

# RF Test Report

Report No.: AGC00552190301EE03

**PRODUCT DESIGNATION** : Smart Phone  
**BRAND NAME** : CUBOT  
**MODEL NAME** : R15  
**APPLICANT** : Shenzhen Huafurui Technology Co., Ltd.  
**DATE OF ISSUE** : Mar. 21, 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           | /           | Mar. 21, 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>               | R15  |
| <b>Date of test</b>             | Mar. 13, 2019 to Mar. 20, 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.

Tested By



Jeast Zhan(Zhan Jiangdong)

Mar. 20, 2019

Reviewed By



Bart Xie(Xie Xiaobin)

Mar. 21, 2019

Approved By



 Forrest Lei(Lei Yonggang)  
 Authorized Officer

Mar. 21, 2019

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## 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:

|                             |  |
|-----------------------------|--|
| <b>Product Name</b>         | Smart Phone  |
| <b>Brand Name</b>           | CUBOT  |
| <b>Test Model</b>           | R15  |
| <b>Product Type</b>         | GSM  |
| <b>Hardware Version</b>     | WE625B_MB_V1.0_20181226  |
| <b>Software Version</b>     | CUBOT_R15_9031C_V02_20190223   |
| <b>Frequency Bands</b>      | <input checked="" type="checkbox"/> GSM 900 <input checked="" type="checkbox"/> DCS 1800 (EU Frequency)<br><input checked="" type="checkbox"/> GSM 850 <input checked="" type="checkbox"/> PCS1900 (none EU Frequency) |
| <b>Modulation Mode</b>      | GMSK, 8PSK   |
| <b>Antenna Type</b>         | PIFA Antenna   |
| <b>Antenna Gain</b>         | GSM900: -1.8dBi, DCS1800: 1.65dBi  |
| <b>Power Class</b>          | GSM900: 4, DCS1800: 1  |
| <b>GSM Release Version</b>  | N/A  |
| <b>GPRS Class</b>           | Class 12   |
| <b>SIM Card Description</b> | There are dual-SIM cards, just one for GSM/WCDMA 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

|                                |  |
|--------------------------------|--|
| <b>Sample Reference Number</b> | A01  |
| <b>Factory Name</b>            | Shenzhen Huafurui Technology Co., Ltd.   |
| <b>Test Model</b>              | R15  |
| <b>Product Type</b>            | GSM  |
| <b>Frequency Bands</b>         | GSM 900: 880 -915 MHz (TX);      925 - 960 MHz (RX)<br>DCS1800: 1710 -1785 MHz (TX);    1805-1880 MHz (RX) |

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## 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.

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### 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<br>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<br>test set 8960      | Agilent      | GB46200384                 | July 13, 2018 | July 12, 2019 |
| 4   | Power Splitter 11636A                        | Agilent      | 34                         | Sep. 20, 2018 | Sep. 19, 2019 |
| 5   | Attenuator                                   | JFW          | 50FHC-006-50               | June 12, 2018 | June 11, 2019 |
| 6   | Vector Signal Generator<br>SMU200A           | R&S          | 104332                     | Sep. 20, 2018 | Sep. 19, 2019 |
| 7   | VECTOR ANALYZER<br>E4440A                    | Agilent      | MY44303916                 | June 12, 2018 | June 11, 2019 |
| 8   | MXG Vector Signal<br>Generator N5182A        | AGILENT      | MY50140530                 | Sep. 20, 2018 | Sep. 19, 2019 |
| 9   | PSG Analog Signal<br>Generator E8257D        | AGILENT      | MY45141029                 | Sep. 20, 2018 | Sep. 19, 2019 |
| 10  | MXA Signal Analyzer<br>N9020A                | AGILENT      | W1312-60196                | Feb. 27, 2019 | Feb. 26, 2020 |
| 11  | Universal Switch Control<br>Unit             | JS TONSCEND  | N/A                        | ---           | ---           |
| 12  | RF SHIELD BOX                                | R&S          | 1204.7008K02-<br>102590-EE | Feb. 27, 2019 | Feb. 26, 2020 |
| 13  | Programmable Power<br>Supply PPT-1830        | GW INSTEK    | EM907629                   | Aug. 19, 2018 | Aug. 18, 2019 |
| 14  | Vibration Source SCU-200                     | SUSHI        | 3000-40-07                 | Feb. 27, 2019 | Feb. 26, 2020 |
| 15  | Attenuator                                   | JFW          | 50FHC-006-50               | June 12, 2018 | June 11, 2019 |
| 16  | EMI Test Receiver ESCI                       | R&S          | 100694                     | Feb. 27, 2019 | Feb. 26, 2020 |
| 17  | Double-Ridged Waveguide<br>Horn Antenna 3117 | ETS LINDGREN | 00034609                   | Mar. 01, 2018 | Feb. 28, 2020 |
| 18  | Trilog Broadband Antenna<br>VULB 9168        | SCHWARZBECK  | 494                        | Mar. 01, 2018 | Feb. 28, 2020 |
| 19  | LOOP ANTENNA<br>SAS-562B                     | A.H          | /                          | Mar. 01, 2018 | Feb. 28, 2020 |

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| No. | Type                                 | Manufacturer      | S/N    | Cal. Date     | Cal. Due      |
|-----|--------------------------------------|-------------------|--------|---------------|---------------|
| 20  | Artificial Mains Network<br>ENV4200  | R&S               | 101116 | July 13,2018  | July 12,2019  |
| 21  | Artificial Mains Network<br>ENV216   | R&S               | 101242 | July 13,2018  | July 12,2019  |
| 22  | Filter Bank Notch<br>1(880-915MHz)   | MICRO-TRONIC<br>S | 010    | Feb. 27, 2019 | Feb. 26, 2020 |
| 23  | Filter Bank Notch<br>2(1710-1785MHz) | MICRO-TRONIC<br>S | 009    | Feb. 27, 2019 | Feb. 26, 2020 |
| 24  | Filter Bank Notch<br>3(1920-1980MHz) | MICRO-TRONIC<br>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:  $\pm 3\%$

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## 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;<br>Part 1: Conformance specification |

### 5.2. TEST ENVIRONMENT/CONDITIONS

|  |   |
|--|---|
| Normal Temperature (NT)  | 20 ... 25 °C  |
| Relative Humidity  | 30 ... 75 %   |
| Air Pressure   | 980 ... 1020 kPa  |
| Adapter Test Model Name  | R15   |
| Details of Power Supply (Rated Input)  | AC100-240V, 50/60Hz, 0.15A  |
| Details of Power Supply (Rated Output)   | DC5V, 1000mA  |
| Extreme Temperature  | Low Temperature (TL) = -20°C<br>Normal Temperature(TN) = 25 °C<br>High Temperature (TH) = +55°C |
| Extreme Voltage of the EUT   | Low Voltage = DC 3.40V<br>Normal Voltage= DC 3.80V<br>High Voltage = DC 4.35V                   |
| <b>Note:</b> The Limit Voltage 4.35V was declared by manufacturer, The EUT couldn't be operate normally with higher voltage. |   |

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### 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                |

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#### 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<br>(ETSI TS<br>151010-1) | Test Case<br>(EN 301<br>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   |      |

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|         |        |   |     |      |     |      |
|---------|--------|---|-----|------|-----|------|
| 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 |

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|         |        |  |     |      |     |      |  |
|---------|--------|--|-----|------|-----|------|--|
|         |        | 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 |  |

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|         |        |  |     |      |     |      |  |
|---------|--------|--|-----|------|-----|------|--|
|         |        | 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 |  |

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

| Test Case<br>(ETSI TS<br>151010-1) | Test Case<br>(EN 301<br>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   |      |
| 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                                 |         |        |          |        |      |

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|         |        |   |     |      |     |      |  |
|---------|--------|---|-----|------|-----|------|--|
|         |        | 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 |  |

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|         |        |  |     |      |     |      |  |
|---------|--------|--|-----|------|-----|------|--|
|         |        | 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 |  |

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|         |        |  |     |      |     |      |  |
|---------|--------|--|-----|------|-----|------|--|
|         |        | 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.

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**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                   | 0.3    | 0.4 | 0.4 | PASS   |
|                               | 19                  | 0.4    | 0.4 | 0.4 | PASS   |
| When the MS is being vibrated | 5                   | 0.3    | 0.4 | 0.4 | PASS   |
|                               | 19                  | 0.4    | 0.4 | 0.4 | PASS   |

| Peak phase error(degree)      | Power control LEVEL | Result |     |     |        |
|-------------------------------|---------------------|--------|-----|-----|--------|
|                               |                     | GSM900 |     |     |        |
|                               |                     | ARFCN  |     |     |        |
|                               |                     | LCH    | MCH | HCH | Result |
| TN VN                         | 5                   | 1.0    | 1.1 | 1.1 | PASS   |
|                               | 19                  | 1.1    | 1.2 | 1.2 | PASS   |
| When the MS is being vibrated | 5                   | 1.0    | 1.1 | 1.1 | PASS   |
|                               | 19                  | 1.1    | 1.2 | 1.2 | PASS   |

| frequency error(Hz)           | Power control LEVEL | Result |     |     |        |
|-------------------------------|---------------------|--------|-----|-----|--------|
|                               |                     | GSM900 |     |     |        |
|                               |                     | ARFCN  |     |     |        |
|                               |                     | LCH    | MCH | HCH | Result |
| TN VN                         | 5                   | -13    | -12 | -6  | PASS   |
|                               | 19                  | -10    | -9  | -13 | PASS   |
| When the MS is being vibrated | 5                   | -14    | -9  | -10 | PASS   |
|                               | 19                  | -14    | -11 | -10 | PASS   |

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**DCS1800**

| RMS phase error(degree)       | Power control LEVEL | Result  |     |     |        |
|-------------------------------|---------------------|---------|-----|-----|--------|
|                               |                     | DCS1800 |     |     |        |
|                               |                     | ARFCN   |     |     |        |
|                               |                     | LCH     | MCH | HCH | Result |
| TN VN                         | 0                   | 0.5     | 0.5 | 0.6 | PASS   |
|                               | 15                  | 0.5     | 0.5 | 0.5 | PASS   |
| When the MS is being vibrated | 0                   | 0.5     | 0.5 | 0.6 | 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                   | 2.8     | 3.6 | 4.0 | PASS   |
|                               | 15                  | 1.5     | 1.5 | 1.5 | PASS   |
| When the MS is being vibrated | 0                   | 2.7     | 3.4 | 3.9 | PASS   |
|                               | 15                  | 1.4     | 1.5 | 1.5 | PASS   |

| frequency error(Hz)           | Power control LEVEL | Result  |     |     |        |
|-------------------------------|---------------------|---------|-----|-----|--------|
|                               |                     | DCS1800 |     |     |        |
|                               |                     | ARFCN   |     |     |        |
|                               |                     | LCH     | MCH | HCH | Result |
| TN VN                         | 0                   | -26     | -24 | -24 | PASS   |
|                               | 15                  | -22     | -16 | -20 | PASS   |
| When the MS is being vibrated | 0                   | -29     | -26 | -24 | PASS   |
|                               | 15                  | -22     | -16 | -18 | PASS   |

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**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                   | -8     | -9  | -9  | PASS   |
|            |                 | 19                  | -9     | -13 | -9  | PASS   |
| HT100      | TNVN            | 5                   | -8     | -11 | -6  | PASS   |
|            |                 | 19                  | -10    | -9  | -11 | PASS   |
| TU50       | TNVN            | 5                   | -9     | -7  | -7  | PASS   |
|            |                 | 19                  | -10    | -13 | -10 | PASS   |
| TU3        | TNVN            | 5                   | -11    | -10 | -10 | PASS   |
|            |                 | 19                  | -12    | -13 | -9  | PASS   |

**DCS1800**

| Fading set | Test conditions | Power control LEVEL | Result  |     |     |        |
|------------|-----------------|---------------------|---------|-----|-----|--------|
|            |                 |                     | DCS1800 |     |     |        |
|            |                 |                     | ARFCN   |     |     |        |
|            |                 |                     | LCH     | MCH | HCH | Result |
| RA130      | TNVN            | 0                   | -22     | -27 | -20 | PASS   |
|            |                 | 15                  | -16     | -20 | -19 | PASS   |
| HT100      | TNVN            | 0                   | -27     | -26 | -23 | PASS   |
|            |                 | 15                  | -22     | -17 | -13 | PASS   |
| TU50       | TNVN            | 0                   | -25     | -25 | -20 | PASS   |
|            |                 | 15                  | -21     | -14 | -16 | PASS   |
| TU1.5      | TNVN            | 0                   | -25     | -22 | -24 | PASS   |
|            |                 | 15                  | -22     | -19 | -21 | PASS   |

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### 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                   | 0.3    | 0.4 | 0.4 | PASS   |
|                               | 19                  | 0.4    | 0.4 | 0.4 | PASS   |
| When the MS is being vibrated | 5                   | 0.3    | 0.4 | 0.4 | PASS   |
|                               | 19                  | 0.4    | 0.4 | 0.4 | PASS   |

| Peak phase error(degree)      | Power control LEVEL | Result |     |     |        |
|-------------------------------|---------------------|--------|-----|-----|--------|
|                               |                     | GSM900 |     |     |        |
|                               |                     | ARFCN  |     |     |        |
|                               |                     | LCH    | MCH | HCH | Result |
| TN VN                         | 5                   | 1.1    | 1.1 | 1.1 | PASS   |
|                               | 19                  | 1.1    | 1.2 | 1.2 | PASS   |
| When the MS is being vibrated | 5                   | 1.0    | 1.1 | 1.2 | PASS   |
|                               | 19                  | 1.1    | 1.2 | 1.2 | PASS   |

| frequency error(Hz)           | Power control LEVEL | Result |     |     |        |
|-------------------------------|---------------------|--------|-----|-----|--------|
|                               |                     | GSM900 |     |     |        |
|                               |                     | ARFCN  |     |     |        |
|                               |                     | LCH    | MCH | HCH | Result |
| TN VN                         | 5                   | -16    | -12 | -13 | PASS   |
|                               | 19                  | -11    | -8  | -11 | PASS   |
| When the MS is being vibrated | 5                   | -13    | -13 | -16 | PASS   |
|                               | 19                  | -10    | -7  | -8  | PASS   |

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**DCS1800**

| RMS phase error(degree)       | Power control LEVEL | Result  |     |     |        |
|-------------------------------|---------------------|---------|-----|-----|--------|
|                               |                     | DCS1800 |     |     |        |
|                               |                     | ARFCN   |     |     |        |
|                               |                     | LCH     | MCH | HCH | Result |
| TN VN                         | 0                   | 0.5     | 0.5 | 0.6 | PASS   |
|                               | 15                  | 0.5     | 0.5 | 0.5 | PASS   |
| When the MS is being vibrated | 0                   | 0.5     | 0.5 | 0.6 | 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                   | 2.5     | 3.4 | 3.4 | PASS   |
|                               | 15                  | 1.4     | 1.4 | 1.5 | PASS   |
| When the MS is being vibrated | 0                   | 2.6     | 3.4 | 3.5 | PASS   |
|                               | 15                  | 1.4     | 1.5 | 1.5 | PASS   |

| frequency error(Hz)           | Power control LEVEL | Result  |     |     |        |
|-------------------------------|---------------------|---------|-----|-----|--------|
|                               |                     | DCS1800 |     |     |        |
|                               |                     | ARFCN   |     |     |        |
|                               |                     | LCH     | MCH | HCH | Result |
| TN VN                         | 0                   | -33     | -24 | -19 | PASS   |
|                               | 15                  | -26     | -18 | -19 | PASS   |
| When the MS is being vibrated | 0                   | -29     | -28 | -22 | PASS   |
|                               | 15                  | -24     | -19 | -15 | PASS   |

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## 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           | 33.83            | 33.83 | 33.81 | PASS   |
|                               | 12          | 20.30            | 20.38 | 20.42 | PASS   |
|                               | 19          | 6.26             | 6.39  | 6.36  | PASS   |

| Transmitter Output power(dBm) | Power level | Result           |       |       |        |
|-------------------------------|-------------|------------------|-------|-------|--------|
|                               |             | Traffic Channels |       |       |        |
| DCS1800                       |             | LCH              | MCH   | HCH   | Result |
| TN,VN                         | 0           | 31.17            | 30.89 | 30.89 | PASS   |
|                               | 8           | 15.42            | 15.08 | 15.25 | PASS   |
|                               | 15          | 2.05             | 1.89  | 1.96  | 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 |

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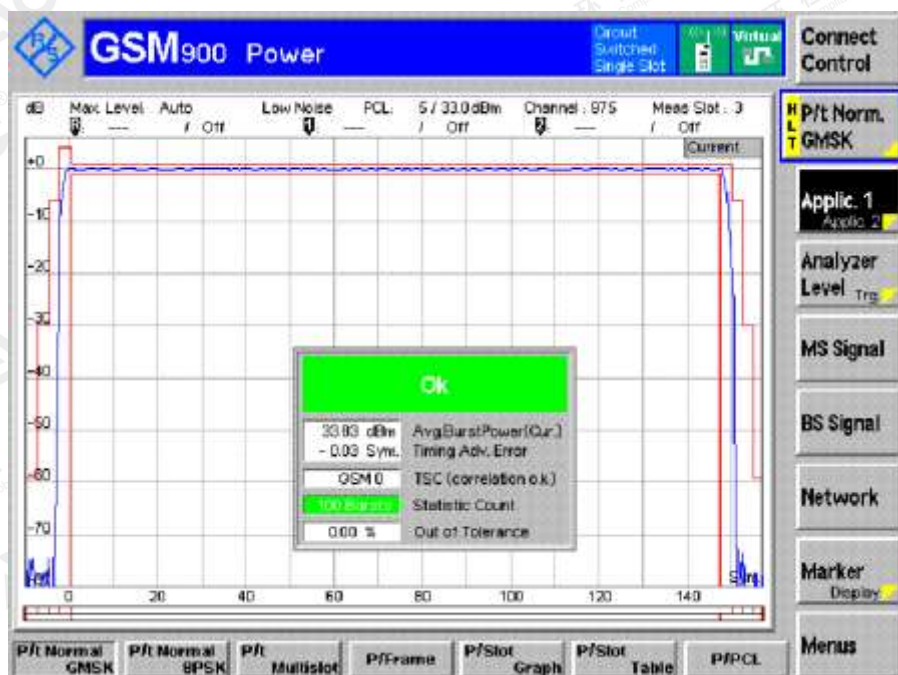


|  |    |      |      |      |
|--|----|------|------|------|
|  | 8  | PASS | PASS | PASS |
|  | 15 | PASS | PASS | PASS |

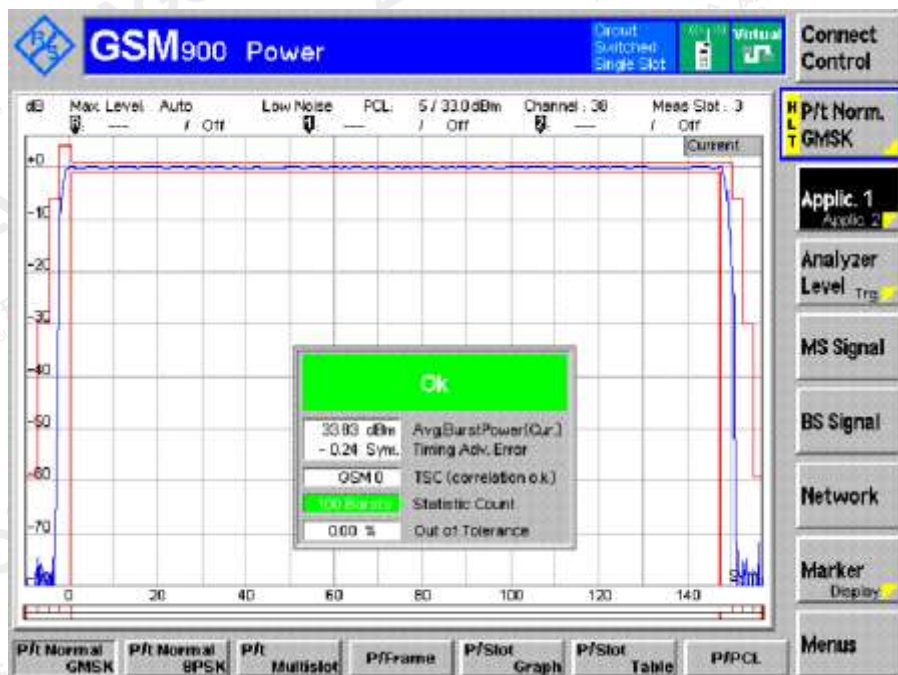
### Graphs of output power and burst timing

#### GSM 900 TN,VN

Channel LCH PCL 5

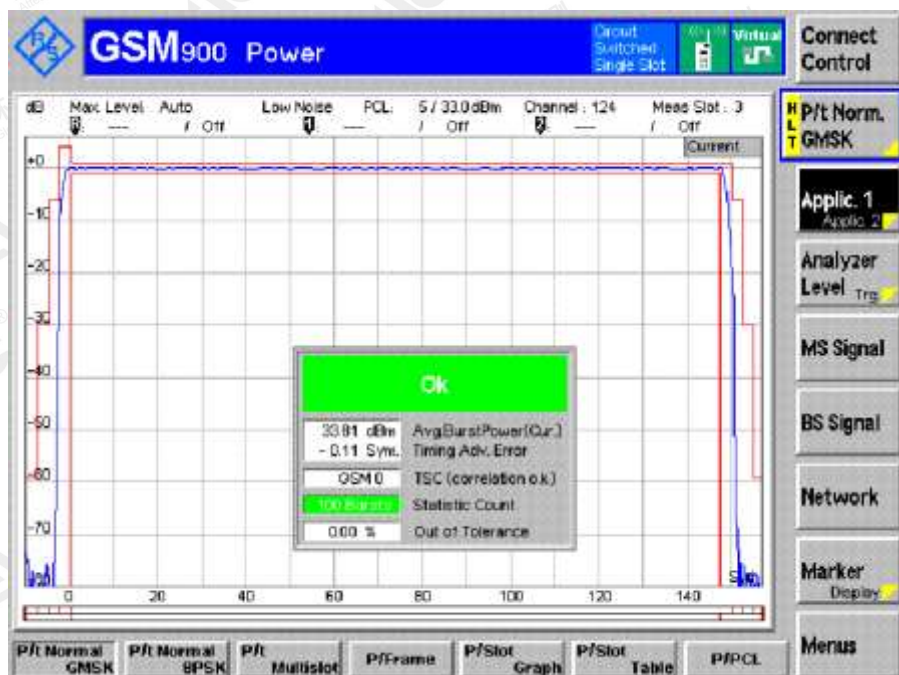


Channel MCH PCL 5

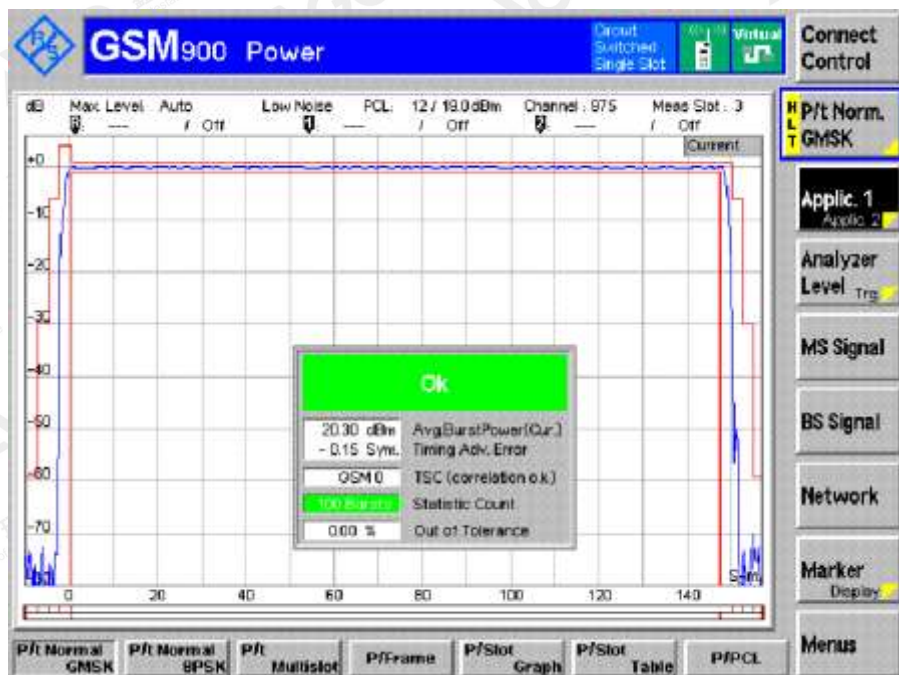


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Channel HCH PCL 5



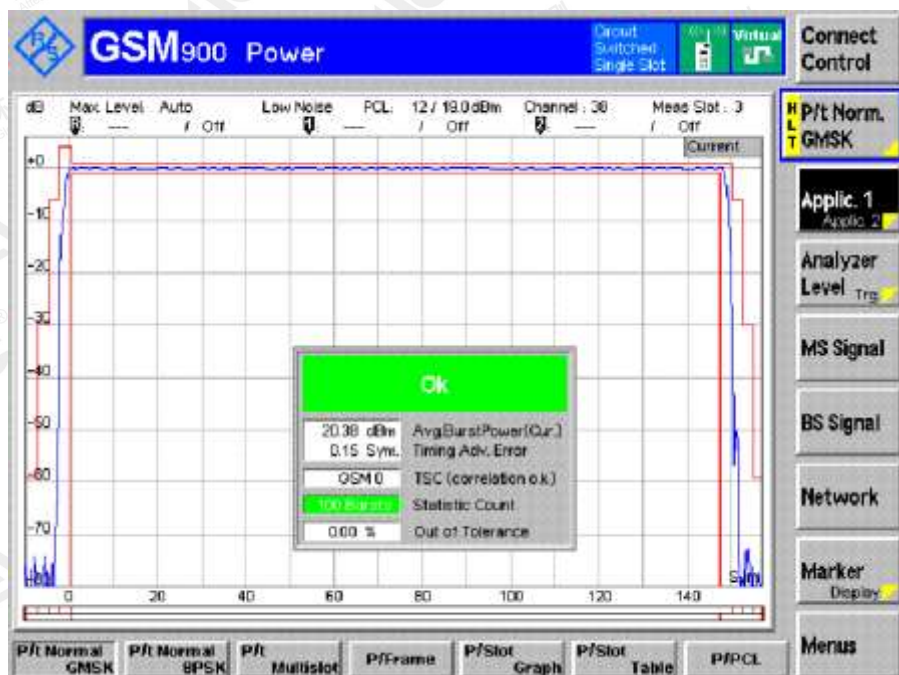
Channel LCH PCL 12



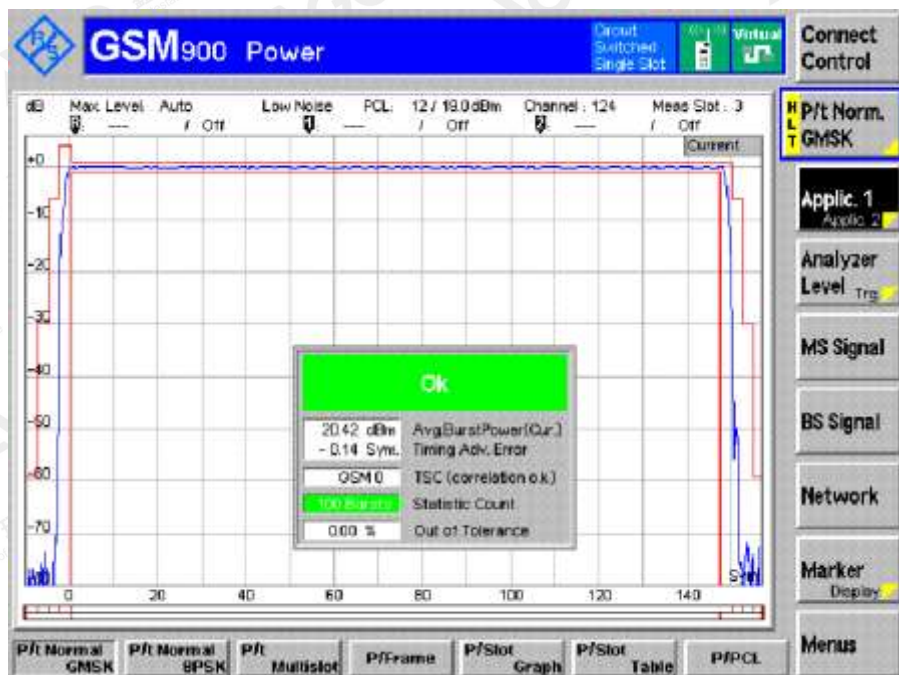
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Channel MCH PCL 12

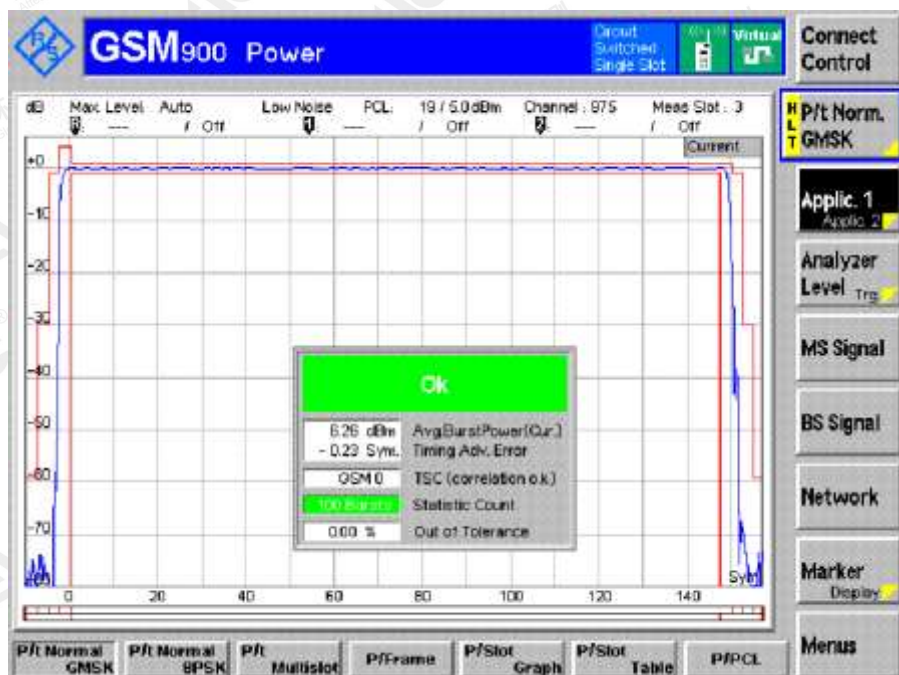


Channel HCH PCL 12

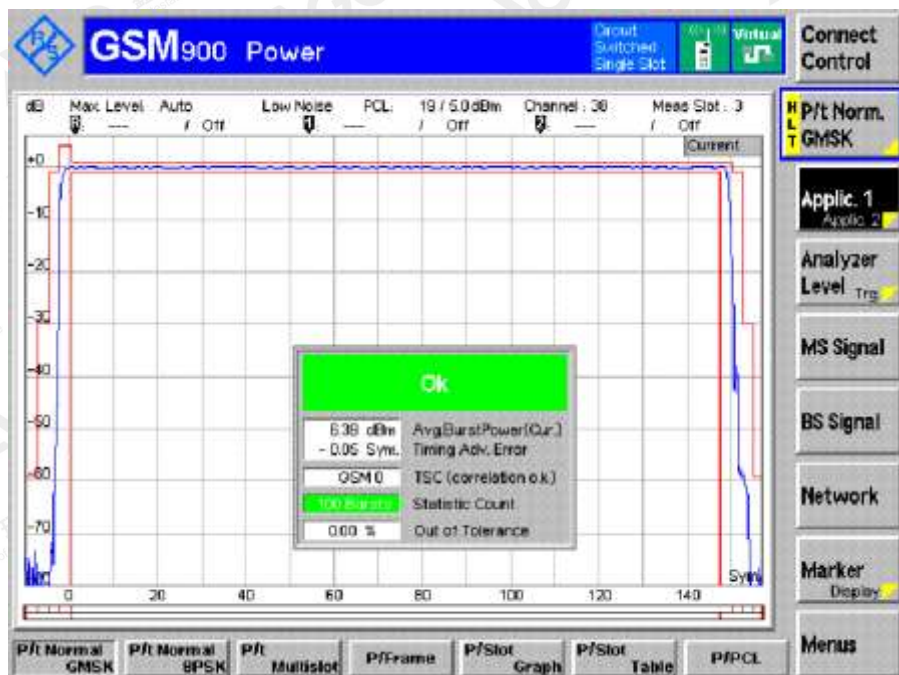


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Channel LCH PCL 19



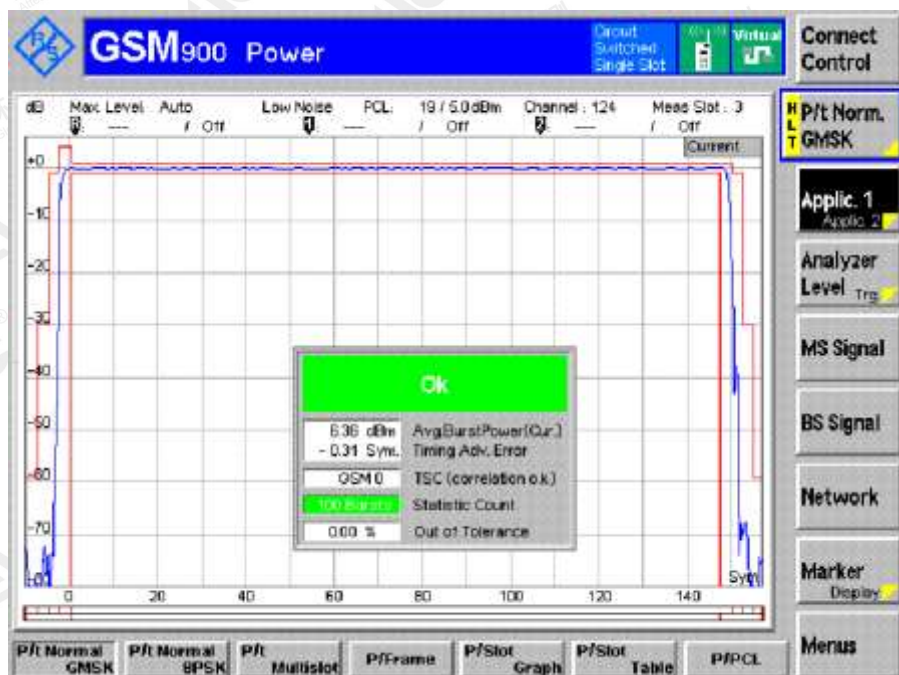
Channel MCH PCL 19



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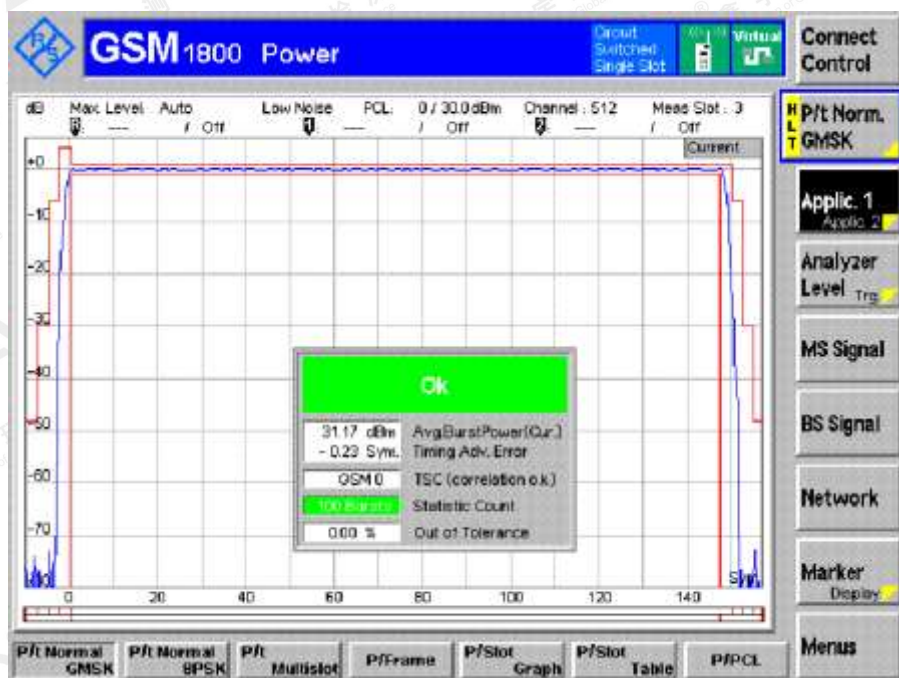


Channel HCH PCL 19



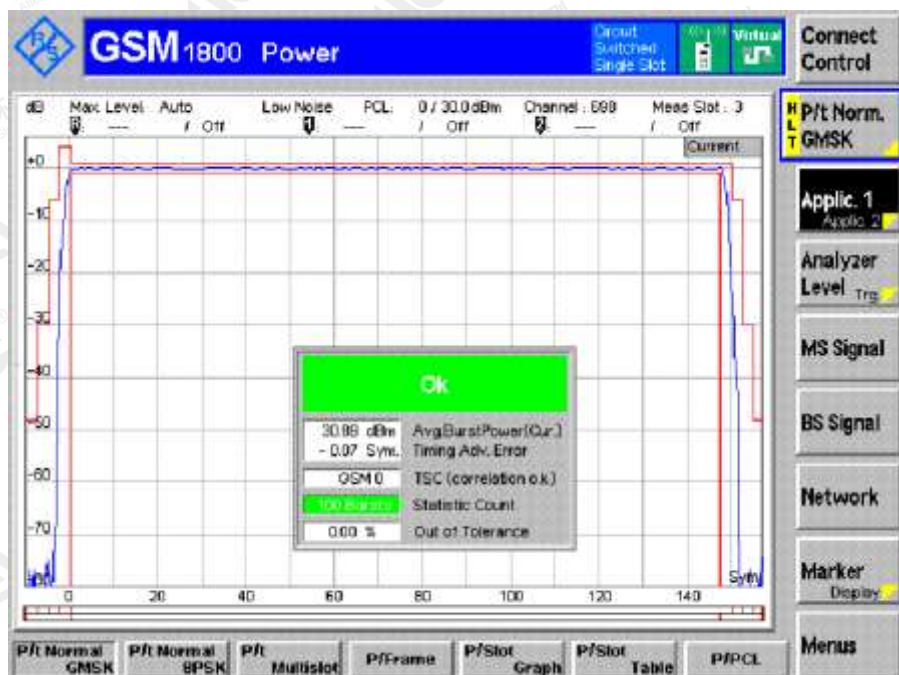
DCS1800 TN,VN

Channel LCH PCL 0



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Channel MCH PCL 0



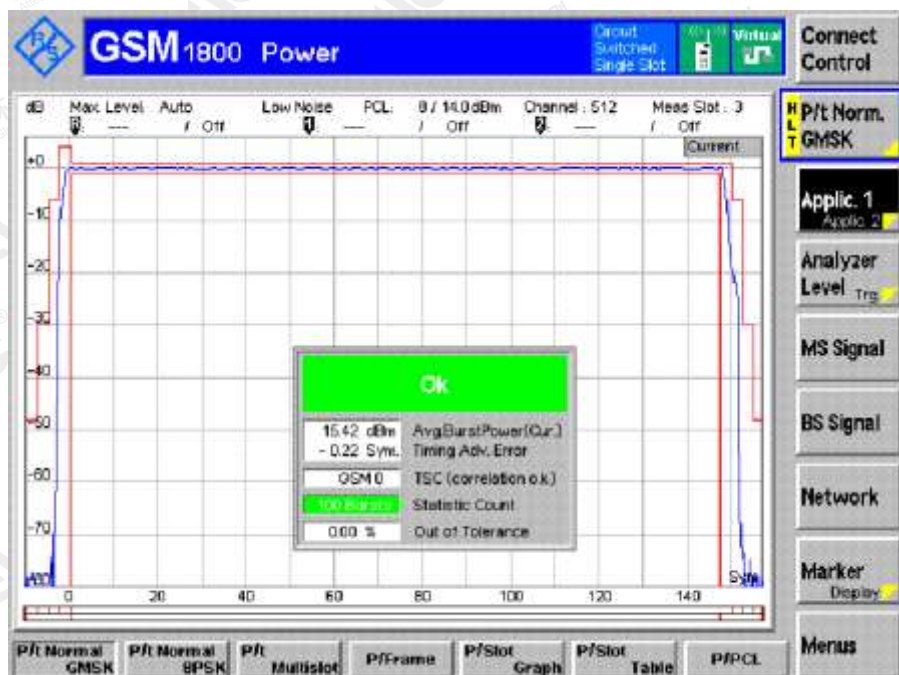
Channel HCH PCL 0



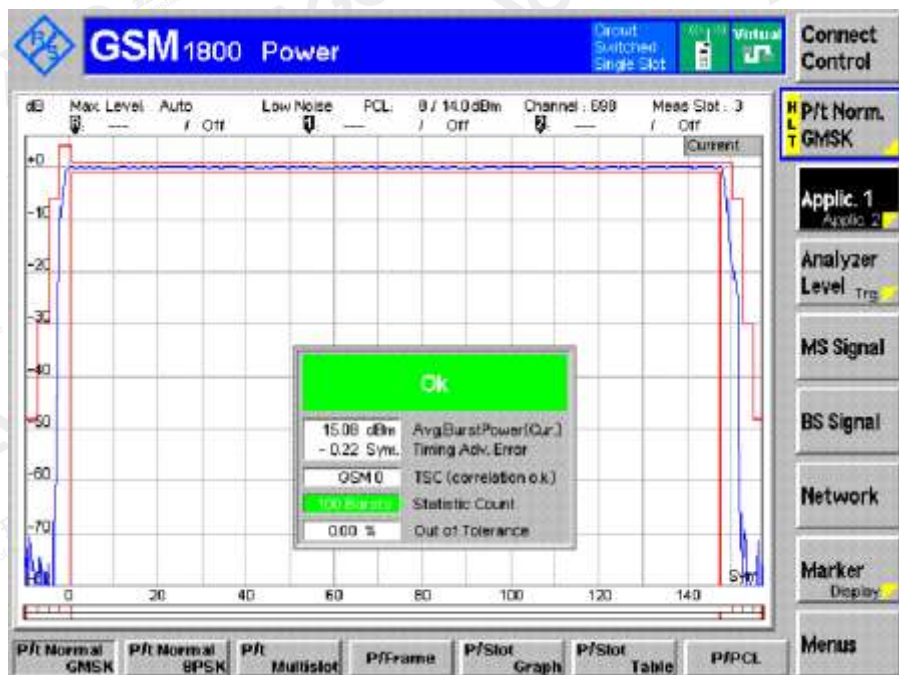
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### Channel LCH PCL 8

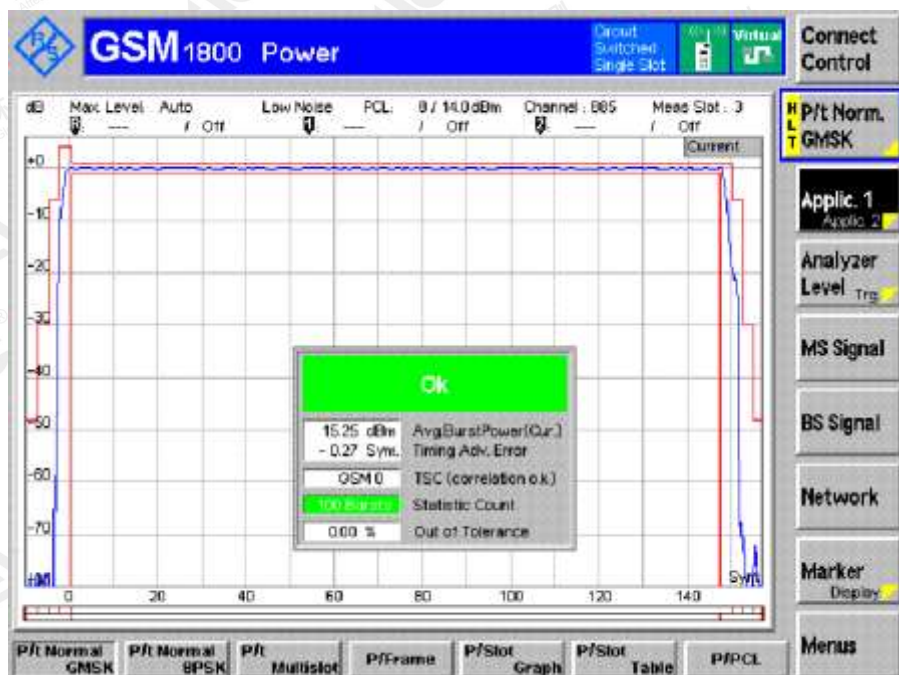


### Channel MCH PCL 8

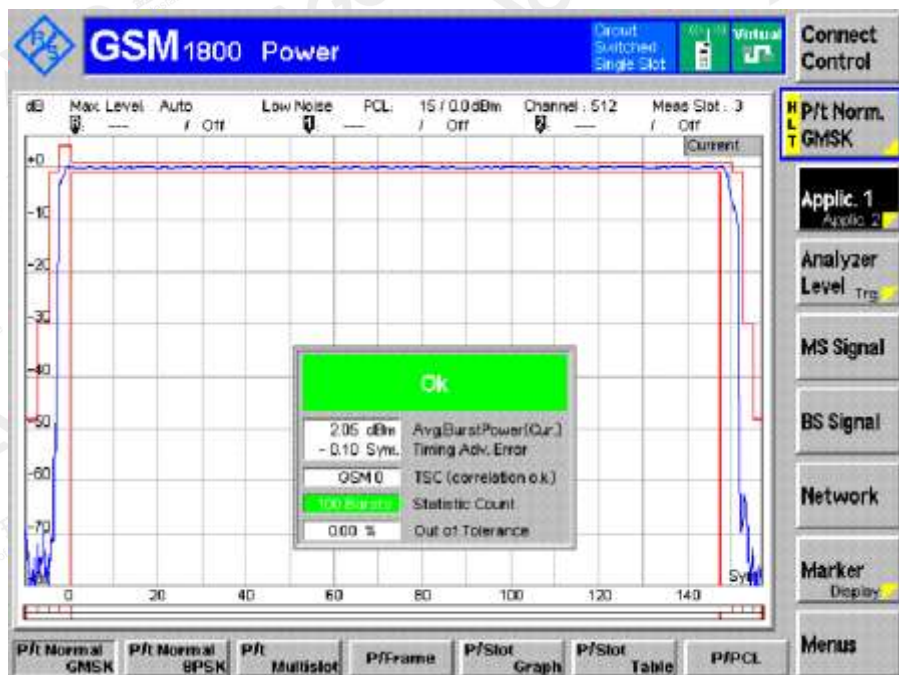


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### Channel HCH PCL 8



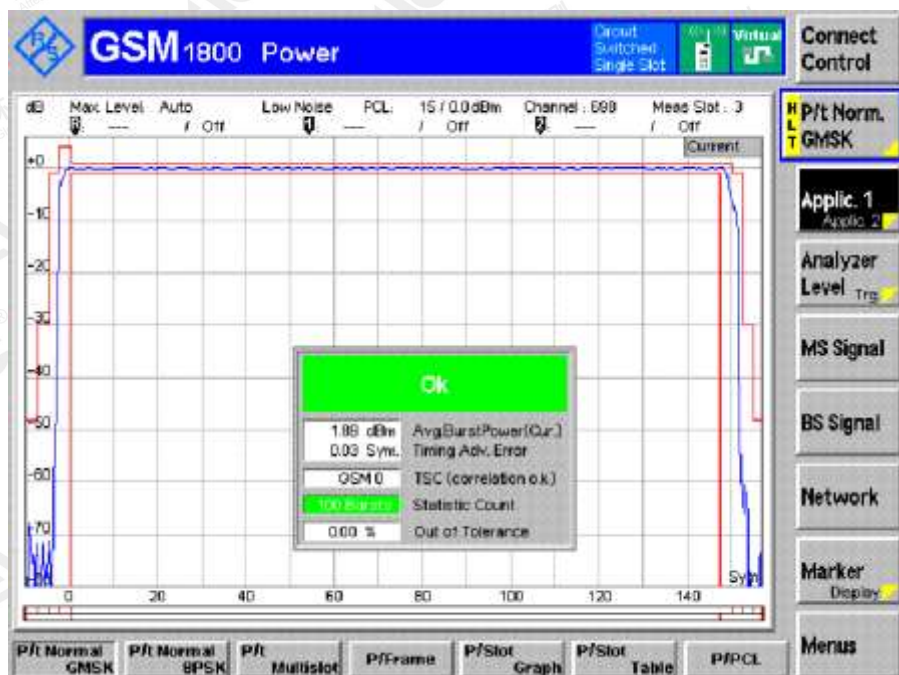
### Channel LCH PCL 15



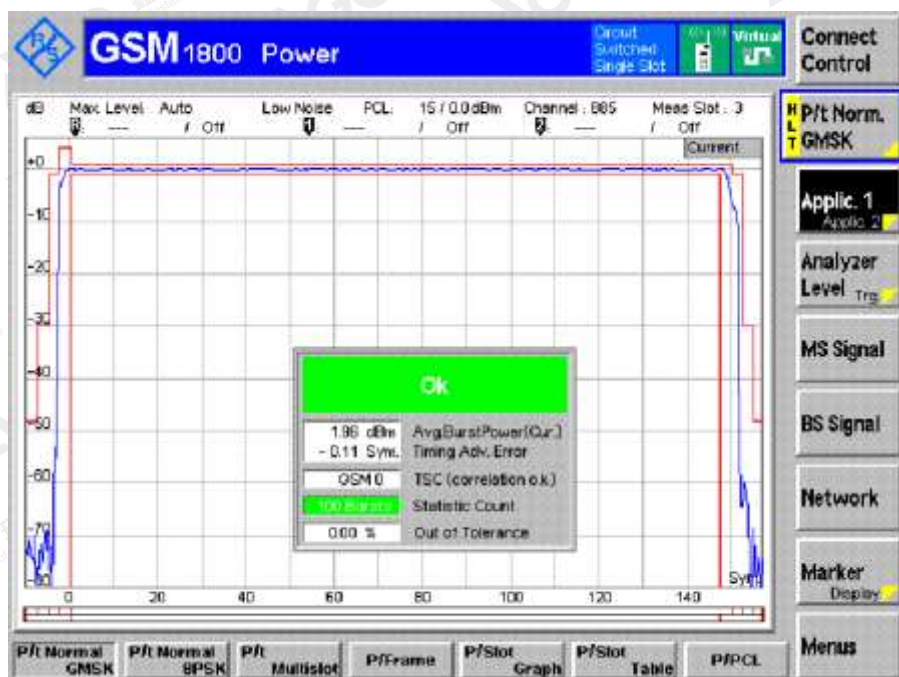
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### Channel MCH PCL 15



### 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.

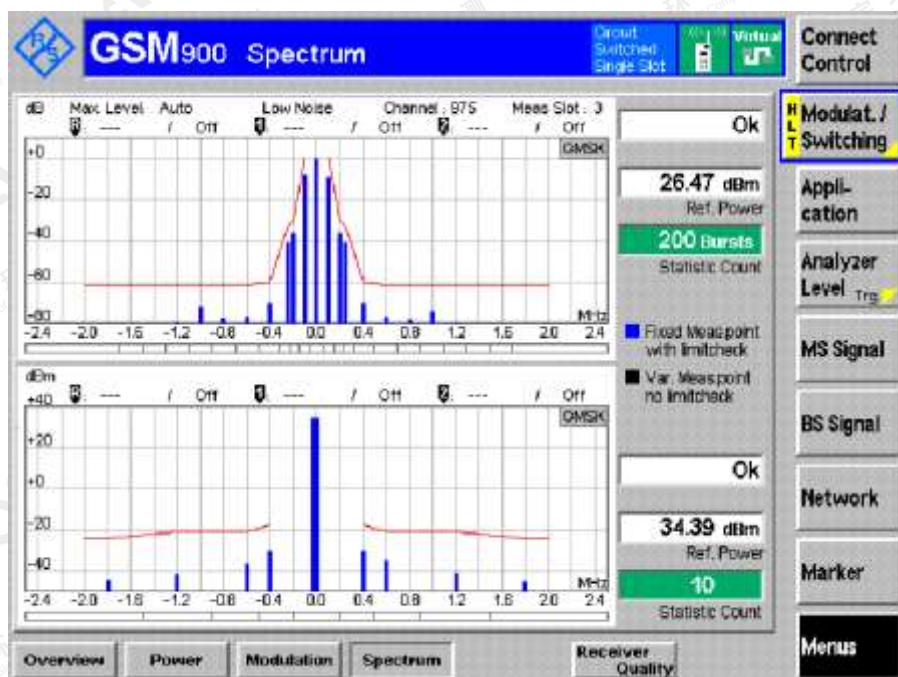
| Modulation& switch<br>Spectrum | Power level | Result           |      |      |
|--------------------------------|-------------|------------------|------|------|
|                                |             | Traffic Channels |      |      |
| GSM900                         |             | LCH  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

| Modulation&<br>switch<br>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

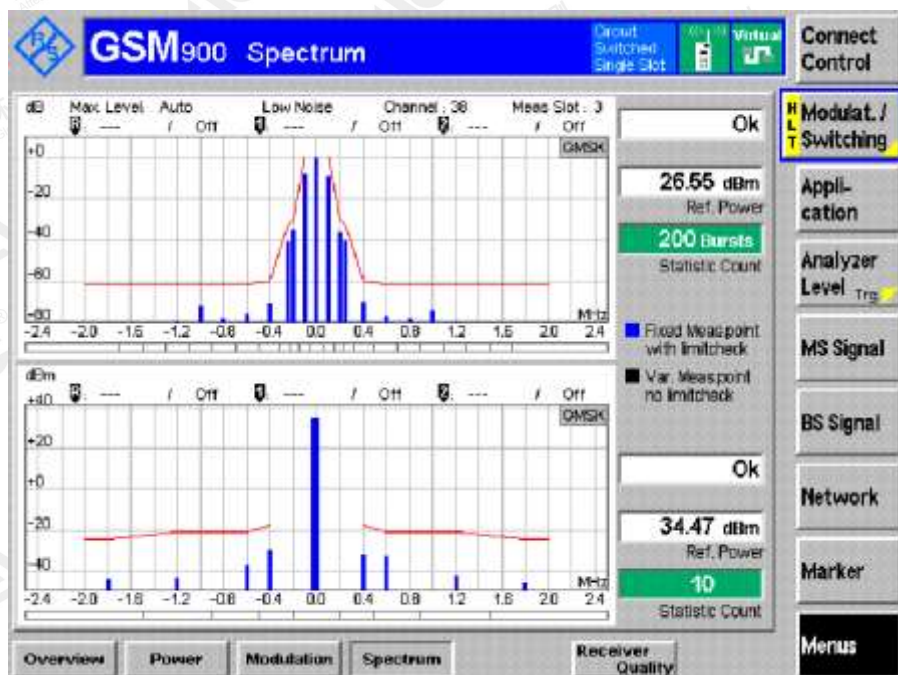
Channel LCH PCL 5



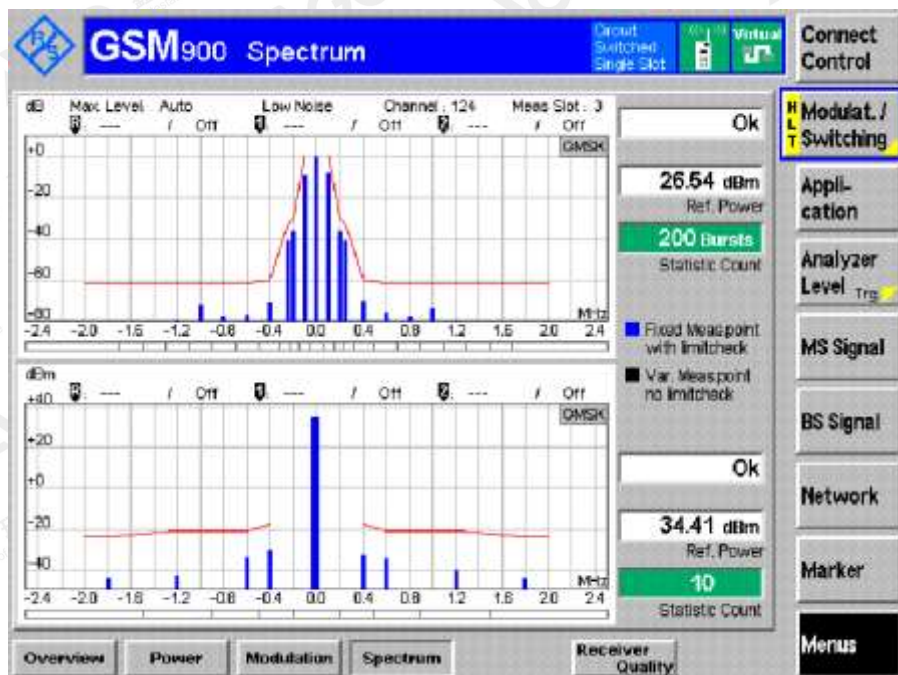
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### Channel MCH PCL 5

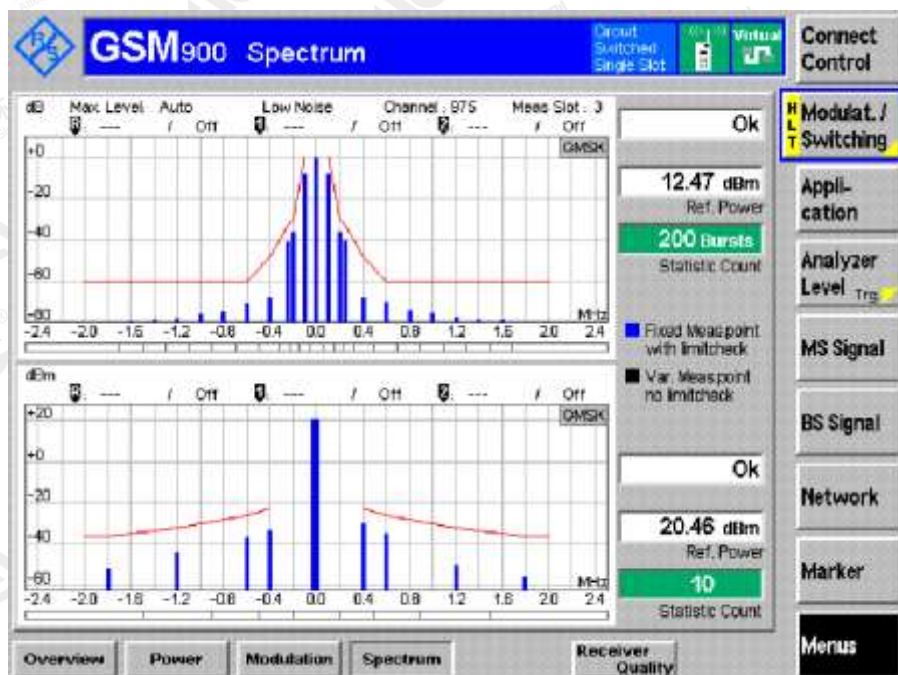


### Channel HCH PCL 5

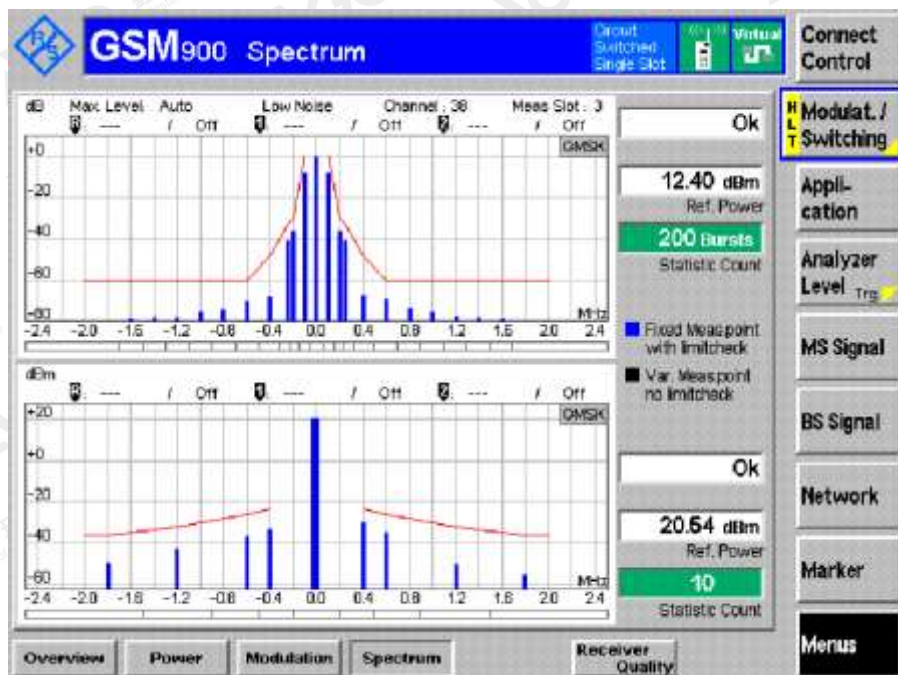


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Channel LCH PCL 12



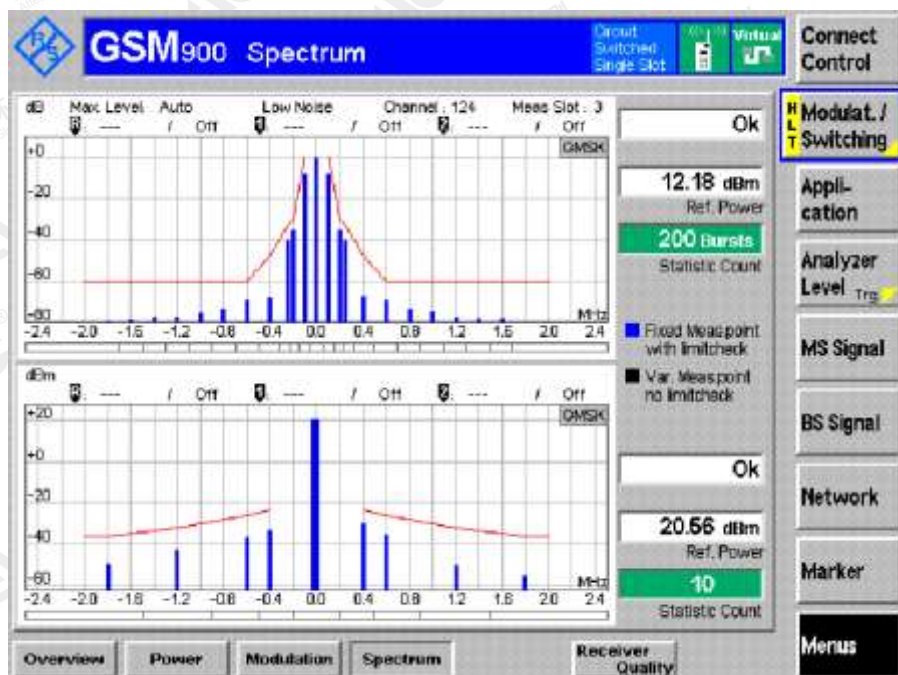
Channel MCH PCL 12



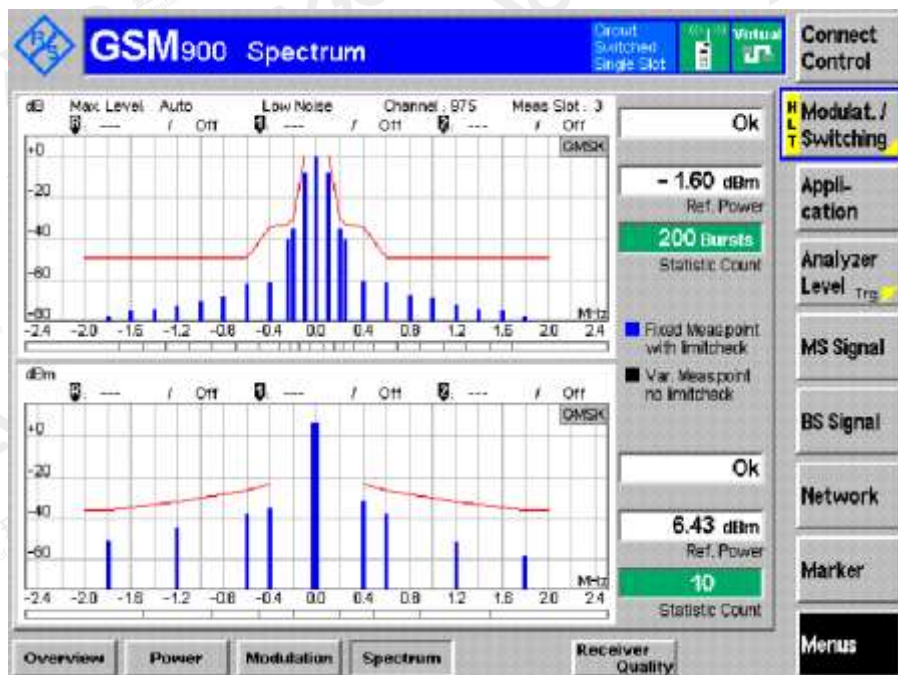
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Channel HCH PCL 12

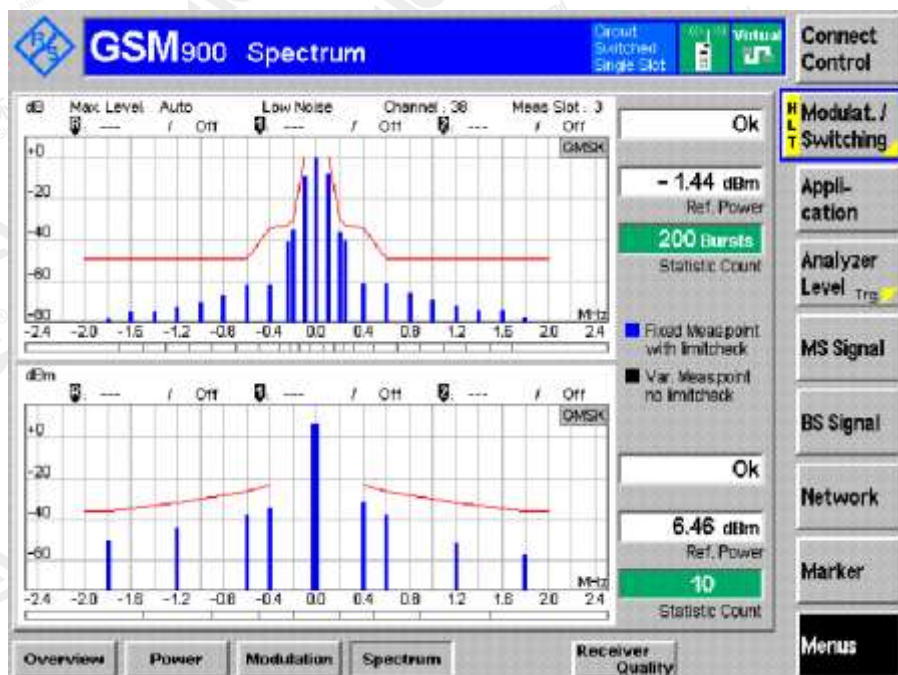


Channel LCH PCL 19

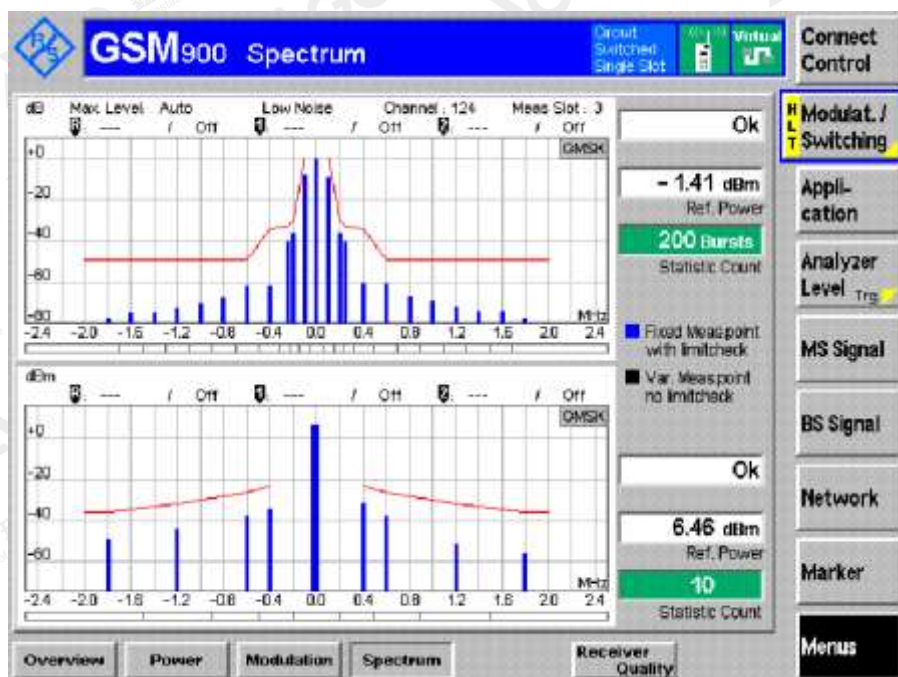


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Channel MCH PCL 19



Channel HCH PCL 19

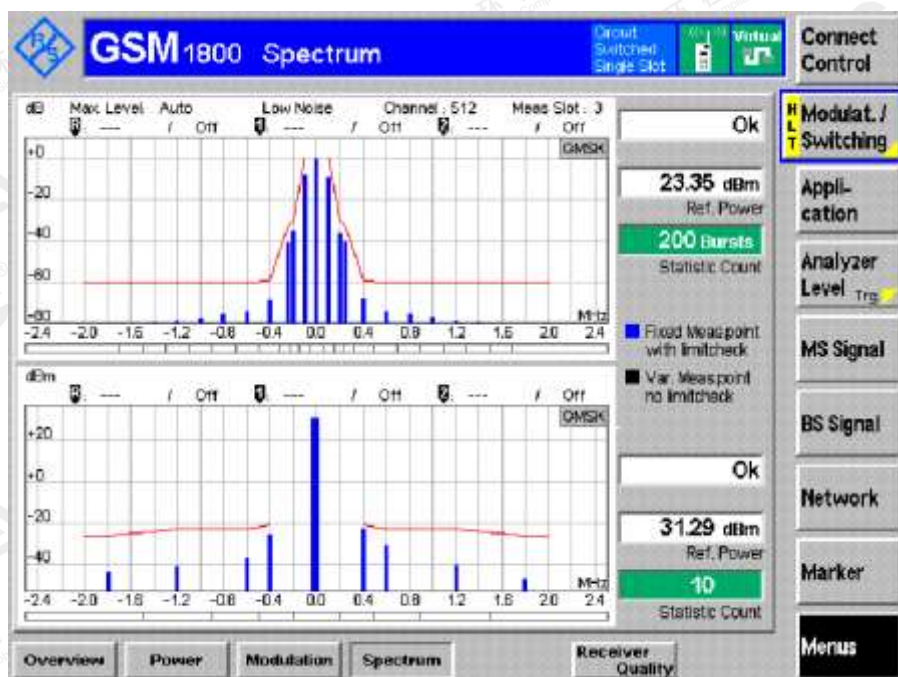


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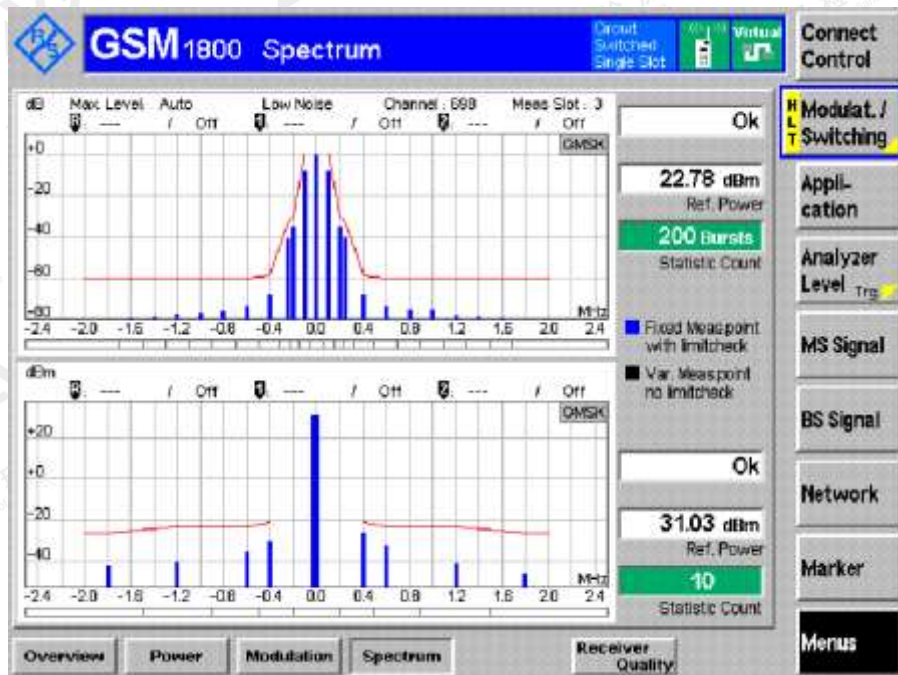


# DCS1800 TN,VN

## Channel LCH PCL 0

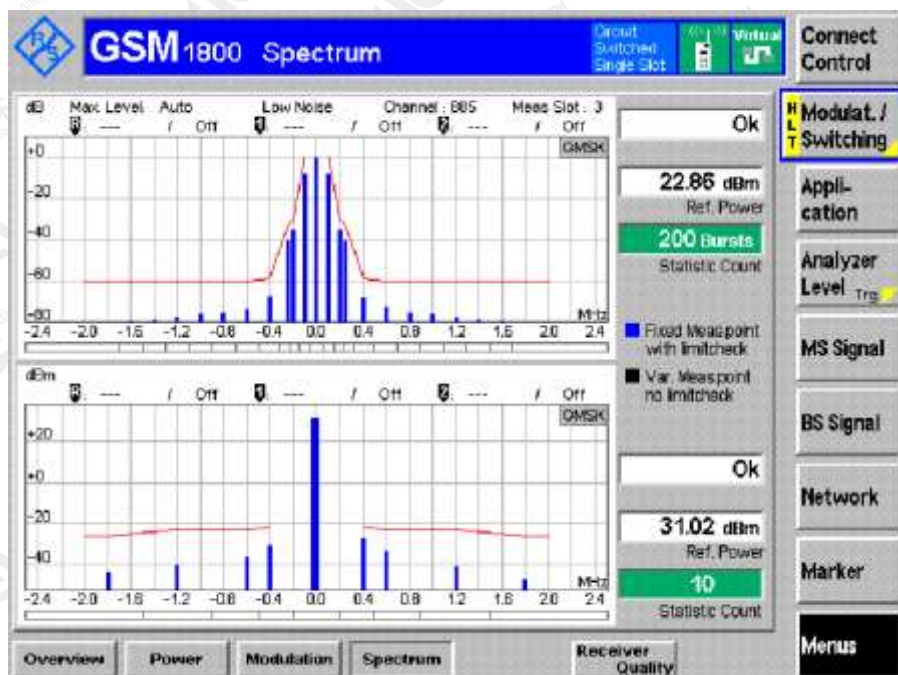


## Channel MCH PCL 0

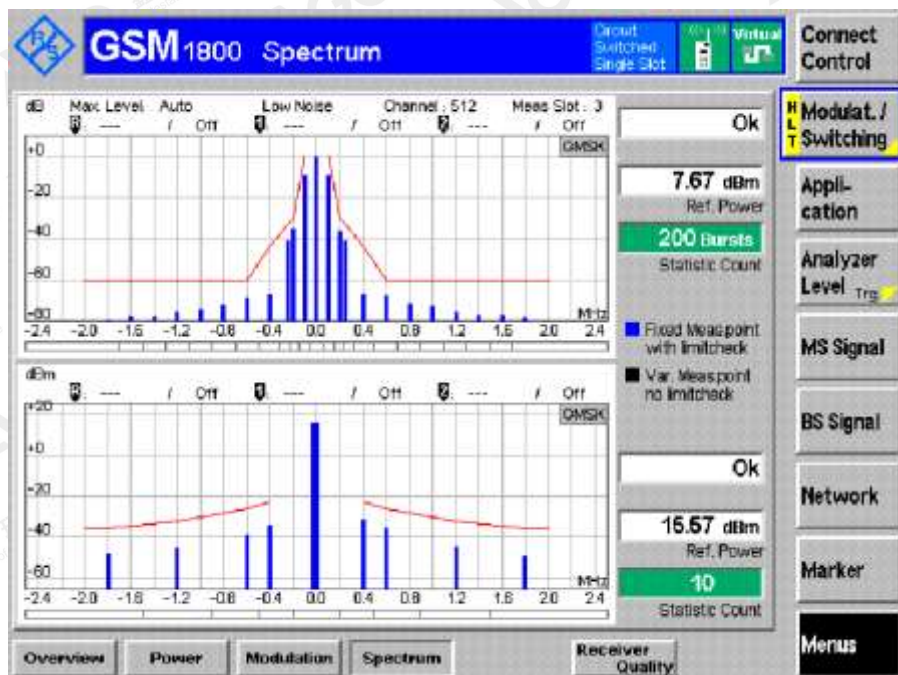


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Channel HCH PCL 0



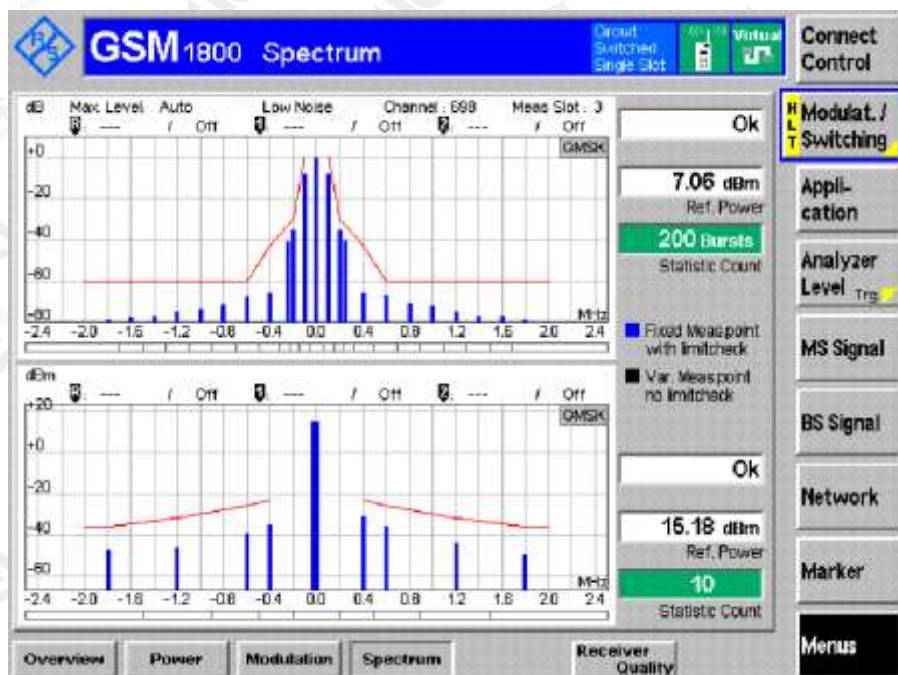
Channel LCH PCL 8



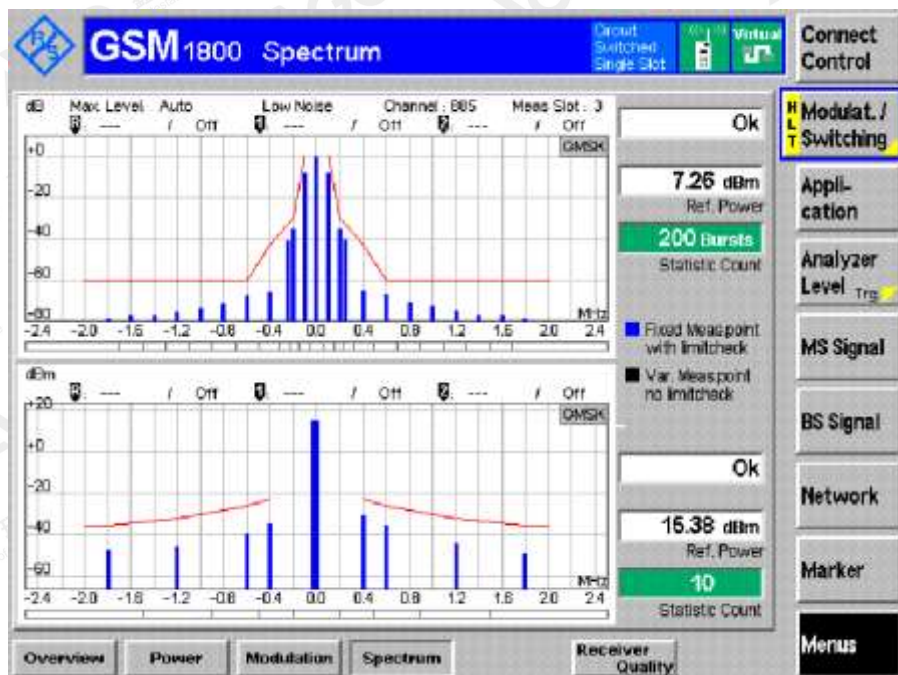
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### Channel MCH PCL 8

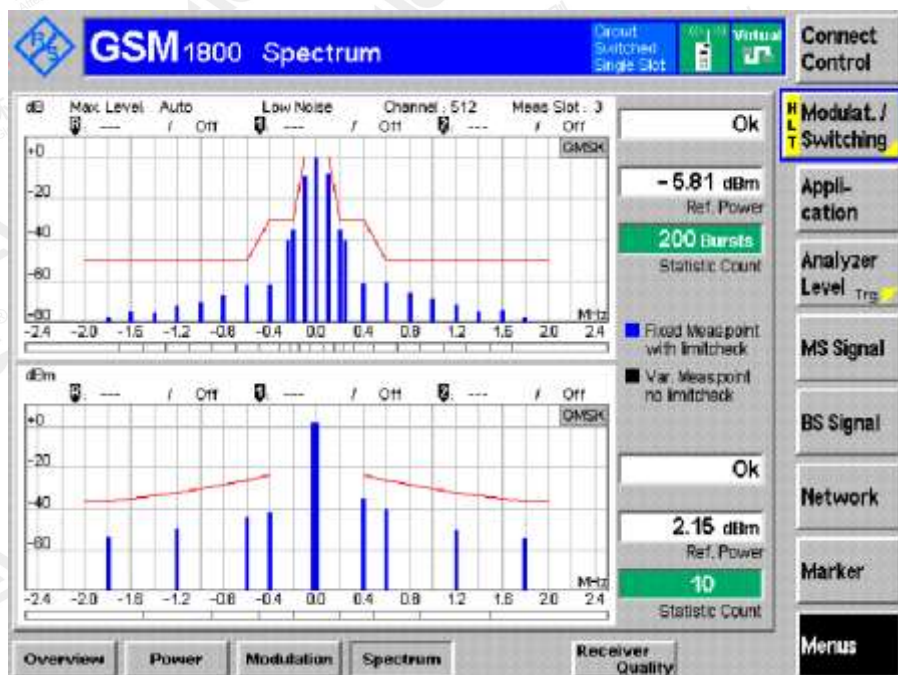


### Channel HCH PCL 8

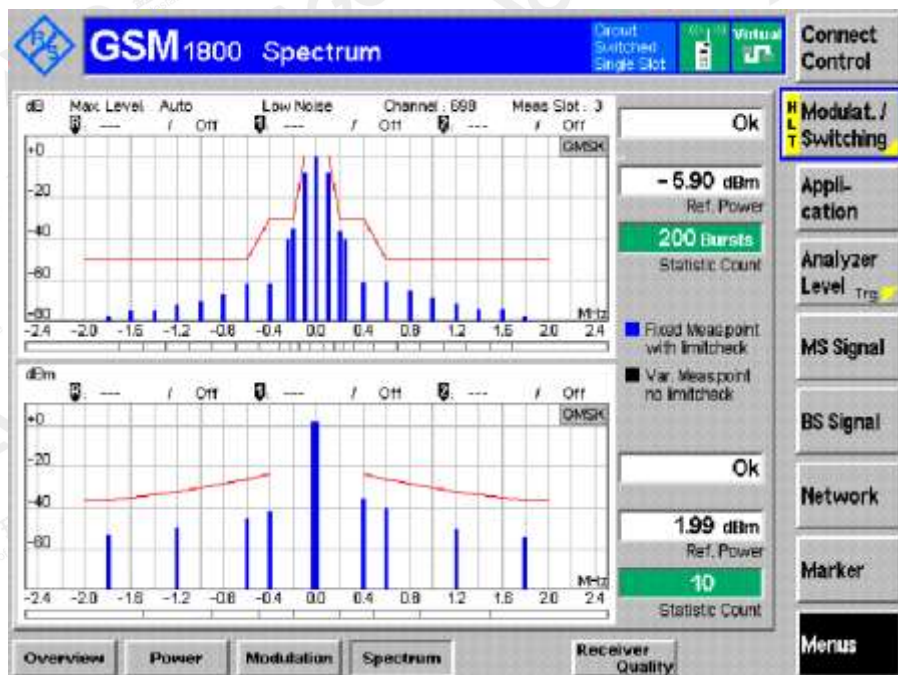


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Channel LCH PCL 15



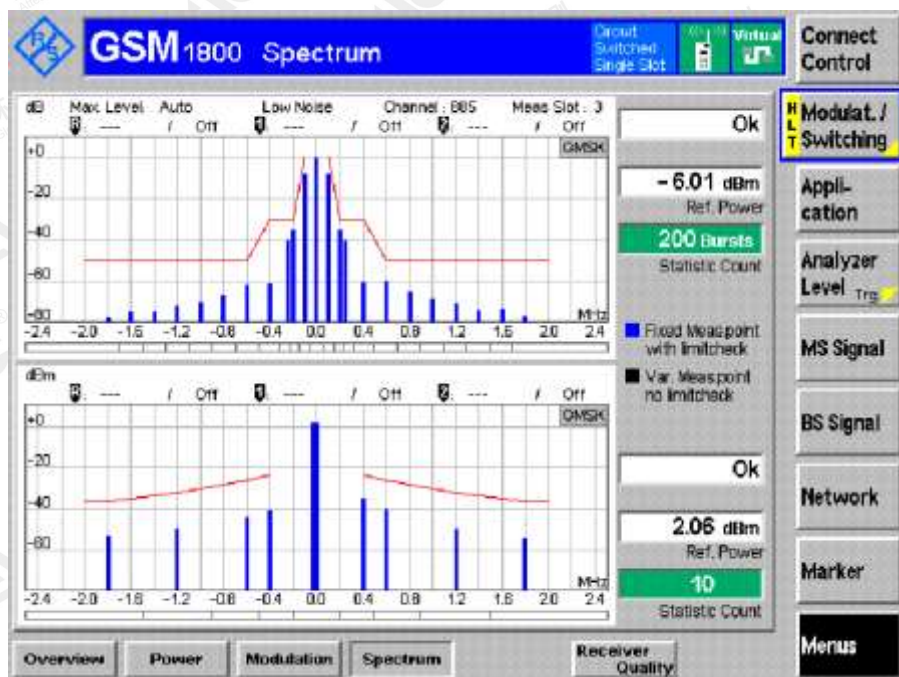
Channel MCH PCL 15



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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           | 28.30            | 28.15 | 28.15 | PASS   |
|                               | 12          | 20.19            | 20.28 | 20.30 | PASS   |
|                               | 19          | 6.24             | 6.35  | 6.35  | PASS   |

| Transmitter Output power(dBm) | Power level | Result           |       |       |        |
|-------------------------------|-------------|------------------|-------|-------|--------|
|                               |             | Traffic Channels |       |       |        |
| DCS1800                       |             | LCH              | MCH   | HCH   | Result |
| TN,VN                         | 0           | 24.62            | 24.76 | 24.35 | PASS   |
|                               | 8           | 15.31            | 14.99 | 15.20 | PASS   |
|                               | 15          | 2.04             | 1.92  | 2.01  | 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 |

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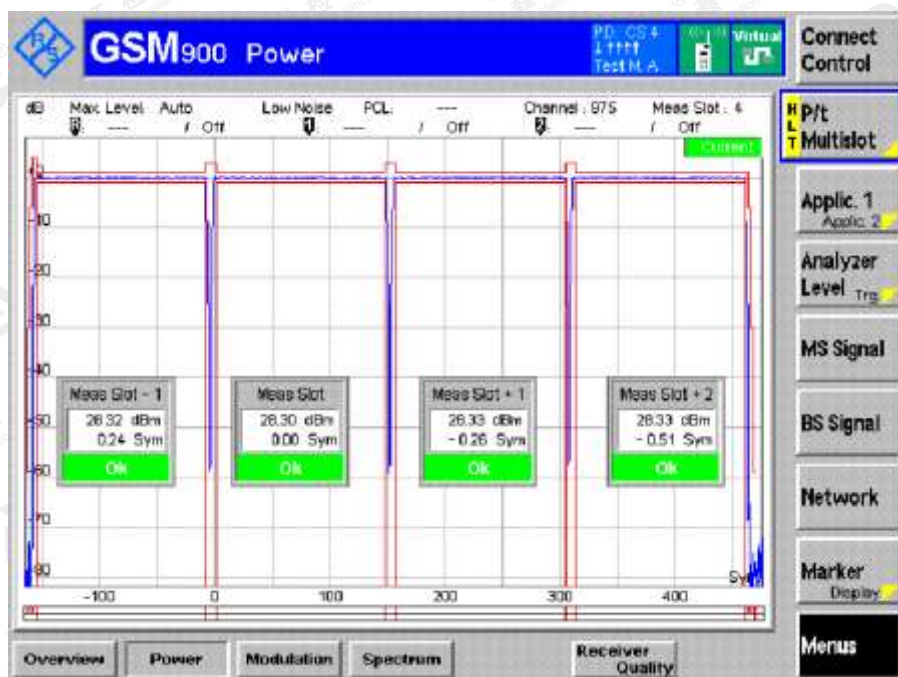


|  |    |      |      |      |
|--|----|------|------|------|
|  | 8  | PASS | PASS | PASS |
|  | 15 | PASS | PASS | PASS |

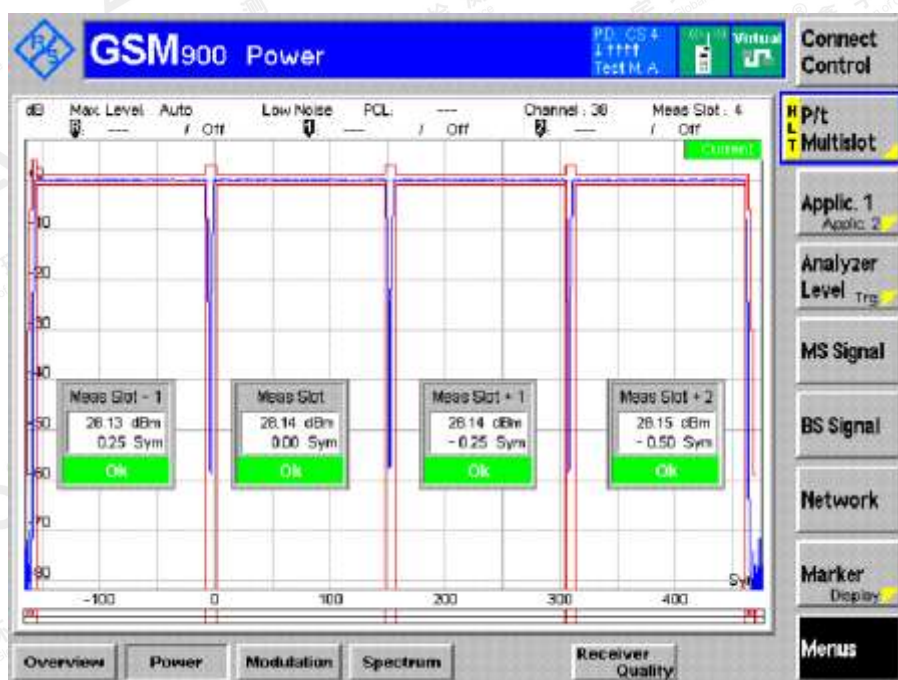
### Graphs of output power in GPRS multislot configuration

#### GSM 900 TN,VN

Channel LCH PCL 5

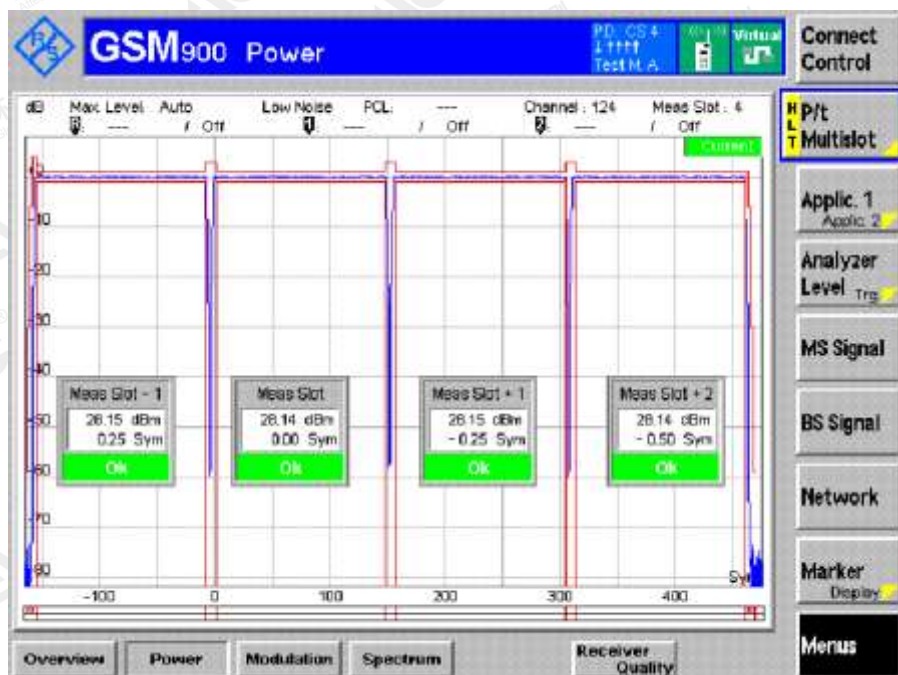


Channel MCH PCL 5

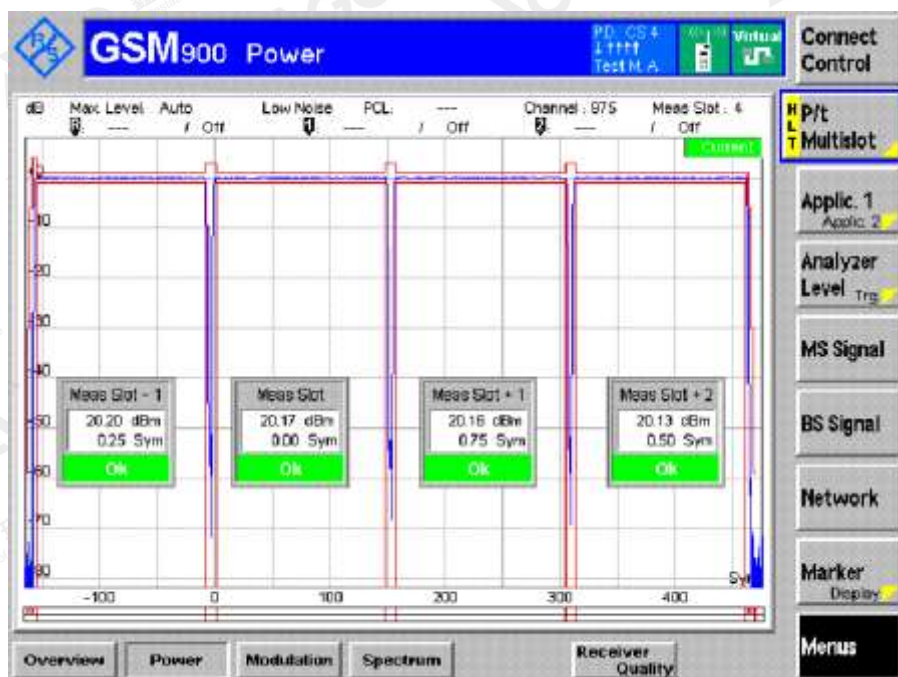


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Channel HCH PCL 5



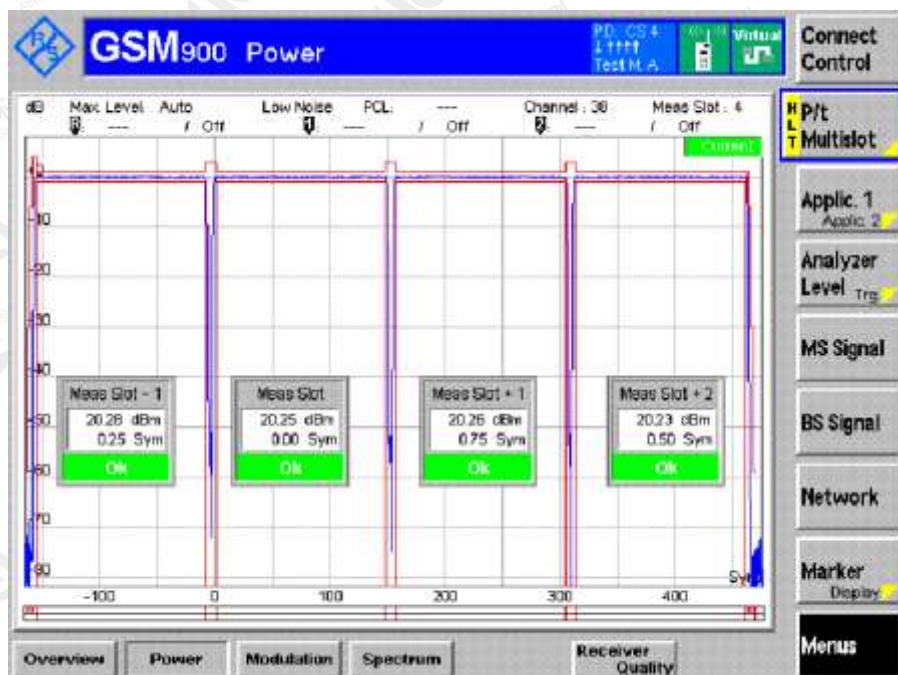
Channel LCH PCL 12



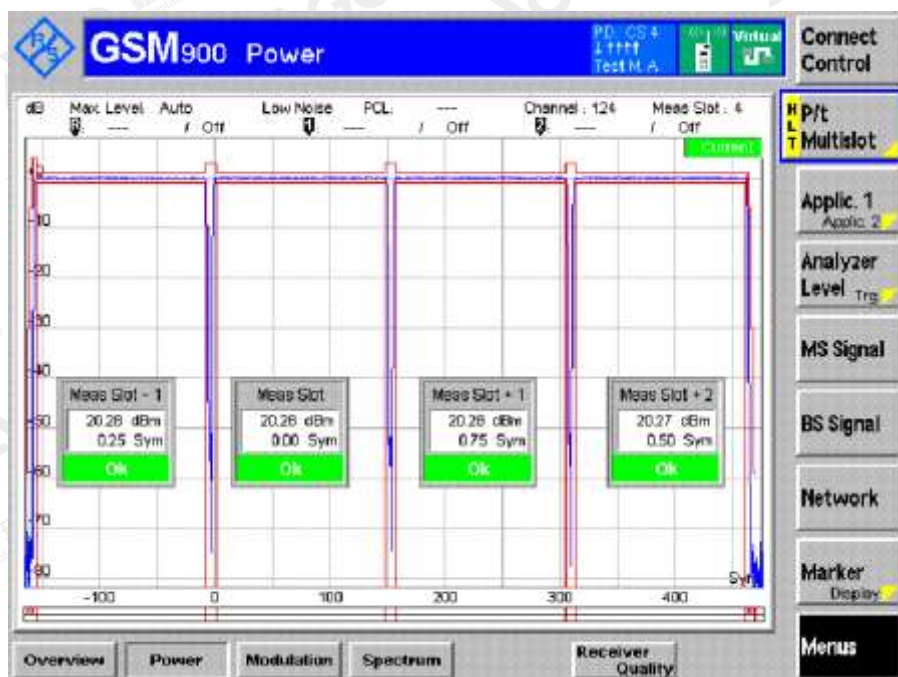
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Channel MCH PCL 12

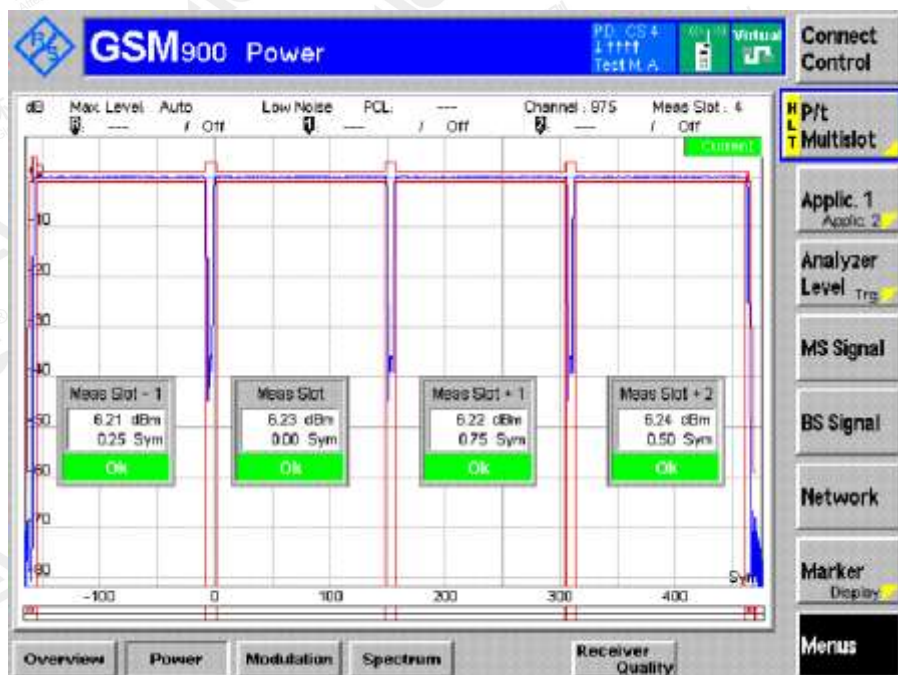


Channel HCH PCL 12

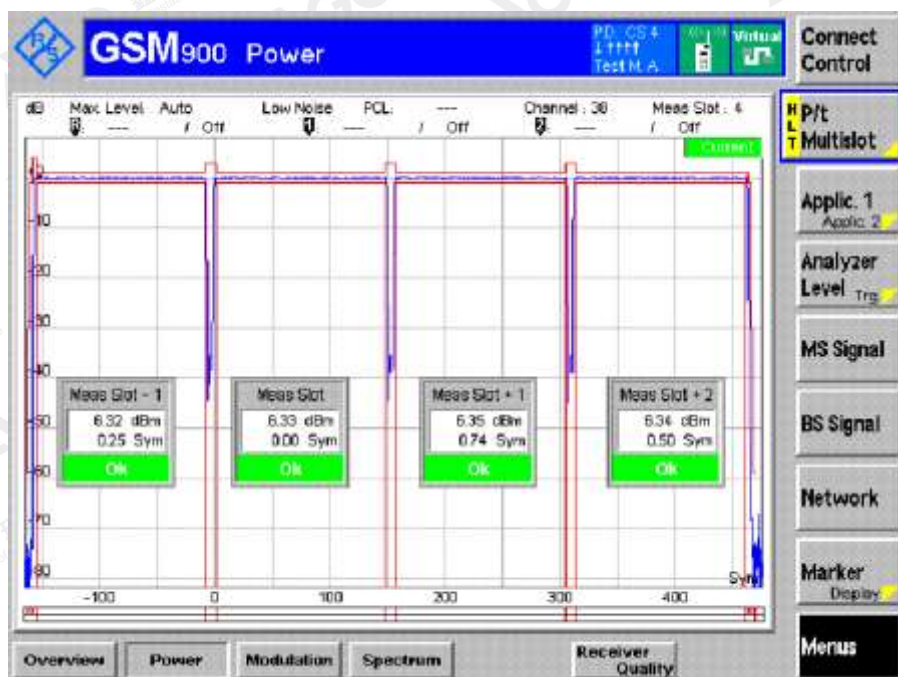


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Channel LCH PCL 19



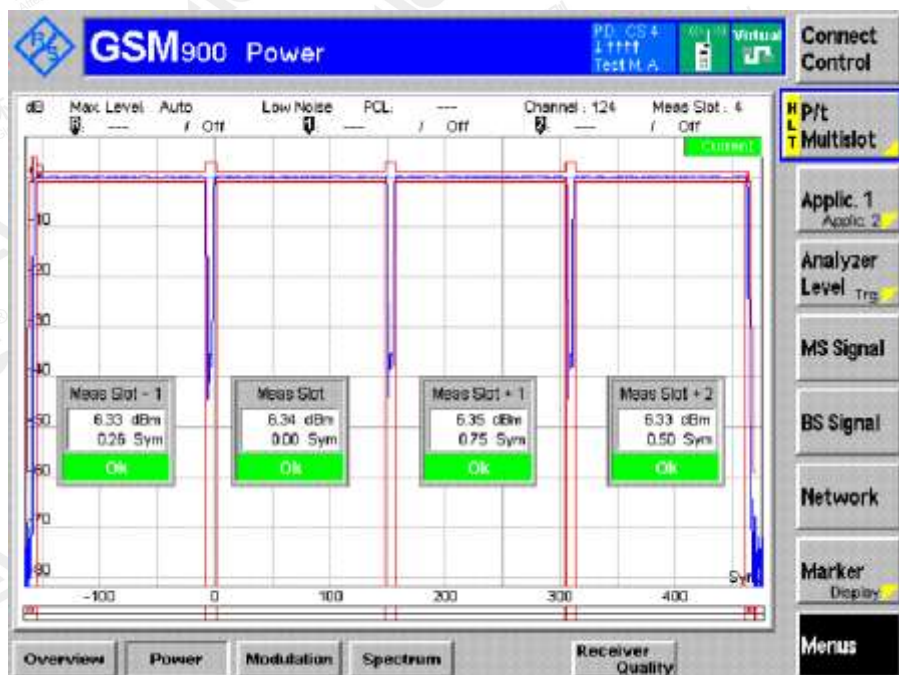
Channel MCH PCL 19



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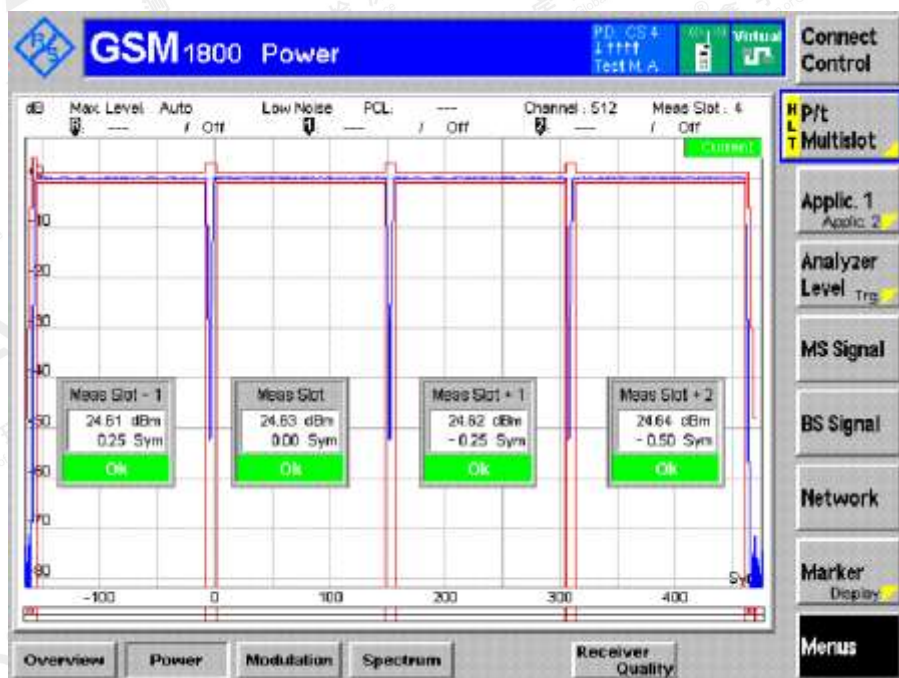


Channel HCH PCL 19



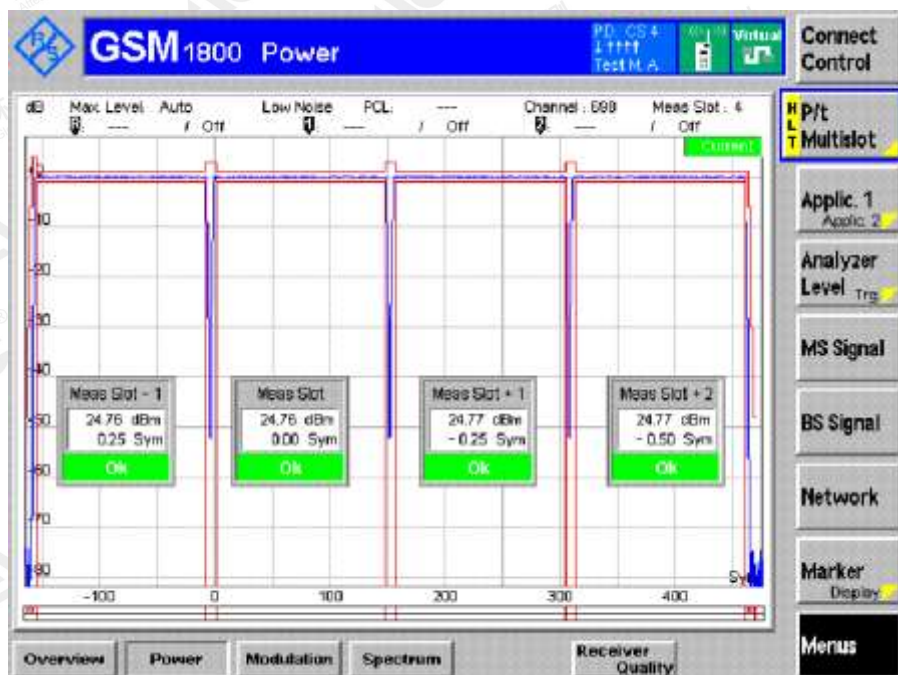
DCS1800 TN,VN

Channel LCH PCL 0

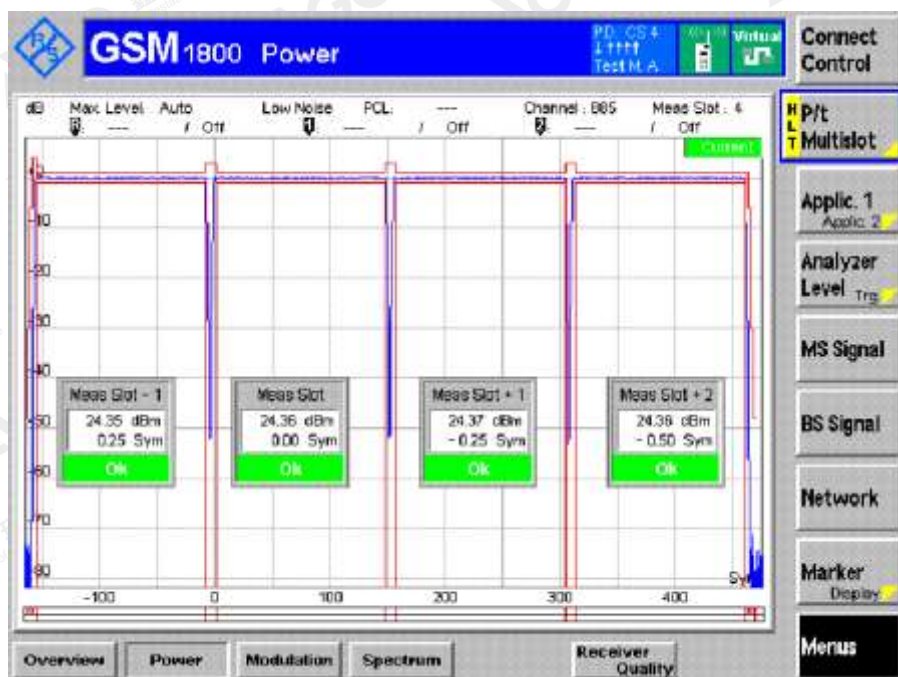


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Channel MCH PCL 0



Channel HCH PCL 0



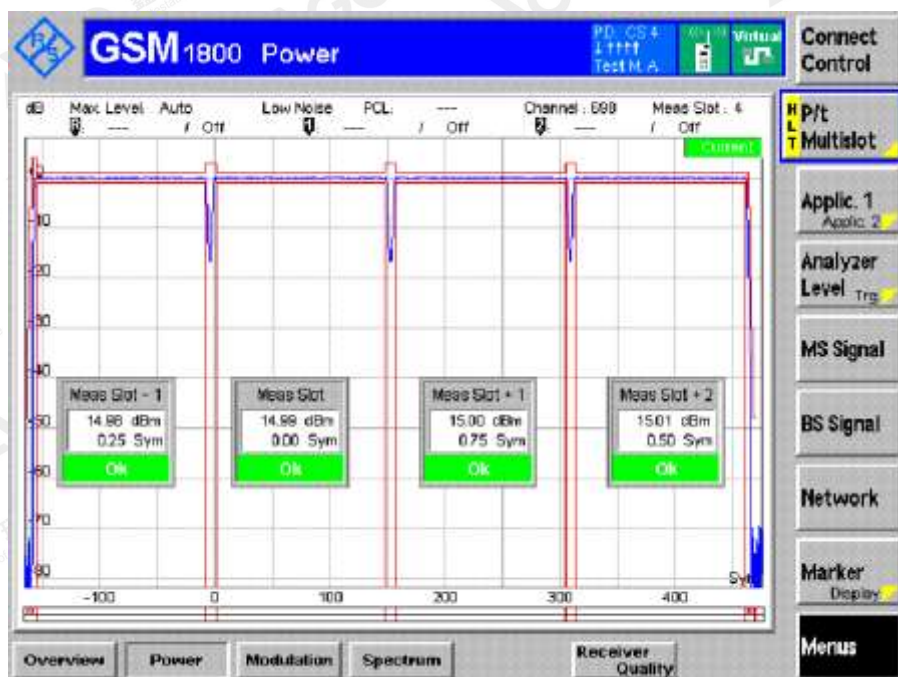
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Channel LCH PCL 8



Channel MCH PCL 8

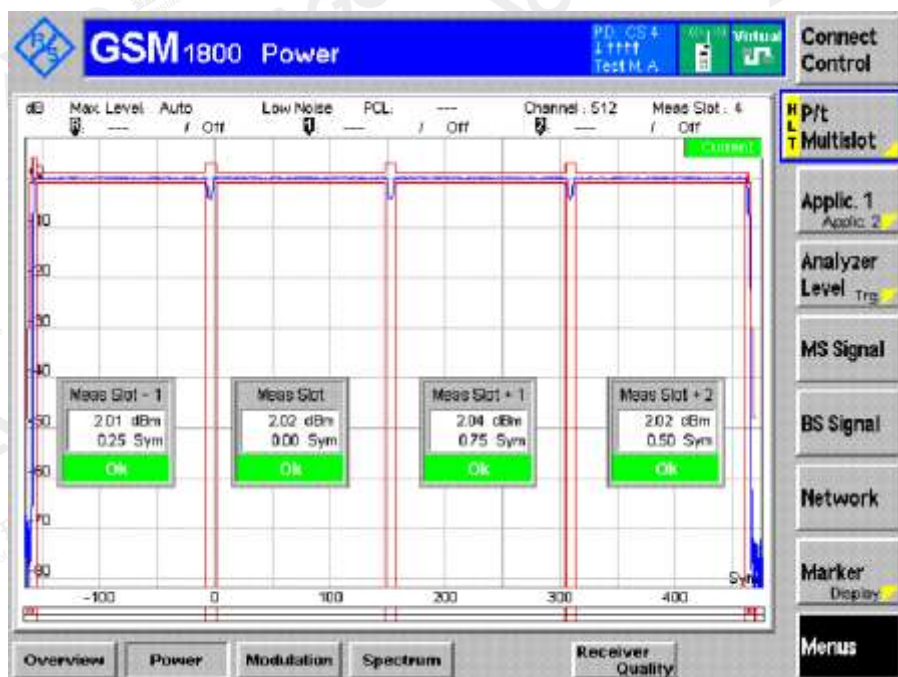


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Channel HCH PCL 8



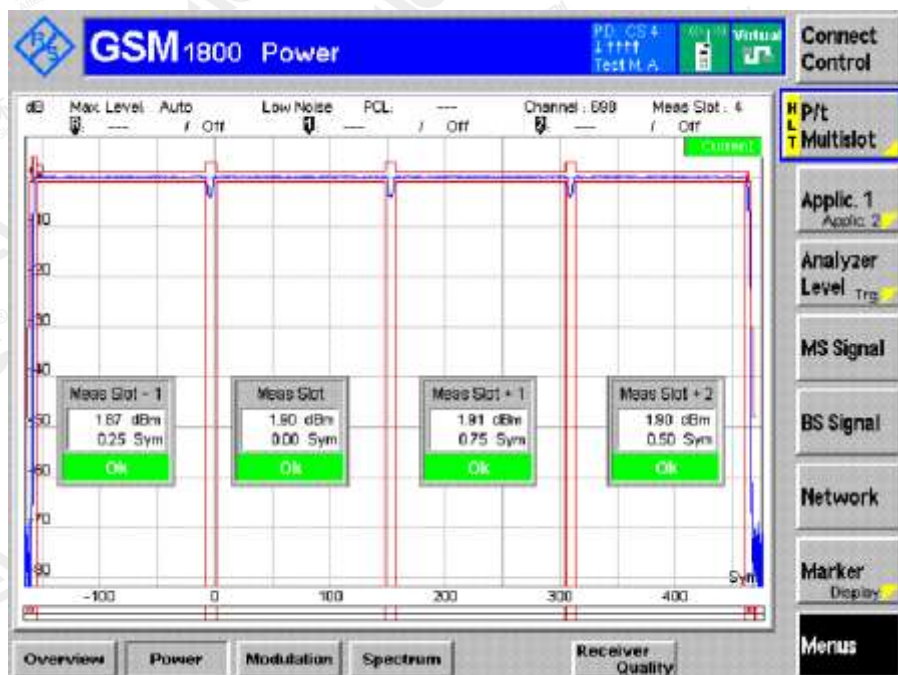
Channel LCH PCL 15



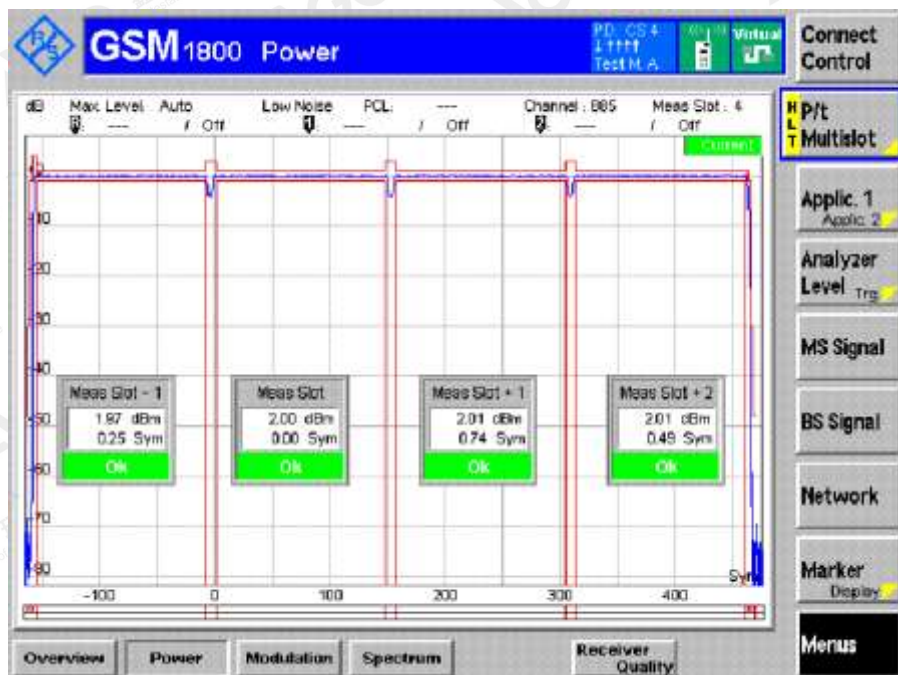
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Channel MCH PCL 15



Channel HCH PCL 15



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## 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.

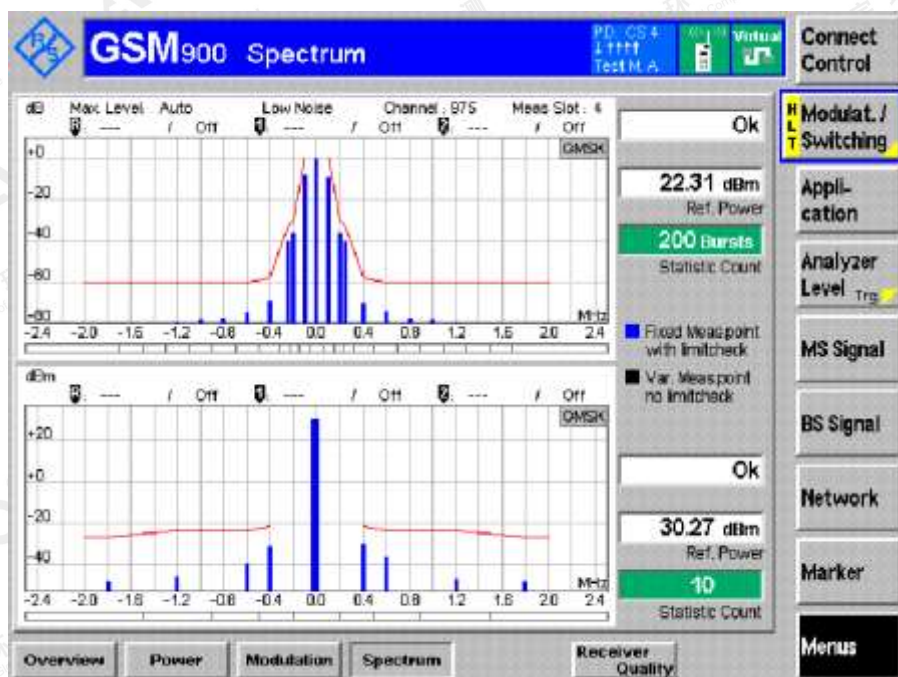
| Modulation& switch<br>Spectrum | Power level | Result           |      |      |
|--------------------------------|-------------|------------------|------|------|
|                                |             | Traffic Channels |      |      |
| GSM900                         |             | LCH  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

| Modulation& switch<br>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

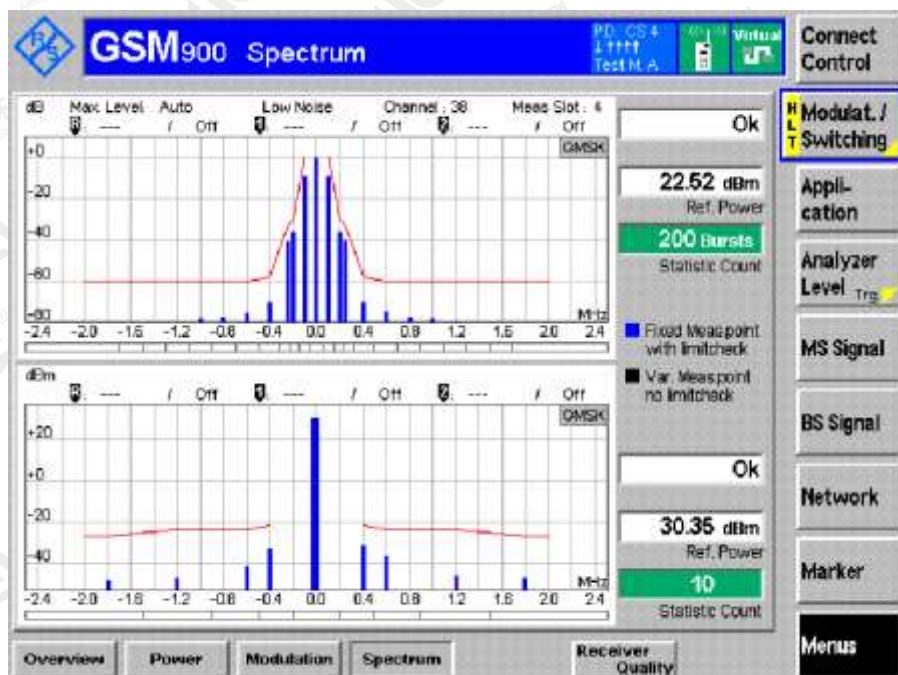
Channel LCH PCL 5



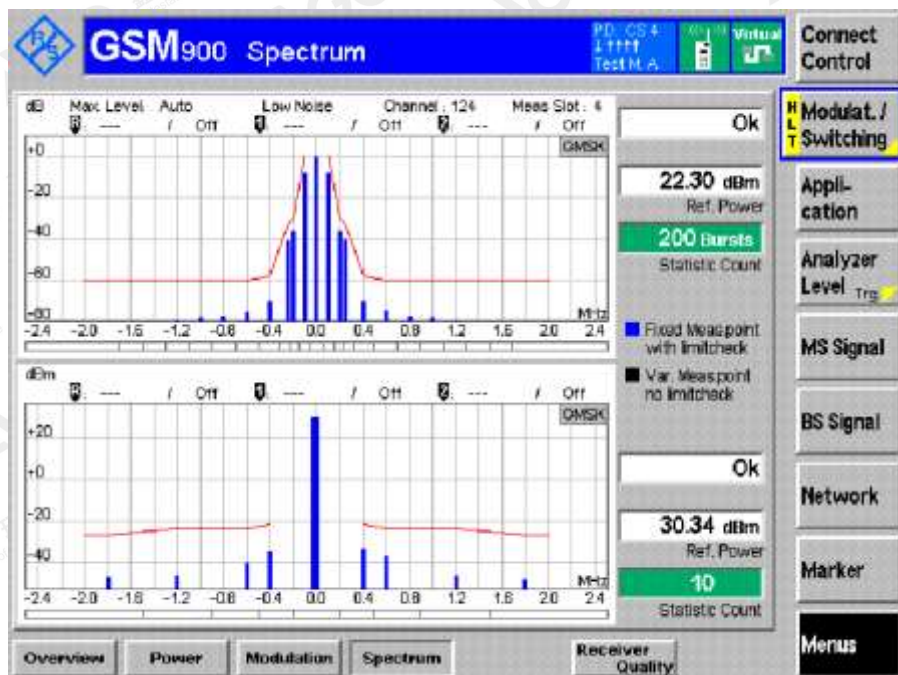
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Channel MCH PCL 5

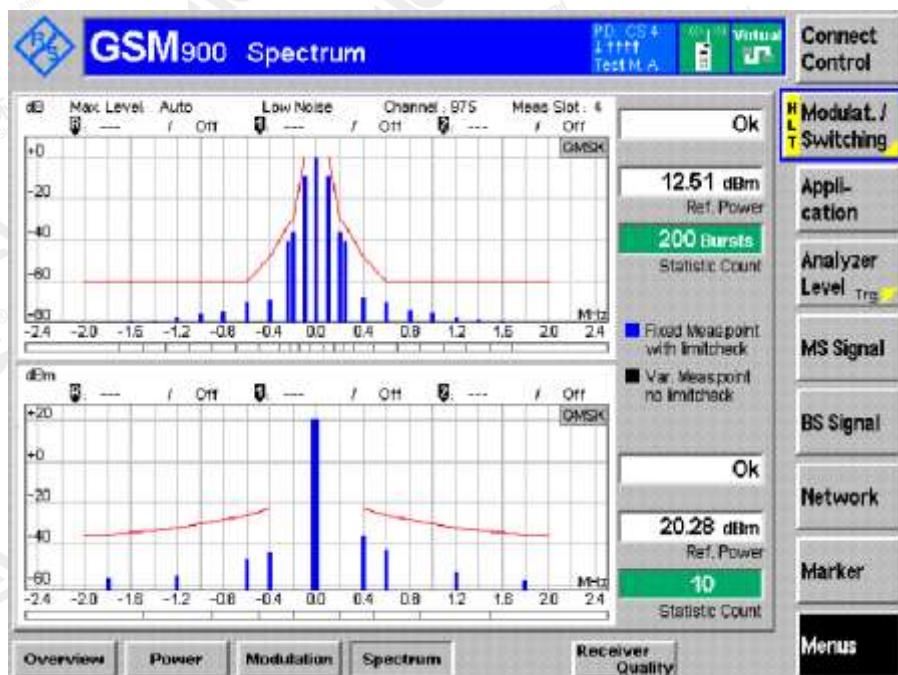


Channel HCH PCL 5

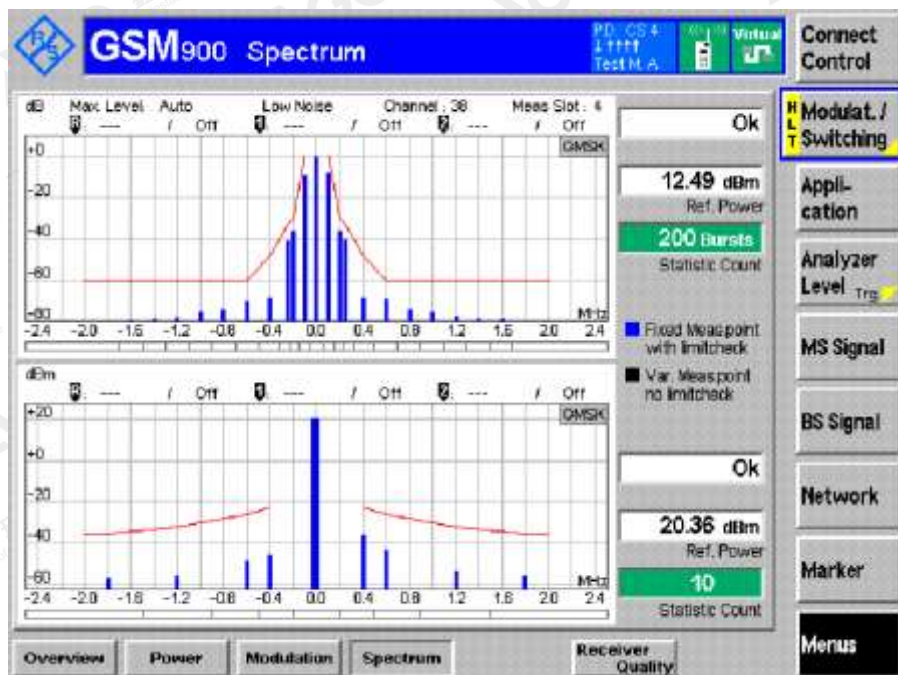


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Channel LCH PCL 12



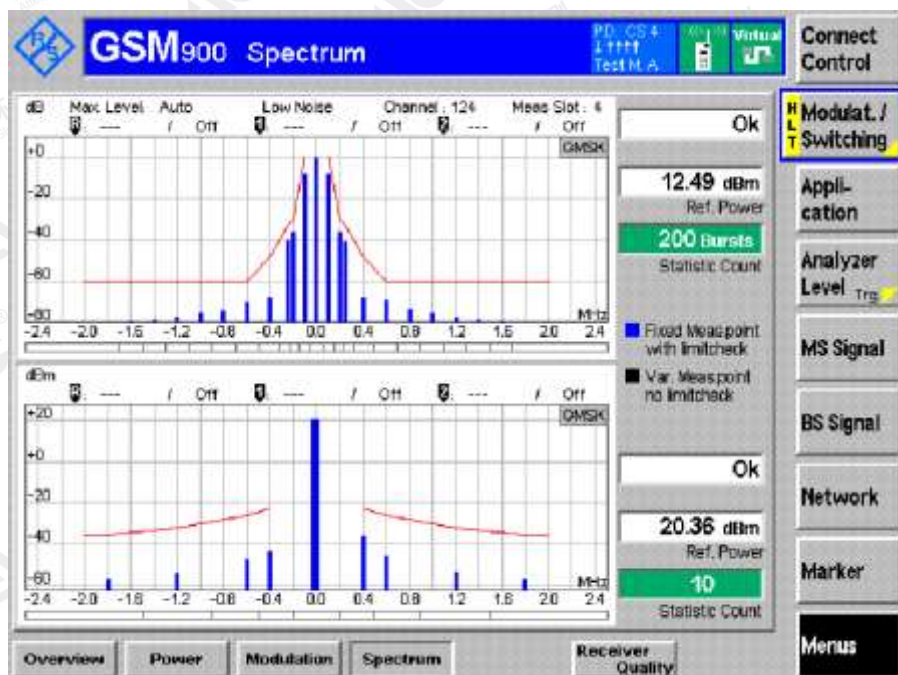
Channel MCH PCL 12



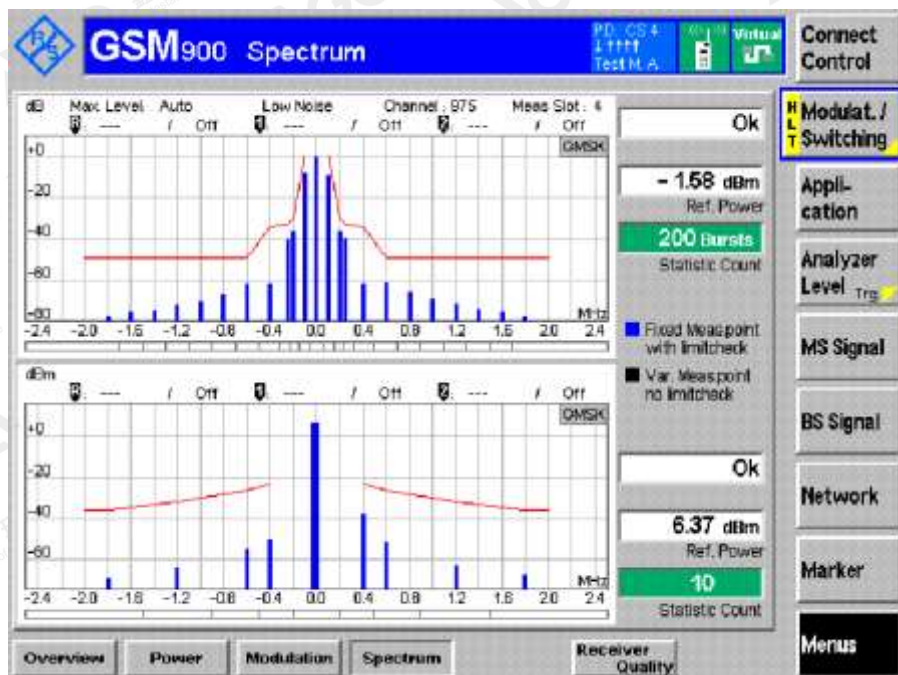
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Channel HCH PCL 12

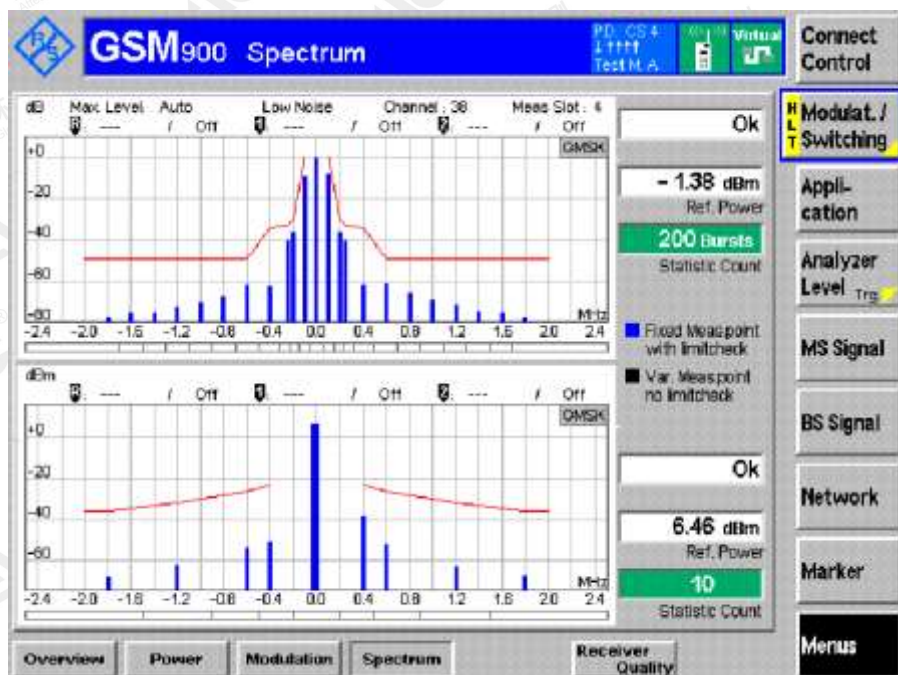


Channel LCH PCL 19

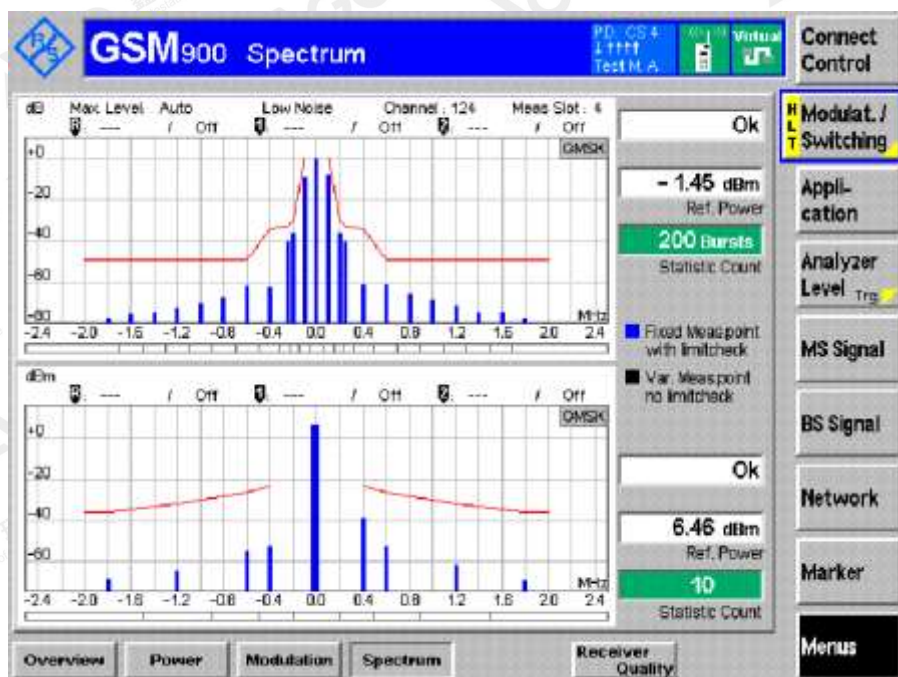


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Channel MCH PCL 19



Channel HCH PCL 19

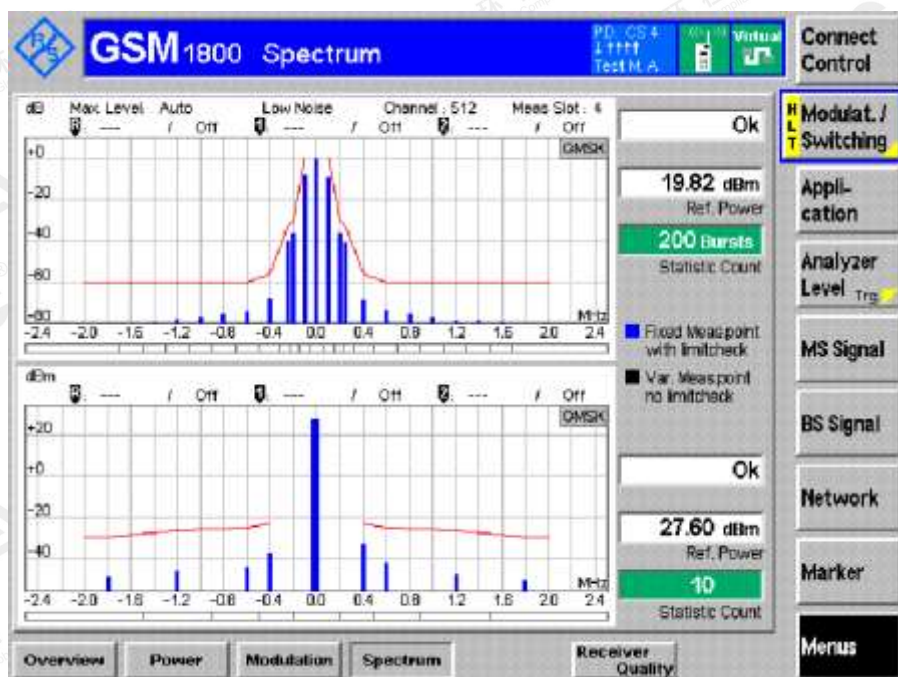


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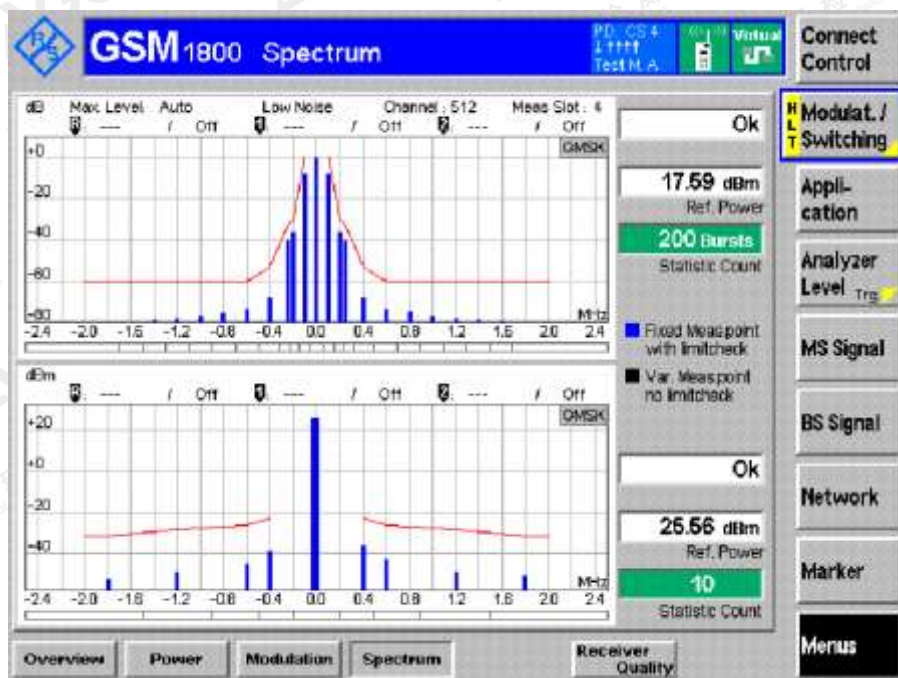


# DCS1800 TN,VN

## Channel LCH PCL 0

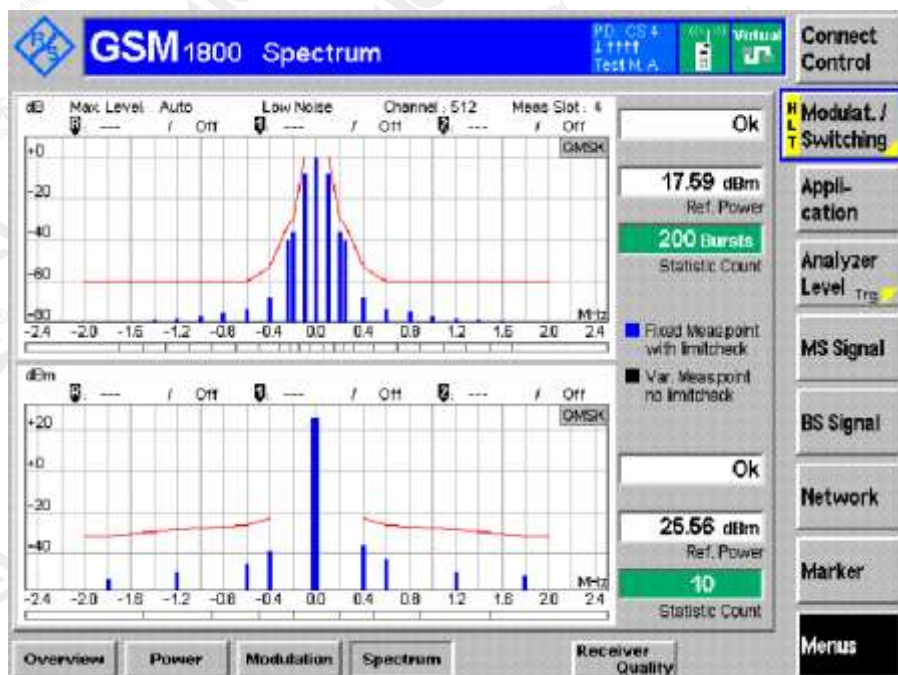


## Channel MCH PCL 0

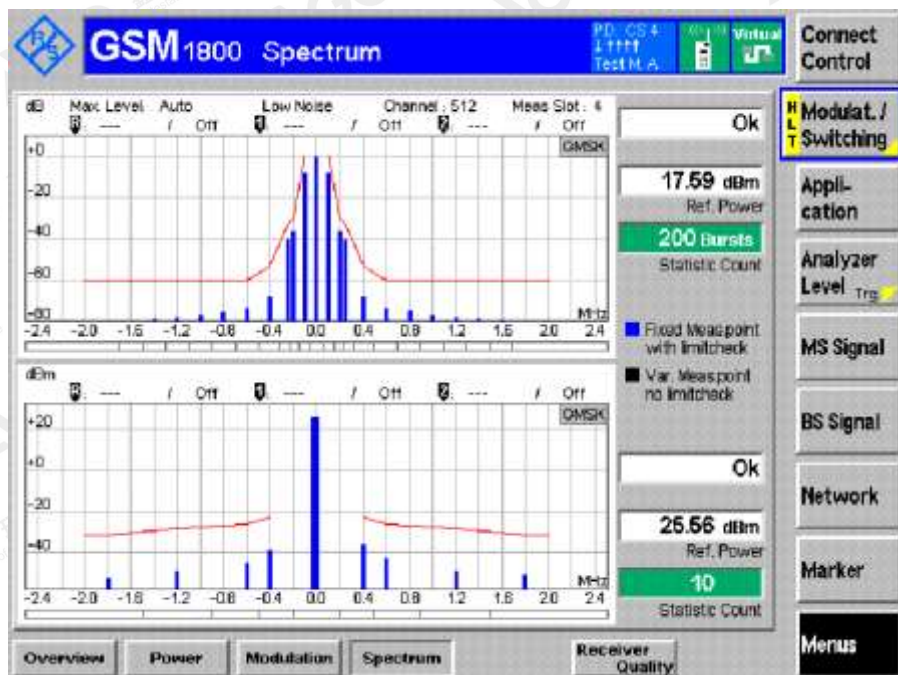


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Channel HCH PCL 0



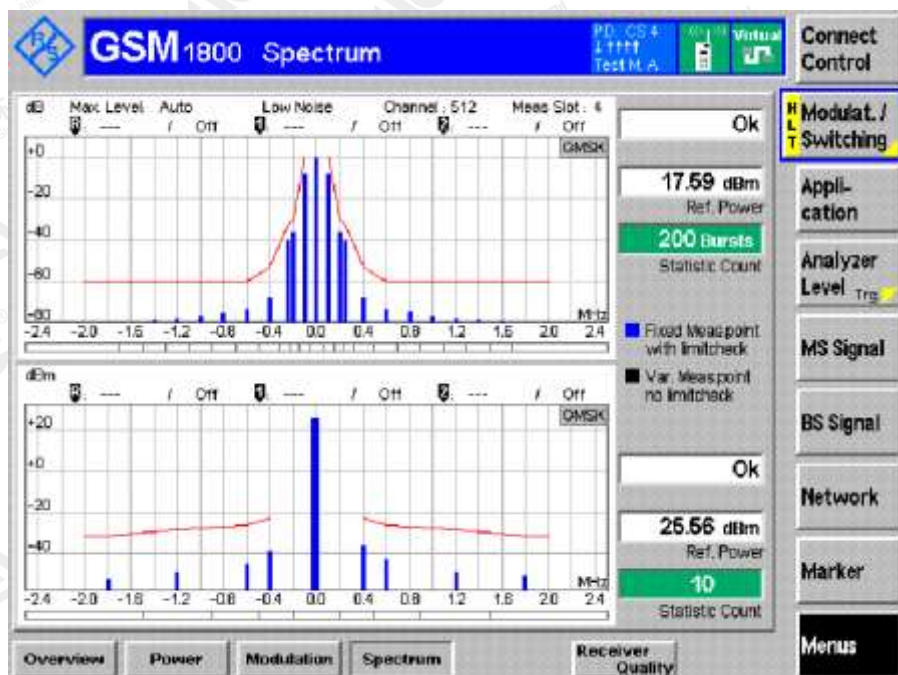
Channel LCH PCL 8



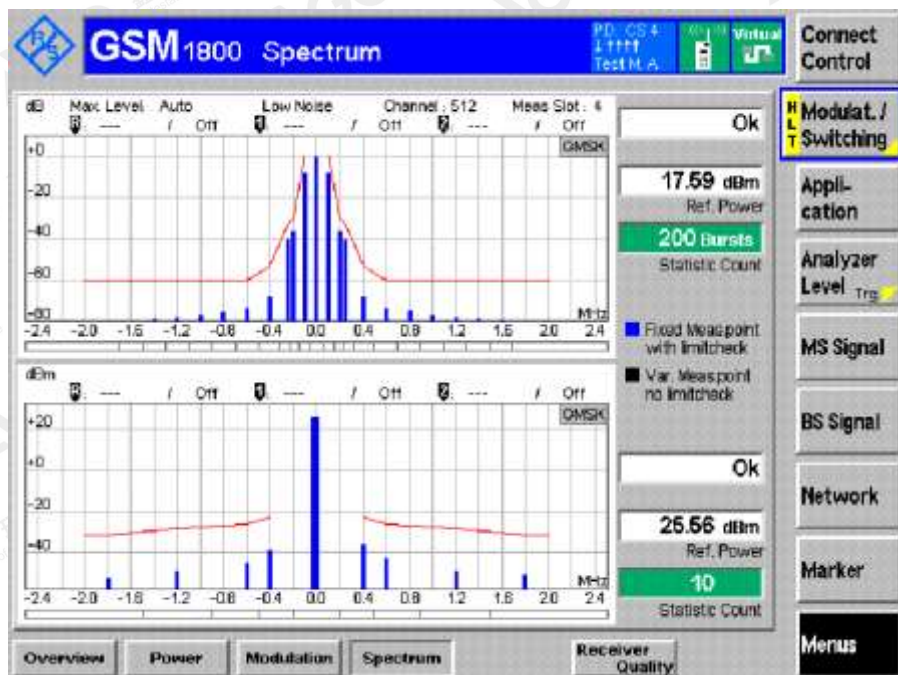
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Channel MCH PCL 8

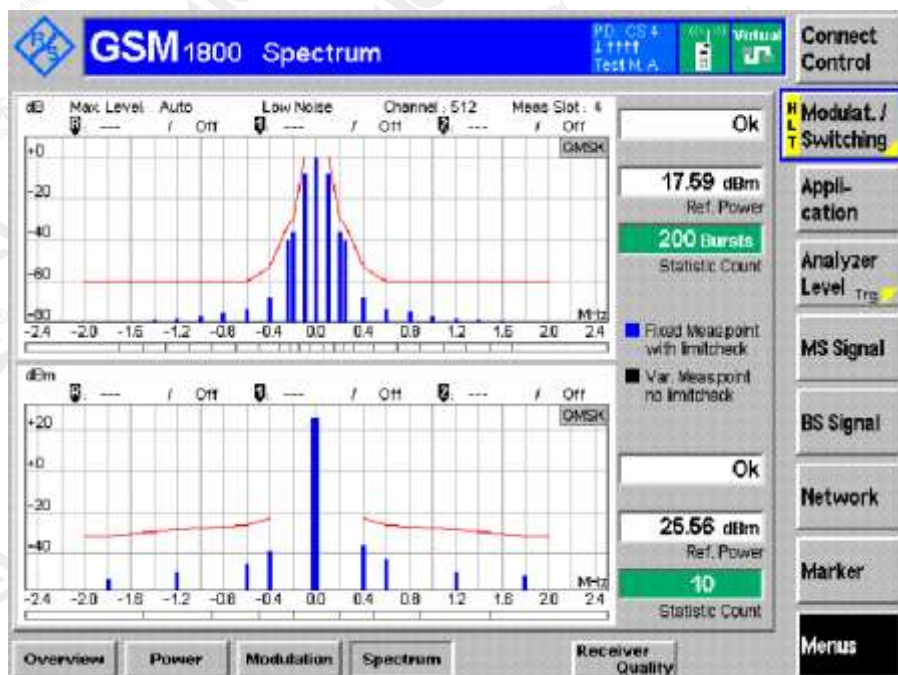


Channel HCH PCL 8

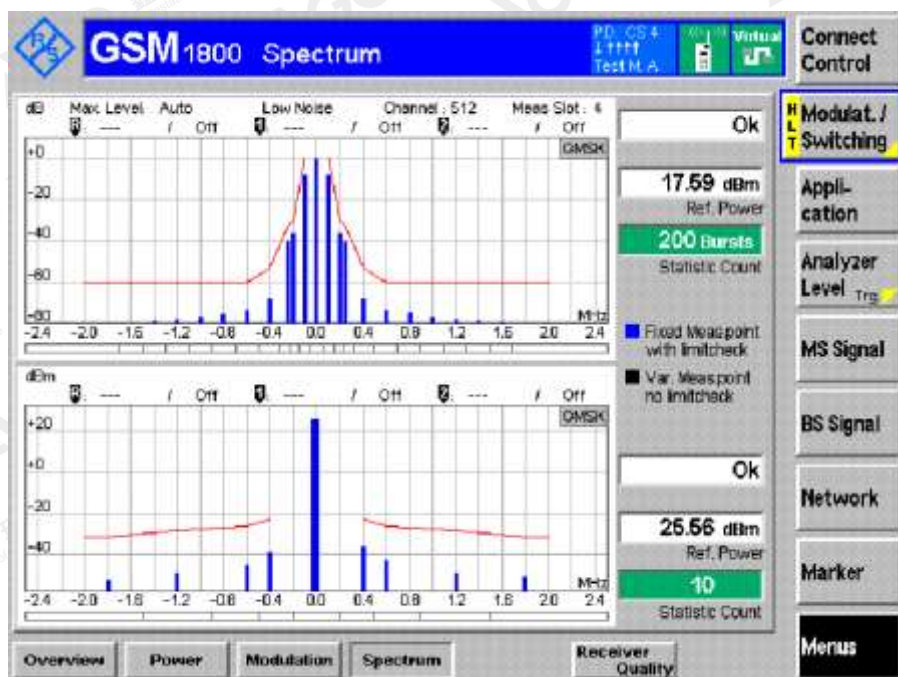


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Channel LCH PCL 15



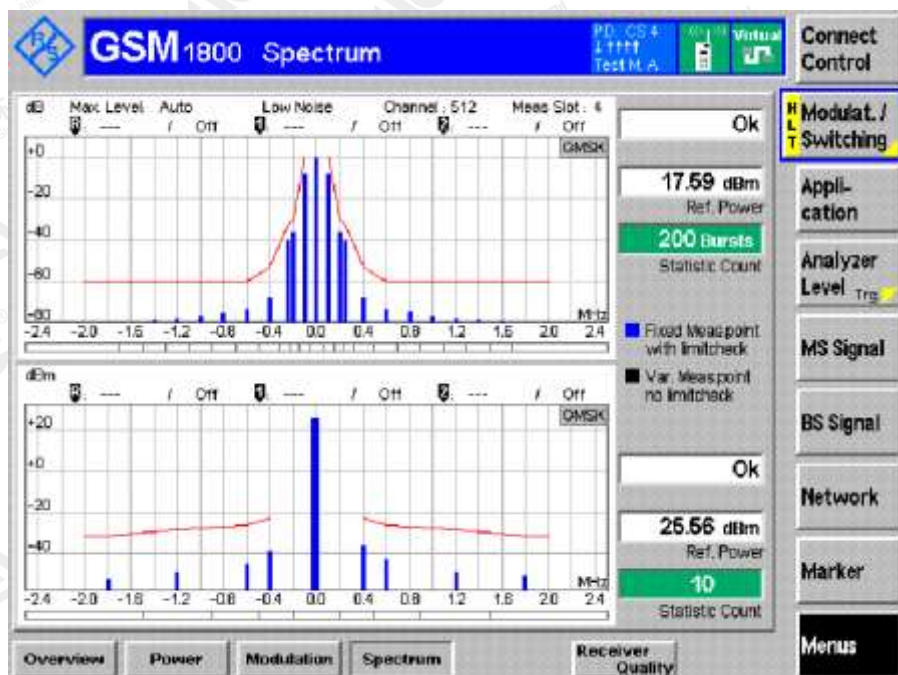
Channel MCH PCL 15



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Channel HCH PCL 15



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## 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            | -55.68   | PASS   |
| 50MHz~500MHz                 | 100k      | -36            | -49.20   | PASS   |
| 500MHz~850MHz                | 3M        | -36            | -39.29   | PASS   |
| 850MHz~860MHz                | 1M        | -36            | -42.52   | PASS   |
| 860MHz~870MHz                | 300k      | -36            | -48.97   | PASS   |
| 870MHz~880MHz                | 100k      | -36            | -53.85   | PASS   |
| 915MHz~925MHz                | 100k      | -36            | -54.55   | PASS   |
| 960MHz~1GHz                  | 3M        | -36            | -39.16   | PASS   |
| 1GHz~1805MHz                 | 3M        | -30            | -38.51   | PASS   |
| 1880MHz~12.75GHz             | 3M        | -30            | -30.86   | PASS   |
| 896.6MHz~900.8MHz            | 30K       | -36            | -59.66   | PASS   |
| 904.4MHz~908.6MHz            | 30K       | -36            | -59.68   | PASS   |
| 880MHz~896.6MHz              | 100K      | -36            | -52.85   | PASS   |
| 908.6MHz~915MHz              | 100K      | -36            | -54.09   | PASS   |

| Conducted spurious emissions | DCS1800;VN |                |          |        |
|------------------------------|------------|----------------|----------|--------|
| Frequency range              | RBW(Hz)    | Max.Limit(dBm) | MCH(dBm) | Result |
| 100kHz~50MHz                 | 10k        | -36            | -58.34   | PASS   |
| 50MHz~500MHz                 | 100k       | -36            | -49.04   | PASS   |
| 500MHz~925MHz                | 3M         | -36            | -39.53   | PASS   |
| 960MHz~1GHz                  | 3M         | -36            | -42.52   | PASS   |
| 1GHz~1680MHz                 | 3M         | -30            | -38.72   | PASS   |
| 1680MHz~1690MHz              | 1M         | -30            | -42.79   | PASS   |
| 1690MHz~1700MHz              | 300k       | -30            | -47.79   | PASS   |
| 1700MHz~1710MHz              | 100k       | -30            | -53.82   | PASS   |

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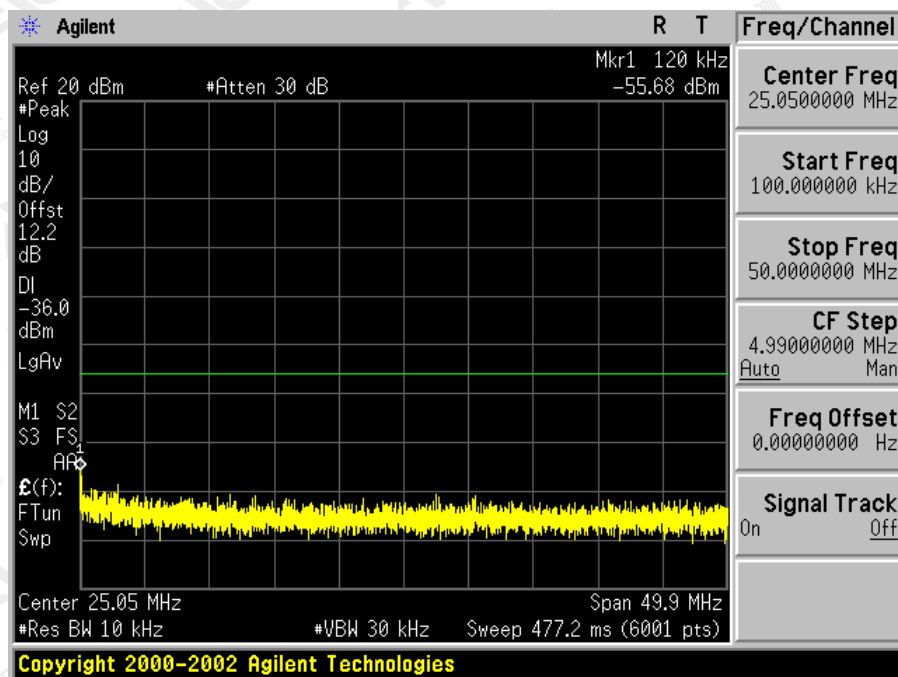


|                     |      |     |        |      |
|---------------------|------|-----|--------|------|
| 1785MHz~1795MHz     | 100K | -30 | -54.35 | PASS |
| 1795MHz~1805MHz     | 300k | -30 | -48.91 | PASS |
| 1880MHz~12.75GHz    | 3M   | -30 | -30.93 | PASS |
| 1741.4MHz~1745.6MHz | 30K  | -36 | -58.80 | PASS |
| 1749.2MHz~1753.4MHz | 30K  | -36 | -59.42 | PASS |
| 1710MHz~1741.4MHz   | 100K | -36 | -53.50 | PASS |
| 1753.4MHz~1785MHz   | 100K | -36 | -53.42 | PASS |

### Graphs of conducted spurious emission-MS allocated a channel

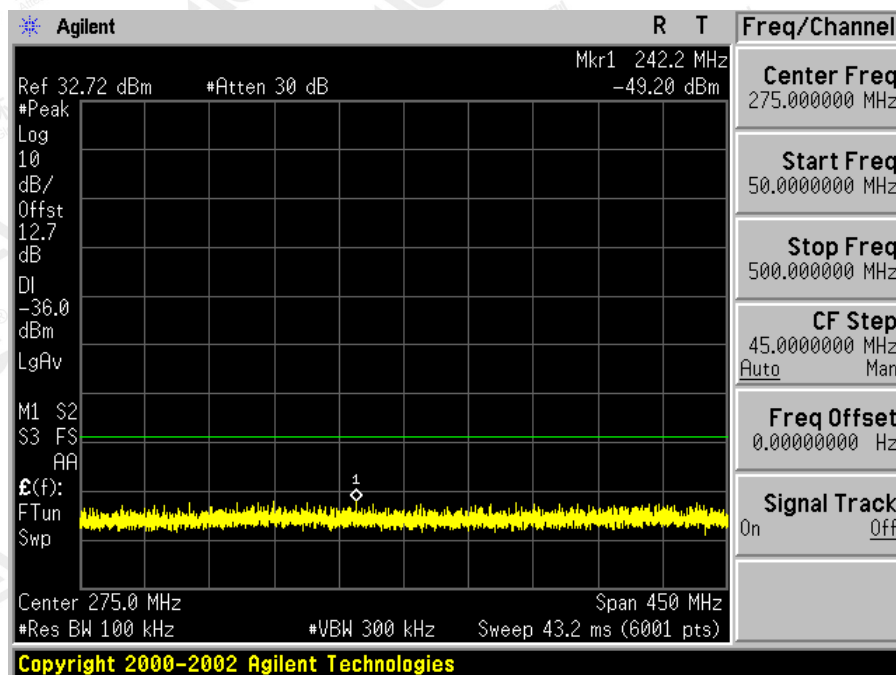
#### GSM900: channel MCH VN

100kHz~50MHz

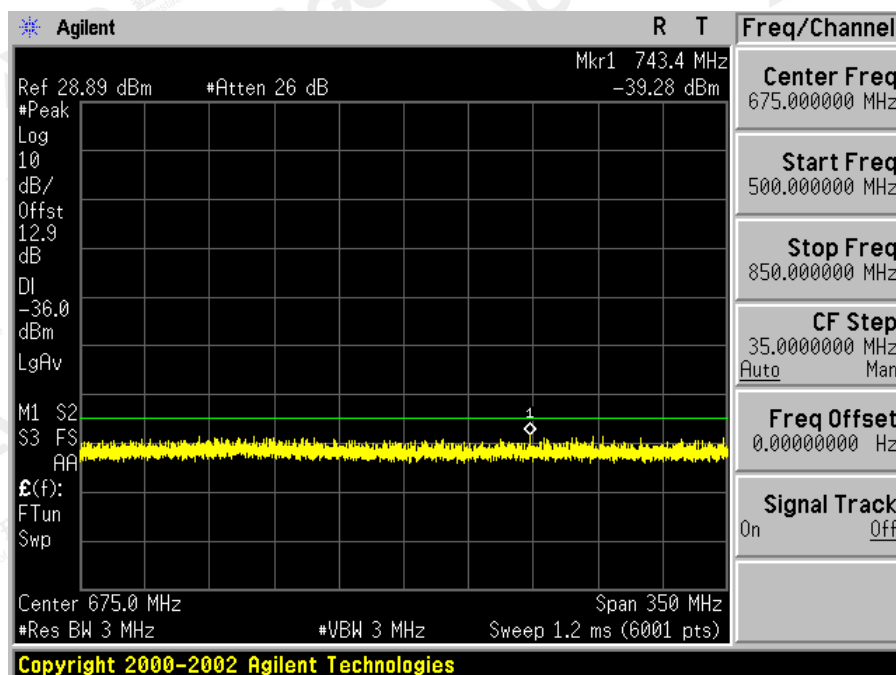


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### 50MHz~500MHz



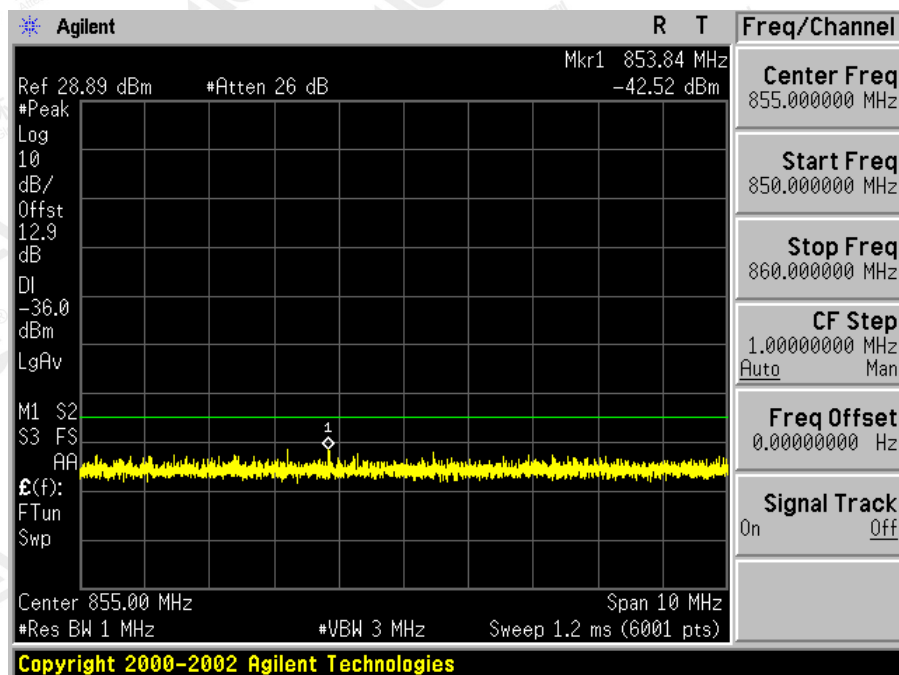
### 500MHz~850MHz



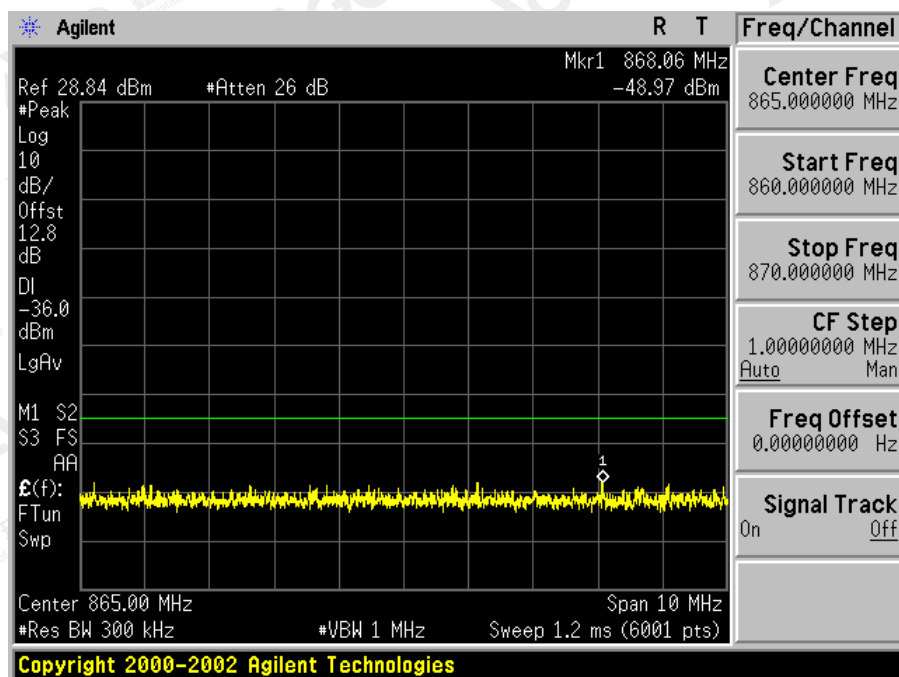
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### 850MHz~860MHz

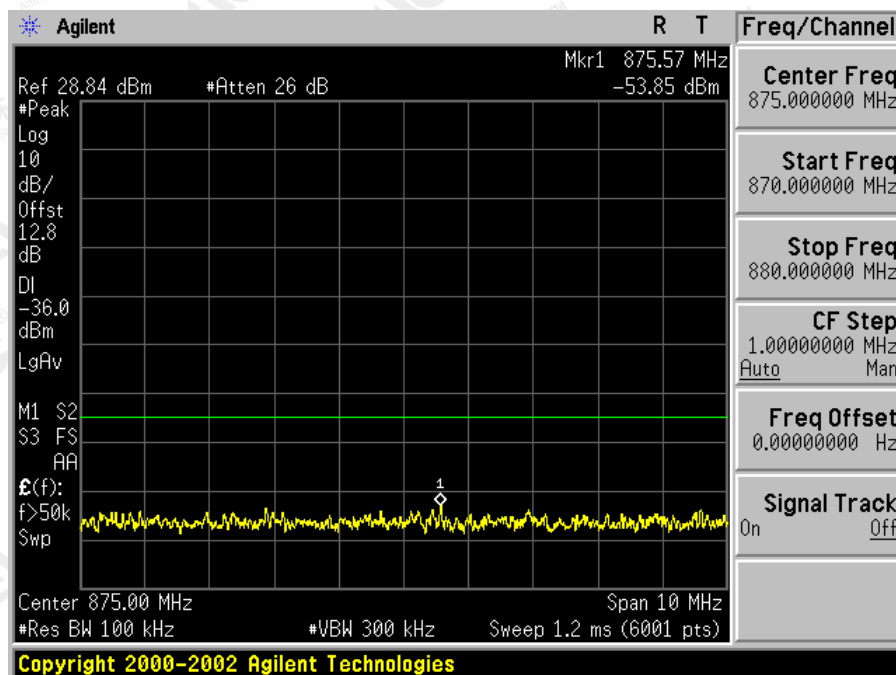


### 860MHz~870MHz

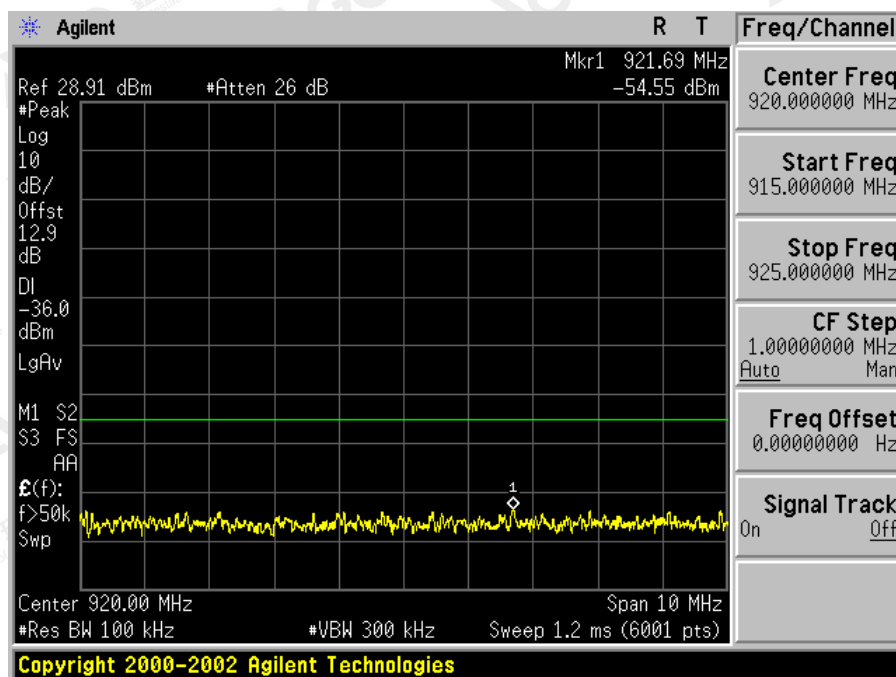


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### 870MHz~880MHz



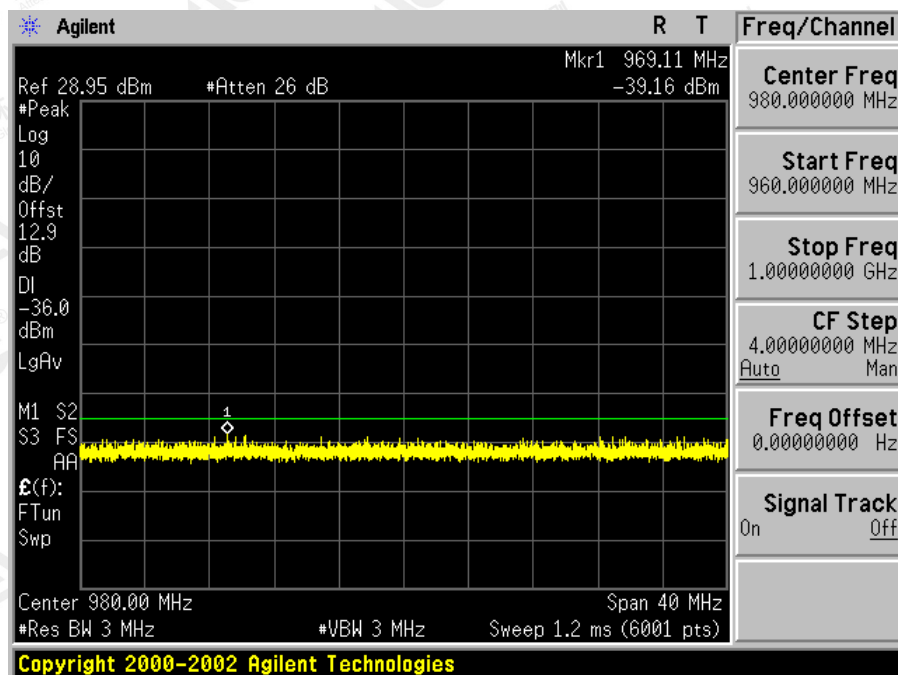
### 915MHz~925MHz



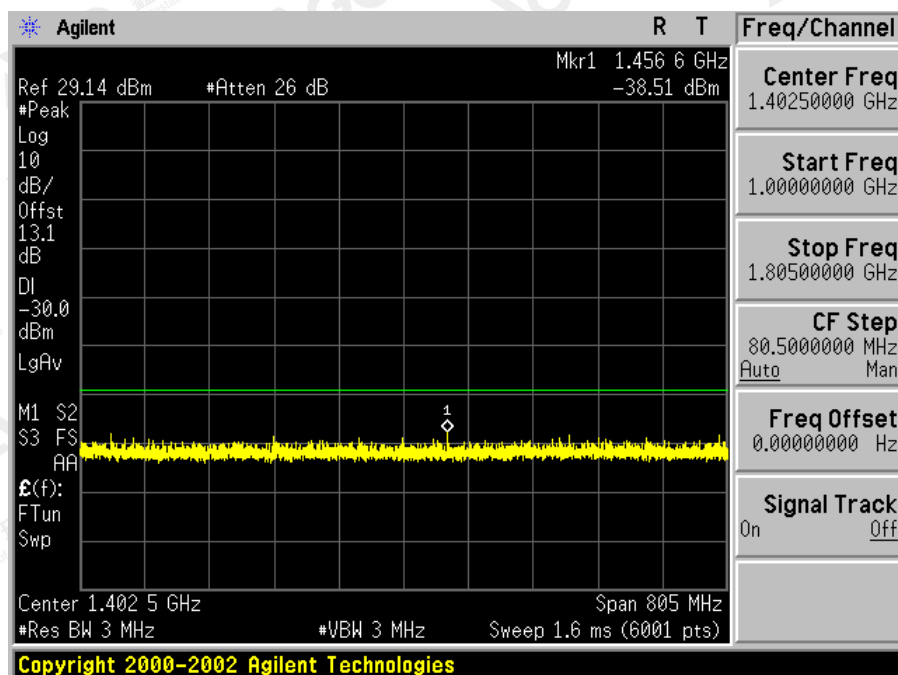
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## 960MHz~1GHz

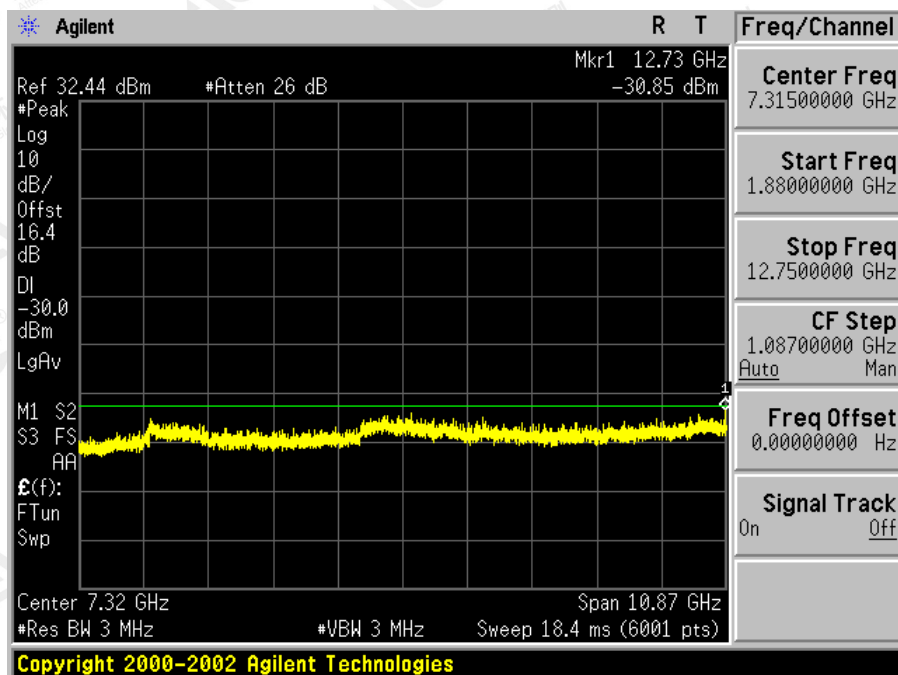


## 1GHz~1805MHz

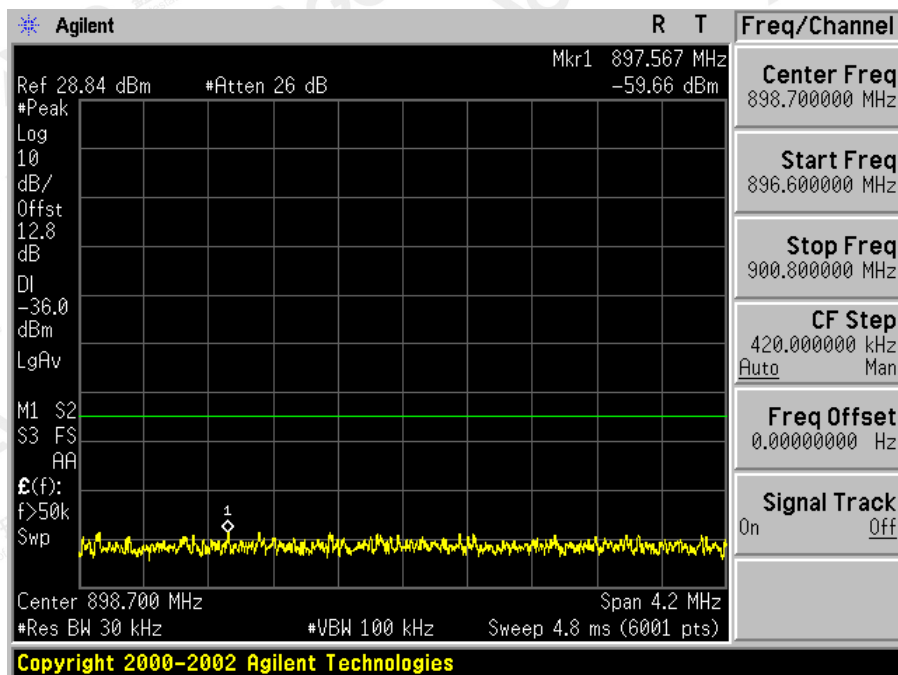


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1880MHz~12.75GHz



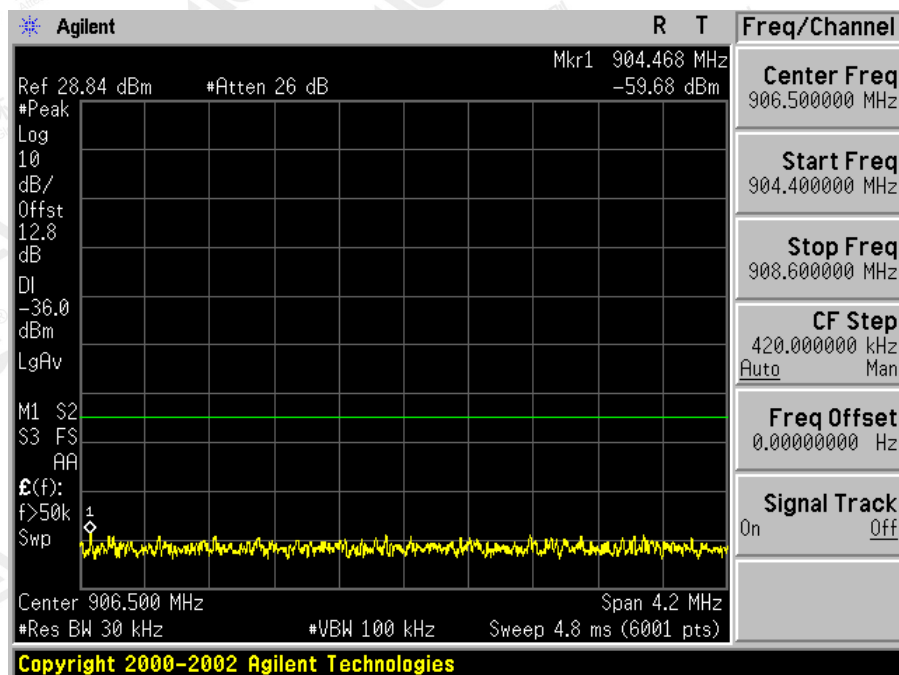
896.6MHz~900.8MHz



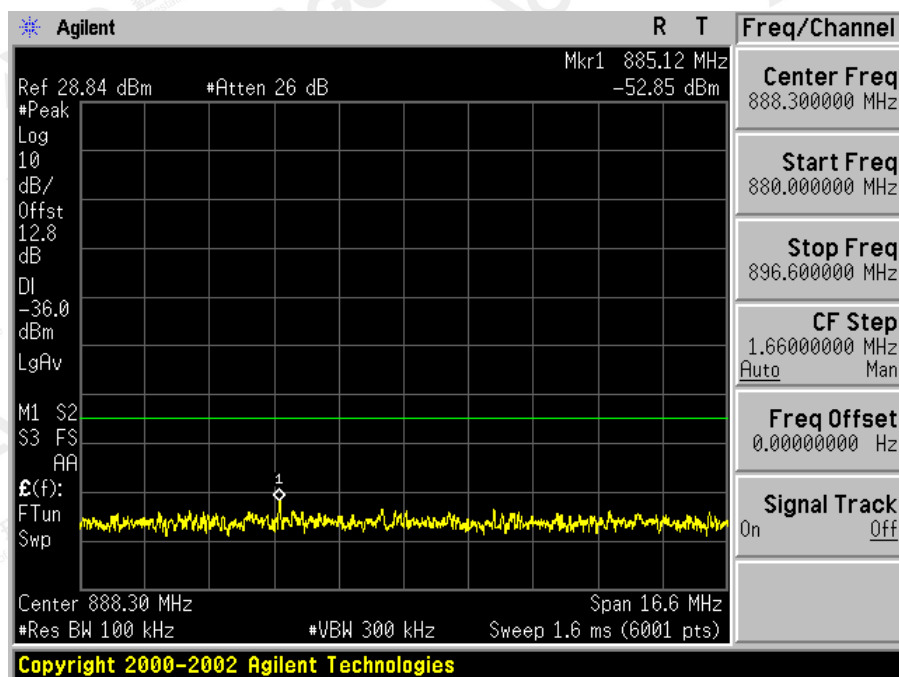
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904.4MHz~908.6MHz

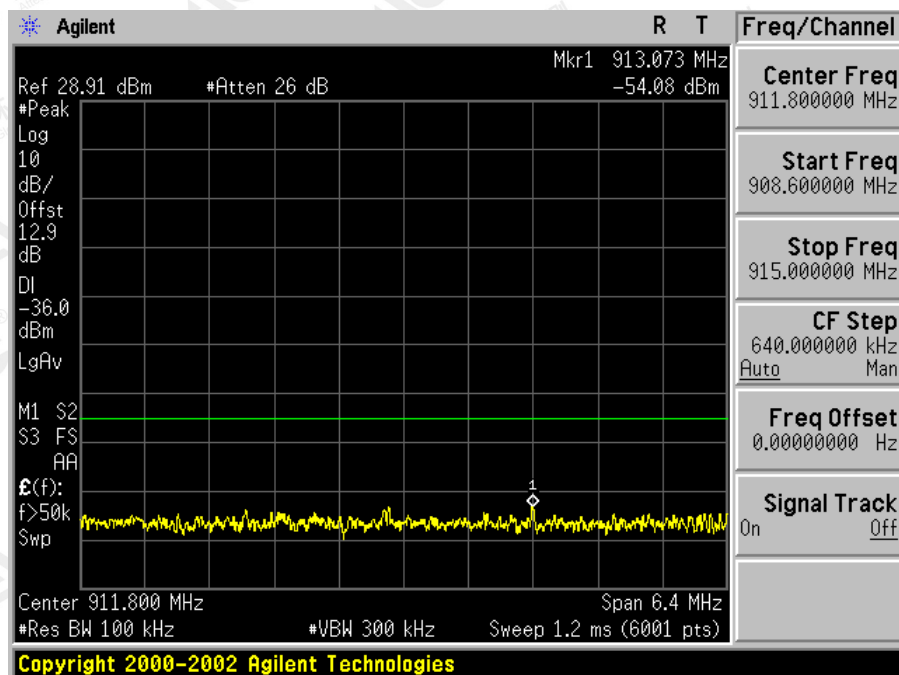


880MHz~896.6MHz



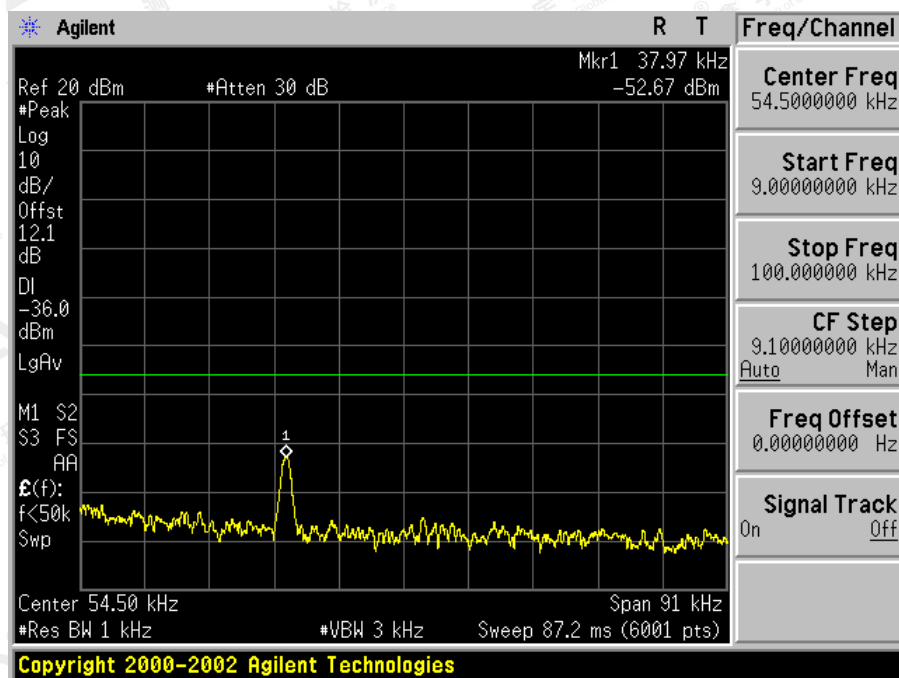
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### 908.6MHz~915MHz



### DCS1800: channel MCH VN

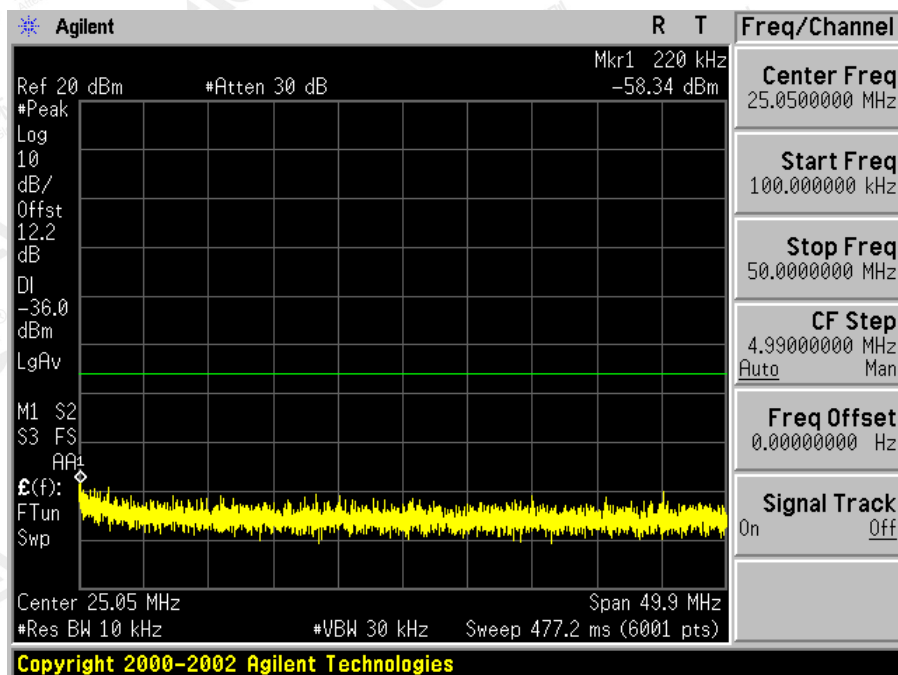
### 9kHz~100kHz



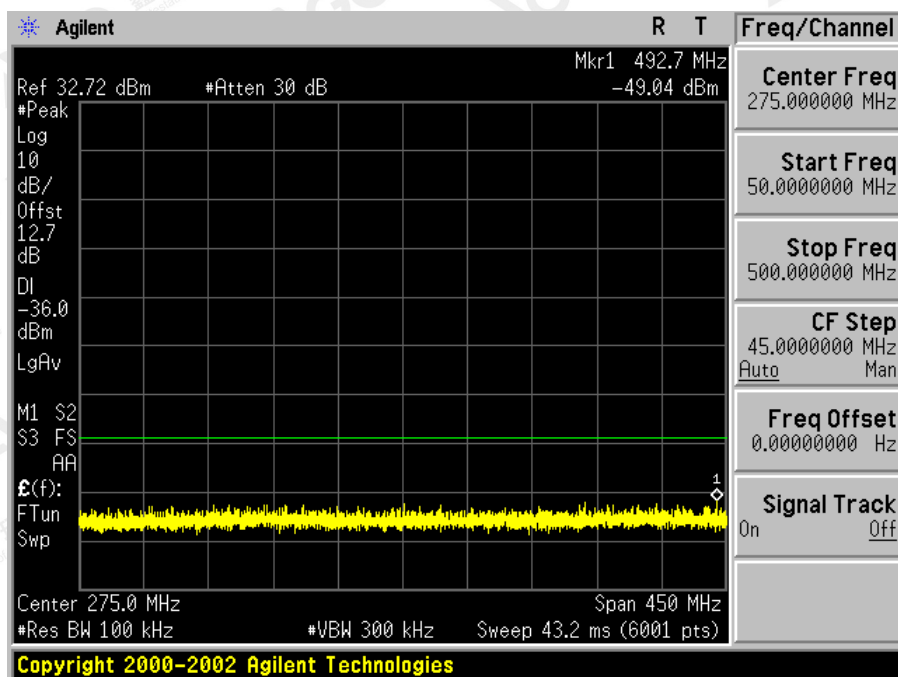
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### 100kHz~50MHz

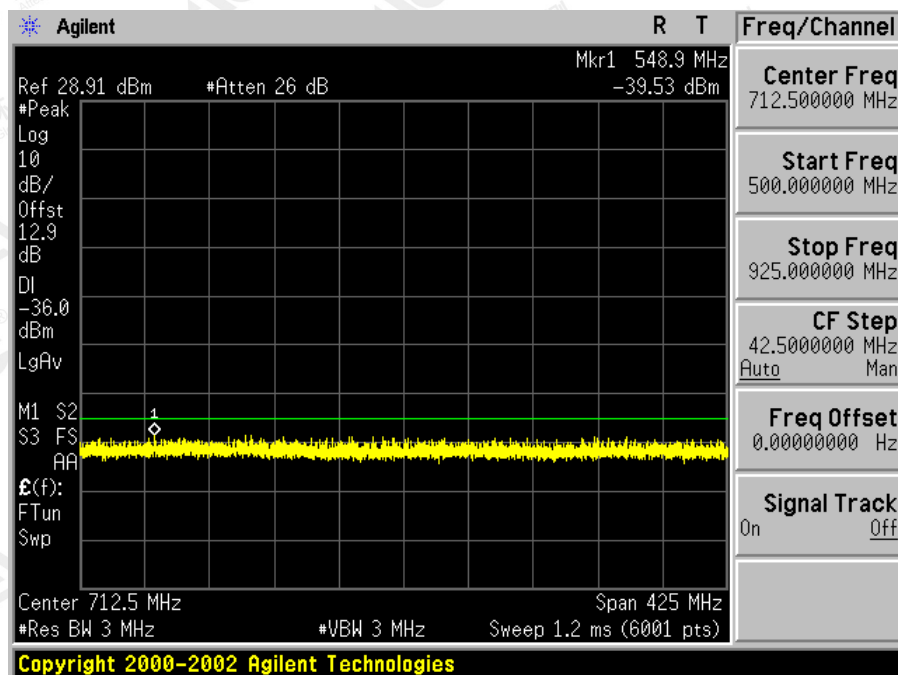


### 50MHz~500MHz

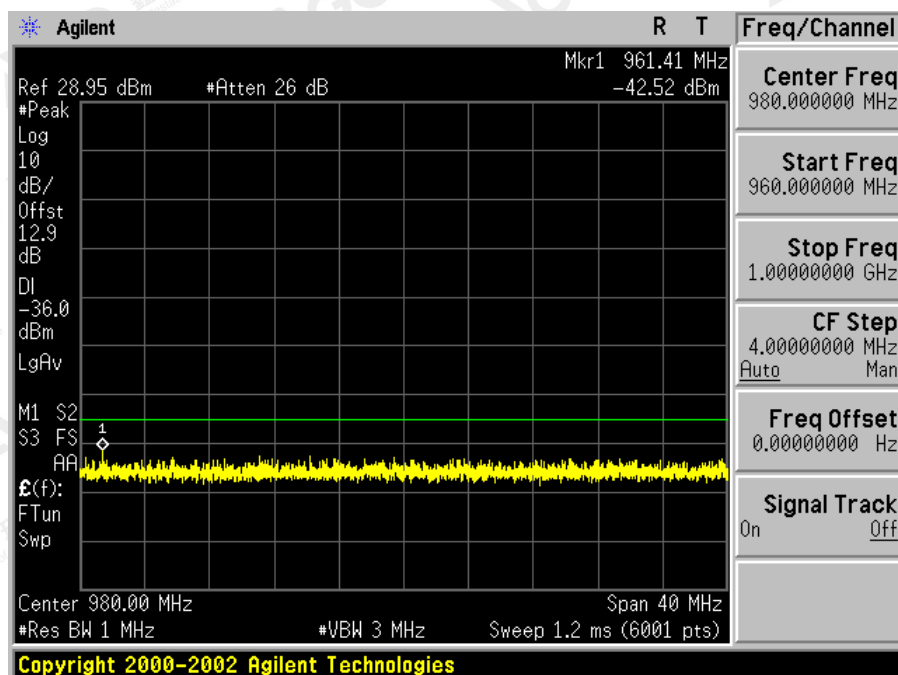


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500MHz~925MHz



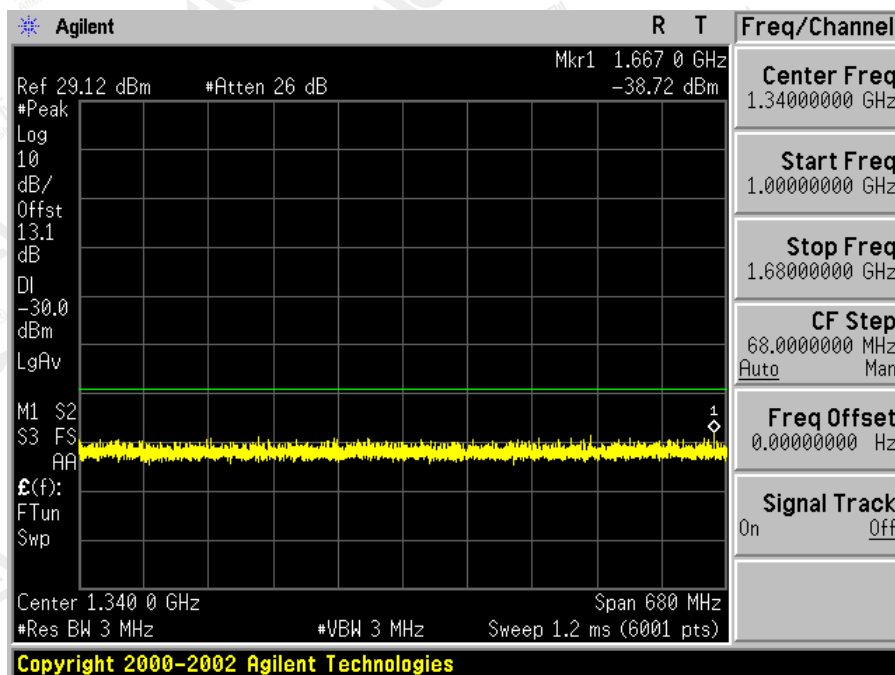
960MHz~1GHz



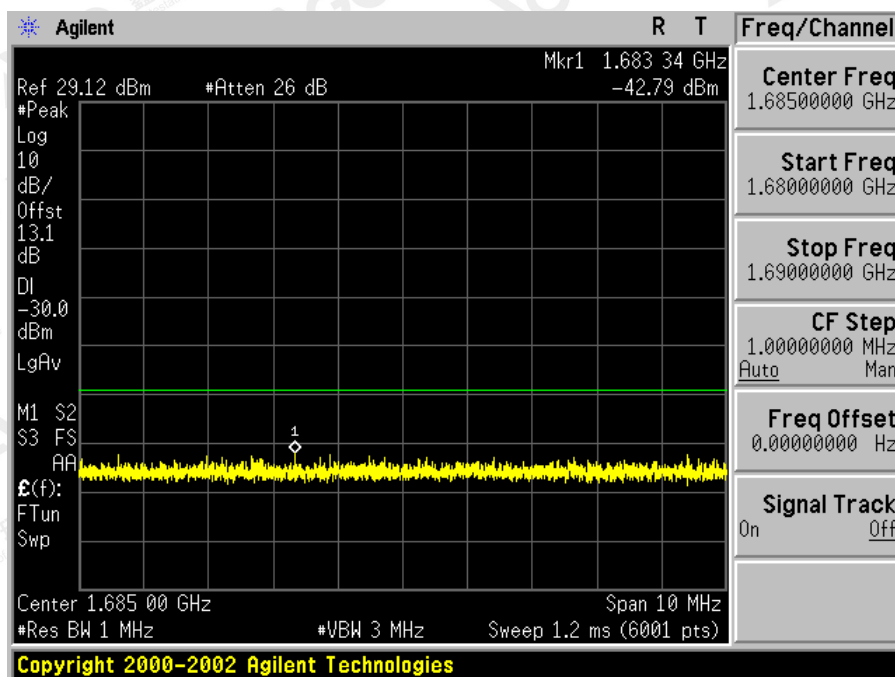
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# 1GHz~1680MHz

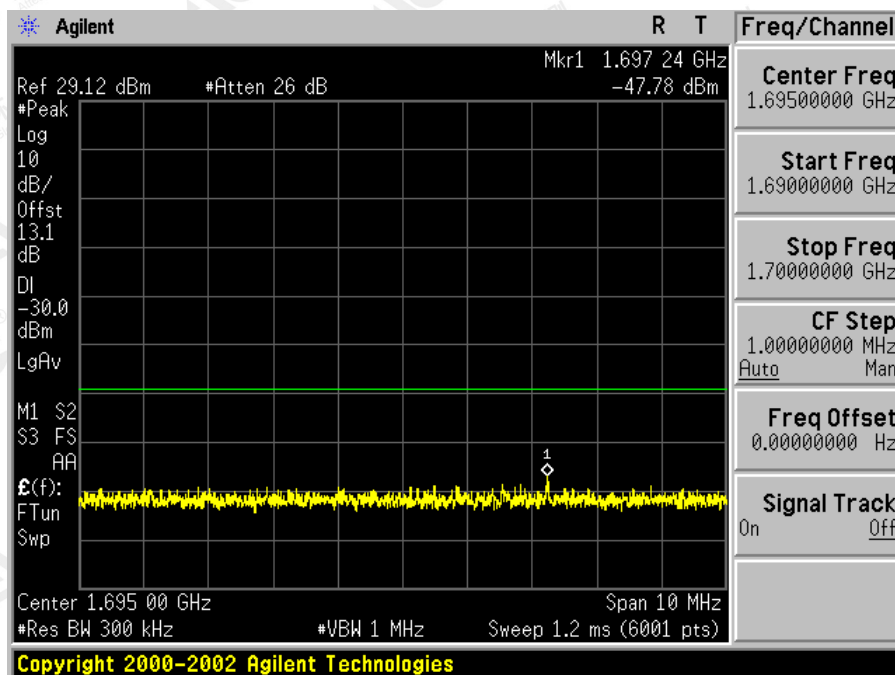


# 1680MHz~1690MHz

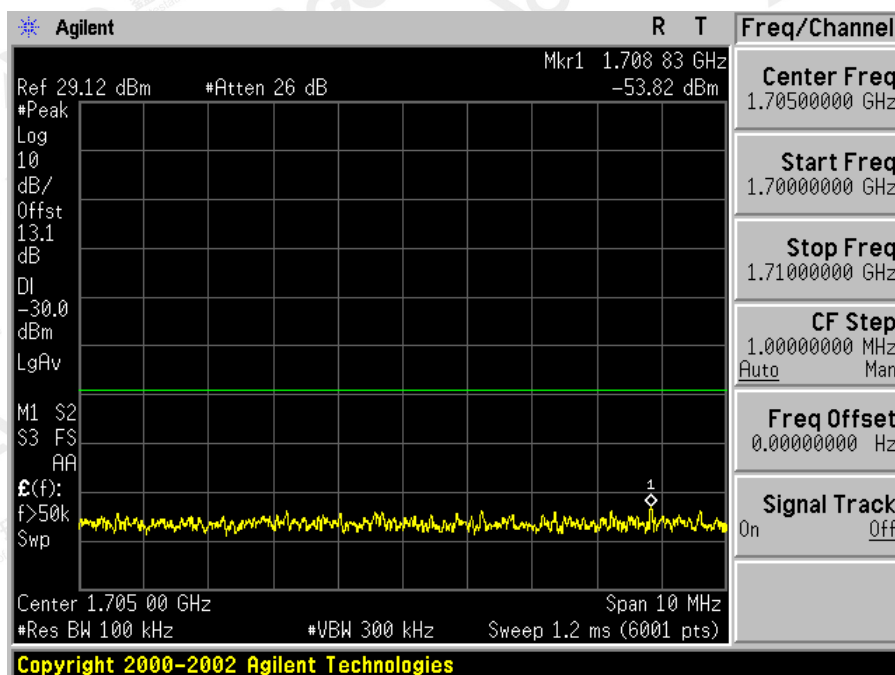


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### 1690MHz~1700MHz



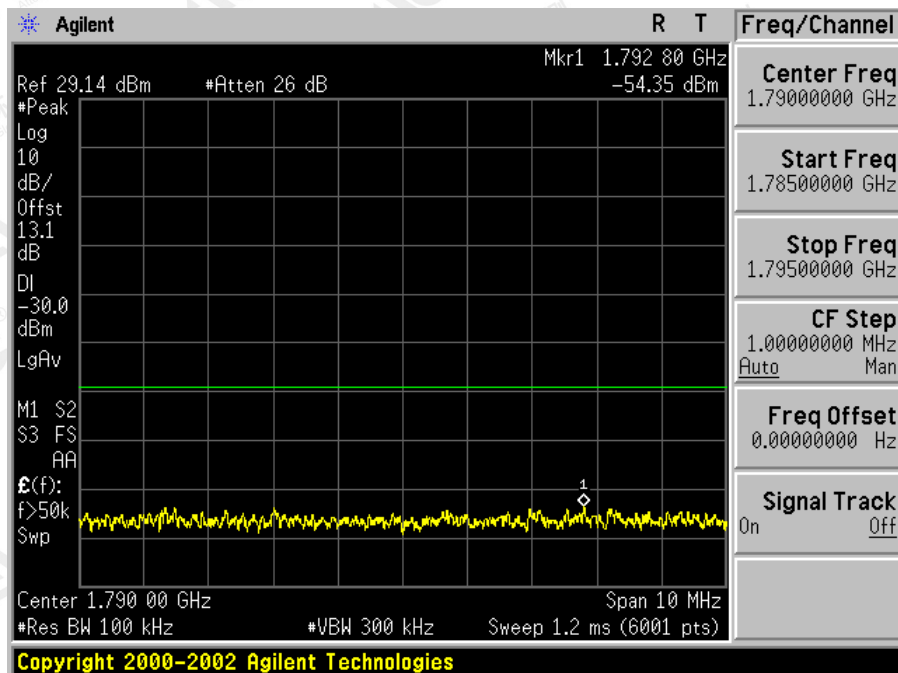
### 1700MHz~1710MHz



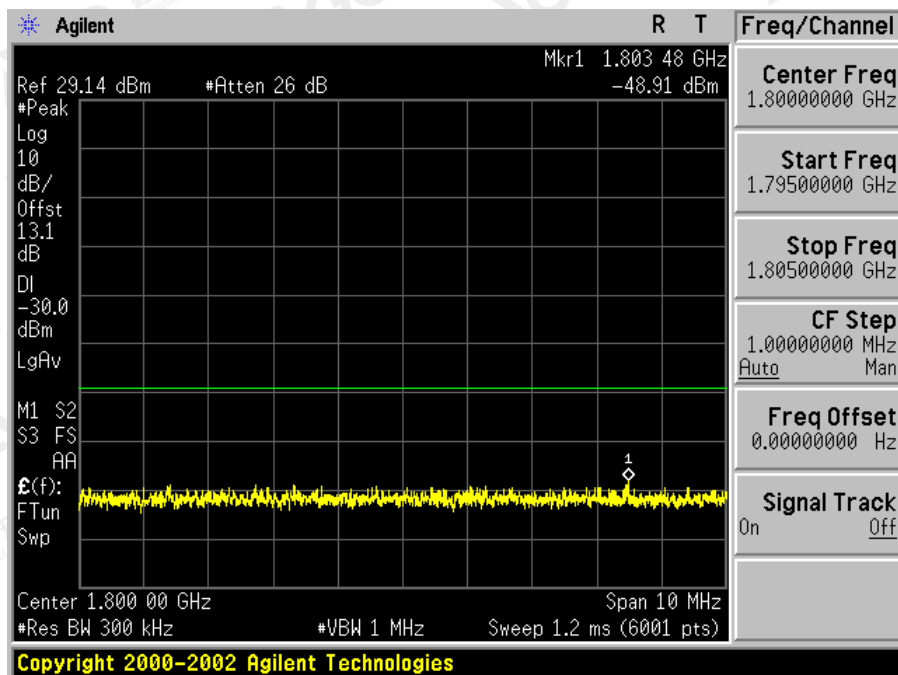
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1785MHz~1795MHz

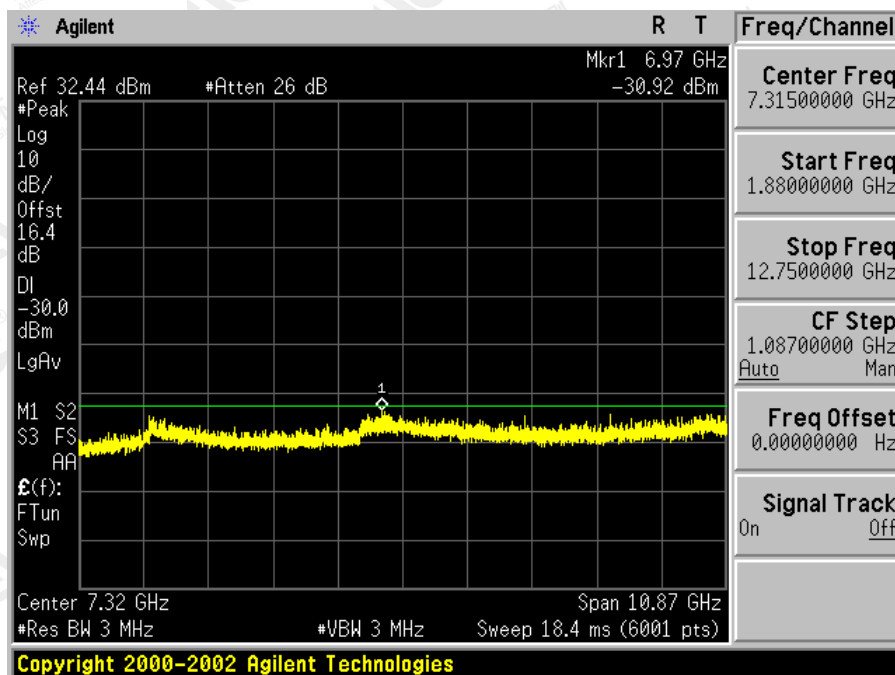


1795MHz~1805MHz

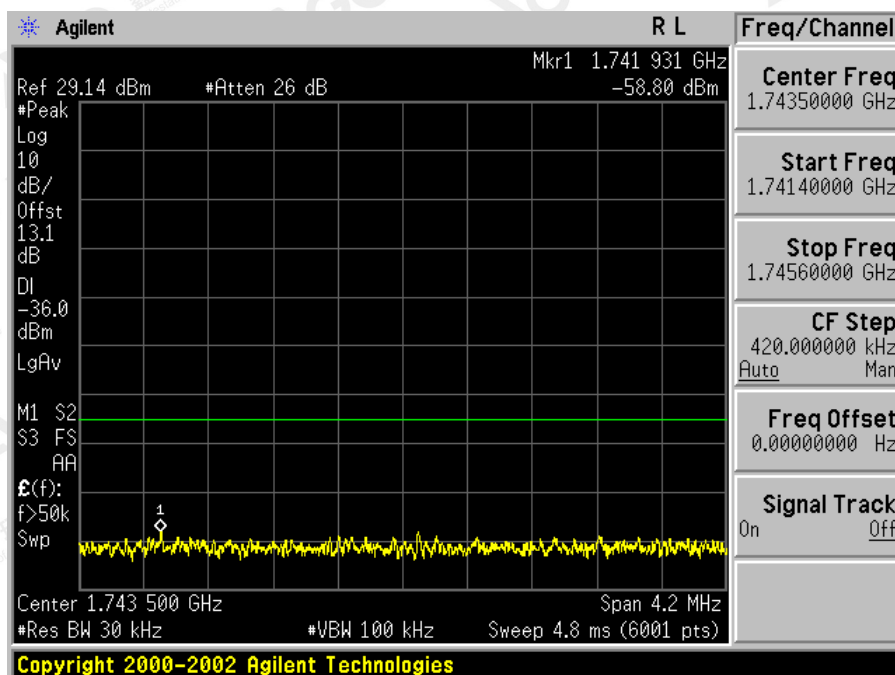


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1880MHz~12.75GHz



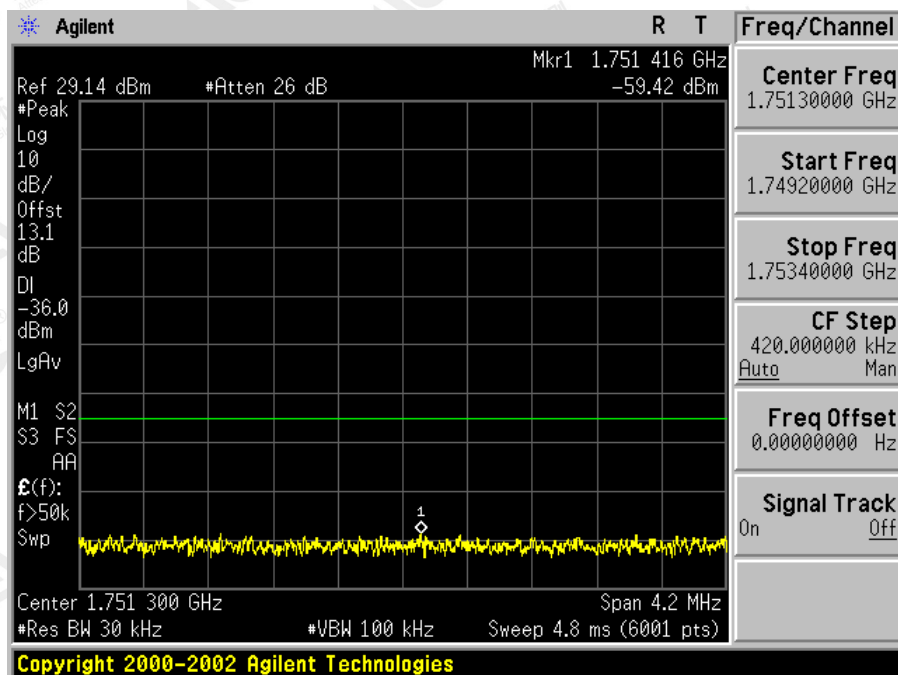
1741.4MHz~1745.6MHz



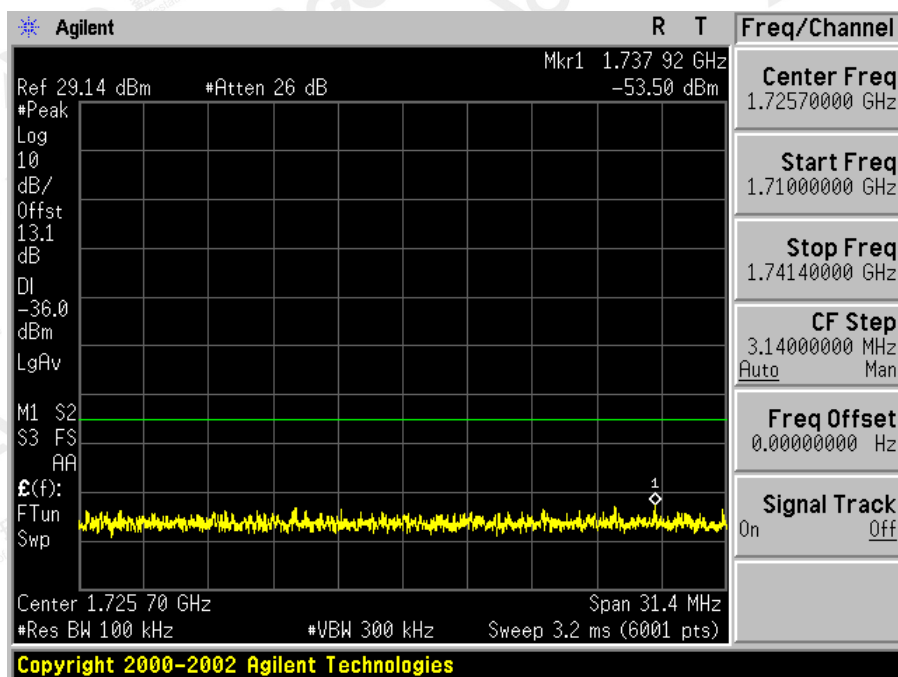
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1749.2MHz~1753.4MHz

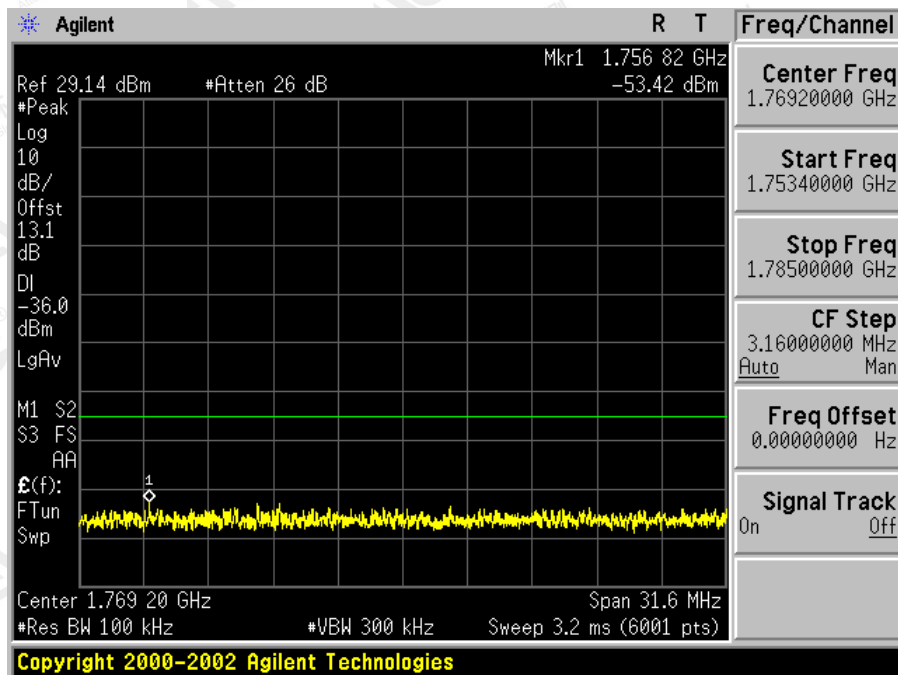


1710MHz~1741.4MHz



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1753.4MHz~1785MHz



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## 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            | -62.40   | PASS   |
| 50MHz~880MHz                 | 100k      | -57            | -59.37   | PASS   |
| 880MHz~915MHz                | 100k      | -59            | -59.41   | PASS   |
| 915MHz~1000MHz               | 100k      | -57            | -58.95   | PASS   |
| 1GHz~1710MHz                 | 100k      | -47            | -51.86   | PASS   |
| 1710MHz~1785MHz              | 100k      | -53            | -57.64   | PASS   |
| 1785MHz~12.75GHz             | 100k      | -47            | -62.41   | PASS   |

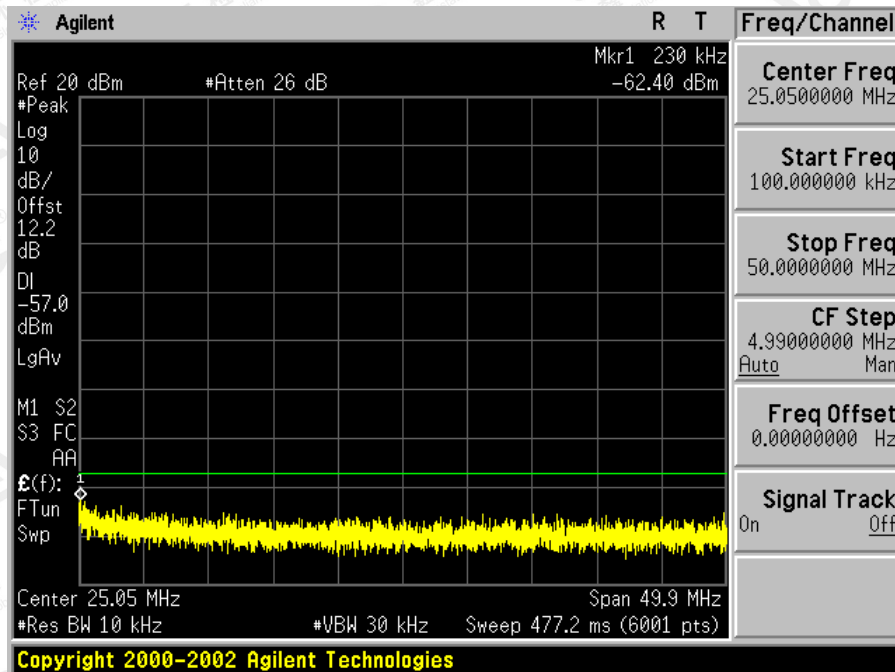
| Conducted spurious emissions | DCS1800;VN |                |          |        |
|------------------------------|------------|----------------|----------|--------|
| Frequency range              | RBW(Hz)    | Max.Limit(dBm) | MCH(dBm) | Result |
| 100kHz~50MHz                 | 10k        | -57            | -61.62   | PASS   |
| 50MHz~880MHz                 | 100k       | -57            | -58.80   | PASS   |
| 880MHz~915MHz                | 100k       | -59            | -59.37   | PASS   |
| 915MHz~1000MHz               | 100k       | -57            | -59.53   | PASS   |
| 1GHz~1710MHz                 | 100k       | -47            | -52.93   | PASS   |
| 1710MHz~1785MHz              | 100k       | -53            | -57.03   | PASS   |
| 1785MHz~12.75GHz             | 100k       | -47            | -61.47   | PASS   |

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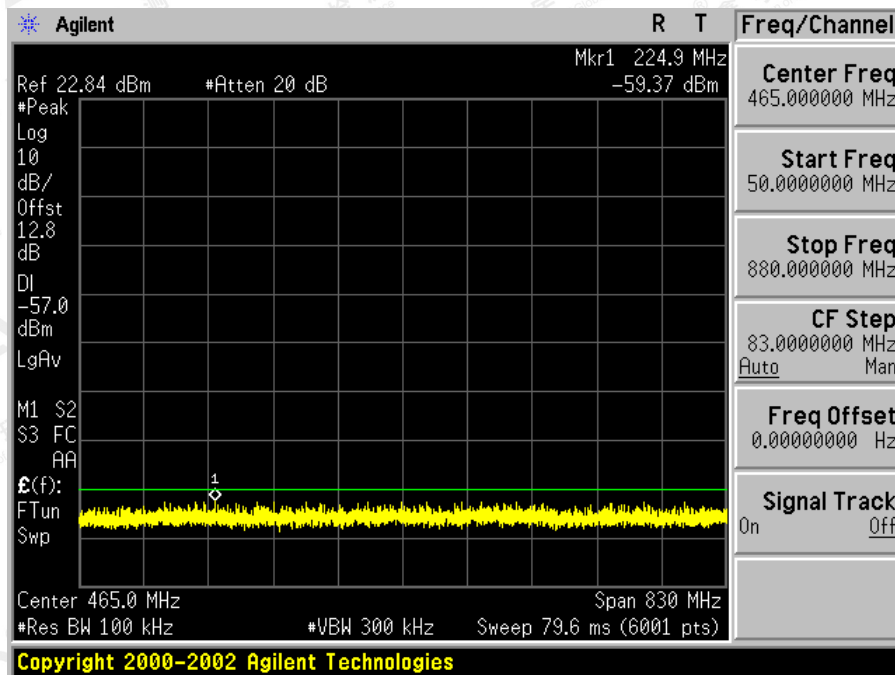
## Graphs of conducted spurious emission-MS in idle mode

### GSM900: channel MCH VN

100kHz~50MHz



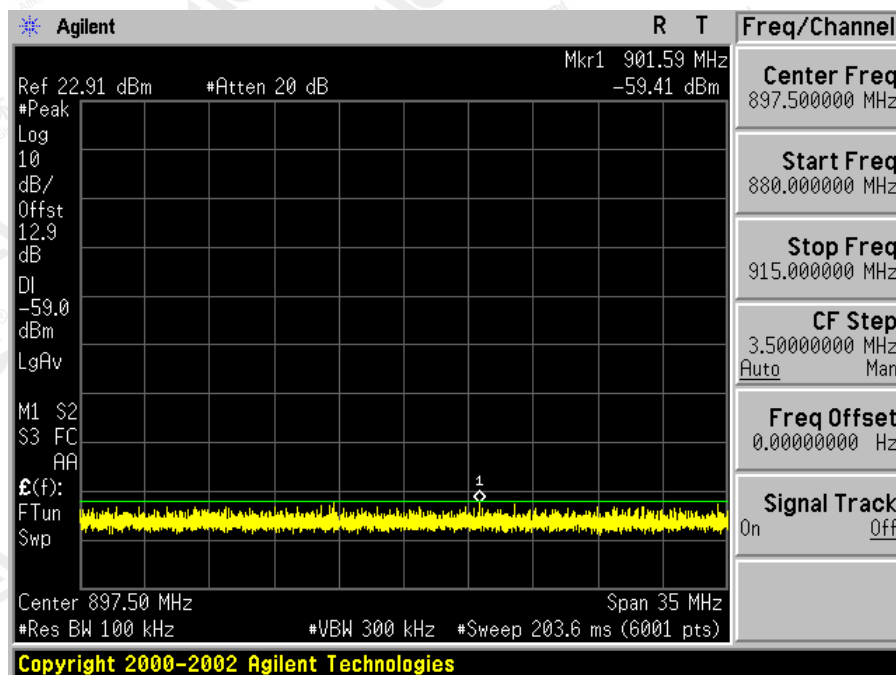
50MHz~880MHz



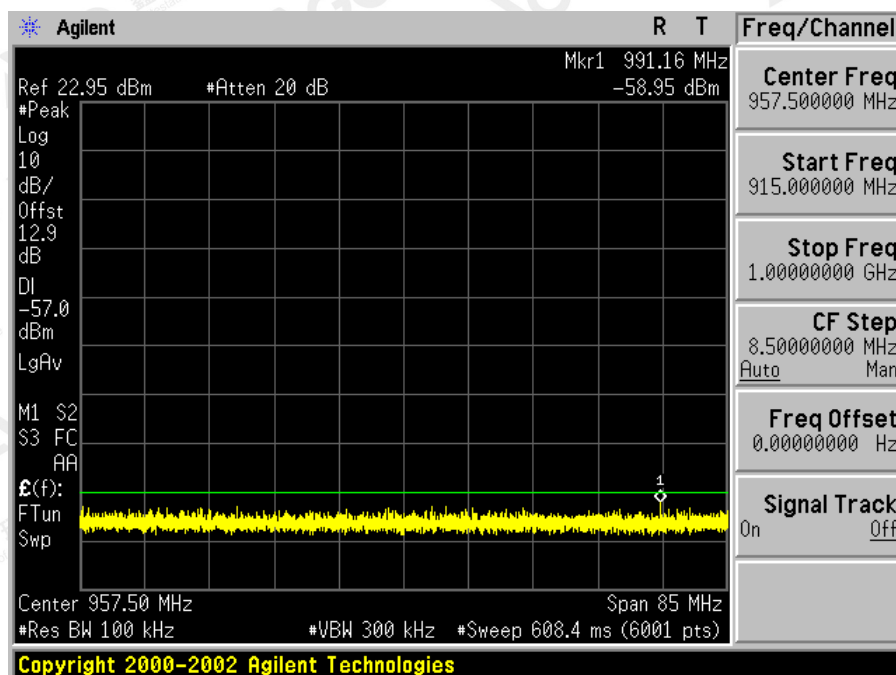
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### 880MHz~915MHz

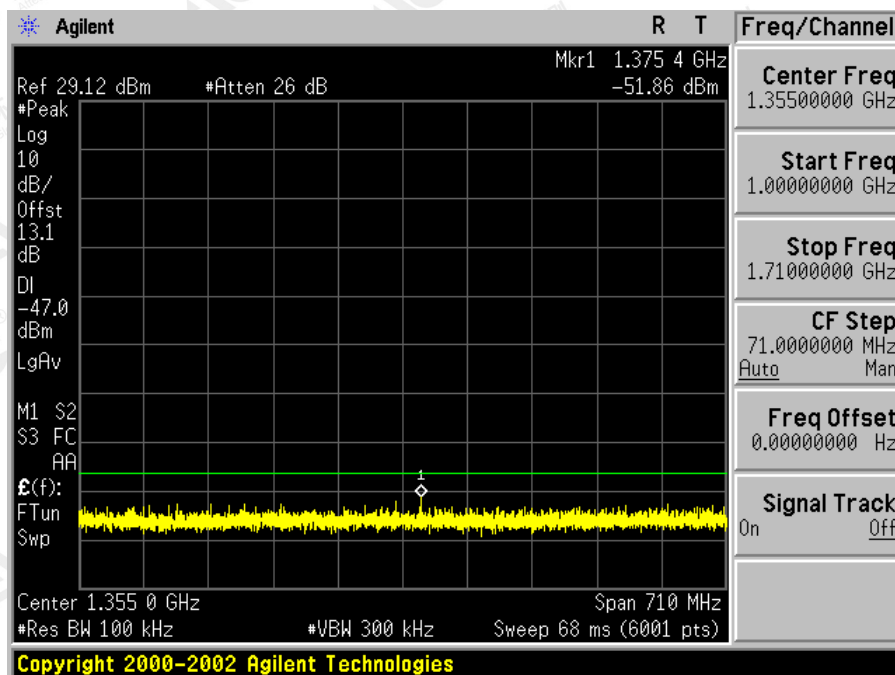


### 915MHz~1000MHz

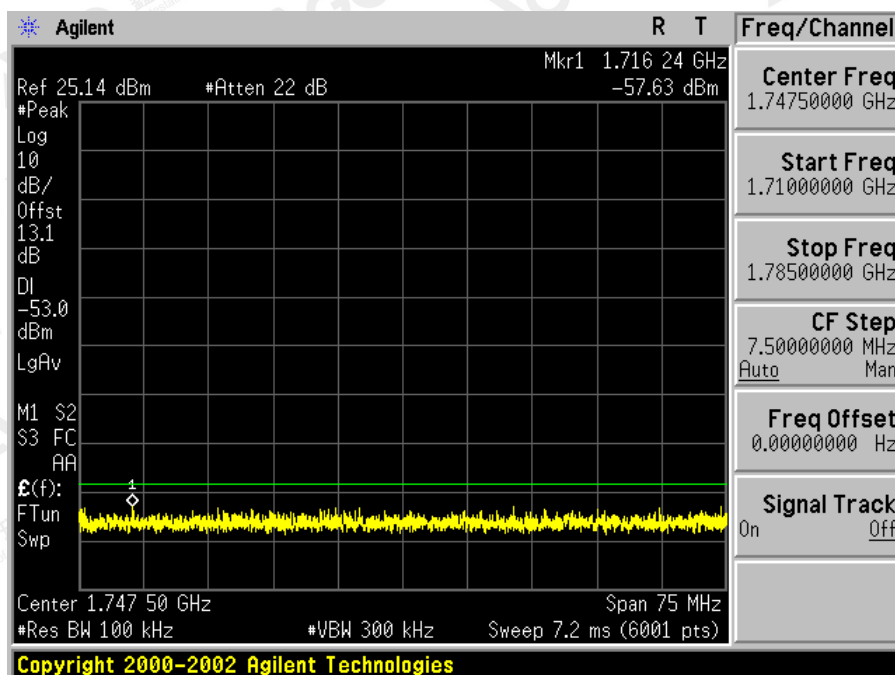


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# 1GHz~1710MHz



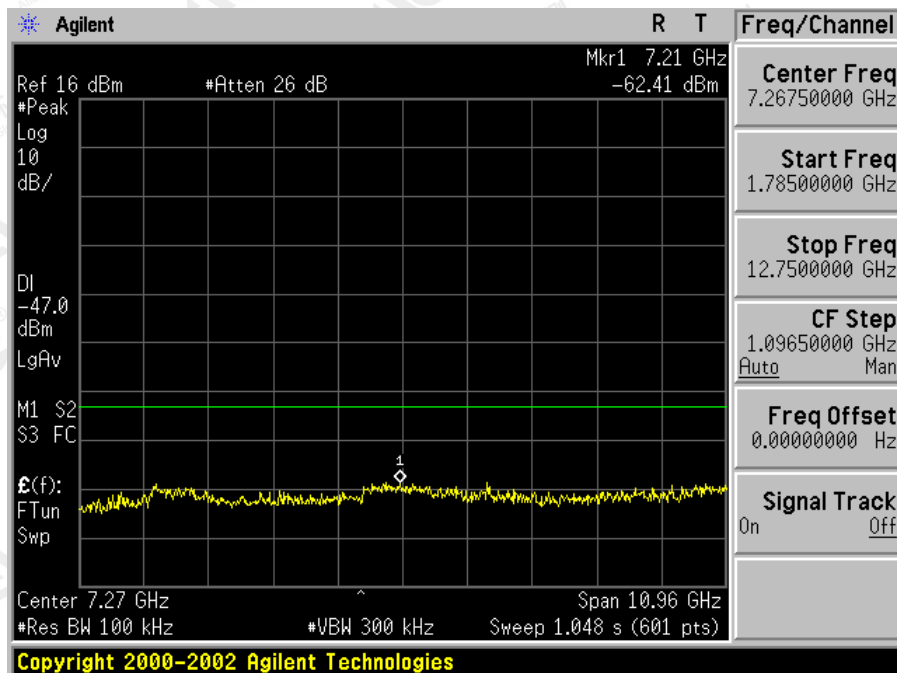
# 1710MHz~1785MHz



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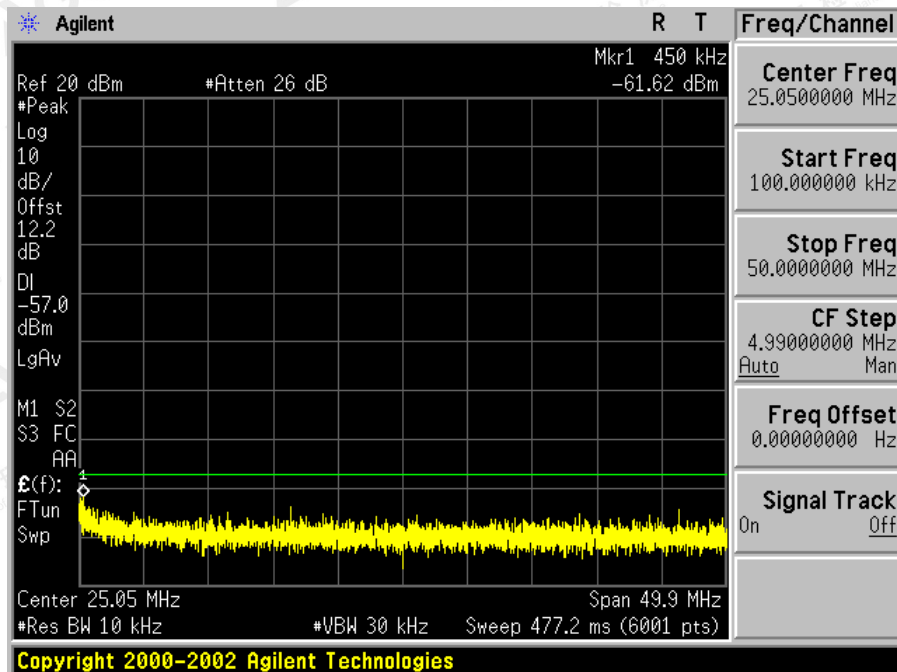


1785MHz~12.75GHz



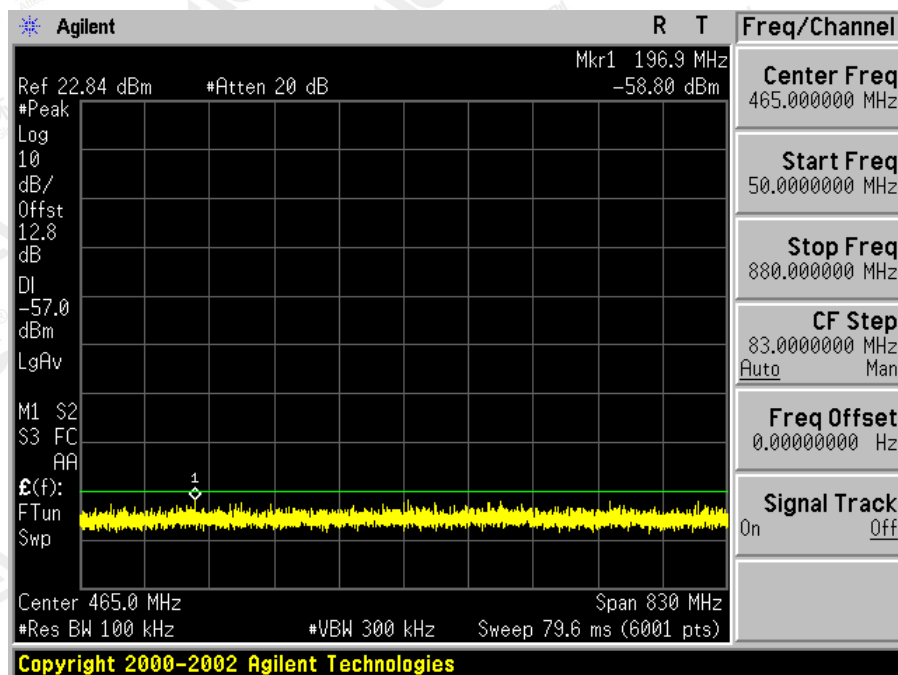
DCS1800: channel MCH VN

100kHz~50MHz

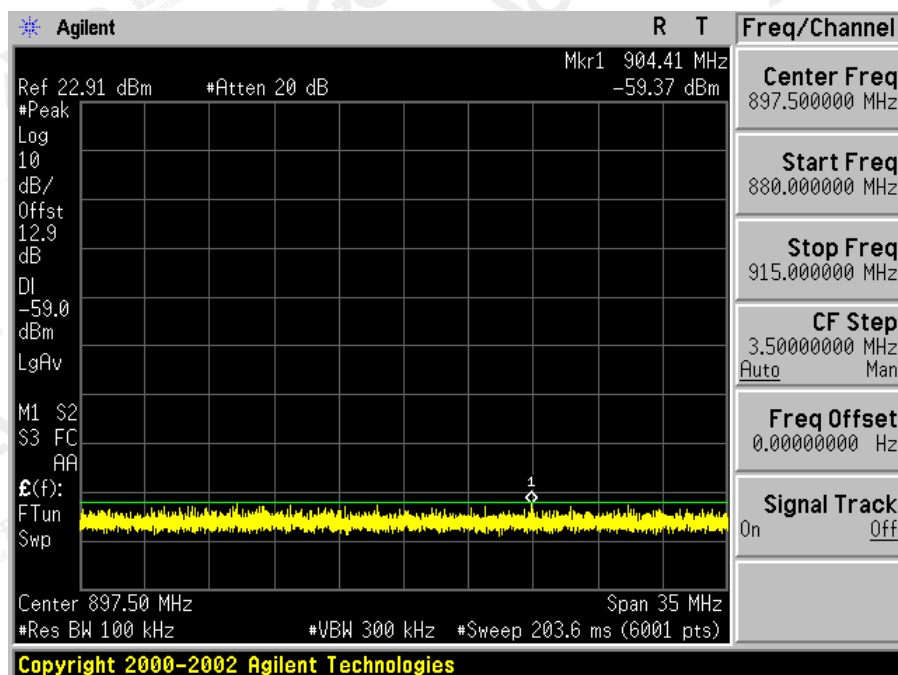


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### 50MHz~880MHz



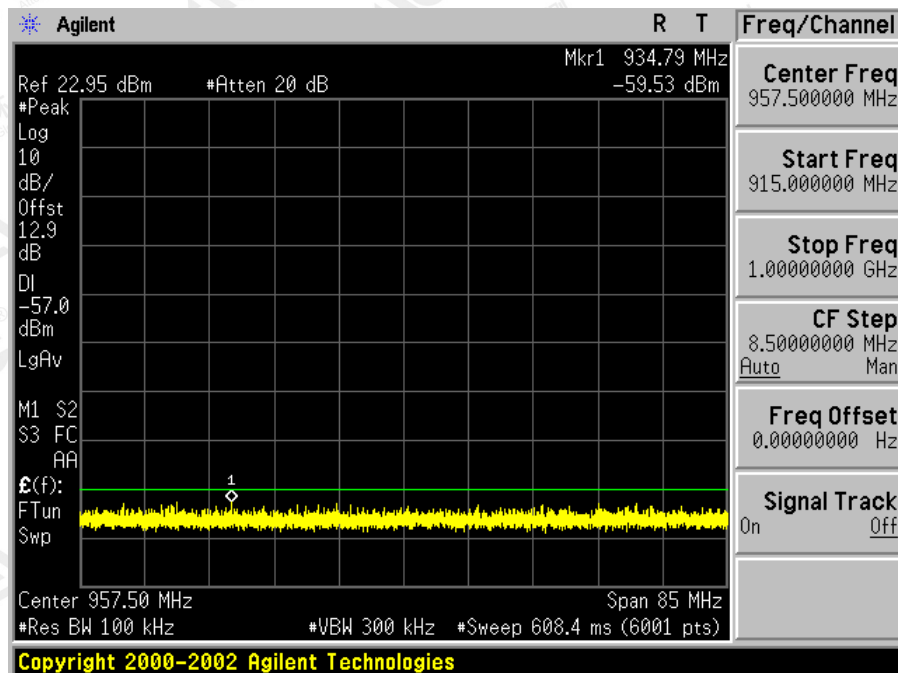
### 880MHz~915MHz



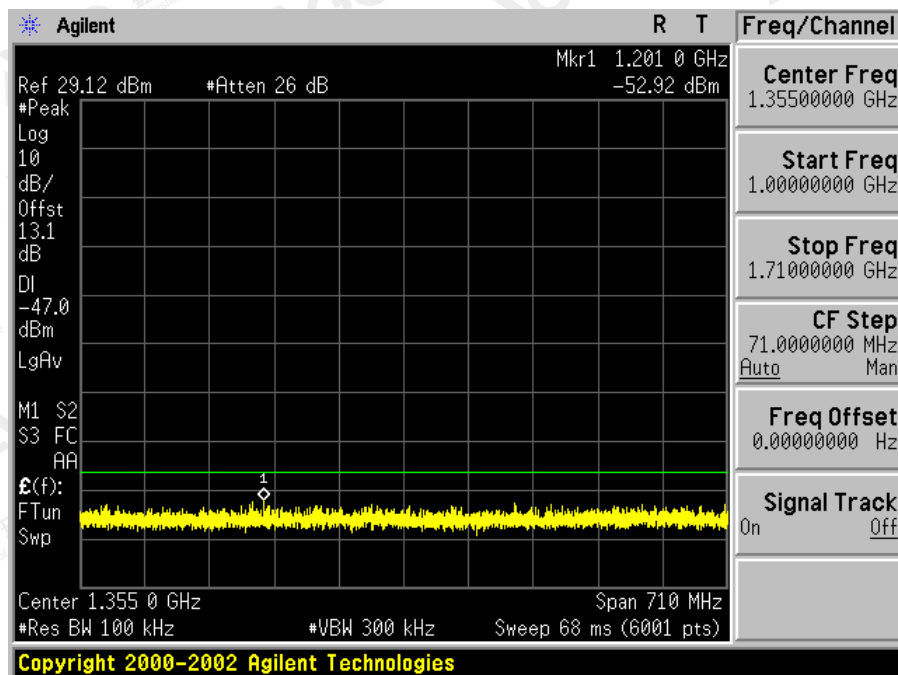
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### 915MHz~1000MHz

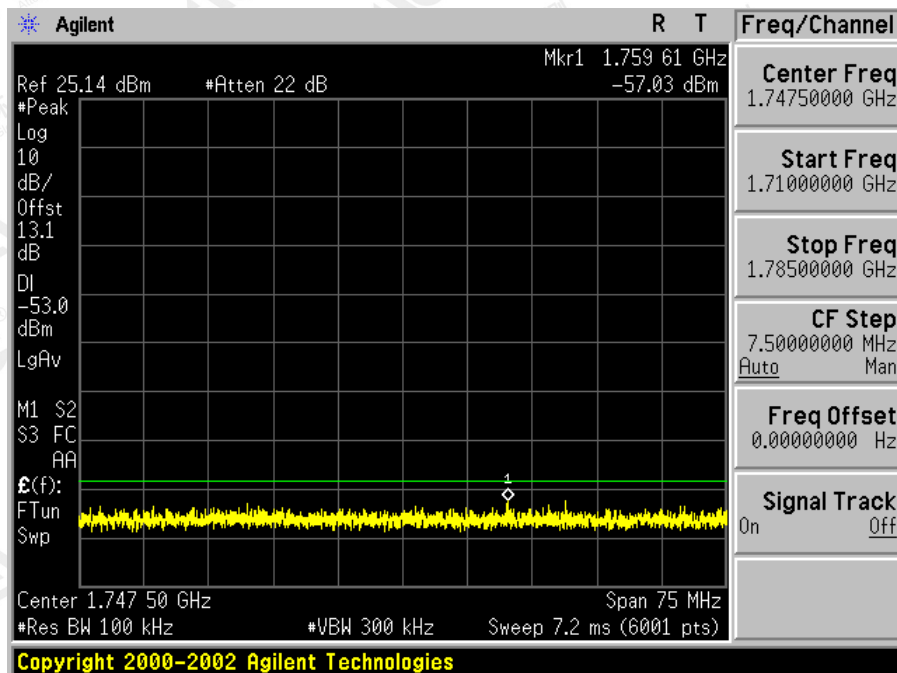


### 1GHz~1710MHz

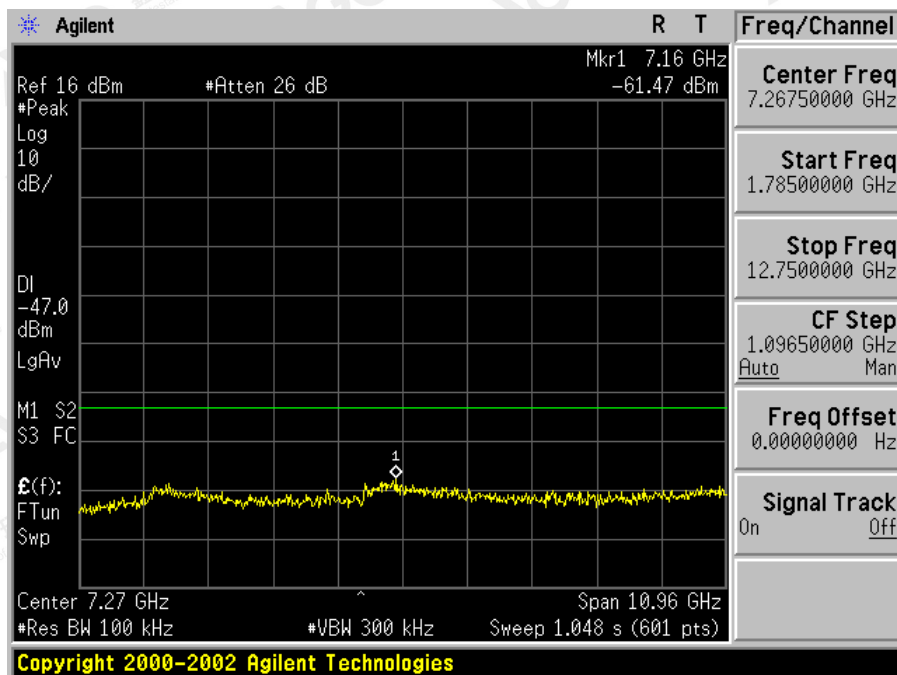


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### 1710MHz~1785MHz



### 1785MHz~12.75GHz



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**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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**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   | 2.9     | 5.2         | 6.4      | -14             | PASS   |
|        |       | 19  | 0.7     | 1.3         | 1.8      | -11             | PASS   |
|        | MCH   | 8   | 3.0     | 5.3         | 6.9      | -16             | PASS   |
|        |       | 19  | 0.7     | 1.3         | 1.9      | -11             | PASS   |
|        | HCH   | 8   | 3.0     | 5.2         | 6.7      | -11             | PASS   |
|        |       | 19  | 0.7     | 1.4         | 1.9      | -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   | 0.8     | 1.5         | 2.2      | -42             | PASS   |
|         |       | 15  | 0.8     | 1.5         | 2.3      | -39             | PASS   |
|         | MCH   | 2   | 0.8     | 1.6         | 2.3      | -29             | PASS   |
|         |       | 15  | 0.8     | 1.5         | 2.3      | -27             | PASS   |
|         | HCH   | 2   | 0.8     | 1.6         | 2.4      | -24             | PASS   |
|         |       | 15  | 0.8     | 1.6         | 2.5      | -22             | PASS   |

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## 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            | -16    | -12 | -13 | PASS   |
| HT100      | TNVN            | -14    | -12 | -12 | PASS   |
| TU50       | TNVN            | -12    | -11 | -12 | PASS   |
| TU3        | TNVN            | -14    | -9  | -13 | PASS   |

### DCS1800

| Fading set | Test conditions | Result  |     |     |        |
|------------|-----------------|---------|-----|-----|--------|
|            |                 | DCS1800 |     |     |        |
|            |                 | ARFCN   |     |     |        |
|            |                 | LCH     | MCH | HCH | Result |
| RA130      | TNVN            | -41     | -20 | -20 | PASS   |
| HT100      | TNVN            | -33     | -21 | -21 | PASS   |
| TU50       | TNVN            | -28     | -22 | -20 | PASS   |
| TU1.5      | TNVN            | -27     | -23 | -21 | PASS   |

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### 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           | 22.22            | 22.23 | 22.54 | PASS   |
|                               | 12          | 18.96            | 18.98 | 19.27 | PASS   |
|                               | 19          | 4.92             | 4.90  | 5.19  | PASS   |

| Transmitter Output power(dBm) | Power level | Result           |       |       |        |
|-------------------------------|-------------|------------------|-------|-------|--------|
|                               |             | Traffic Channels |       |       |        |
| DCS1800                       |             | LCH              | MCH   | HCH   | Result |
| TN,VN                         | 2           | 23.29            | 24.27 | 23.80 | PASS   |
|                               | 8           | 15.79            | 16.86 | 16.38 | PASS   |
|                               | 15          | 1.97             | 2.71  | 2.13  | 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 |

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|  |    |      |      |      |
|--|----|------|------|------|
|  | 8  | PASS | PASS | PASS |
|  | 15 | PASS | PASS | PASS |

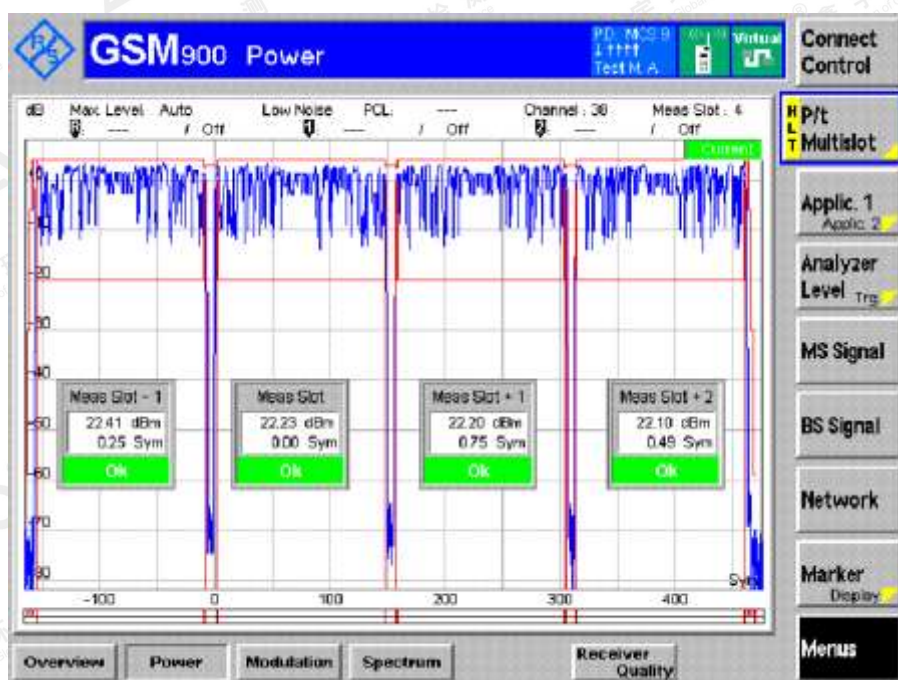
## Graphs of EGPRS Transmitter output power

### GSM 900 TN,VN

Channel LCH PCL 8

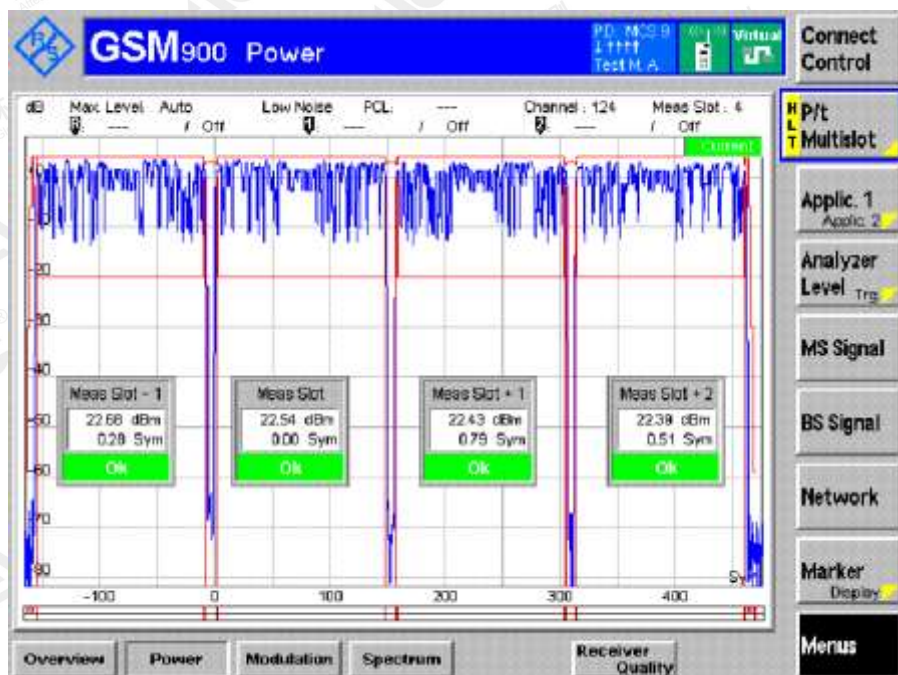


Channel MCH PCL 8



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Channel HCH PCL 8



Channel LCH PCL 12



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Channel MCH PCL 12



Channel HCH PCL 12



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Channel LCH PCL 19



Channel MCH PCL 19



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Channel HCH PCL 19



DCS1800 TN,VN

Channel LCH PCL 2

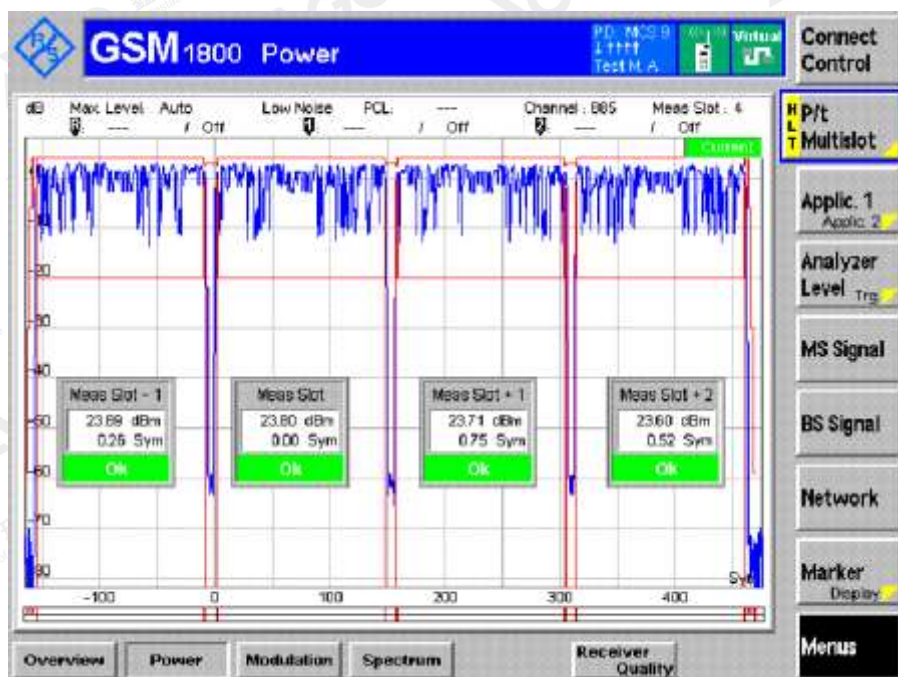


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Channel MCH PCL 2



Channel HCH PCL 2



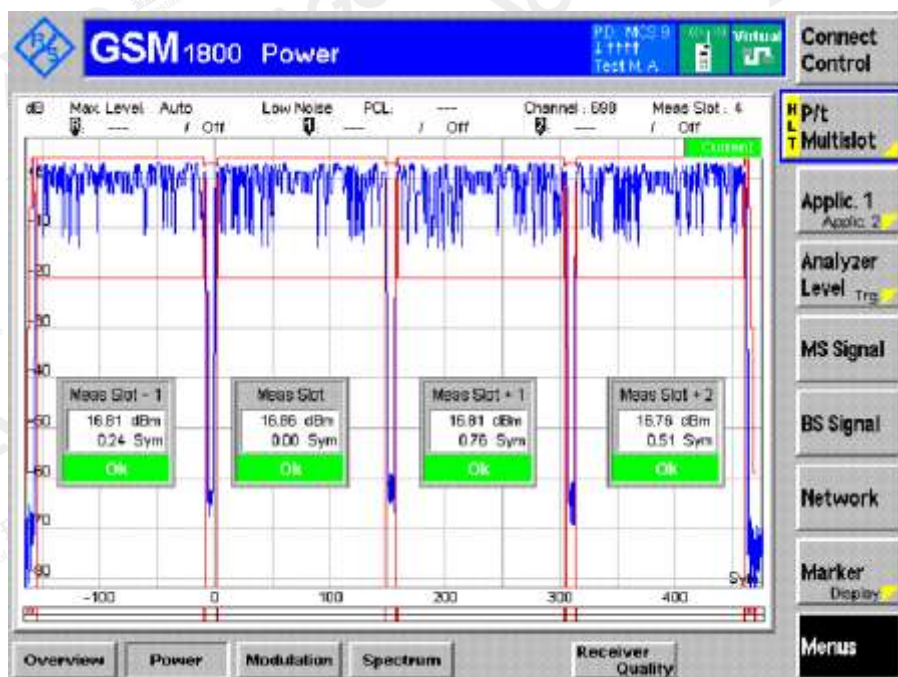
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Channel LCH PCL 8

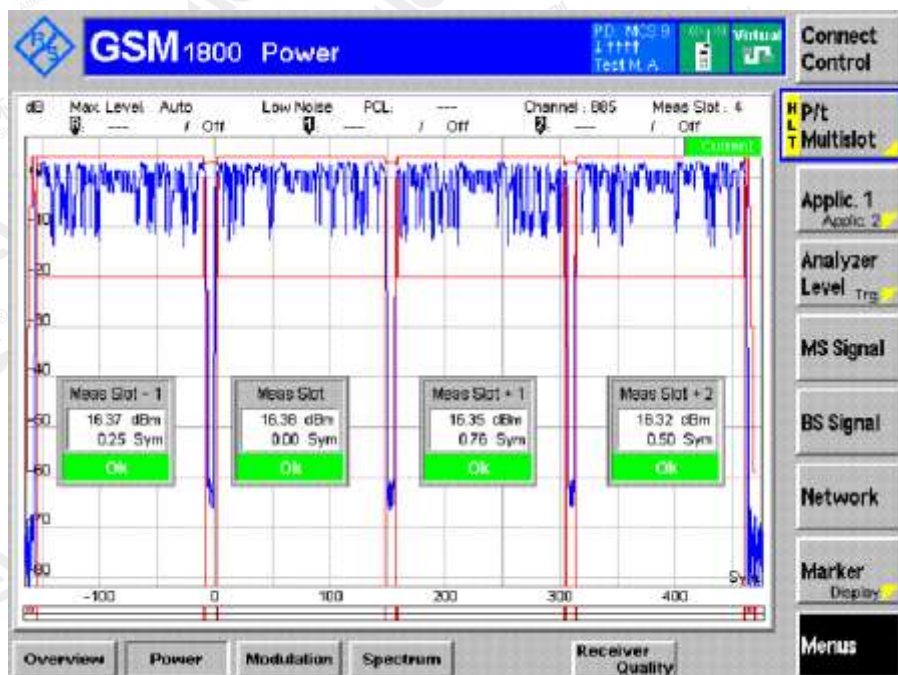


Channel MCH PCL 8



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Channel HCH PCL 8



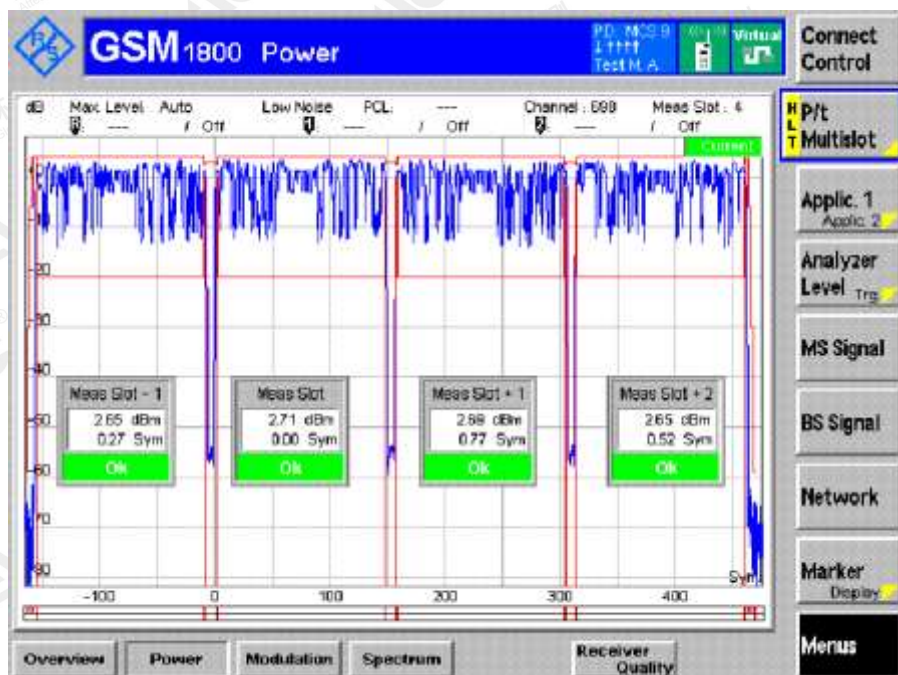
Channel LCH PCL 15



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Channel MCH PCL 15



Channel HCH PCL 15



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## Appendix N. Output RF spectrum in EGPRS configuration

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

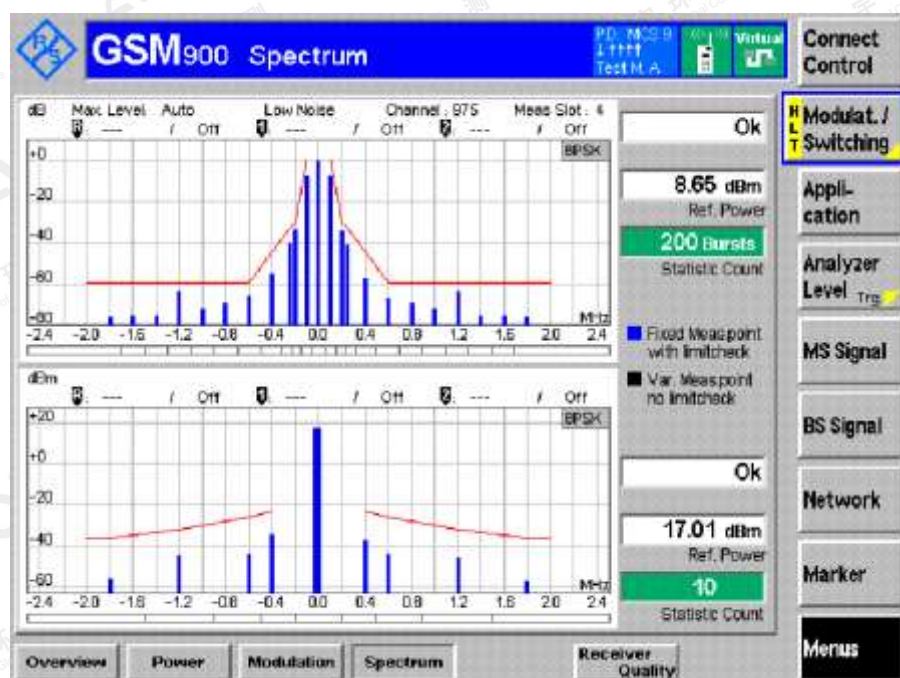
| Modulation& switch Spectrum | Power level | Result           |      |      |
|-----------------------------|-------------|------------------|------|------|
|                             |             | Traffic Channels |      |      |
| GSM900                      |             | LCH              | 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

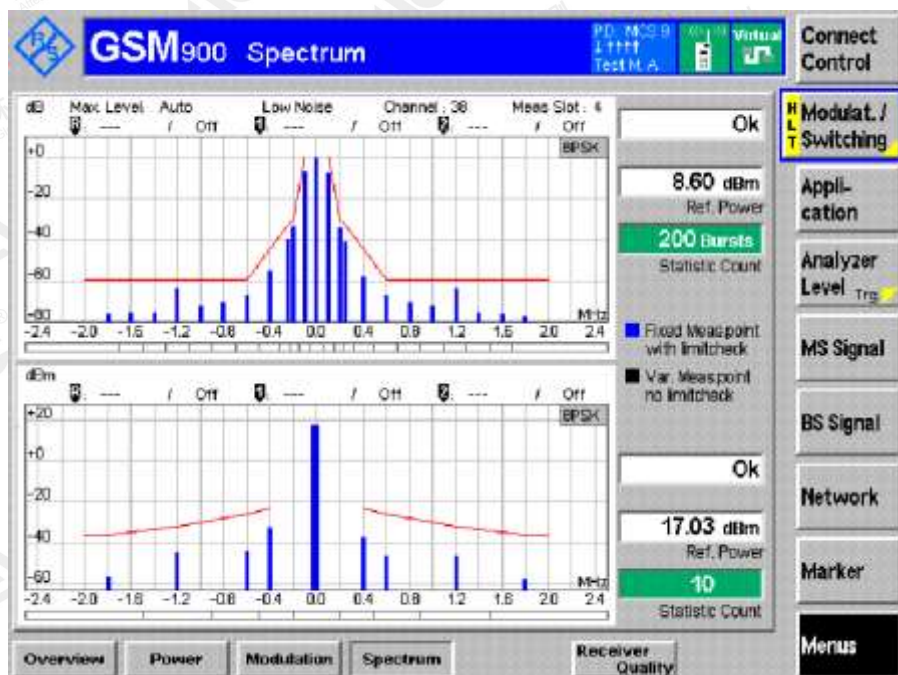
Channel LCH PCL 8



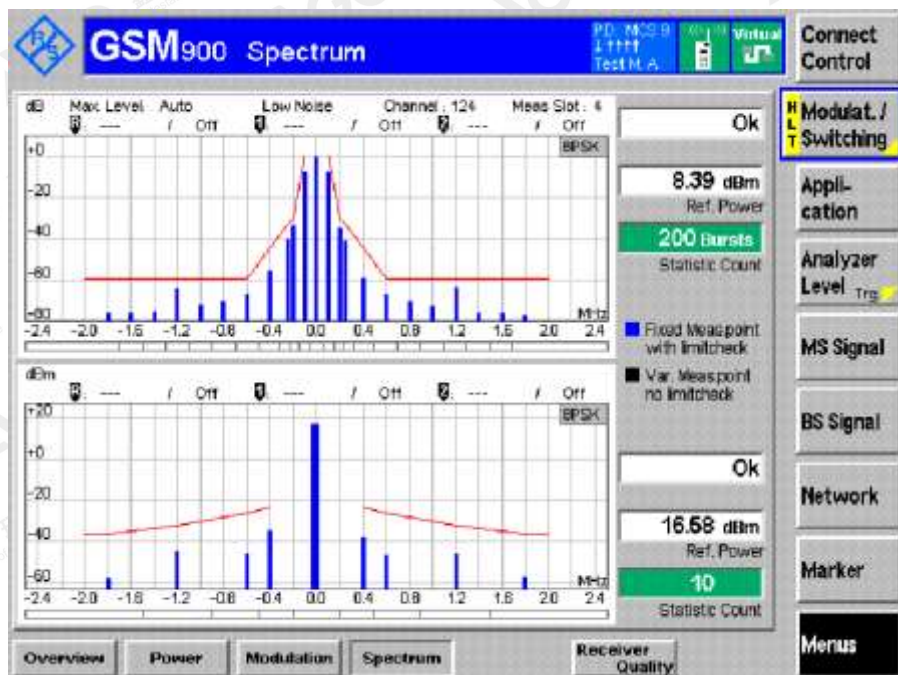
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Channel MCH PCL 8

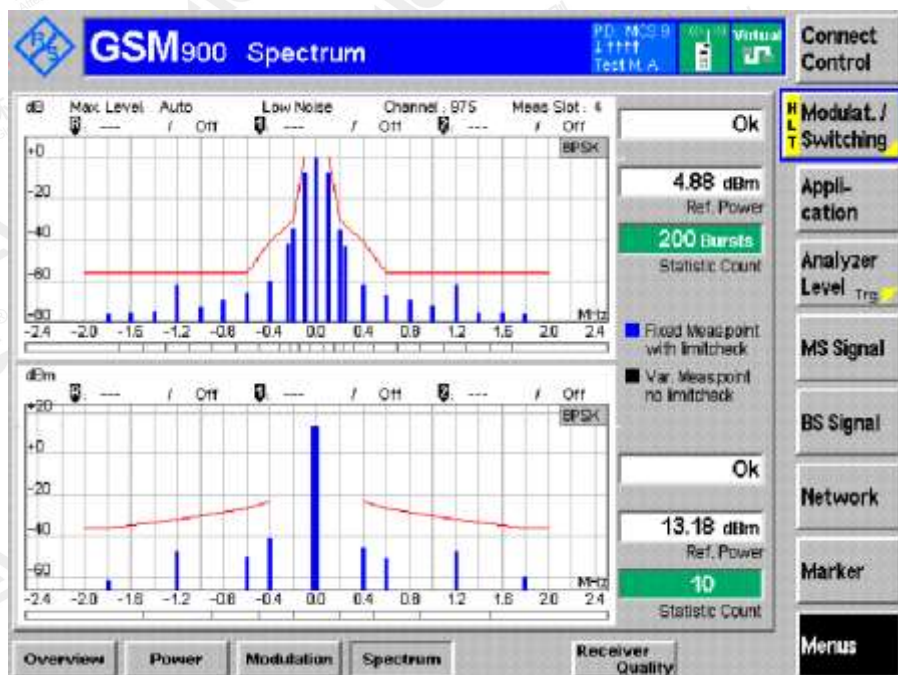


Channel HCH PCL 8

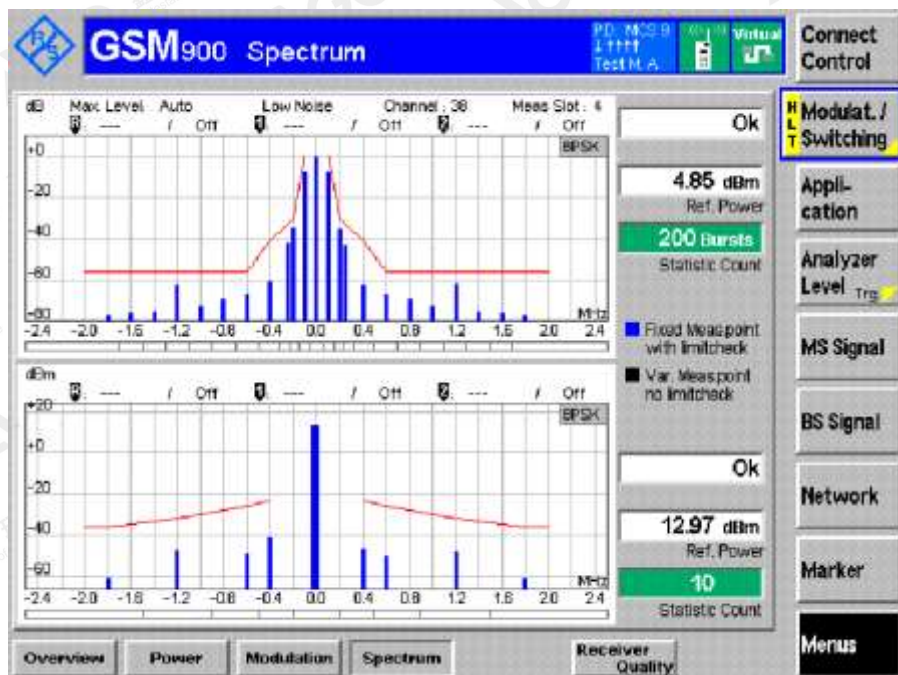


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Channel LCH PCL 12



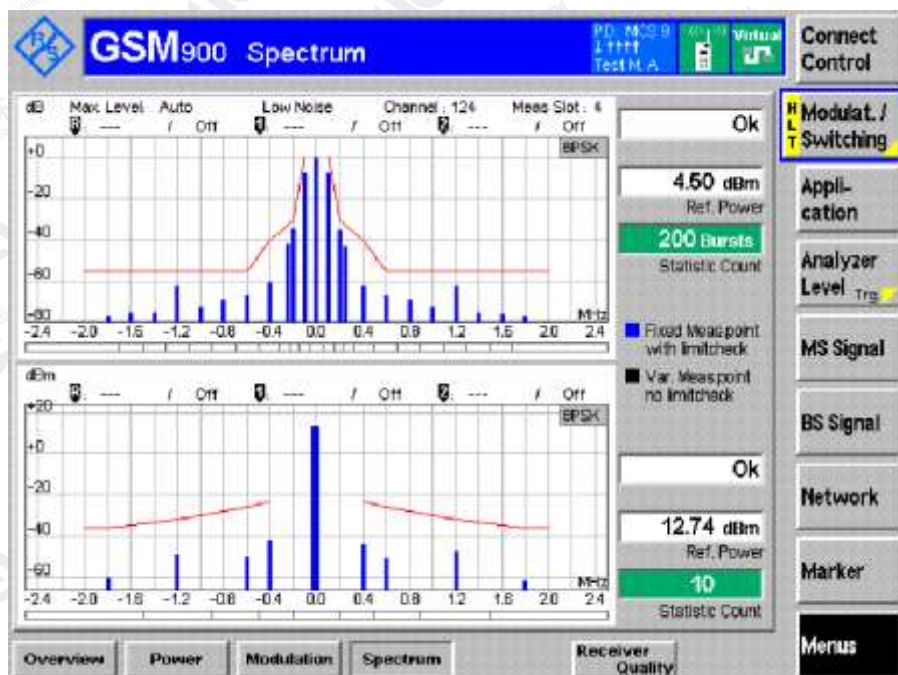
Channel MCH PCL 12



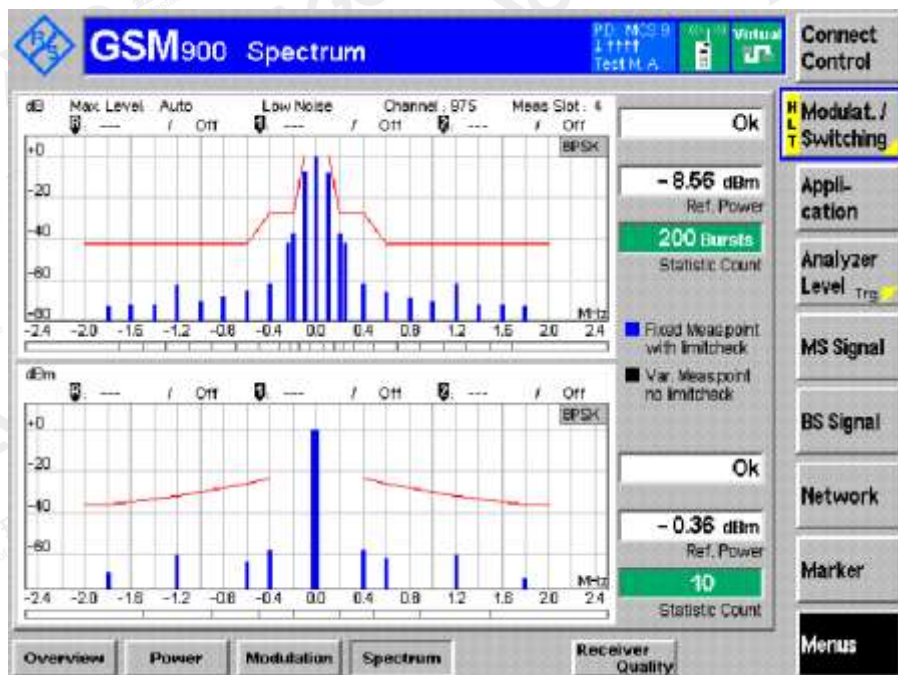
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Channel HCH PCL 12

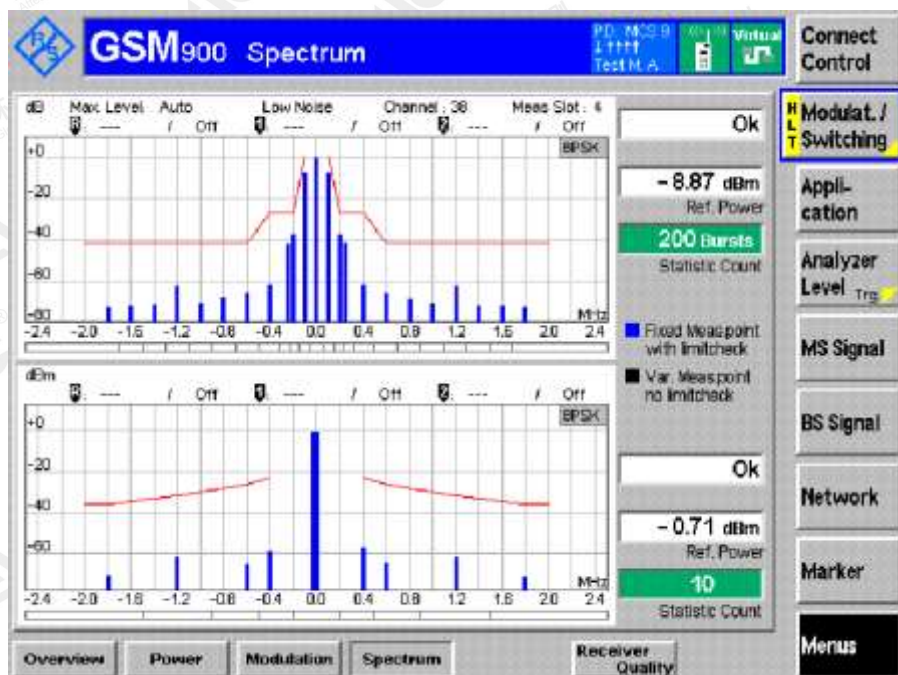


Channel LCH PCL 19

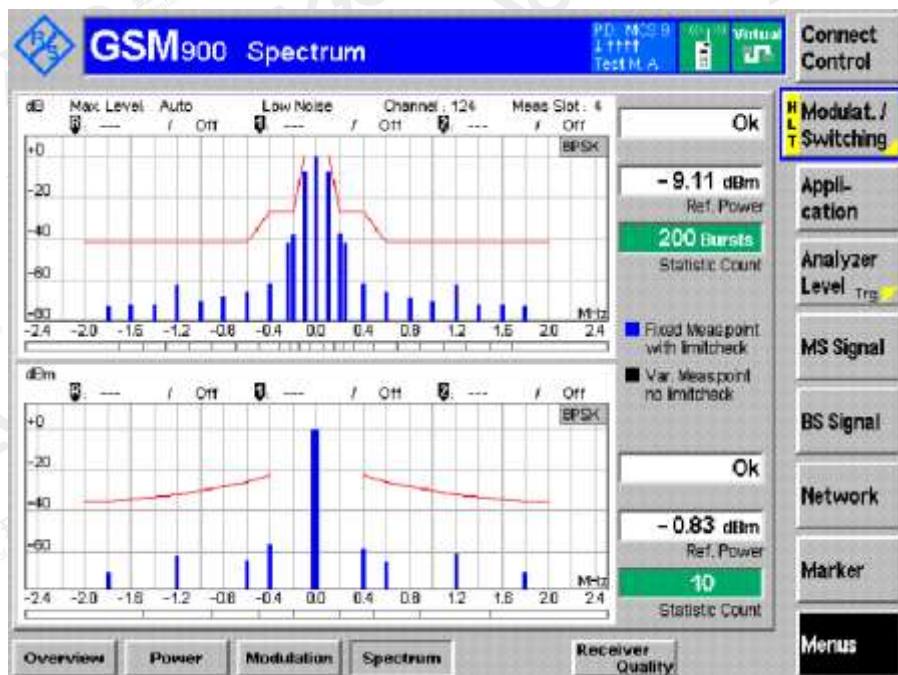


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Channel MCH PCL 19



Channel HCH PCL 19

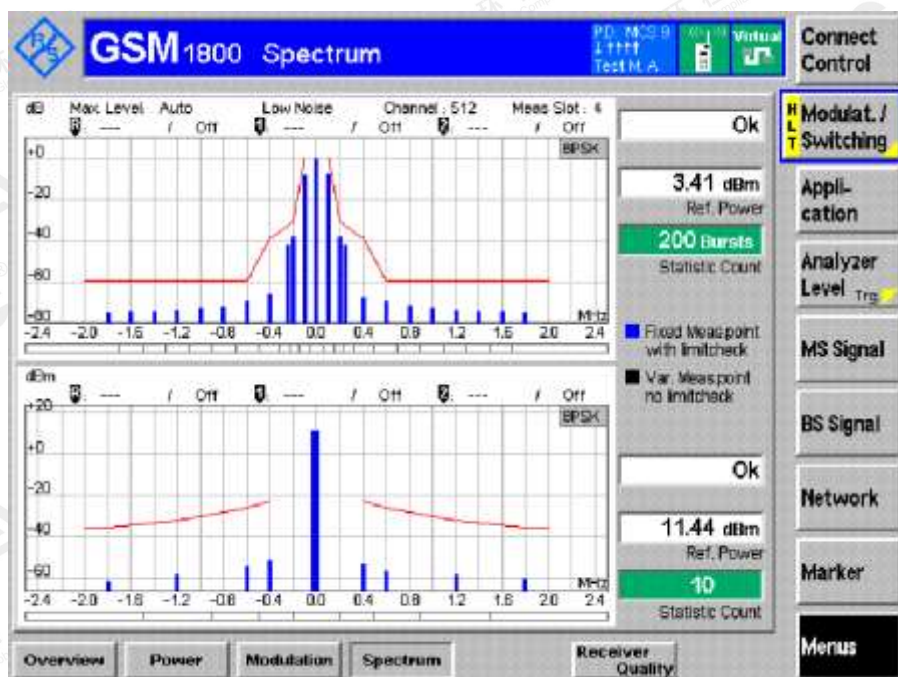


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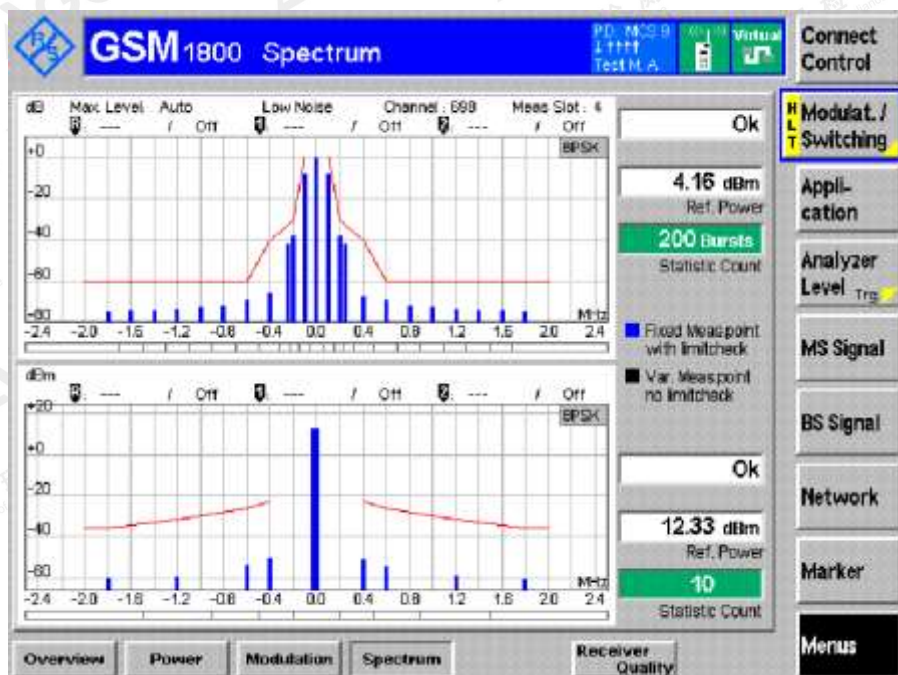


# DCS1800 TN,VN

## Channel LCH PCL 2

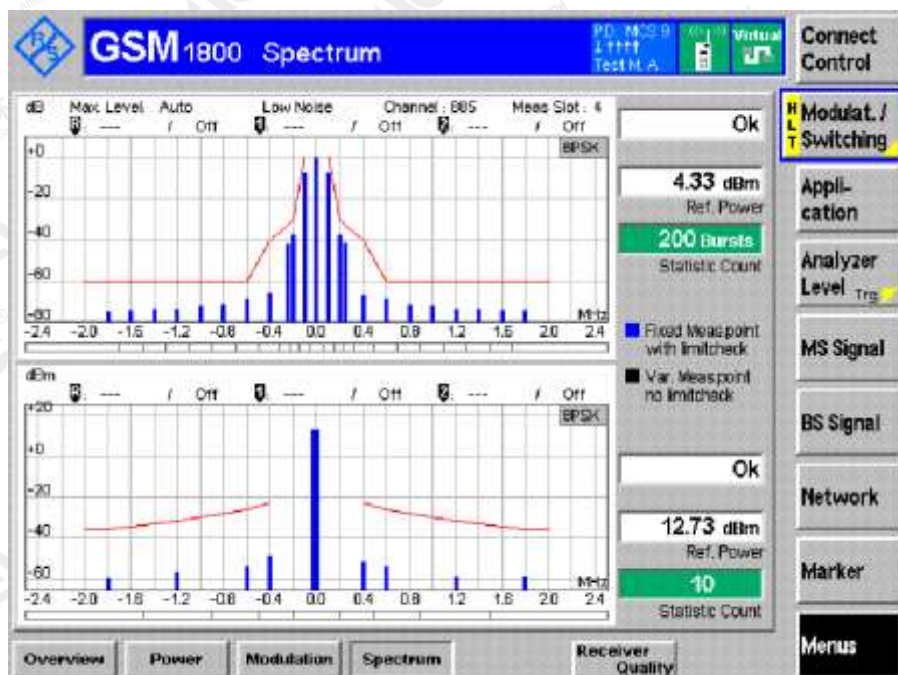


## Channel MCH PCL 2

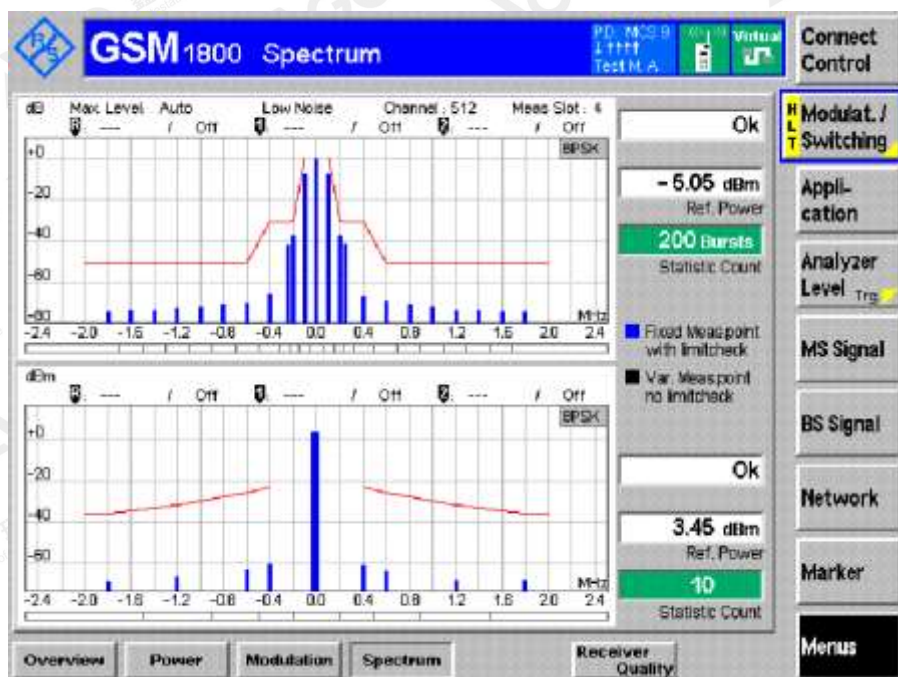


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Channel HCH PCL 2



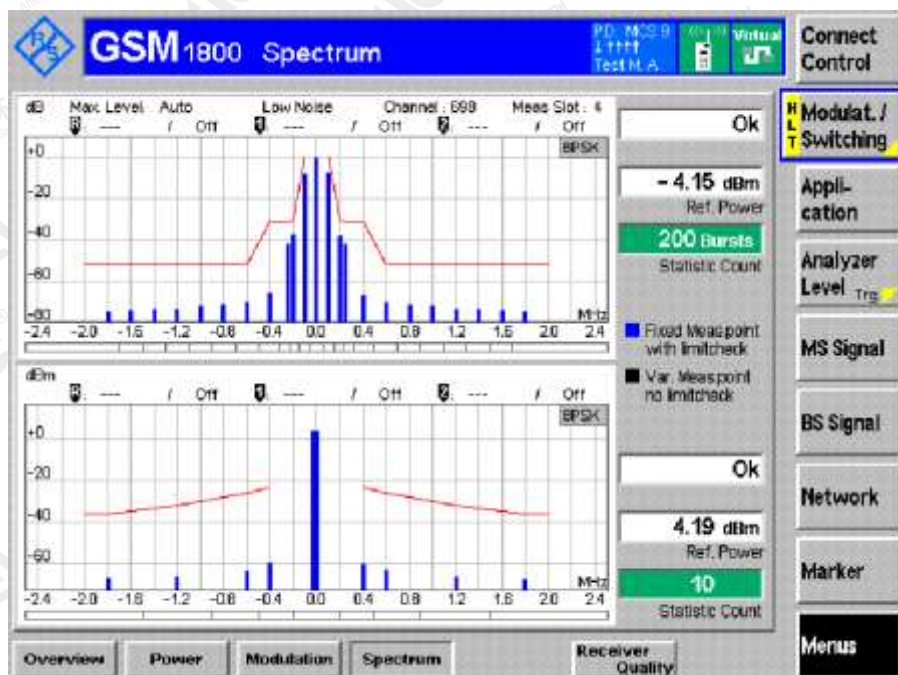
Channel LCH PCL 8



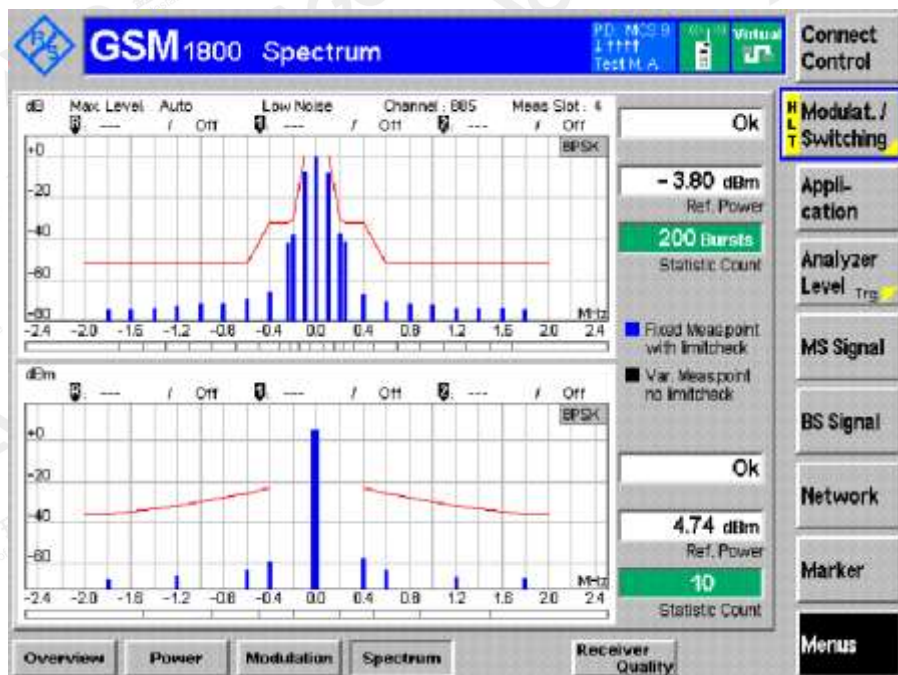
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Channel MCH PCL 8

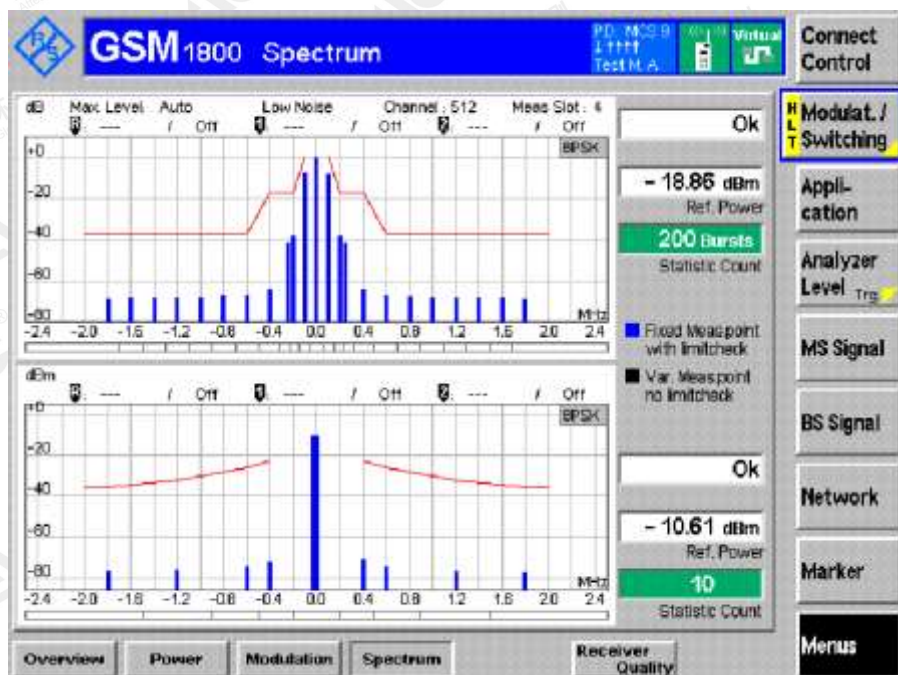


Channel HCH PCL 8

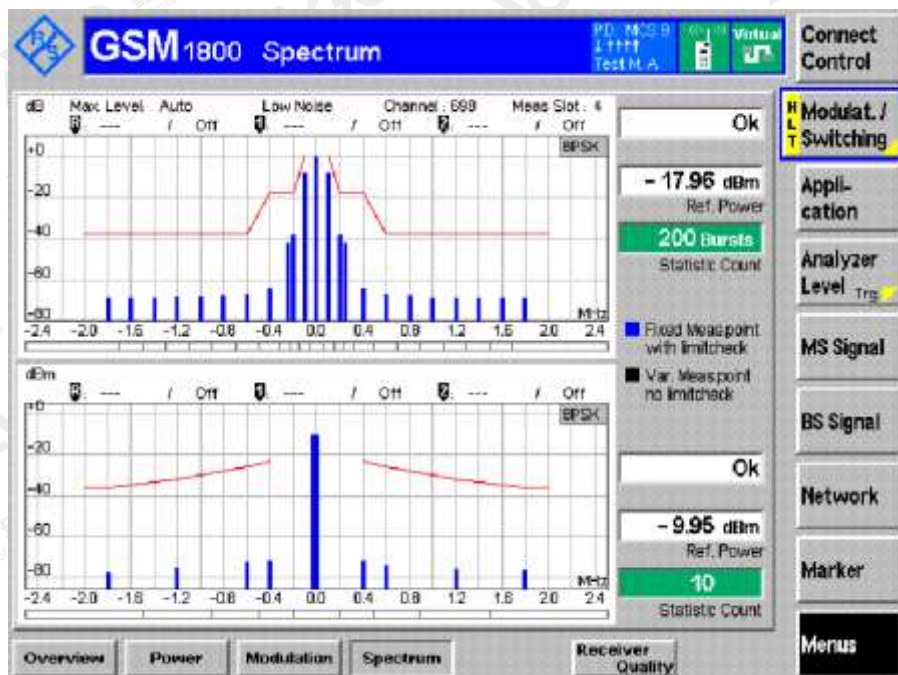


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Channel LCH PCL 15



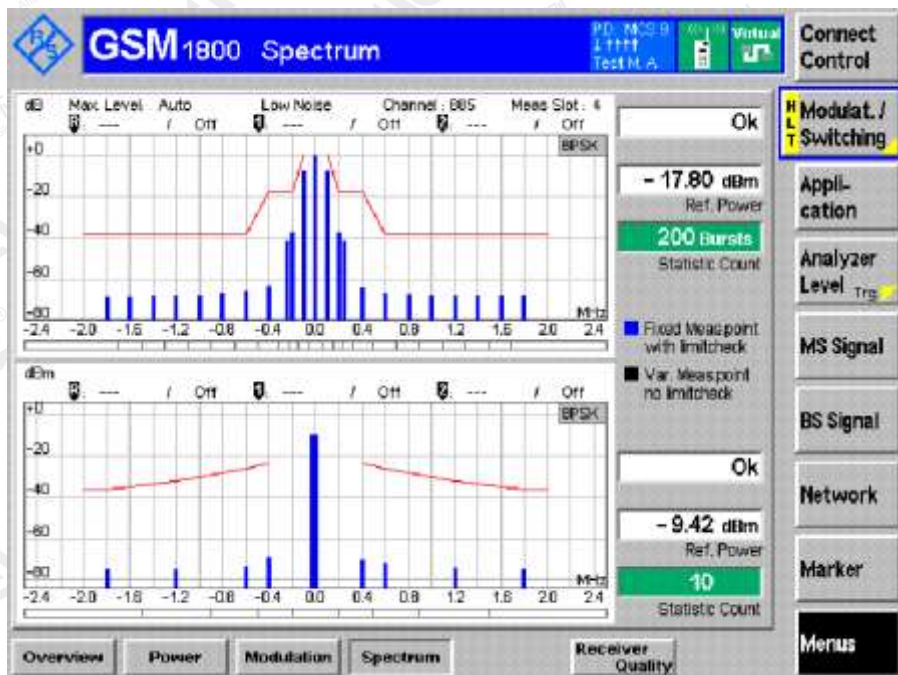
Channel MCH PCL 15



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Channel HCH PCL 15



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## 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   |

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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 |

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## 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   |

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**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   |

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**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<br>RBER<br>RBER | 6,742* $\alpha$<br>0,420/ $\alpha$<br>8,333  | 8 900<br>1 000 000<br>600 000 | Pass   |
|      | TCH/FS class Ib class II | 400 kHz         | FER<br>RBER<br>RBER | 11,461* $\alpha$<br>0,756/ $\alpha$<br>9,167 | 8 900<br>1 000 000<br>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<br>RBER<br>RBER | 3,371* $\alpha$<br>0,270/ $\alpha$<br>8,333 | 17 800<br>2 000 000<br>1 200 000 | Pass   |
|      | TCH/FS class Ib class II | 400 kHz         | FER<br>RBER<br>RBER | 5,714* $\alpha$<br>0,483/ $\alpha$<br>9,167 | 10 500<br>1 200 000<br>720 000   | Pass   |

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**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             | 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                  |        |

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**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 |

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**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<br>(no FH) | TUhigh<br>(ideal FH) | RA<br>(no FH) | HT<br>(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<br>(no FH) | TUhigh<br>(ideal<br>FH) | RA<br>(no FH) | HT<br>(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<br>dBm | < -104                 | <-104             | <-104                   | <-104         | <-103         | 1 %  | 0.1 %  | PASS |

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**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<br>(no FH) | TUhigh<br>(ideal FH) | RA (no<br>FH) | HT (no<br>FH) |        |
| TNVN | USF/MCS-5 to 9<br>dBm | -102                   | -97,5             | -99                  | -100          | -99           | Pass   |

**GSM1800**

|      | Type of Channel       | Propagation conditions |                   |                      |               |               | Result |
|------|-----------------------|------------------------|-------------------|----------------------|---------------|---------------|--------|
|      |                       | static                 | TUhigh<br>(no FH) | TUhigh<br>(ideal FH) | RA (no<br>FH) | HT (no<br>FH) |        |
| TNVN | USF/MCS-5 to 9<br>dBm | -102                   | -97,5             | -99                  | -100          | -99           | Pass   |

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## 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            | -63.20   | PASS   |
| 880MHz~915MHz               | 10k       | -59            | -76.26   | PASS   |
| 915MHz~1000MHz              | 100k      | -57            | -67.52   | PASS   |
| 1GHz~1710MHz                | 100k      | -47            | -69.46   | PASS   |
| 1710MHz~1785MHz             | 100k      | -53            | -64.17   | PASS   |
| 1785MHz~4GHz                | 100k      | -47            | -61.24   | PASS   |

### GSM1800

| Radiated spurious emissions | GSM1800 VN |                |          |        |
|-----------------------------|------------|----------------|----------|--------|
| Frequency range             | RBW(Hz)    | Max.Limit(dBm) | MCH(dBm) | Result |
| 30MHz~880MHz                | 10k        | -57            | -66.82   | PASS   |
| 880MHz~915MHz               | 10k        | -59            | -71.36   | PASS   |
| 915MHz~1000MHz              | 100k       | -57            | -65.74   | PASS   |
| 1GHz~1710MHz                | 100k       | -47            | -63.29   | PASS   |
| 1710MHz~1785MHz             | 100k       | -53            | -64.54   | PASS   |
| 1785MHz~4GHz                | 100k       | -47            | -60.69   | PASS   |

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## Appendix Y Intermodulation rejection - speech channels

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

### GSM900

|      |                             |    |      |
|------|-----------------------------|----|------|
| TNVH | Wanted Signal dBuVemf()     | 15 | Pass |
|      | First Interferer dBuVemf()  | 64 | Pass |
|      | Second Interferer dBuVemf() | 63 | Pass |

### GSM1800

| Intermodulation Test Signal Levels |                             |    | Result |
|------------------------------------|-----------------------------|----|--------|
| TNVH                               | Wanted Signal dBuVemf()     | 15 | Pass   |
|                                    | First Interferer dBuVemf()  | 68 | Pass   |
|                                    | Second Interferer dBuVemf() | 68 | Pass   |

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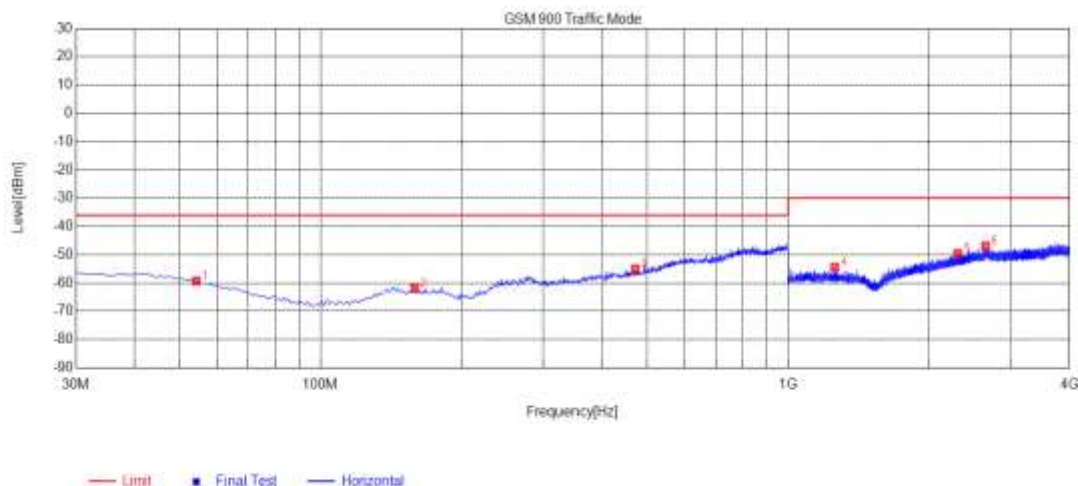
## APPENDIX Z. RADIATED SPURIOUS EMISSIONS TEST RESULT

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.

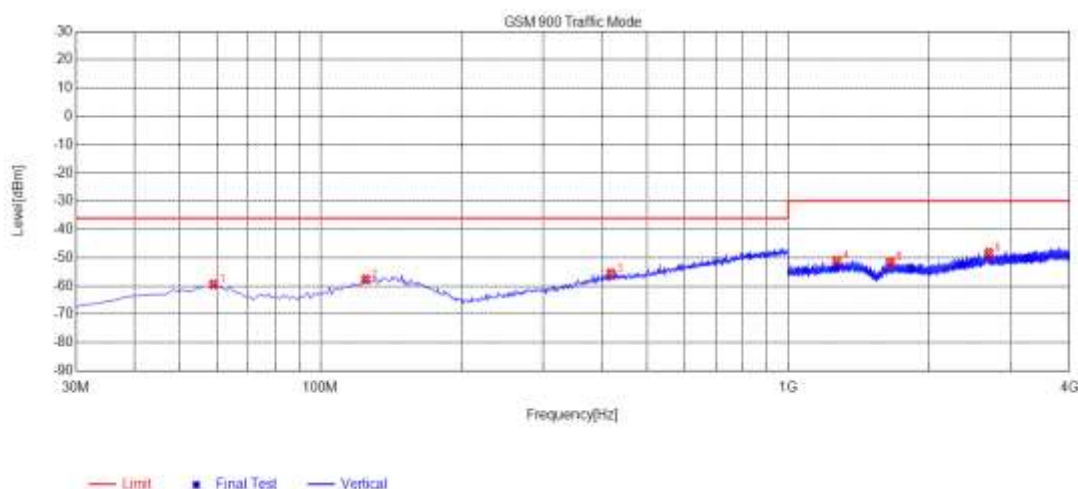
### RADIATED SPURIOUS EMISSIONS GSM 900- HORIZONTAL



| Suspected List |             |               |             |             |             |             |            |
|----------------|-------------|---------------|-------------|-------------|-------------|-------------|------------|
| NO.            | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Polarity   |
| 1              | 54.2500     | -91.71        | -59.27      | -36.00      | 23.27       | 32.44       | Horizontal |
| 2              | 159.0100    | -91.08        | -61.77      | -36.00      | 25.77       | 29.31       | Horizontal |
| 3              | 471.3500    | -90.78        | -55.00      | -36.00      | 19.00       | 35.78       | Horizontal |
| 4              | 1258.0258   | -50.75        | -54.47      | -30.00      | 24.47       | -3.72       | Horizontal |
| 5              | 2307.8308   | -52.56        | -49.62      | -30.00      | 19.62       | 2.94        | Horizontal |
| 6              | 2644.1644   | -51.63        | -46.94      | -30.00      | 16.94       | 4.69        | Horizontal |

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## RADIATED SPURIOUS EMISSIONS GSM 900- VERTICAL



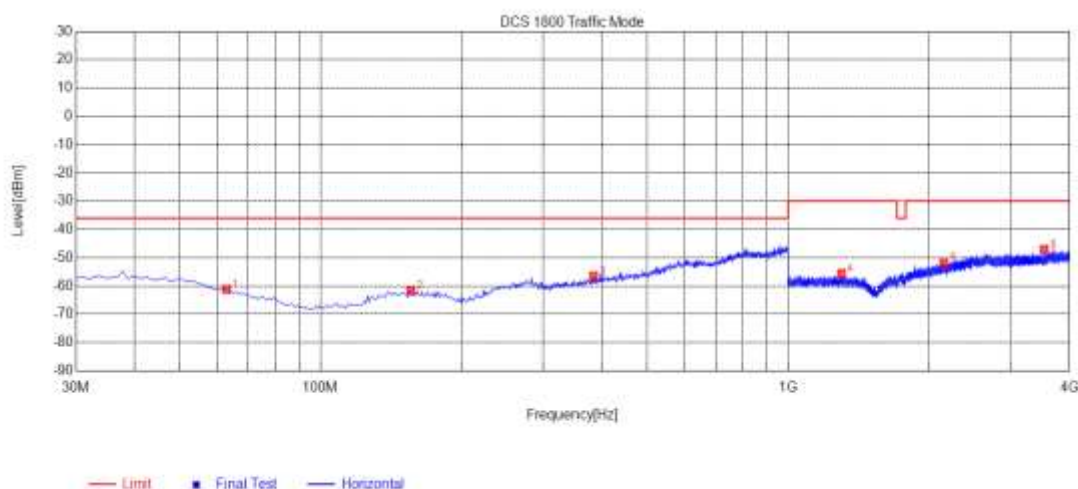
### Suspected List

| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|----------|
| 1   | 59.1000     | -90.69        | -59.45      | -36.00      | 23.45       | 31.24       | Vertical |
| 2   | 125.0600    | -91.06        | -57.68      | -36.00      | 21.68       | 33.38       | Vertical |
| 3   | 418.0000    | -90.72        | -55.48      | -36.00      | 19.48       | 35.24       | Vertical |
| 4   | 1270.3270   | -51.65        | -51.02      | -30.00      | 21.02       | 0.63        | Vertical |
| 5   | 1655.8656   | -53.19        | -51.58      | -30.00      | 21.58       | 1.61        | Vertical |
| 6   | 2687.6688   | -52.47        | -48.28      | -30.00      | 18.28       | 4.19        | Vertical |

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# RADIATED SPURIOUS EMISSIONS GSM 1800- HORIZONTAL

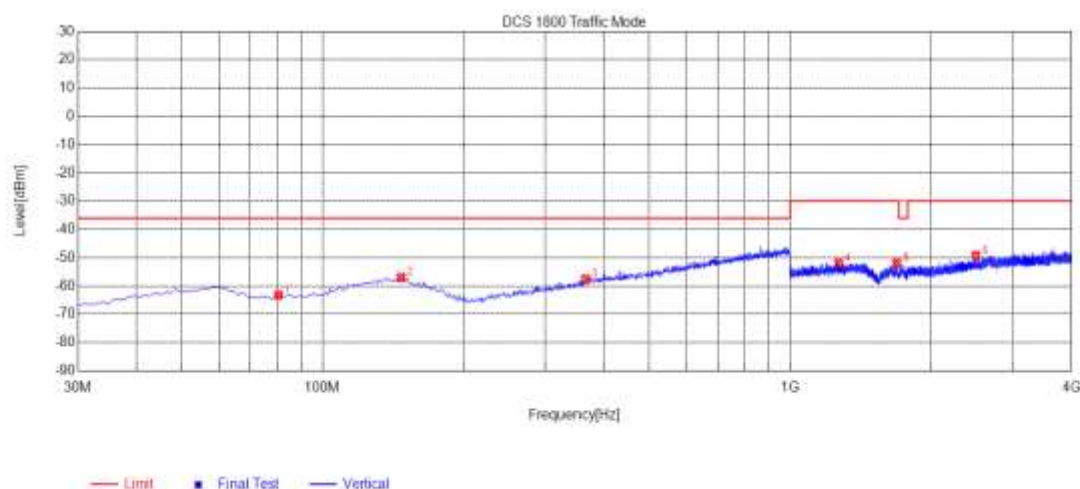


## Suspected List

| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|------------|
| 1   | 62.9800     | -91.29        | -61.17      | -36.00      | 25.17       | 30.12       | Horizontal |
| 2   | 156.1000    | -90.99        | -61.67      | -36.00      | 25.67       | 29.32       | Horizontal |
| 3   | 384.0500    | -90.53        | -56.50      | -36.00      | 20.50       | 34.03       | Horizontal |
| 4   | 1300.6301   | -51.92        | -55.55      | -30.00      | 25.55       | -3.63       | Horizontal |
| 5   | 2153.0153   | -53.67        | -51.94      | -30.00      | 21.94       | 1.73        | Horizontal |
| 6   | 3530.1530   | -53.33        | -47.06      | -30.00      | 17.06       | 6.27        | Horizontal |

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# RADIATED SPURIOUS EMISSIONS GSM 1800- VERTICAL



| Suspected List |             |               |             |             |             |             |          |
|----------------|-------------|---------------|-------------|-------------|-------------|-------------|----------|
| NO.            | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Polarity |
| 1              | 80.4400     | -91.81        | -63.19      | -36.00      | 27.19       | 28.62       | Vertical |
| 2              | 147.3700    | -90.85        | -56.97      | -36.00      | 20.97       | 33.88       | Vertical |
| 3              | 365.6200    | -91.14        | -57.55      | -36.00      | 21.55       | 33.59       | Vertical |
| 4              | 1271.2271   | -52.53        | -51.89      | -30.00      | 21.89       | 0.64        | Vertical |
| 5              | 1691.8692   | -53.39        | -51.90      | -30.00      | 21.90       | 1.49        | Vertical |
| 6              | 2495.9496   | -52.76        | -49.22      | -30.00      | 19.22       | 3.54        | Vertical |

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



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



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

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