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# RF Test Report

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Report No.: AGC00552191002EE03

**PRODUCT DESIGNATION** : Smart Phone  
**BRAND NAME** : CUBOT  
**MODEL NAME** : X20  
**APPLICANT** : Shenzhen Huafurui Technology Co., Ltd.  
**DATE OF ISSUE** : Oct. 23, 2019  
**STANDARD(S)** : EN 301 511 V12.5.1: 2017-03  
**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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### Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct. 23, 2019	Valid	Initial release



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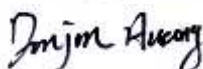
## 1. TEST REPORT CERTIFICATION

<b>Applicant</b>	Shenzhen Huafurui Technology Co., Ltd.
<b>Address</b>	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
<b>Manufacturer</b>	Shenzhen Huafurui Technology Co., Ltd.
<b>Address</b>	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
<b>Factory Name</b>	Shenzhen Huafurui Technology Co., Ltd.
<b>Address</b>	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
<b>Product Designation</b>	Smart Phone
<b>Brand Name</b>	CUBOT
<b>Test Model</b>	X20
<b>Date of test</b>	Oct. 14, 2019 to Oct. 22, 2019
<b>Deviation</b>	None
<b>Condition of Test Sample</b>	Normal
<b>Report Template</b>	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



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(Project Engineer)

Oct. 22, 2019


Reviewed By



Max Zhang  
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Oct. 23, 2019

Approved By



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Oct. 23, 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
Product Type	GSM
Hardware Version	E965_MAIN_PCB_V1.0
Software Version	CUBOT_X20_9071C-1_V01_20190920
Frequency Bands	<input checked="" type="checkbox"/> GSM 900 <input checked="" type="checkbox"/> DCS 1800 (EU Frequency) <input checked="" type="checkbox"/> GSM 850 <input checked="" type="checkbox"/> PCS1900 (none EU Frequency)
Modulation Mode	GMSK, 8PSK
Antenna Type	Hardware antenna
Antenna Gain	GSM900:0.72dBi, DCS1800:0.85dBi;
Power Class	GSM900: 4, DCS1800: 1
GSM Release Version	N/A
GPRS Class	Class 12
SIM Card Description	There are dual-SIM cards for GSM, just one for GSM/WCDMA/LTE and the other only for GSM.

#### 2.1.2. PHOTOGRAPHS OF THE EUT

Please see 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 Huafului Technology Co., Ltd.
Test Model	X20
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

<b>Test Site-1</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd
<b>Location</b>	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	July 11, 2019	July 10, 2020
4	Power Splitter 11636A	Agilent	34	Sep. 09, 2019	Sep. 08, 2020
5	Attenuator	JFW	50FHC-006-50	June 12, 2019	June 11, 2020
6	Vector Signal Generator SMU200A	R&S	104332	Sep. 09, 2019	Sep. 08, 2020
7	VECTOR ANALYZER E4440A	Agilent	MY44303916	June 12, 2019	June 11, 2020
8	MXG Vector Signal Generator N5182A	AGILENT	MY50140530	Sep. 09, 2019	Sep. 08, 2020
9	PSG Analog Signal Generator E8257D	AGILENT	MY45141029	Sep. 09, 2019	Sep. 08, 2020
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. 09, 2019	Sep. 08, 2020
13	DC Power Source	N/A	GBD-60V30A	Feb. 27, 2019	Feb. 26, 2020
14	Attenuator	JFW	50FHC-006-50	June 12, 2019	June 11, 2020
15	EMI Test Receiver ESCI	R&S	100694	June 12, 2019	June 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 ENV4200	R&S	101116	July 11, 2019	July 10, 2020



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



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#### 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,  $U_c = \pm 1 \times 10^{-5}$
- Uncertainty of total RF power, conducted,  $U_c = \pm 1.5\text{dB}$
- Uncertainty of RF power density, conducted,  $U_c = \pm 3\text{dB}$
- Uncertainty of spurious emissions, conducted,  $U_c = \pm 3\text{dB}$
- Uncertainty of spurious emissions, radiated,  $U_c = \pm 6\text{dB}$
- Uncertainty of Temperature:  $\pm 1^\circ\text{C}$
- Uncertainty of Humidity:  $\pm 5\%$
- Uncertainty of DC and low frequency voltages:  $\pm 3\%$



## 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	3 <sup>rd</sup> 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)	DC5.0V, 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°C 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

Verdict	Description
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
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	0.6	0.5	0.6	PASS
	19	0.5	0.5	0.6	PASS
When the MS is being vibrated	5	0.5	0.6	0.5	PASS
	19	0.5	0.5	0.6	PASS

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

frequency error(Hz)	Power control LEVEL	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	5	15	15	16	PASS
	19	15	12	13	PASS
When the MS is being vibrated	5	16	17	16	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	0.6	0.5	PASS
	15	0.6	0.6	0.5	PASS
When the MS is being vibrated	0	0.6	0.5	0.5	PASS
	15	0.5	0.5	0.5	PASS

Peak phase error(degree)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	1.8	1.7	1.7	PASS
	15	2.0	1.8	1.6	PASS
When the MS is being vibrated	0	2.1	1.5	1.7	PASS
	15	1.7	1.5	1.7	PASS

frequency error(Hz)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	12	18	15	PASS
	15	14	14	12	PASS
When the MS is being vibrated	0	16	11	14	PASS
	15	8	14	12	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	17	14	12	PASS
		19	14	14	15	PASS
HT100	TNVN	5	17	14	15	PASS
		19	16	14	13	PASS
TU50	TNVN	5	16	14	14	PASS
		19	12	13	16	PASS
TU3	TNVN	5	17	17	12	PASS
		19	14	15	16	PASS

### DCS1800

Fading set	Test conditions	Power control LEVEL	Result			
			DCS1800			
			ARFCN			
			LCH	MCH	HCH	Result
RA130	TNVN	0	8	13	11	PASS
		15	9	13	13	PASS
HT100	TNVN	0	9	15	14	PASS
		15	9	14	12	PASS
TU50	TNVN	0	8	12	12	PASS
		15	10	15	10	PASS
TU1.5	TNVN	0	13	15	13	PASS
		15	11	13	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	0.5	0.5	0.5	PASS
	19	0.5	0.5	0.5	PASS
When the MS is being vibrated	5	0.5	0.6	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	1.5	1.6	1.6	PASS
	19	1.5	1.5	1.5	PASS
When the MS is being vibrated	5	1.6	1.8	1.5	PASS
	19	1.5	1.6	1.5	PASS

frequency error(Hz)	Power control LEVEL	Result			
		GSM900			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	5	13	11	12	PASS
	19	11	12	12	PASS
When the MS is being vibrated	5	10	10	12	PASS
	19	15	11	12	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	0.7	0.6	0.5	PASS
When the MS is being vibrated	0	0.6	0.5	0.5	PASS
	15	0.6	0.5	0.5	PASS

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

frequency error(Hz)	Power control LEVEL	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
TN VN	0	3	8	7	PASS
	15	4	7	8	PASS
When the MS is being vibrated	0	4	8	9	PASS
	15	2	6	8	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	33.61	33.53	33.55	PASS
	12	19.99	20.08	20.08	PASS
	19	6.47	6.64	6.45	PASS

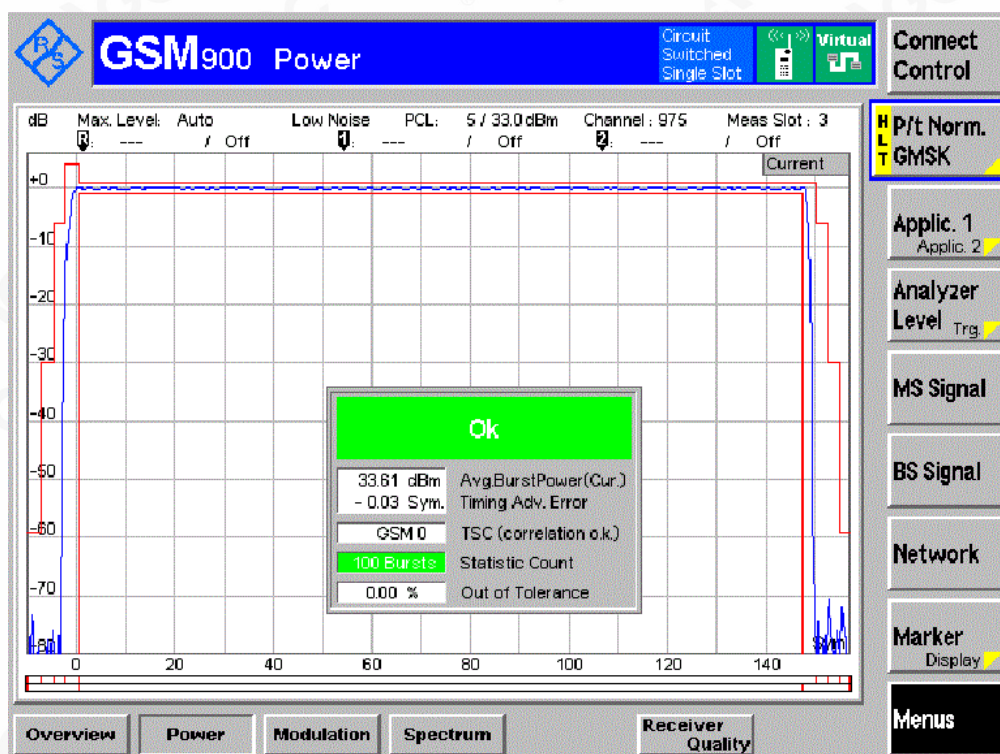
Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
DCS1800		LCH	MCH	HCH	Result
TN,VN	0	31.56	31.42	31.15	PASS
	8	15.19	15.52	15.40	PASS
	15	1.79	2.10	2.03	PASS

### B. Power VS Time

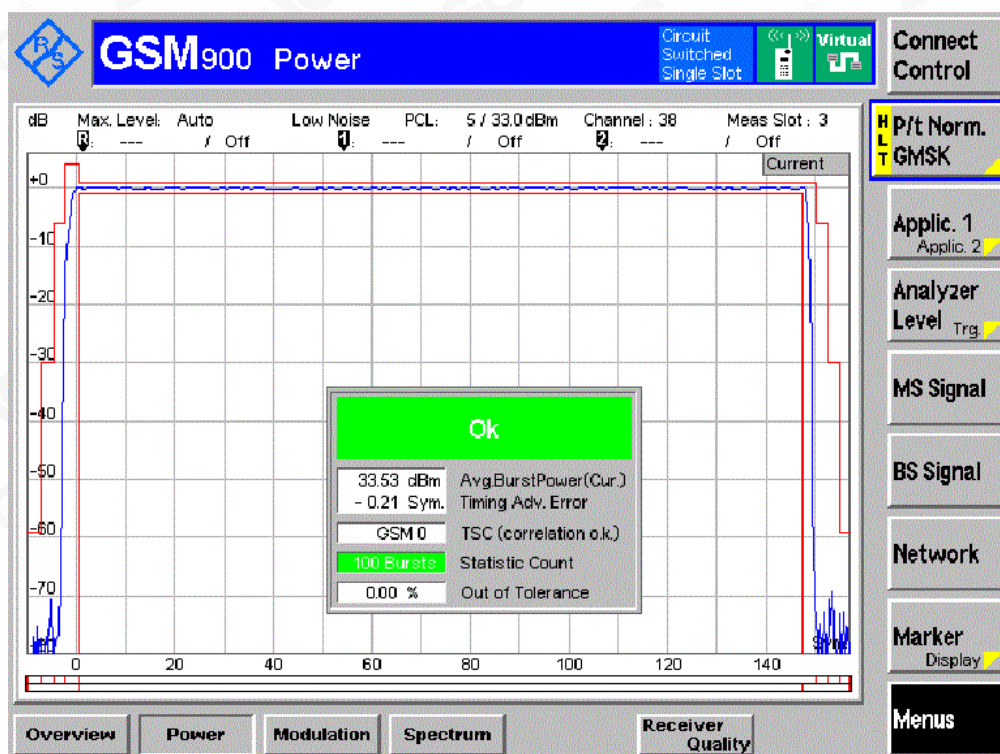
Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
GSM900	Power level	LCH	MCH	HCH
TN,VN	5	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

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

**GSM 900 TN,VN**  
**Channel LCH PCL 5**

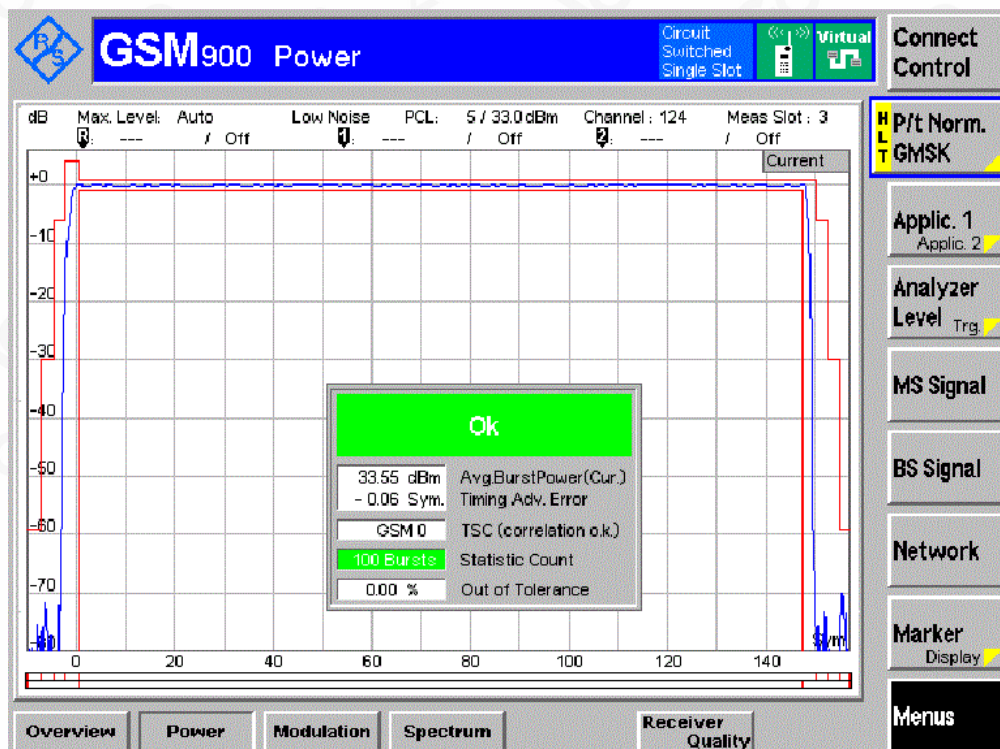


**Channel MCH PCL 5**

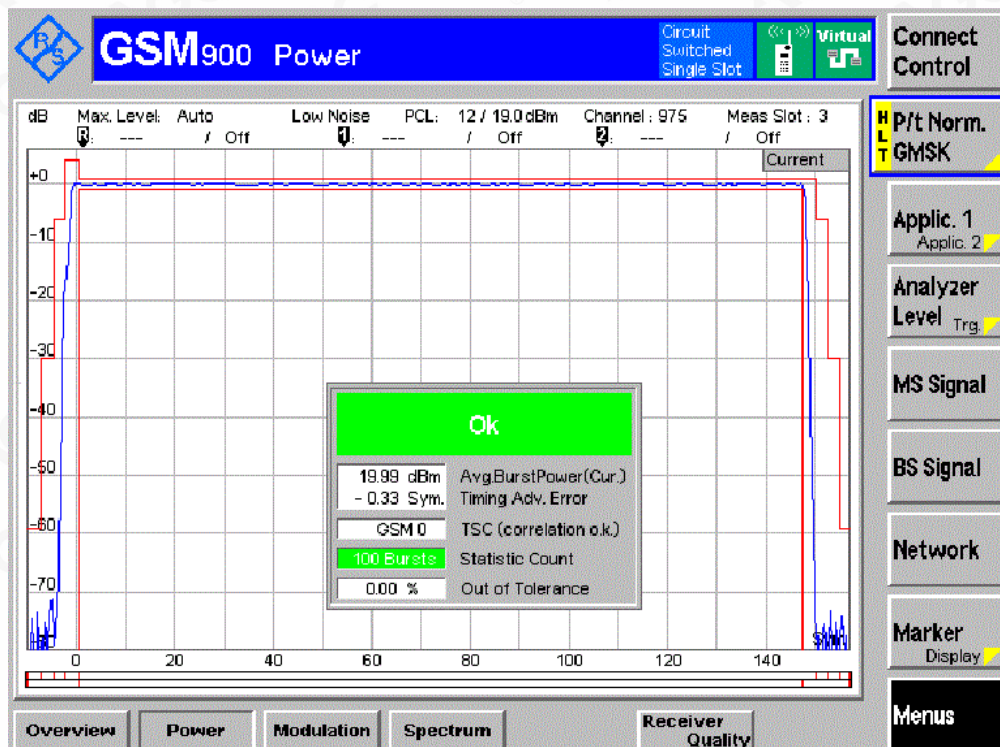




### Channel HCH PCL 5

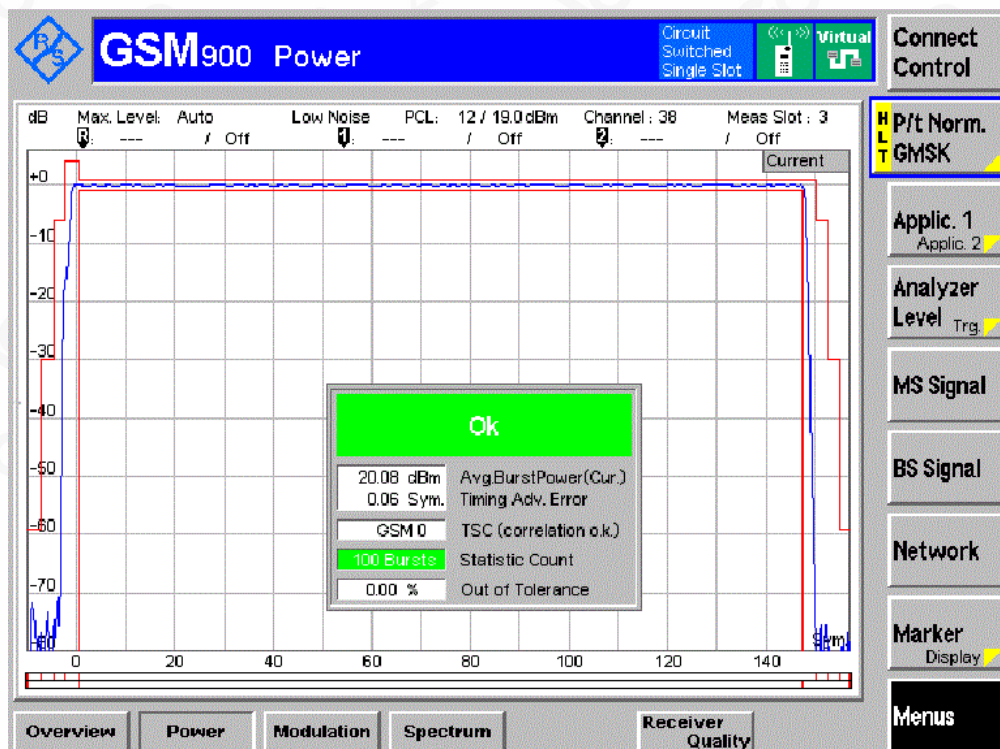


### Channel LCH PCL 12

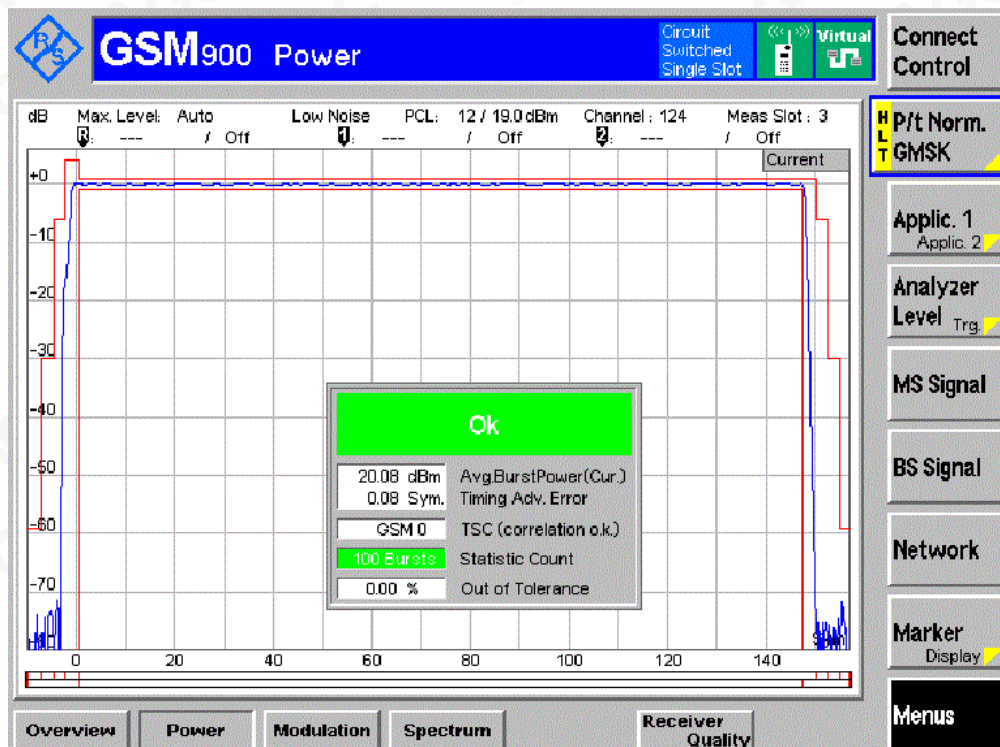




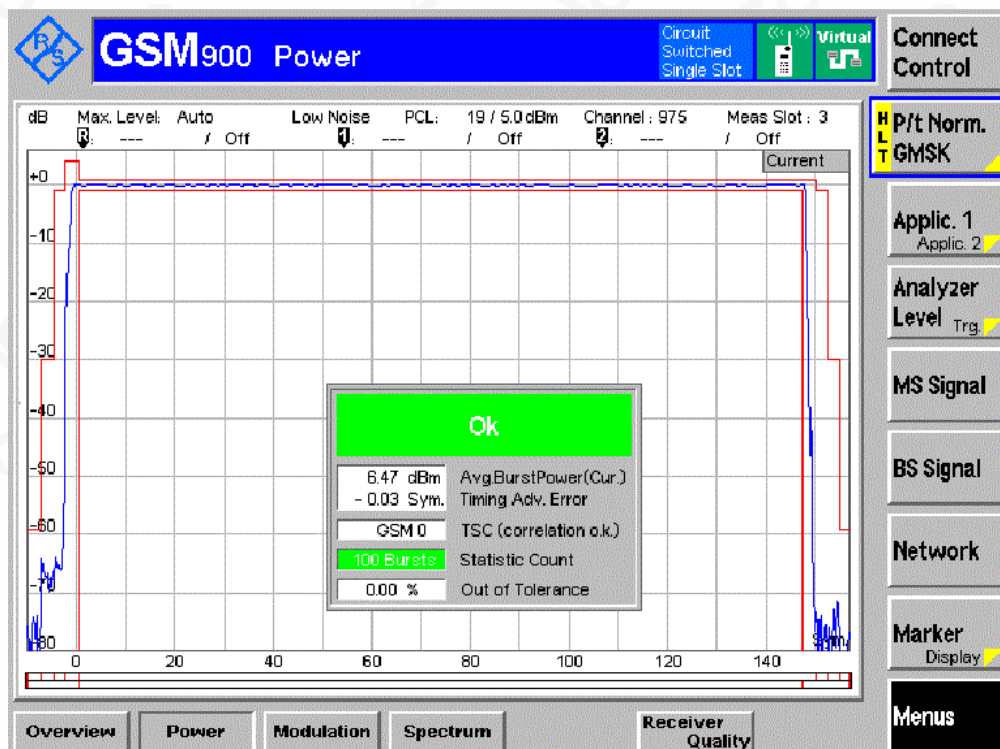
### Channel MCH PCL 12



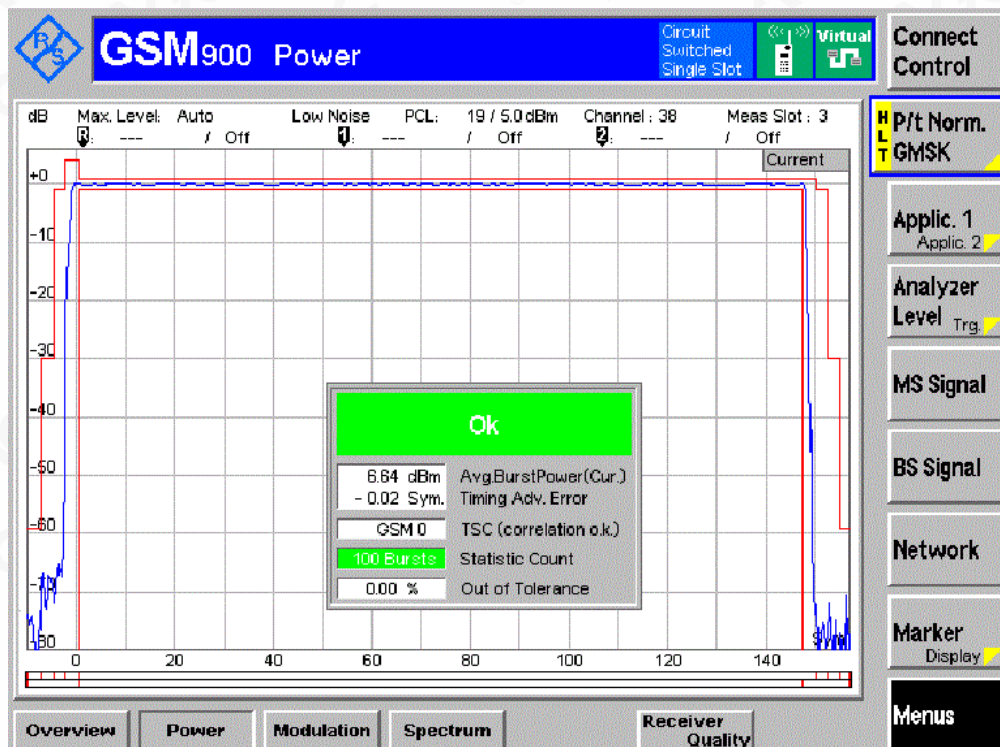
### Channel HCH PCL 12



### Channel LCH PCL 19

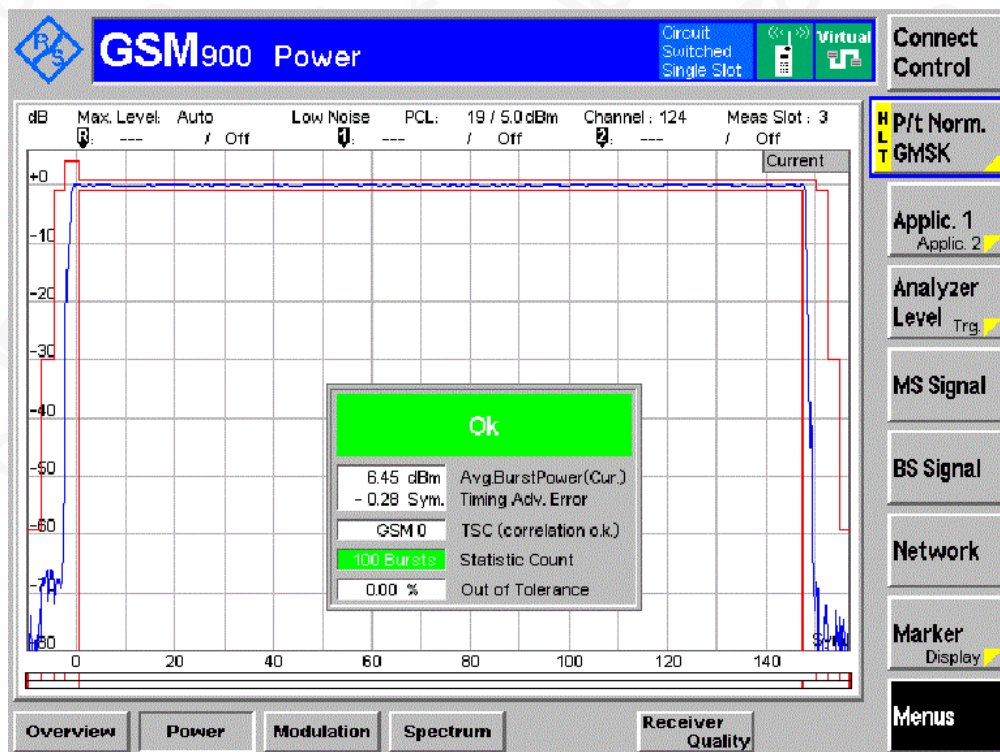


### Channel MCH PCL 19



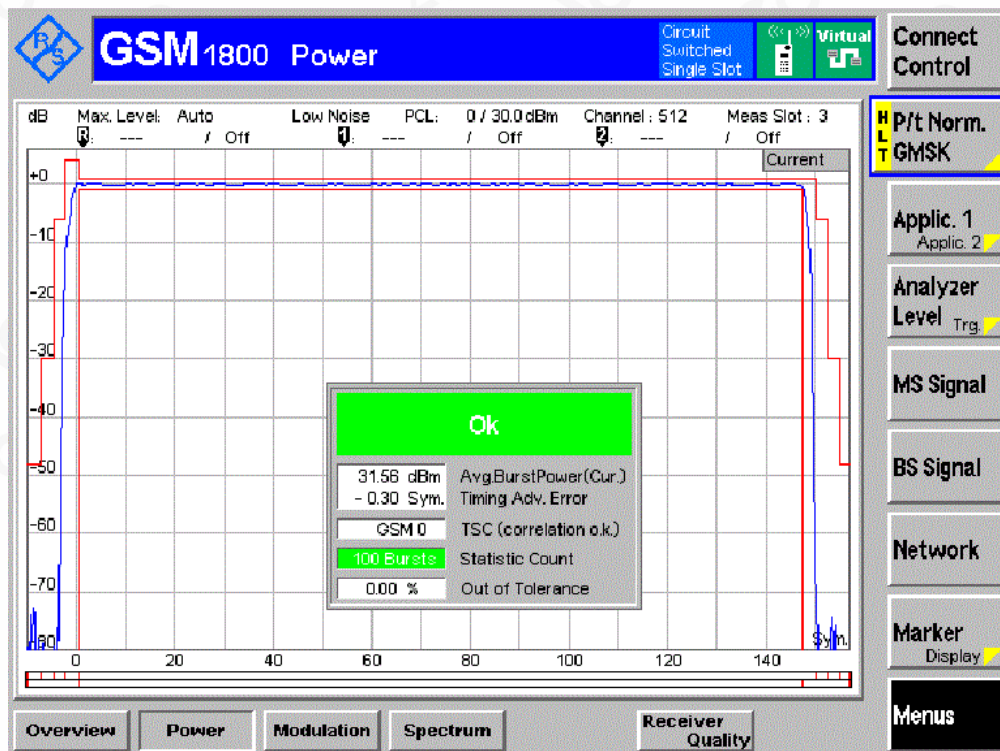


### Channel HCH PCL 19

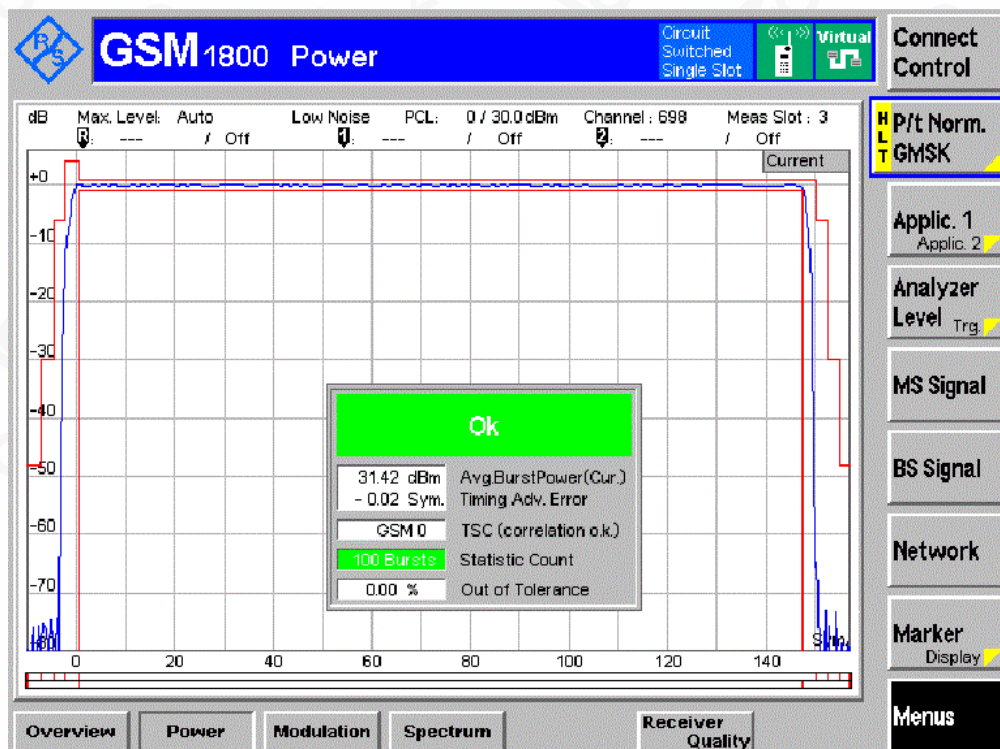


### DCS1800 TN,VN

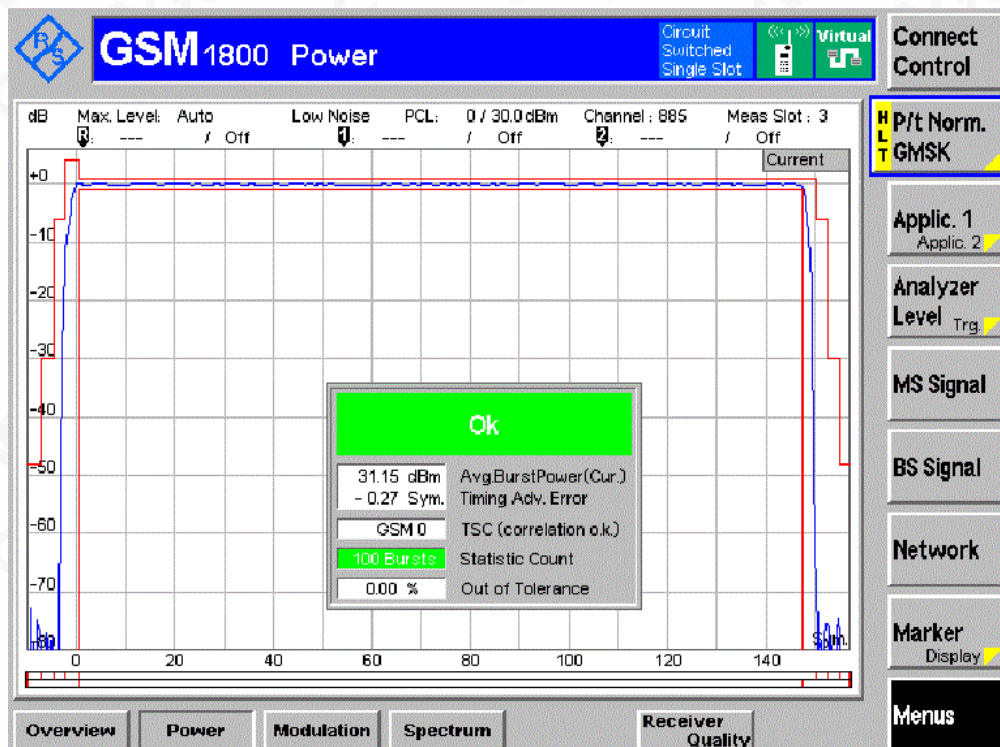
### Channel LCH PCL 0



### Channel MCH PCL 0

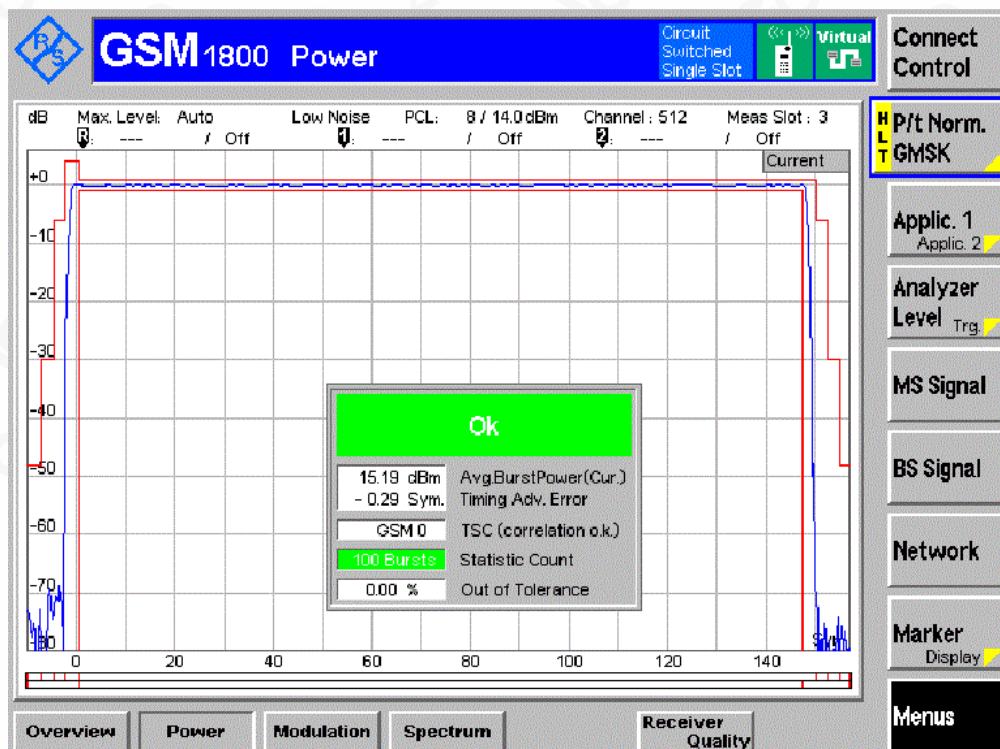


### Channel HCH PCL 0

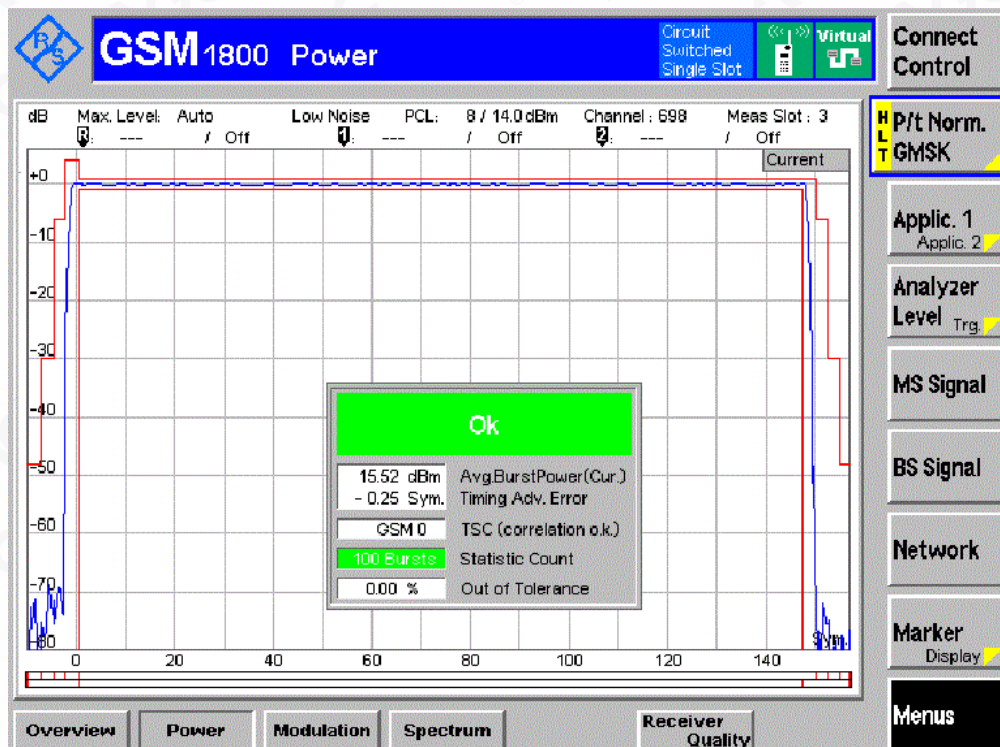




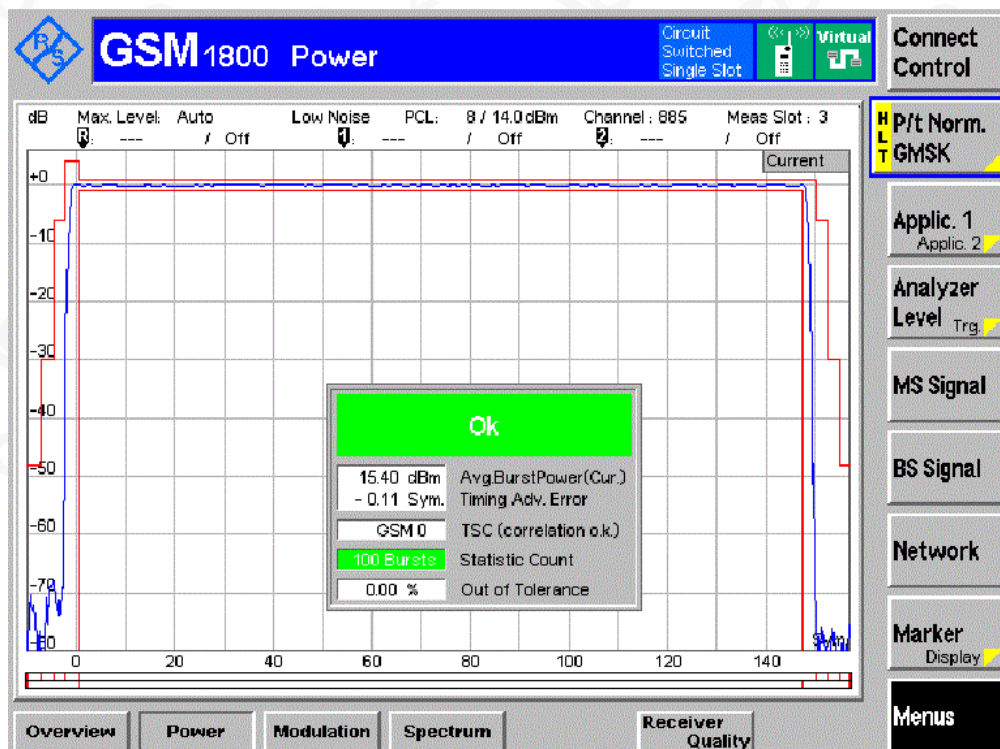
### Channel LCH PCL 8



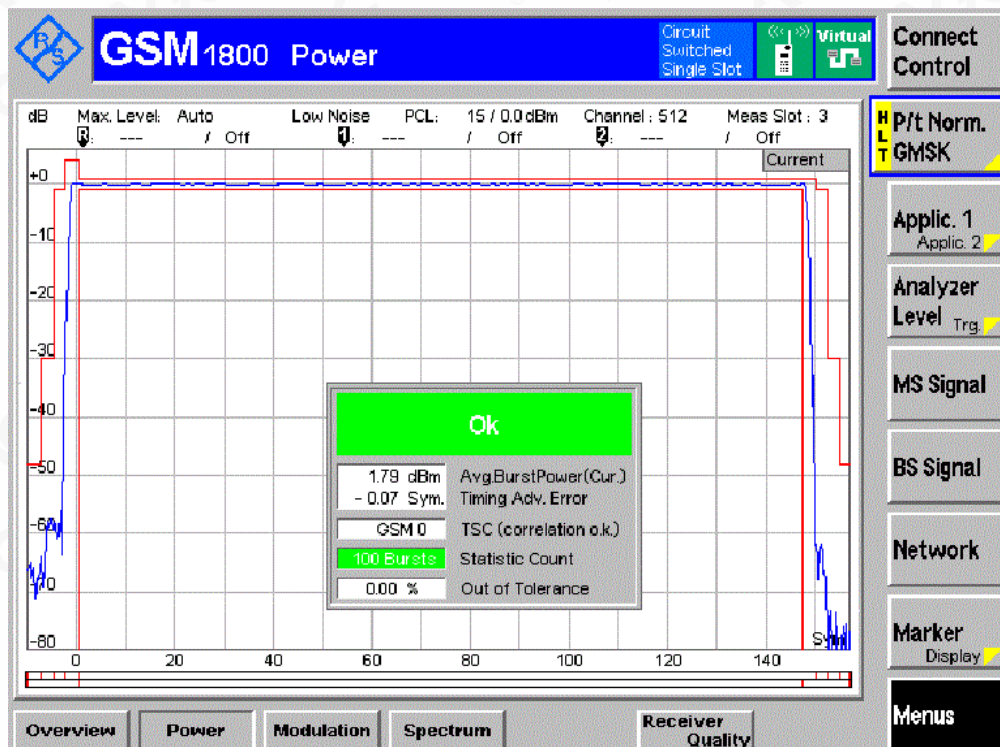
### Channel MCH PCL 8



### Channel HCH PCL 8

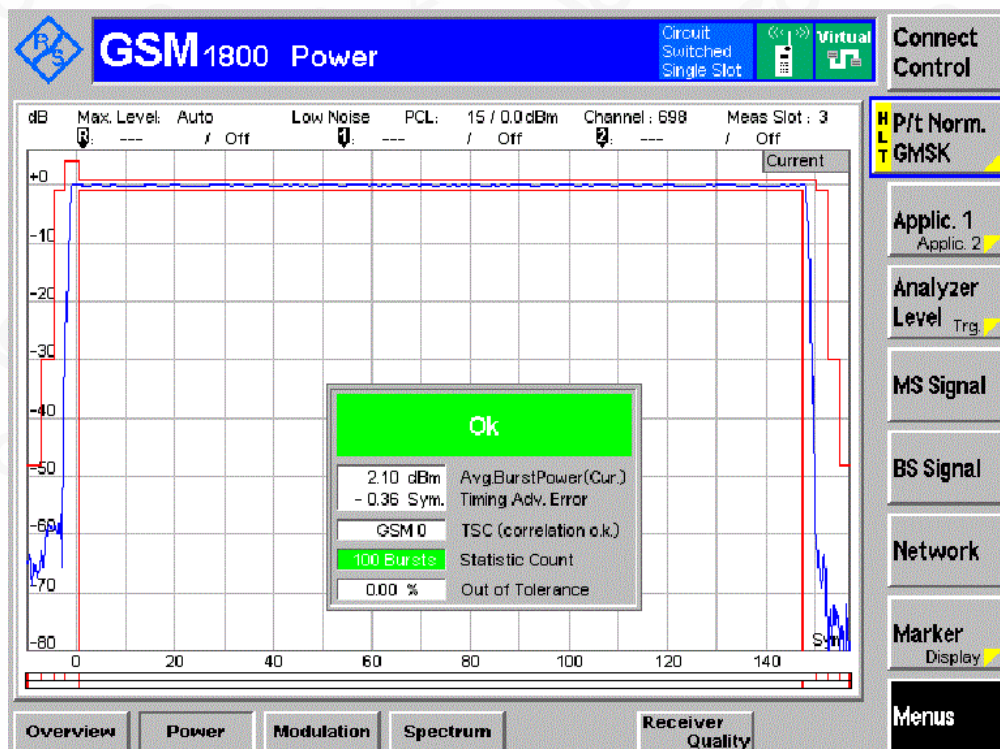


### Channel LCH PCL 15

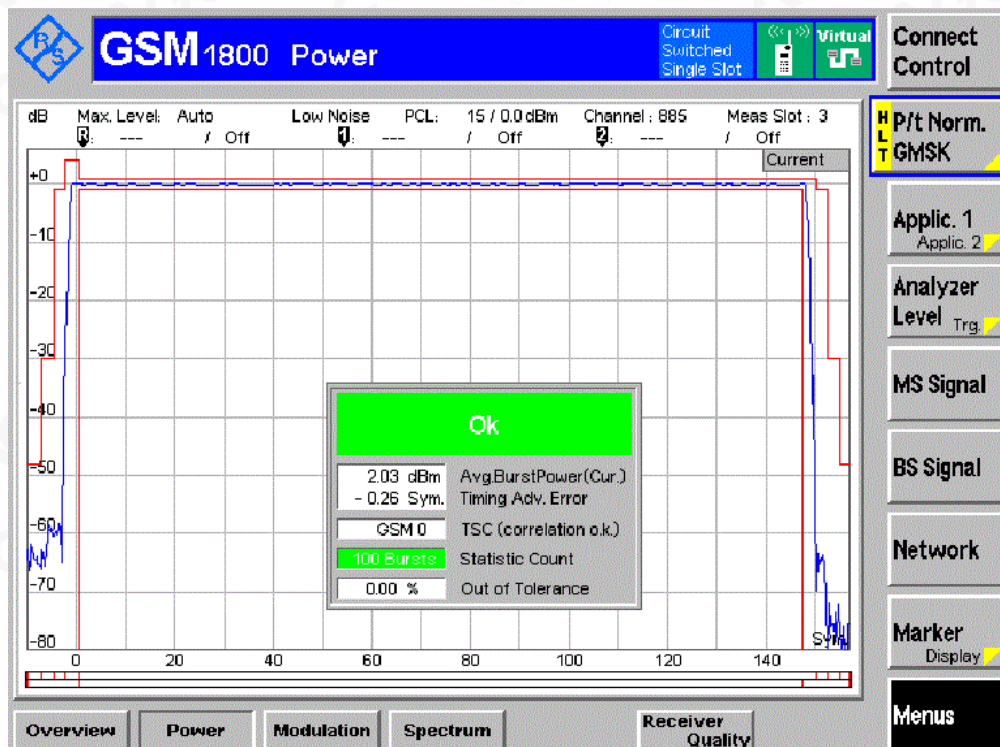




### Channel MCH PCL 15



### Channel HCH PCL 15



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## Appendix E. Transmitter – Output RF spectrum

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

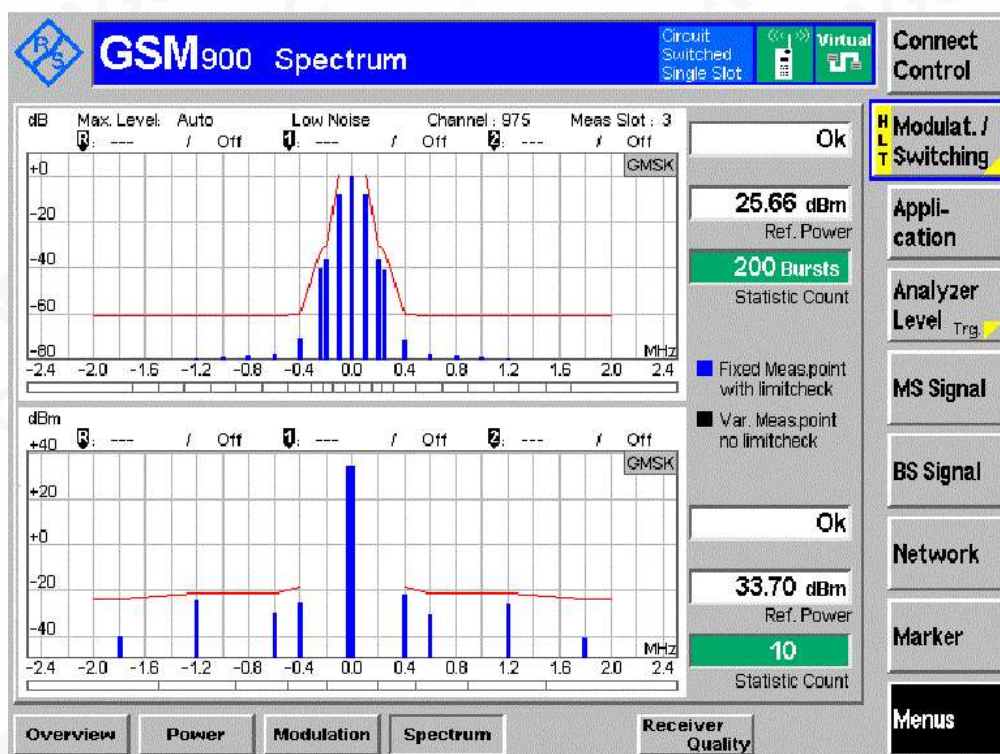
Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
GSM900		LCH	MCH	HCH
TN,VN	5	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

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

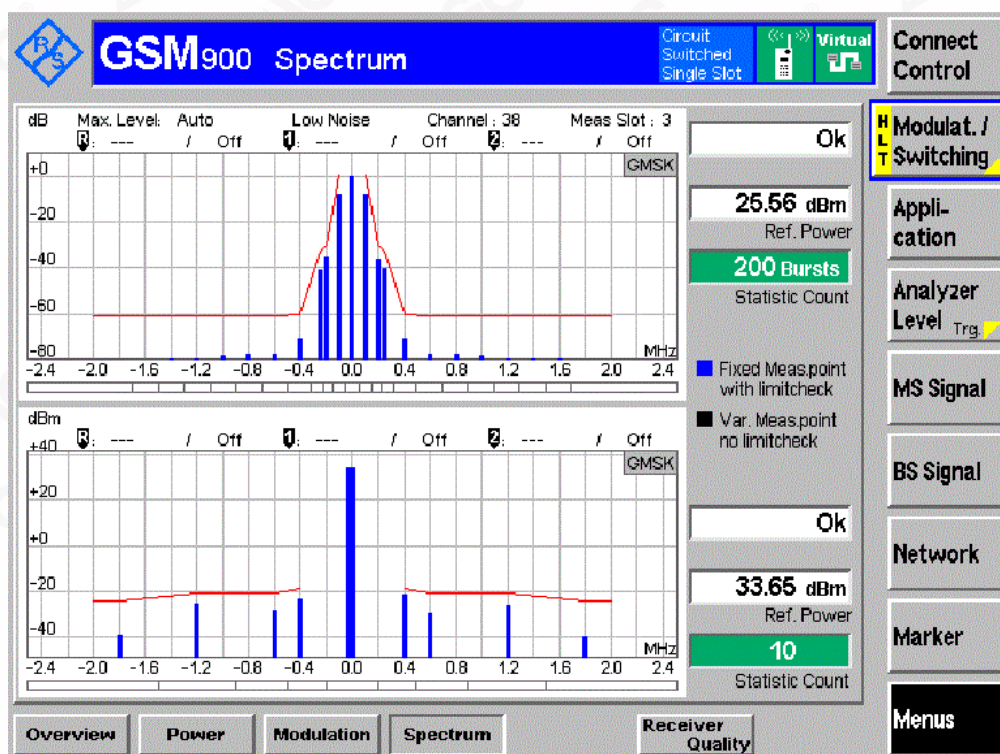




**GSM 900 TN,VN**  
**Channel LCH PCL 5**

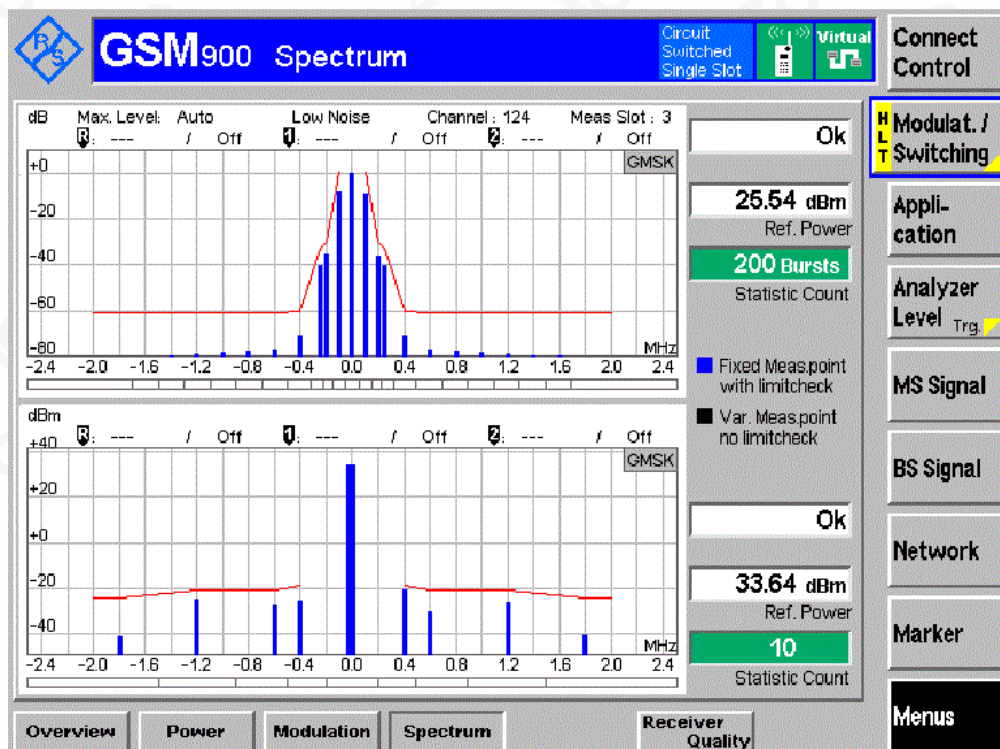


**Channel MCH PCL 5**

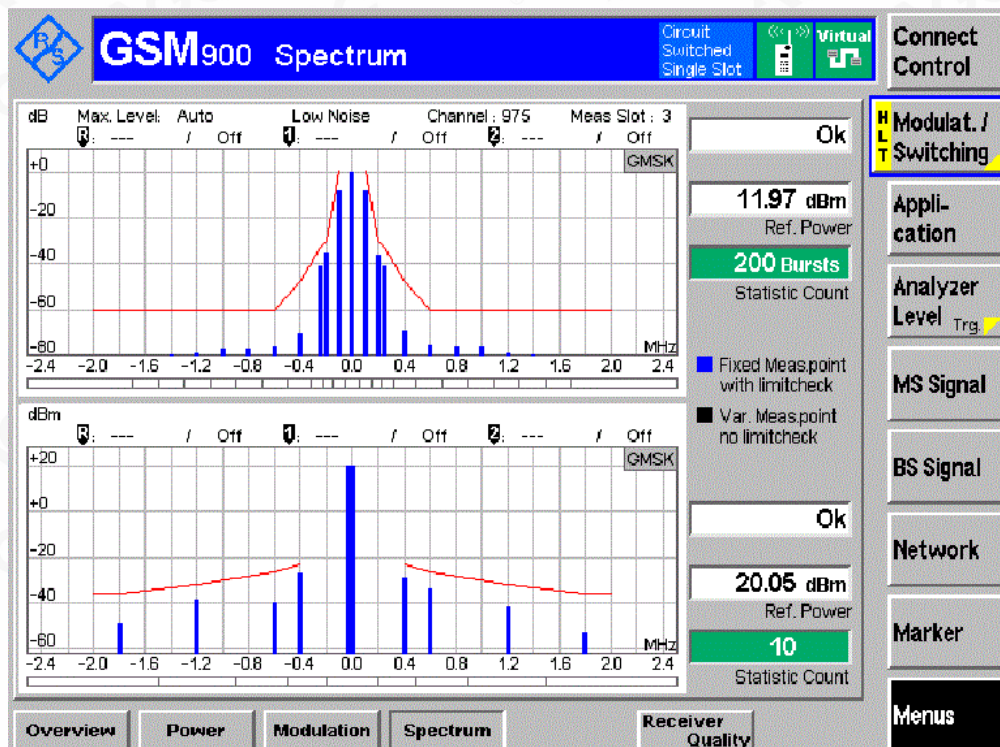




### Channel HCH PCL 5

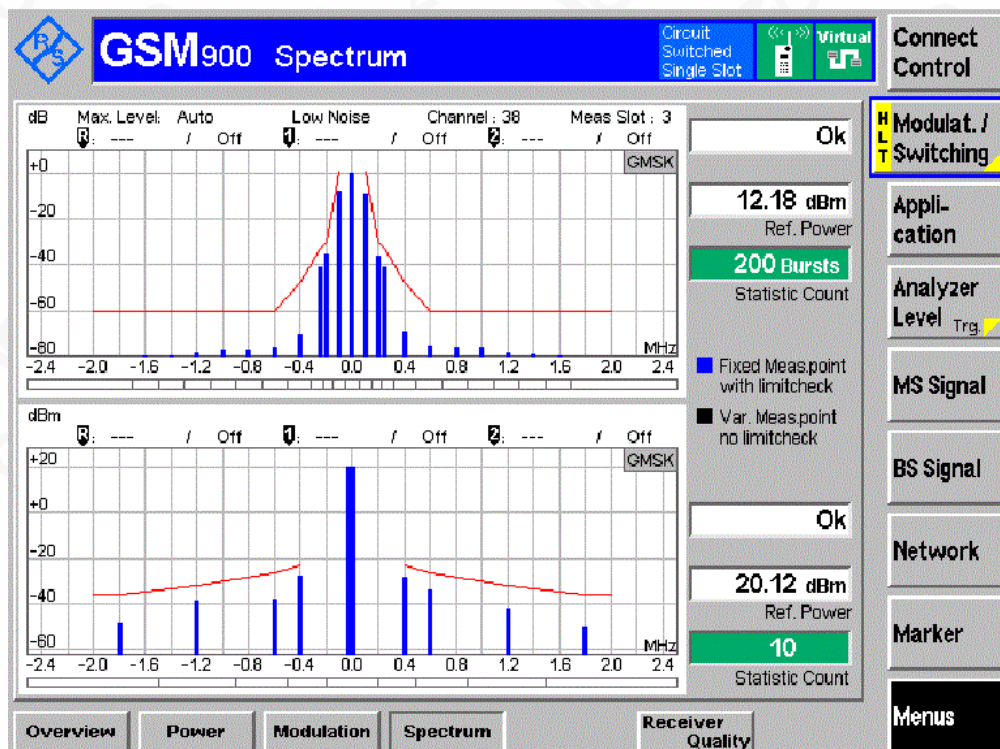


### Channel LCH PCL 12

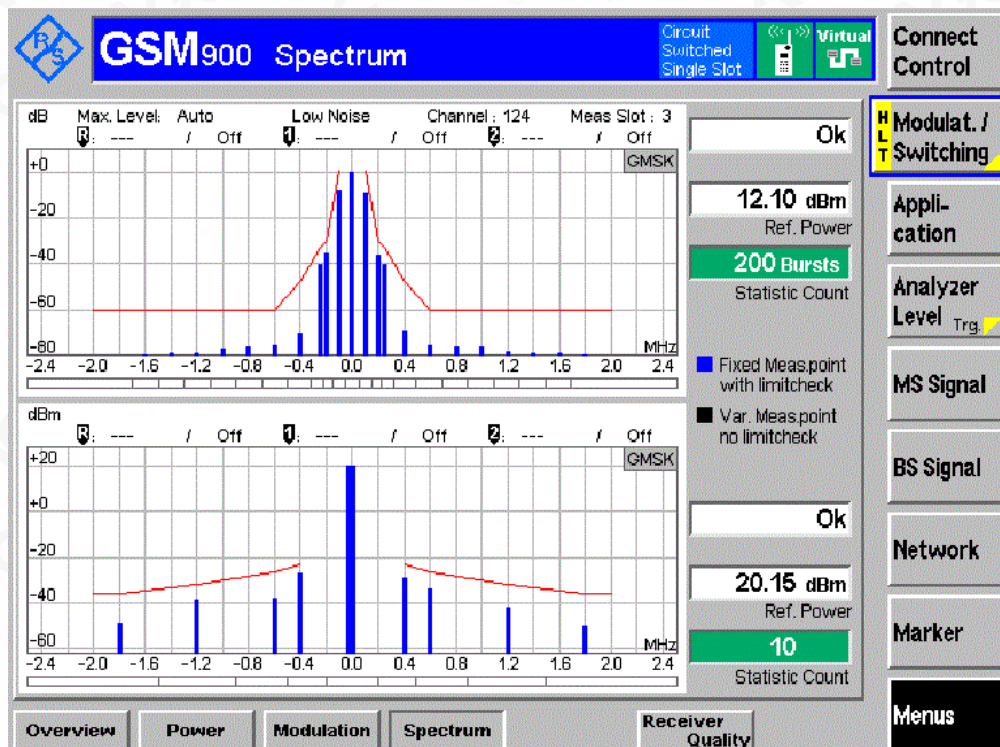




### Channel MCH PCL 12

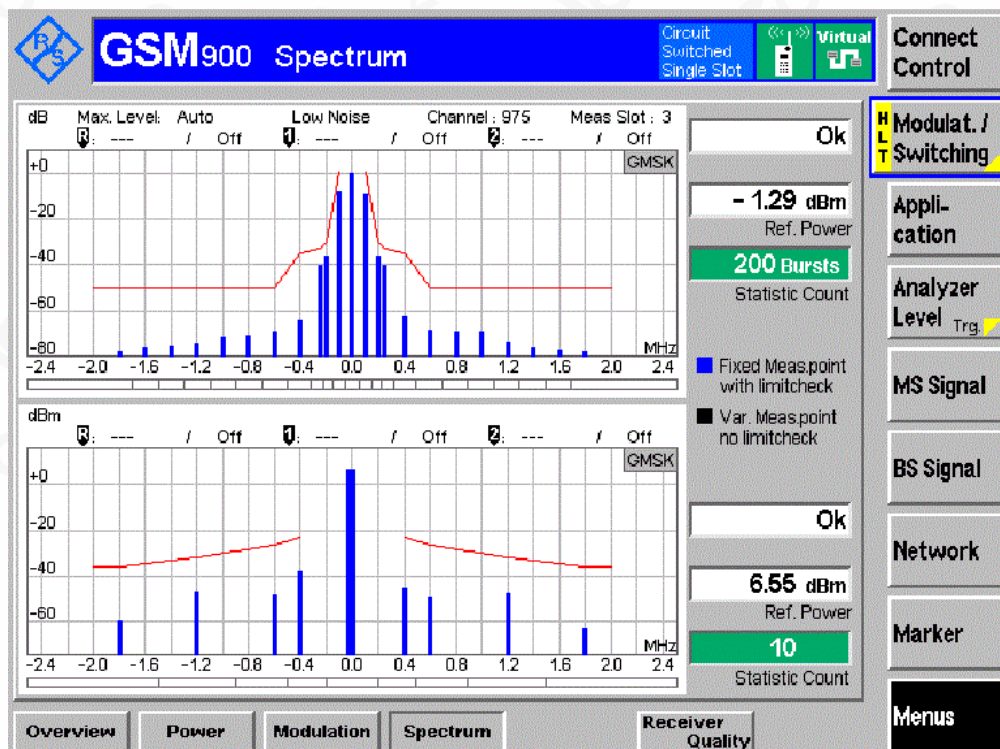


### Channel HCH PCL 12

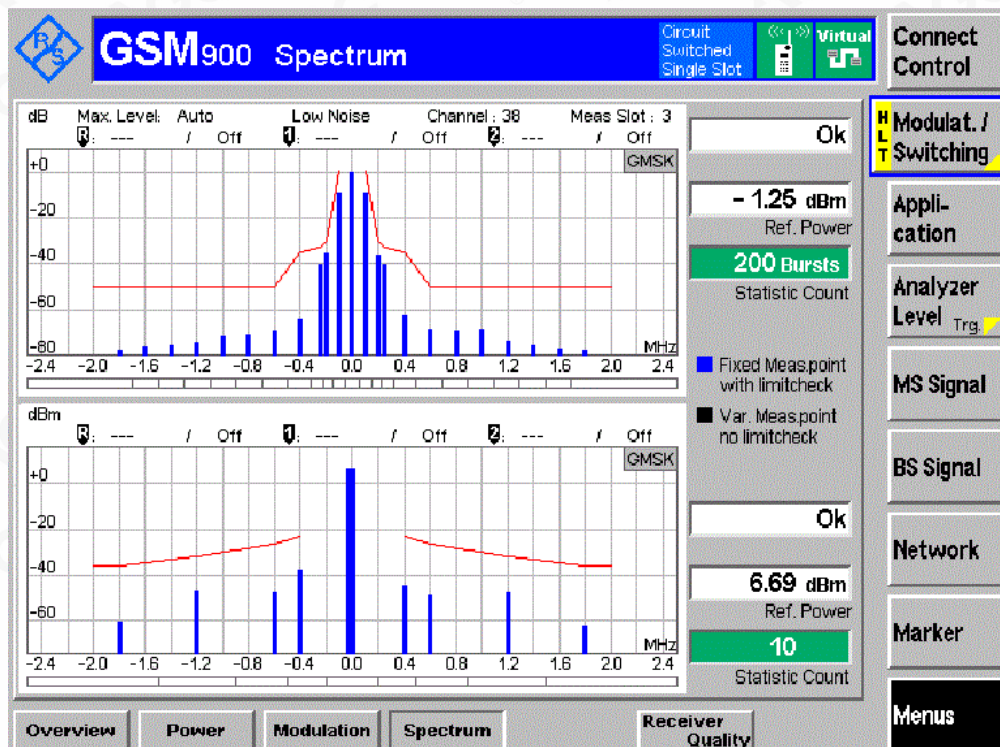




Channel LCH PCL 19



Channel MCH PCL 19



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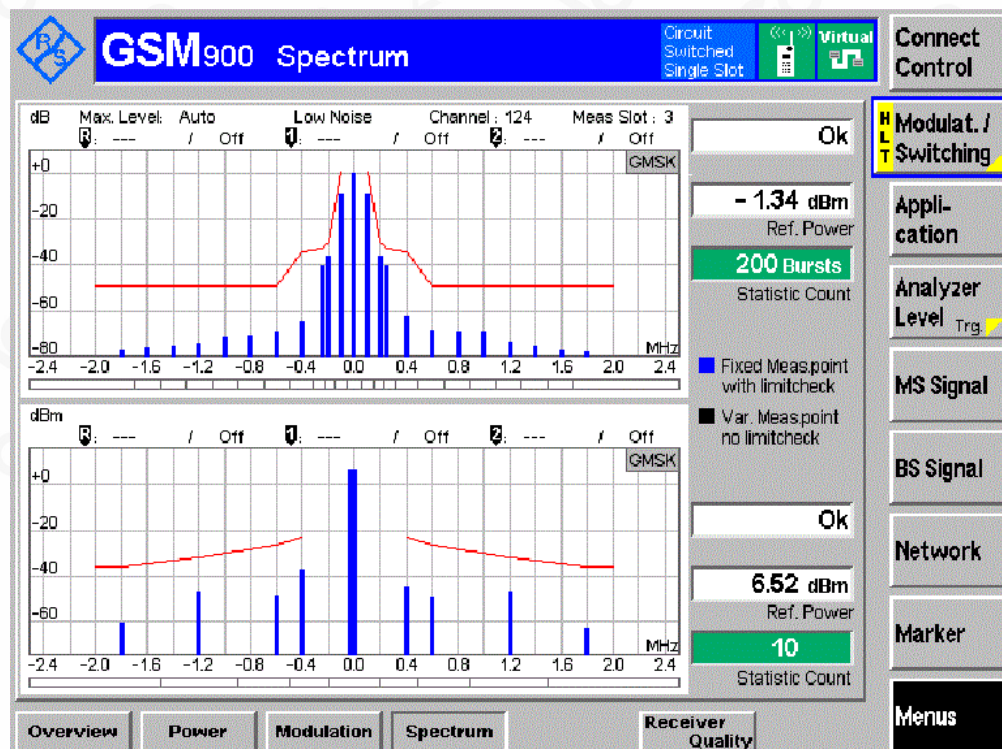
Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118

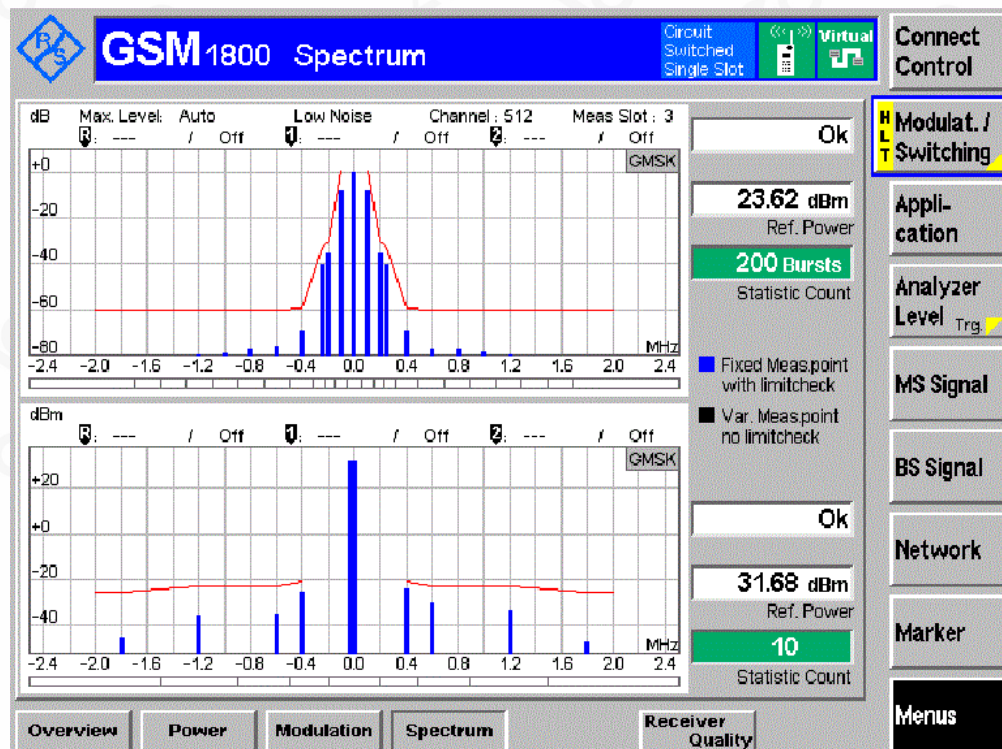


### Channel HCH PCL 19



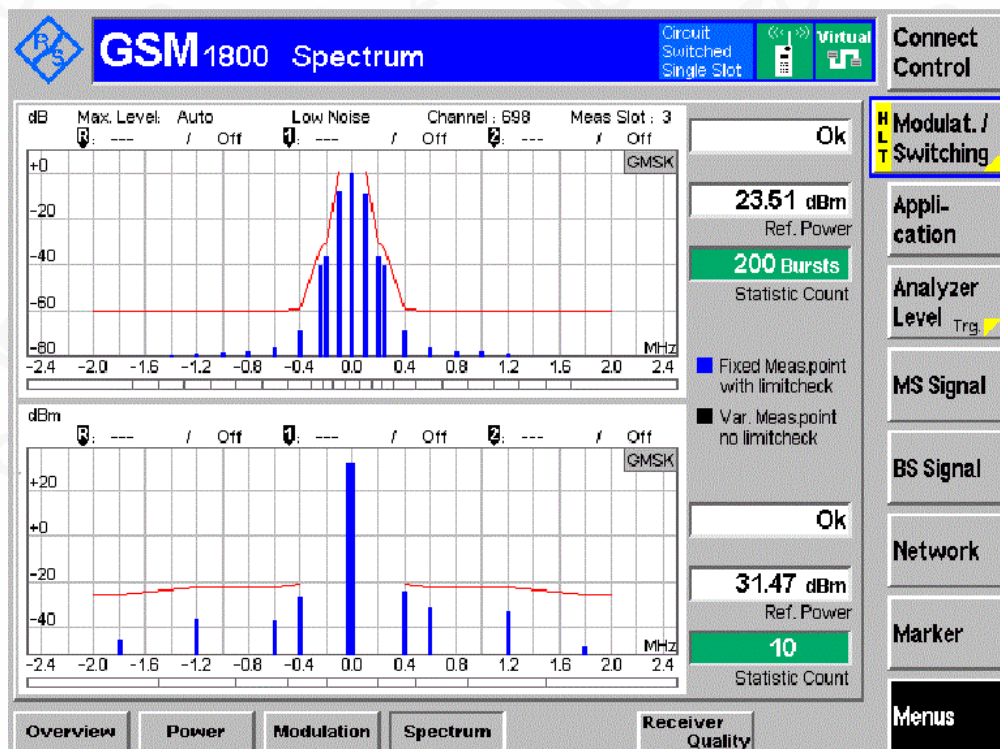
### DCS1800 TN,VN

### Channel LCH PCL 0

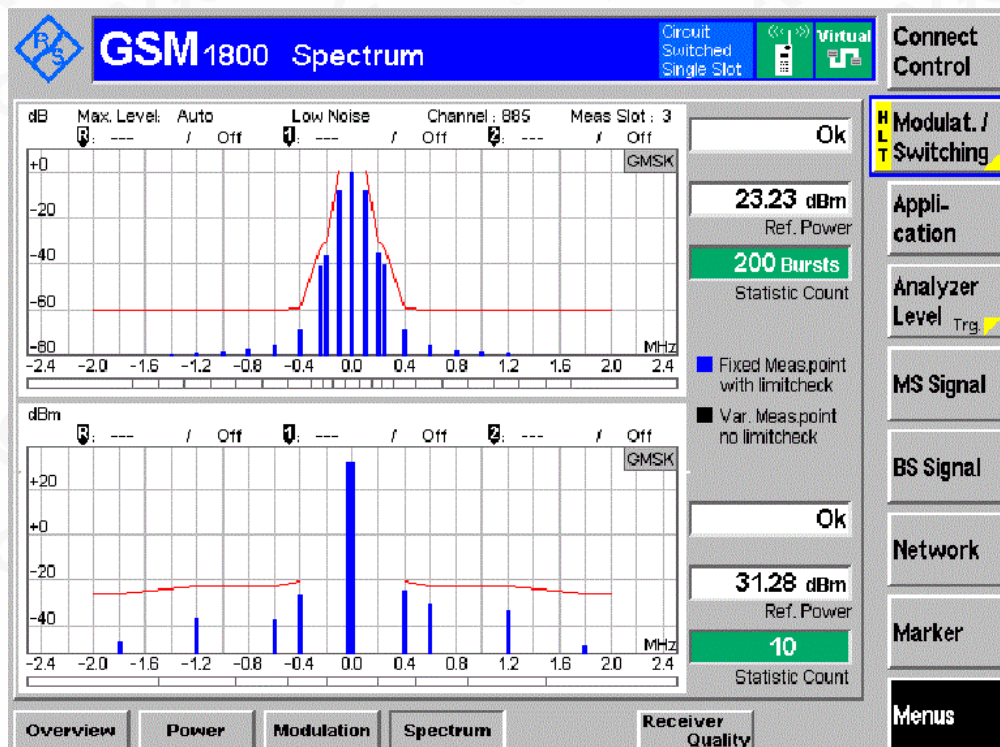




### Channel MCH PCL 0

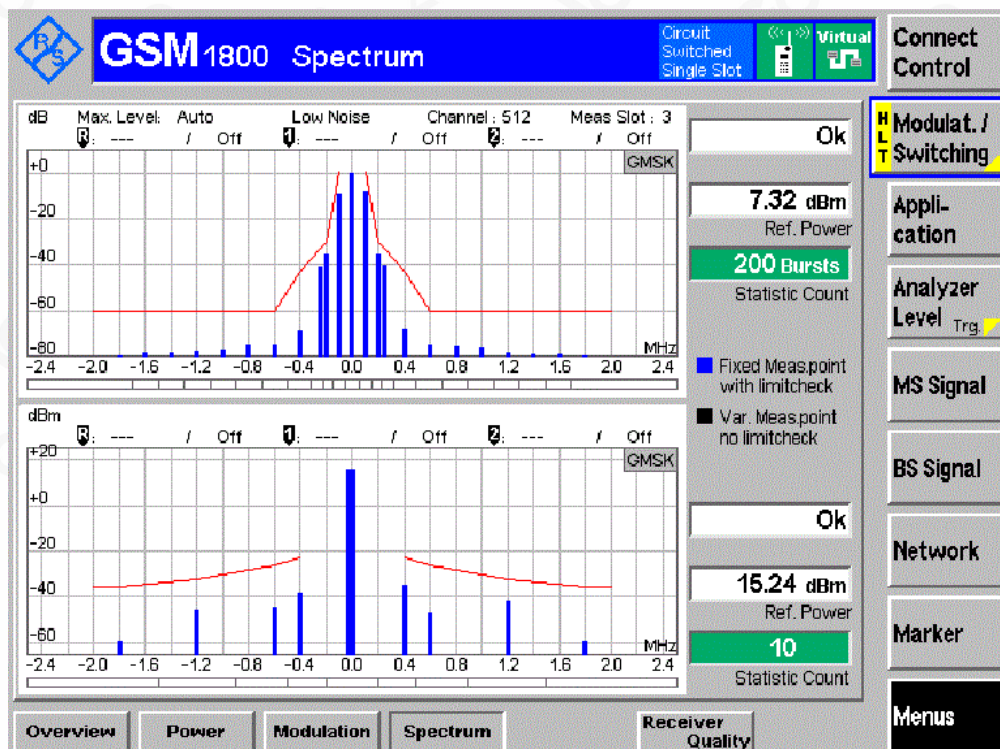


### Channel HCH PCL 0

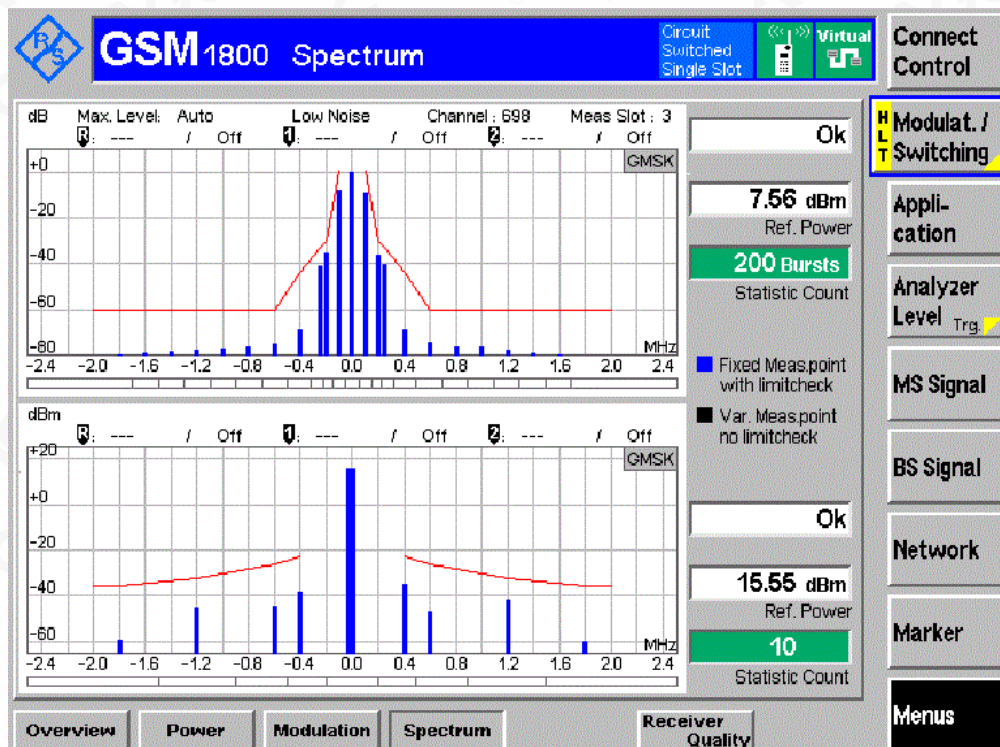




### Channel LCH PCL 8

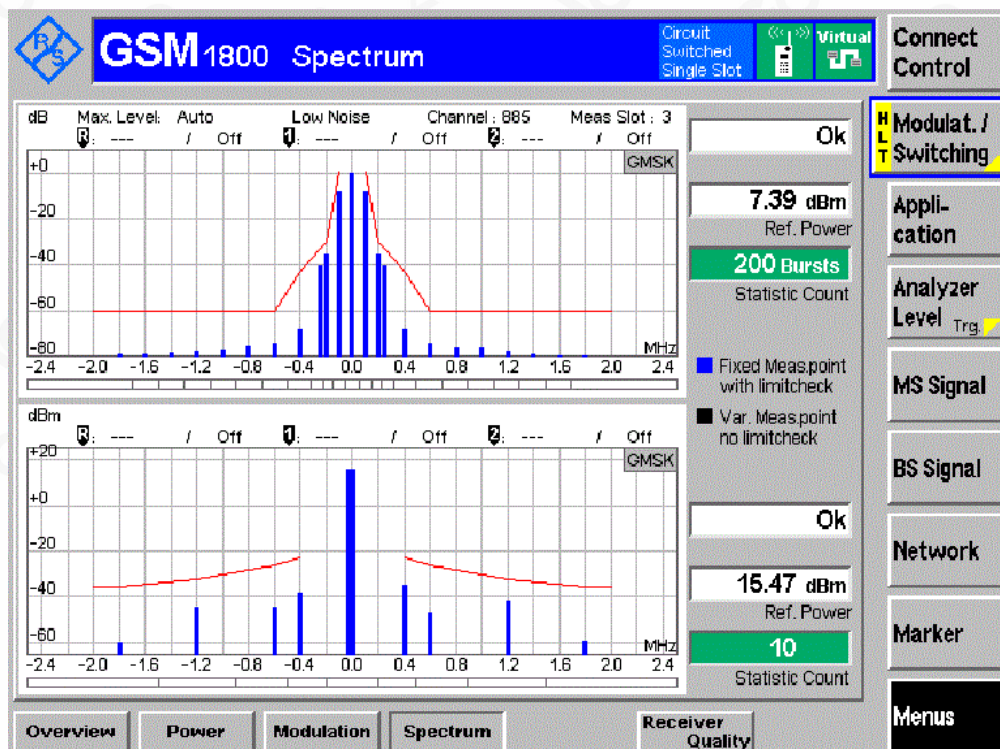


### Channel MCH PCL 8

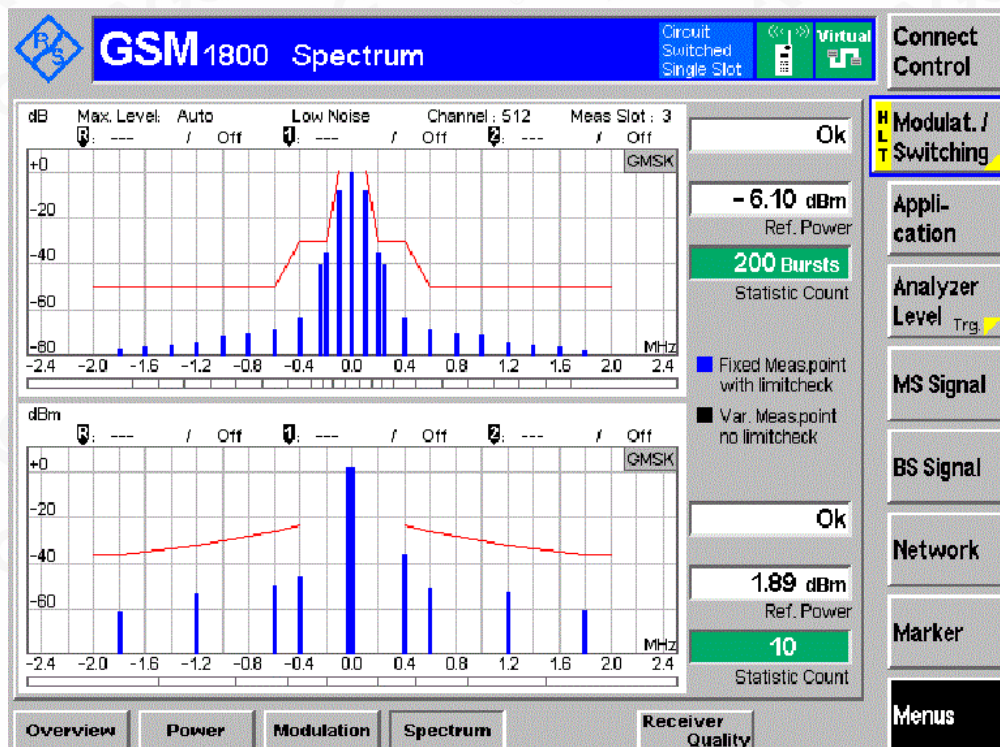




### Channel HCH PCL 8

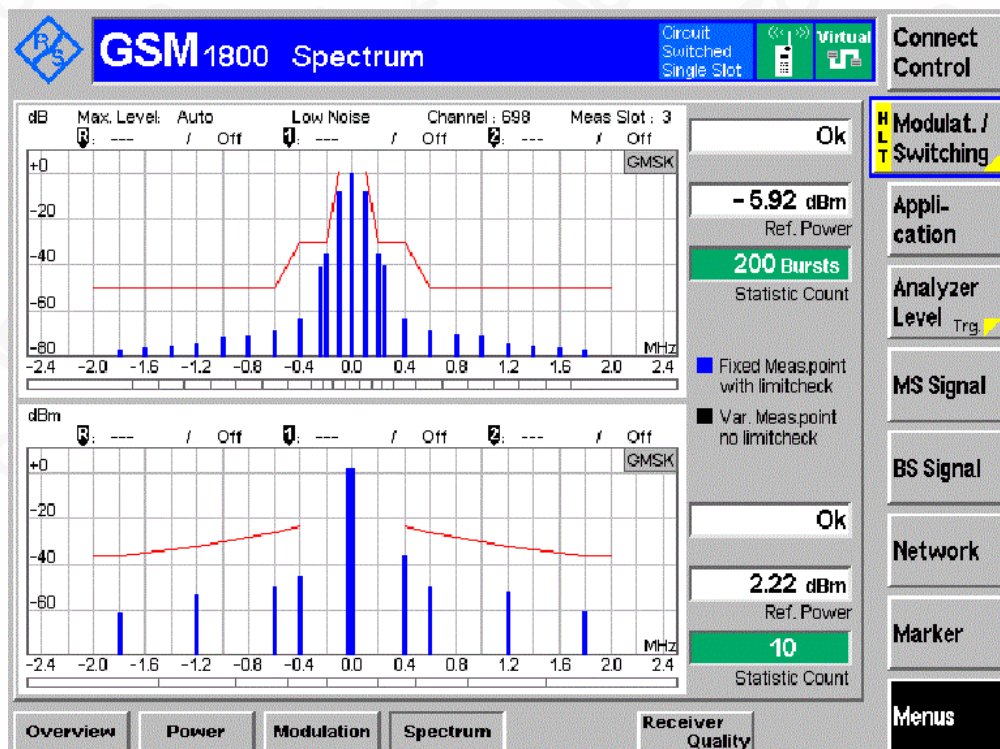


### Channel LCH PCL 15

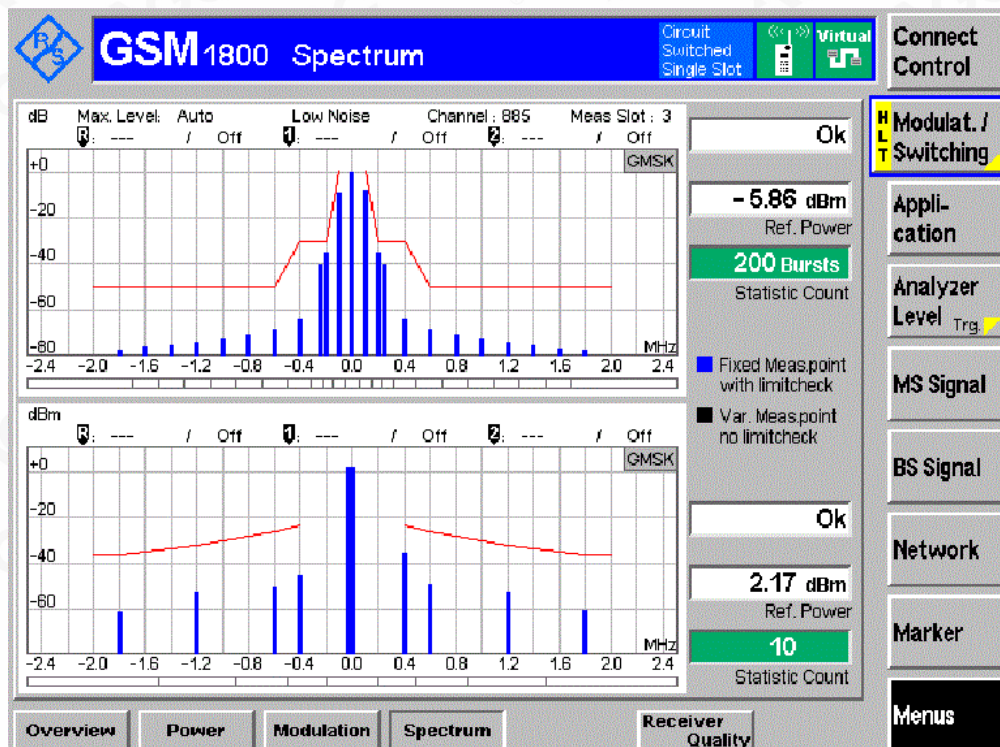




### Channel MCH PCL 15



### Channel HCH PCL 15



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## 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	30.01	29.98	29.99	PASS
	12	19.86	19.99	19.99	PASS
	19	6.44	6.60	6.42	PASS

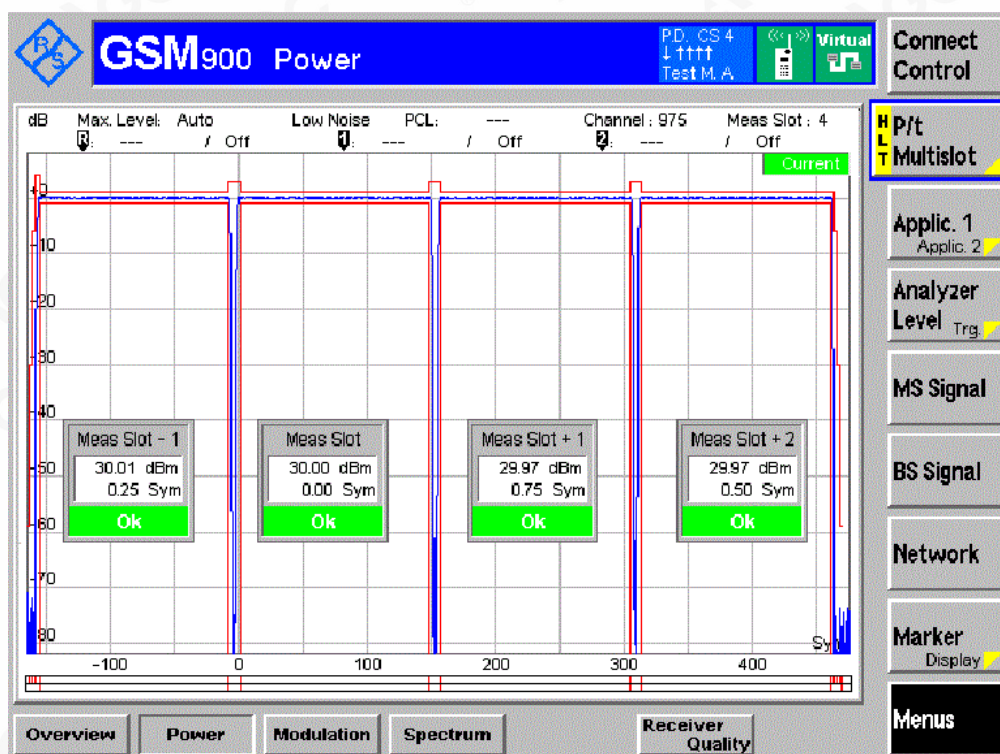
Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
DCS1800		LCH	MCH	HCH	Result
TN,VN	0	27.69	27.61	27.40	PASS
	8	15.35	15.65	15.54	PASS
	15	2.08	2.38	2.35	PASS

### B. Power VS Time

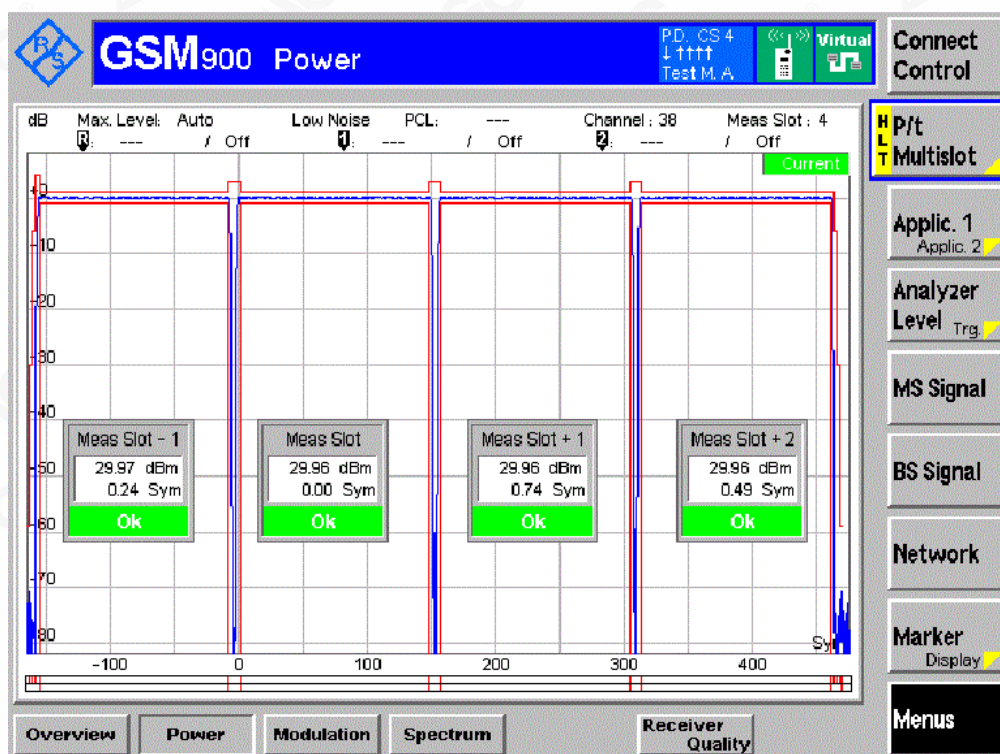
Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
GSM900	Power level	LCH	MCH	HCH
TN,VN	5	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

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

**GSM 900 TN,VN**  
Channel LCH PCL 5

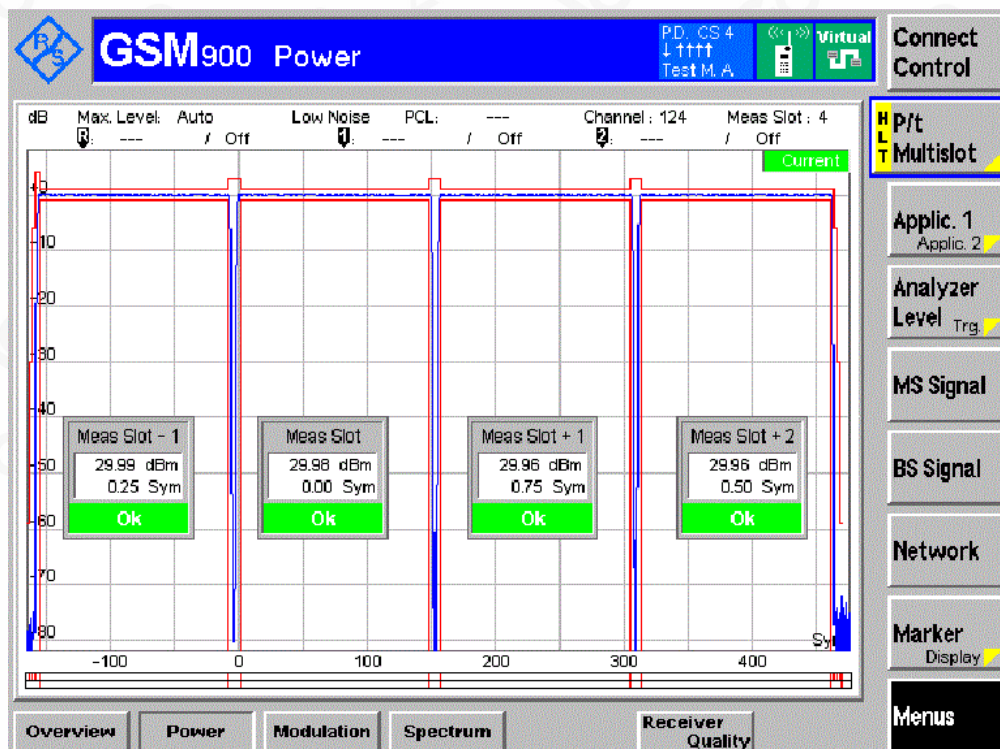


Channel MCH PCL 5

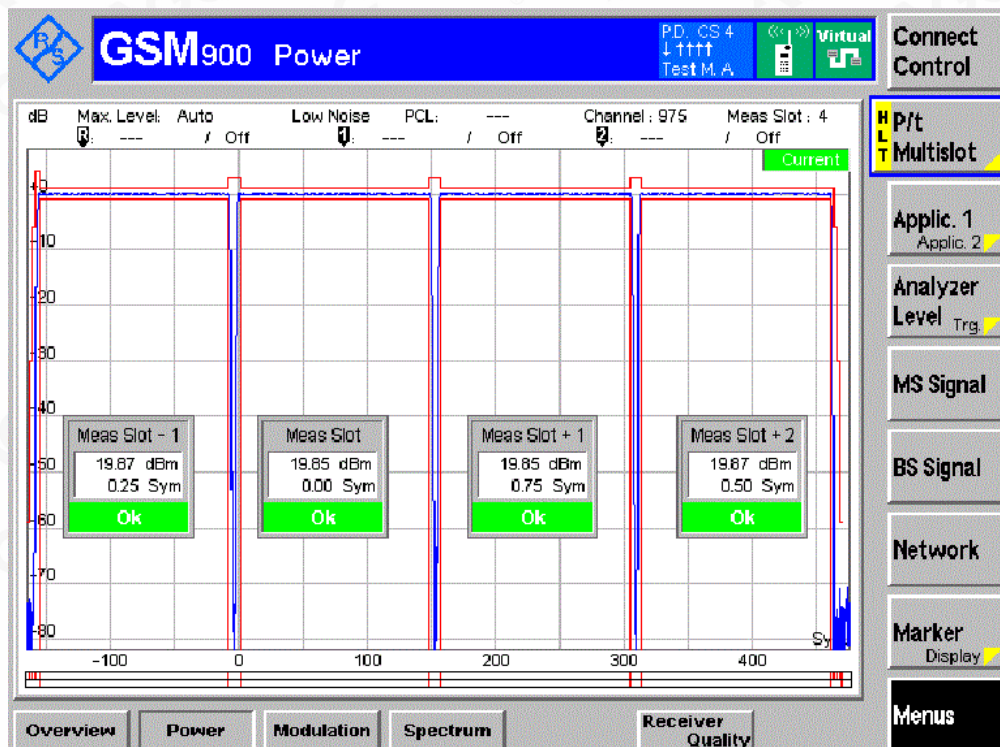




### Channel HCH PCL 5

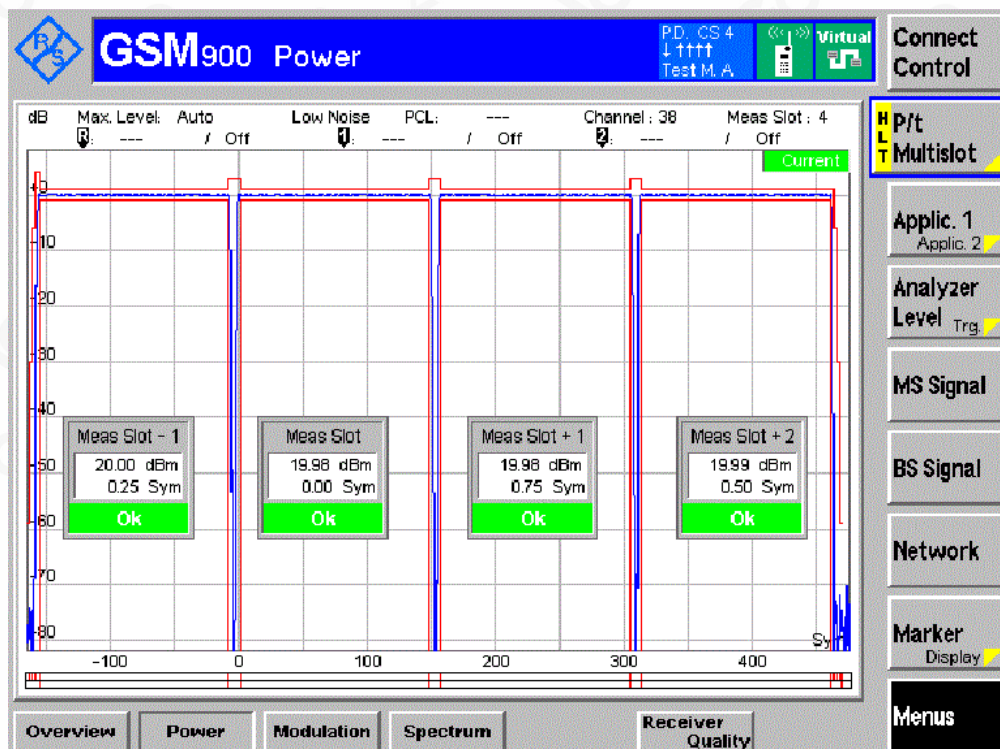


### Channel LCH PCL 12

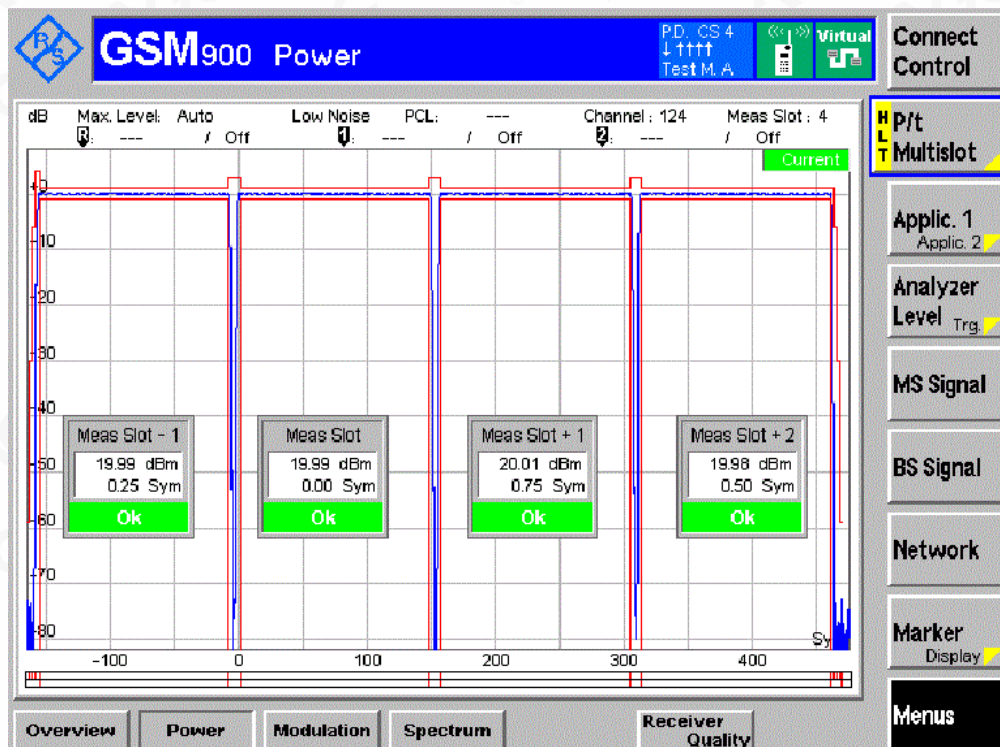




### Channel MCH PCL 12



### Channel HCH PCL 12



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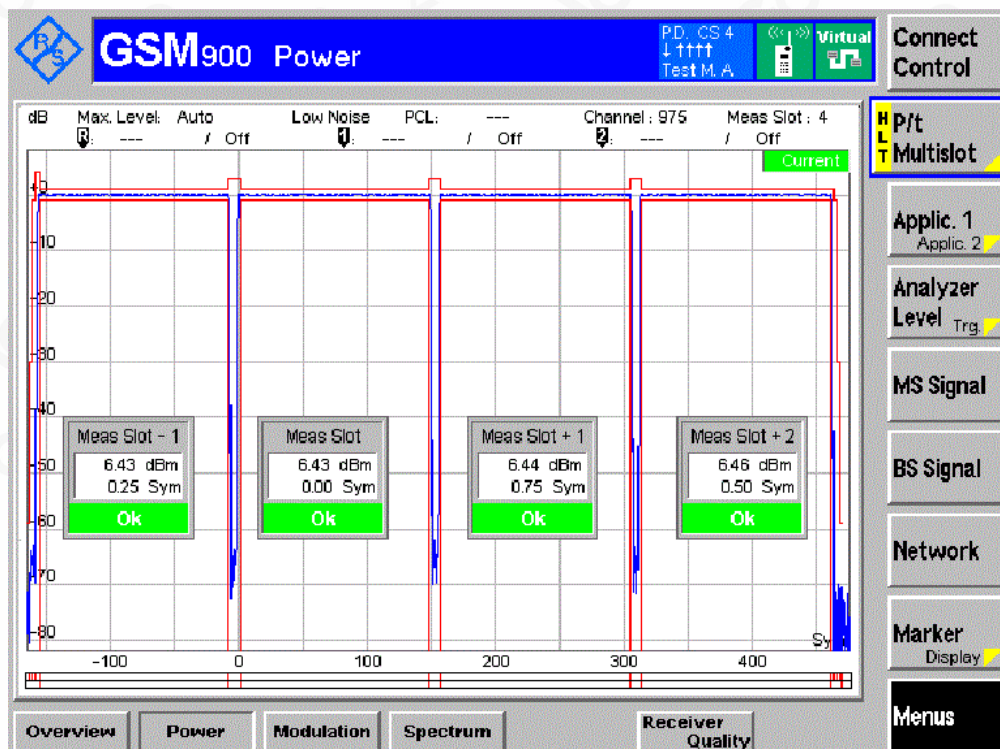
Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,  
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088

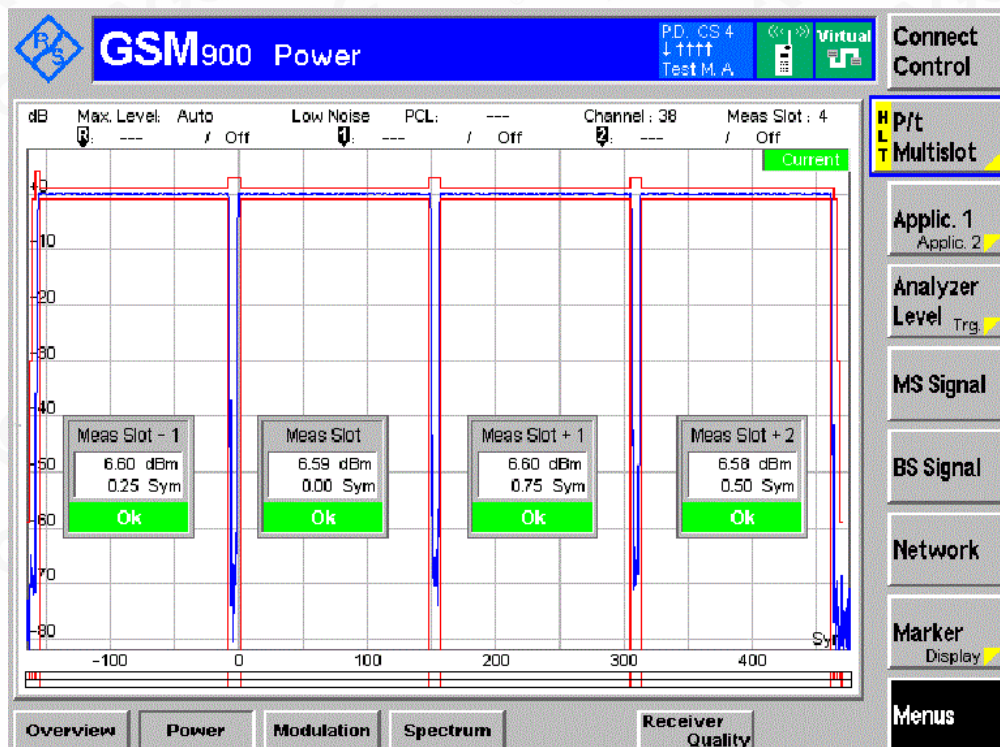
E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118

### Channel LCH PCL 19

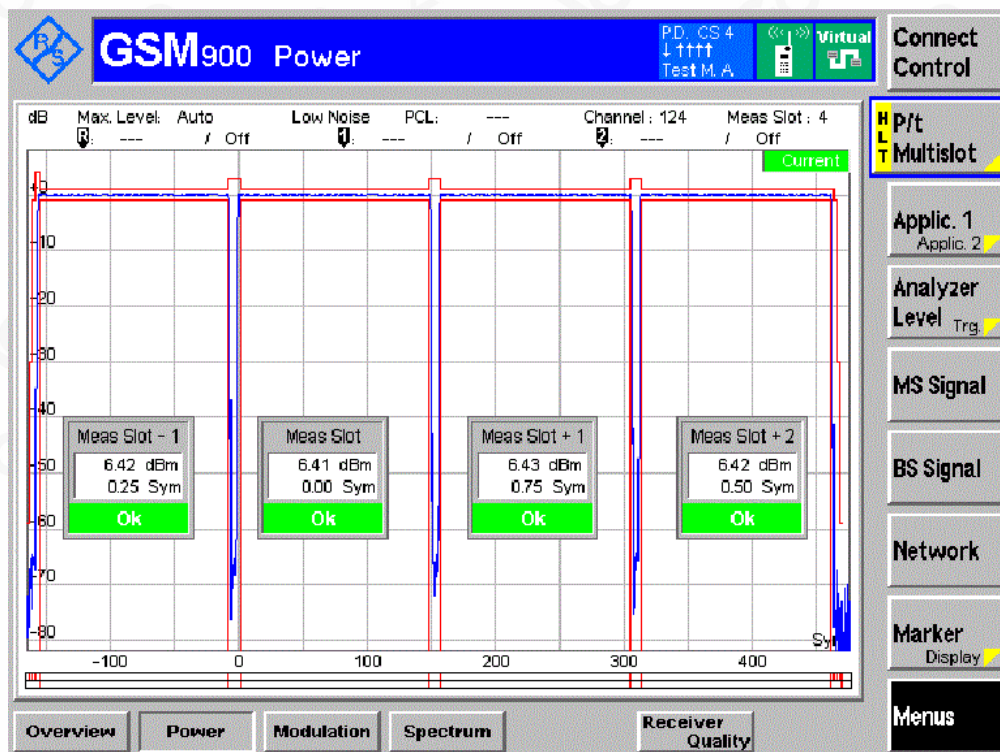


### Channel MCH PCL 19



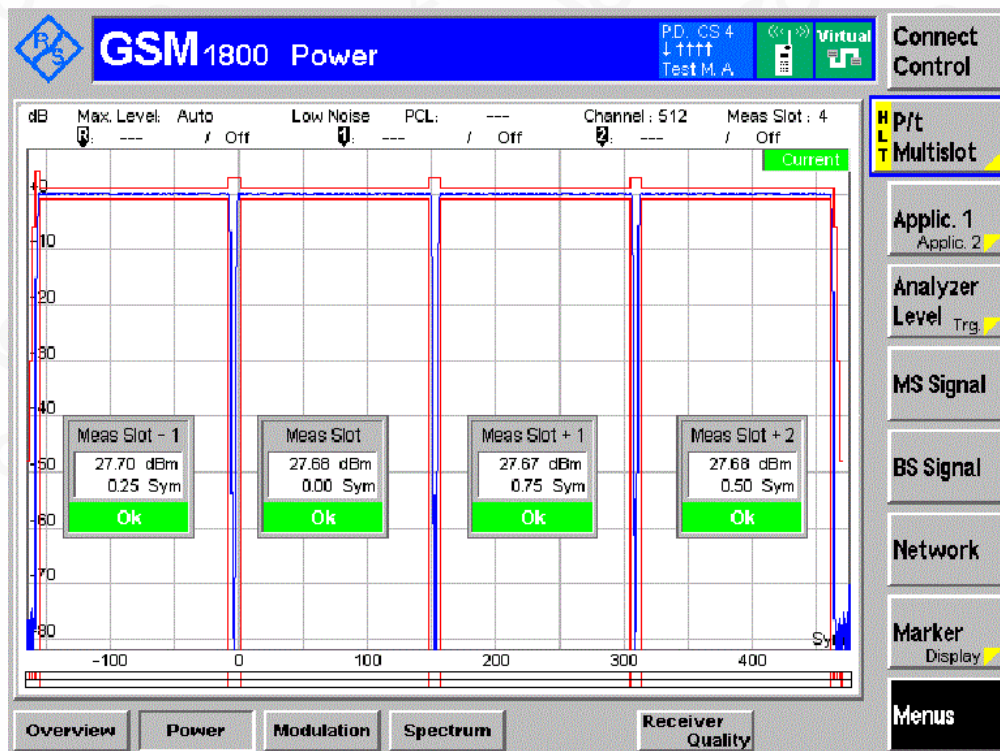


### Channel HCH PCL 19



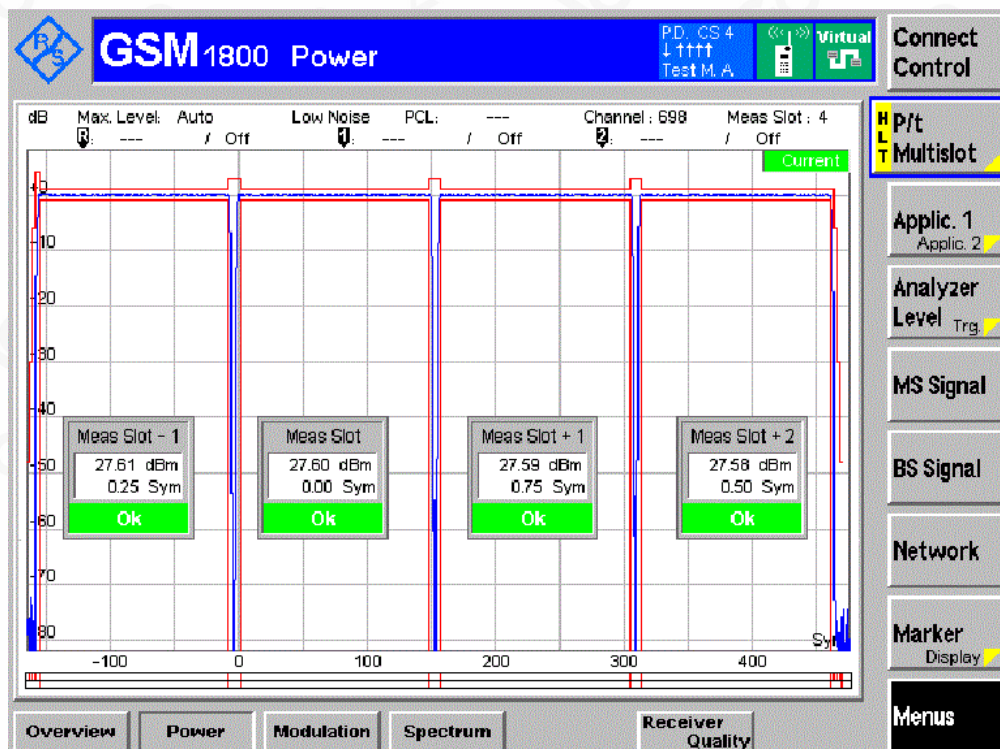
### DCS1800 TN,VN

### Channel LCH PCL 0

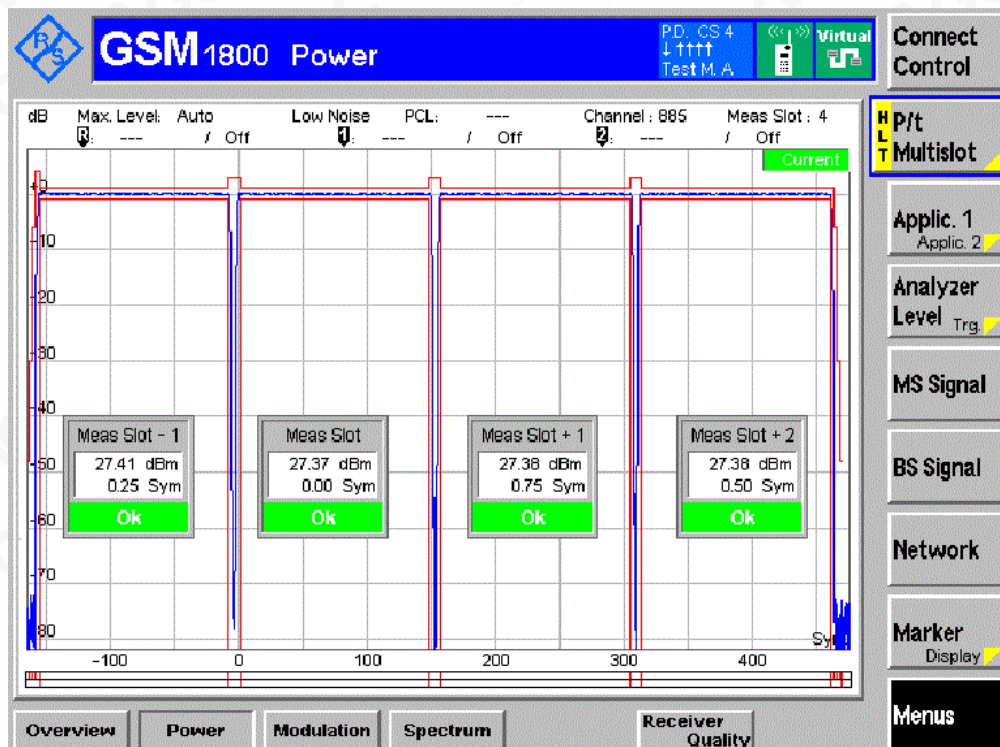




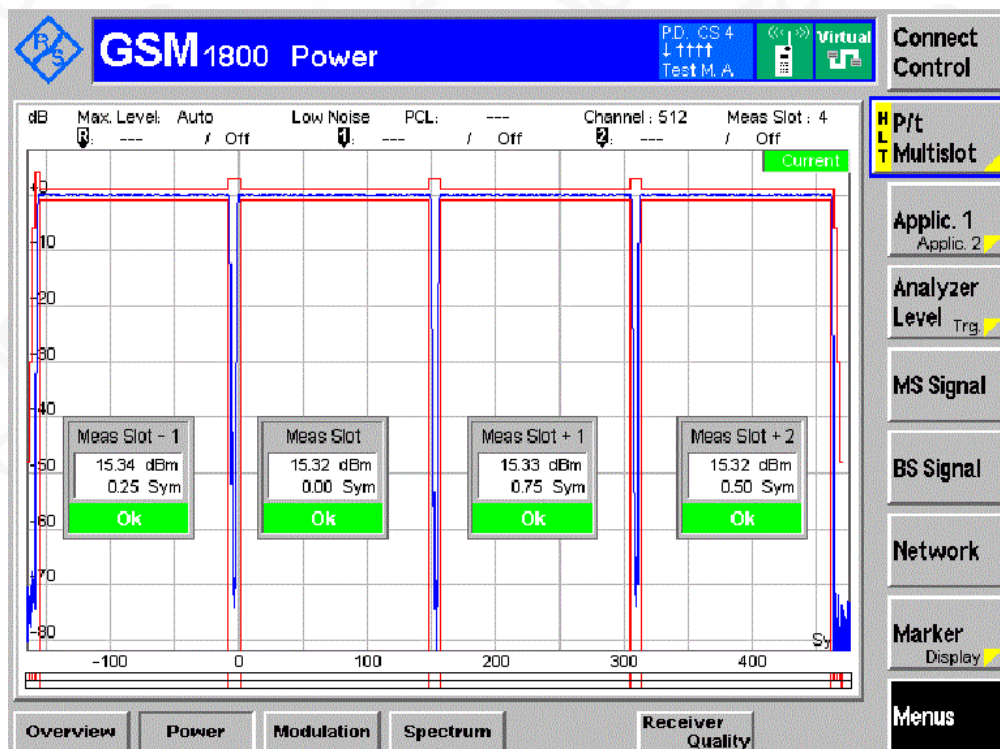
### Channel MCH PCL 0



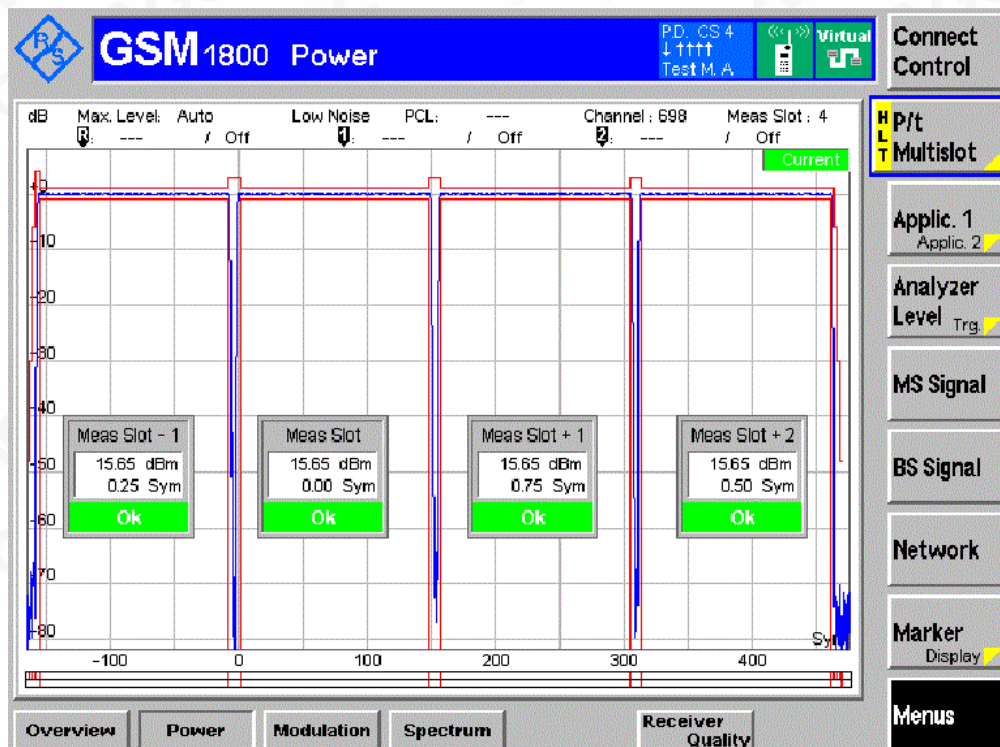
### Channel HCH PCL 0



### Channel LCH PCL 8

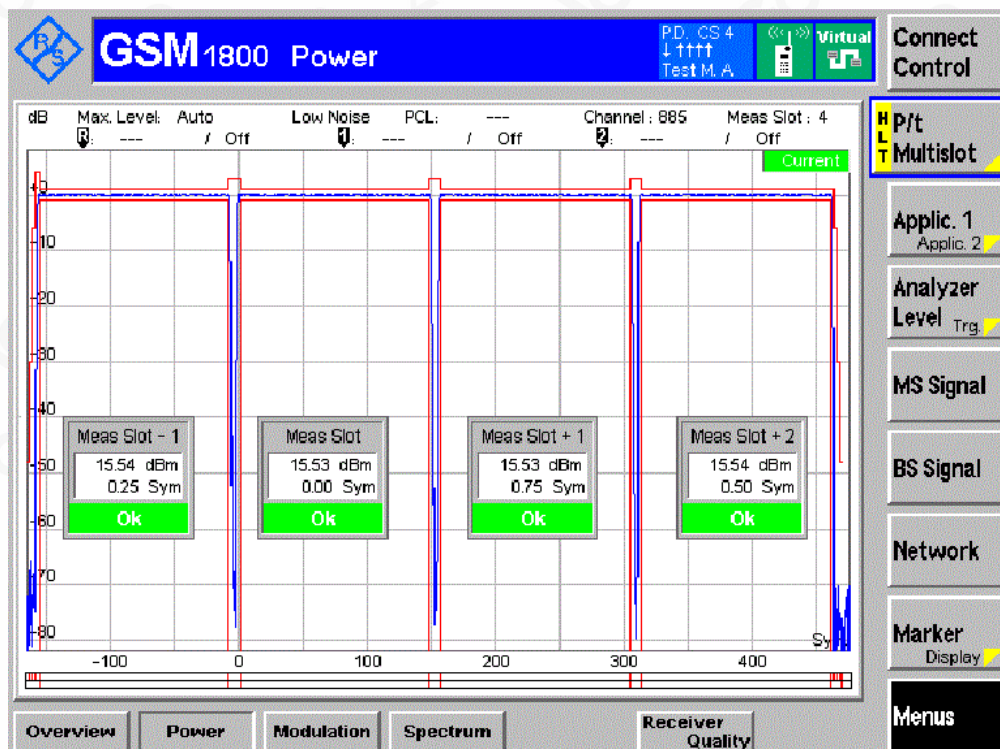


### Channel MCH PCL 8

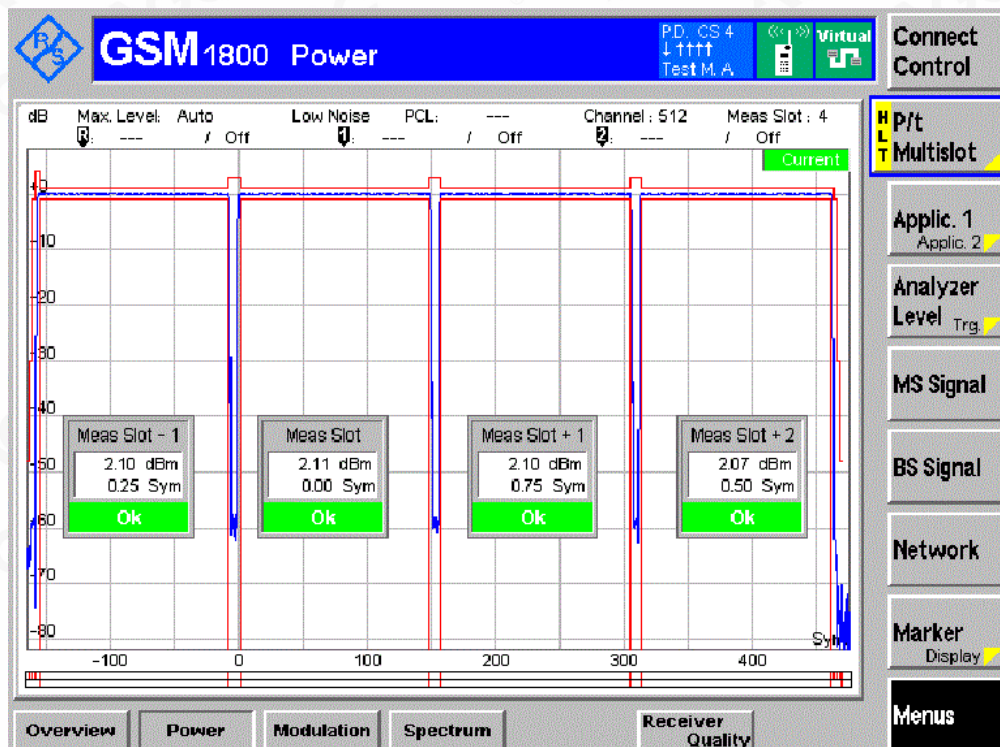




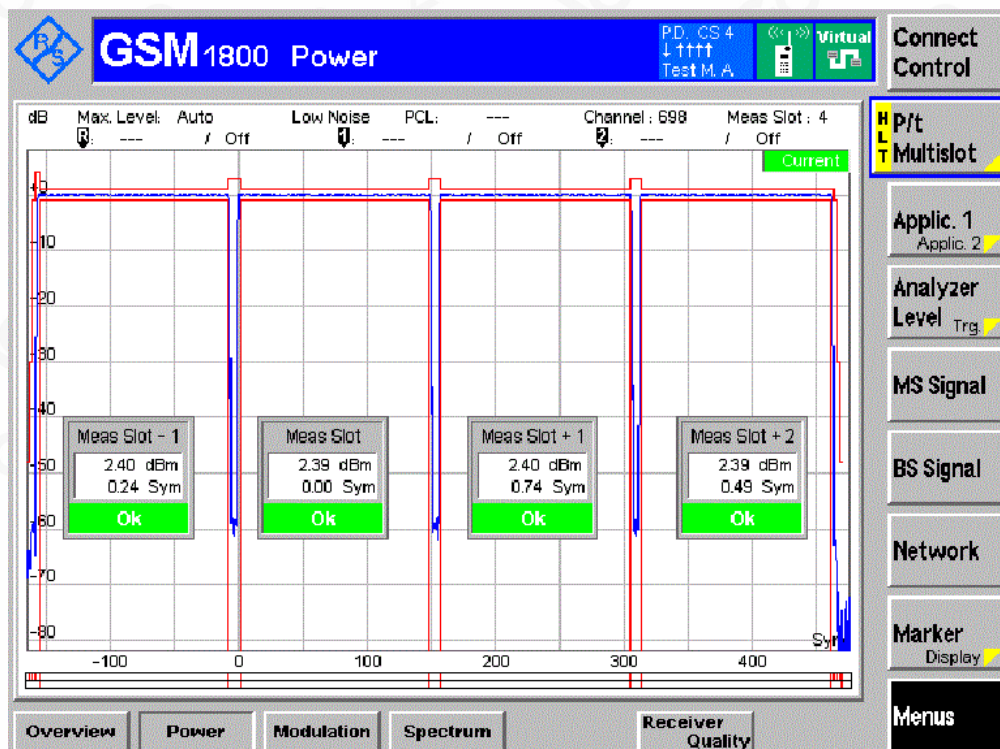
### Channel HCH PCL 8



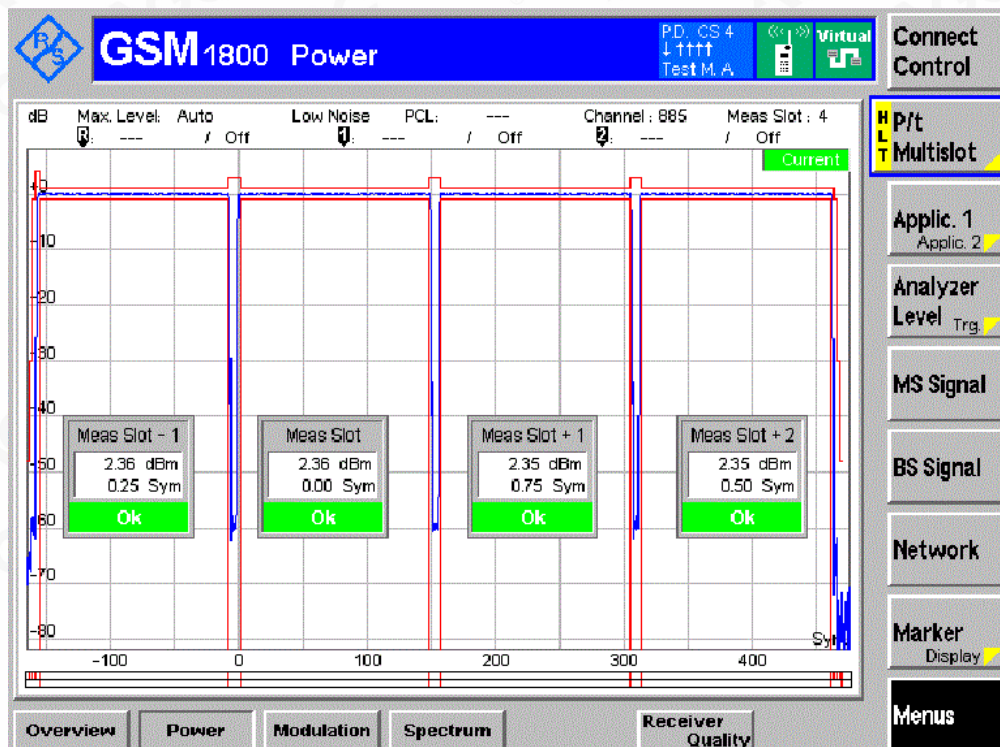
### Channel LCH PCL 15



### Channel MCH PCL 15



### Channel HCH PCL 15





## Appendix G. Output RF spectrum in GPRS multislot configuration

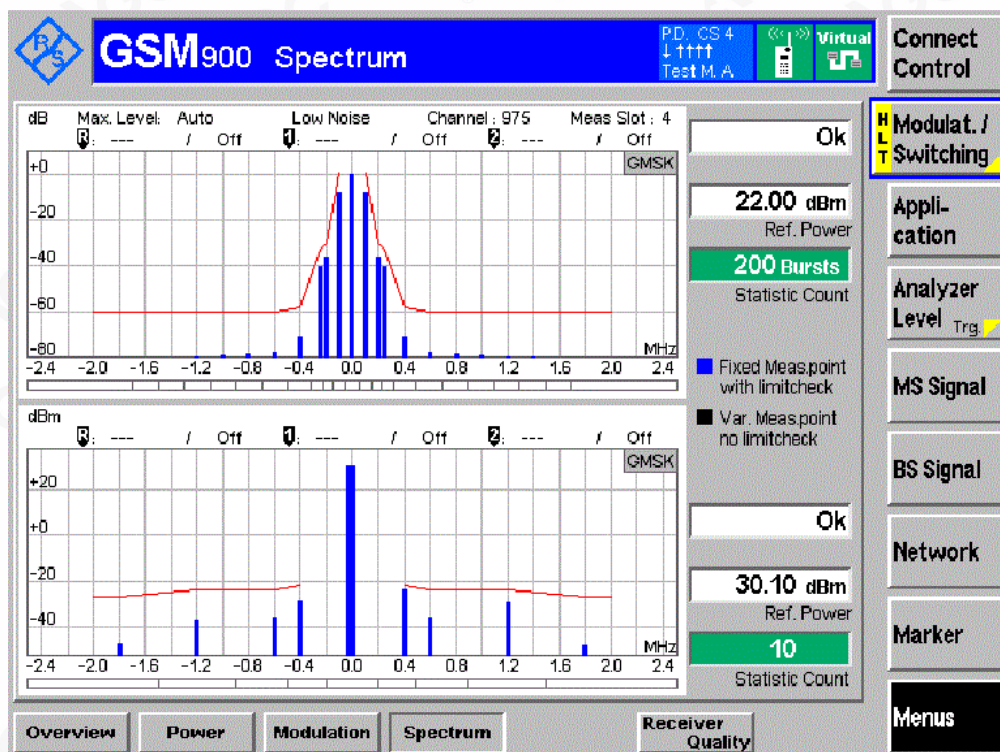
Note: All the modes had been tested, but only the worst data recorded in the report.

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

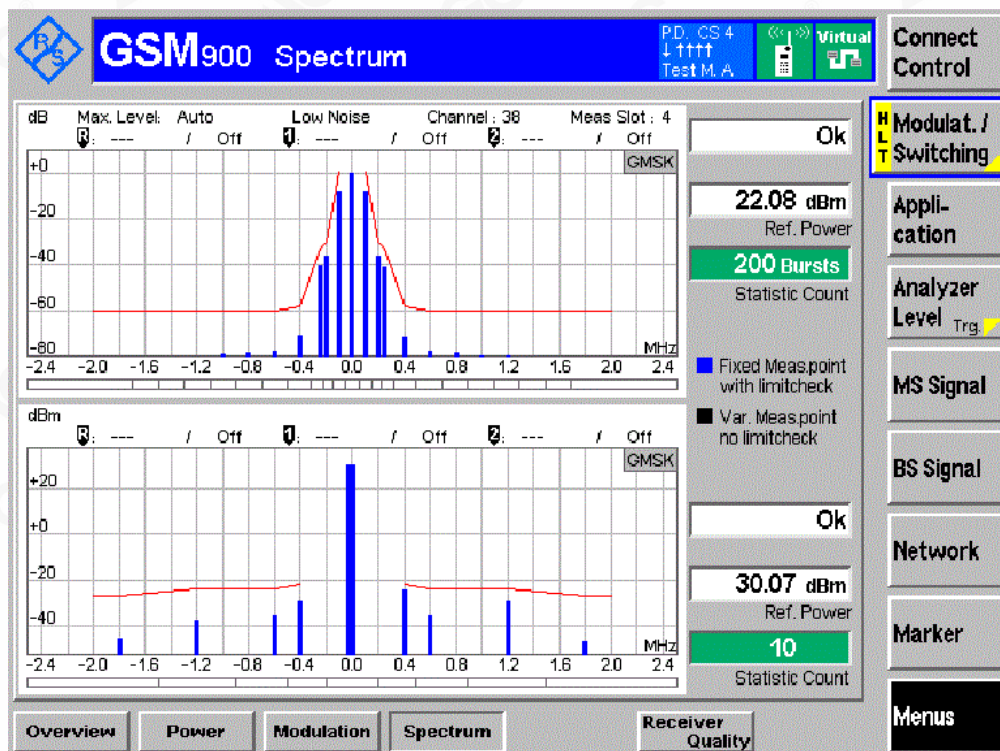
Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
DCS1800		LCH	MCH	HCH
TN,VN	0	PASS	PASS	PASS
	8	PASS	PASS	PASS
	15	PASS	PASS	PASS



**GSM 900 TN,VN**  
**Channel LCH PCL 5**

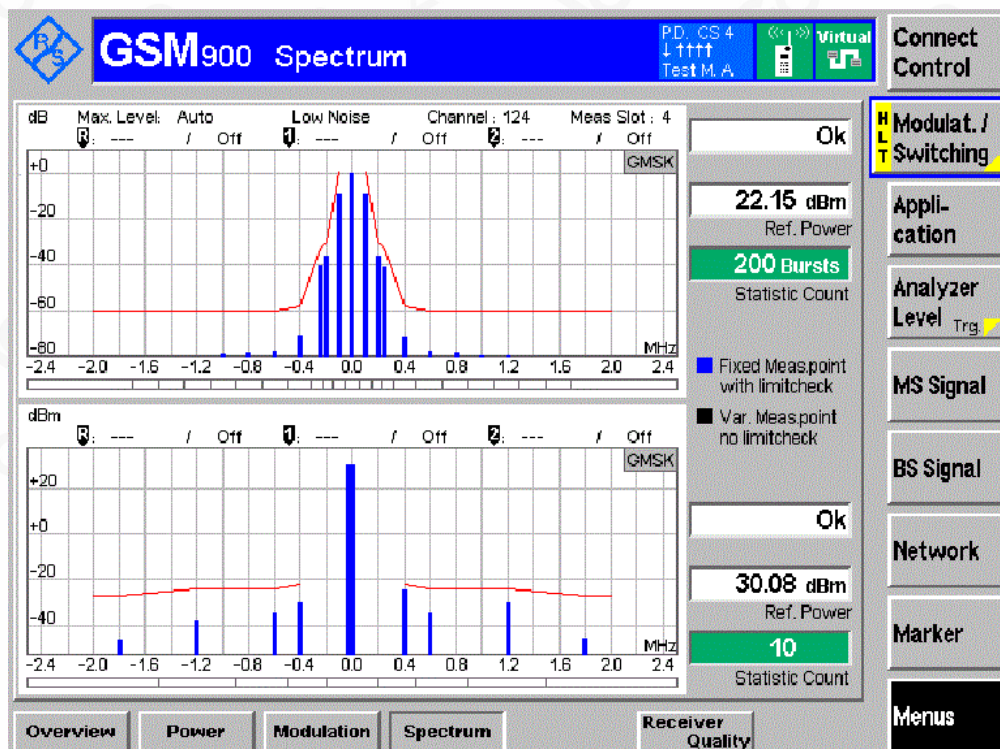


**Channel MCH PCL 5**

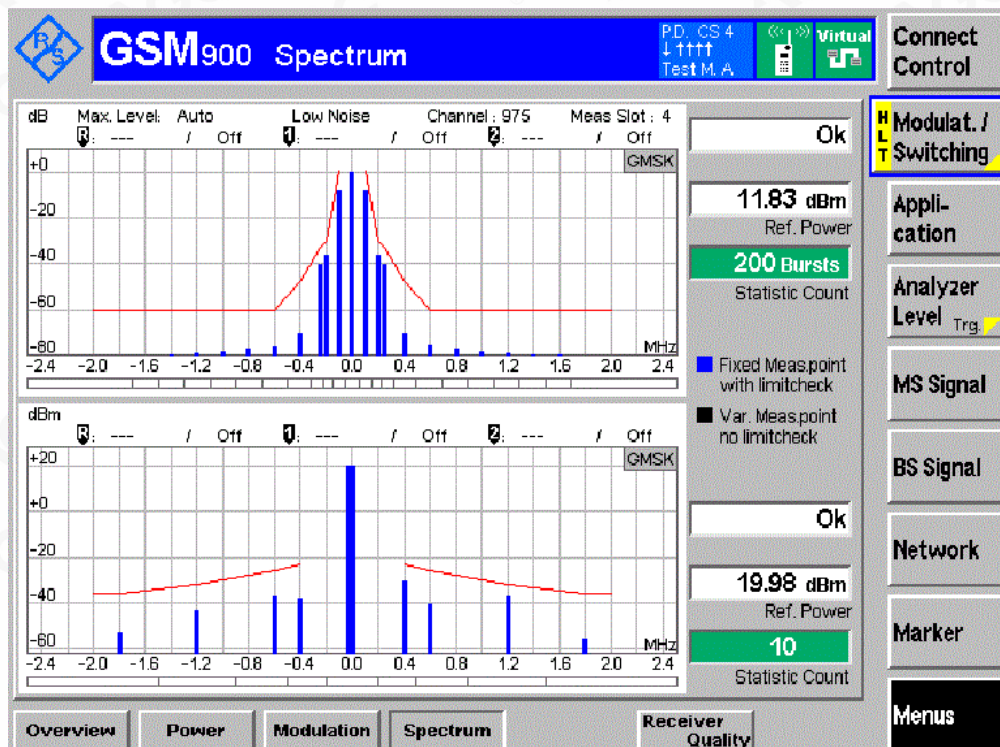




### Channel HCH PCL 5



### Channel LCH PCL 12



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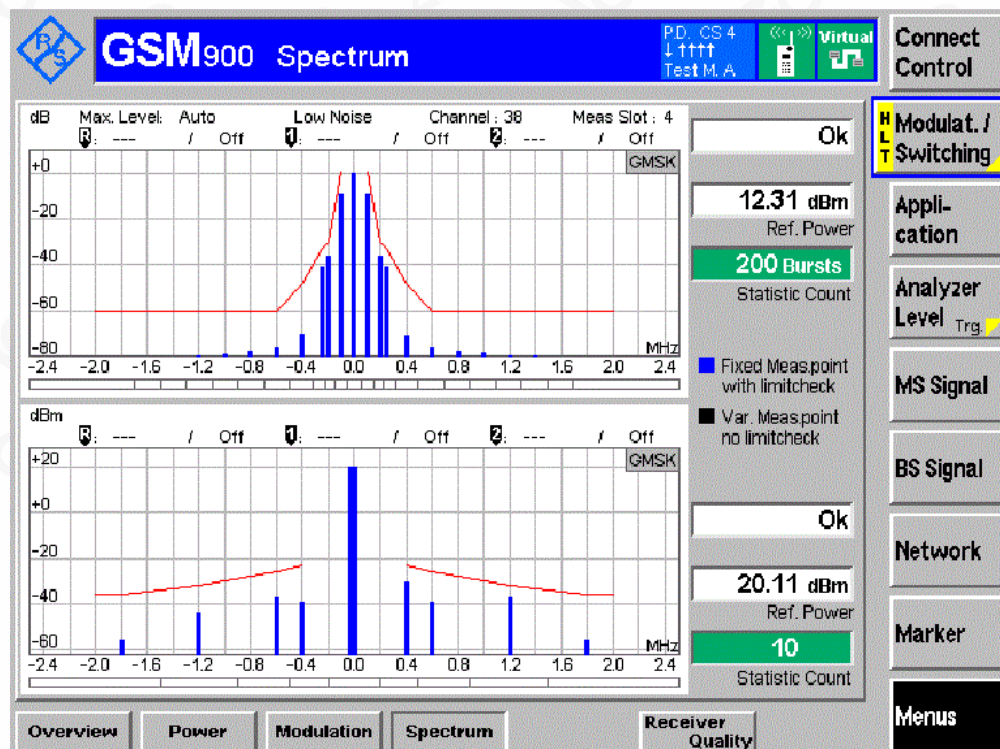
Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

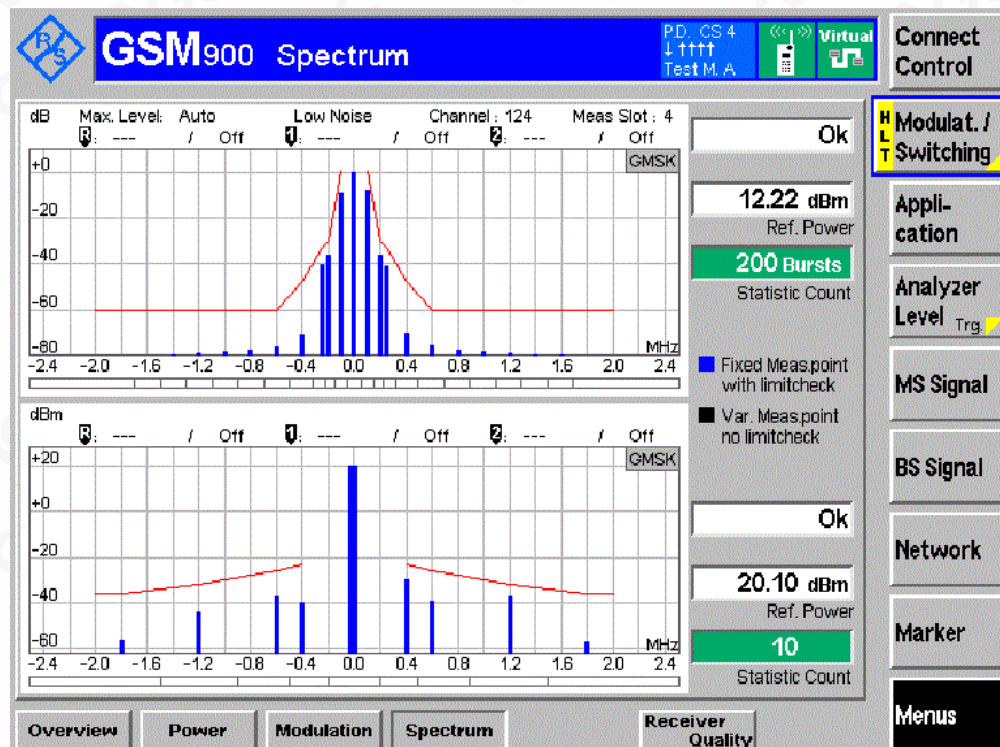
Service Hotline: 400 089 2118



### Channel MCH PCL 12

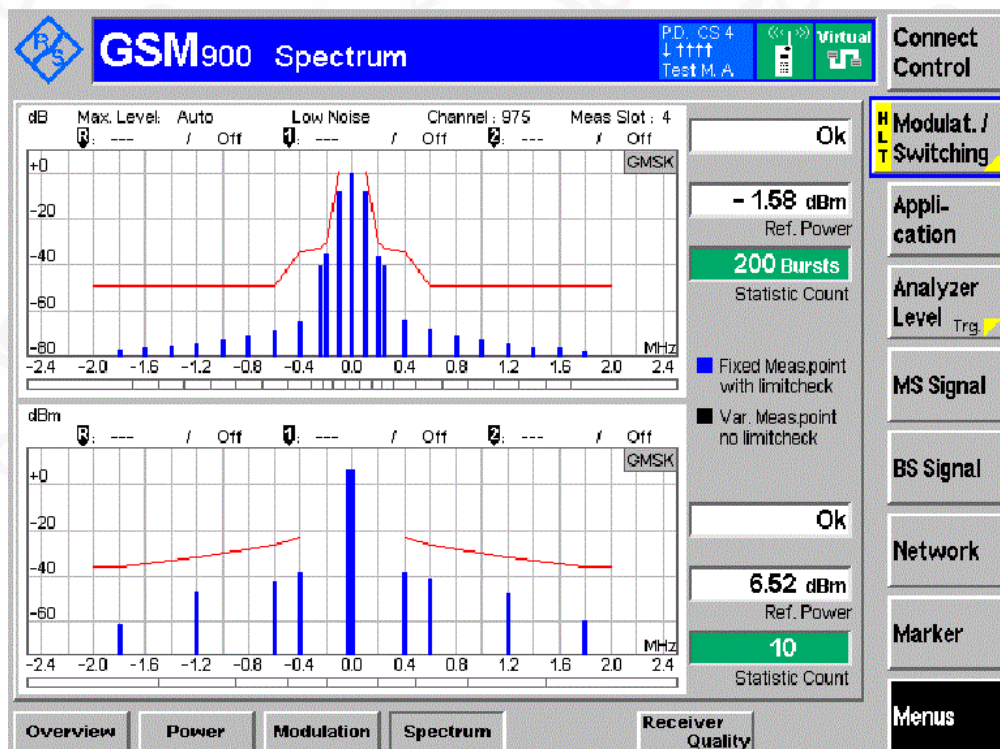


### Channel HCH PCL 12

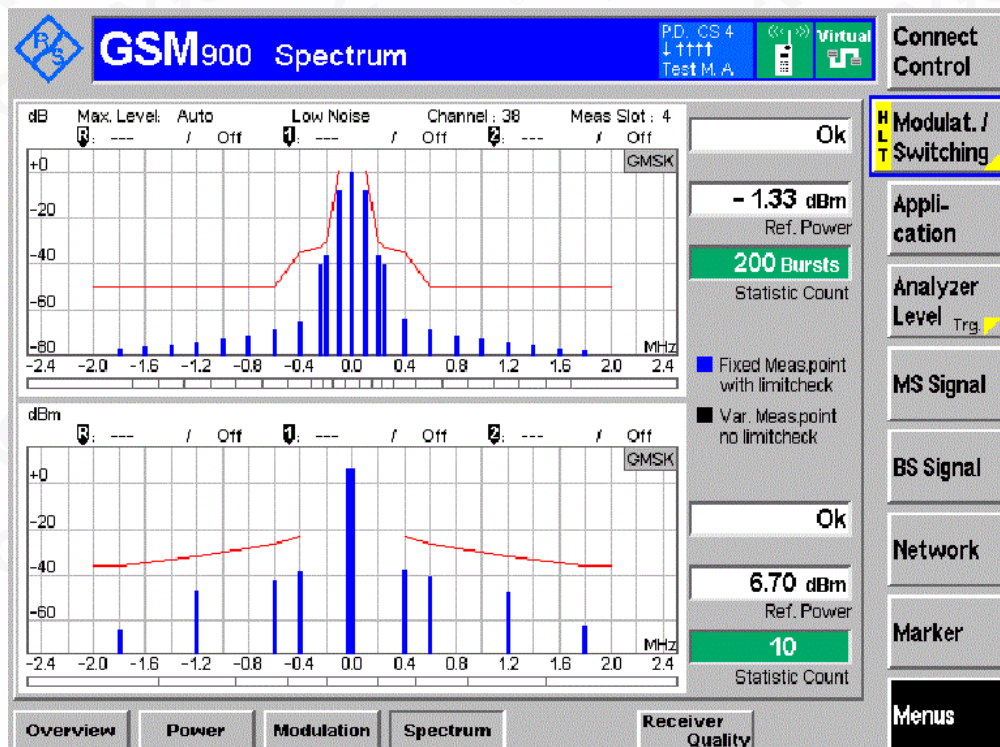




Channel LCH PCL 19

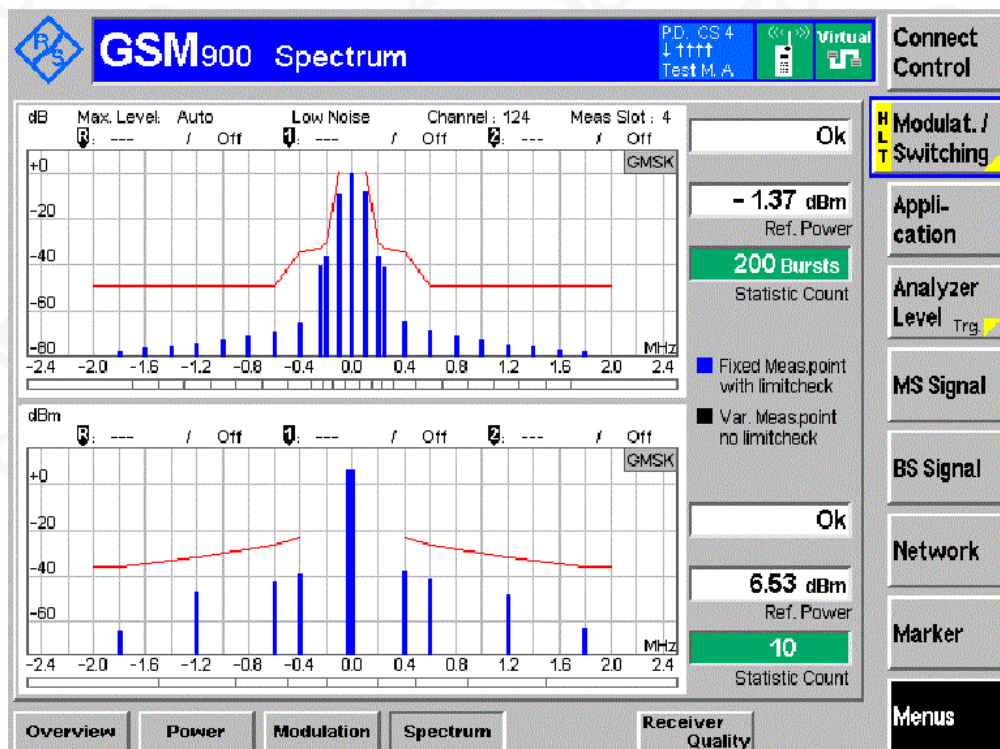


Channel MCH PCL 19



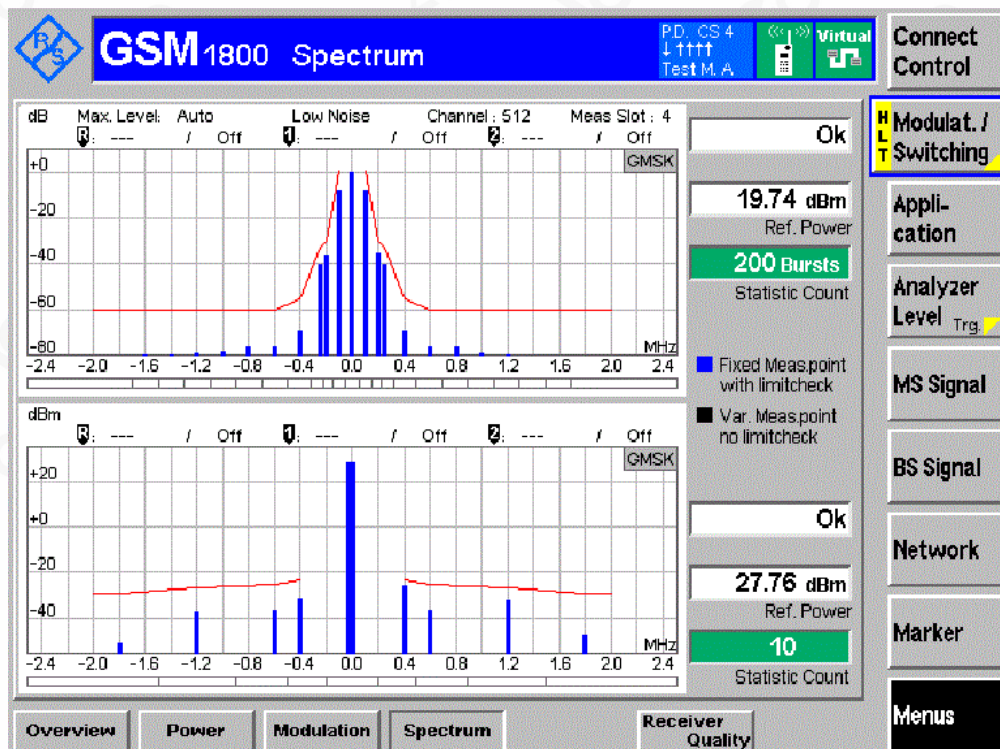


### Channel HCH PCL 19



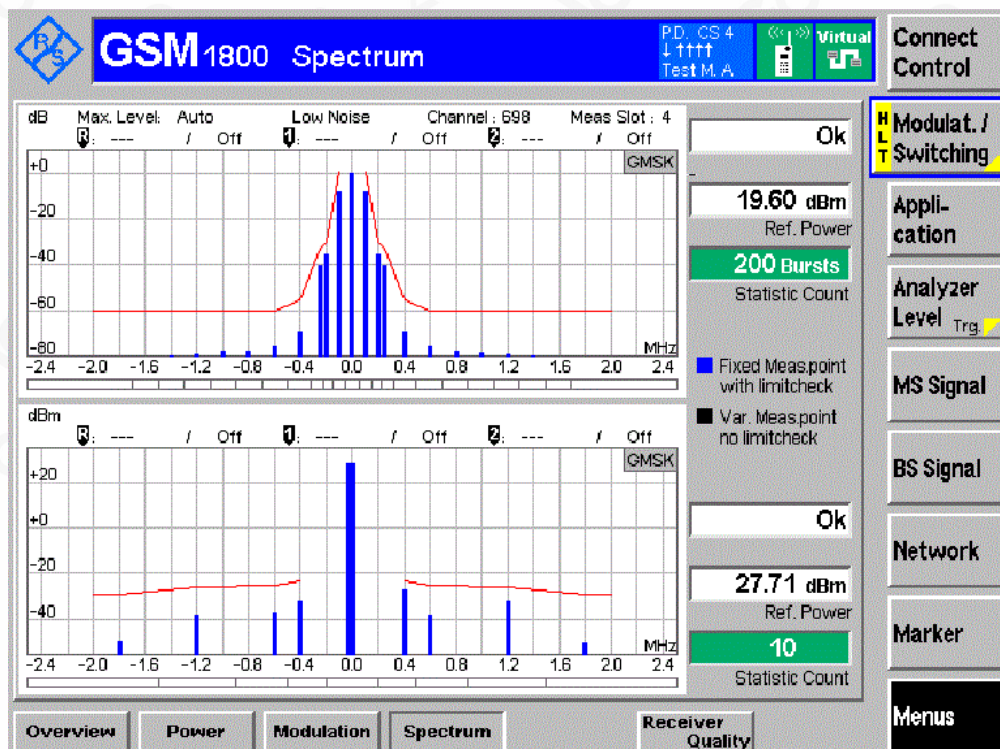
### DCS1800 TN,VN

### Channel LCH PCL 0

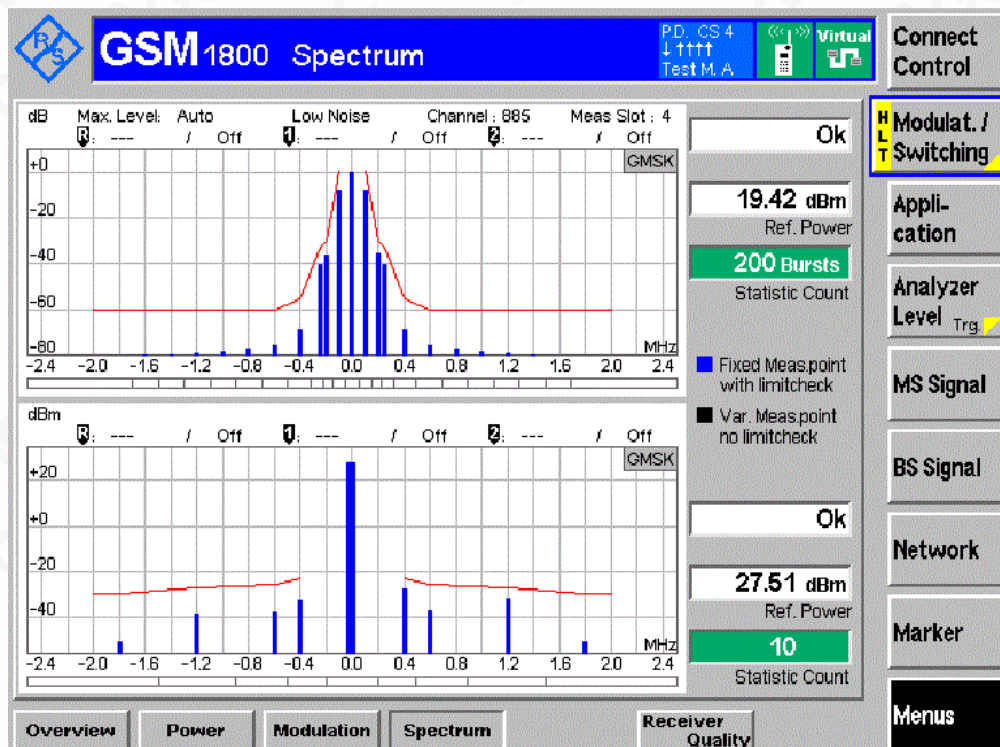




### Channel MCH PCL 0



### Channel HCH PCL 0



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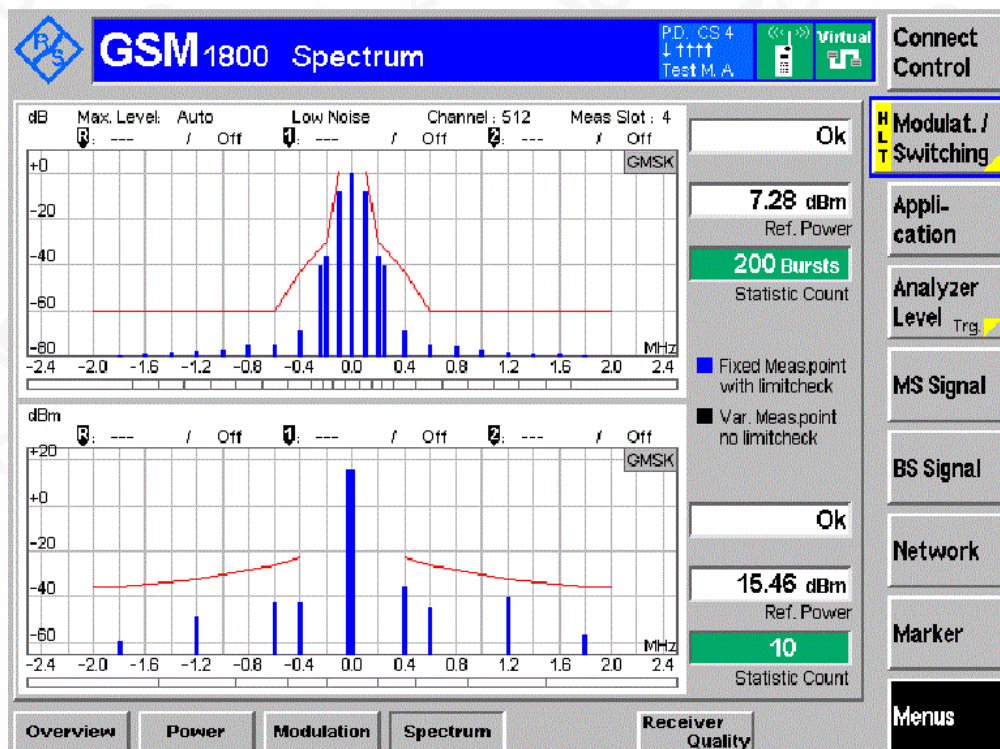
Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

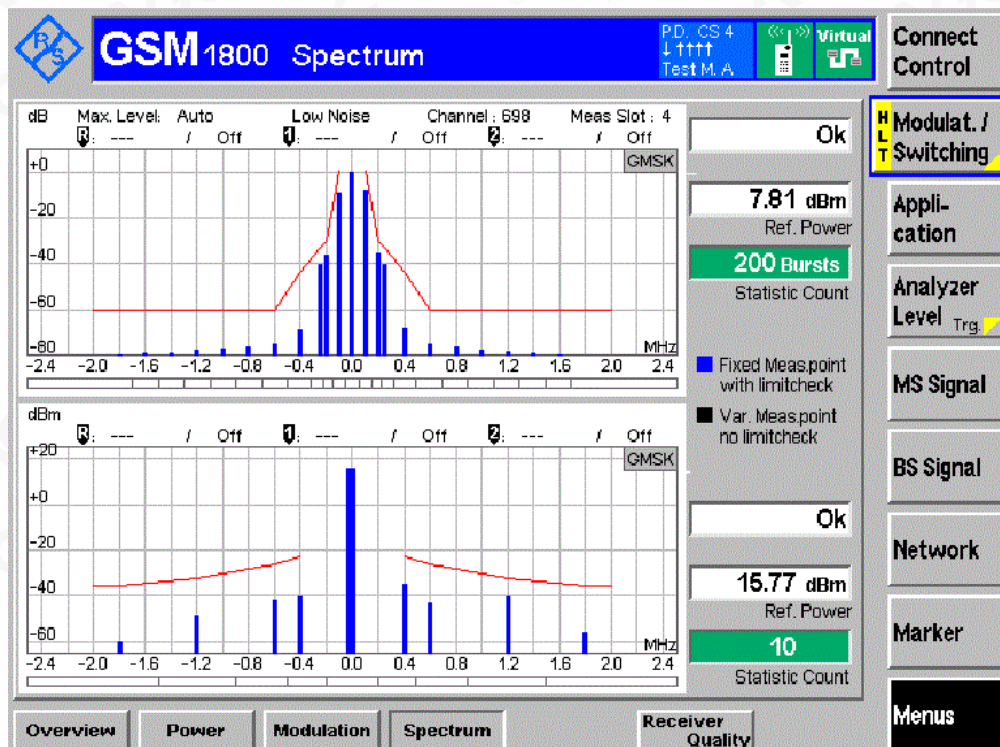
Service Hotline: 400 089 2118



### Channel LCH PCL 8

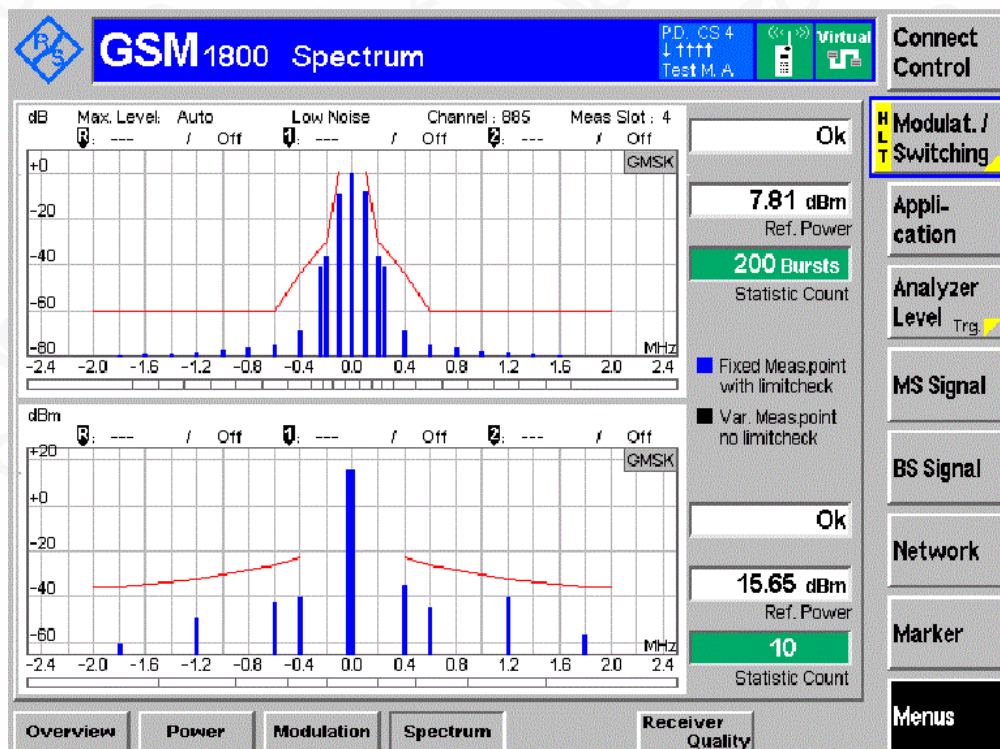


### Channel MCH PCL 8

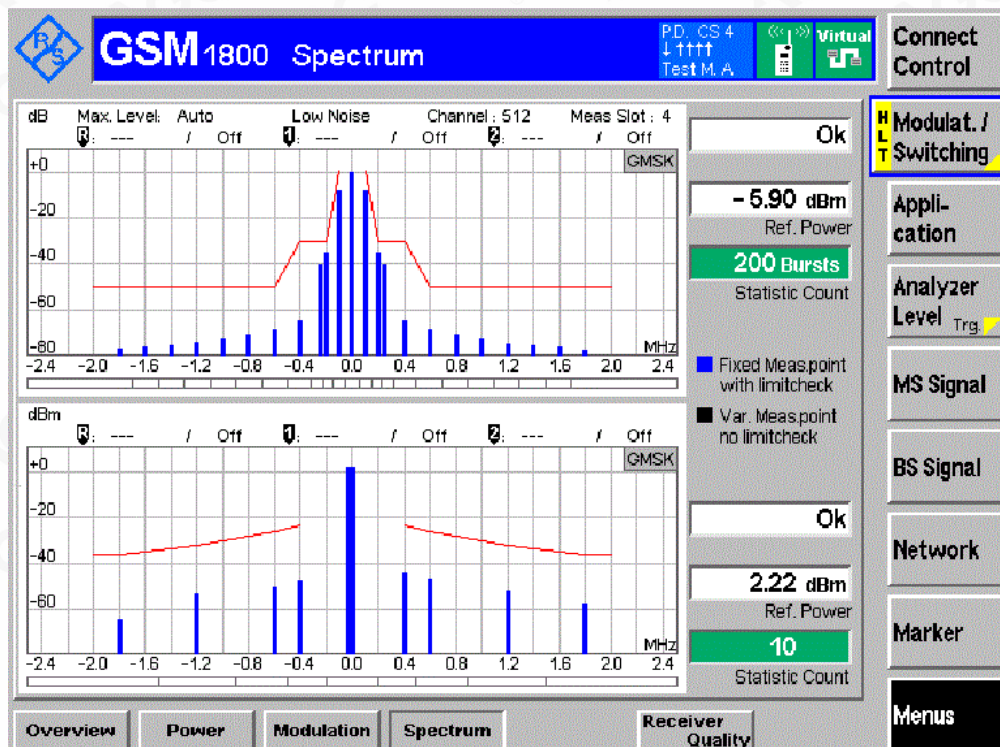




### Channel HCH PCL 8

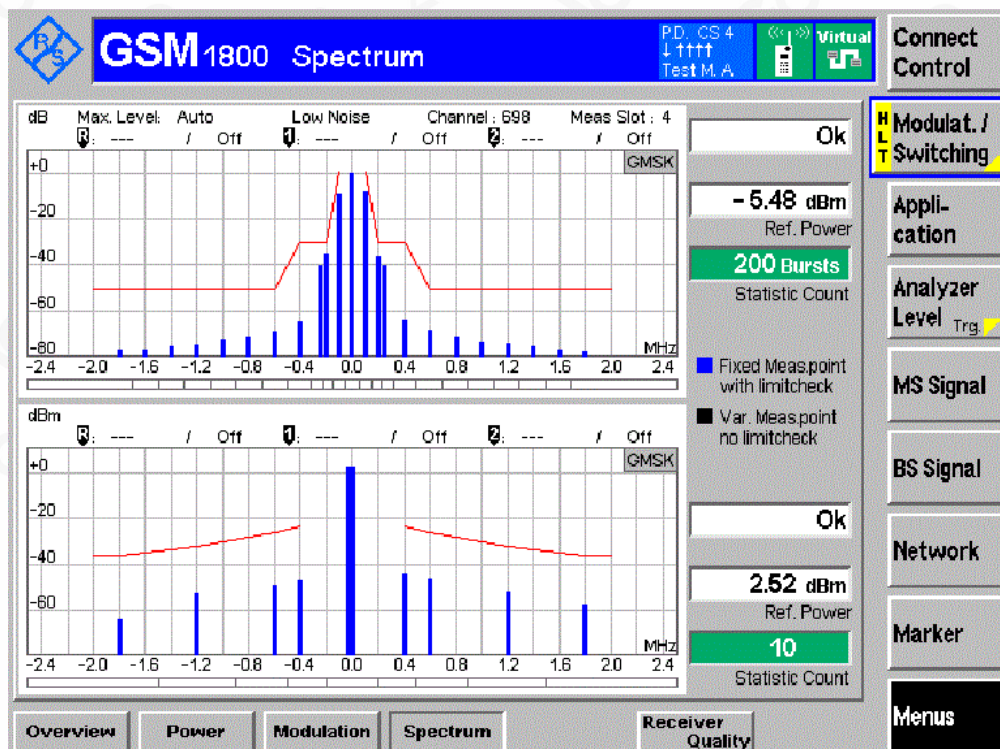


### Channel LCH PCL 15

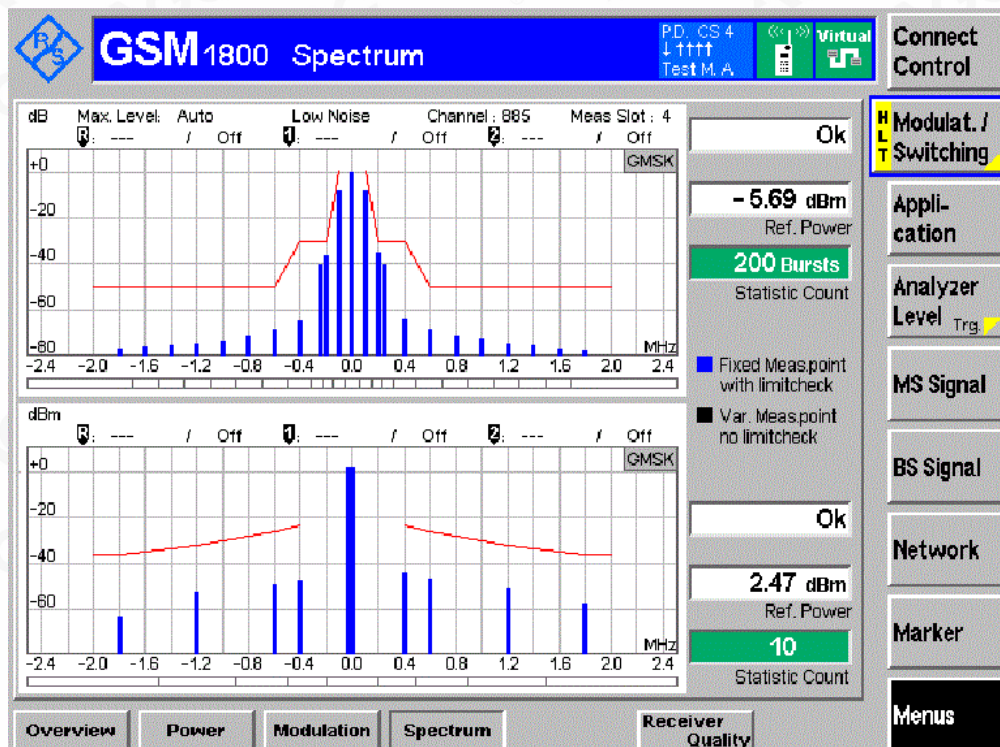




### Channel MCH PCL 15



### Channel HCH PCL 15



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E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118



## 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	-52.85	PASS
50MHz~500MHz	100k	-36	-49.46	PASS
500MHz~850MHz	3M	-36	-41.43	PASS
850MHz~860MHz	1M	-36	-44.59	PASS
860MHz~870MHz	300k	-36	-48.94	PASS
870MHz~880MHz	100k	-36	-48.57	PASS
915MHz~925MHz	100k	-36	-48.16	PASS
960MHz~1GHz	3M	-36	-42.17	PASS
1GHz~1805MHz	3M	-30	-42.62	PASS
1880MHz~12.75GHz	3M	-30	-38.31	PASS
896.6MHz~900.8MHz	30K	-36	-54.49	PASS
904.4MHz~908.6MHz	30K	-36	-54.96	PASS
880MHz~896.6MHz	100K	-36	-49.75	PASS
908.6MHz~915MHz	100K	-36	-49.29	PASS

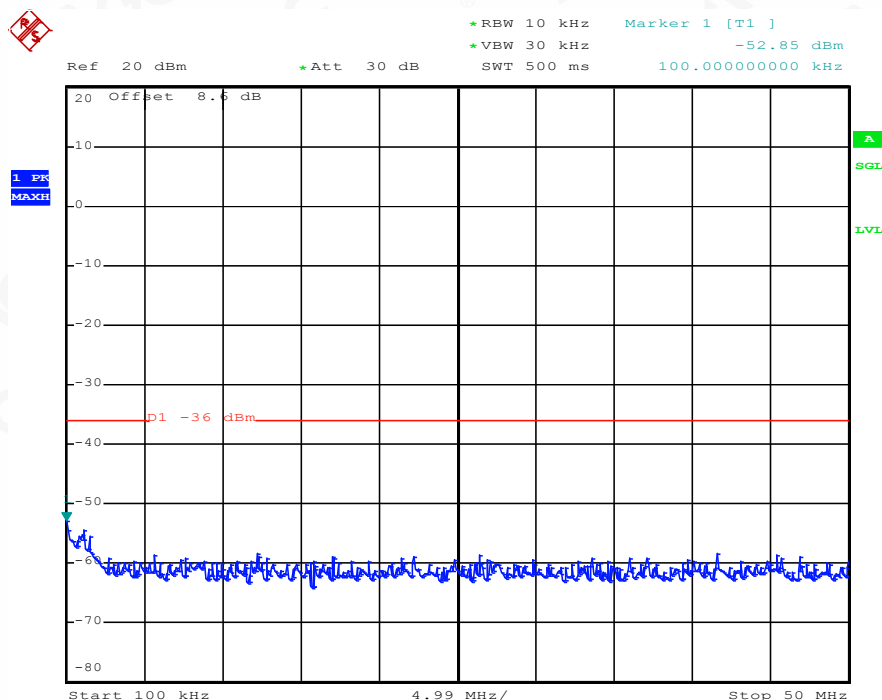
Conducted spurious emissions	DCS1800;VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
100kHz~50MHz	10k	-36	-52.18	PASS
50MHz~500MHz	100k	-36	-49.24	PASS
500MHz~925MHz	3M	-36	-40.78	PASS
960MHz~1GHz	3M	-36	-46.79	PASS
1GHz~1680MHz	3M	-30	-42.72	PASS
1680MHz~1690MHz	1M	-30	-46.05	PASS
1690MHz~1700MHz	300k	-30	-50.32	PASS

1700MHz~1710MHz	100k	-30	-50.26	PASS
1785MHz~1795MHz	100K	-30	-50.41	PASS
1795MHz~1805MHz	300k	-30	-51.66	PASS
1880MHz~12.75GHz	3M	-30	-37.61	PASS
1741.4MHz~1745.6MHz	30K	-36	-56.52	PASS
1749.2MHz~1753.4MHz	30K	-36	-56.80	PASS
1710MHz~1741.4MHz	100K	-36	-51.57	PASS
1753.4MHz~1785MHz	100K	-36	-51.60	PASS





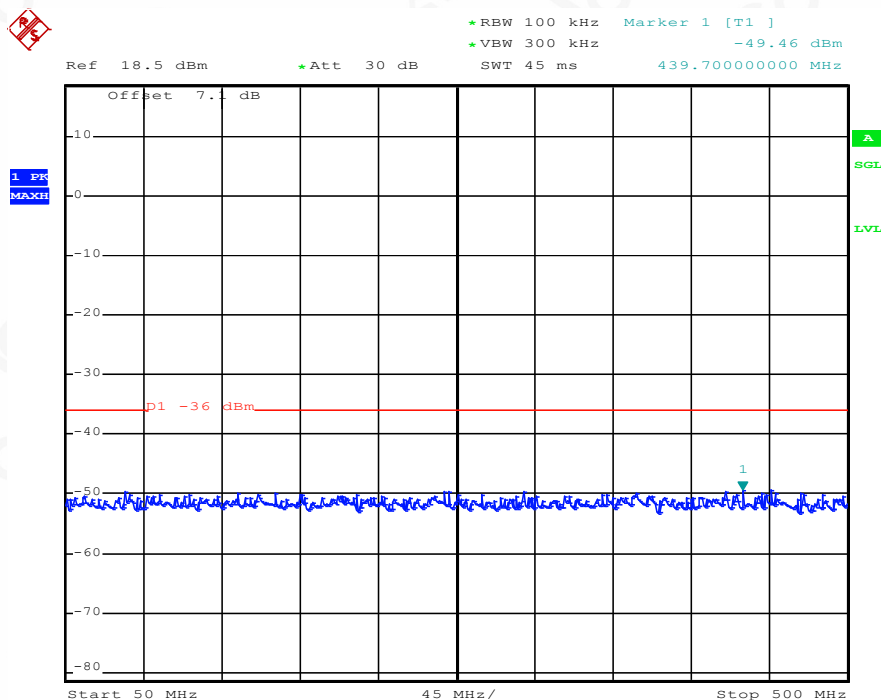
**GSM900: channel MCH VN**  
100kHz~50MHz



AAA

Date: 17.OCT.2019 14:48:37

50MHz~500MHz

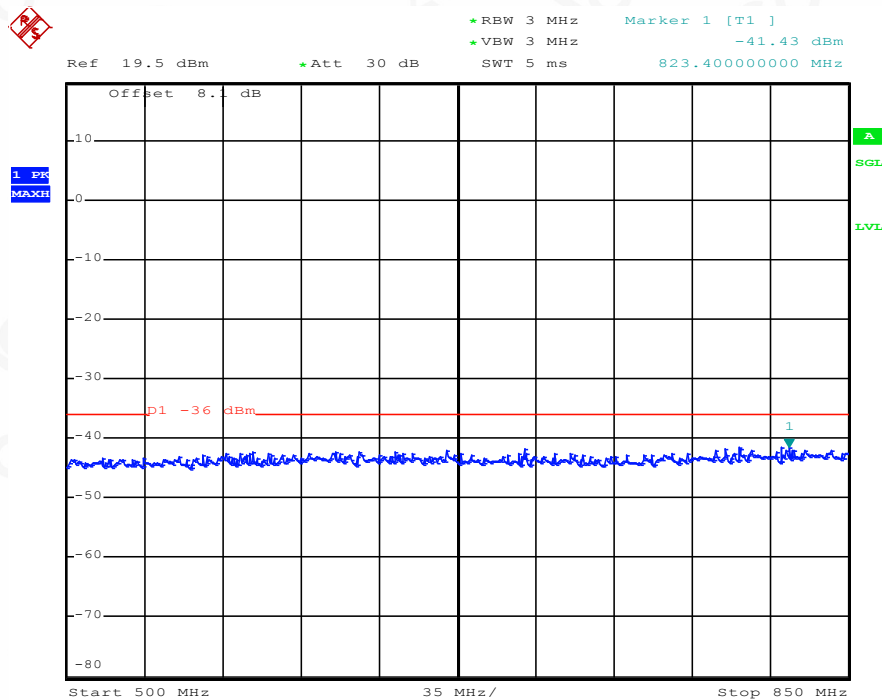


AAA

Date: 17.OCT.2019 14:48:46



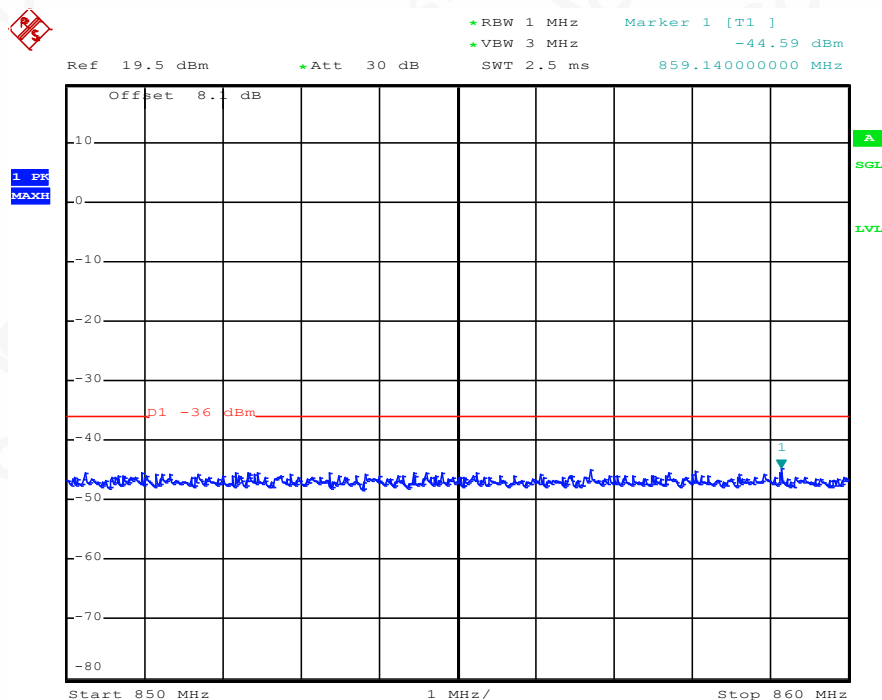
500MHz~850MHz



AAA

Date: 17.OCT.2019 14:48:54

850MHz~860MHz

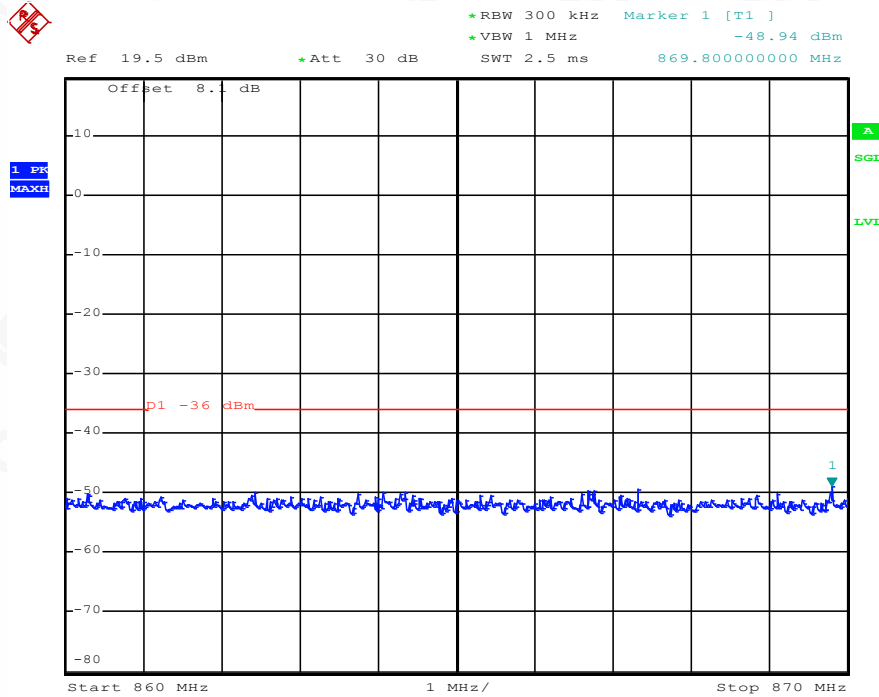


AAA

Date: 17.OCT.2019 14:49:02



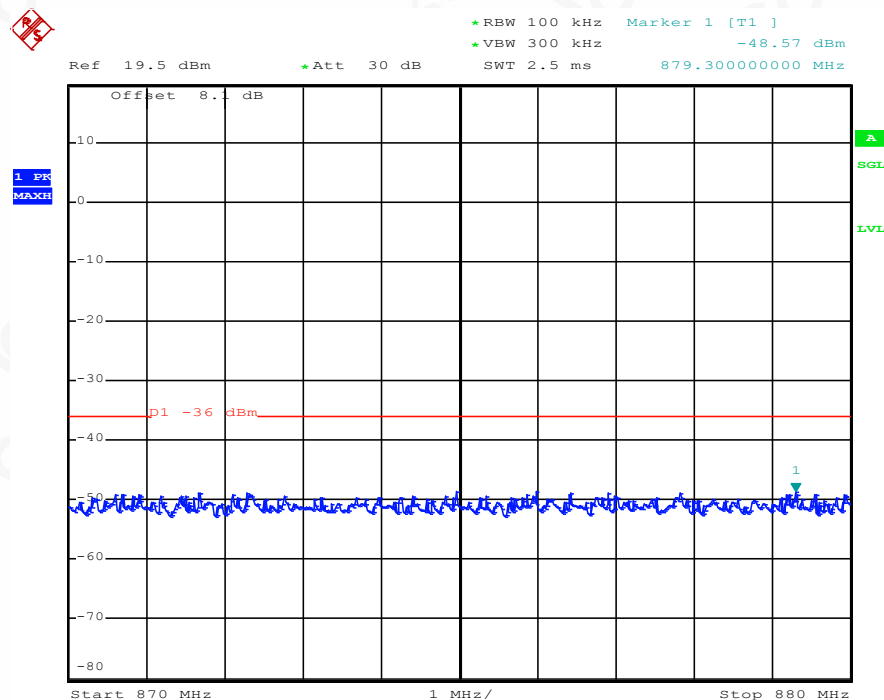
860MHz~870MHz



AAA

Date: 17.OCT.2019 14:49:11

870MHz~880MHz

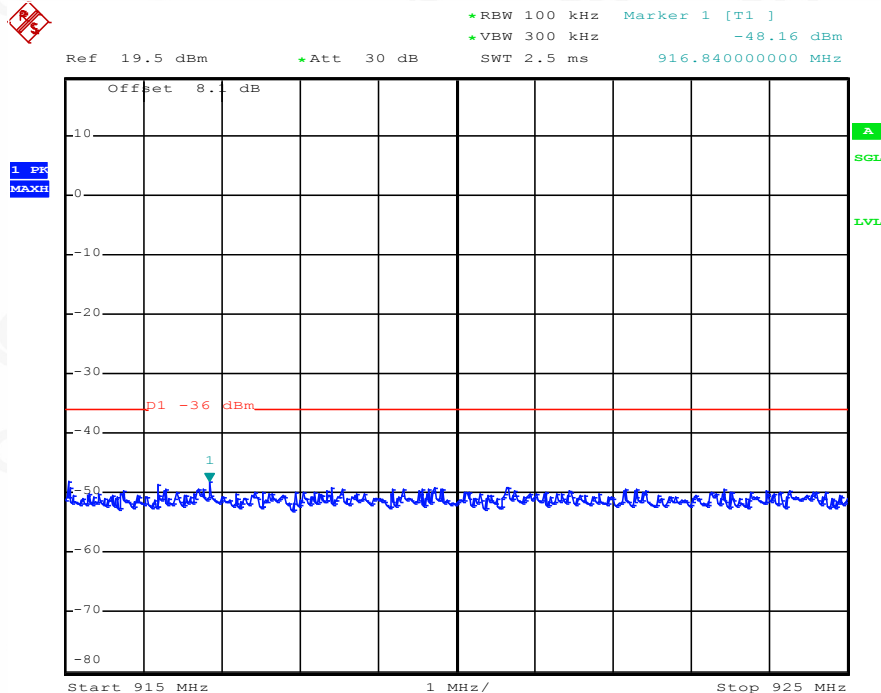


AAA

Date: 17.OCT.2019 14:49:19



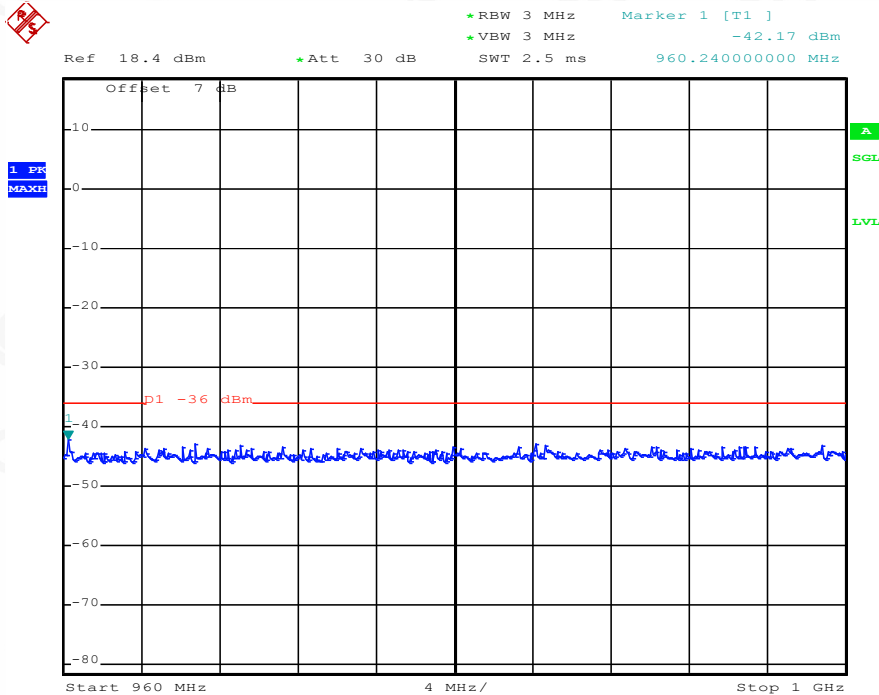
915MHz~925MHz



AAA

Date: 17.OCT.2019 14:49:27

960MHz~1GHz

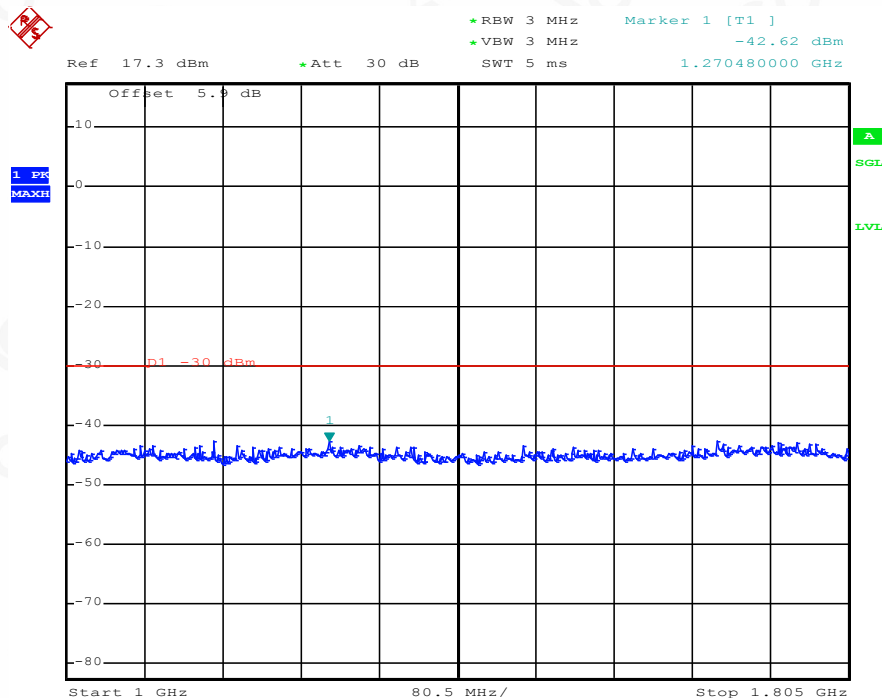


AAA

Date: 17.OCT.2019 14:49:35



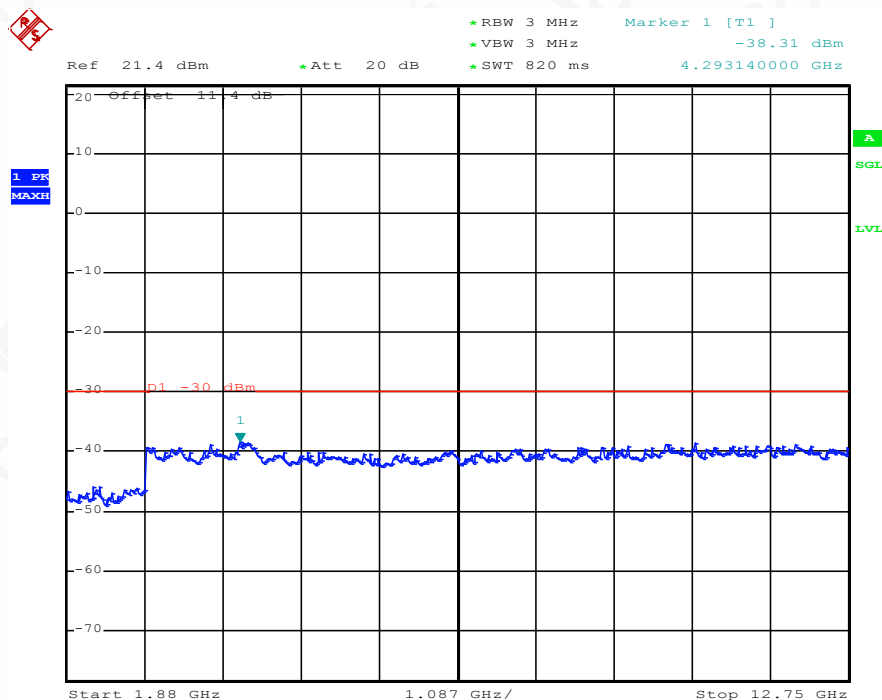
1GHz~1805MHz



AAA

Date: 17.OCT.2019 14:49:44

1880MHz~12.75GHz

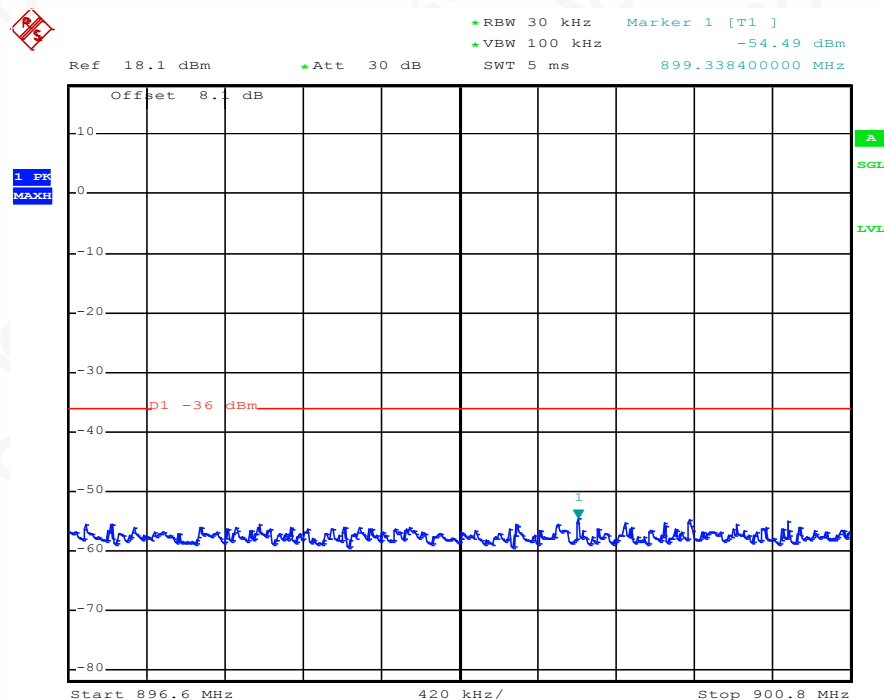


AAA

Date: 17.OCT.2019 14:50:13



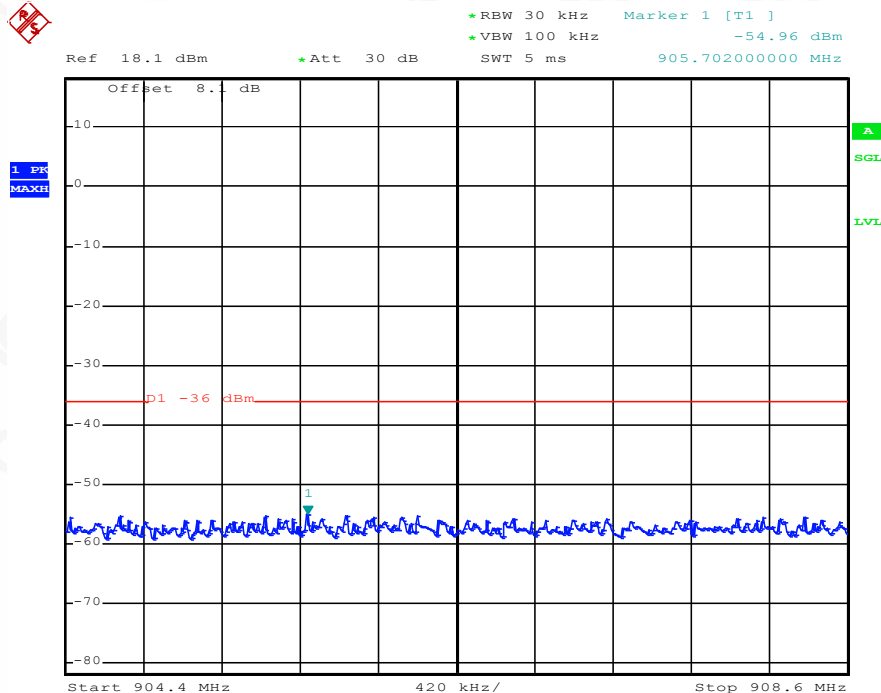
896.6MHz~900.8MHz



AAA

Date: 17.OCT.2019 14:50:21

904.4MHz~908.6MHz

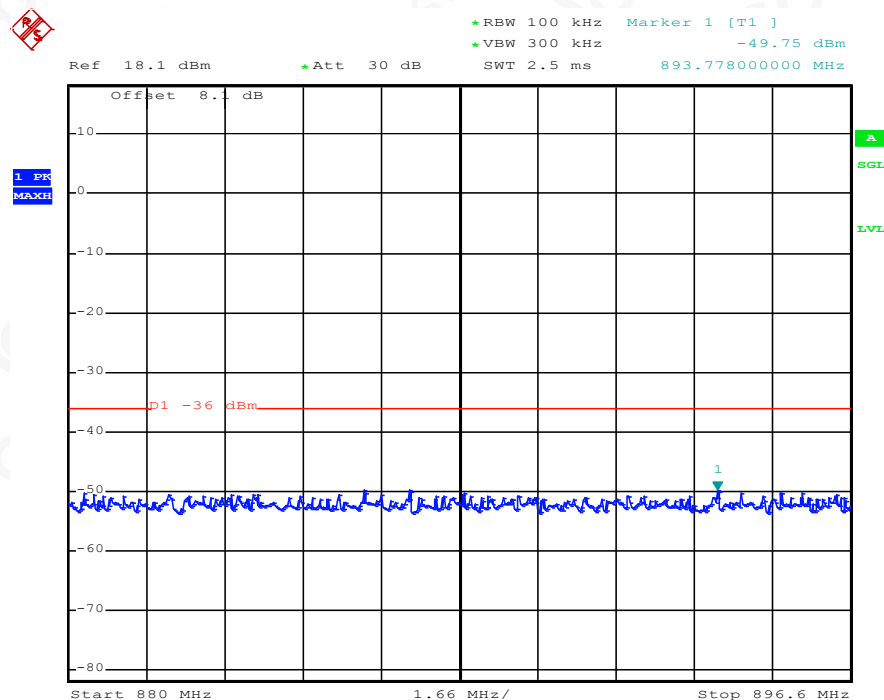


AAA

Date: 17.OCT.2019 14:50:29



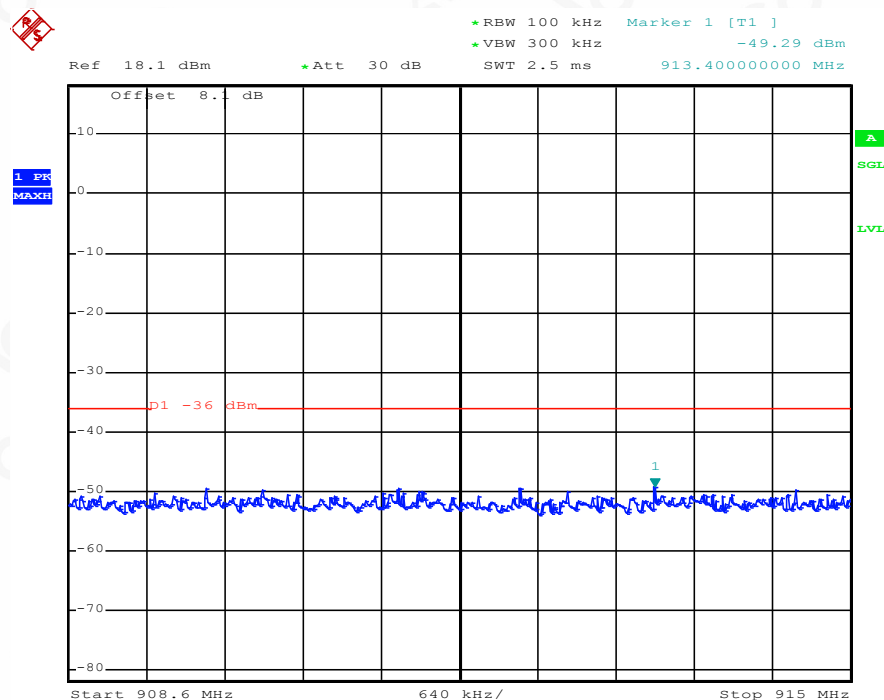
880MHz~896.6MHz



AAA

Date: 17.OCT.2019 14:50:37

908.6MHz~915MHz

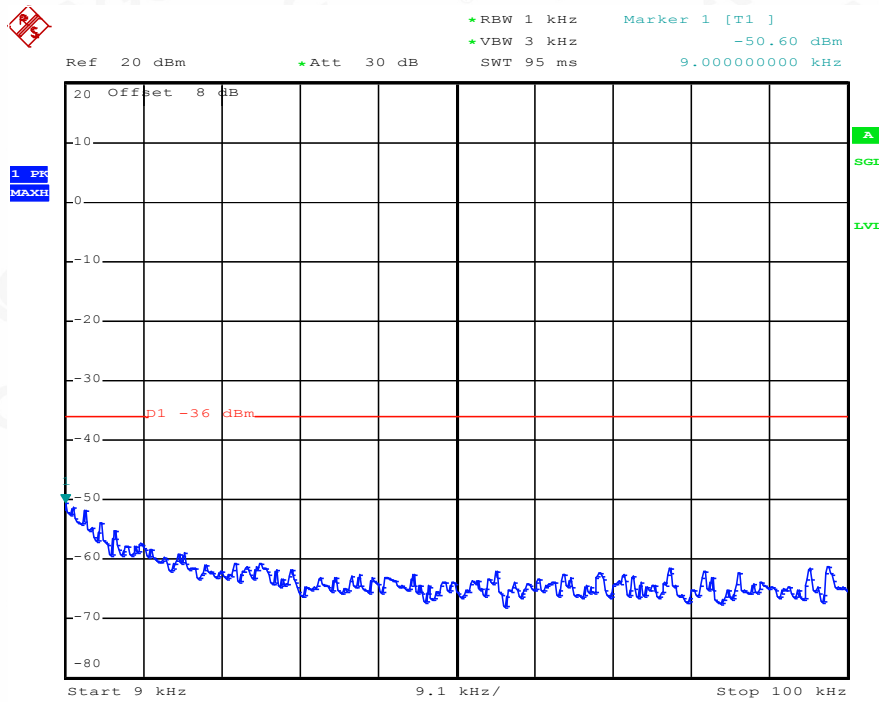


AAA

Date: 17.OCT.2019 14:50:46

## DCS1800: channel MCH VN

9kHz~100kHz

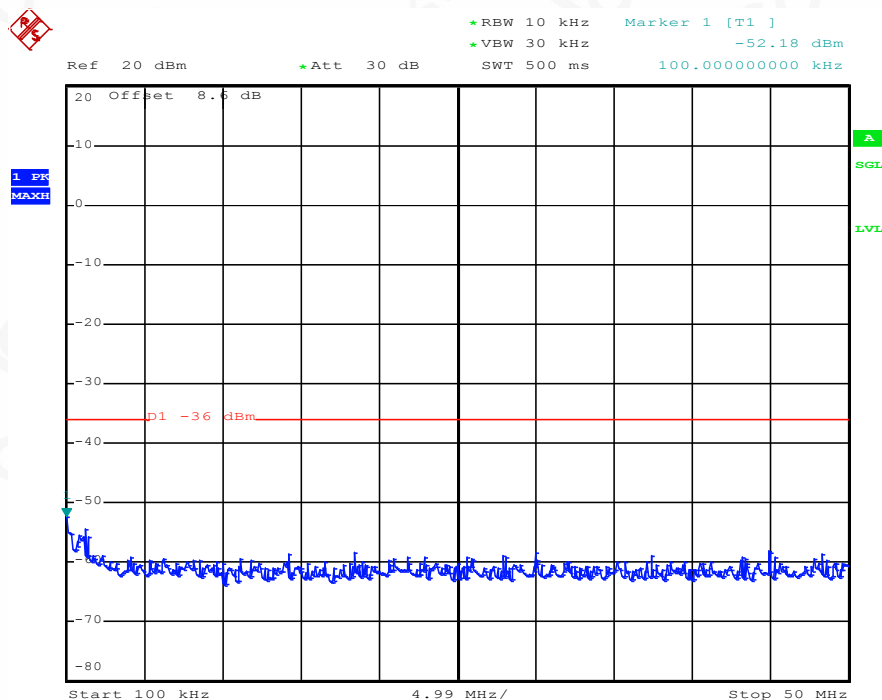


AAA

Date: 17.OCT.2019 15:44:17



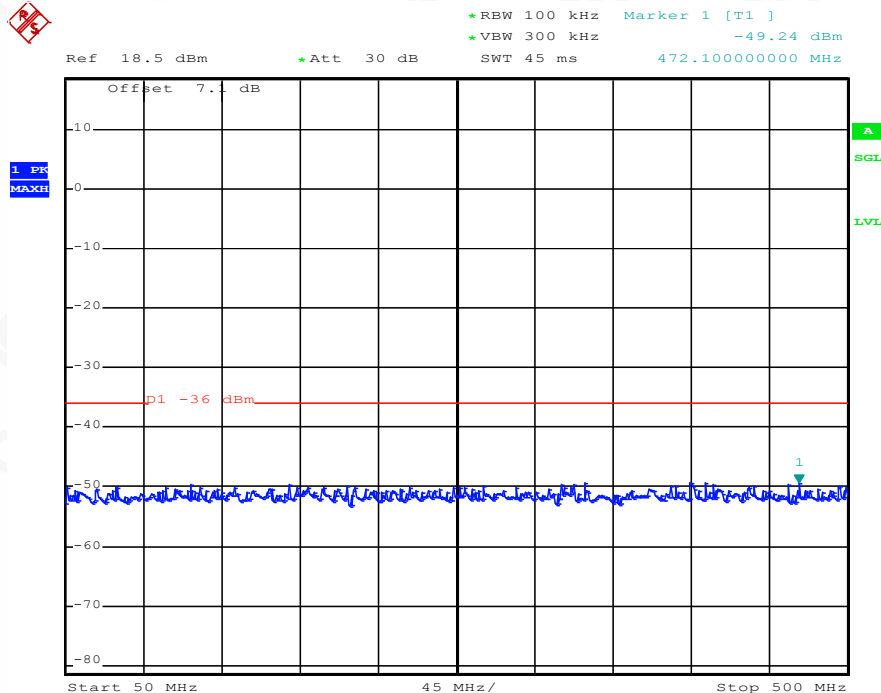
100kHz~50MHz



AAA

Date: 17.OCT.2019 15:44:25

50MHz~500MHz



AAA

Date: 17.OCT.2019 15:44:34



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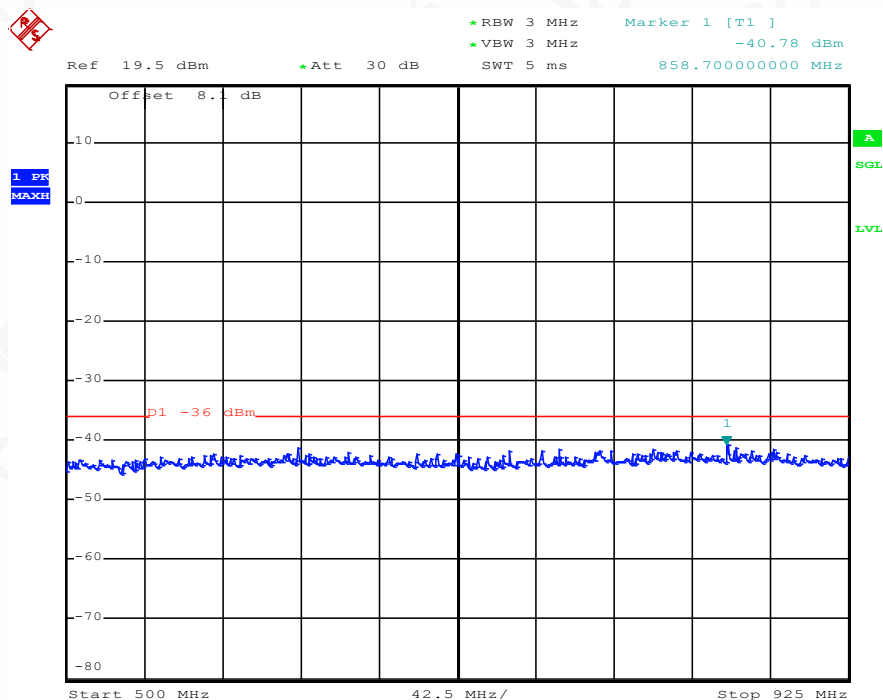
Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,  
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500MHz~925MHz

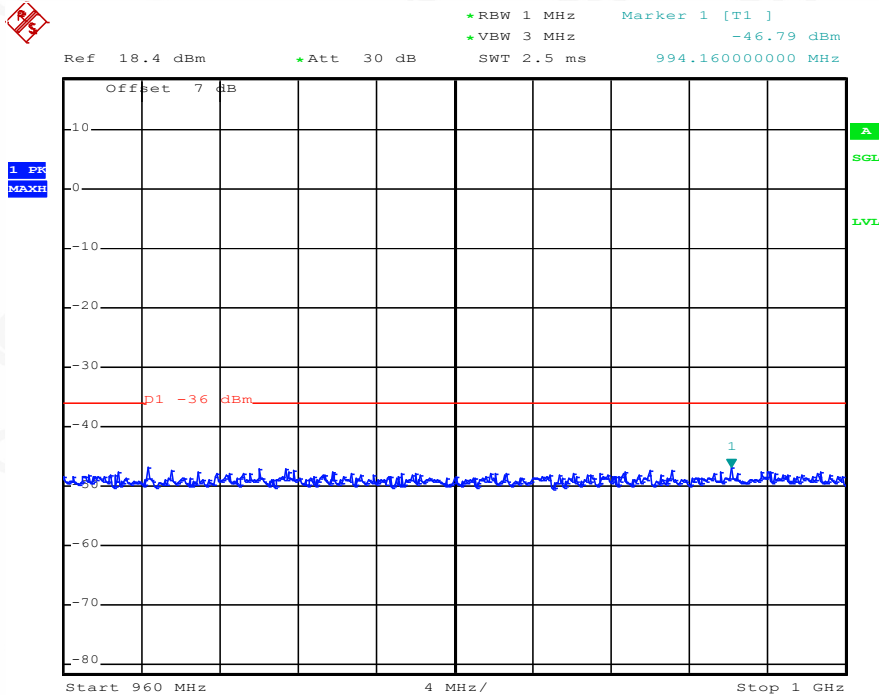


AAA

Date: 17.OCT.2019 15:44:42



960MHz~1GHz



AAA

Date: 17.OCT.2019 15:44:50



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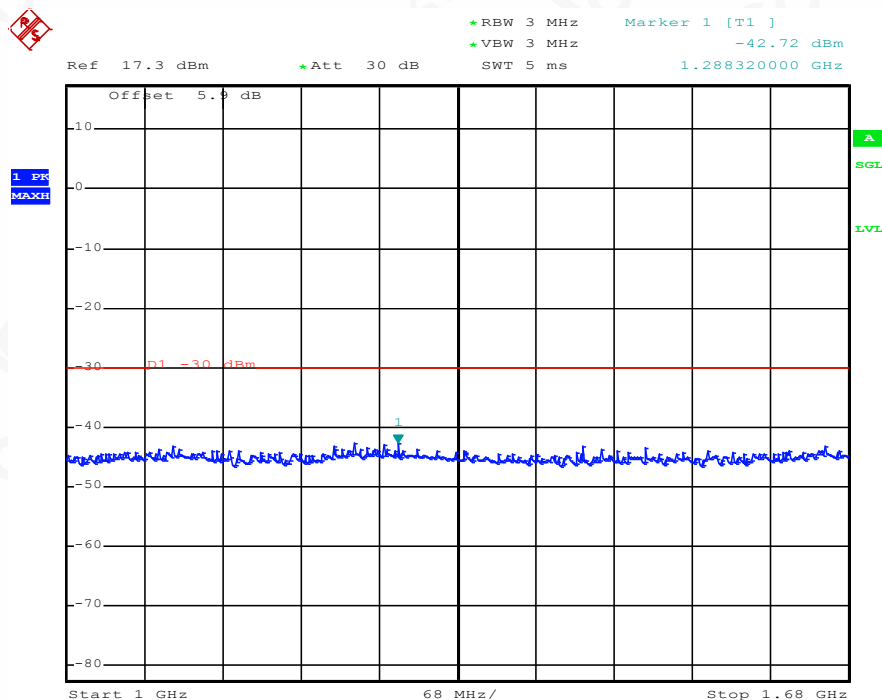
Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,  
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118

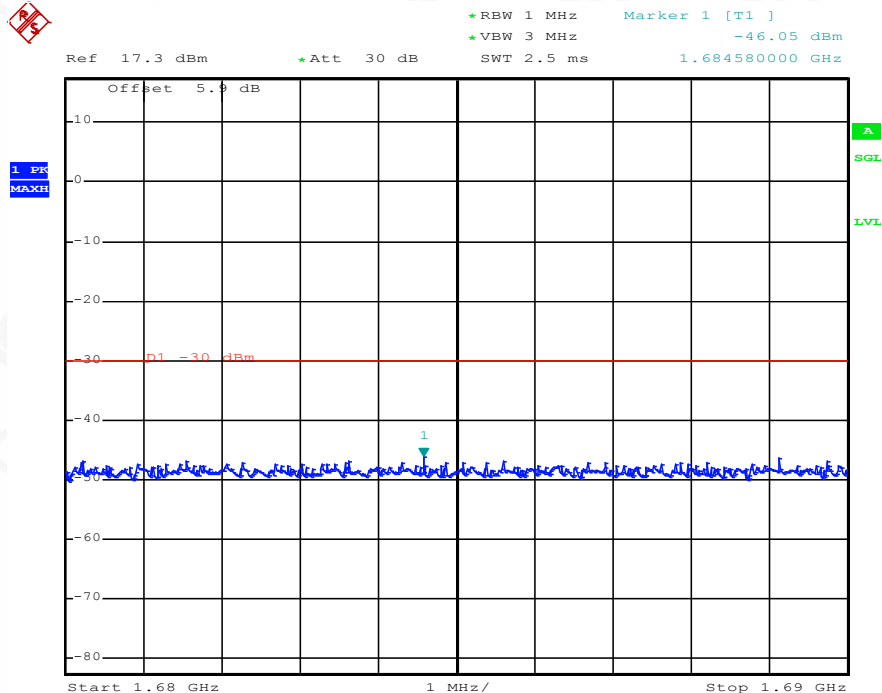
1GHz~1680MHz



AAA

Date: 17.OCT.2019 15:44:59

1680MHz~1690MHz

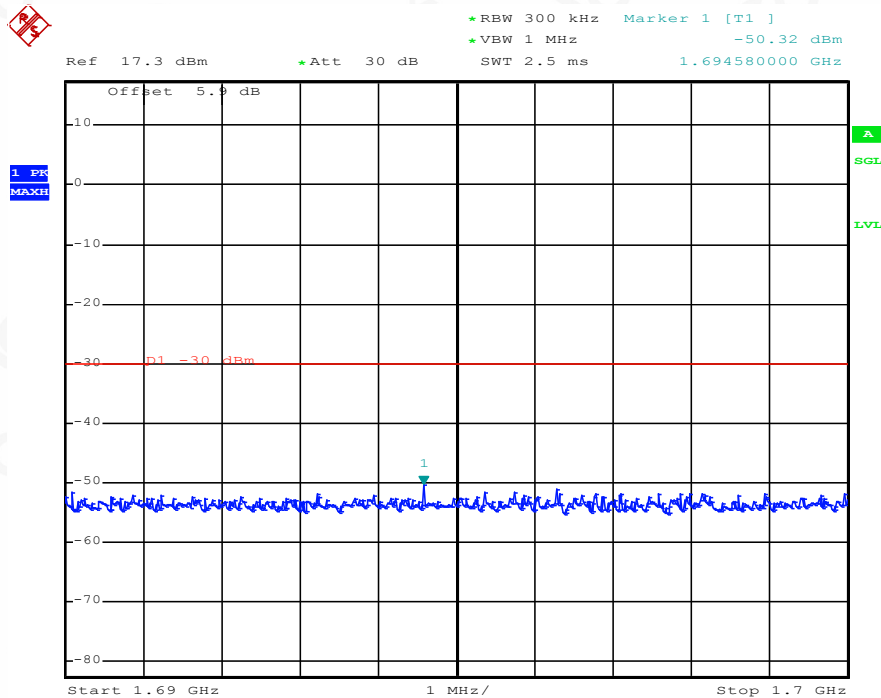


AAA

Date: 17.OCT.2019 15:45:07



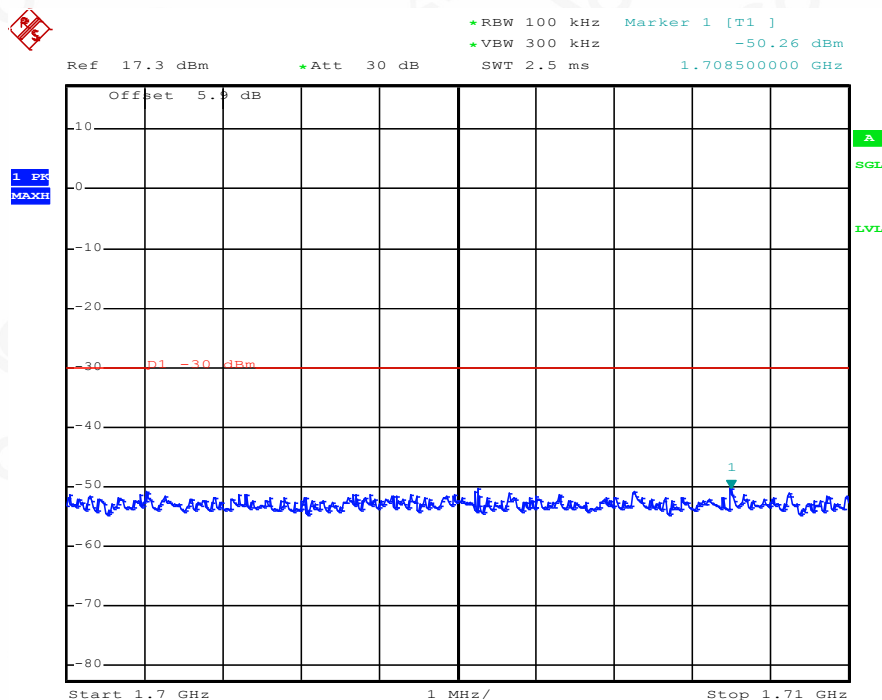
1690MHz~1700MHz



AAA

Date: 17.OCT.2019 15:45:15

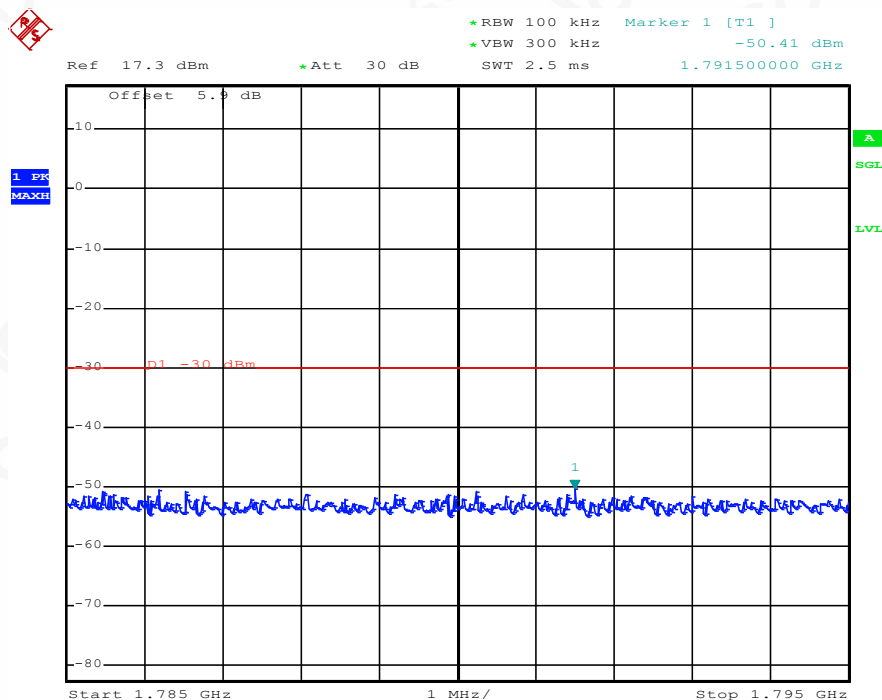
1700MHz~1710MHz



AAA

Date: 17.OCT.2019 15:45:24

1785MHz~1795MHz

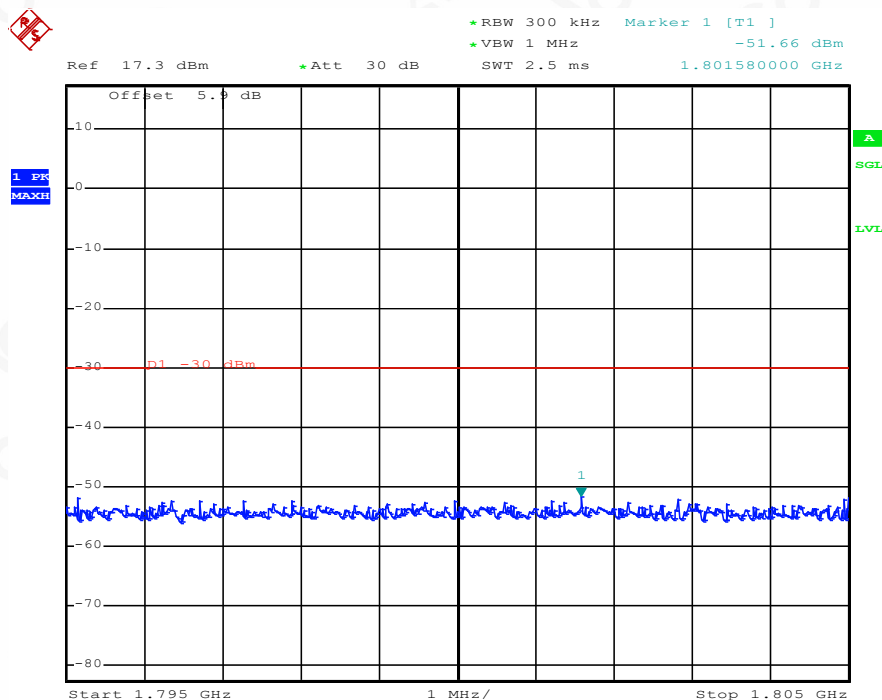


AAA

Date: 17.OCT.2019 15:45:32



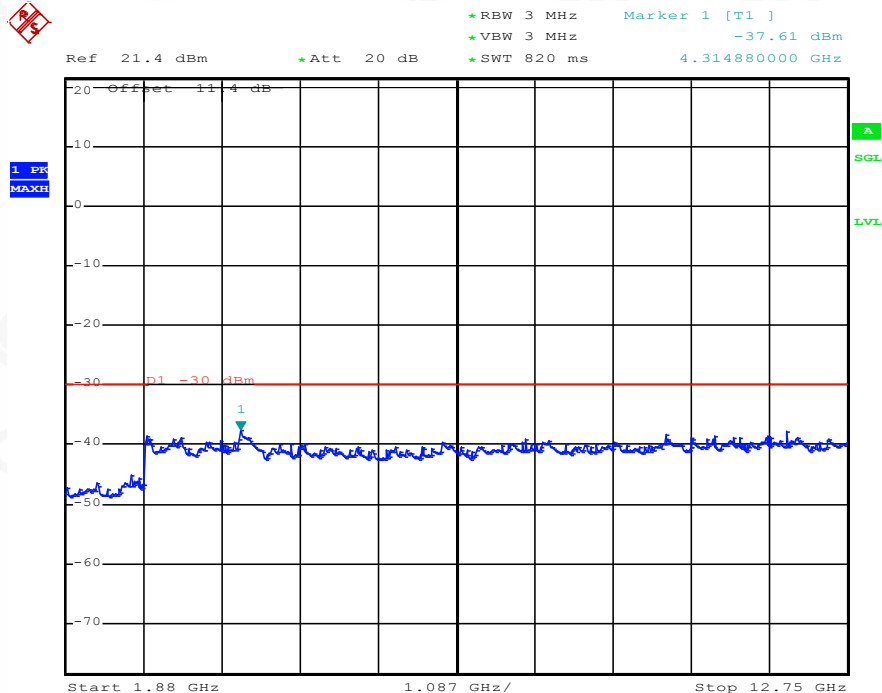
1795MHz~1805MHz



AAA

Date: 17.OCT.2019 15:45:40

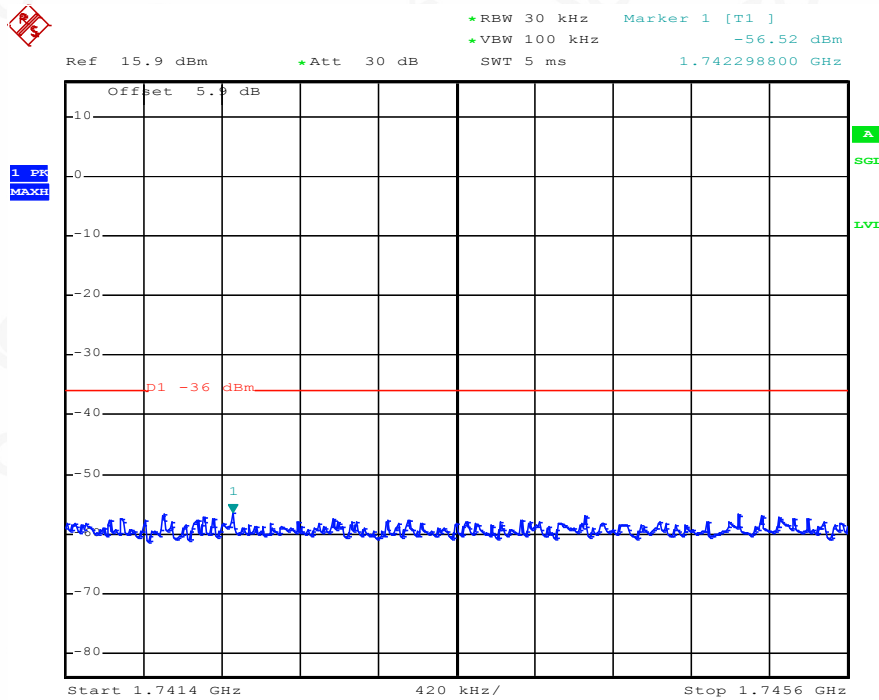
1880MHz~12.75GHz



AAA

Date: 17.OCT.2019 15:46:10

1741.4MHz~1745.6MHz

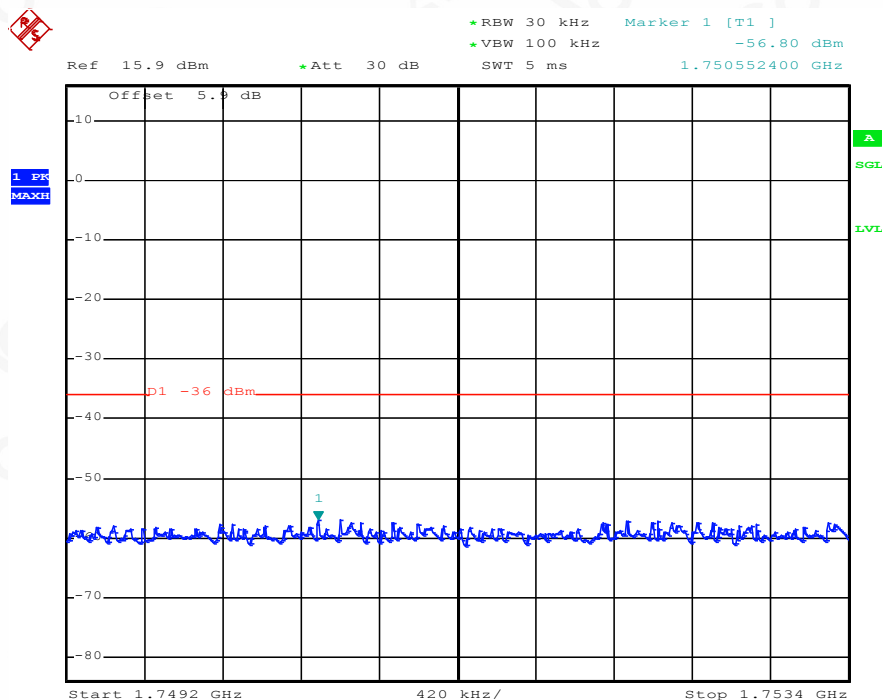


AAA

Date: 17.OCT.2019 15:46:18



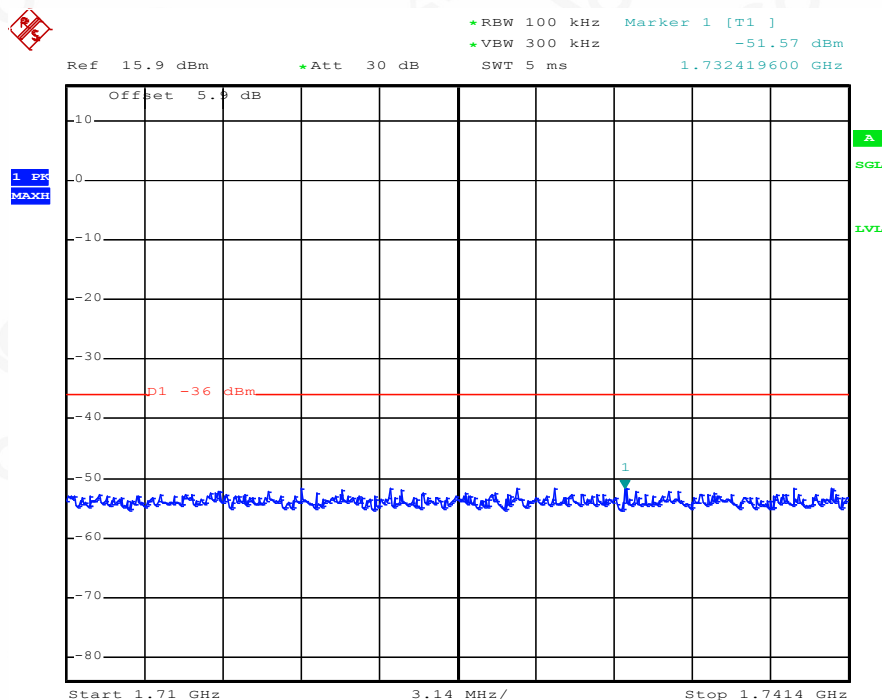
1749.2MHz~1753.4MHz



AAA

Date: 17.OCT.2019 15:46:26

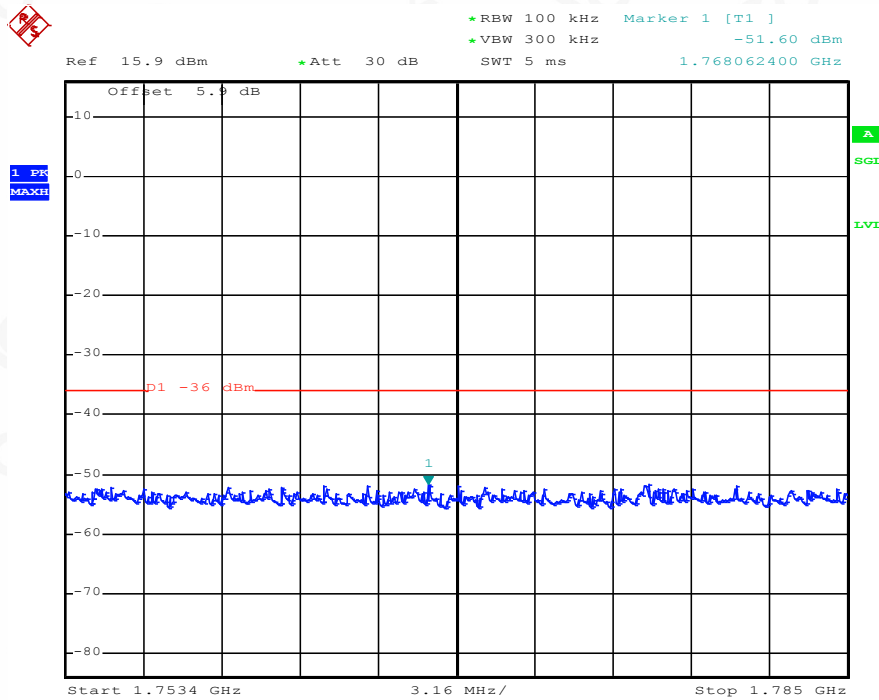
1710MHz~1741.4MHz



AAA

Date: 17.OCT.2019 15:46:34

1753.4MHz~1785MHz



AAA

Date: 17.OCT.2019 15:46:42



## 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.

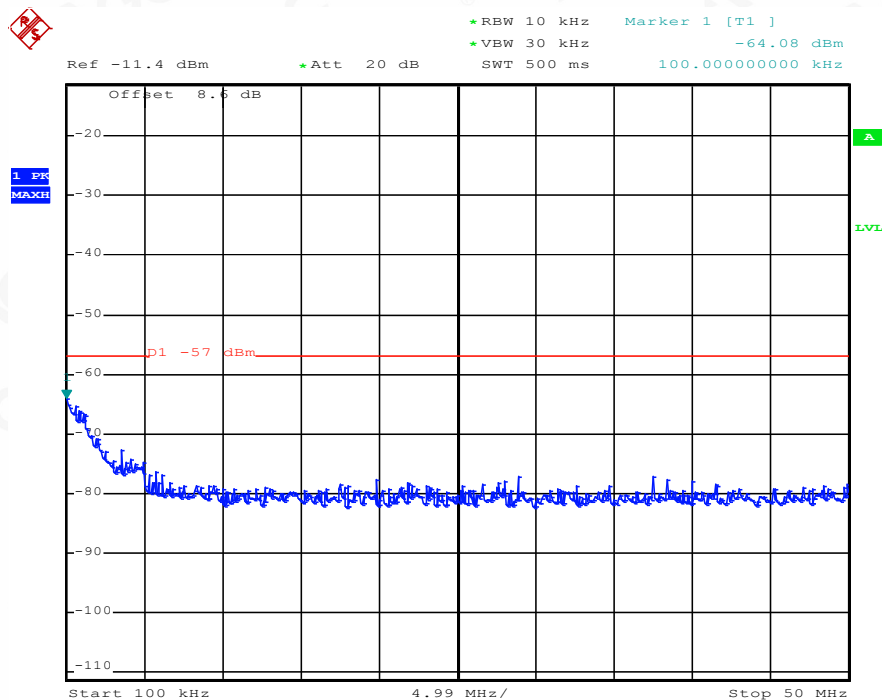
Conducted spurious emissions	GSM900;VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
100kHz~50MHz	10k	-57	-64.08	PASS
50MHz~880MHz	100k	-57	-65.00	PASS
880MHz~915MHz	100k	-59	-64.15	PASS
915MHz~1000MHz	100k	-57	-66.03	PASS
1GHz~1710MHz	100k	-47	-55.88	PASS
1710MHz~1785MHz	100k	-53	-56.21	PASS
1785MHz~12.75GHz	100k	-47	-52.50	PASS

Conducted spurious emissions	DCS1800;VN			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
100kHz~50MHz	10k	-57	-62.30	PASS
50MHz~880MHz	100k	-57	-65.27	PASS
880MHz~915MHz	100k	-59	-64.54	PASS
915MHz~1000MHz	100k	-57	-66.21	PASS
1GHz~1710MHz	100k	-47	-56.76	PASS
1710MHz~1785MHz	100k	-53	-56.06	PASS
1785MHz~12.75GHz	100k	-47	-51.90	PASS



# GSM900: channel MCH VN

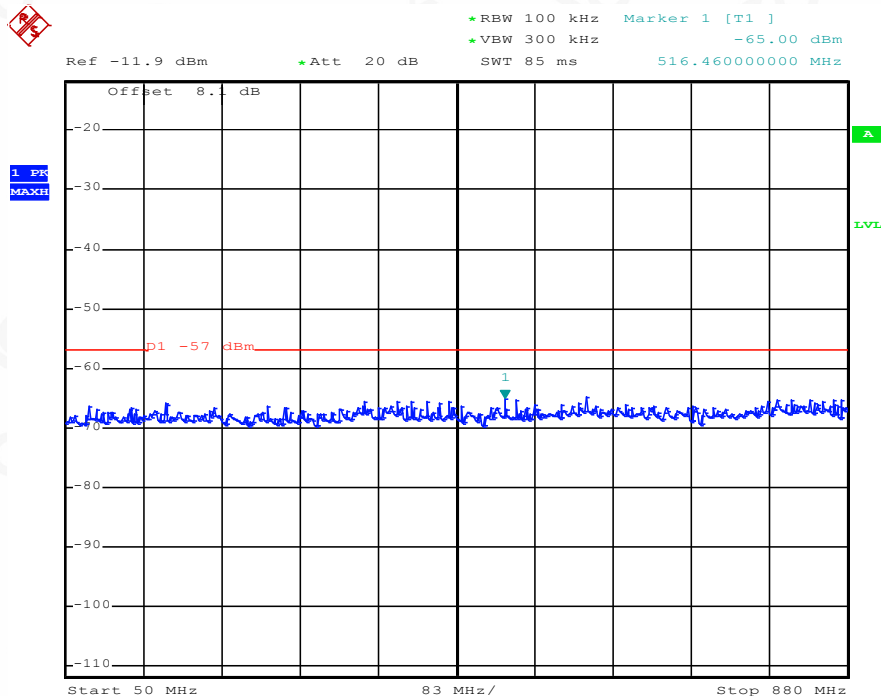
100kHz~50MHz



AAA

Date: 17.OCT.2019 14:51:14

50MHz~880MHz

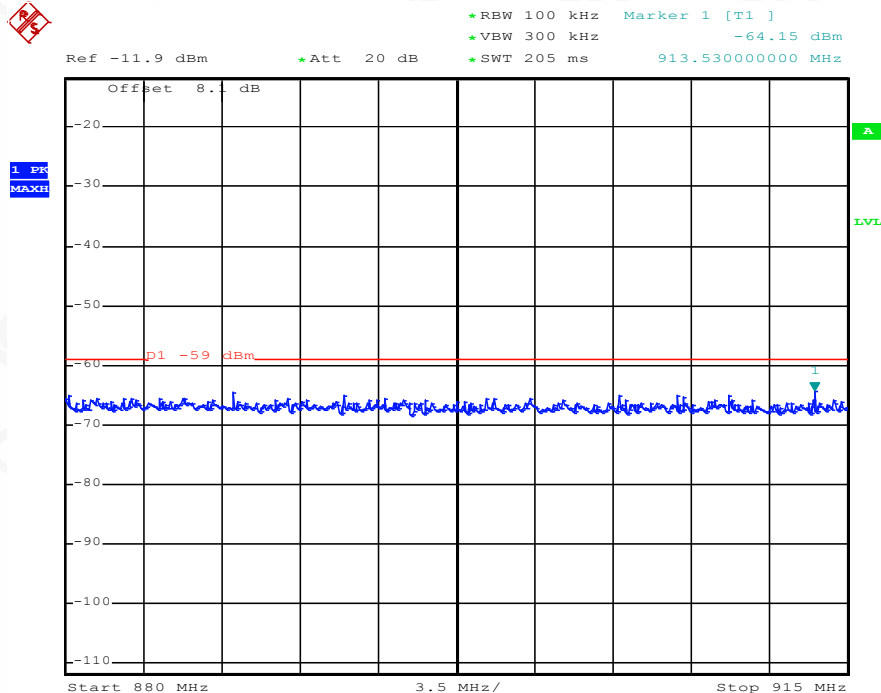


AAA

Date: 17.OCT.2019 14:51:21



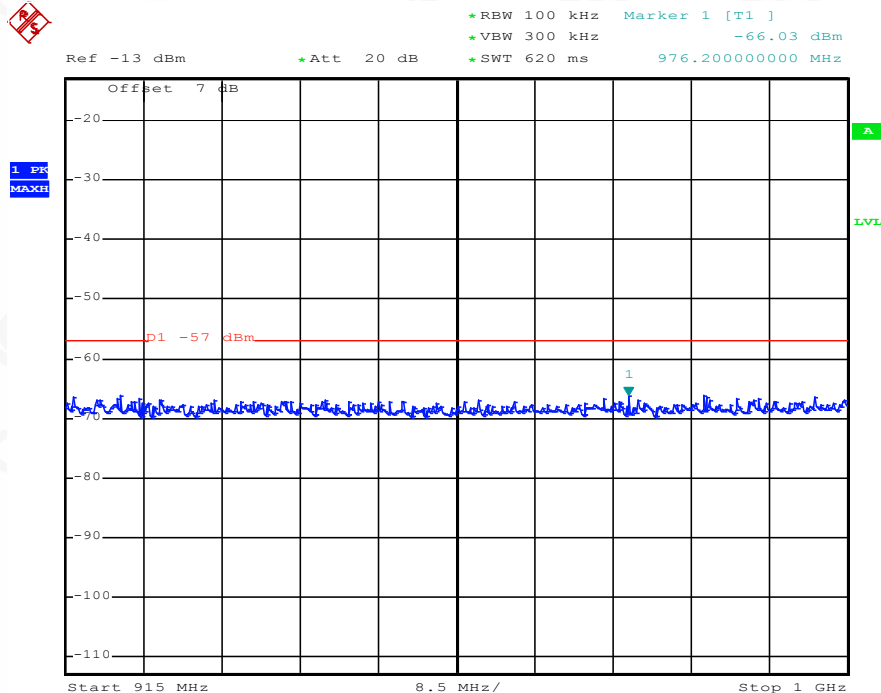
880MHz~915MHz



AAA

Date: 17.OCT.2019 14:51:34

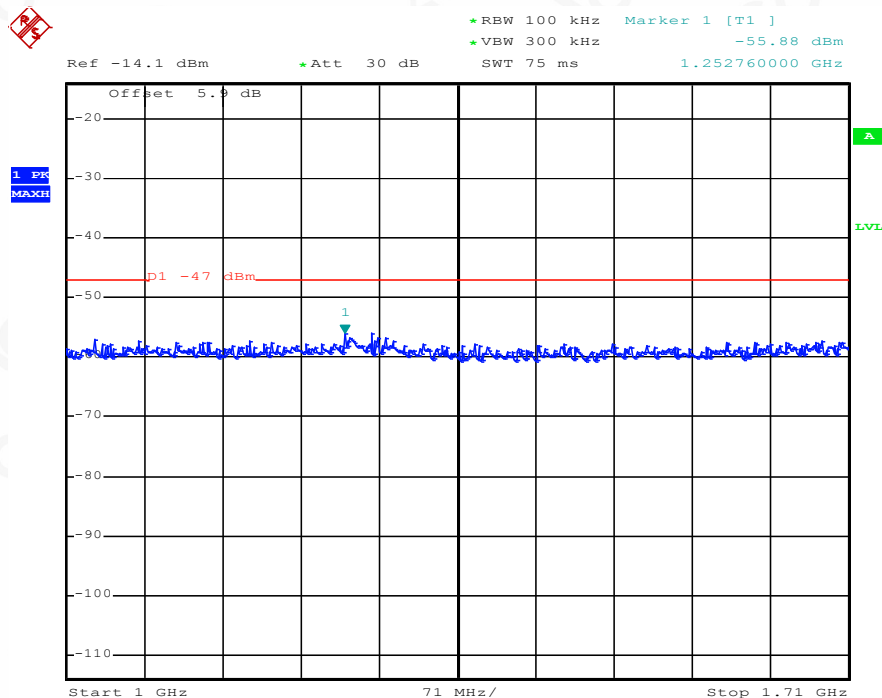
915MHz~1000MHz



AAA

Date: 17.OCT.2019 14:51:58

1GHz~1710MHz

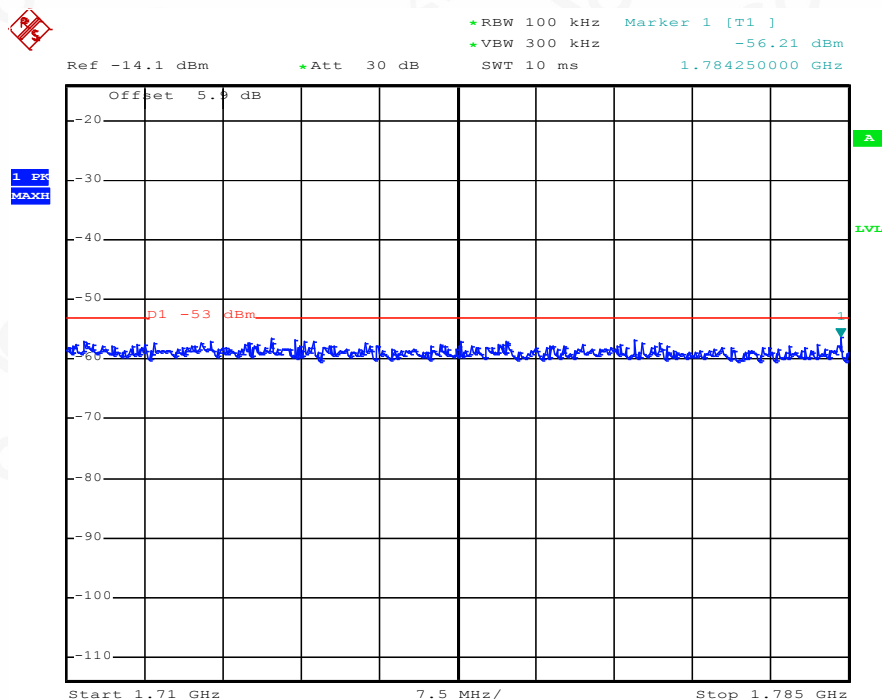


AAA

Date: 17.OCT.2019 14:52:05



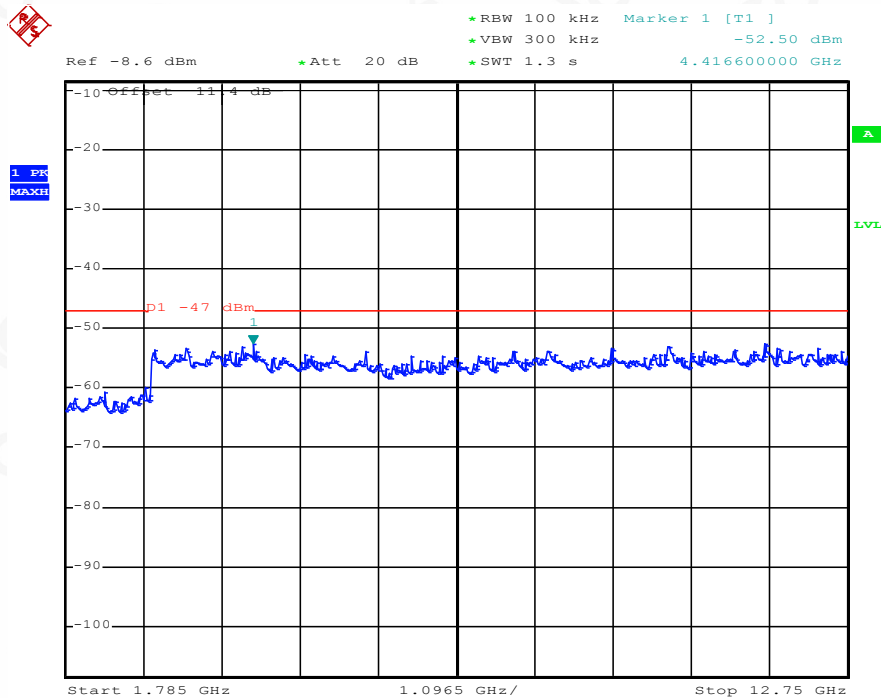
1710MHz~1785MHz



AAA

Date: 17.OCT.2019 14:52:12

1785MHz~12.75GHz

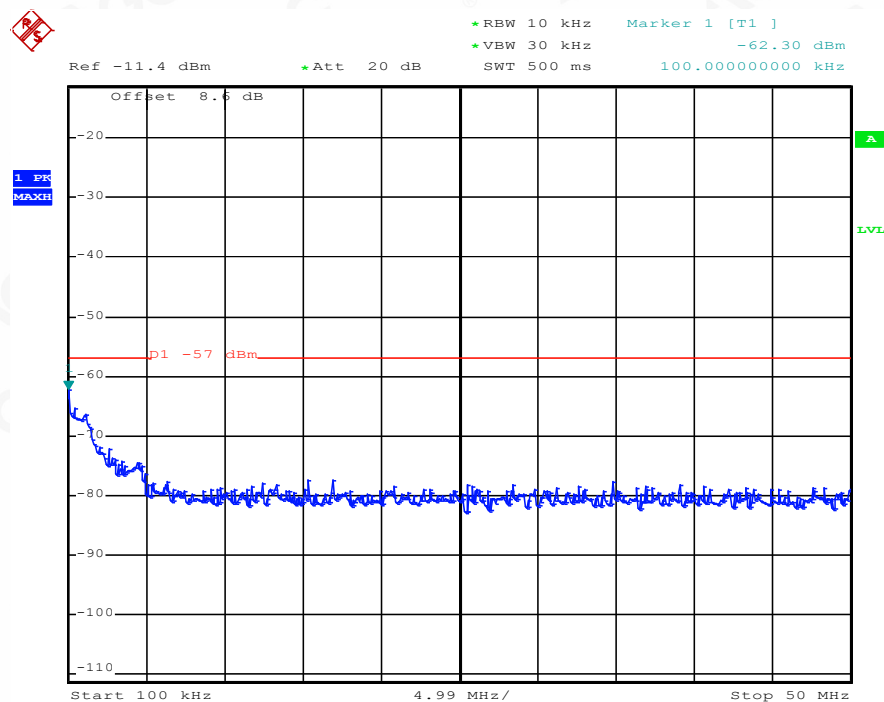


AAA

Date: 17.OCT.2019 14:52:25

# DCS1800: channel MCH VN

100kHz~50MHz

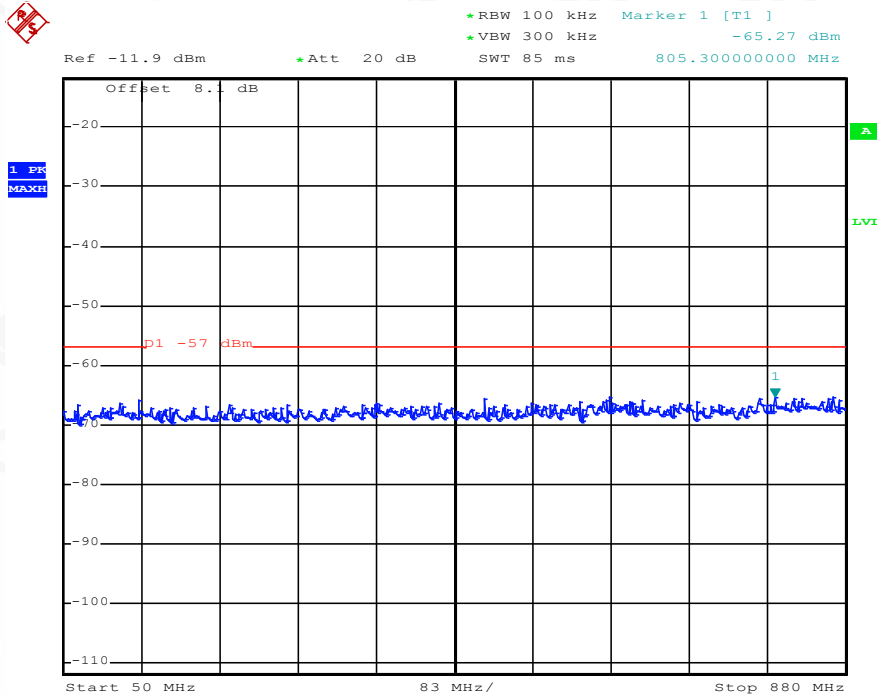


AAA

Date: 17.OCT.2019 15:51:17



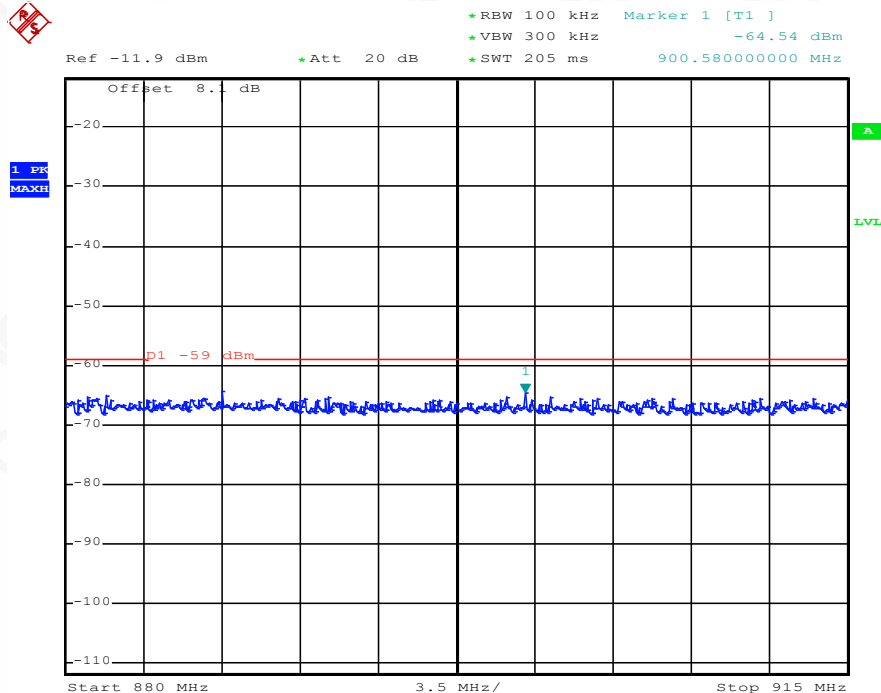
50MHz~880MHz



AAA

Date: 17.OCT.2019 15:51:24

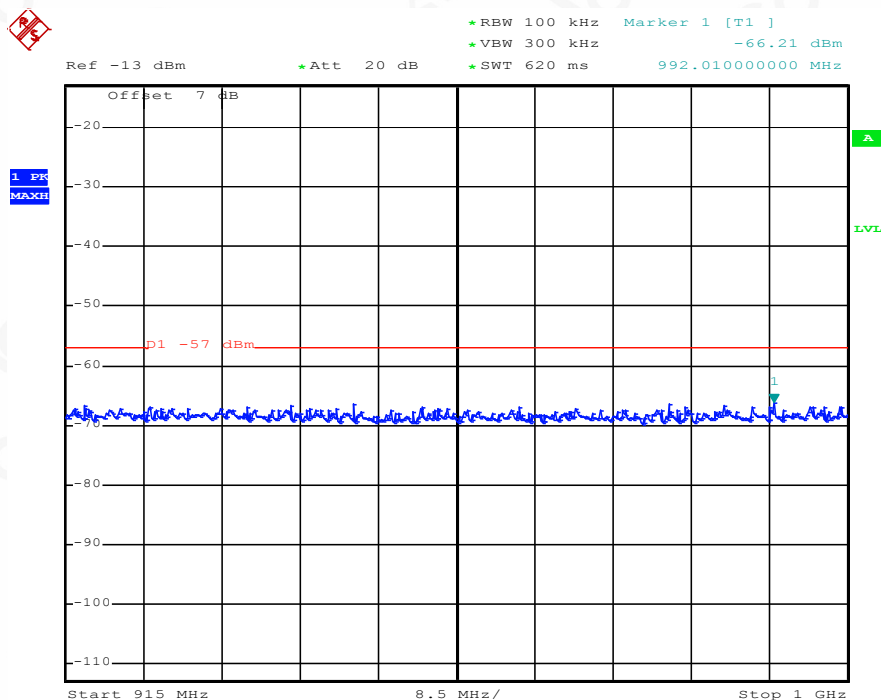
880MHz~915MHz



AAA

Date: 17.OCT.2019 15:51:37

915MHz~1000MHz

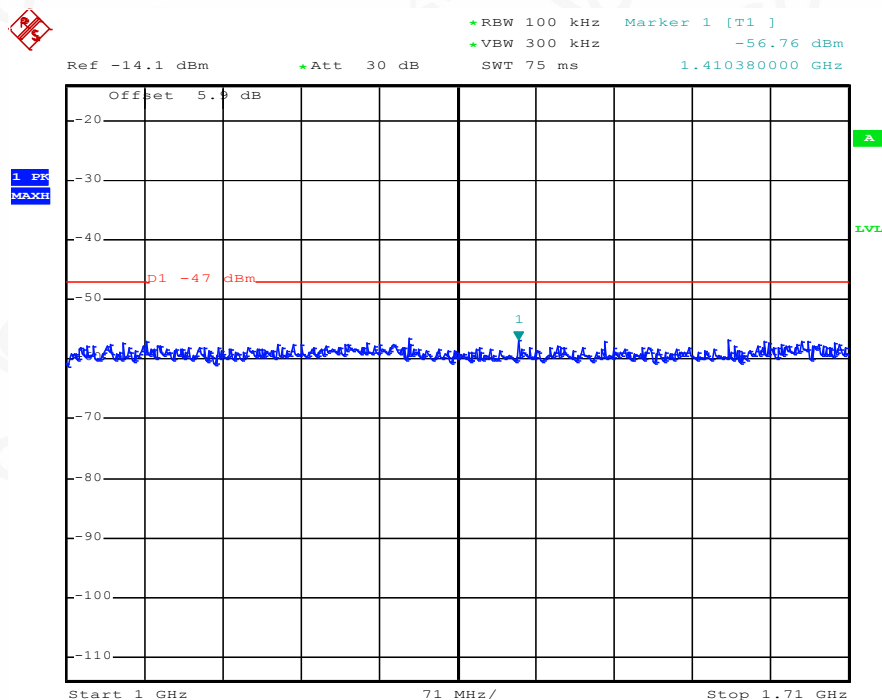


AAA

Date: 17.OCT.2019 15:52:04



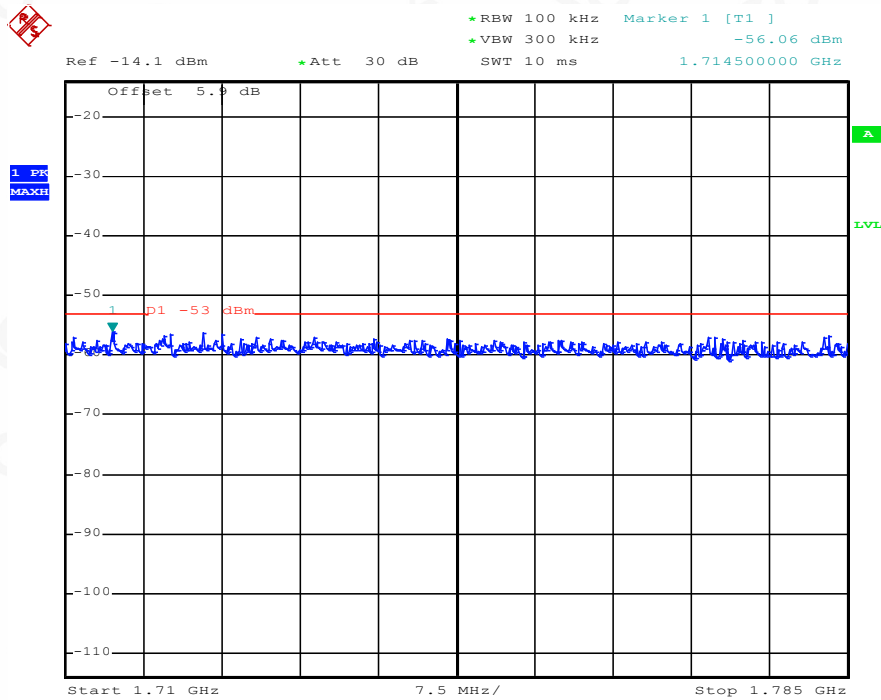
1GHz~1710MHz



AAA

Date: 17.OCT.2019 15:52:11

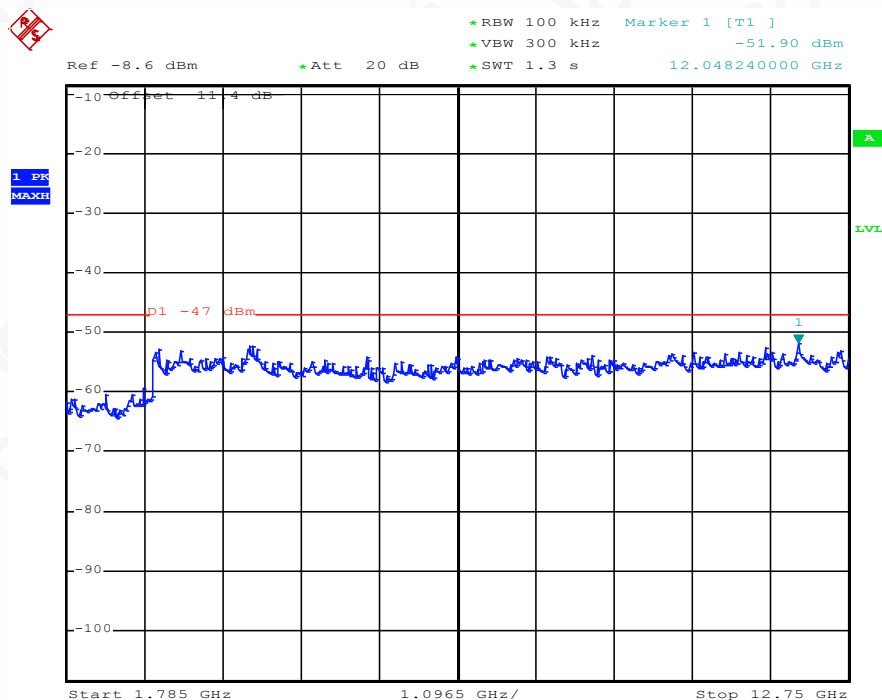
1710MHz~1785MHz



AAA

Date: 17.OCT.2019 15:52:18

1785MHz~12.75GHz



AAA

Date: 17.OCT.2019 15:52:31



## 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



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E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118

## 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	1.4	2.5	3.9	10	PASS
		19	0.8	1.4	2.1	11	PASS
	MCH	8	1.5	2.7	4.4	12	PASS
		19	0.8	1.5	2.2	11	PASS
	HCH	8	1.5	2.7	4.5	11	PASS
		19	0.8	1.5	2.2	14	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	1.0	1.8	2.6	-1	PASS
		15	0.8	1.5	2.2	0	PASS
	MCH	2	0.9	1.7	2.5	3	PASS
		15	0.8	1.5	2.3	2	PASS
	HCH	2	1.2	2.3	3.3	3	PASS
		15	0.8	1.5	2.3	4	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	13	13	12	PASS
HT100	TNVN	14	12	14	PASS
TU50	TNVN	14	14	13	PASS
TU3	TNVN	16	13	15	PASS

### DCS1800

Fading set	Test conditions	Result			
		DCS1800			
		ARFCN			
		LCH	MCH	HCH	Result
RA130	TNVN	1	8	10	PASS
HT100	TNVN	3	7	11	PASS
TU50	TNVN	4	9	10	PASS
TU1.5	TNVN	4	9	9	PASS



## Appendix M. EGPRS Transmitter output power

Note: the worst test data (GSM 900/1800 TN VN) is record the report:

### A. output power

Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
GSM900		LCH	MCH	HCH	Result
TN,VN	8	24.11	24.04	23.80	PASS
	12	19.55	20.02	20.05	PASS
	19	5.97	6.00	5.99	PASS

Transmitter Output power(dBm)	Power level	Result			
		Traffic Channels			
DCS1800		LCH	MCH	HCH	Result
TN,VN	2	23.16	23.46	23.35	PASS
	8	15.14	15.24	15.27	PASS
	15	1.03	1.24	1.28	PASS

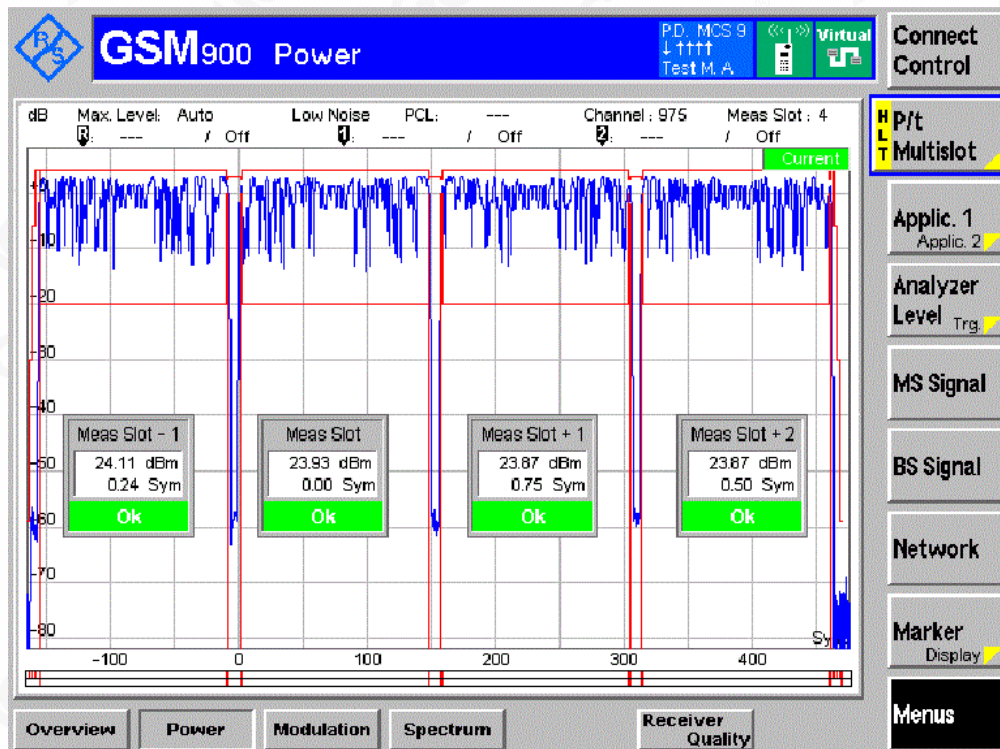
### B. Power VS Time

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

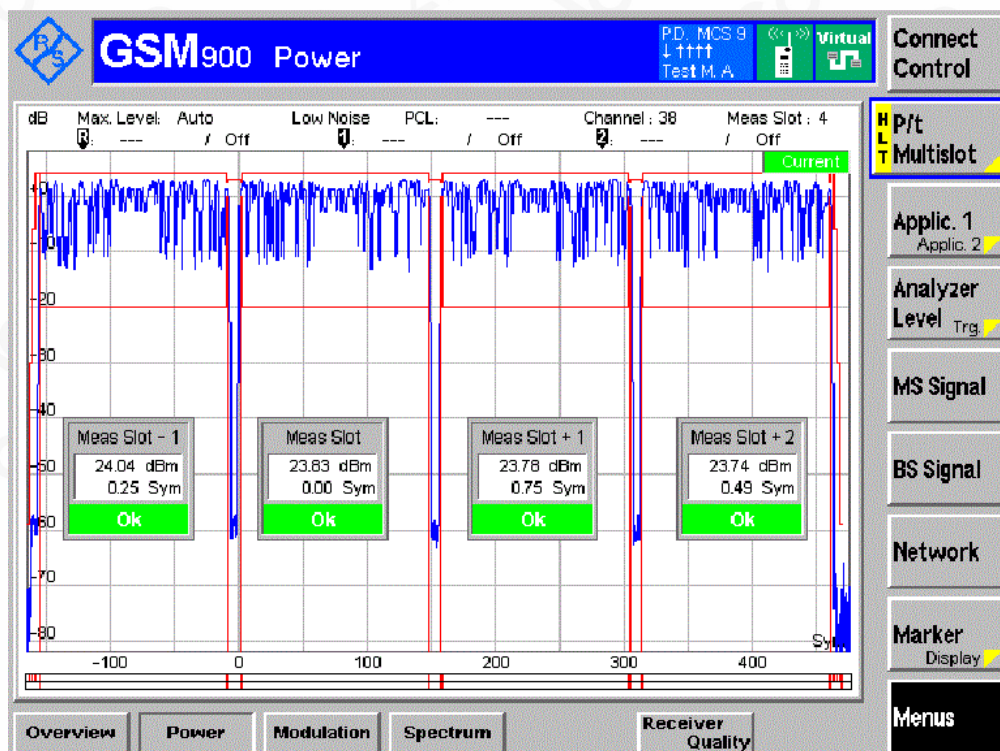
Power VS Time Graph	ACCESS BURST	Result		
		Traffic Channels		
DCS1800	Power level	LCH	MCH	HCH
TN,VN	2	PASS	PASS	PASS
	8	PASS	PASS	PASS
	15	PASS	PASS	PASS

# GSM 900 TN,VN

Channel LCH PCL 8



Channel MCH PCL 8



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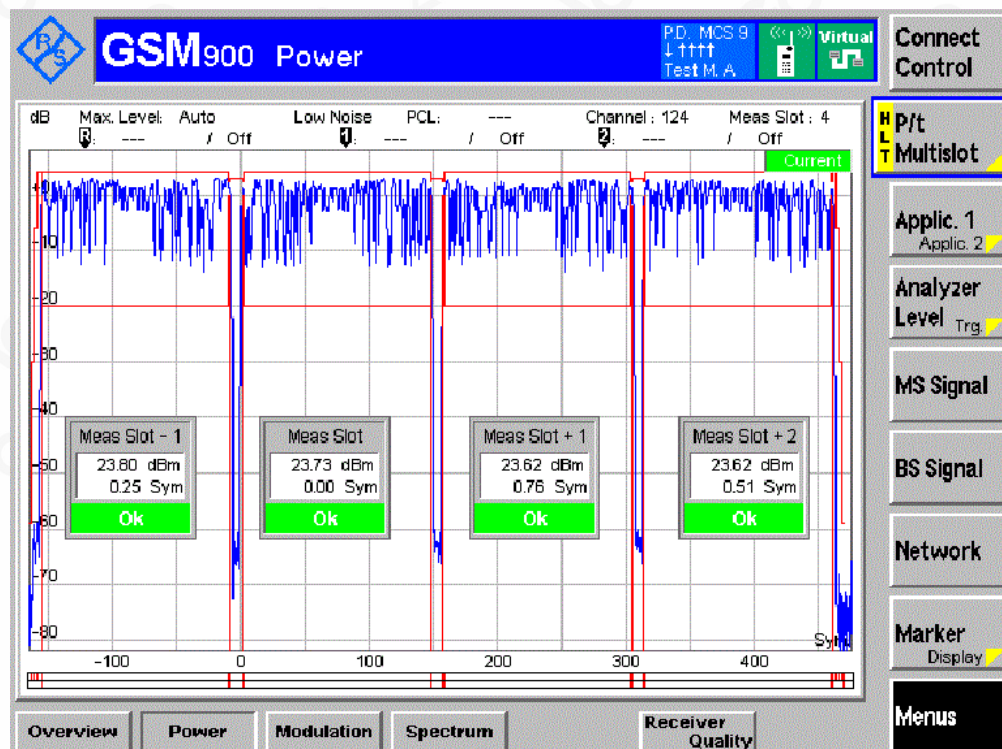
Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

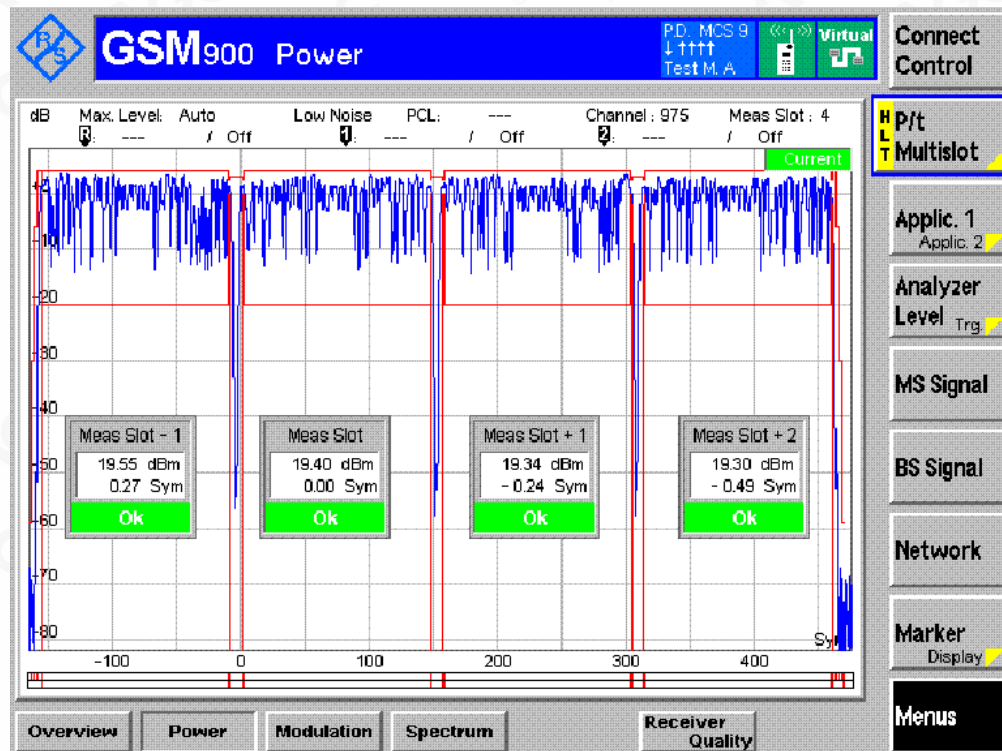
Service Hotline: 400 089 2118



Channel HCH PCL 8

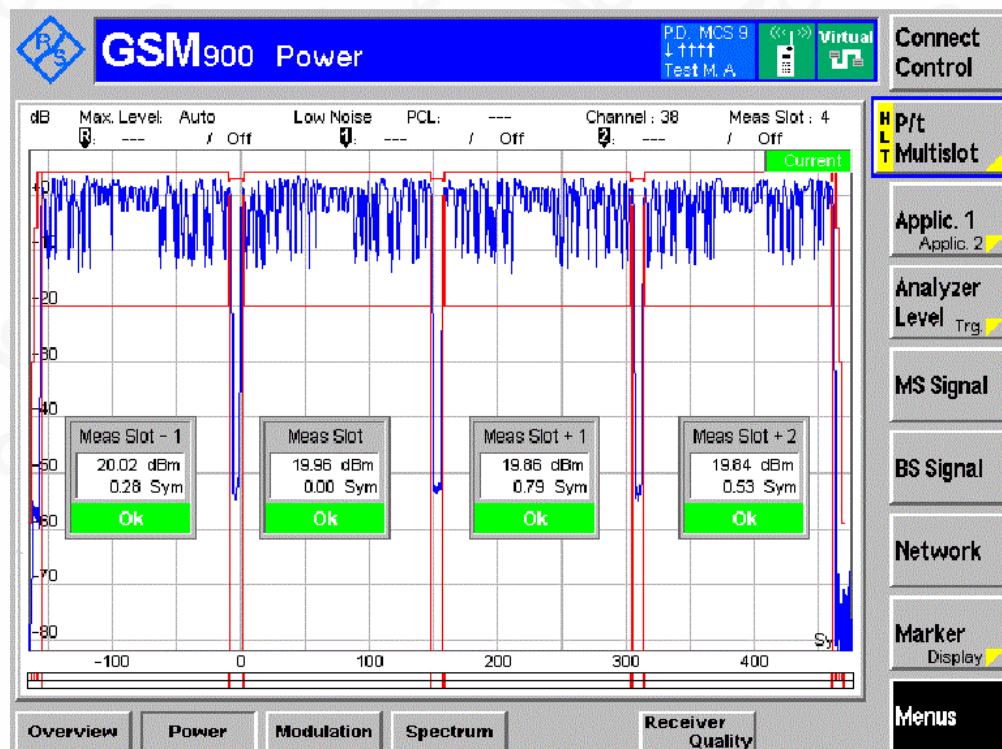


Channel LCH PCL 12

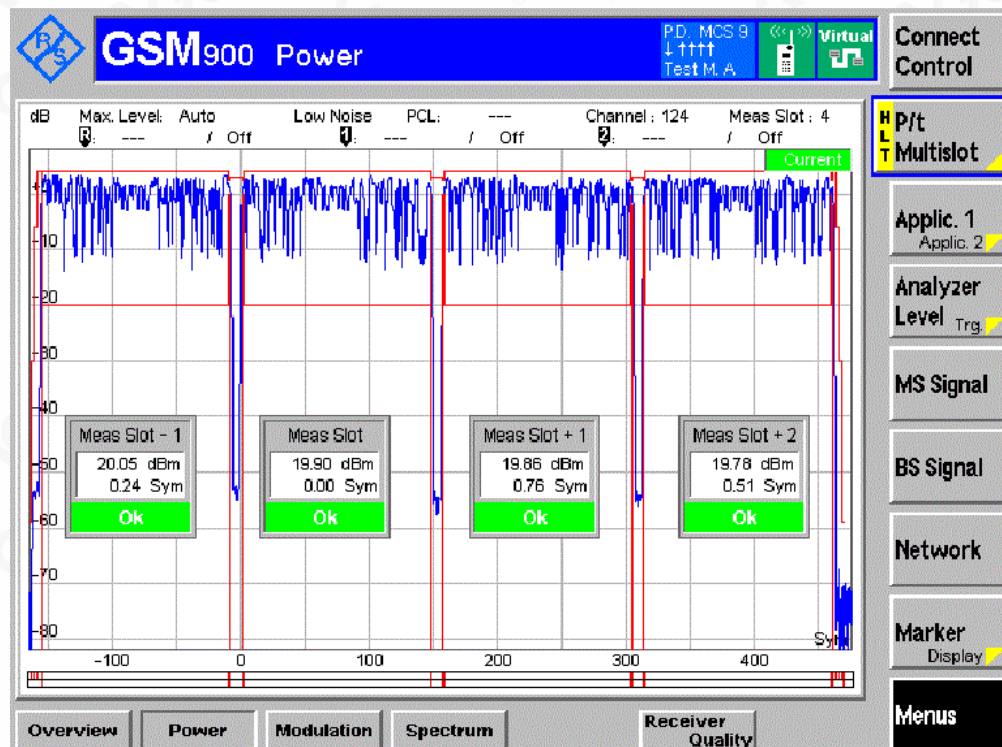




### Channel MCH PCL 12



### Channel HCH PCL 12



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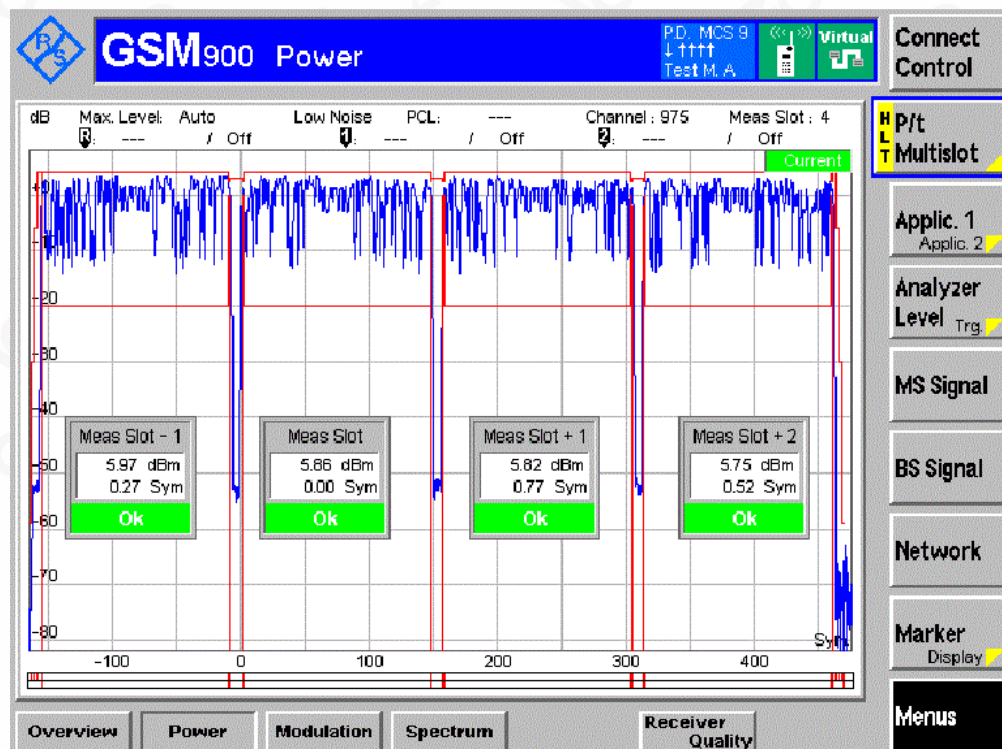
Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,  
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Tel: +86-755 2523 4088

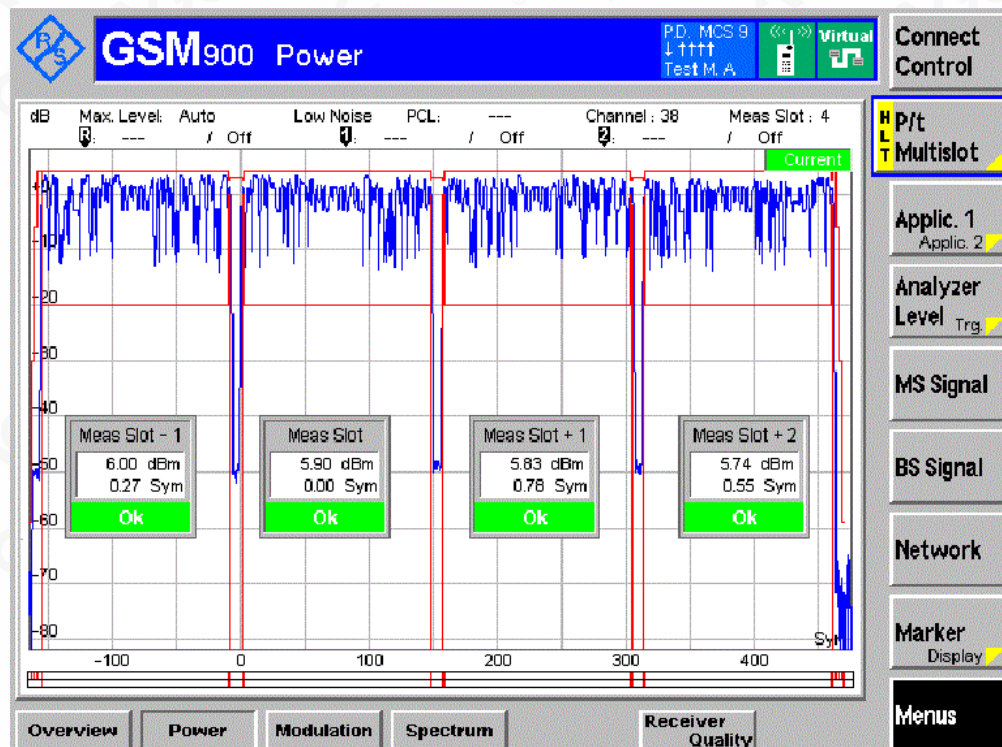
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### Channel LCH PCL 19



### Channel MCH PCL 19



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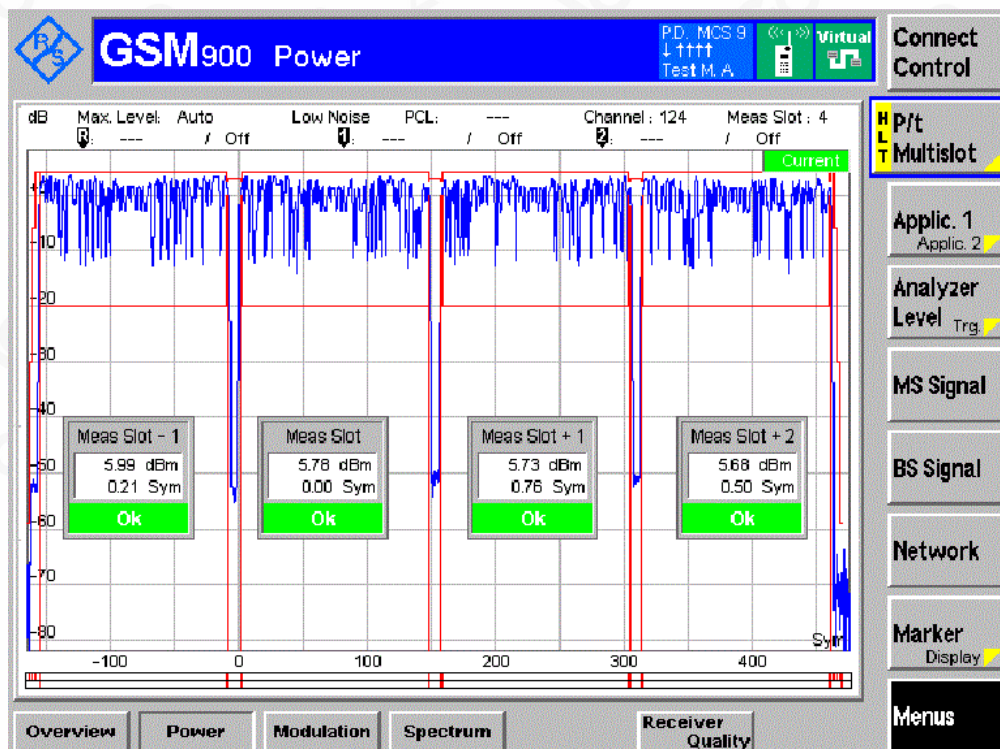
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E-mail: agc@agc-cert.com

Service Hotline: 400 089 2118

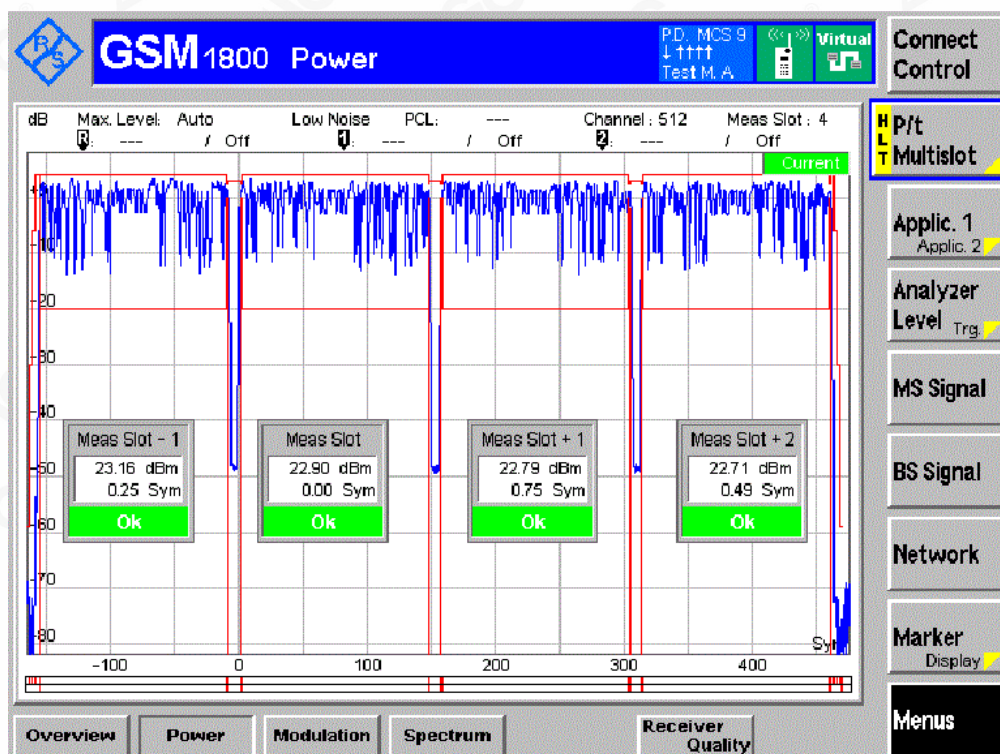


### Channel HCH PCL 19



### DCS1800 TN,VN

#### Channel LCH PCL 2



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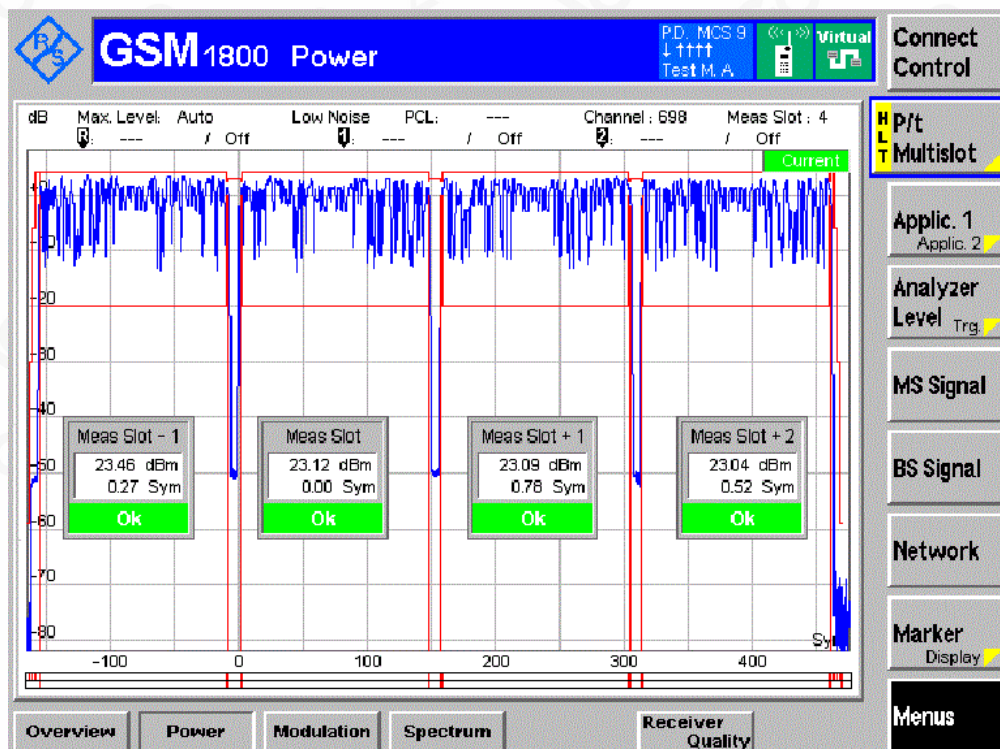
Tel: +86-755 2523 4088

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### Channel MCH PCL 2



### Channel HCH PCL 2



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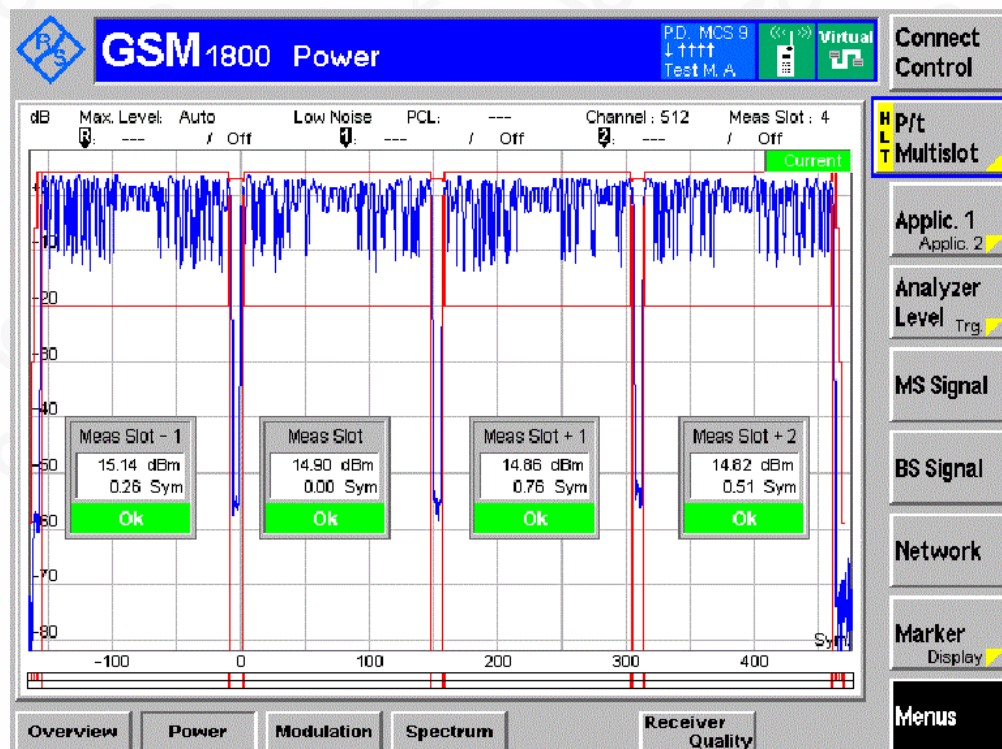
Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,  
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Tel: +86-755 2523 4088

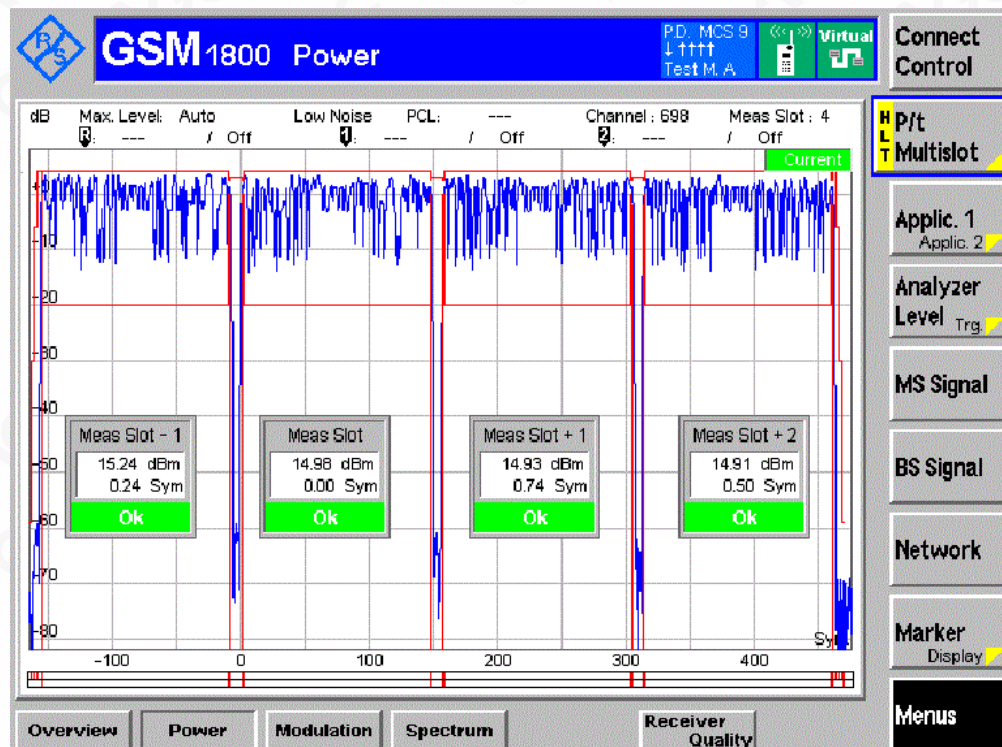
E-mail: agc@agc-cert.com

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Channel LCH PCL 8



Channel MCH PCL 8



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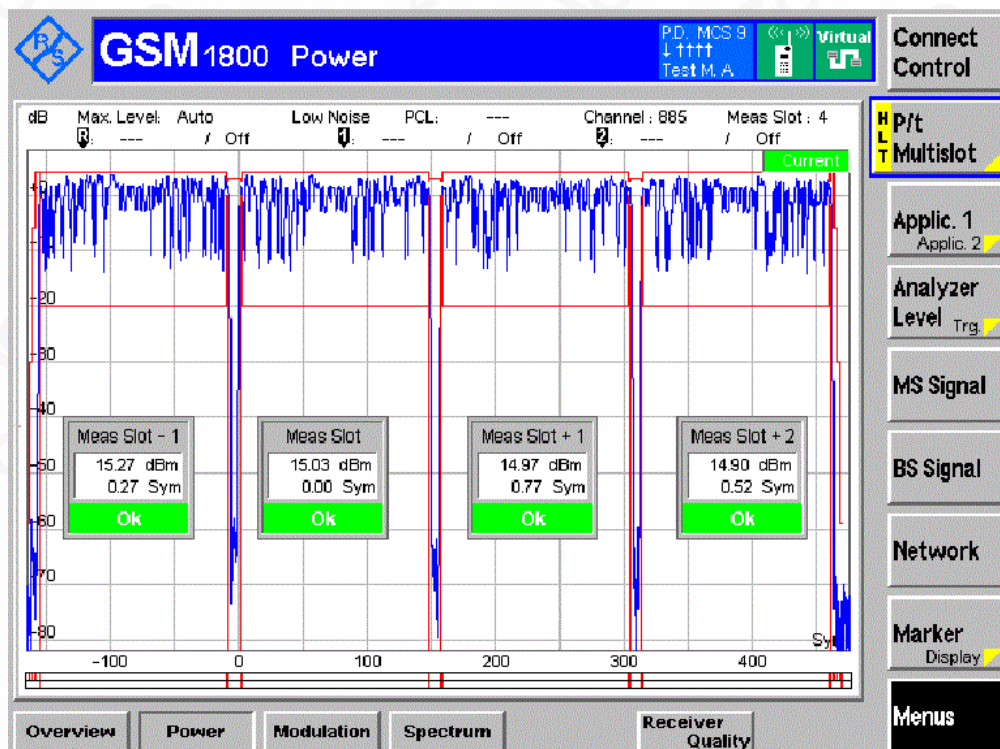
Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

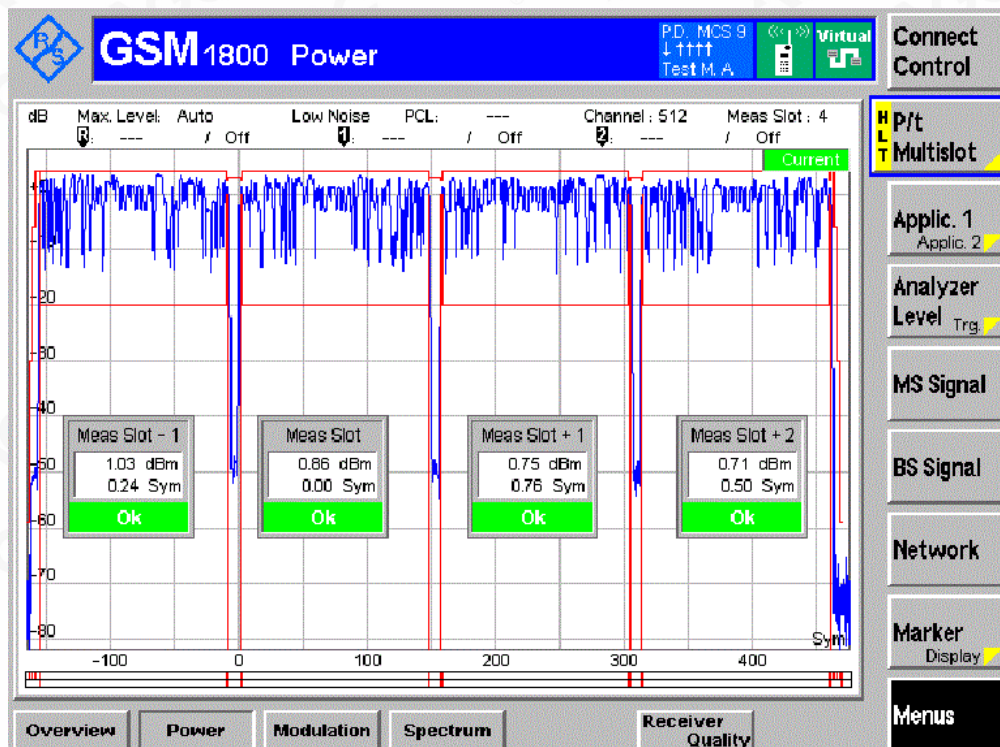
Service Hotline: 400 089 2118



Channel HCH PCL 8

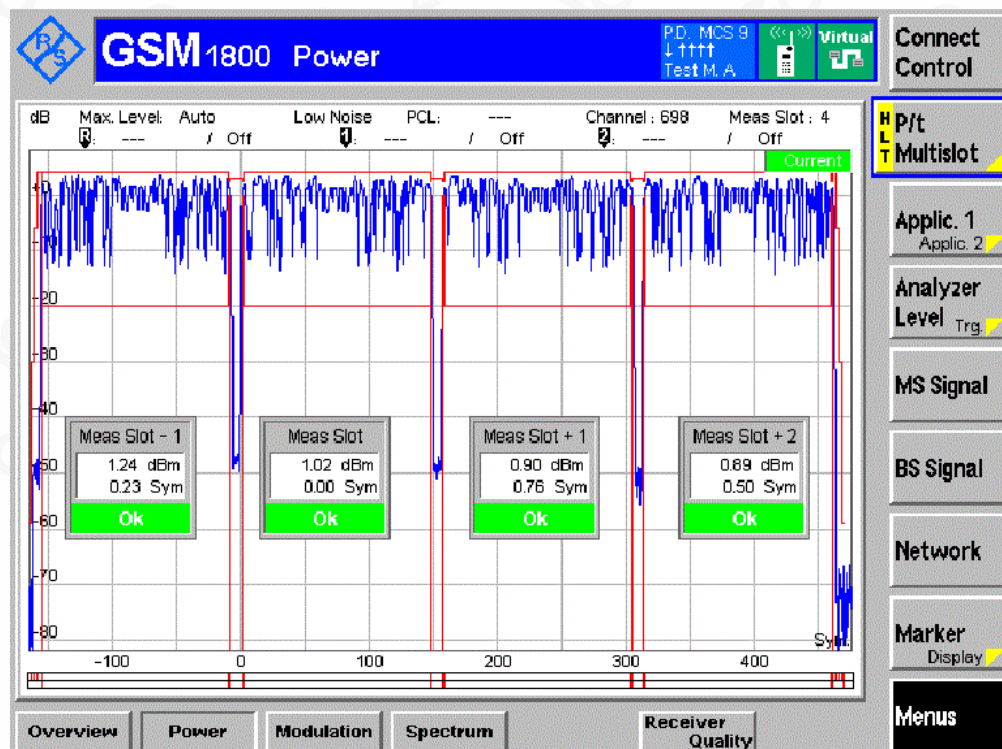


Channel LCH PCL 8

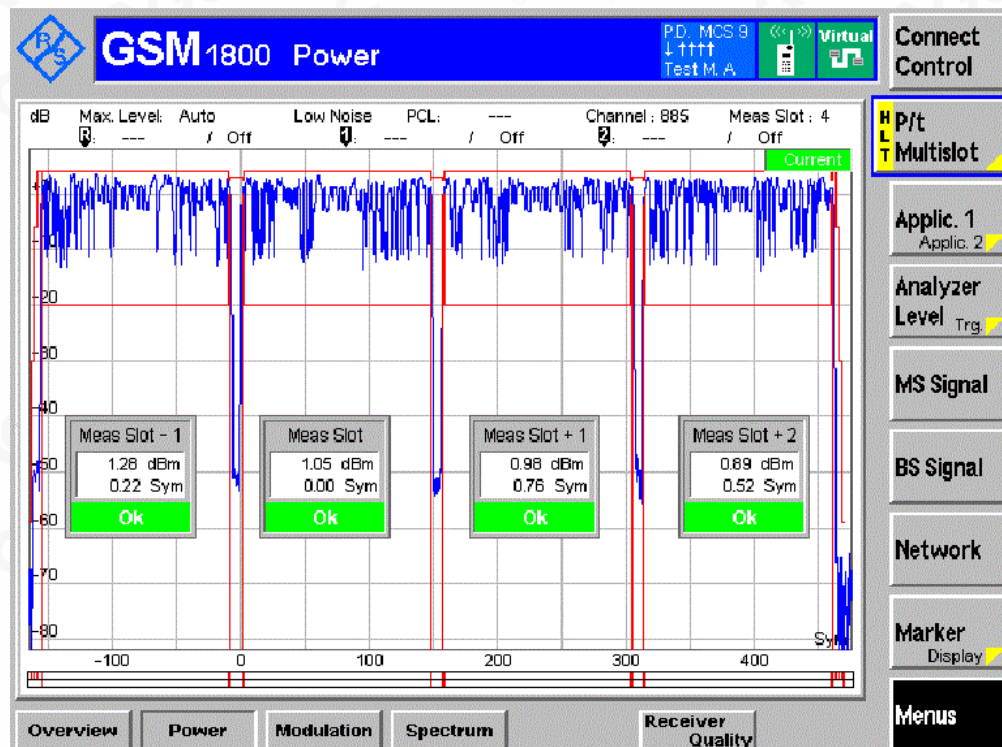




Channel MCH PCL 15



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.

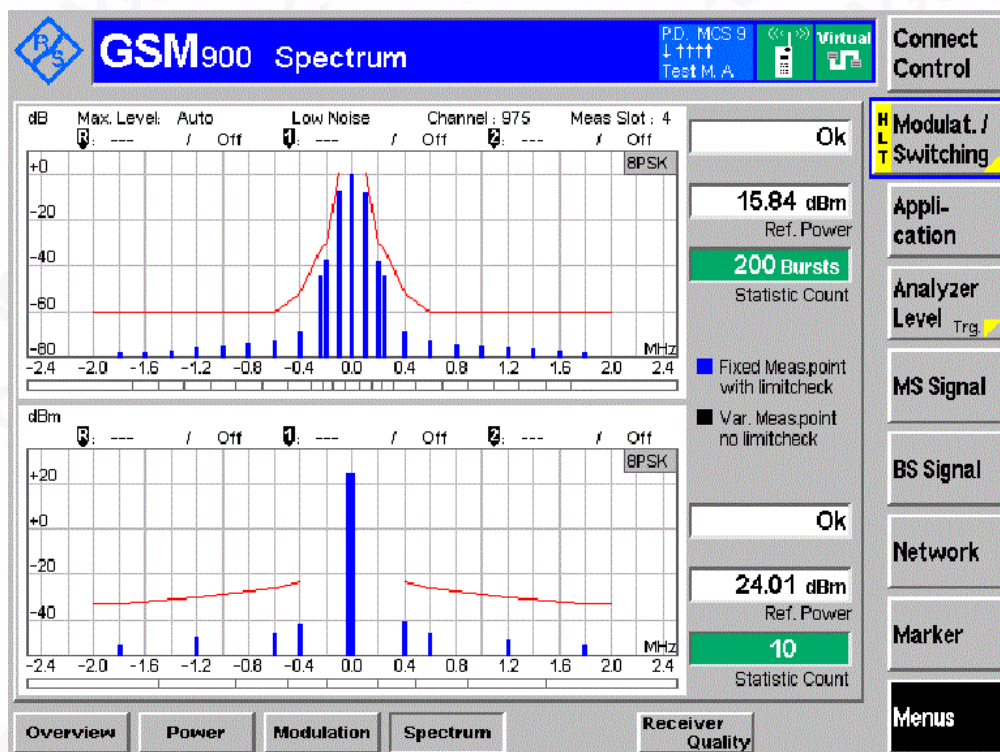
Modulation& switch Spectrum	Power level	Result		
		Traffic Channels		
GSM900		LCH	MCH	HCH
TN,VN	8	PASS	PASS	PASS
	12	PASS	PASS	PASS
	19	PASS	PASS	PASS

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

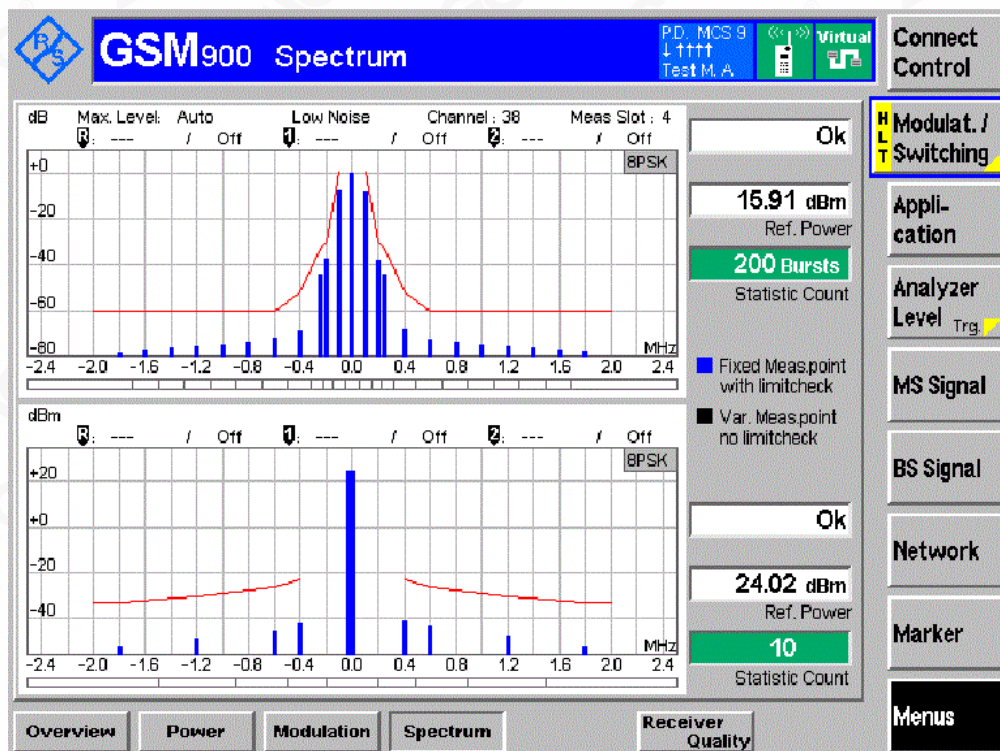




**GSM 900 TN,VN**  
**Channel LCH PCL 8**

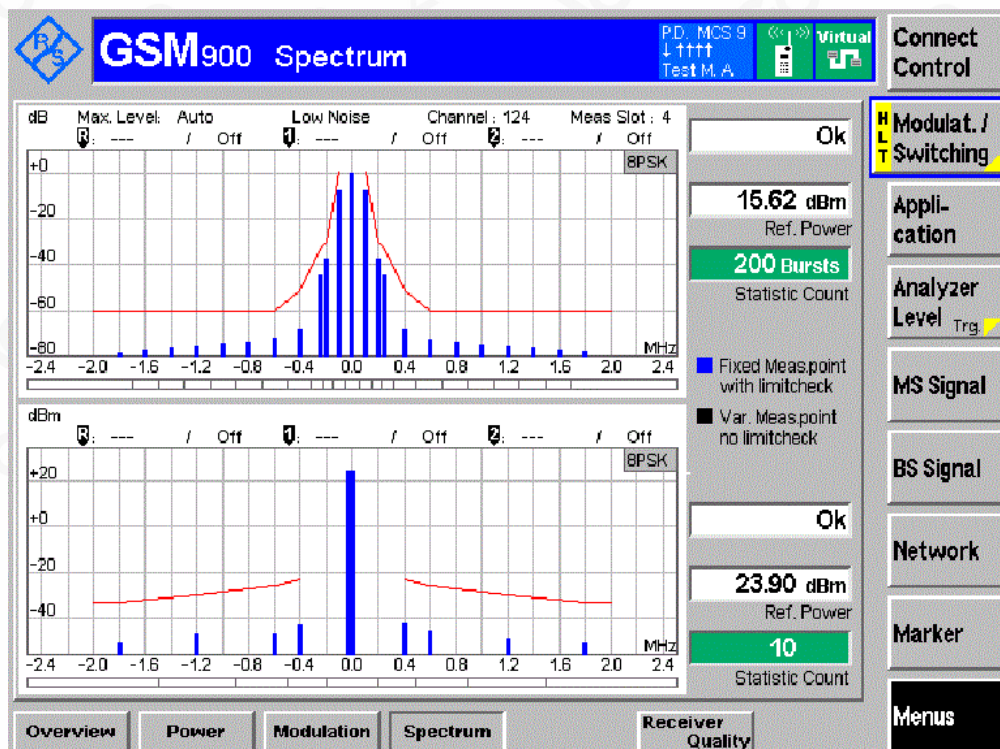


**Channel MCH PCL 8**

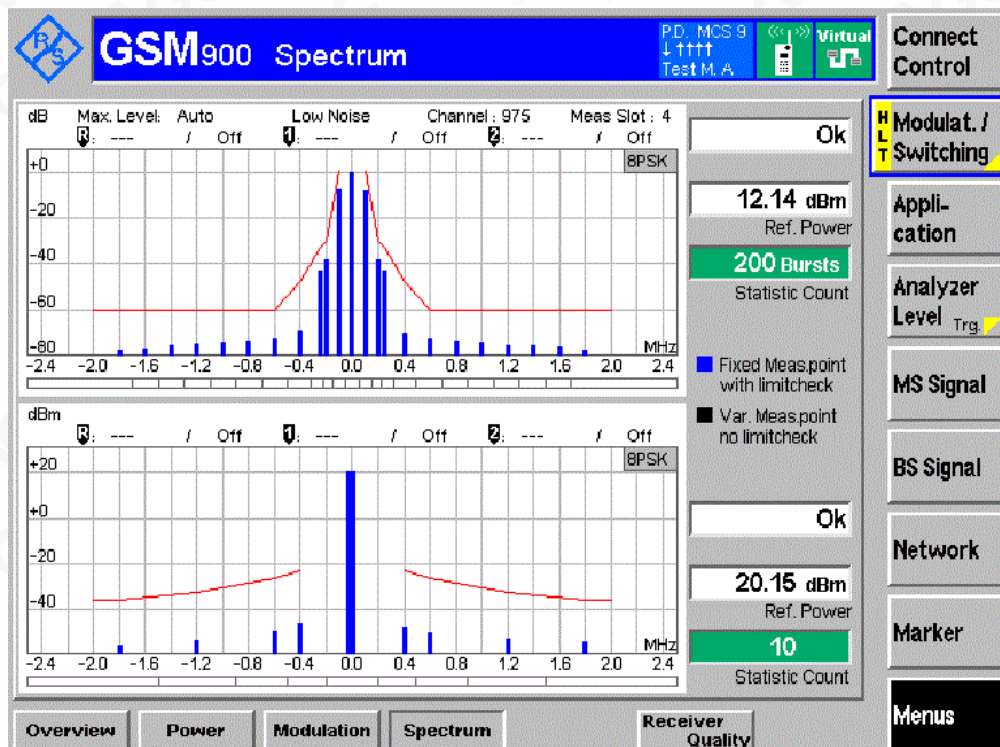




### Channel HCH PCL 8

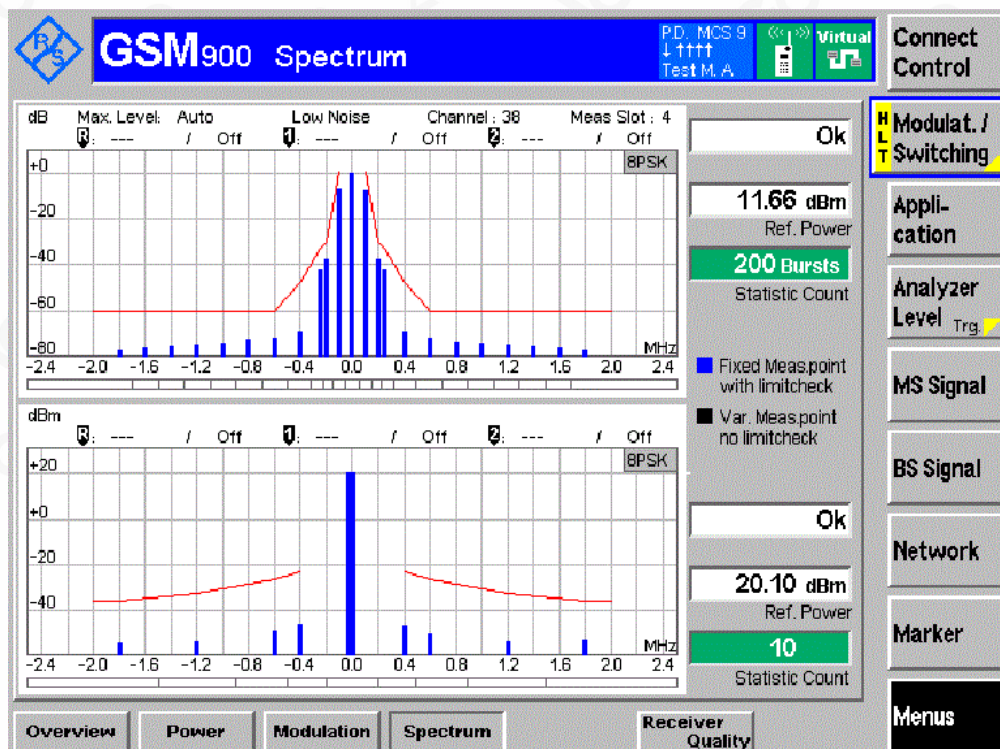


### Channel LCH PCL 12

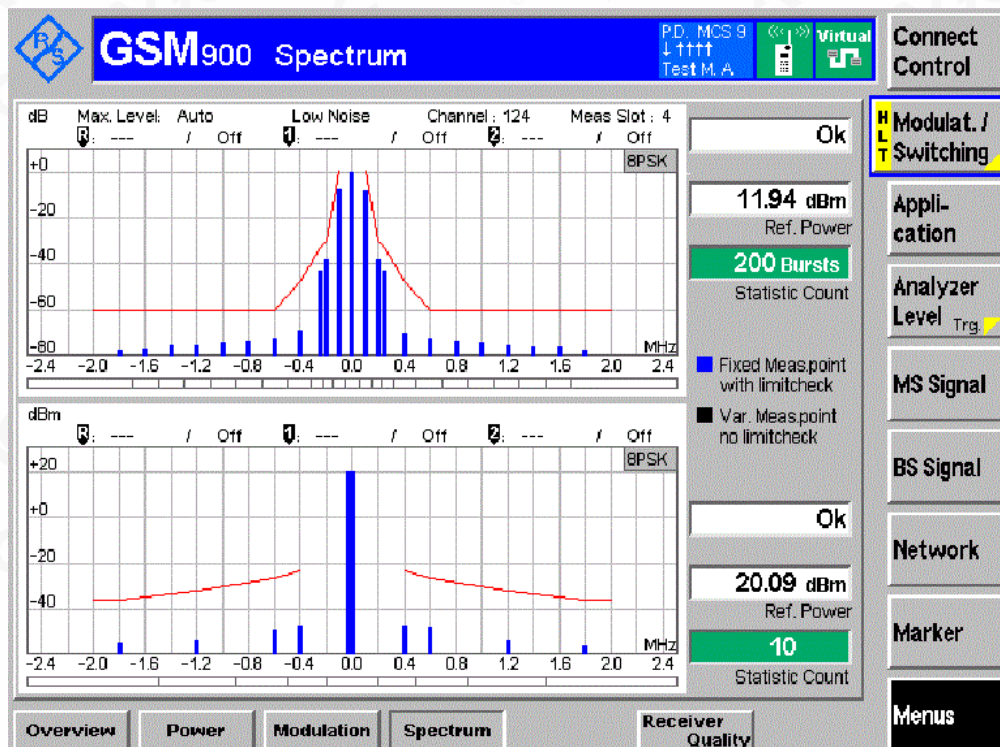




### Channel MCH PCL 12

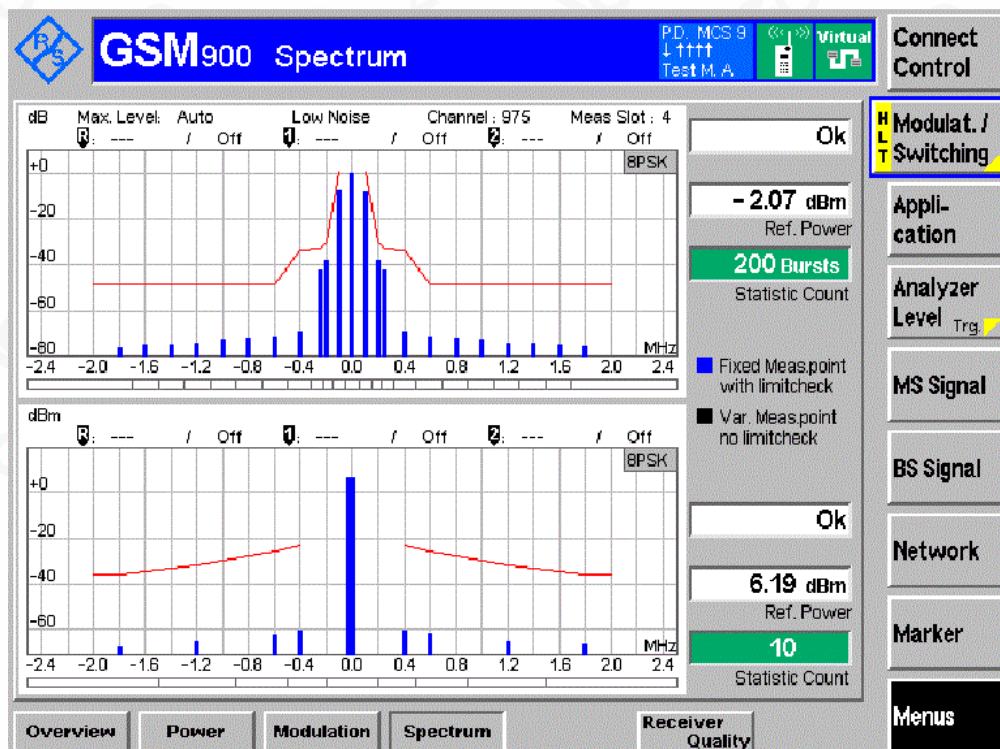


### Channel HCH PCL 12

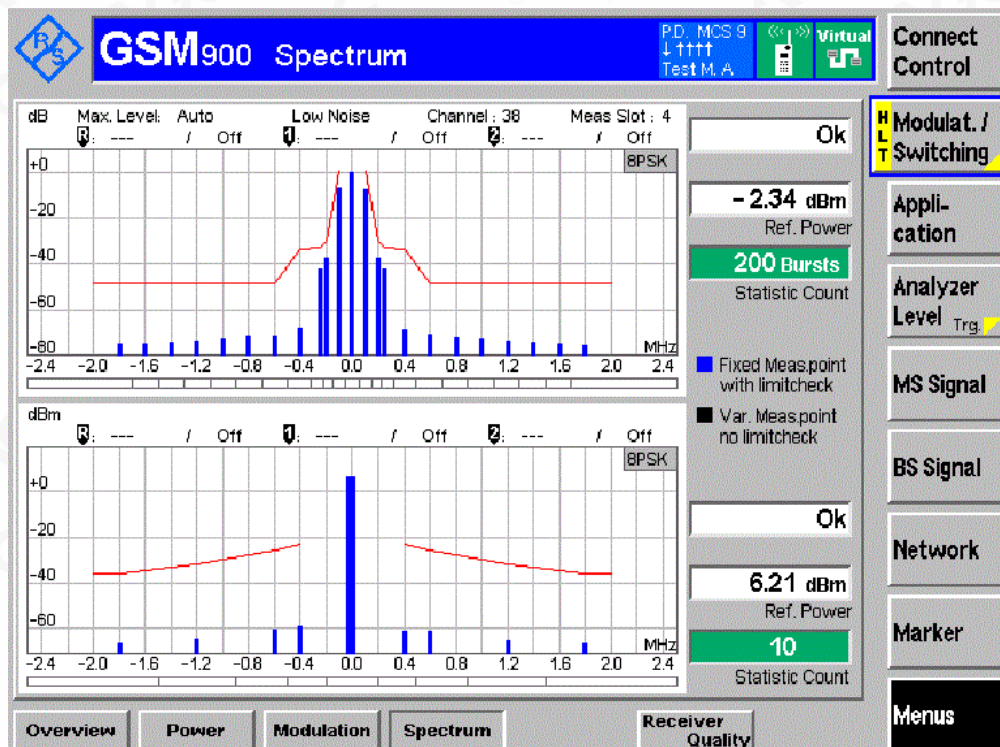




Channel LCH PCL 19

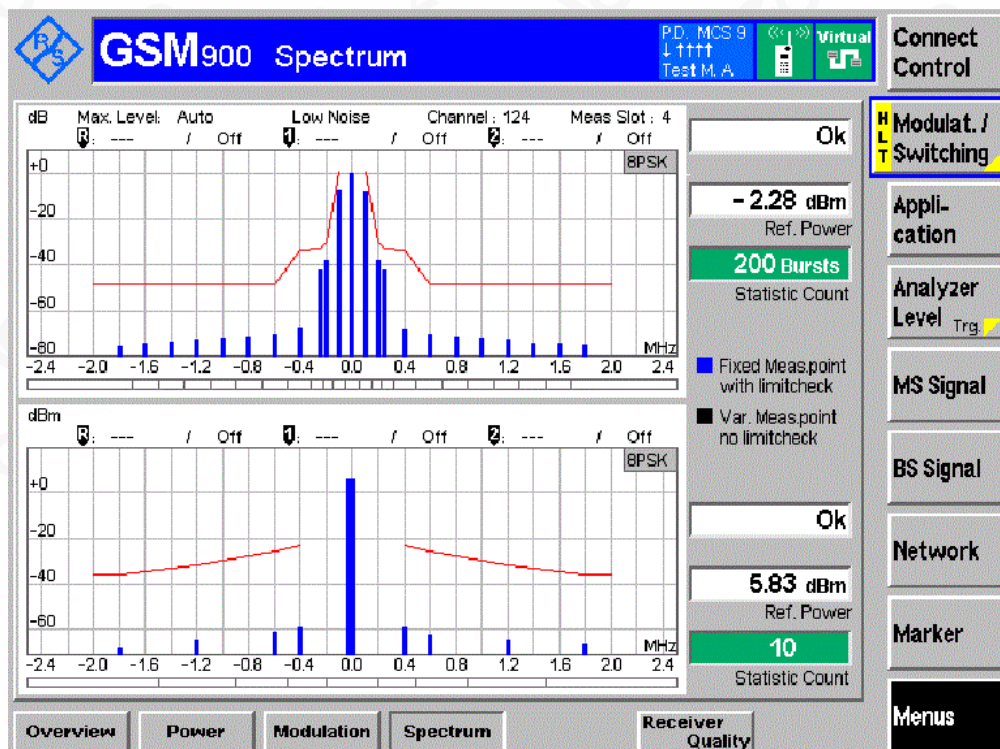


Channel MCH PCL 19



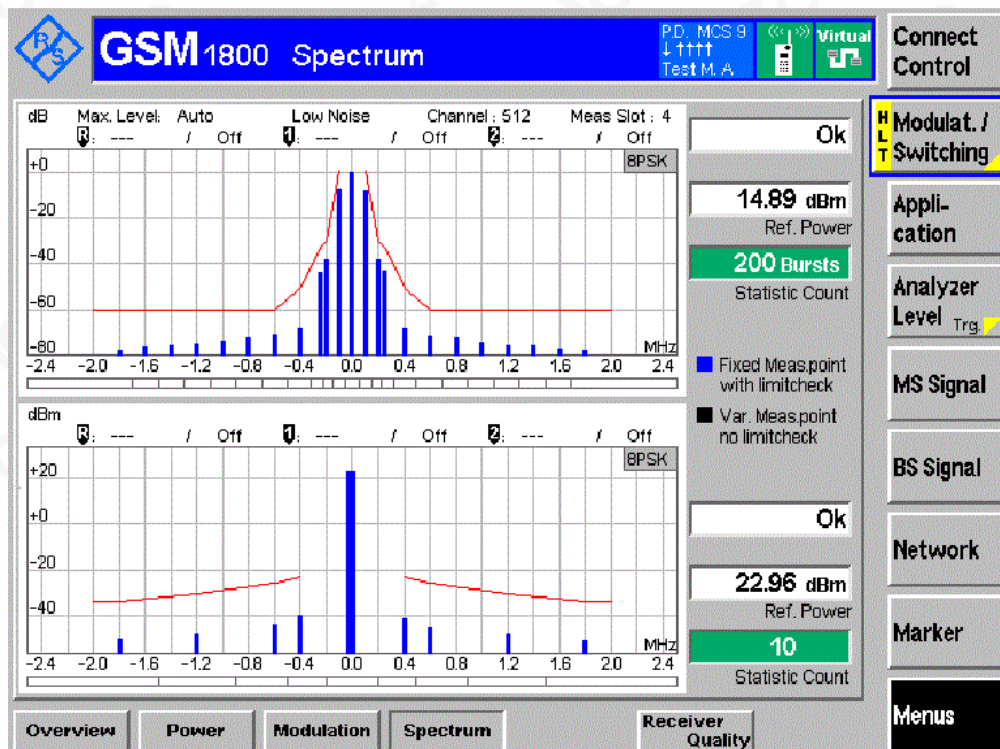


### Channel HCH PCL 19



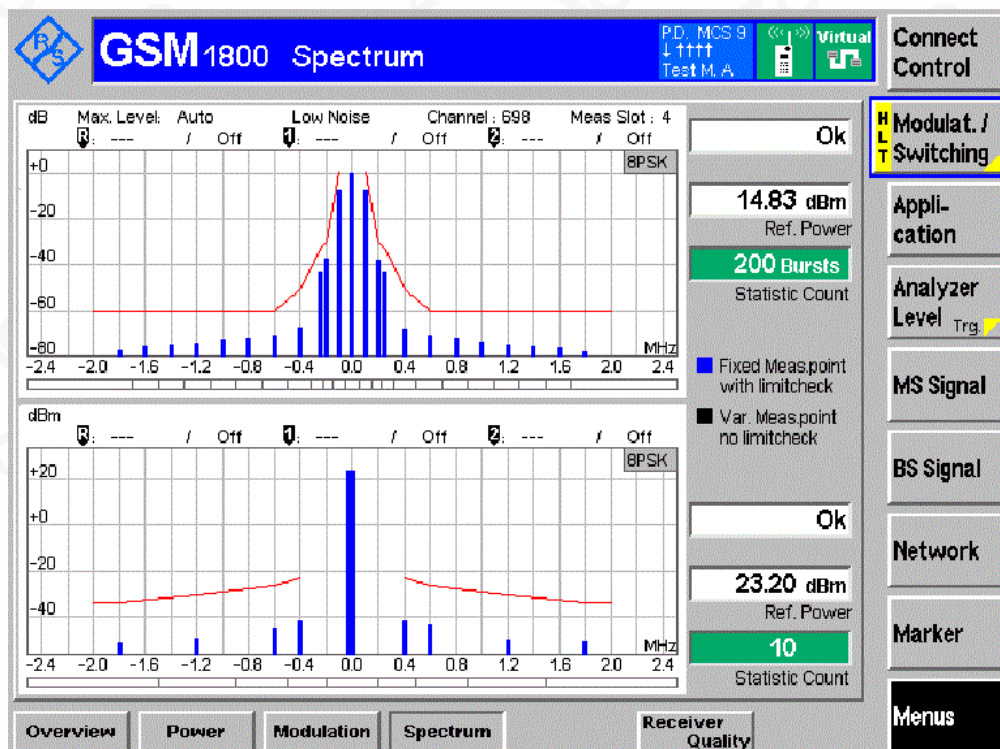
### DCS1800 TN,VN

### Channel LCH PCL 2

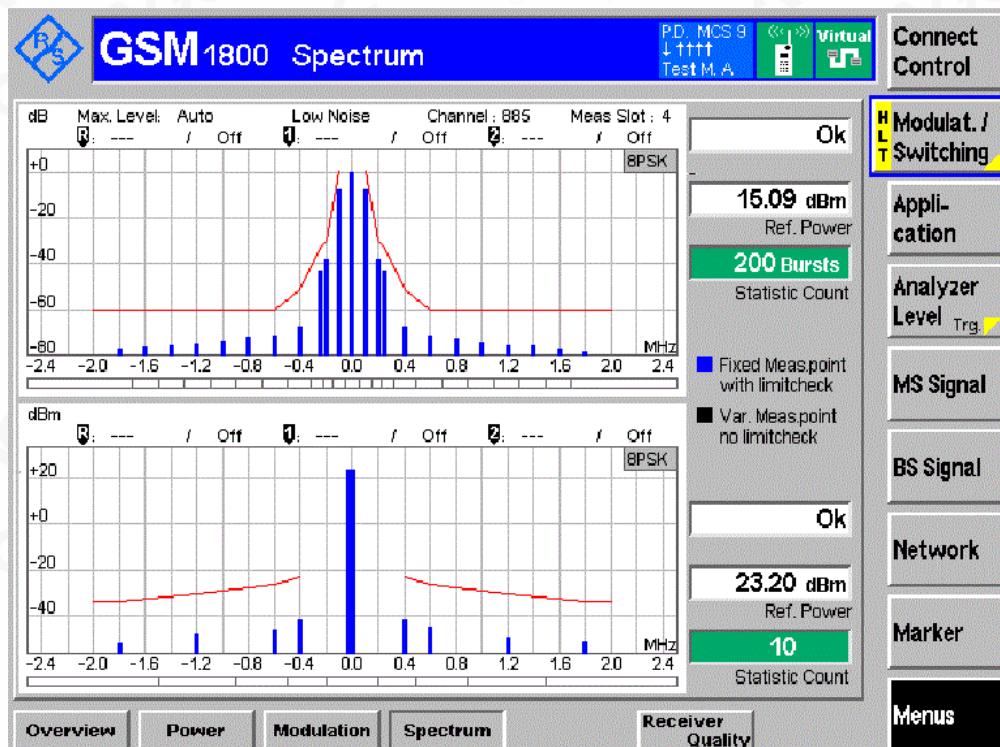




### Channel MCH PCL 2



### Channel HCH PCL 2



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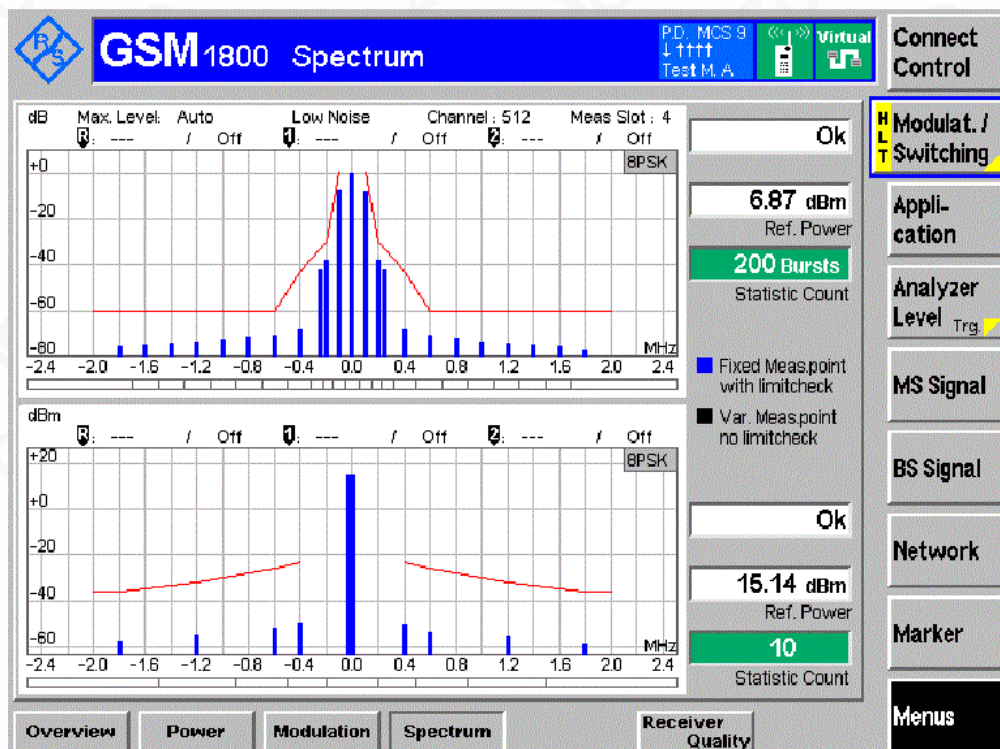
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E-mail: agc@agc-cert.com

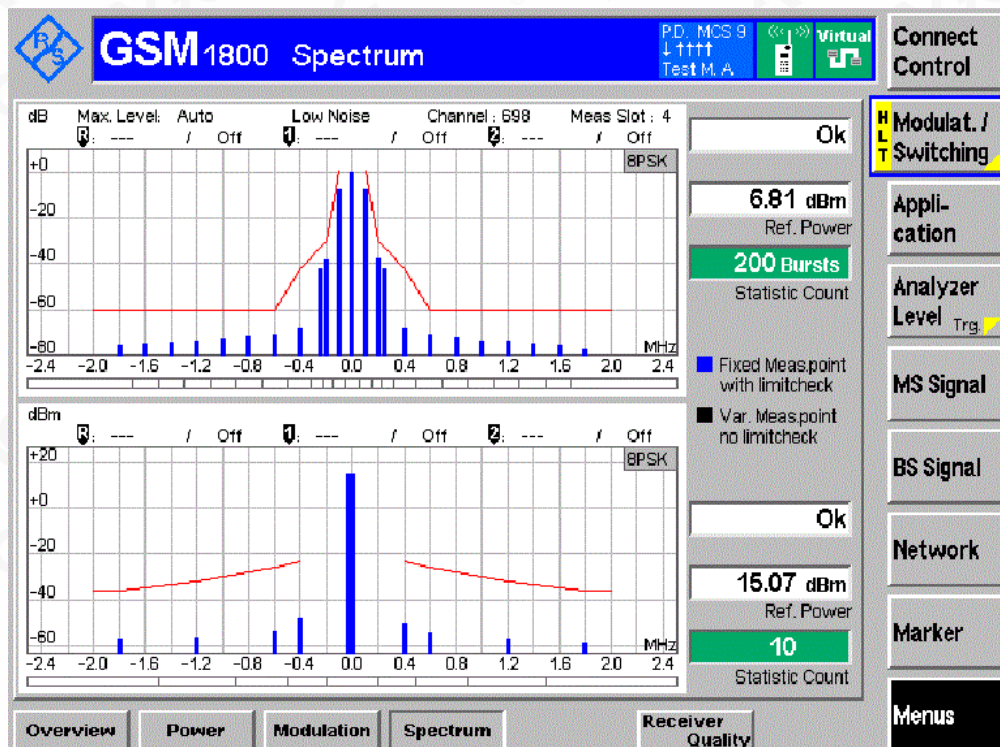
Service Hotline: 400 089 2118



### Channel LCH PCL 8

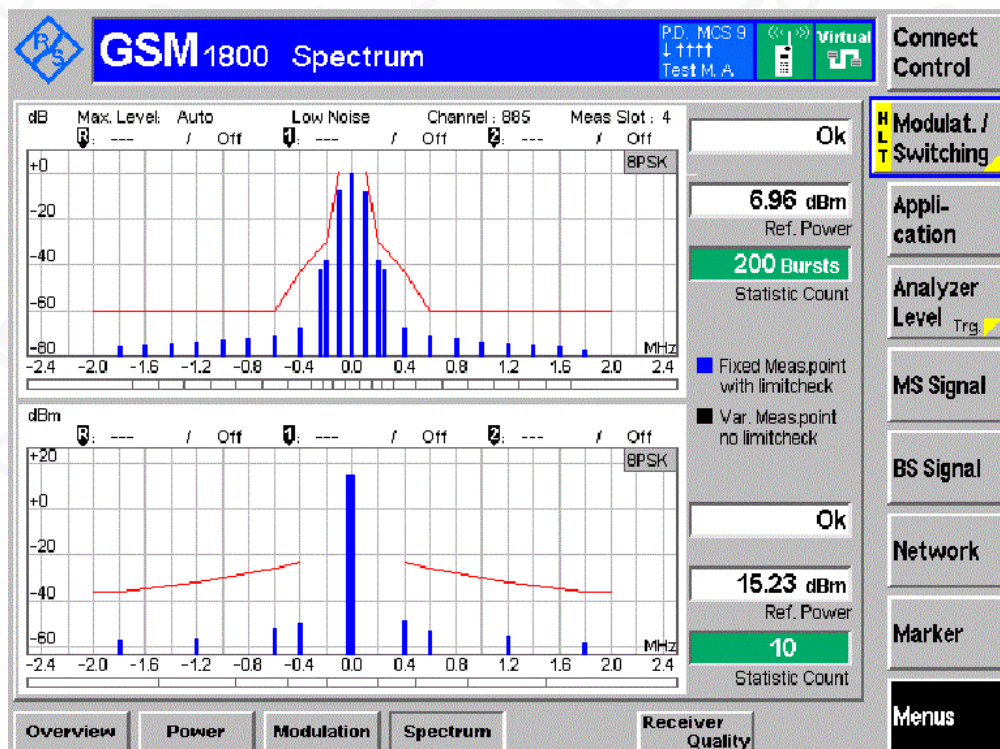


### Channel MCH PCL 8

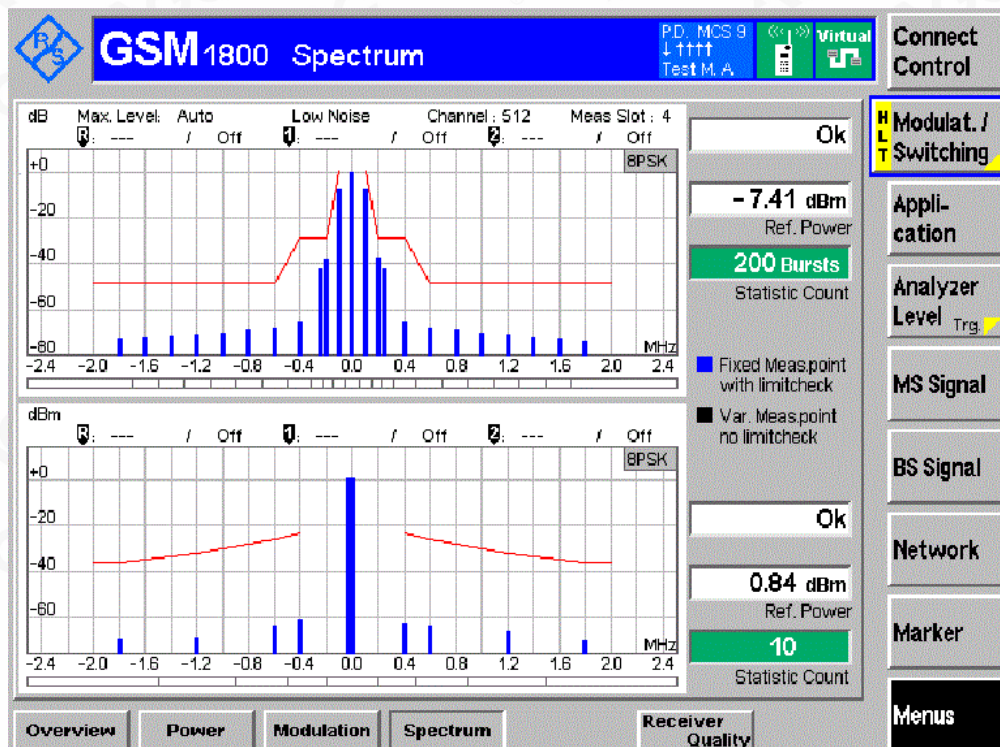




### Channel HCH PCL 8



### Channel LCH PCL 15



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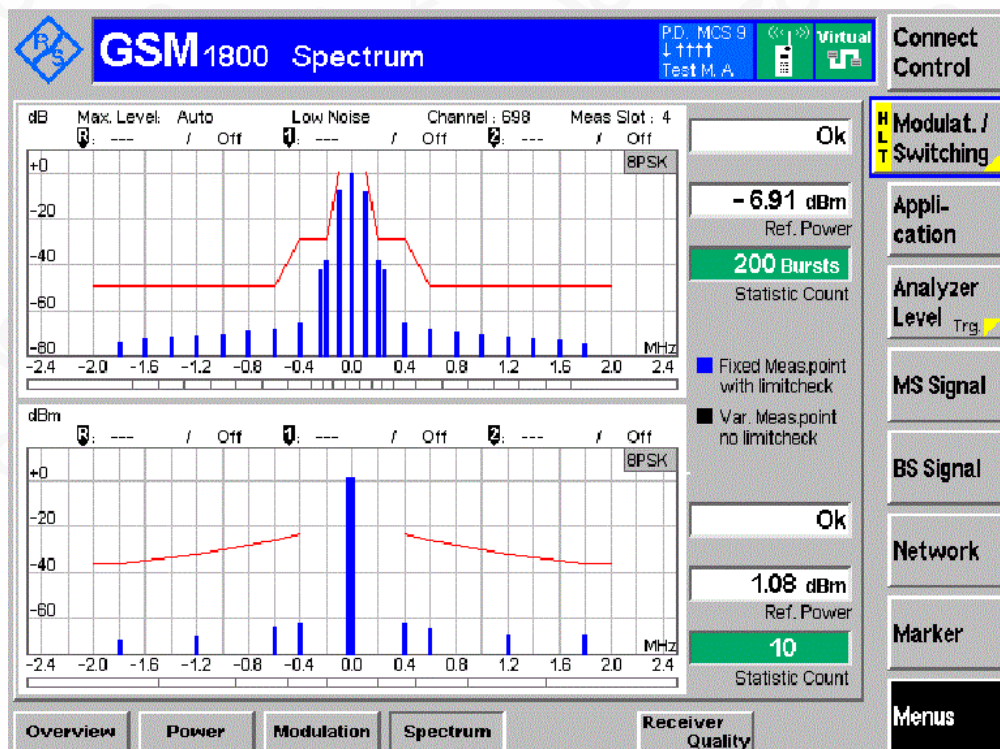
Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

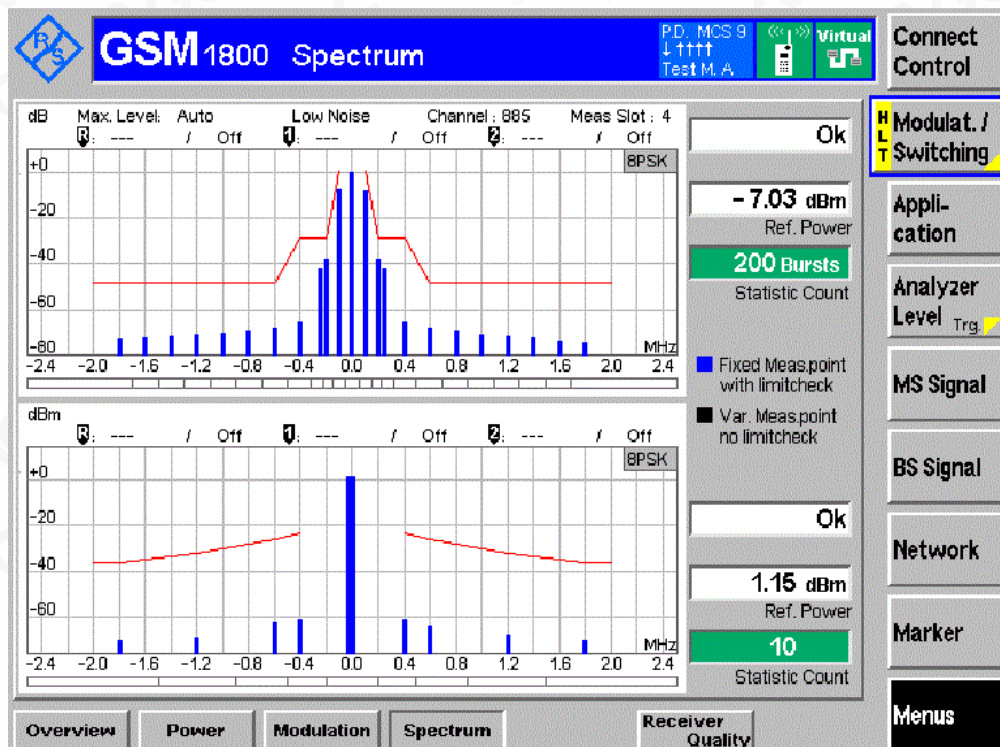
Service Hotline: 400 089 2118



### Channel MCH PCL 15



### Channel HCH PCL 15



## Appendix O. Receiver Blocking and spurious response – speech channels

### 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



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## 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 - 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 R. 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



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### Adjacent S. 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 T.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* $\alpha$ 0.420/ $\alpha$ 8.333	8 900 1 000 000 600 000	Pass
	TCH/FS class Ib class II	400 kHz	FER RBER RBER	11.461* $\alpha$ 0.756/ $\alpha$ 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* $\alpha$ 0.270/ $\alpha$ 8.333	17 800 2 000 000 1 200 000	Pass
	TCH/FS class Ib class II	400 kHz	FER RBER RBER	5.714* $\alpha$ 0.483/ $\alpha$ 9.167	10 500 1 200 000 720 000	Pass



## Appendix U. 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	1	8 900					1	164 000	Pass
	FER class Ib(RBER)	0.06	1 000000	6.55	24 000	5.49	60 000	0.07	20000000	
	class II(RBER)	4.1	120 000					6.58	8 200	

### 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	1	13 400					1	164 000	Pass
	FER class Ib(RBER)	0.06	1500000	5.75	24 000	5.64	30 000	0.07	20000000	
	class II(RBER)	5.44	60 000					6.58	8 200	





## Appendix V. 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 W. 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									
THVH	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								
TLVL	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 X. 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 Y. 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 VH			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
30MHz~880MHz	10k	-57	-64.10	PASS
880MHz~915MHz	10k	-59	-68.38	PASS
915MHz~1000MHz	100k	-57	-65.41	PASS
1GHz~1710MHz	100k	-47	-63.58	PASS
1710MHz~1785MHz	100k	-53	-69.30	PASS
1785MHz~4GHz	100k	-47	-58.19	PASS

### GSM1800

Radiated spurious emissions	GSM1800 VH			
Frequency range	RBW(Hz)	Max.Limit(dBm)	MCH(dBm)	Result
30MHz~880MHz	10k	-57	-67.28	PASS
880MHz~915MHz	10k	-59	-77.30	PASS
915MHz~1000MHz	100k	-57	-62.41	PASS
1GHz~1710MHz	100k	-47	-61.55	PASS
1710MHz~1785MHz	100k	-53	-68.58	PASS
1785MHz~4GHz	100k	-47	-65.19	PASS



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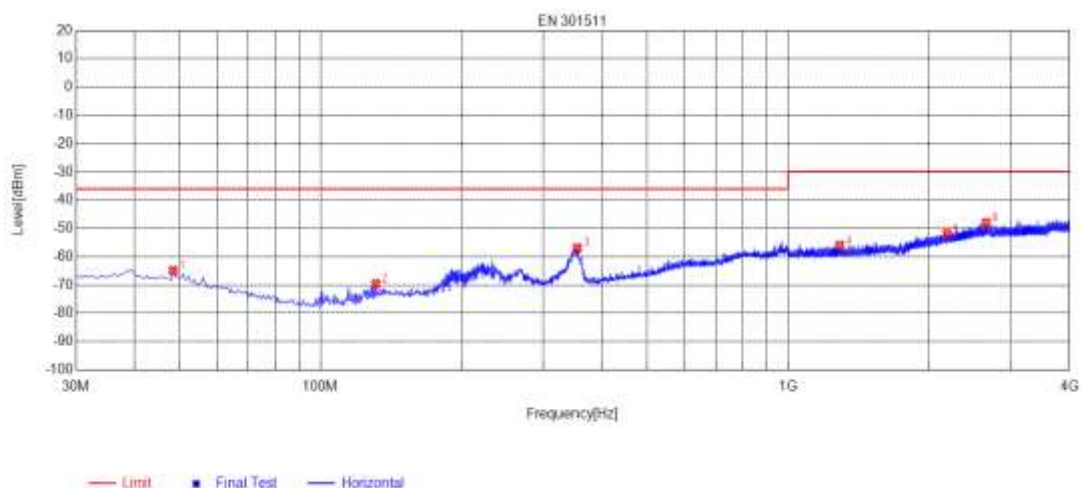
## APPENDIX Z. RADIATED SPURIOUS EMISSIONS TEST RESULT

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.

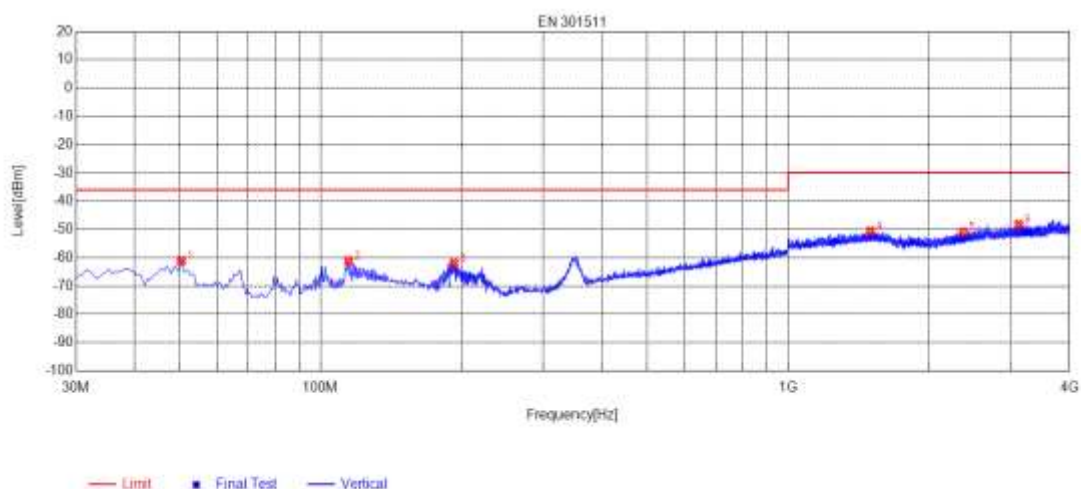
### RADIATED SPURIOUS EMISSIONS GSM 900 – HORIZONTAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	48.4300	-98.77	-64.90	-36.00	28.90	33.87	296	Horizontal
2	131.365	-97.29	-69.58	-36.00	33.58	27.71	20	Horizontal
3	354.465	-90.22	-56.92	-36.00	20.92	33.30	105	Horizontal
4	1290.72	-52.40	-56.05	-30.00	26.05	-3.65	200	Horizontal
5	2188.11	-53.96	-51.96	-30.00	21.96	2.00	286	Horizontal
6	2655.56	-52.75	-48.05	-30.00	18.05	4.70	314	Horizontal



## RADIATED SPURIOUS EMISSIONS GSM 900 – VERTICAL

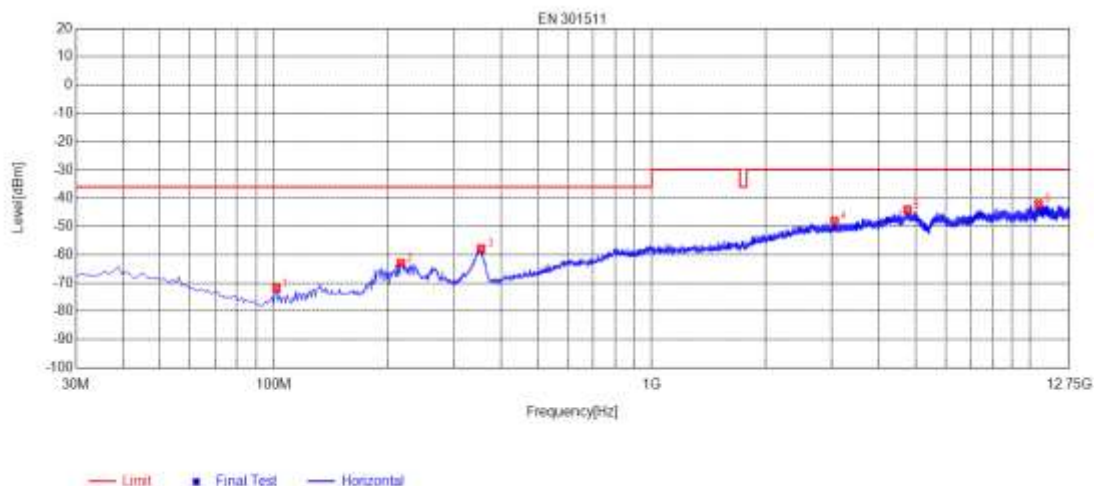


NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	50.3700	-90.95	-61.08	-36.00	25.08	29.87	74	Vertical
2	114.875	-93.18	-61.11	-36.00	25.11	32.07	122	Vertical
3	192.960	-90.21	-61.99	-36.00	25.99	28.22	9	Vertical
4	1501.05	-52.81	-50.65	-30.00	20.65	2.16	359	Vertical
5	2371.13	-53.70	-50.94	-30.00	20.94	2.76	93	Vertical
6	3116.11	-53.68	-48.27	-30.00	18.27	5.41	314	Vertical





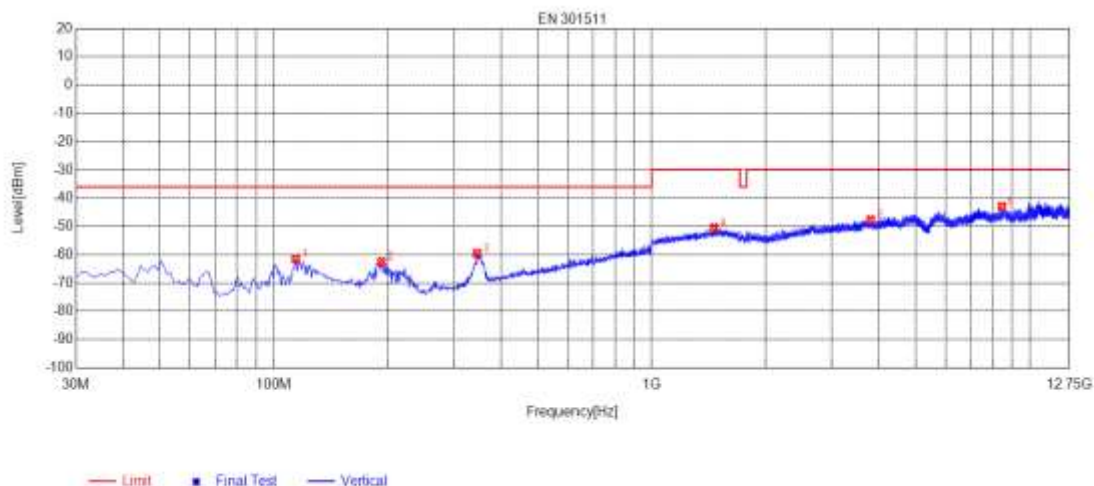
## RADIATED SPURIOUS EMISSIONS GSM 1800 – HORIZONTAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	101.780	-96.61	-71.91	-36.00	35.91	24.70	192	Horizontal
2	217.210	-91.45	-62.98	-36.00	26.98	28.47	341	Horizontal
3	353.980	-91.18	-57.89	-36.00	21.89	33.29	117	Horizontal
4	3047.05	-53.50	-48.13	-30.00	18.13	5.37	13	Horizontal
5	4753.32	-53.74	-44.13	-30.00	14.13	9.61	295	Horizontal
6	10561.9	-57.66	-42.05	-30.00	12.05	15.61	323	Horizontal



## RADIATED SPURIOUS EMISSIONS GSM 1800 – VERTICAL



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	114.390	-93.47	-61.49	-36.00	25.49	31.98	110	Vertical
2	192.960	-90.73	-62.51	-36.00	26.51	28.22	1	Vertical
3	345.250	-92.32	-59.55	-36.00	23.55	32.77	26	Vertical
4	1462.99	-52.45	-50.54	-30.00	20.54	1.91	317	Vertical
5	3799.12	-54.48	-47.68	-30.00	17.68	6.80	354	Vertical
6	8439.66	-55.95	-42.94	-30.00	12.94	13.01	260	Vertical



**APPENDIX AA: PHOTOGRAPHS OF TEST SETUP**  
**RADIATED SPURIOUS EMISSION TEST SETUP**



**RADIATED SPURIOUS EMISSION ABOVE 1G TEST SETUP**



**----END OF REPORT----**