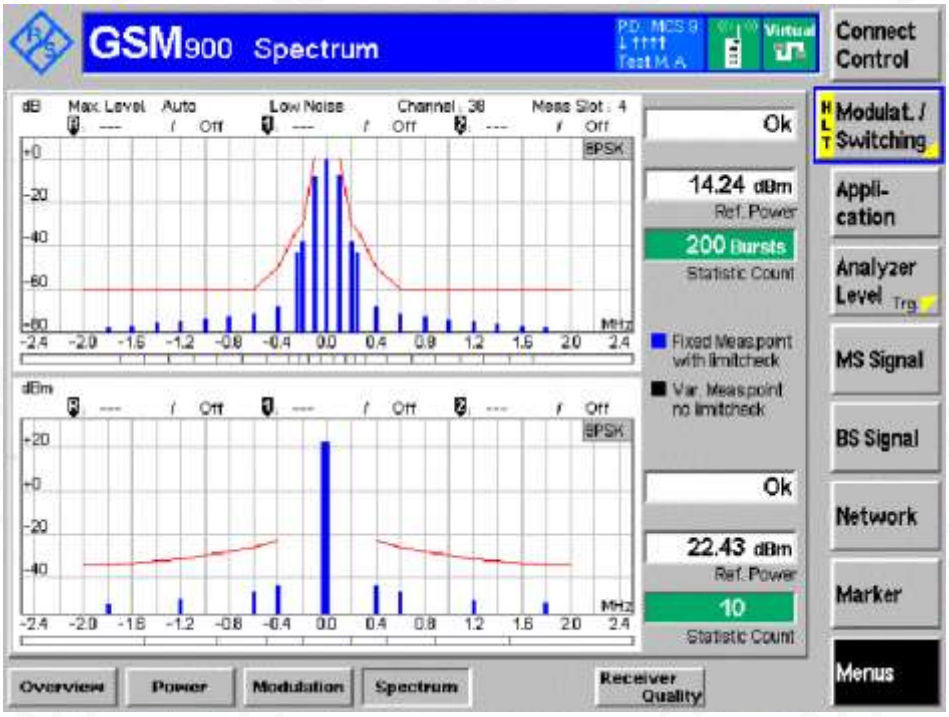
Graphs of output RF spectrum in EGPRS multislot configuration

GSM 900 TN,VN

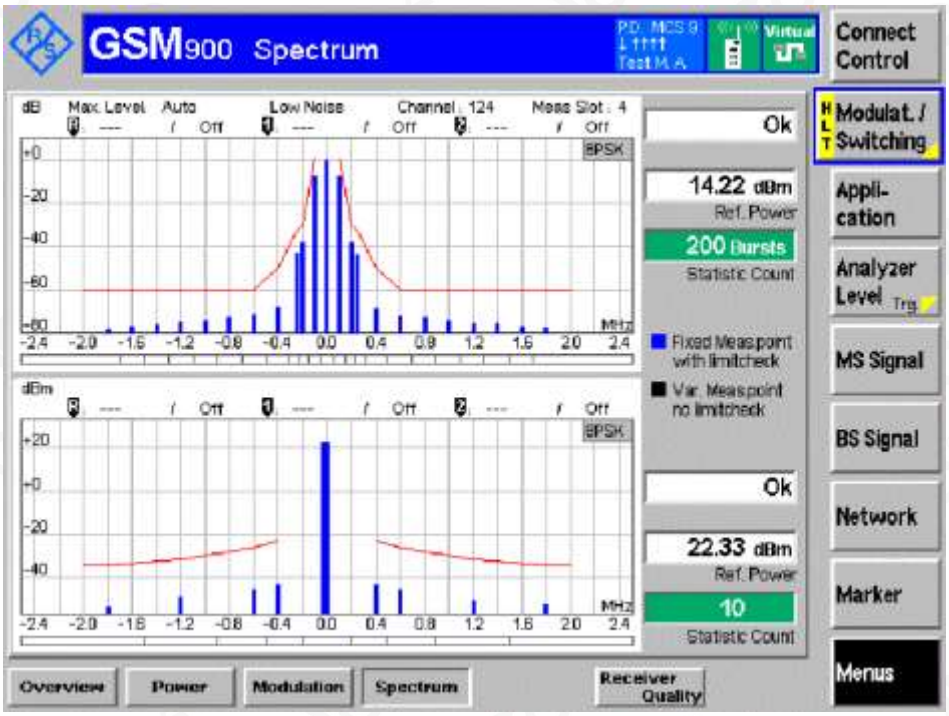
Channel LCH PCL 8



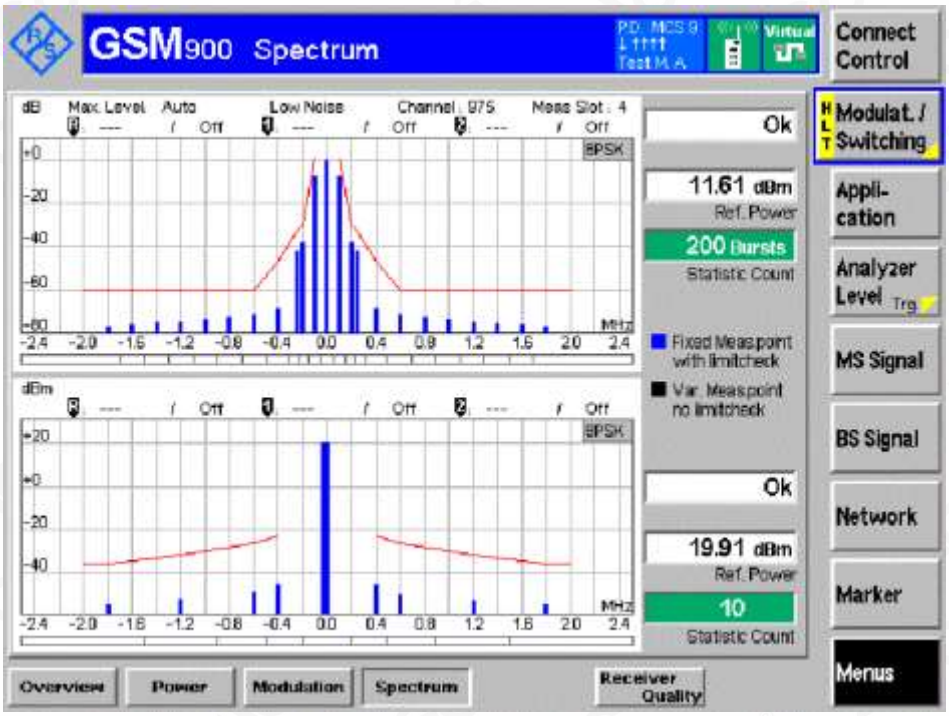
Channel MCH PCL 8



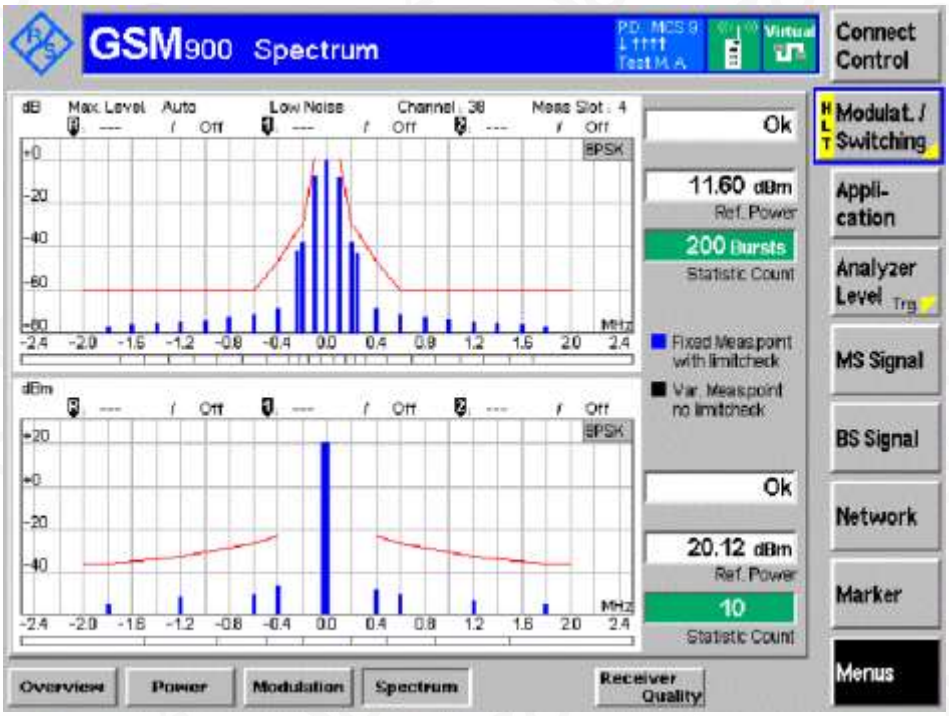
Channel HCH PCL 8



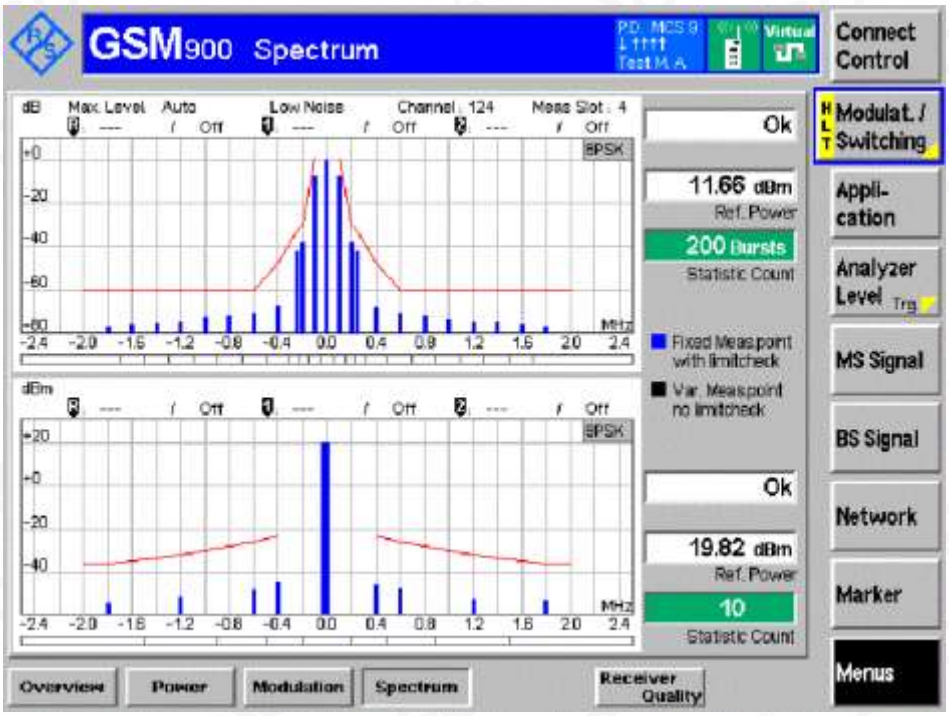
Channel LCH PCL 12



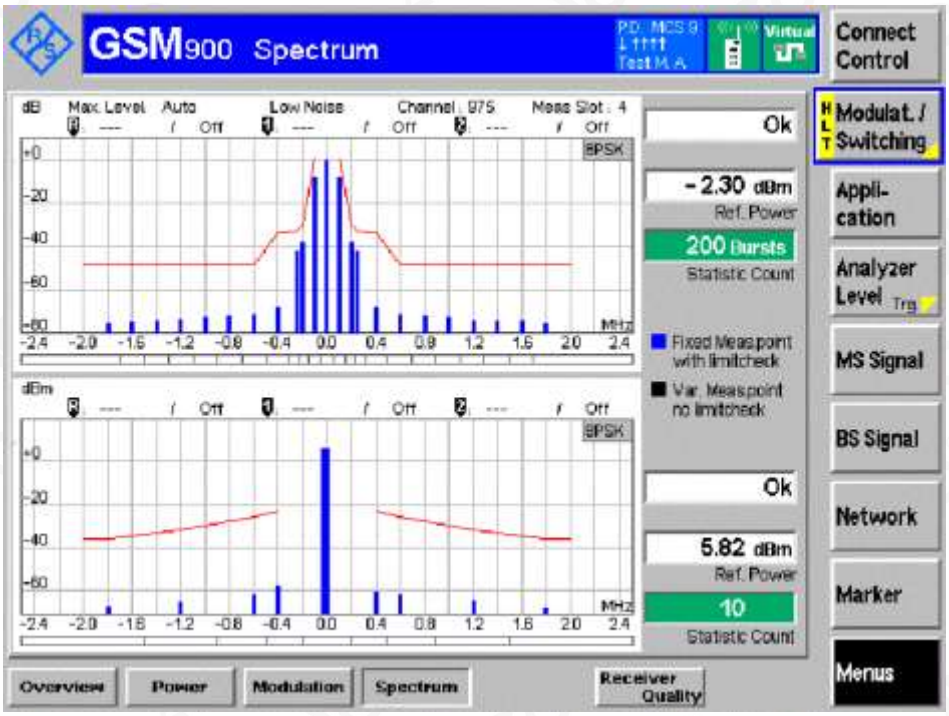
Channel MCH PCL 12



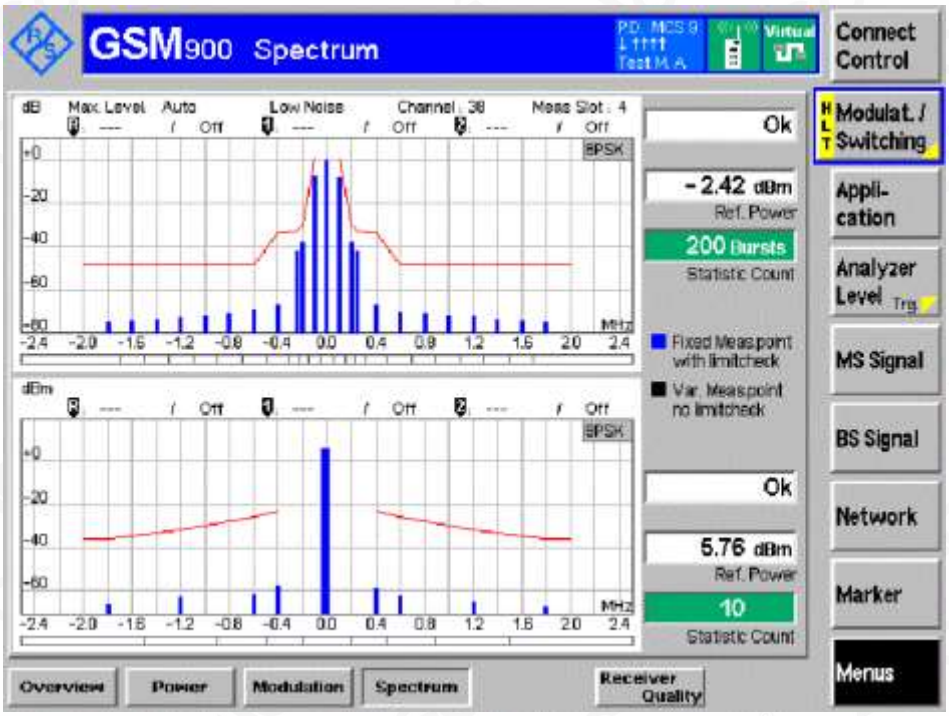
Channel HCH PCL 12



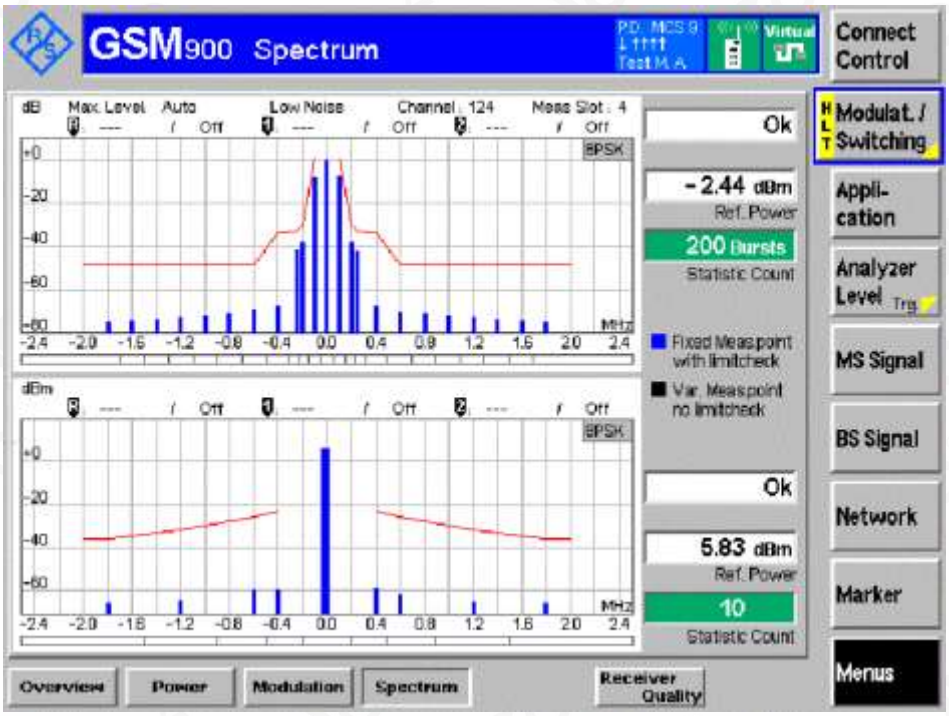
Channel LCH PCL 19



Channel MCH PCL 19

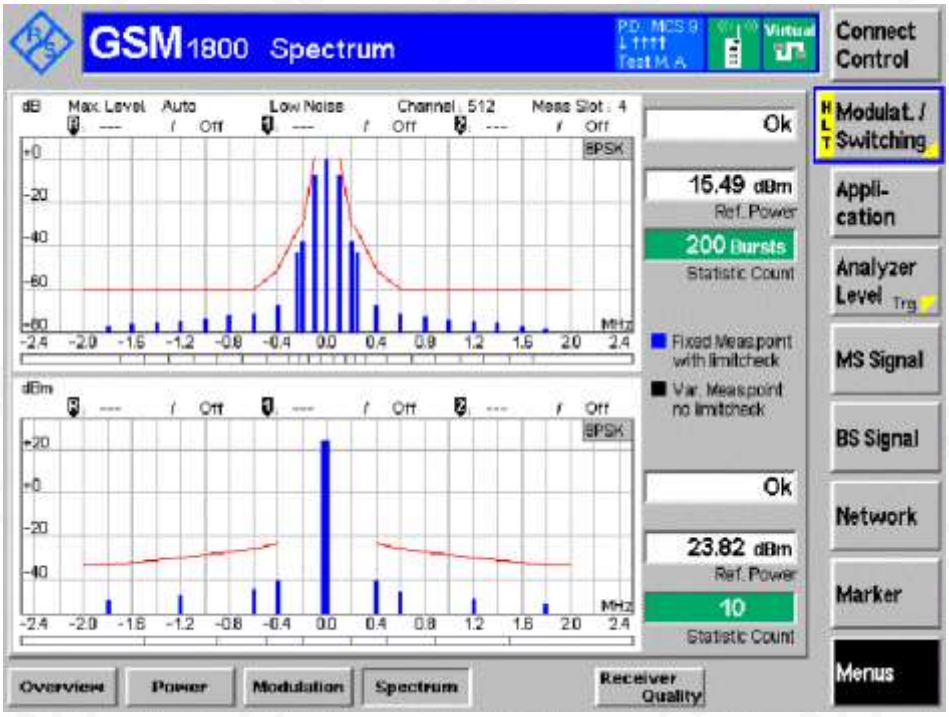


Channel HCH PCL 19

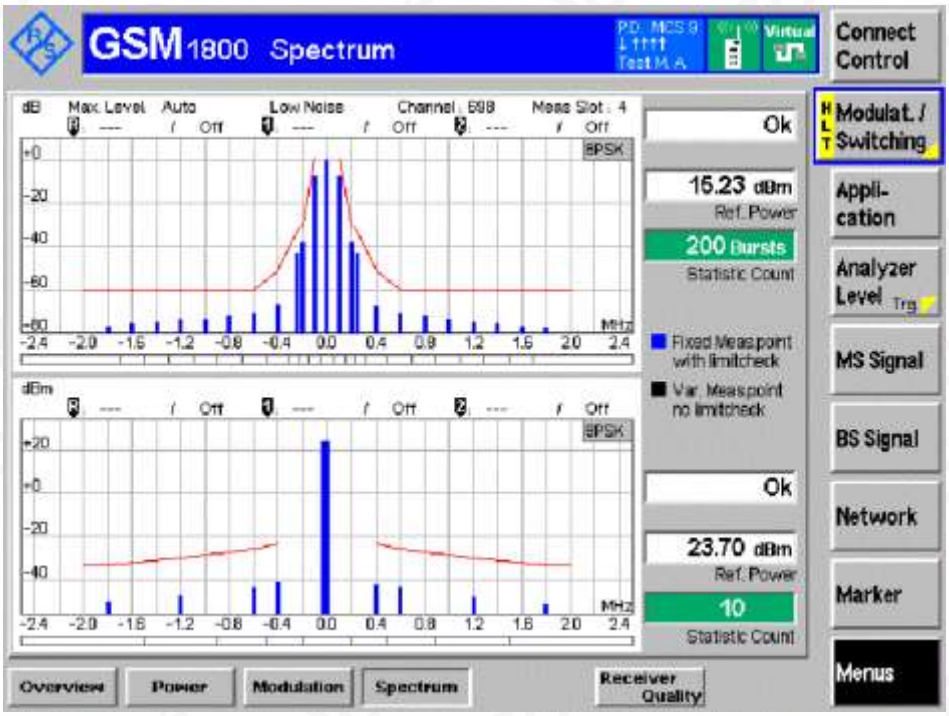


DCS1800 TN,VN

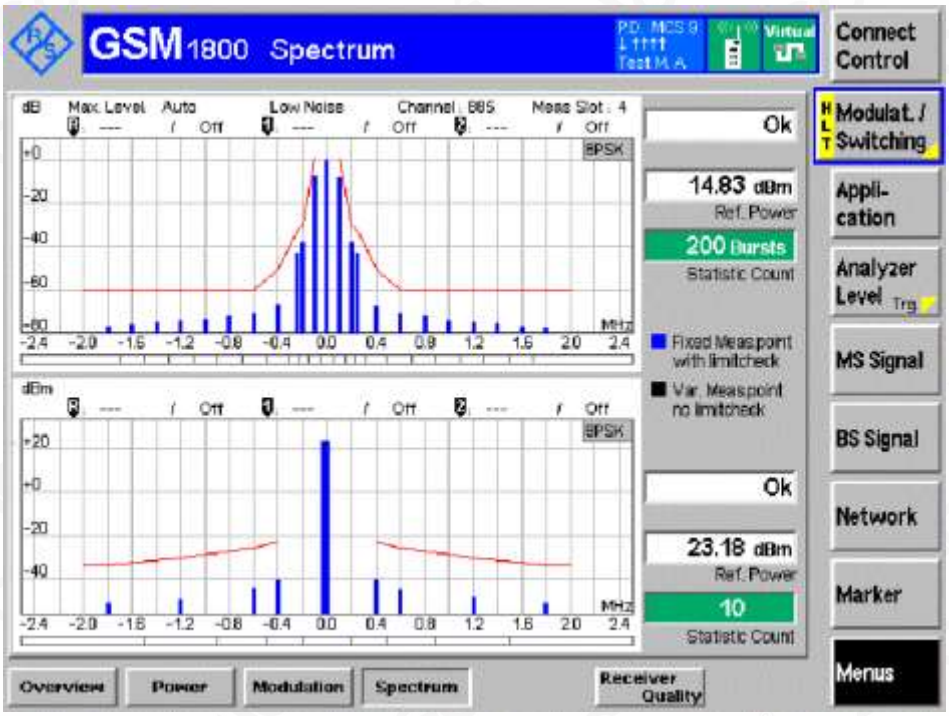
Channel LCH PCL 2



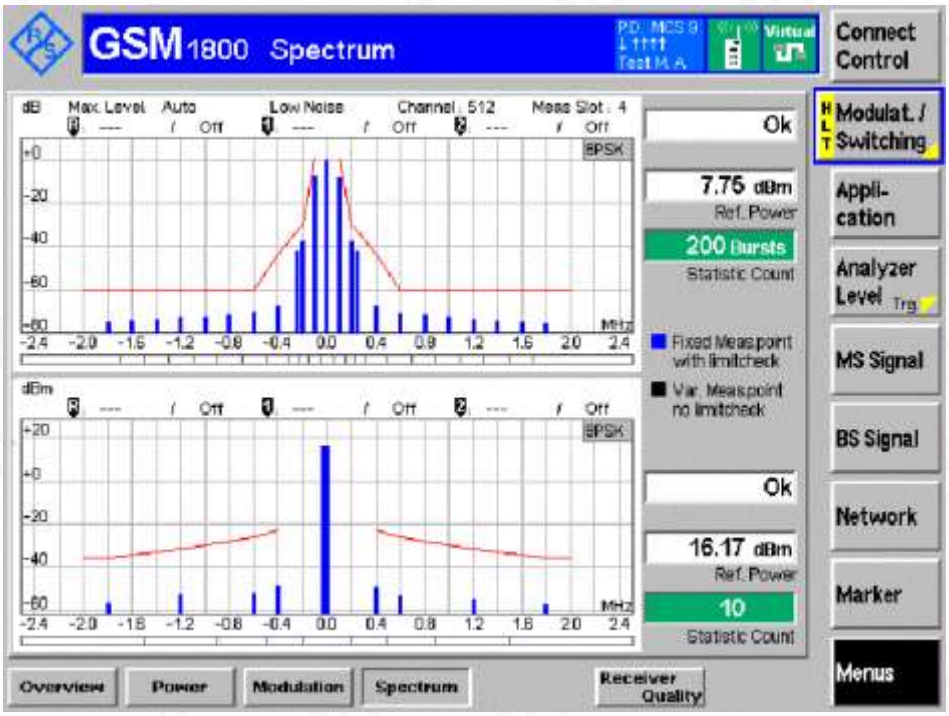
Channel MCH PCL 2



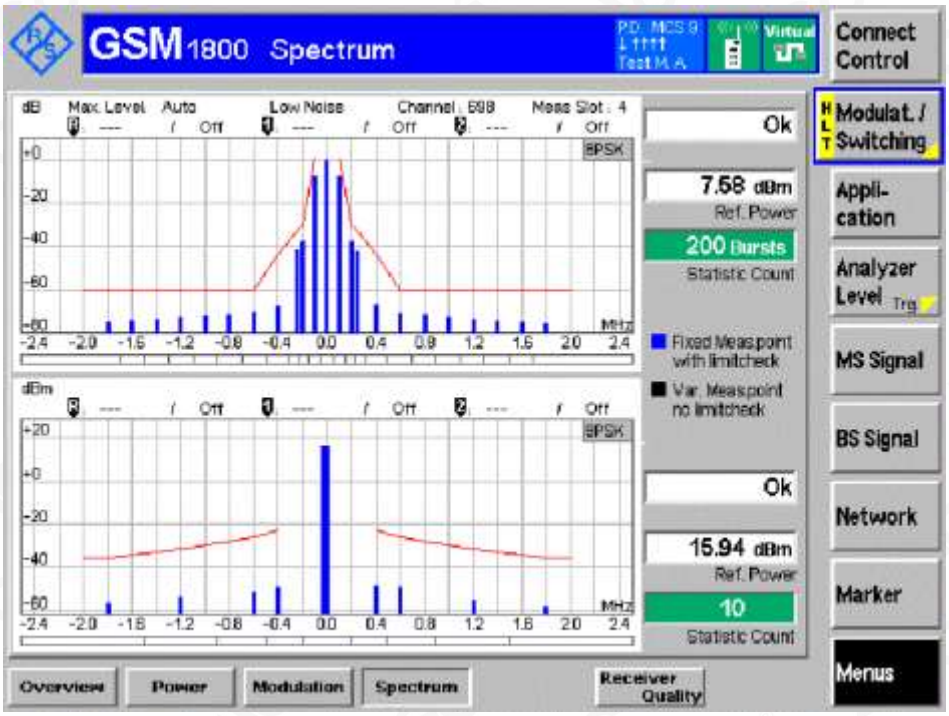
Channel HCH PCL 2



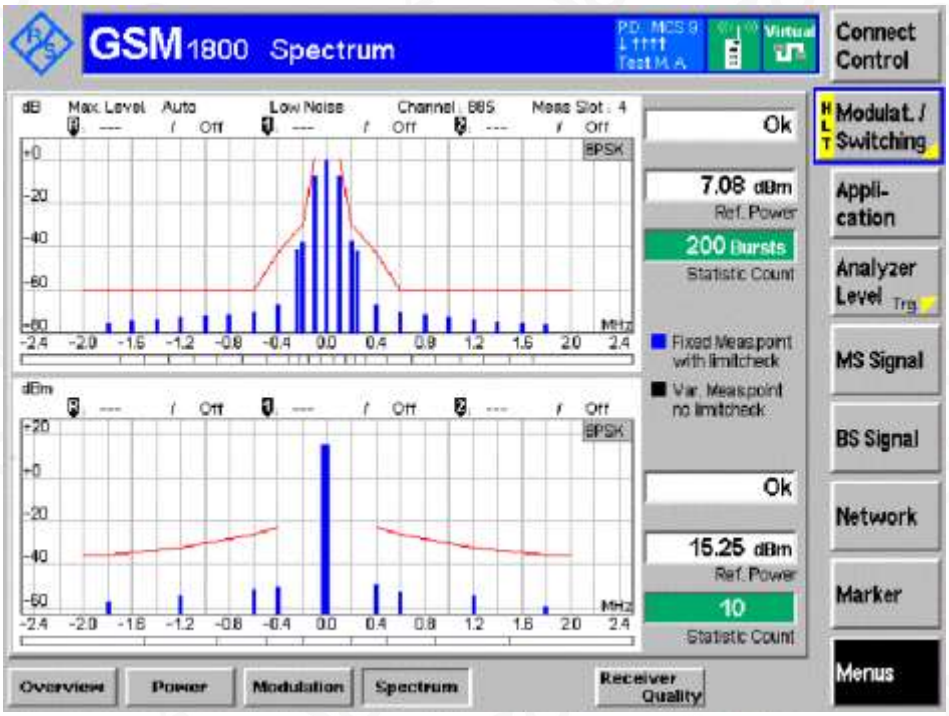
Channel LCH PCL 8



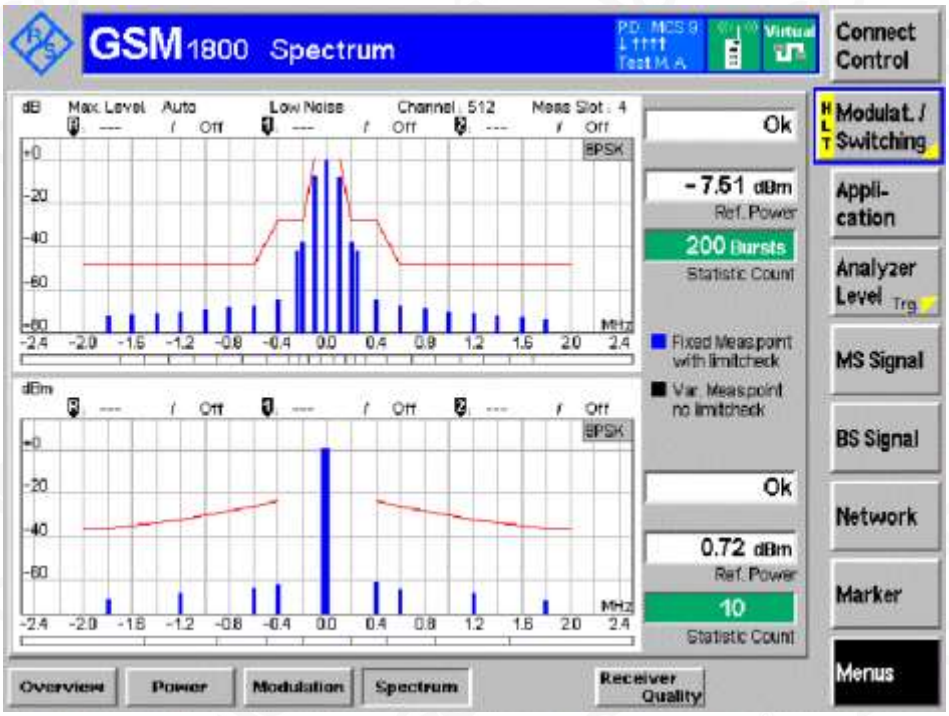
Channel MCH PCL 8



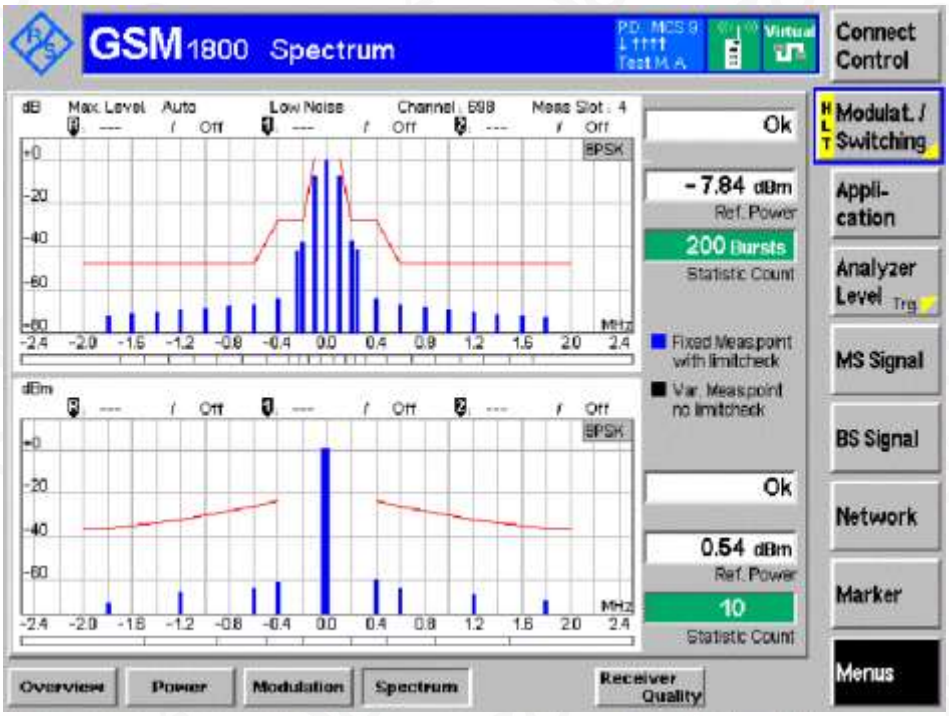
Channel HCH PCL 8



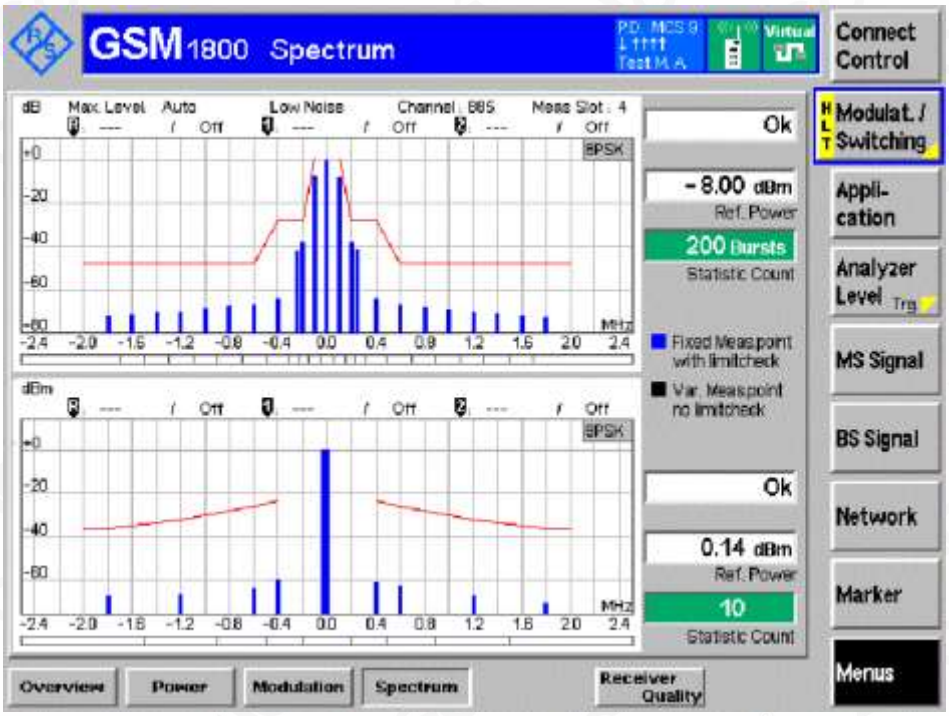
Channel LCH PCL 15



Channel MCH PCL 15



Channel HCH PCL 15



Appendix O. Receiver Blocking and spurious response in EGPRS configuration

GSM900

FREQUENCY	Measurement Result	
	GSM900	
	Small MS	
	Interference Level in dBµVemf()	Result
FR +/- 600 kHz to FR +/- 800 kHz	70	PASS
FR +/- 800 kHz to FR +/- 1.6 MHz	70	PASS
FR +/- 1.6 MHz to FR +/- 3 MHz	80	PASS
915 MHz to FR - 3 MHz	90	PASS
FR + 3 MHz to 980 MHz	90	PASS
835 MHz to <915 MHz	113	PASS
>980 MHz to 1000 MHz	113	PASS
100 kHz to <835 MHz	113	PASS
>1000 MHz to 12.75 GHz	113	PASS

DCS1800

FREQUENCY	Measurement Result	
	DCS1800	
	Small MS	
	Interference Level in dBµVemf()	Result
FR +/- 600 kHz to FR +/- 800 kHz	70	PASS
FR +/- 800 kHz to FR +/- 1.6 MHz	70	PASS
FR +/- 1.6 MHz to FR +/- 3 MHz	80	PASS
1785 MHz to FR - 3 MHz	87	PASS
FR + 3 MHz to 1920 MHz	87	PASS
100 kHz to 1705 MHz	113	PASS
>1705 MHz to <1785 MHz	101	PASS
>1920 MHz to 1980 MHz	101	PASS
>1980 MHz to 12.75 GHz	113	PASS

Appendix P .AM suppression - speech channels

GSM900

Channel	Propagation conditions	Type of measurement	Test limit error rate %	Minimum No. of max-samples	Result	
TCH/FS Class II	Static	RBER	2.439	8200	0.632%	Pass

GSM1800

Channel	Propagation conditions	Type of measurement	Test limit error rate %	Minimum No. of max-samples	Result	
TCH/FS Class II	Static	RBER	2.439	8200	0.812%	Pass

Appendix Q. Intermodulation rejection - EGPRS

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

	Intermodulation Test Signal Levels	Small MS	Result
TNVN	FIRST INTERFERER dBμVemf( )	64	Pass
	SECOND INTERFERER dBμVemf( )	63	Pass

GSM1800

	Intermodulation Test Signal Levels	Small MS	Result
TNVN	FIRST INTERFERER dBμVemf( )	68	Pass
	SECOND INTERFERER dBμVemf( )	68	Pass

Adjacent R. Adjacent channel rejection – EGPRS

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

	Channel types	Block per s	Channel types	Derived test limit	Target number of samples	Target test time /s	Target test time /hh:mm:ss	Result
TNVN	USF/MCS-1 to 9	50	0.01	0.01234	27958	559	00:09:19	Pass

GSM1800

	Channel types	Block per s	Channel types	Derived test limit	Target number of samples	Target test time /s	Target test time /hh:mm:ss	Result
TNVN	USF/MCS-1 to 9	50	0.01	0.01234	27958	559	00:09:19	Pass

Appendix S .Adjacent channel rejection - speech channels (TCH/FS)

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

	Channel	Interference at	Type of Measurement	Test limit error rate %	Minimum No. of samples	Result
TNVN	TCH/FS class Ib class II	200 kHz	FER RBER RBER	6.742*α 0.420/α 8.333	8 900 1 000 000 600 000	Pass
	TCH/FS class Ib class II	400 kHz	FER RBER RBER	11.461*α 0.756/α 9.167	8 900 1 000 000 600 000	Pass

GSM1800

	Channel	Interference at	Type of Measurement	Test limit error rate %	Minimum No. of samples	Result
TNVN	TCH/FS class Ib class II	200 kHz	FER RBER RBER	3.371*α 0.270/α 8.333	17 800 2 000 000 1 200 000	Pass
	TCH/FS class Ib class II	400 kHz	FER RBER RBER	5.714*α 0.483/α 9.167	10 500 1 200 000 720 000	Pass

Appendix T. Reference sensitivity - TCH/FS

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

	Channels	Propagation conditions TUhigh		Propagation conditions RA		Propagation conditions HT		Static conditions		Result
		Test limit Error rate %	Minimum No. of samples	Test limit error rate %	Minimum No. of samples	Test limit error rate %	Minimum No. of samples	Test limit error rate %	Minimum No. of samples	
TNVN	TCH/FS FER class Ib(RBER) class II(RBER)	1 0.06 4.1	8 900 1 000000 120 000	6.55	24 000	5.49	60 000	1 0.07 6.58	164 000 20000000 8 200	Pass

GSM1800

	Channels	Propagation conditions TUhigh		Propagation conditions RA		Propagation conditions HT		Static conditions		Result
		Test limit Error rate %	Minimum No. of samples	Test limit error rate %	Minimum No. of samples	Test limit error rate %	Minimum No. of samples	Test limit error rate %	Minimum No. of samples	
TNVN	TCH/FS FER class Ib(RBER) class II(RBER)	1 0.06 5.44	13 400 1500000 60 000	5.75	24 000	5.64	30 000	1 0.07 6.58	164 000 20000000 8 200	Pass

Appendix U. Reference sensitivity - FACCH/F

GSM900

Channel	Propagation	Type of Measurement	Test limit error rate %	Result	
FACCH/F	TUhigh	FER	7.728	3.246%	Pass

GSM1800

Channel	Propagation	Type of Measurement	Test limit error rate %	Result	
FACCH/F	TUhigh	FER	8.064	3.128%	Pass

Appendix V. Minimum Input level for Reference Performance – GPRS

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

	Type of channel	Propagation conditions							
		static	TUhigh (no FH)	TUhigh (ideal FH)	RA (no FH)	HT (no FH)	BLER	Result	
GSM 900									
TNVN	PDTCH/CS-1 dBm	-104	-104	-104	-104	-103	10 %	0.1 %	PASS
	PDTCH/CS-2 dBm	-104	-100	-101	-101	-99	10 %	0.1 %	PASS
	PDTCH/CS-3 dBm	-104	-98	-99	-98	-96	10 %	0.1 %	PASS
	PDTCH/CS-4 dBm	-101	-90	-90	--		10 %	0.1 %	PASS
	USF/CS-1 dBm	< -104	<-101	<-103	<-103	<-101	1 %	0.1 %	PASS
	USF/CS-2to 4 dBm	< -104	<-103	<-104	<-104	<-104	1 %	0.1 %	PASS

GSM1800

	Type of channel	Propagation conditions							
		static	TUhigh (no FH)	TUhigh (ideal FH)	RA (no FH)	HT (no FH)	BLER	Result	
	GSM 1800								
TNVN	PDTCH/CS-1 dBm	-104	-104	-104	-104	-109	10 %	0.1 %	PASS
	PDTCH/CS-2 dBm	-104	-100	-100	-101	-99	10 %	0.1 %	PASS
	PDTCH/CS-3 dBm	-104	-98	-98	-98	-94	10 %	0.1 %	PASS
	PDTCH/CS-4 dBm	-101	-88	-88	--		10 %	0.1 %	PASS
	USF/CS-1 dBm	< -104	<-103	<-103	<-103	<-101	1 %	0.1 %	PASS
	USF/CS-2to 4 dBm	< -104	<-104	<-104	<-104	<-103	1 %	0.1 %	PASS

Appendix W. Minimum Input level for Reference Performance – EGPRS

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

	Type of Channel	Propagation conditions					Result
		static	TUhigh (no FH)	TUhigh (ideal FH)	RA (no FH)	HT (no FH)	
TNVN	USF/MCS-5 to 9 dBm	-102	-97.5	-99	-100	-99	Pass

GSM1800

	Type of Channel	Propagation conditions					Result
		static	TUhigh (no FH)	TUhigh (ideal FH)	RA (no FH)	HT (no FH)	
TNVN	USF/MCS-5 to 9 dBm	-102	-97.5	-99	-100	-99	Pass

Appendix X. Radiated spurious emissions - MS in idle mode

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

Radiated spurious emissions	GSM900 VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
30MHz~880MHz	10k	-57	-70.14	PASS
880MHz~915MHz	10k	-59	-71.07	PASS
915MHz~1000MHz	100k	-57	-69.76	PASS
1GHz~1710MHz	100k	-47	-63.42	PASS
1710MHz~1785MHz	100k	-53	-67.76	PASS
1785MHz~4GHz	100k	-47	-64.73	PASS

GSM1800

Radiated spurious emissions	GSM1800 VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
30MHz~880MHz	10k	-57	-70.96	PASS
880MHz~915MHz	10k	-59	-70.15	PASS
915MHz~1000MHz	100k	-57	-68.84	PASS
1GHz~1710MHz	100k	-47	-64.56	PASS
1710MHz~1785MHz	100k	-53	-68.66	PASS
1785MHz~4GHz	100k	-47	-65.52	PASS

Appendix Y Intermodulation rejection - speech channels

Note: All the modes had been tested, but only the worst data recorded in the report.

GSM900

TNVN	Wanted Signal dBuVemf()	15	Pass
	First Interferer dBuVemf()	64	Pass
	Second Interferer dBuVemf()	63	Pass

GSM1800

	Intermodulation Test Signal Levels		Result
TNVN	Wanted Signal dBuVemf()	15	Pass
	First Interferer dBuVemf()	68	Pass
	Second Interferer dBuVemf()	68	Pass

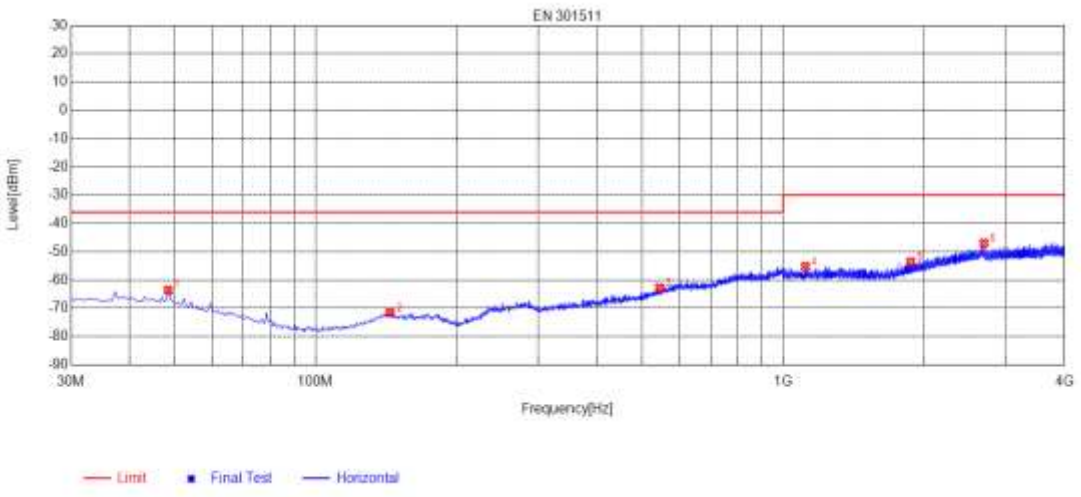
APPENDIX Z. RADIATED SPURIOUS EMISSIONS TEST RESULT

All test modes were carried out for all operation modes

The (middle channel) was showed as the follow:

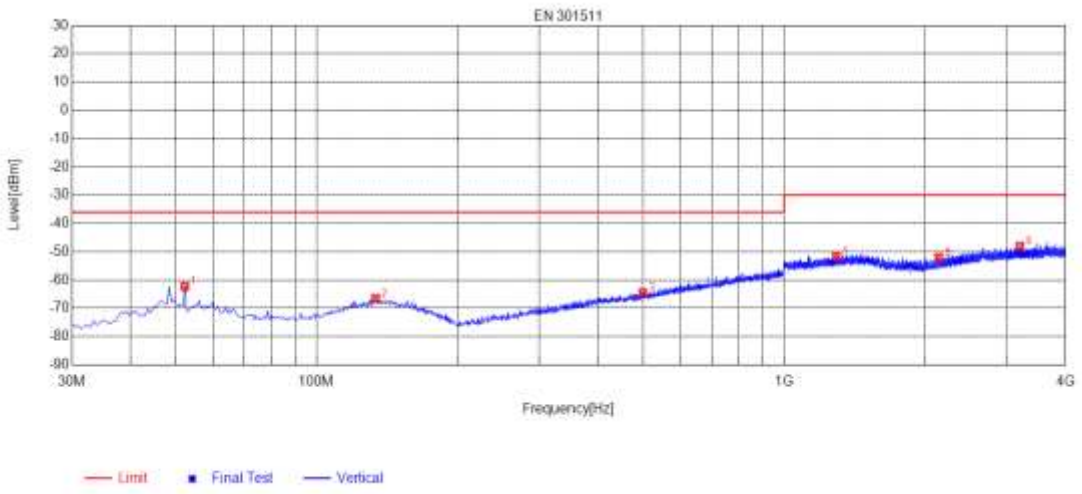
Note: The filter has been used in this test.

RADIATED SPURIOUS EMISSIONS GSM 900– HORIZONTAL



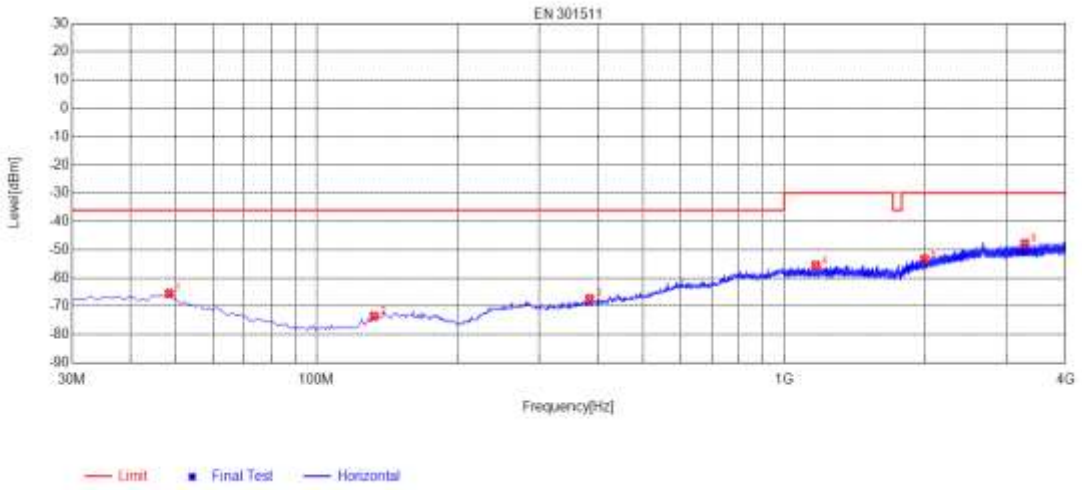
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	48.4300	-97.48	-63.61	-36.00	27.61	33.87	277	Horizontal
2	144.4600	-100.91	-71.55	-36.00	35.55	29.36	85	Horizontal
3	544.1000	-100.68	-62.80	-36.00	26.80	37.88	360	Horizontal
4	1116.4116	-51.25	-55.27	-30.00	25.27	-4.02	127	Horizontal
5	1875.4875	-53.18	-53.58	-30.00	23.58	-0.40	210	Horizontal
6	2689.7690	-51.77	-47.01	-30.00	17.01	4.76	294	Horizontal

RADIATED SPURIOUS EMISSIONS GSM 900– VERTICAL



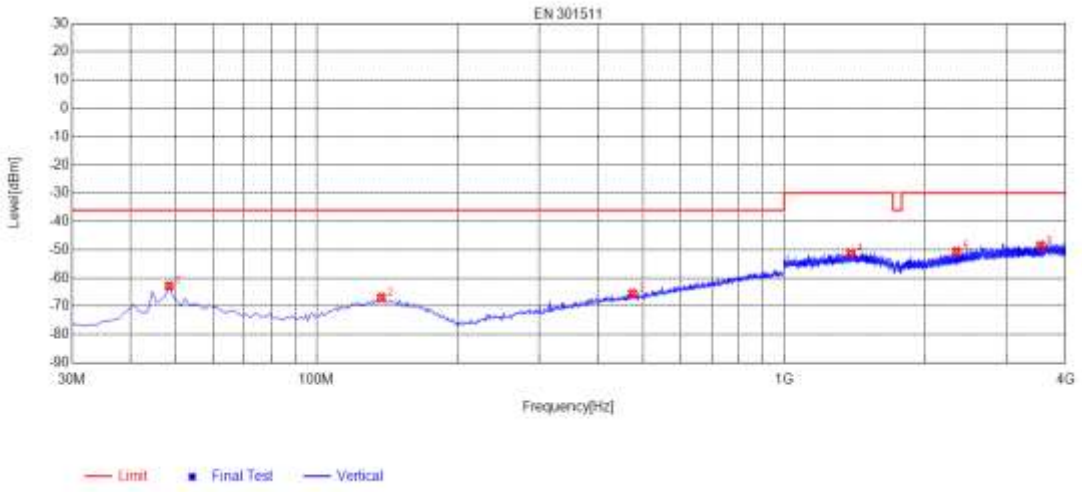
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	52.3100	-92.45	-62.28	-36.00	26.28	30.17	23	Vertical
2	133.7900	-100.49	-66.52	-36.00	30.52	33.97	175	Vertical
3	498.9950	-100.92	-64.54	-36.00	28.54	36.38	200	Vertical
4	1293.4293	-52.43	-51.64	-30.00	21.64	0.79	158	Vertical
5	2144.0144	-53.41	-52.09	-30.00	22.09	1.32	317	Vertical
6	3195.0195	-53.62	-48.08	-30.00	18.08	5.54	0	Vertical

RADIATED SPURIOUS EMISSIONS GSM 1800– HORIZONTAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	48.4300	-99.32	-65.45	-36.00	29.45	33.87	139	Horizontal
2	132.8200	-101.49	-73.50	-36.00	37.50	27.99	53	Horizontal
3	384.0500	-101.41	-67.38	-36.00	31.38	34.03	360	Horizontal
4	1169.2169	-51.61	-55.51	-30.00	25.51	-3.90	61	Horizontal
5	1997.2997	-53.84	-53.33	-30.00	23.33	0.51	165	Horizontal
6	3274.5275	-53.59	-47.81	-30.00	17.81	5.78	190	Horizontal

RADIATED SPURIOUS EMISSIONS GSM 1800– VERTICAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	48.4300	-92.40	-62.85	-36.00	26.85	29.55	0	Vertical
2	137.6700	-101.12	-66.89	-36.00	30.89	34.23	265	Vertical
3	474.2600	-101.54	-65.51	-36.00	29.51	36.03	23	Vertical
4	1388.2388	-52.64	-51.22	-30.00	21.22	1.42	239	Vertical
5	2337.8338	-53.24	-50.69	-30.00	20.69	2.55	170	Vertical
6	3540.6541	-54.69	-48.53	-30.00	18.53	6.16	161	Vertical

APPENDIX AA: PHOTOGRAPHS OF TEST SETUP

RADIATED SPURIOUS EMISSION TEST SETUP

RADIATED SPURIOUS EMISSION-ABOVE 1G TEST SETUP

----END OF REPORT----