

RF Test Report

Report No.: AGC00552190303EE03

PRODUCT DESIGNATION : Smart Phone
BRAND NAME : CUBOT
MODEL NAME : J7
APPLICANT : Shenzhen Huafurui Technology Co., Ltd.
DATE OF ISSUE : Apr. 22, 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 | / | Apr. 22, 2019 | Valid | Initial release |

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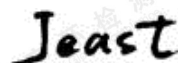
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1. TEST REPORT CERTIFICATION

| | |
|---------------------------------|--|
| Applicant | Shenzhen Huafului Technology Co., Ltd. |
| Address | Unit 1401 &1402, 14/F, Jin qi zhi gu mansion (No. 4 building of Chong wen Garden), Crossing of the Liu xian street and Tang ling road, Tao yuan street, Nan shan district, Shenzhen,P.R. China |
| Manufacturer | Shenzhen Huafului Technology Co., Ltd. |
| Address | Unit 1401 &1402, 14/F, Jin qi zhi gu mansion (No. 4 building of Chong wen Garden), Crossing of the Liu xian street and Tang ling road, Tao yuan street, Nan shan district, Shenzhen,P.R. China |
| Factory Name | Shenzhen Huafului Technology Co., Ltd. |
| Address | Unit 1401 &1402, 14/F, Jin qi zhi gu mansion (No. 4 building of Chong wen Garden), Crossing of the Liu xian street and Tang ling road, Tao yuan street, Nan shan district, Shenzhen,P.R. China |
| Product Designation | Smart Phone |
| Brand Name | CUBOT |
| Test Model | J7 |
| Date of test | Apr. 01, 2019~Apr. 22, 2019 |
| Deviation | None |
| Condition of Test Sample | Normal |
| Report Template | AGCRT-EC-2.5G1/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)

Apr. 22, 2019

Reviewed By



Max Zhang(Zhang Yi)

Apr. 22, 2019

Approved By



 Forrest Lei(Lei Yonggang)
 Authorized Officer

Apr. 22, 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:

| | |
|-----------------------------|--|
| Product Name | Smart Phone |
| Brand Name | CUBOT |
| Test Model | J7 |
| Product Type | GSM |
| Hardware Version | E553_MAIN_PCB_V1.1 |
| Software Version | E553_CQ_9055_80_PO_V01_S20190308 |
| Frequency Bands | <input checked="" type="checkbox"/> GSM 900 <input checked="" type="checkbox"/> DCS 1800 (EU Frequency) <input checked="" type="checkbox"/> GSM 850 <input checked="" type="checkbox"/> PCS1900 (none EU Frequency) |
| Modulation Mode | GMSK |
| Antenna Type | PIFA Antenna |
| Antenna Gain | 1.0dBi |
| Power Class | GSM900: 4, DCS1800: 1 |
| GSM Release Version | N/A |
| GPRS Class | Class 12 |
| SIM Card Description | There are dual-SIM cards for GSM, just one for GSM/WCDMA and the other only for GSM. |

2.1.2. PHOTOGRAPHS OF THE EUT

Please see photographs of the EUT.

2.1.3. IDENTIFICATION OF SAMPLES EUT

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

SAMPLE A01

| | |
|--------------------------------|--|
| Sample Reference Number | A01 |
| Factory Name | Shenzhen Huafului Technology Co., Ltd. |
| Test Model | J7 |
| Product Type | GSM |
| Frequency Bands | GSM 900: 880 -915 MHz (TX); 925 - 960 MHz (RX) 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 | NO | Type_EGPRS |
| 5 | EGPRS capable of 8PSK in Uplink, of all Multislot classes | NO | 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 |

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3. IDENTIFICATION OF THE RESPONSIBLE TESTING LOCATION

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

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

LIST OF EQUIPMENTS USED OF AGC

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

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| No. | Type | Manufacturer | S/N | Cal. Date | Cal. Due |
|-----|--------------------------------------|---------------|--------|---------------|---------------|
| | ENV4200 | | | | |
| 20 | Artificial Mains Network ENV216 | R&S | 101242 | July 13, 2018 | July 12, 2019 |
| 21 | Filter Bank Notch 1(880-915MHz) | MICRO-TRONICS | 010 | Feb. 27, 2019 | Feb. 26, 2020 |
| 22 | Filter Bank Notch 2(1710-1785MHz) | MICRO-TRONICS | 009 | Feb. 27, 2019 | Feb. 26, 2020 |
| 23 | Filter Bank Notch 3(1920-1980MHz) | MICRO-TRONICS | 008 | Feb. 27, 2019 | Feb. 26, 2020 |

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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 rd Generation Partnership Project; Technical Specification Group GSM/EDGE Radio Access Network Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification |

5.2. TEST ENVIRONMENT/CONDITIONS

| | |
|--|--|
| Normal Temperature (NT) | 15 ... 35 °C |
| Relative Humidity | 30 ... 75 % |
| Air Pressure | 980 ... 1020 kPa |
| Adapter Test Model Name | TPA-97050100VU |
| Details of Power Supply (Rated Input) | AC100-240V, 50/60Hz 0.15A |
| Details of Power Supply (Rated Output) | DC5.0V,1000mA |
| Extreme Temperature | Low Temperature (TL) = -10°C High Temperature (TH) = +40°C |
| Extreme Voltage of the EUT | Low Voltage = DC 3.4V Normal Voltage = DC 3.8V High Voltage = DC 4.35V |

Note: The Limit Voltage 4.35V was declared by manufacturer, The EUT couldn't be operate normally with higher voltage.
The maximum temperature of 40 is not a standard requirement and is measured according to the maximum service temperature stated by the manufacturer.

5.3. ITEMS USED IN THE TEST RESULTS LIST

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

| Verdict | Description |
|---------|---------------------------|
| PASS | EUT passed this test case |
| FAIL | EUT failed this test case |

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

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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 |
| 14.7.1 | 4.2.20 | Blocking and spurious response – speech channels | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS |

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| | | | | | | | |
|----------|--------|---|-----|------|-----|------|--|
| 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 | |
| 14.5.1.1 | 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 | |
| 14.2.1 | 4.2.42 | Reference sensitivity - TCH/FS | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | NT / LV | A01 | PASS | A01 | PASS | |
| | | NT / HV | A01 | PASS | A01 | PASS | |
| 14.2.3 | 4.2.43 | Reference sensitivity - FACCH/F | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| 14.16.1 | 4.2.44 | Minimum Input level for Reference Performance - GPRS | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | NT / LV | A01 | PASS | A01 | PASS | |
| | | NT / HV | A01 | PASS | A01 | PASS | |

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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 (ETSI TS 151010-1) | Test Case (EN 301 511) | Parameter | GSM 900 | | GSM 1800 | | Note |
|------------------------------------|------------------------------|---|---------|--------|----------|--------|------|
| | | | Sample | Result | Sample | Result | |
| 12.1.1 | 4.2.12 | Conducted spurious emissions - MS allocated a channel | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | NT / LV | A01 | PASS | A01 | PASS | |
| | | NT / HV | A01 | PASS | A01 | PASS | |
| 12.1.2 | 4.2.13 | Conducted spurious emissions - MS in idle mode | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | NT / LV | A01 | PASS | A01 | PASS | |
| | | NT / HV | A01 | PASS | A01 | PASS | |
| 12.2.1 | 4.2.16 | Radiated spurious emissions - MS allocated a channel | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | NT / LV | A01 | PASS | A01 | PASS | |
| | | NT / HV | A01 | PASS | A01 | PASS | |
| 12.2.2 | 4.2.17 | Radiated spurious emissions - MS in idle mode | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | NT / LV | A01 | PASS | A01 | PASS | |
| | | NT / HV | A01 | PASS | A01 | PASS | |
| 13.1 | 4.2.1 | Transmitter - Frequency error and phase error | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | LT / LV | A01 | PASS | A01 | PASS | |
| | | LT / HV | A01 | PASS | A01 | PASS | |
| | | HT / LV | A01 | PASS | A01 | PASS | |
| | | HT / HV | A01 | PASS | A01 | PASS | |
| | | Vibration X-axis | A01 | PASS | A01 | PASS | |
| | | Vibration Y-axis | A01 | PASS | A01 | PASS | |
| 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 | |
| 14.7.1 | 4.2.20 | Blocking and spurious response – speech channels | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| 14.6.1 | 4.2.32 | Intermodulation rejection - speech channels | | | | | |

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| | | | | | | | |
|----------|--------|---|-----|------|-----|------|--|
| | | 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 | |
| 14.5.1.1 | 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 | |
| 14.2.1 | 4.2.42 | Reference sensitivity - TCH/FS | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | NT / LV | A01 | PASS | A01 | PASS | |
| | | NT / HV | A01 | PASS | A01 | PASS | |
| 14.2.3 | 4.2.43 | Reference sensitivity - FACCH/F | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| 14.16.1 | 4.2.44 | Minimum Input level for Reference Performance - GPRS | | | | | |
| | | NT / NV | A01 | PASS | A01 | PASS | |
| | | NT / LV | A01 | PASS | A01 | PASS | |
| | | NT / HV | A01 | PASS | A01 | PASS | |

Note: The worst test case(SIM Card 1) recorded in the test report.

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Appendix A. Transmitter - Frequency error and phase error

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of follow:

GSM900

| RMS phase error(degree) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|--------|-----|-----|--------|
| | | GSM900 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 5 | 0.3 | 0.4 | 0.3 | PASS |
| | 19 | 0.6 | 0.6 | 0.6 | PASS |
| When the MS is being vibrated | 5 | 0.3 | 0.4 | 0.4 | PASS |
| | 19 | 0.6 | 0.6 | 0.6 | PASS |

| Peak phase error(degree) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|--------|-----|-----|--------|
| | | GSM900 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 5 | 1.3 | 1.1 | 1.1 | PASS |
| | 19 | 8.3 | 8.2 | 8.2 | PASS |
| When the MS is being vibrated | 5 | 1.2 | 1.1 | 1.1 | PASS |
| | 19 | 8.2 | 8.3 | 8.1 | PASS |

| frequency error(Hz) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|--------|-----|-----|--------|
| | | GSM900 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 5 | 3 | 4 | 2 | PASS |
| | 19 | 3 | 7 | 2 | PASS |
| When the MS is being vibrated | 5 | 4 | 3 | 2 | PASS |
| | 19 | 3 | 3 | 5 | PASS |

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DCS1800

| RMS phase error(degree) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|---------|-----|-----|--------|
| | | DCS1800 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 0 | 0.7 | 0.7 | 0.5 | PASS |
| | 15 | 1.0 | 0.8 | 0.6 | PASS |
| When the MS is being vibrated | 0 | 0.7 | 0.6 | 0.5 | PASS |
| | 15 | 1.0 | 0.8 | 0.6 | PASS |

| Peak phase error(degree) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|---------|-----|-----|--------|
| | | DCS1800 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 0 | 5.4 | 5.9 | 1.6 | PASS |
| | 15 | 8.6 | 6.7 | 5.5 | PASS |
| When the MS is being vibrated | 0 | 5.5 | 5.7 | 1.6 | PASS |
| | 15 | 8.8 | 6.6 | 5.6 | PASS |

| frequency error(Hz) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|---------|-----|-----|--------|
| | | DCS1800 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 0 | 9 | 10 | 8 | PASS |
| | 15 | 12 | 14 | 9 | PASS |
| When the MS is being vibrated | 0 | 9 | 7 | 9 | PASS |
| | 15 | 11 | 11 | 9 | PASS |

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Appendix B.Frequency error under multipath and interference conditions

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

GSM900

| Fading set | Test conditions | Power control LEVEL | Result | | | |
|------------|-----------------|---------------------|--------|-----|-----|--------|
| | | | GSM900 | | | |
| | | | ARFCN | | | |
| | | | LCH | MCH | HCH | Result |
| RA250 | TNVN | 5 | 5 | 0 | 3 | PASS |
| | | 19 | 5 | 6 | 4 | PASS |
| HT100 | TNVN | 5 | 4 | 3 | 2 | PASS |
| | | 19 | 5 | 4 | 4 | PASS |
| TU50 | TNVN | 5 | 3 | 4 | 2 | PASS |
| | | 19 | 4 | 5 | 5 | PASS |
| TU3 | TNVN | 5 | 5 | 7 | 4 | PASS |
| | | 19 | 4 | 4 | 5 | PASS |

DCS1800

| Fading set | Test conditions | Power control LEVEL | Result | | | |
|------------|-----------------|---------------------|---------|-----|-----|--------|
| | | | DCS1800 | | | |
| | | | ARFCN | | | |
| | | | LCH | MCH | HCH | Result |
| RA130 | TNVN | 0 | 9 | 12 | 9 | PASS |
| | | 15 | 10 | 13 | 10 | PASS |
| HT100 | TNVN | 0 | 13 | 11 | 5 | PASS |
| | | 15 | 16 | 14 | 7 | PASS |
| TU50 | TNVN | 0 | 11 | 14 | 9 | PASS |
| | | 15 | 10 | 16 | 9 | PASS |
| TU1.5 | TNVN | 0 | 10 | 12 | 8 | PASS |
| | | 15 | 14 | 15 | 12 | PASS |

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

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

GSM900

| RMS phase error(degree) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|--------|-----|-----|--------|
| | | GSM900 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 5 | 0.4 | 0.4 | 0.4 | PASS |
| | 19 | 0.4 | 0.4 | 0.4 | PASS |
| When the MS is being vibrated | 5 | 0.4 | 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 | 2.0 | 1.1 | 1.1 | PASS |
| | 19 | 1.8 | 1.7 | 1.2 | PASS |
| When the MS is being vibrated | 5 | 2.1 | 1.2 | 1.1 | PASS |
| | 19 | 1.8 | 1.7 | 1.3 | PASS |

| frequency error(Hz) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|--------|-----|-----|--------|
| | | GSM900 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 5 | 5 | 2 | 2 | PASS |
| | 19 | 2 | 6 | 1 | PASS |
| When the MS is being vibrated | 5 | 2 | 4 | 1 | PASS |
| | 19 | 4 | 7 | 1 | 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 | 0.6 | 0.5 | PASS |
| | 15 | 0.5 | 0.5 | 0.5 | PASS |
| When the MS is being vibrated | 0 | 0.5 | 0.6 | 0.6 | PASS |
| | 15 | 0.6 | 0.5 | 0.5 | PASS |

| Peak phase error(degree) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|---------|-----|-----|--------|
| | | DCS1800 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 0 | 2.4 | 4.5 | 3.2 | PASS |
| | 15 | 4.1 | 2.2 | 1.5 | PASS |
| When the MS is being vibrated | 0 | 2.4 | 4.7 | 3.3 | PASS |
| | 15 | 4.1 | 2.2 | 1.5 | PASS |

| frequency error(Hz) | Power control LEVEL | Result | | | |
|-------------------------------|---------------------|---------|-----|-----|--------|
| | | DCS1800 | | | |
| | | ARFCN | | | |
| | | LCH | MCH | HCH | Result |
| TN VN | 0 | 5 | 5 | 8 | PASS |
| | 15 | 3 | 11 | 6 | PASS |
| When the MS is being vibrated | 0 | 2 | 10 | 9 | PASS |
| | 15 | 6 | 7 | 6 | PASS |

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Appendix D. Transmitter output power and burst timing

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

A. output power

| Transmitter Output power(dBm) | Power level | Result | | | |
|-------------------------------|-------------|------------------|-------|-------|--------|
| | | Traffic Channels | | | |
| GSM900 | | LCH | MCH | HCH | Result |
| TN,VN | 5 | 33.13 | 33.33 | 33.26 | PASS |
| | 12 | 18.90 | 19.29 | 19.34 | PASS |
| | 19 | 5.28 | 5.55 | 5.51 | PASS |

| Transmitter Output power(dBm) | Power level | Result | | | |
|-------------------------------|-------------|------------------|-------|-------|--------|
| | | Traffic Channels | | | |
| DCS1800 | | LCH | MCH | HCH | Result |
| TN,VN | 0 | 29.84 | 30.23 | 29.46 | PASS |
| | 8 | 12.49 | 13.88 | 14.31 | PASS |
| | 15 | -1.43 | 1.19 | 2.19 | PASS |

B. Power VS Time

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

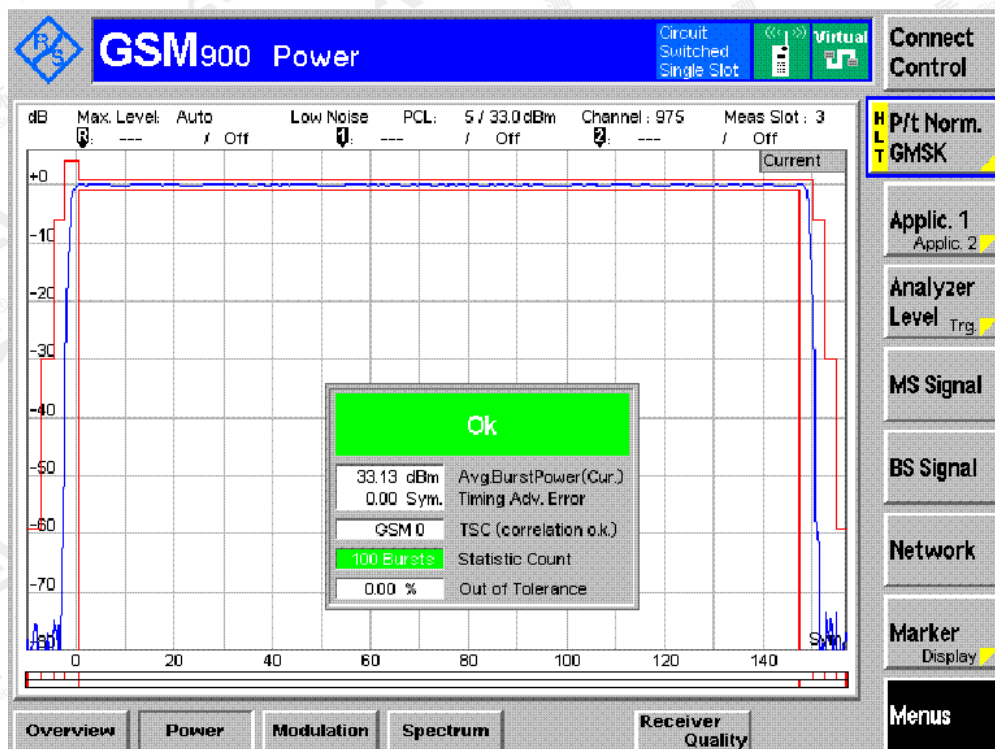
| Power VS Time Graph | ACCESS BURST | Result | | |
|---------------------|--------------|------------------|------|------|
| | | Traffic Channels | | |
| DCS1800 | Power level | LCH | MCH | HCH |
| TN,VN | 0 | PASS | PASS | PASS |
| | 8 | PASS | PASS | PASS |
| | 15 | PASS | PASS | PASS |

Graphs of output power and burst timing

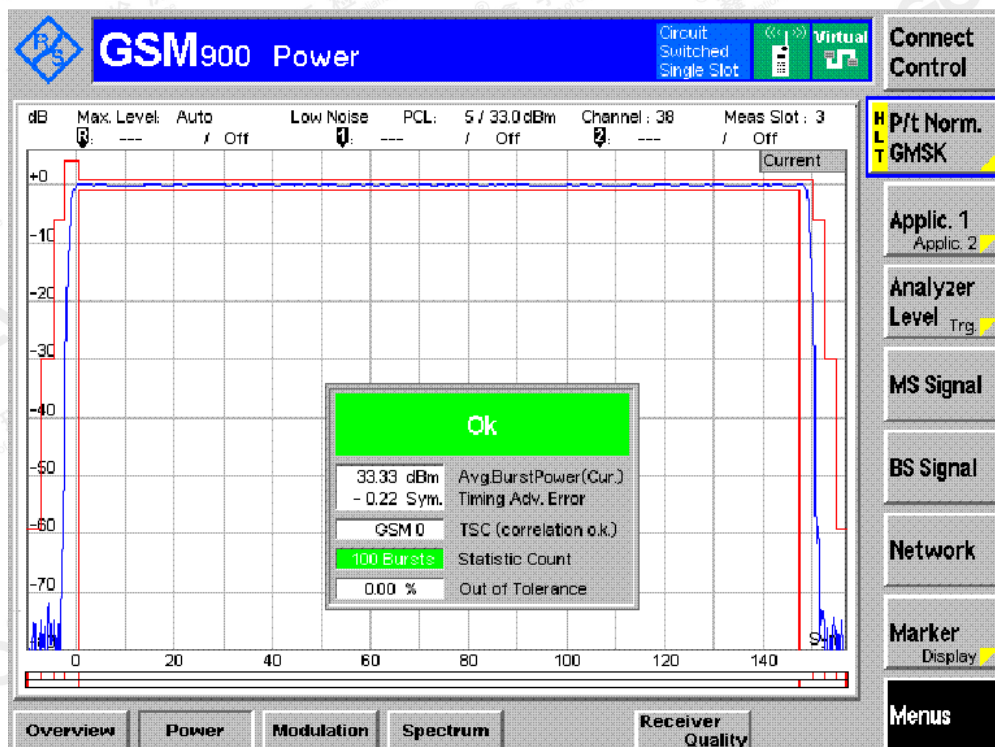
GSM 900 TN,VN

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Channel LCH PCL 5

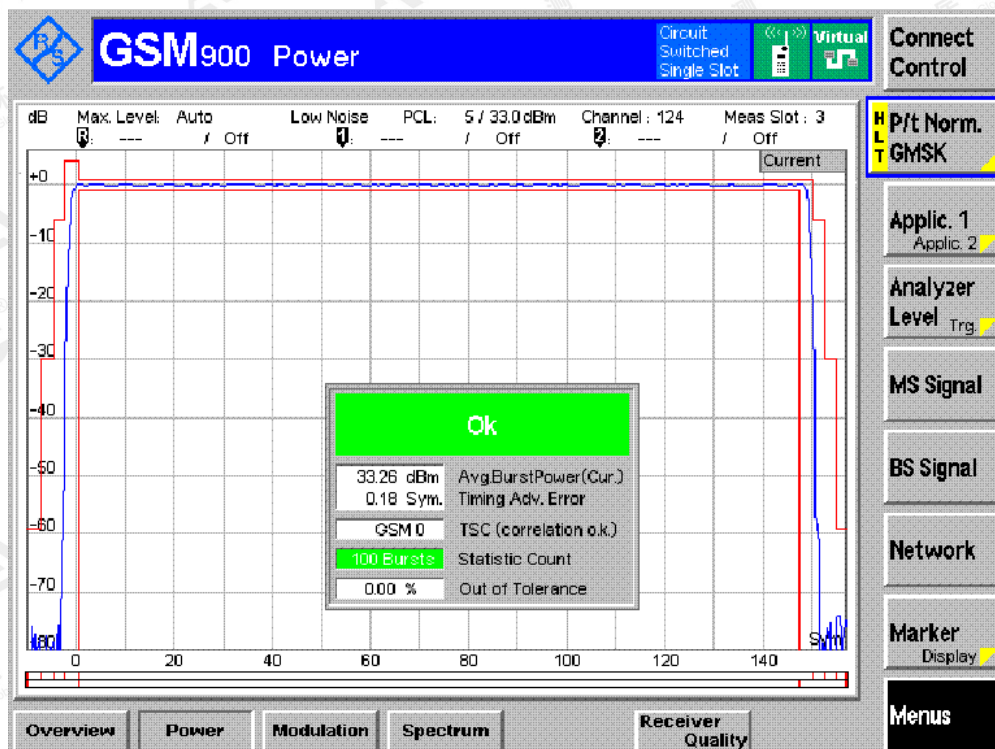


Channel MCH PCL 5

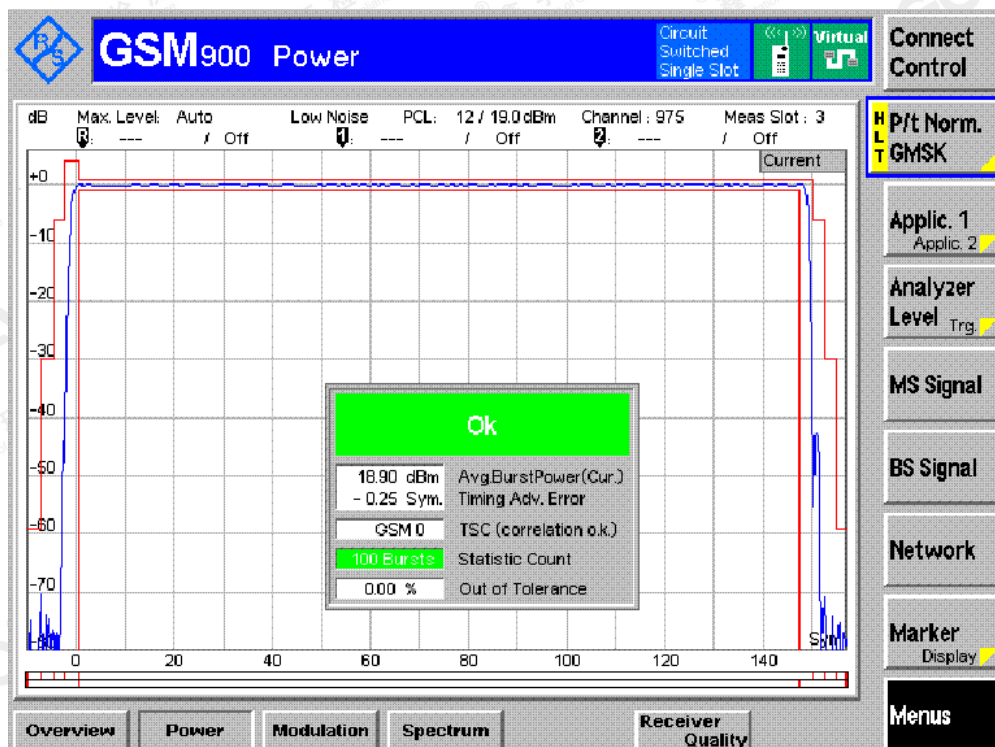


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Channel HCH PCL 5

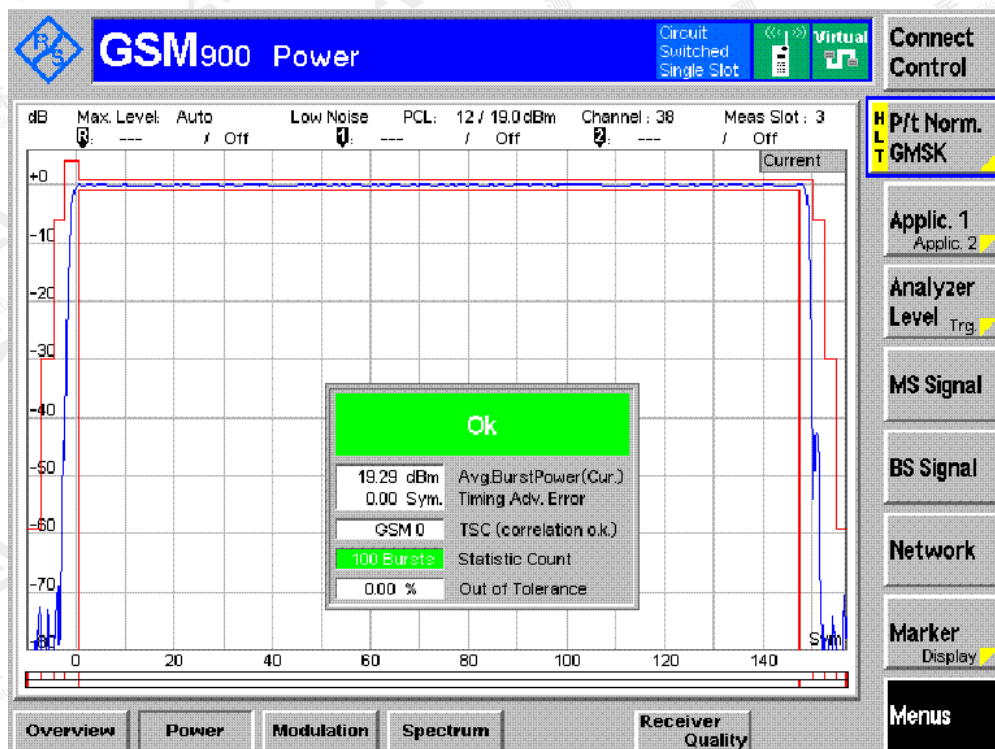


Channel LCH PCL 12

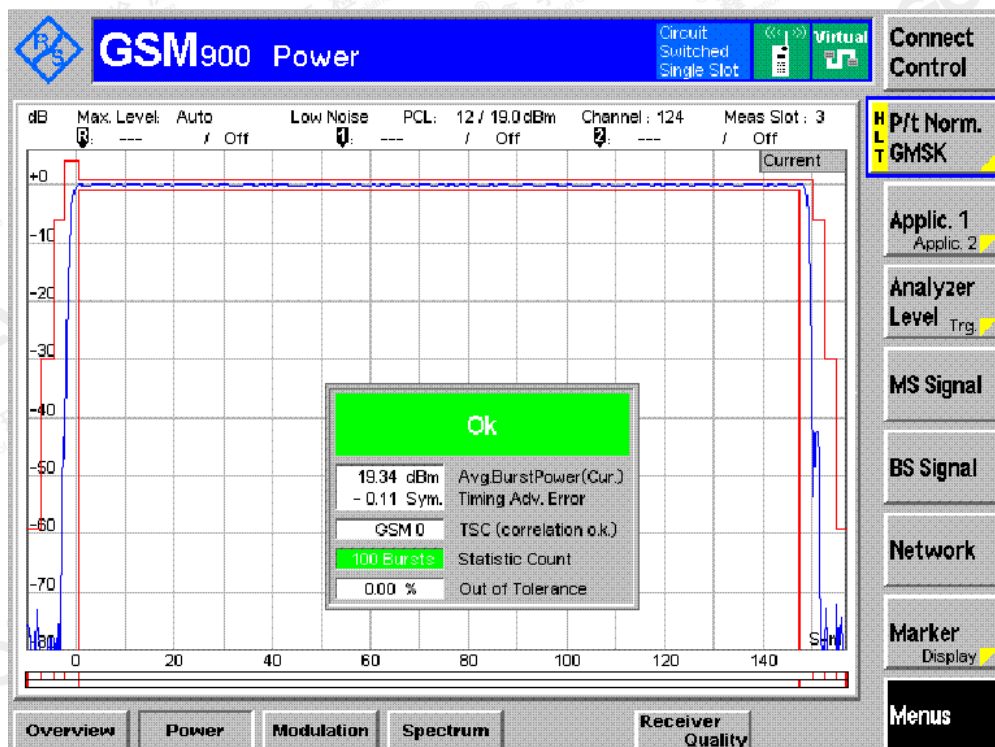


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Channel MCH PCL 12

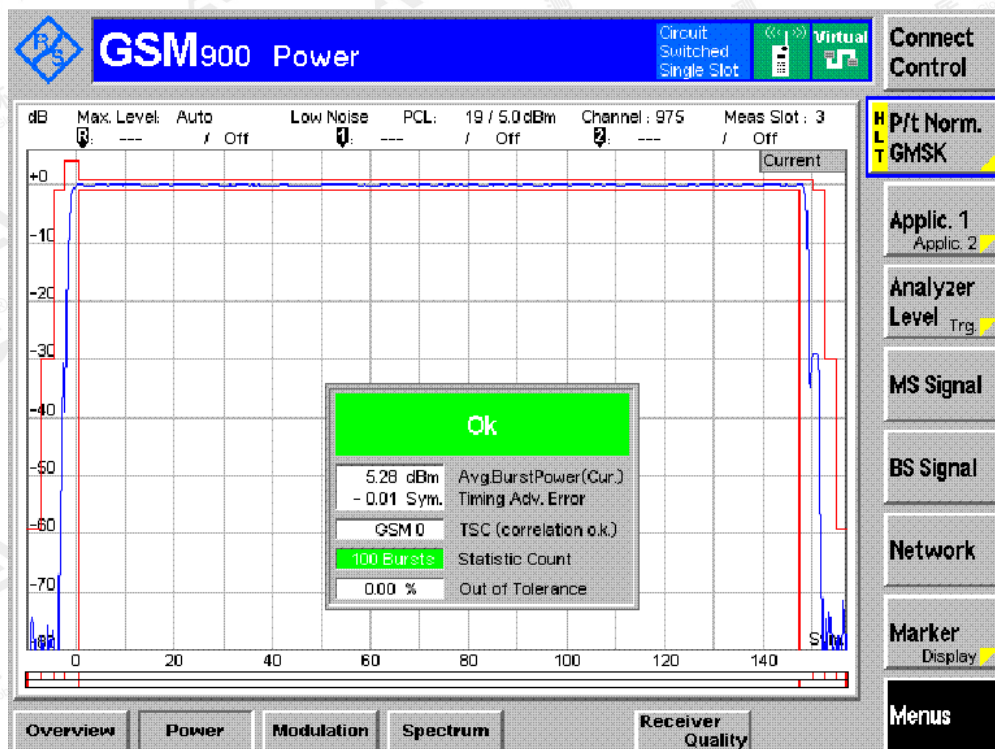


Channel HCH PCL 12

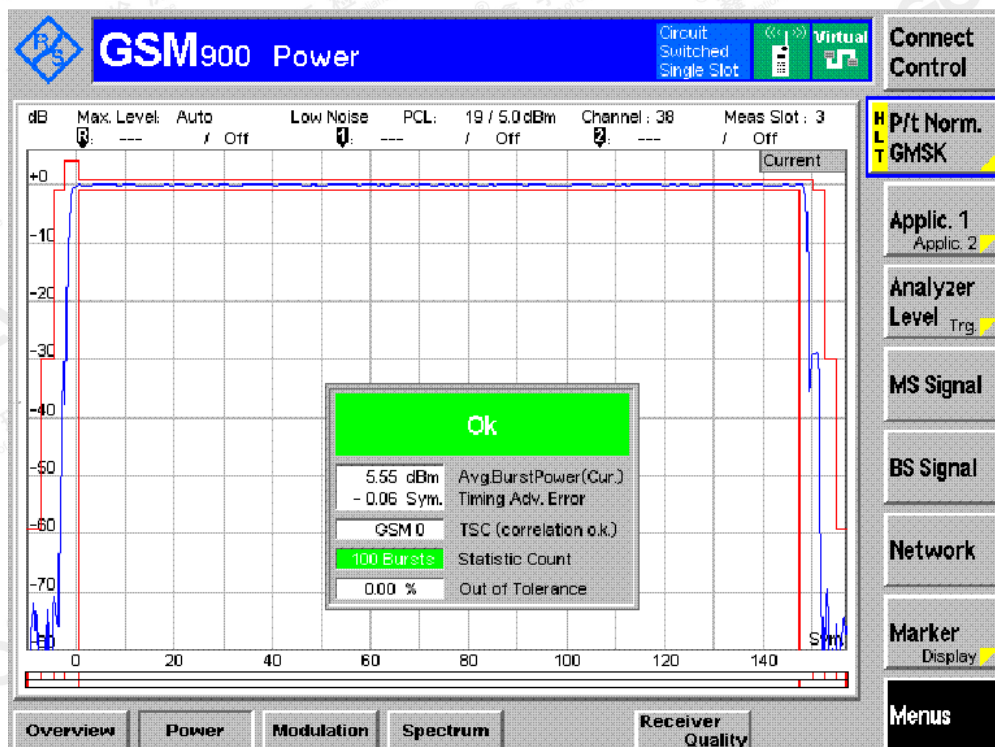


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Channel LCH PCL 19

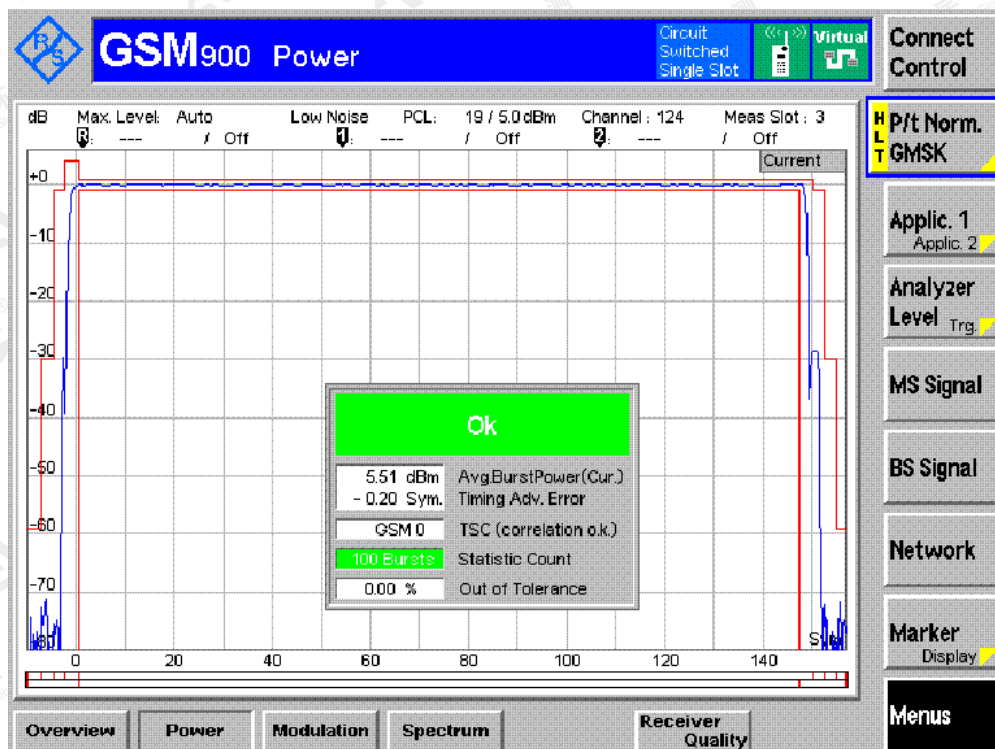


Channel MCH PCL 19

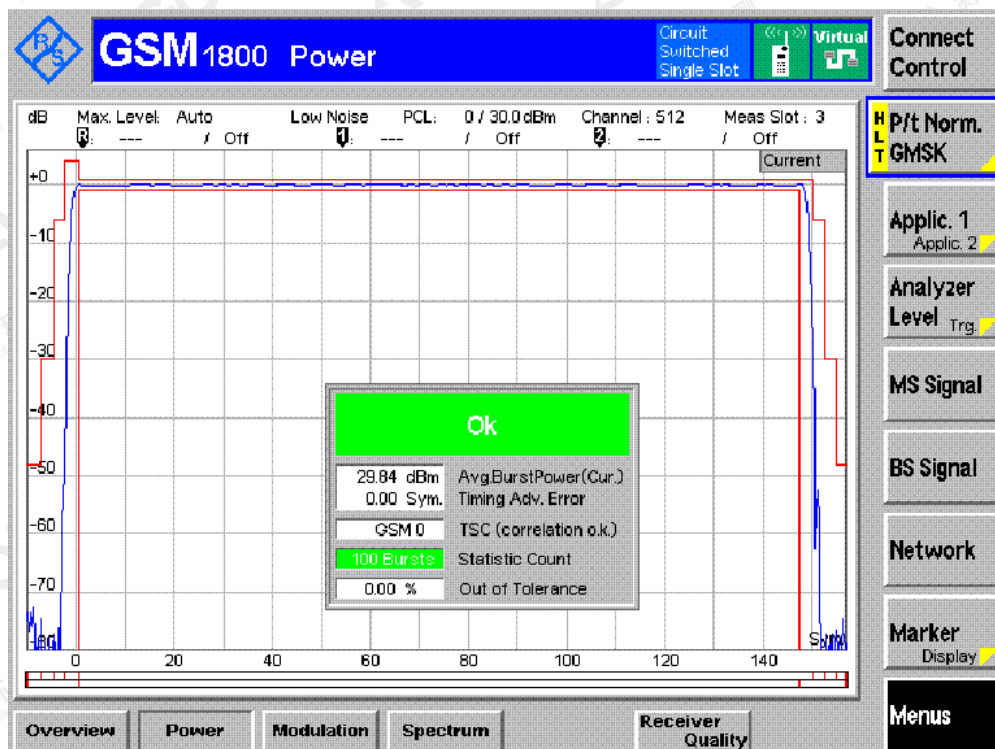


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Channel HCH PCL 19

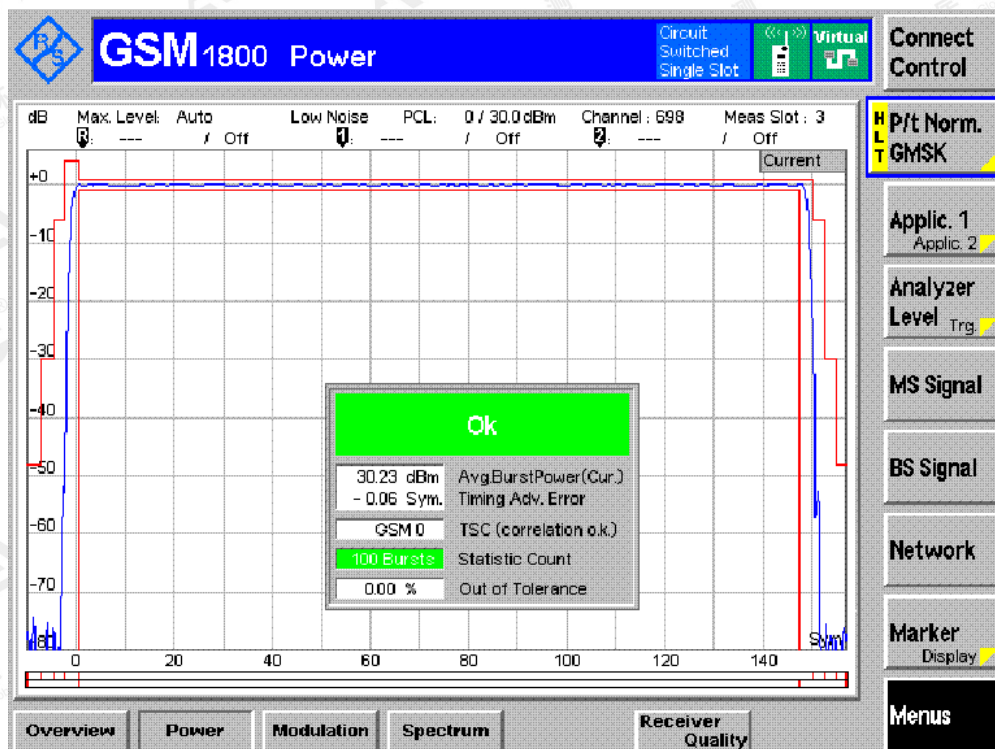


DCS1800 TN,VN
Channel LCH PCL 0

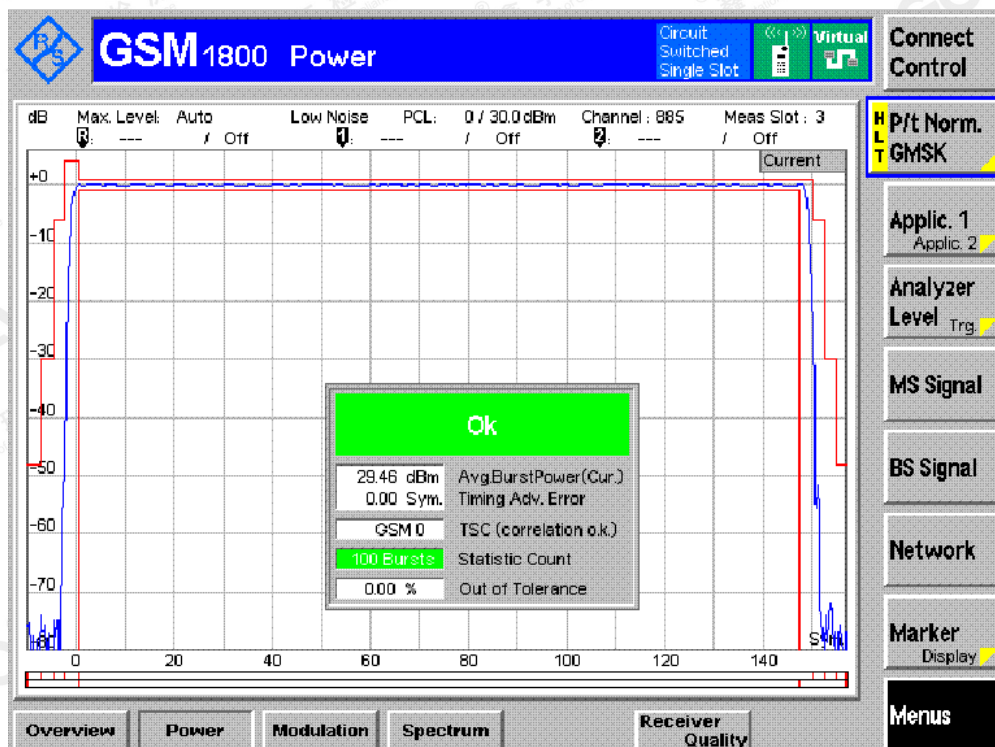


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Channel MCH PCL 0

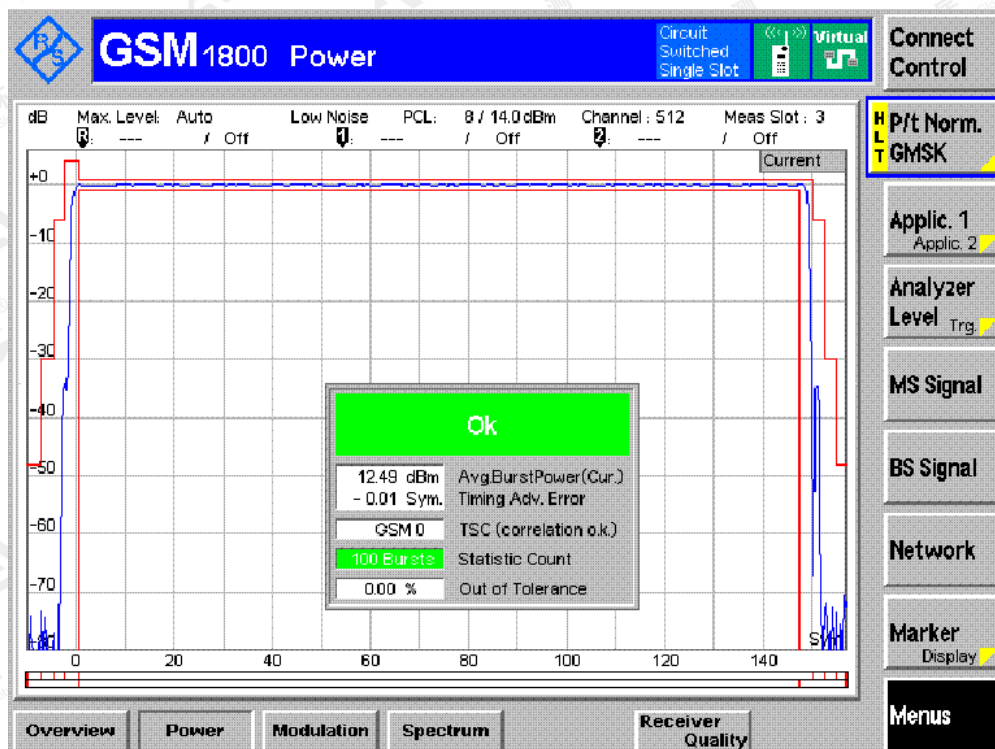


Channel HCH PCL 0

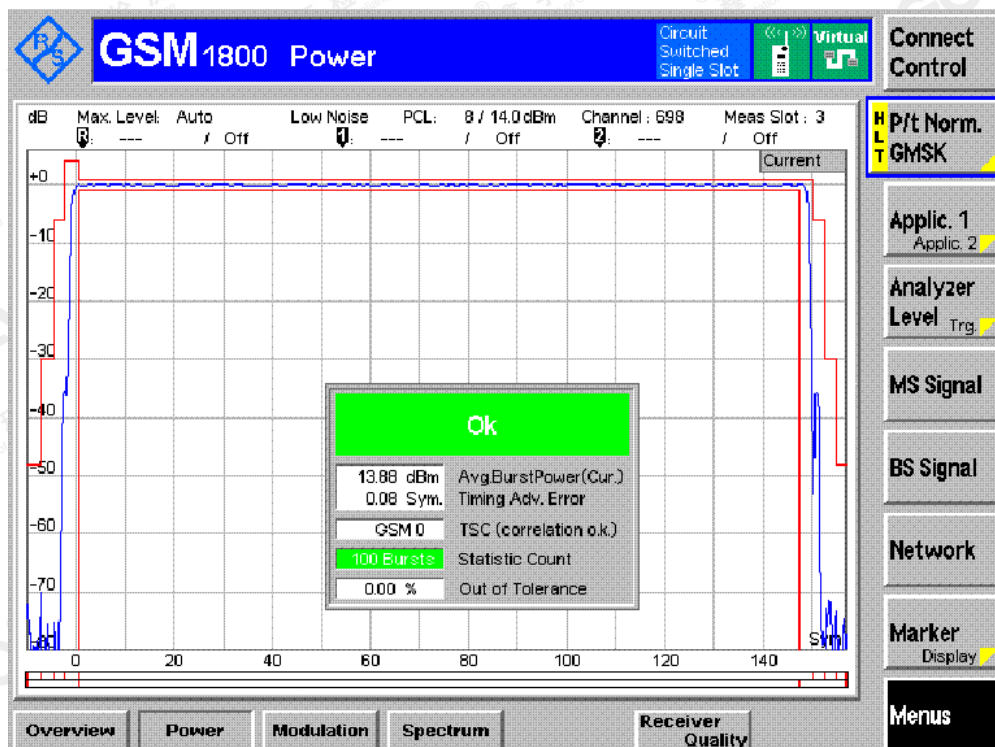


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Channel LCH PCL 8

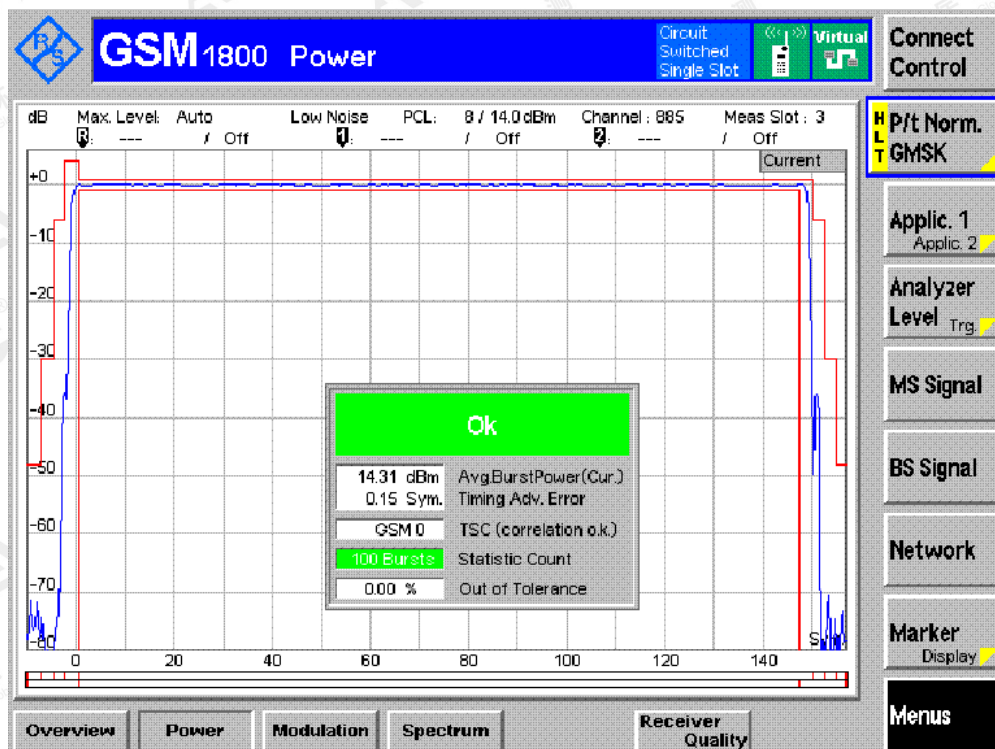


Channel MCH PCL 8

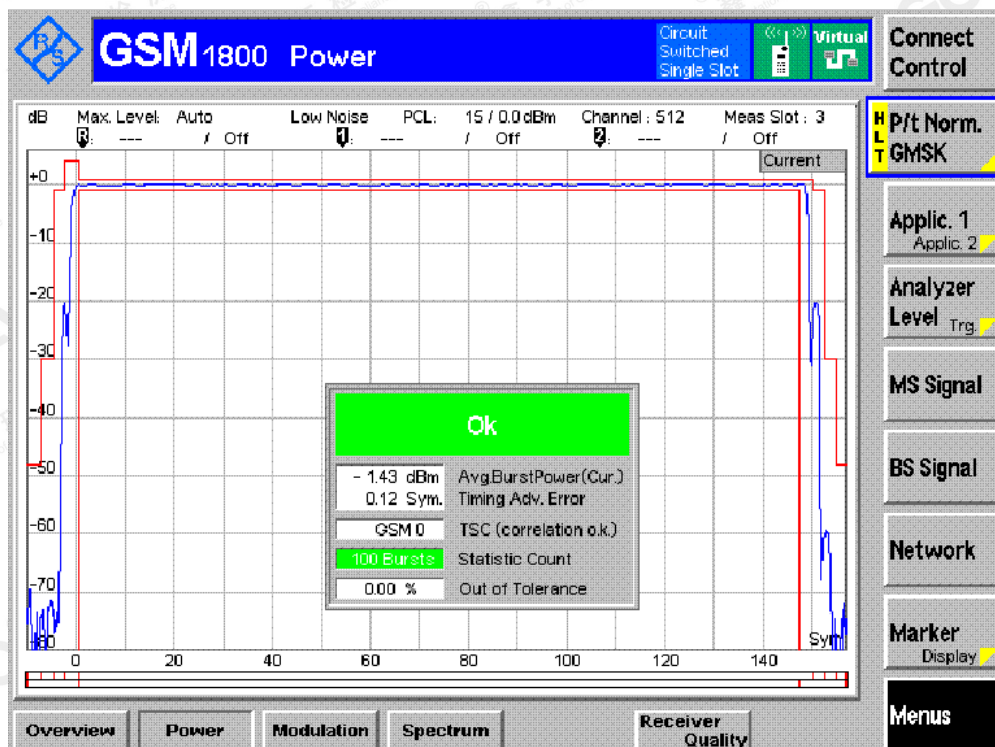


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Channel HCH PCL 8

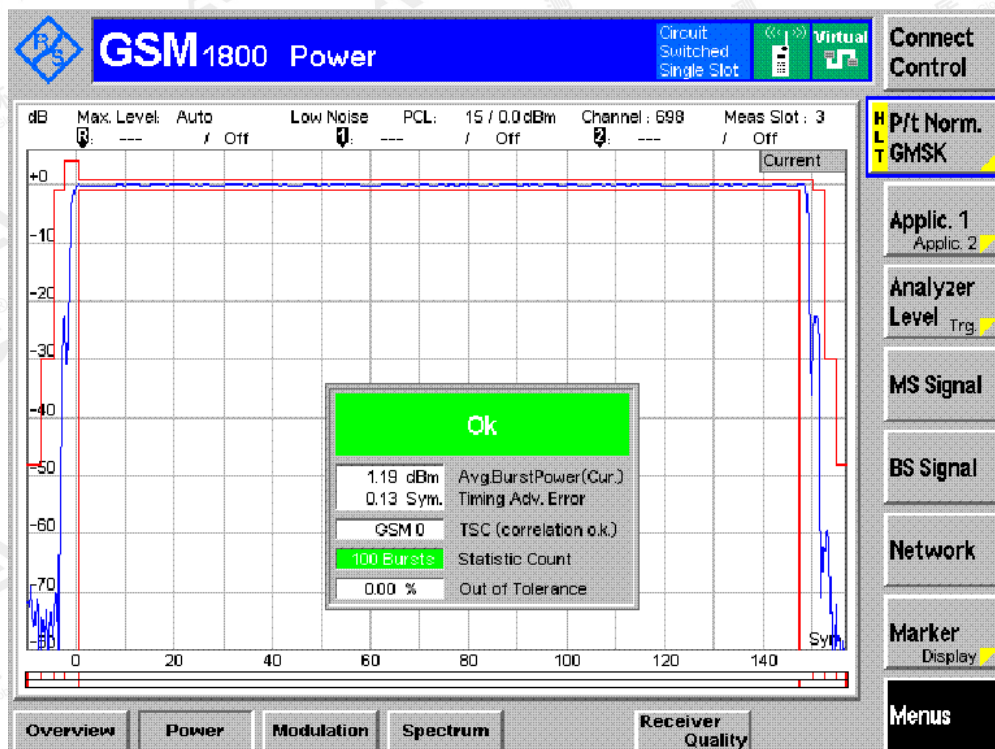


Channel LCH PCL 15

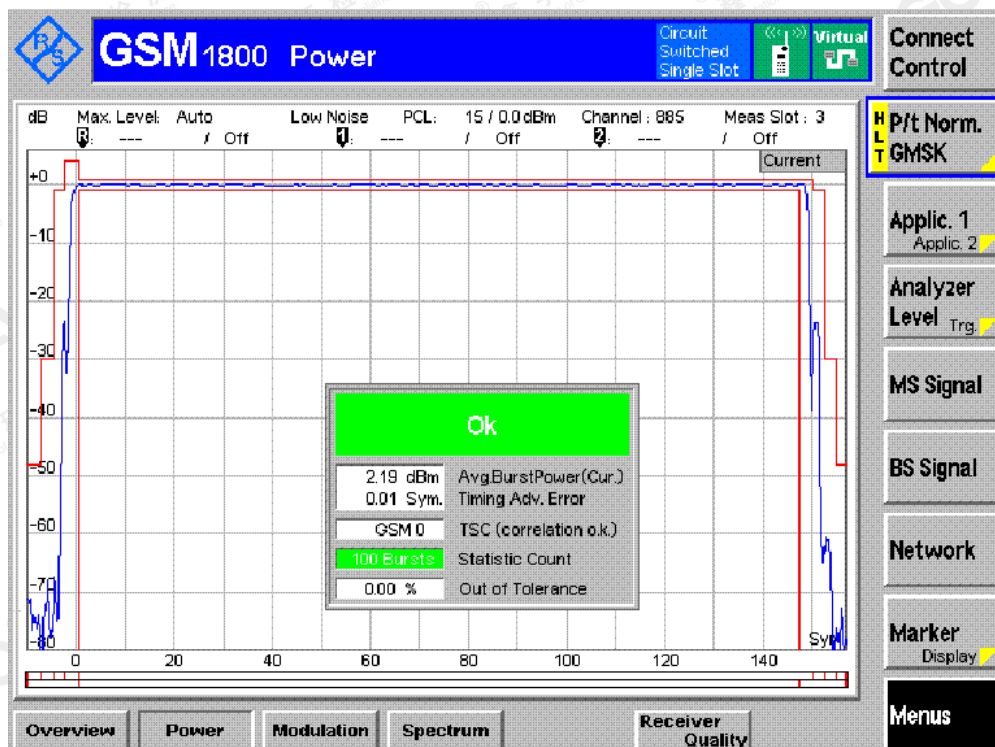


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Channel MCH PCL 15



Channel HCH PCL 15



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Appendix E. Transmitter – Output RF spectrum

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

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

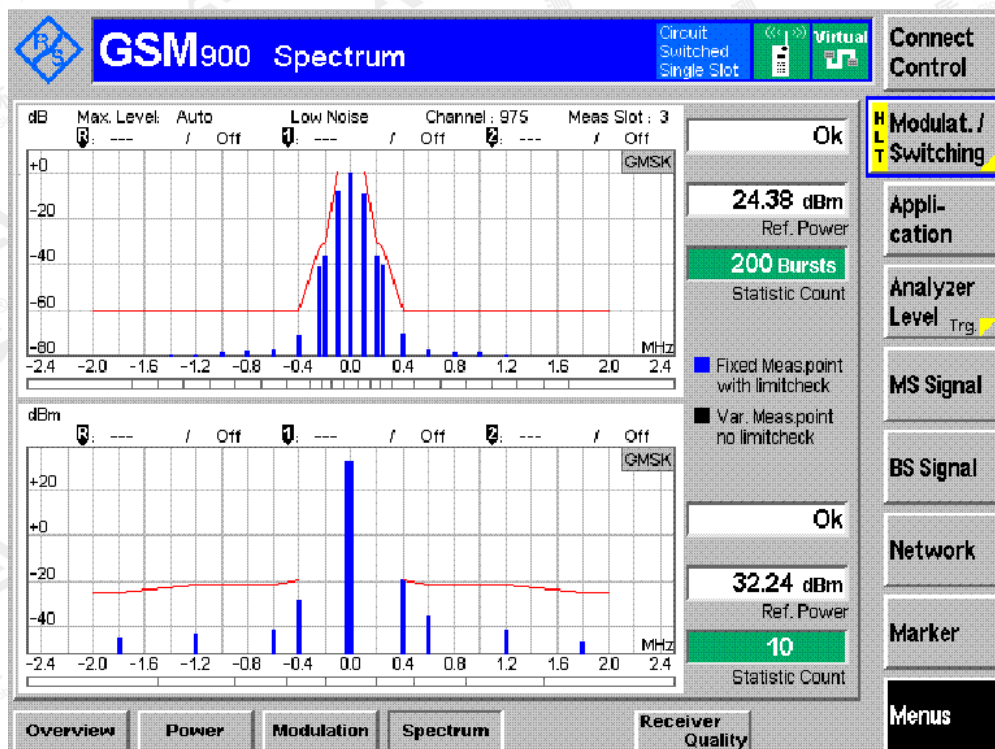
| Modulation& switch Spectrum | Power level | Result | | |
|-----------------------------|-------------|------------------|------|------|
| | | Traffic Channels | | |
| DCS1800 | | LCH | MCH | HCH |
| TN,VN | 0 | PASS | PASS | PASS |
| | 8 | PASS | PASS | PASS |
| | 15 | PASS | PASS | PASS |

Graphs of output RF spectrum

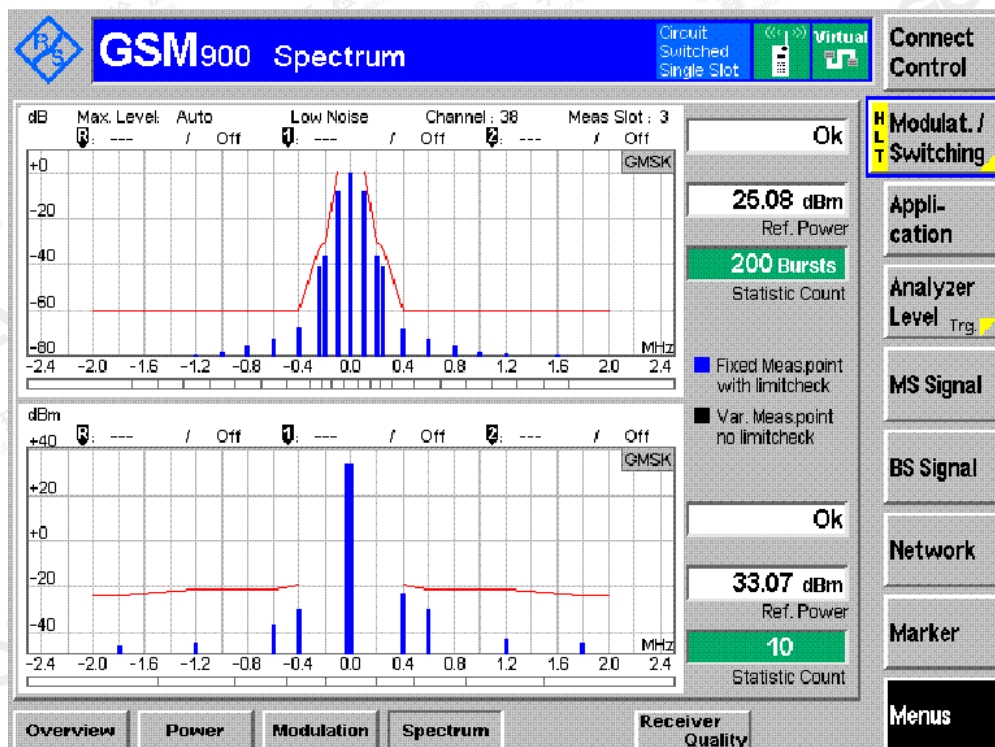
GSM 900 TN,VN

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Channel LCH PCL 5

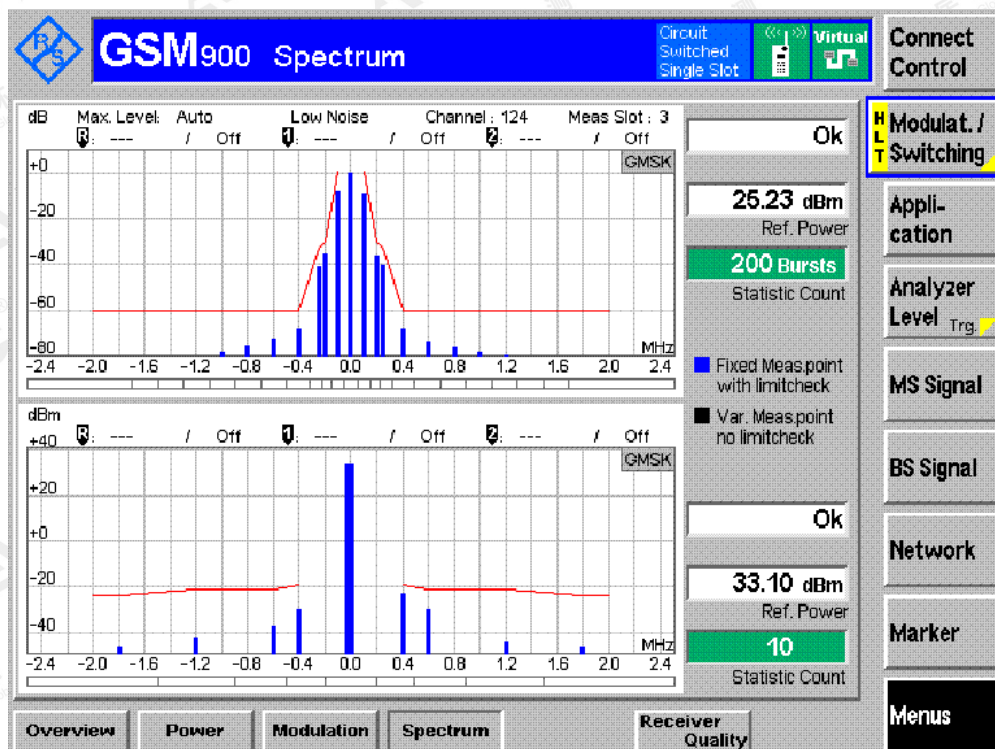


Channel MCH PCL 5

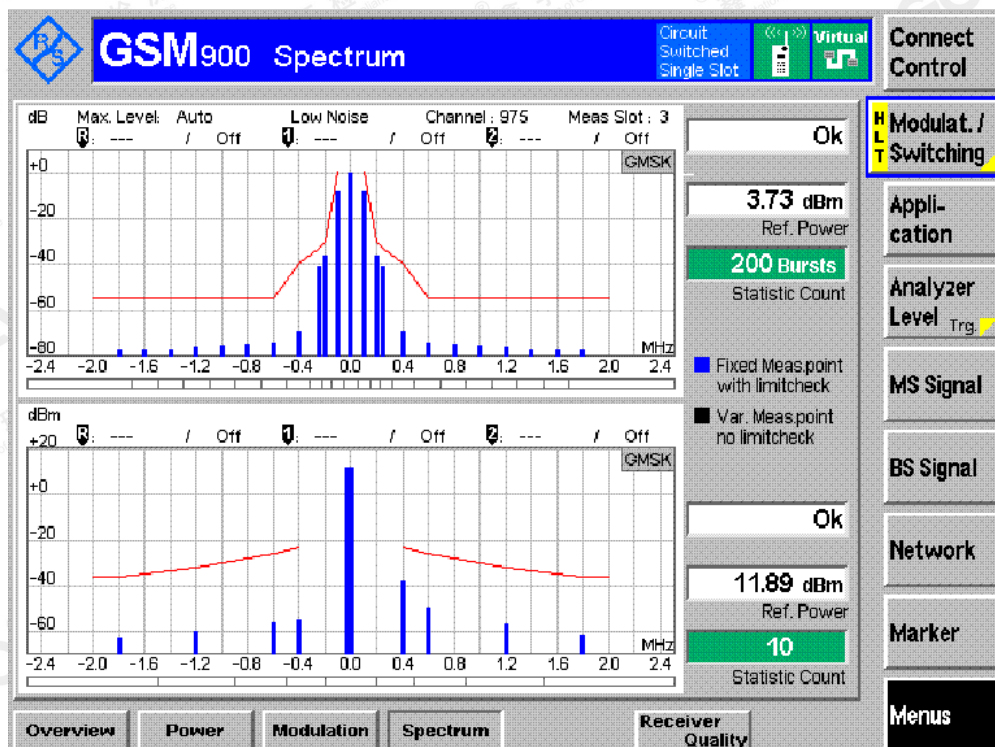


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Channel HCH PCL 5

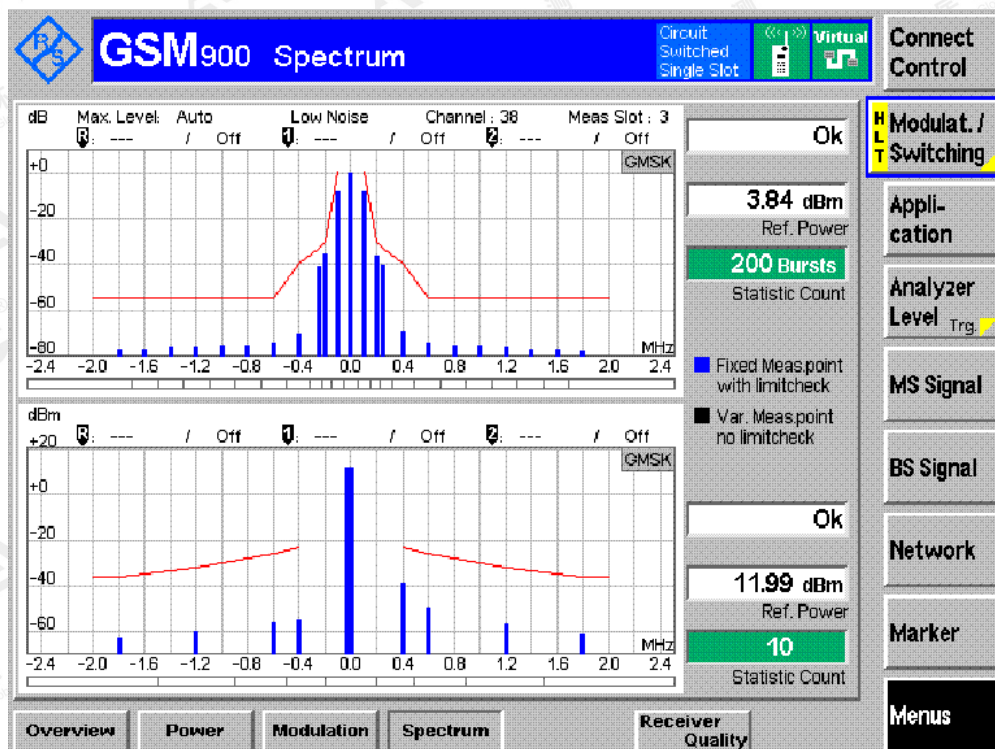


Channel LCH PCL 12

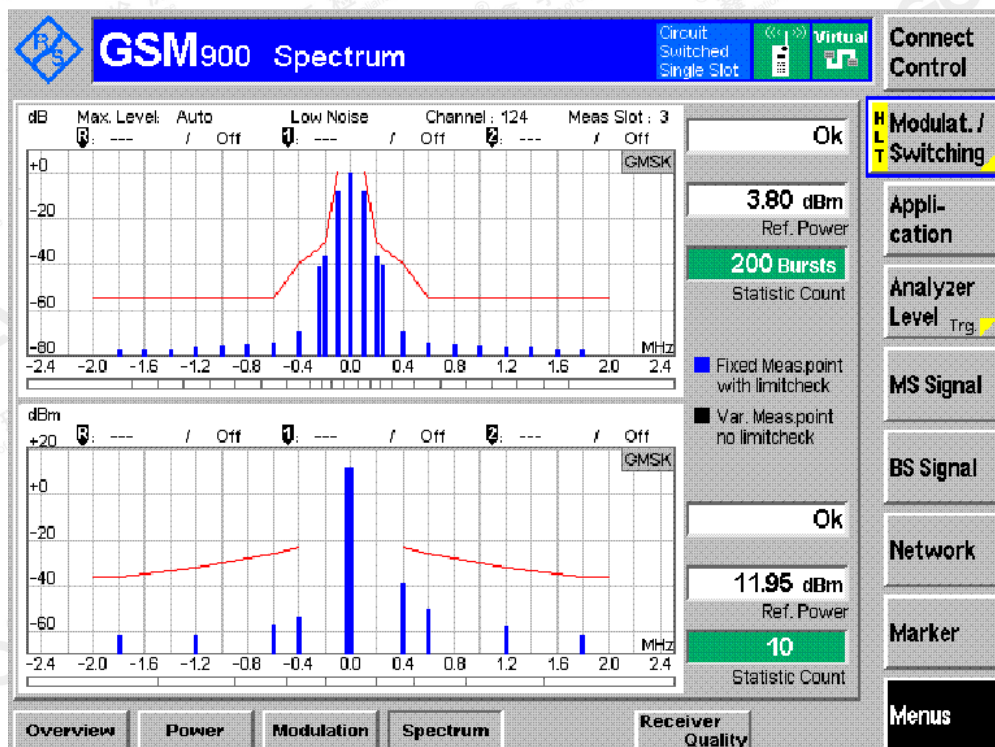


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Channel MCH PCL 12

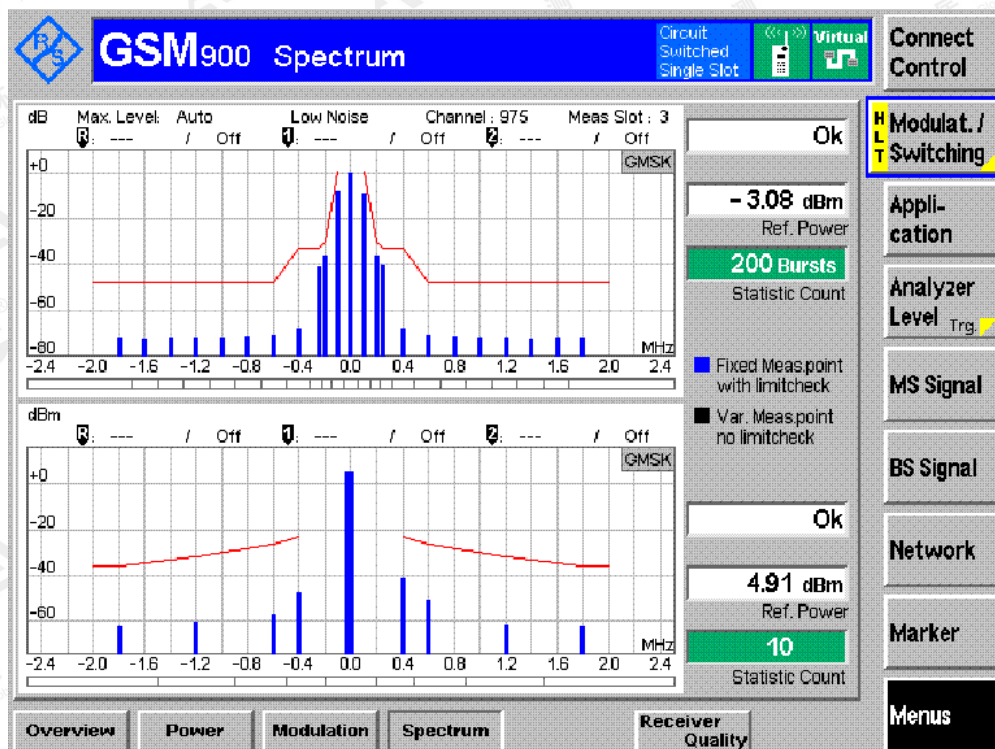


Channel HCH PCL 12

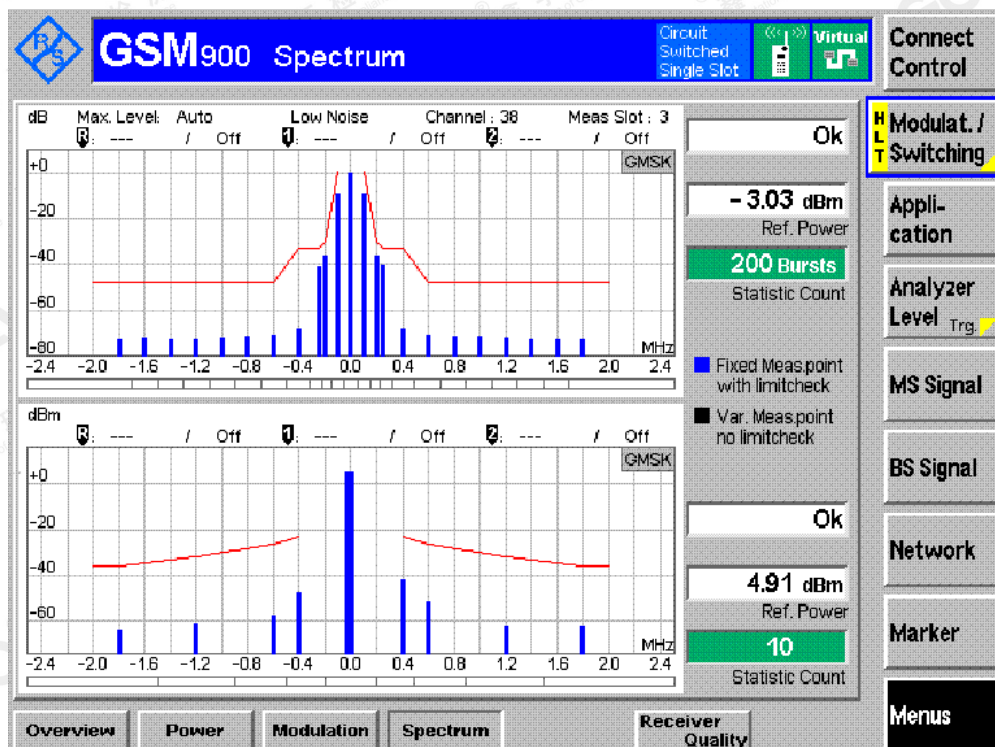


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Channel LCH PCL 19

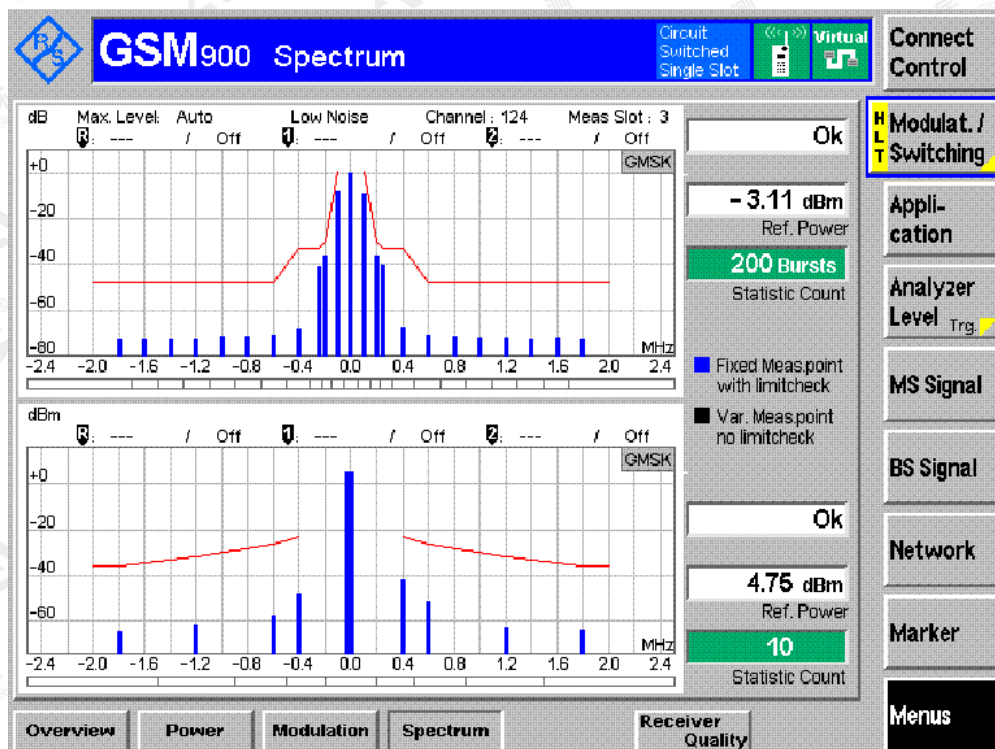


Channel MCH PCL 19



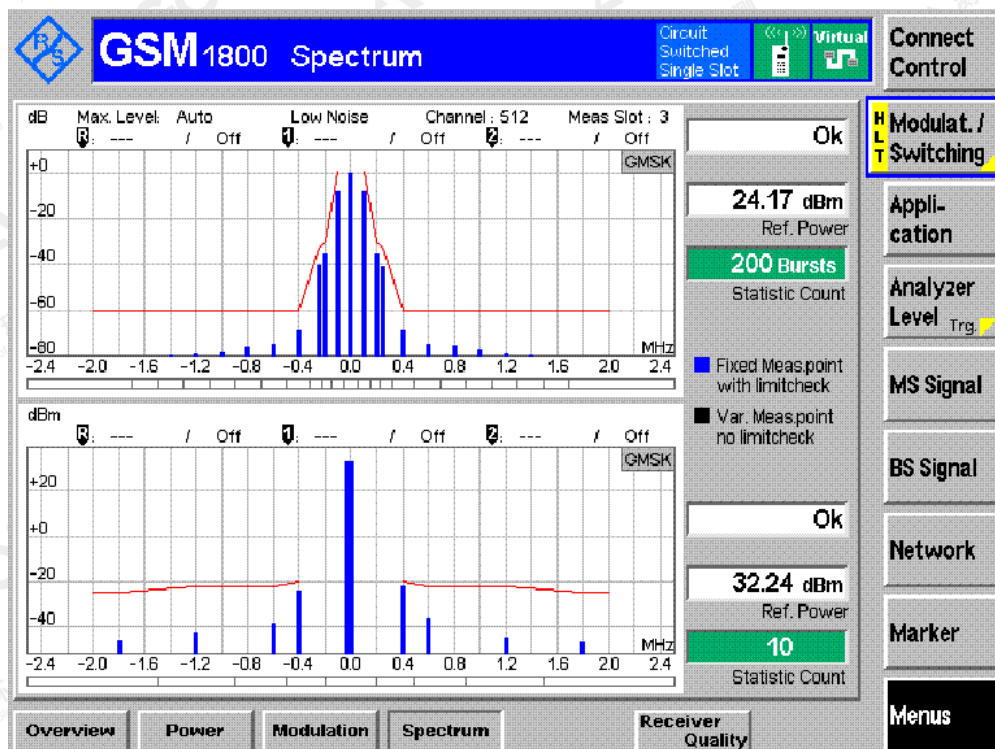
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.agc-cert.com>.

Channel HCH PCL 19



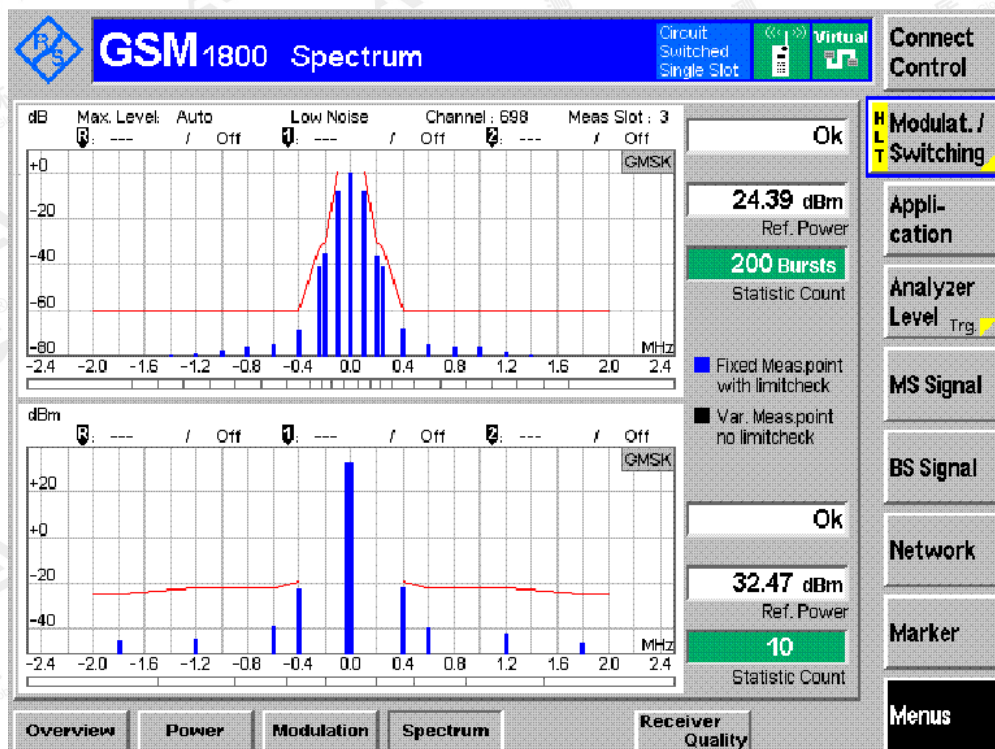
DCS1800 TN,VN

Channel LCH PCL 0

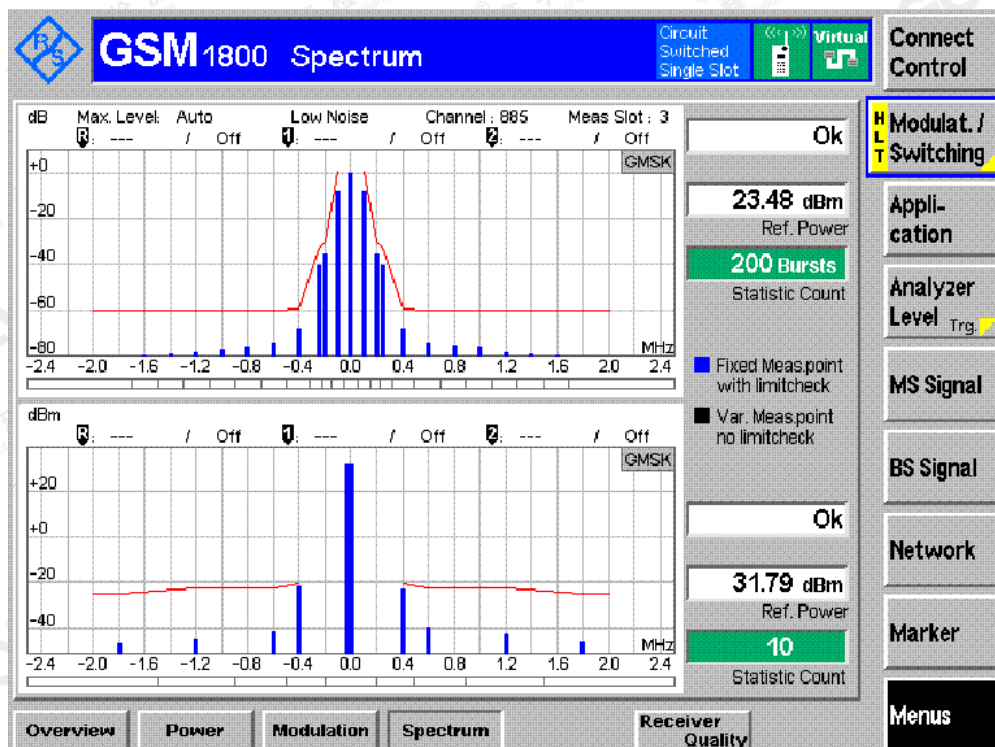


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Channel MCH PCL 0

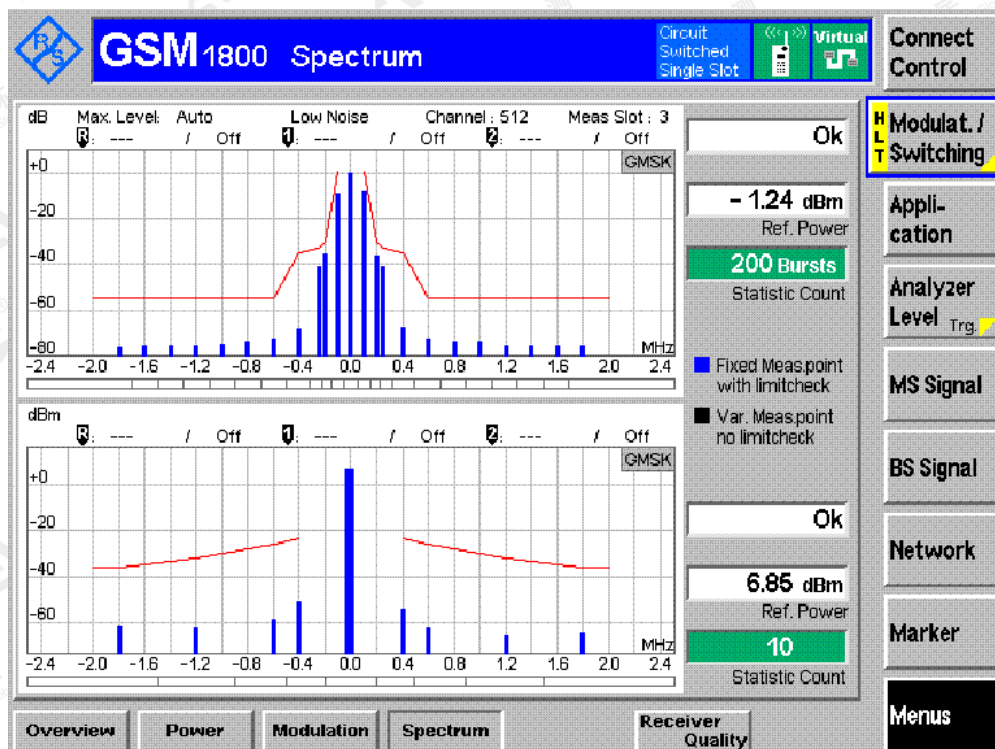


Channel HCH PCL 0

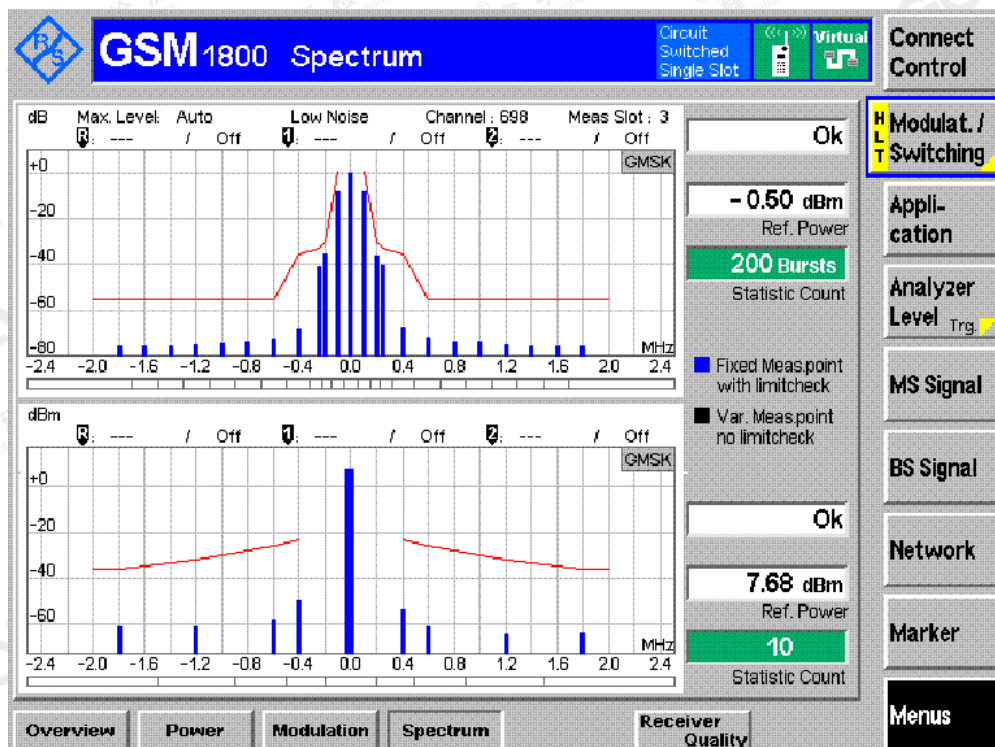


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Channel LCH PCL 8

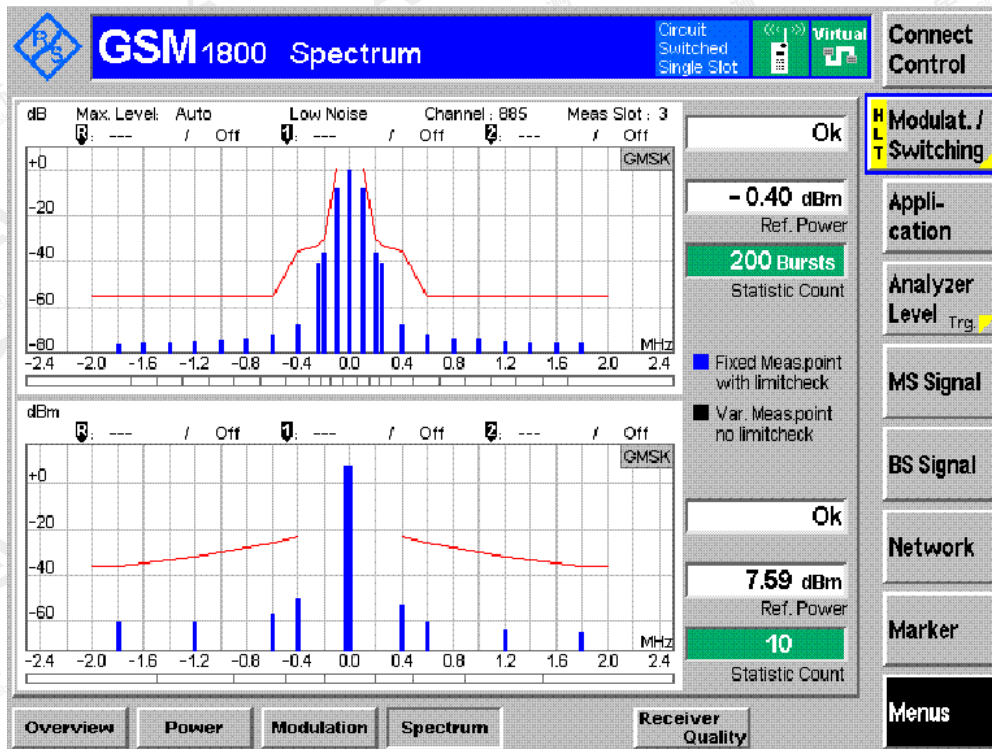


Channel MCH PCL 8

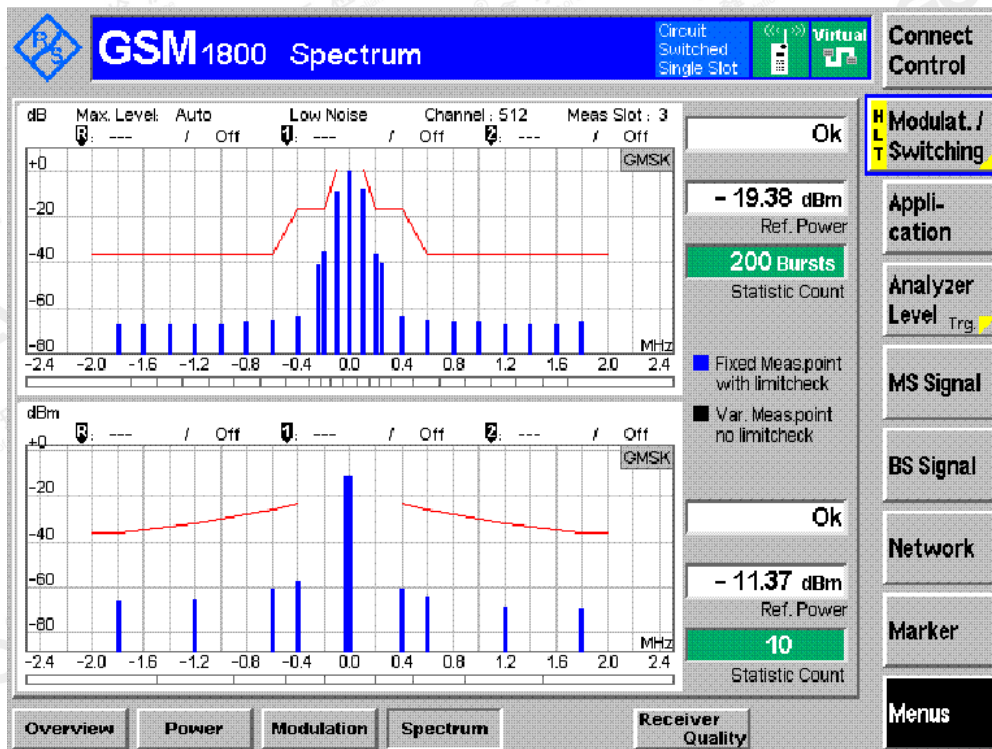


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Channel HCH PCL 8

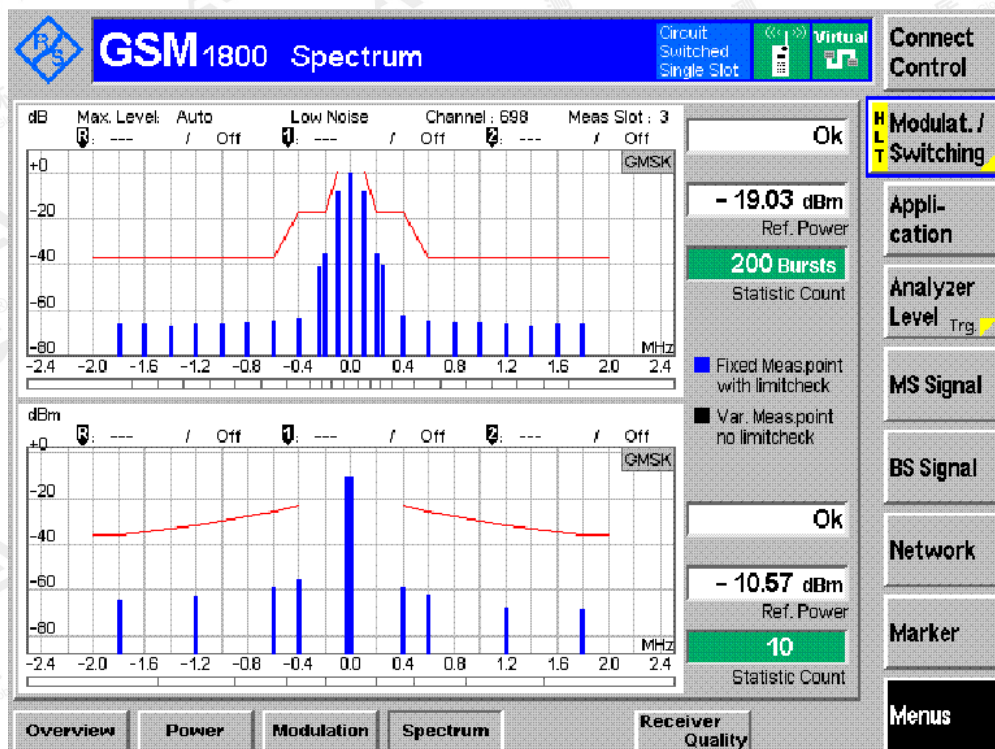


Channel LCH PCL 15

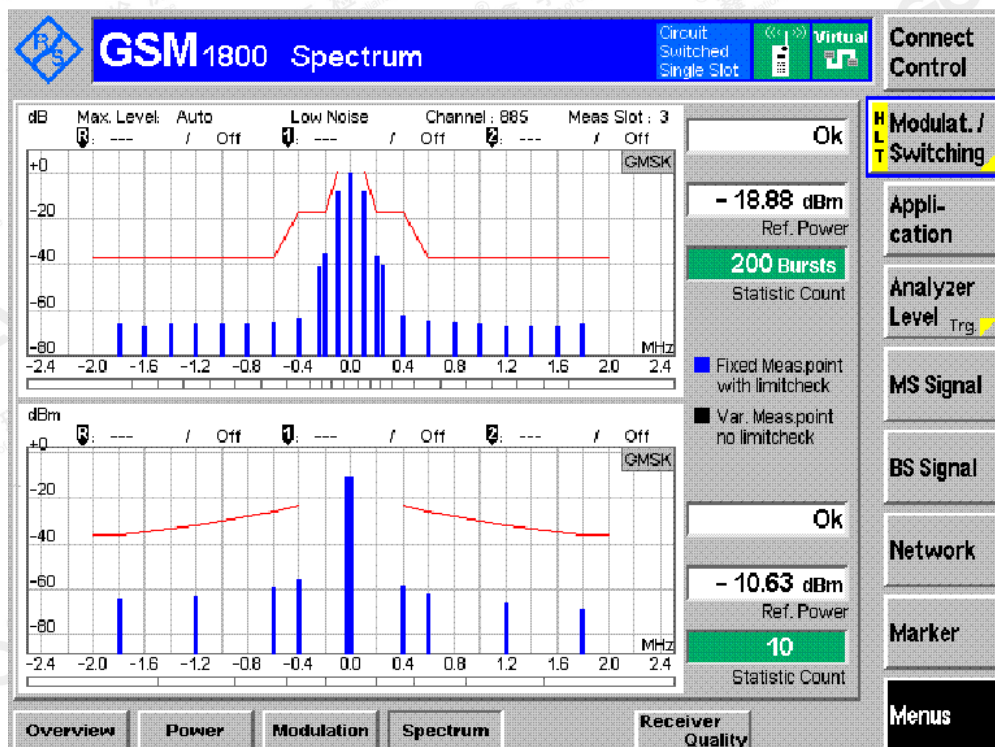


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Channel MCH PCL 15



Channel HCH PCL 15



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Appendix F. Transmitter output power in GPRS multislot configuration

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

A. output power

| Transmitter Output power(dBm) | Power level | Result | | | |
|-------------------------------|-------------|------------------|-------|-------|--------|
| | | Traffic Channels | | | |
| GSM900 | | LCH | MCH | HCH | Result |
| TN,VN | 5 | 28.69 | 28.96 | 29.06 | PASS |
| | 12 | 18.47 | 18.82 | 18.88 | PASS |
| | 19 | 4.86 | 5.12 | 5.06 | PASS |

| Transmitter Output power(dBm) | Power level | Result | | | |
|-------------------------------|-------------|------------------|-------|-------|--------|
| | | Traffic Channels | | | |
| DCS1800 | | LCH | MCH | HCH | Result |
| TN,VN | 0 | 25.53 | 26.06 | 25.82 | PASS |
| | 8 | 12.24 | 13.62 | 14.11 | PASS |
| | 15 | 1.16 | 1.18 | 1.97 | PASS |

B. Power VS Time

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

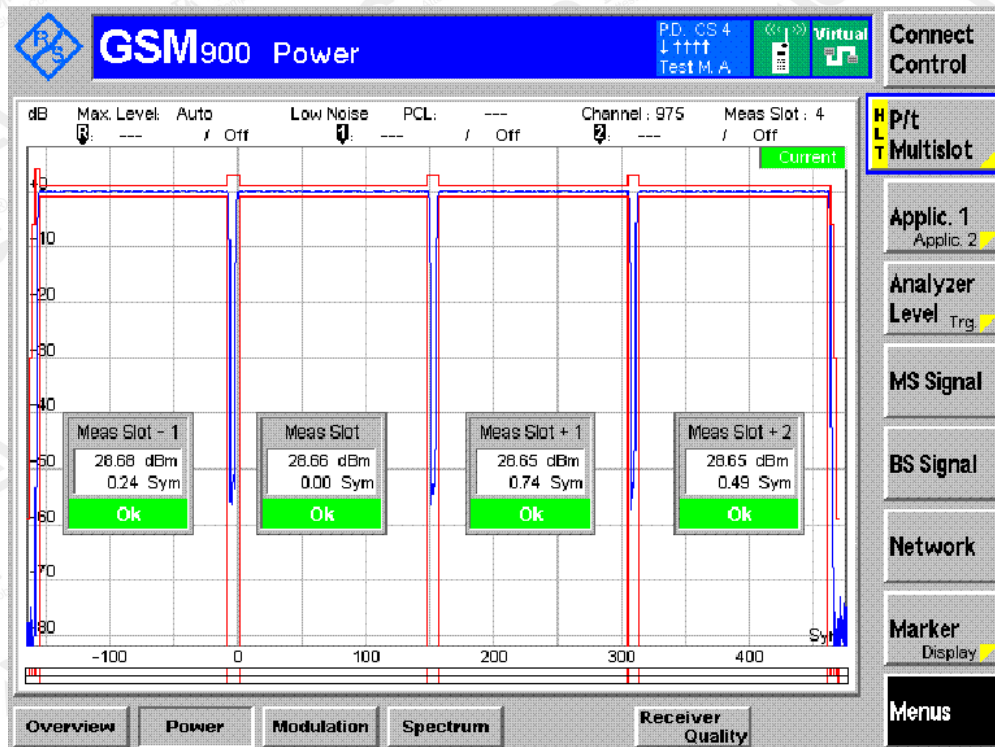
| Power VS Time Graph | ACCESS BURST | Result | | |
|---------------------|--------------|------------------|------|------|
| | | Traffic Channels | | |
| DCS1800 | Power level | LCH | MCH | HCH |
| TN,VN | 0 | PASS | PASS | PASS |
| | 8 | PASS | PASS | PASS |
| | 15 | PASS | PASS | PASS |

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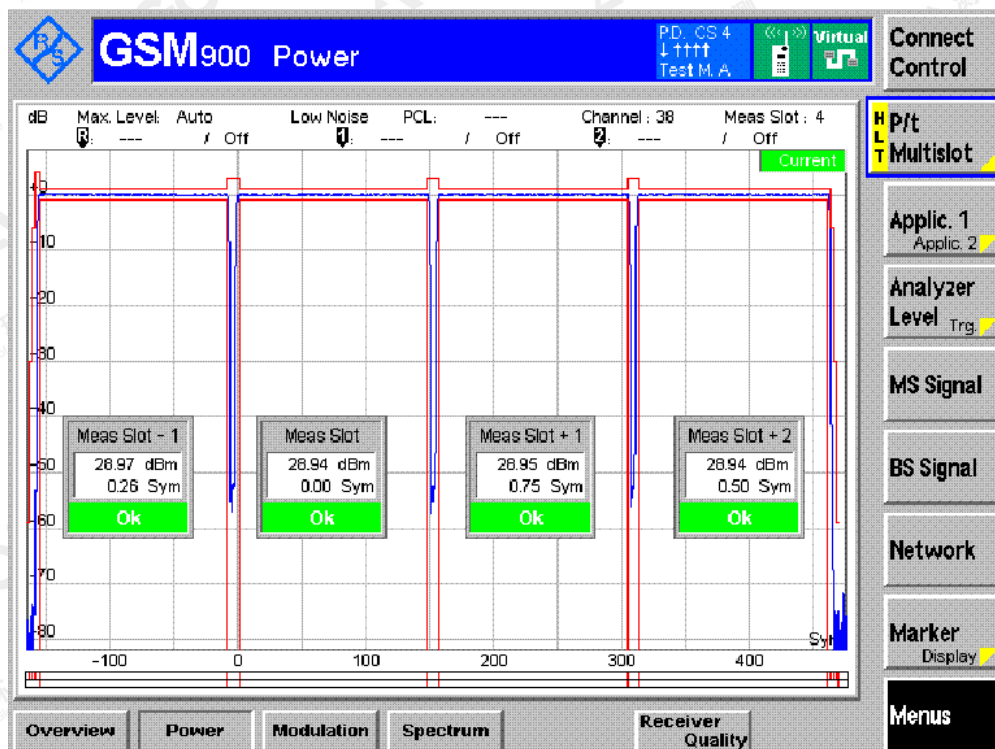
Graphs of output power in GPRS multislot configuration

GSM 900 TN,VN

Channel LCH PCL 5

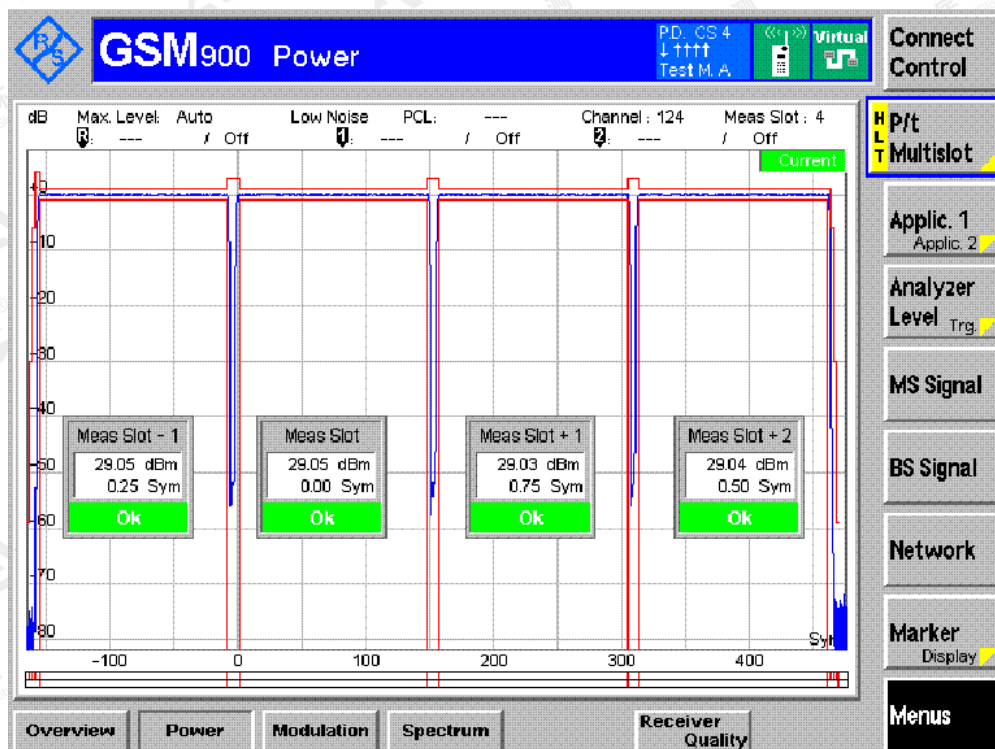


Channel MCH PCL 5

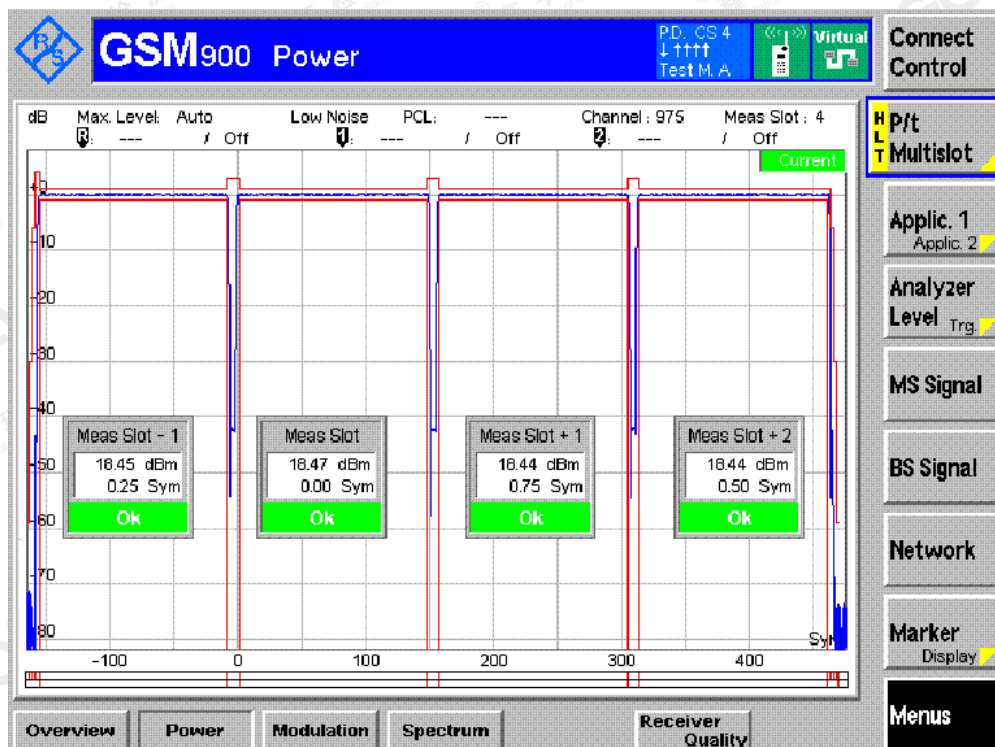


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Channel HCH PCL 5

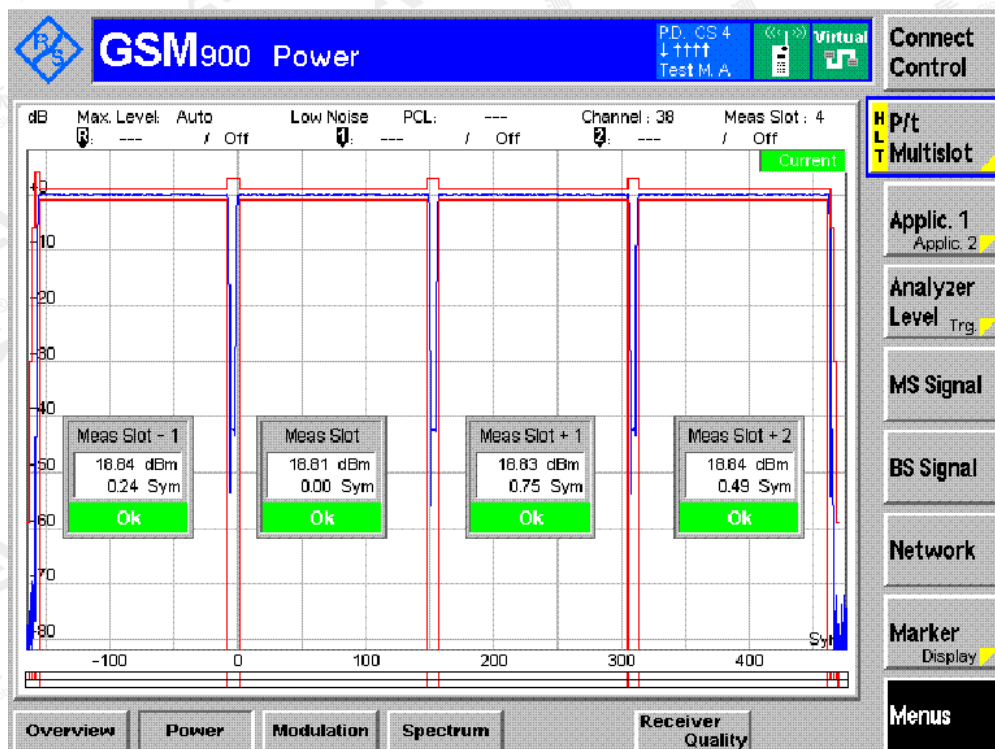


Channel LCH PCL 12

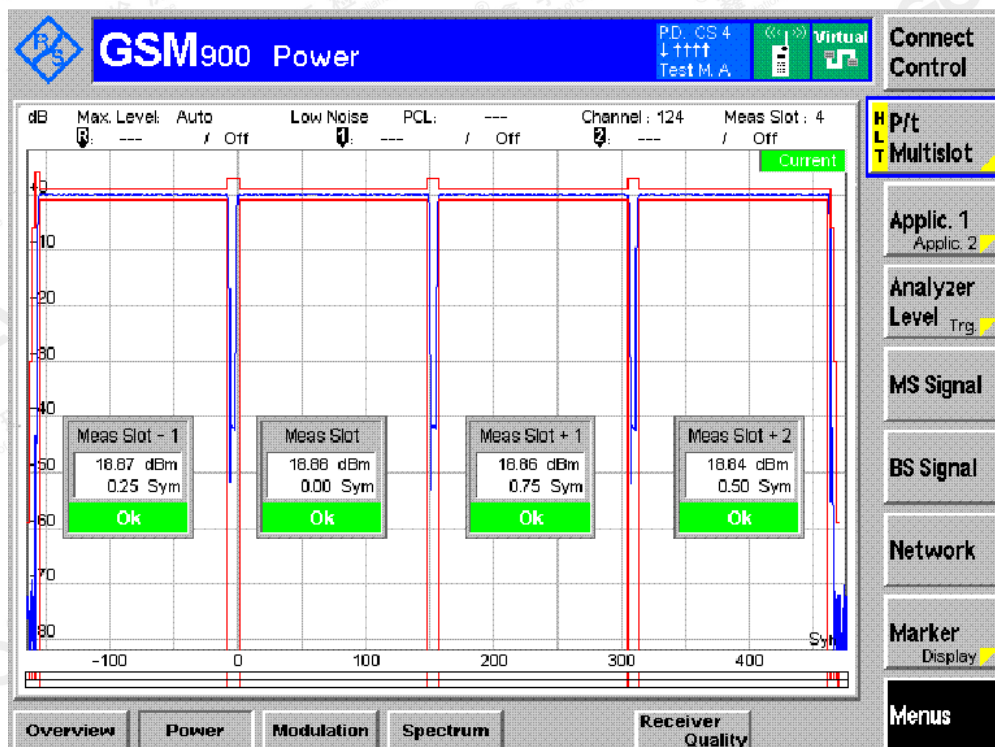


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Channel MCH PCL 12

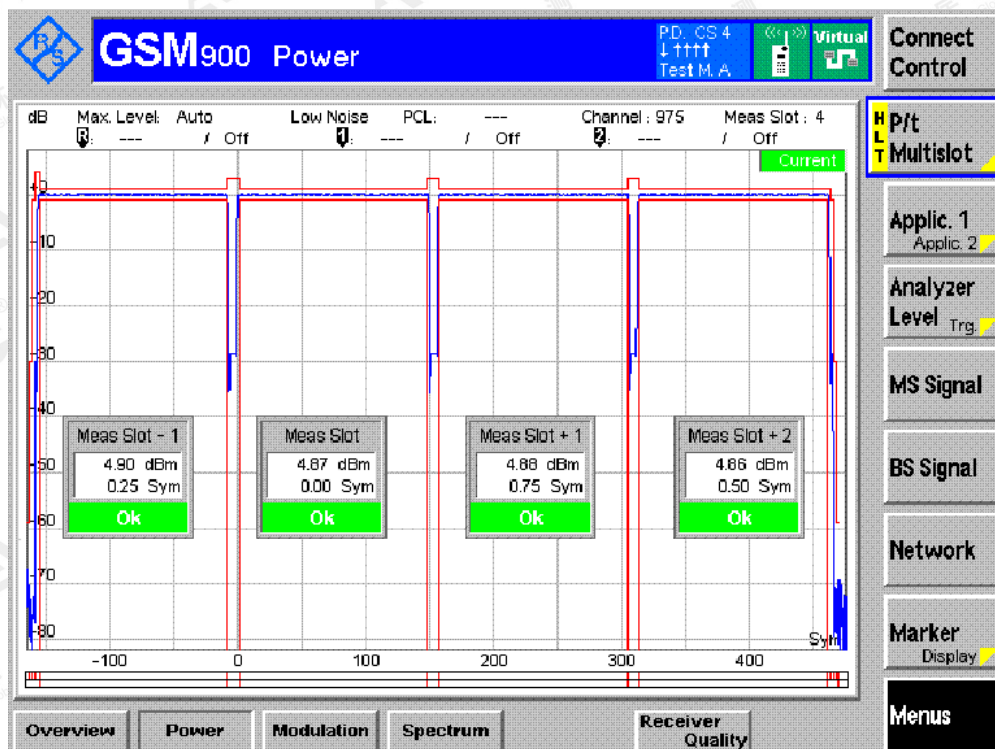


Channel HCH PCL 12

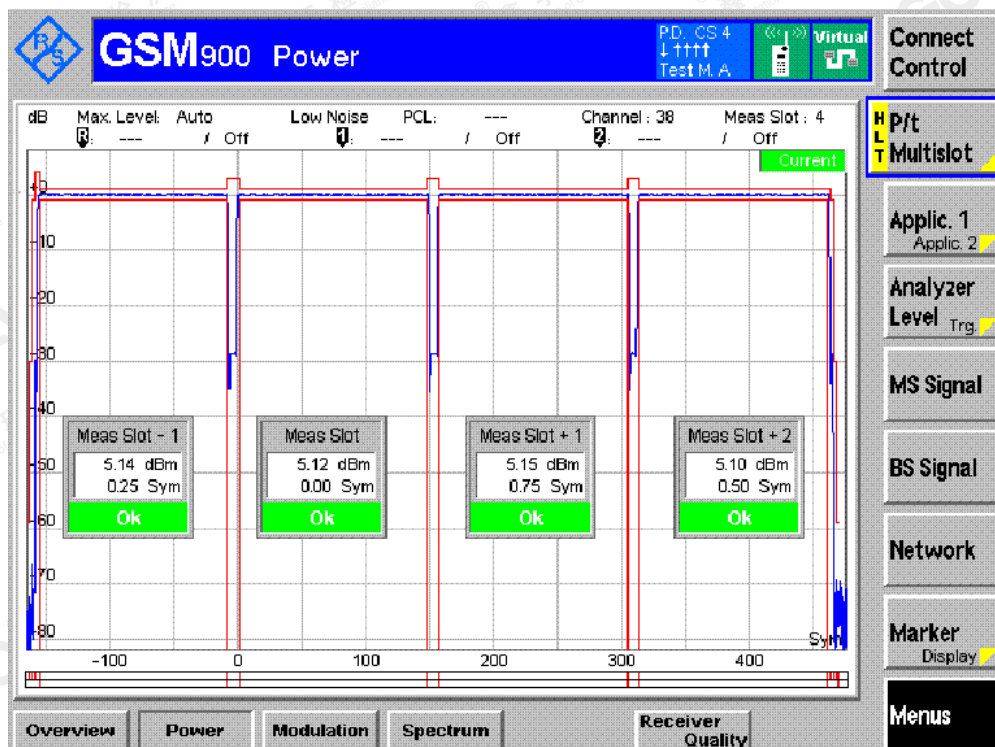


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Channel LCH PCL 19

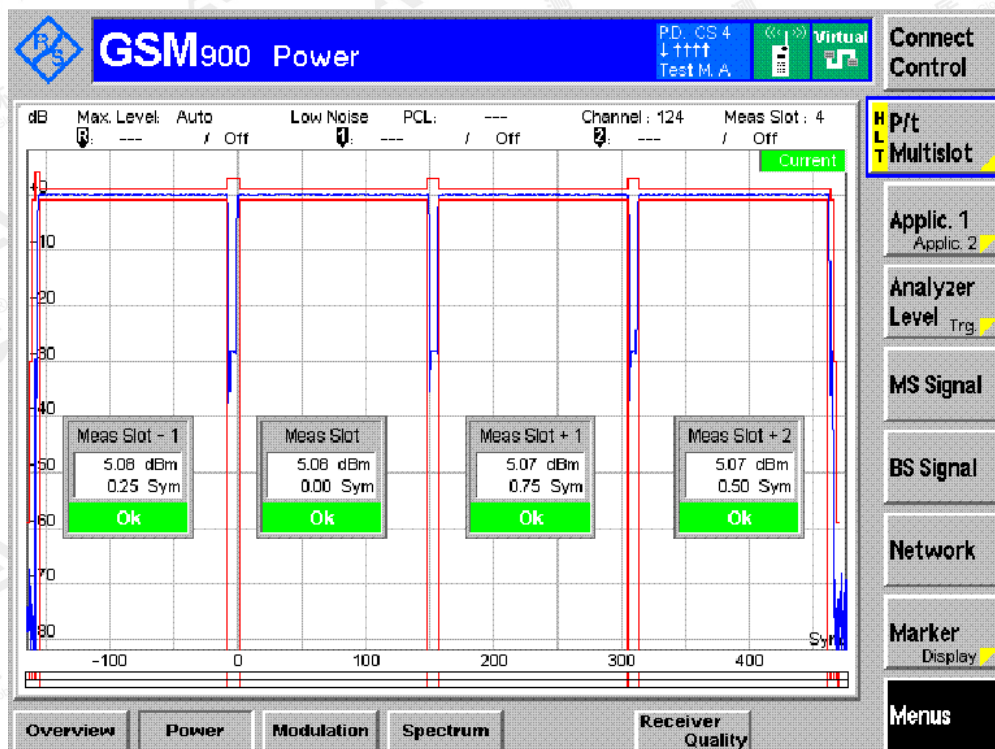


Channel MCH PCL 19

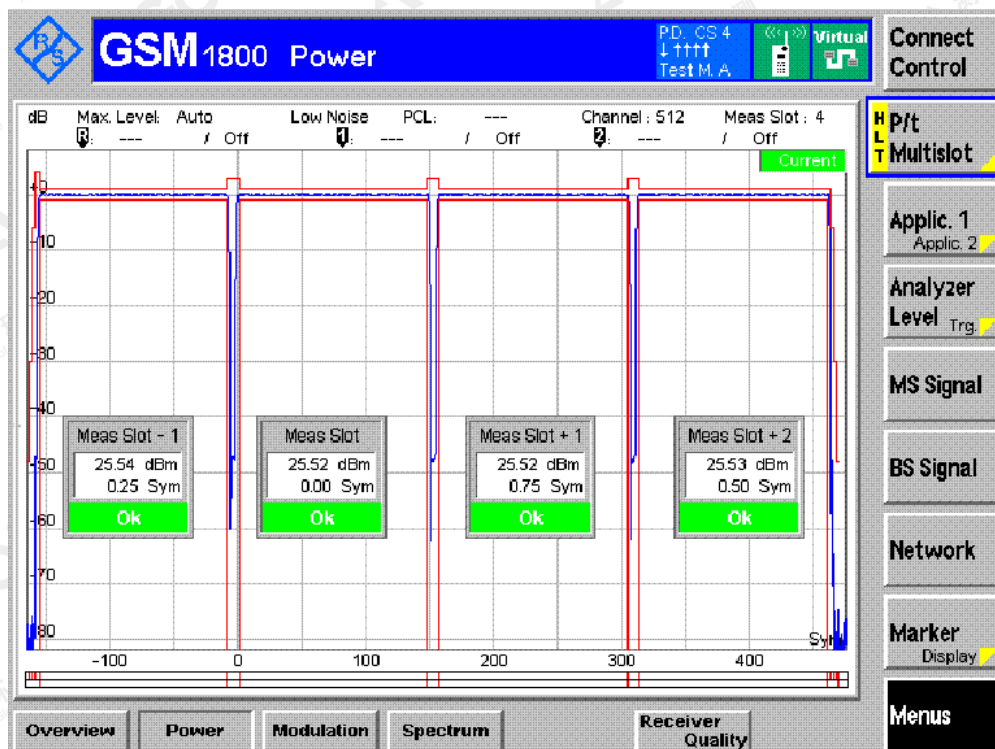


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Channel HCH PCL 19

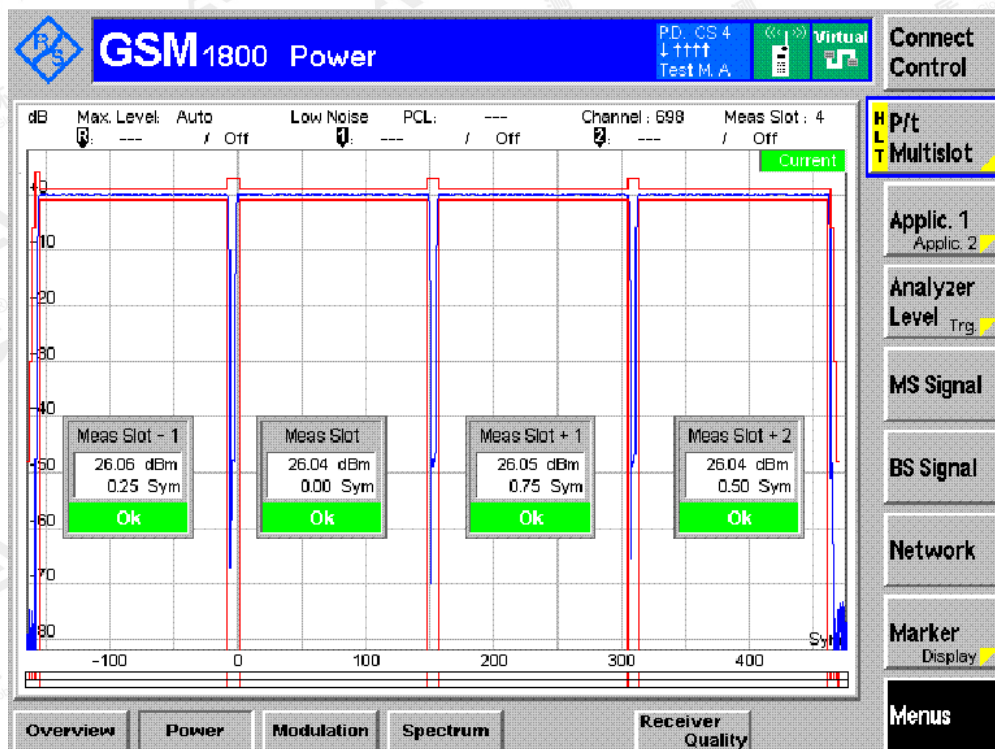


DCS1800 TN,VN
Channel LCH PCL 0

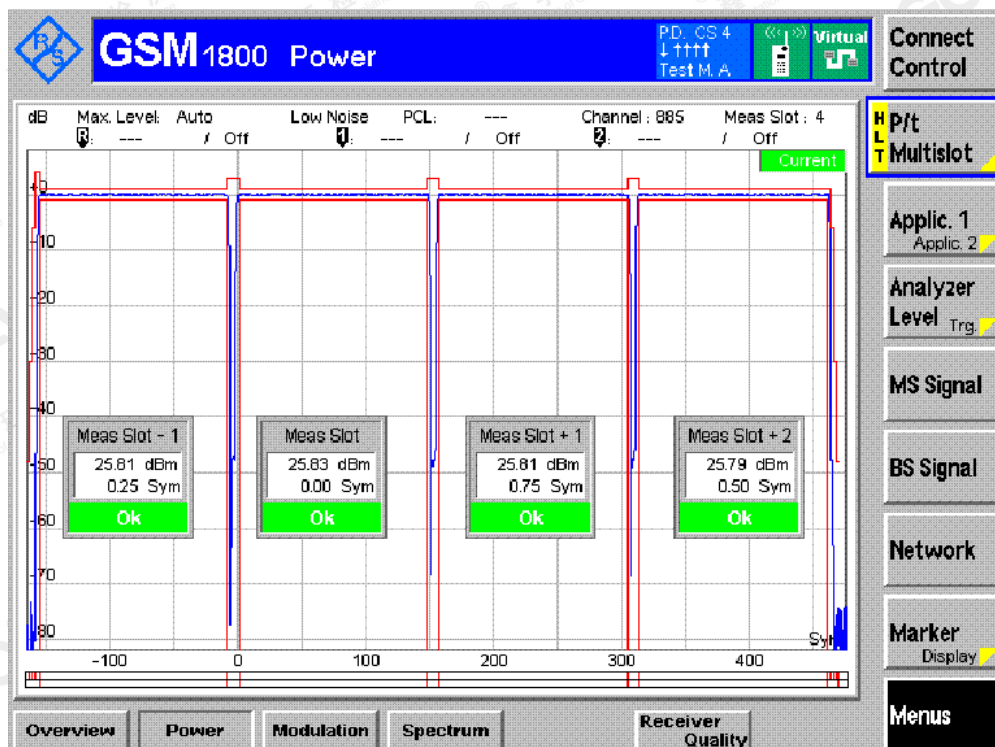


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Channel MCH PCL 0

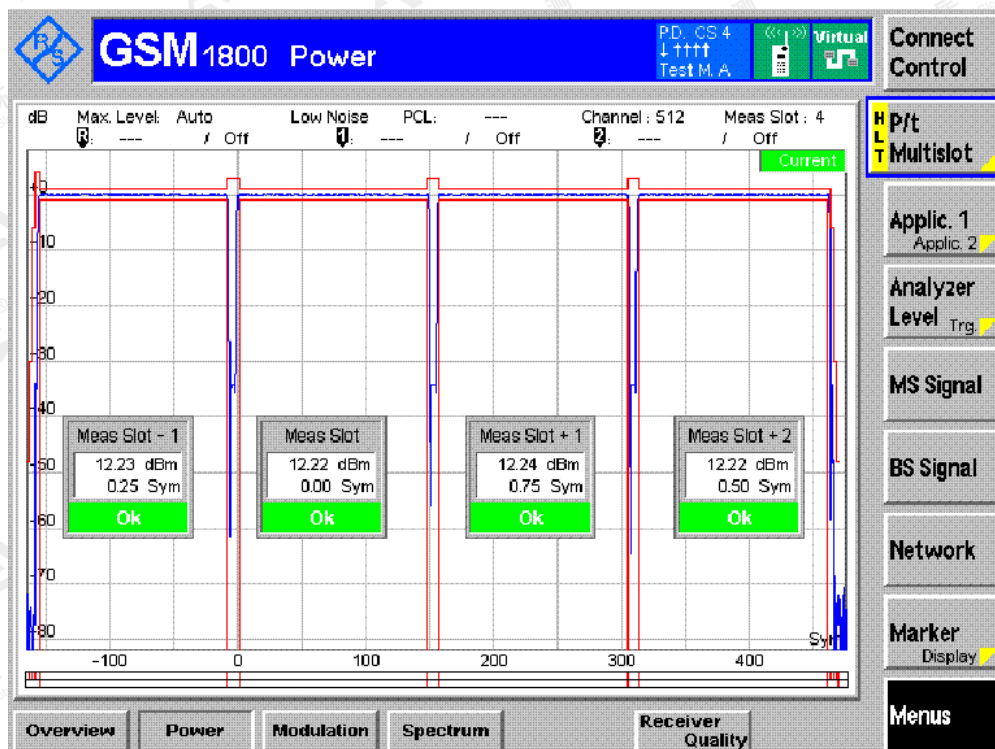


Channel HCH PCL 0

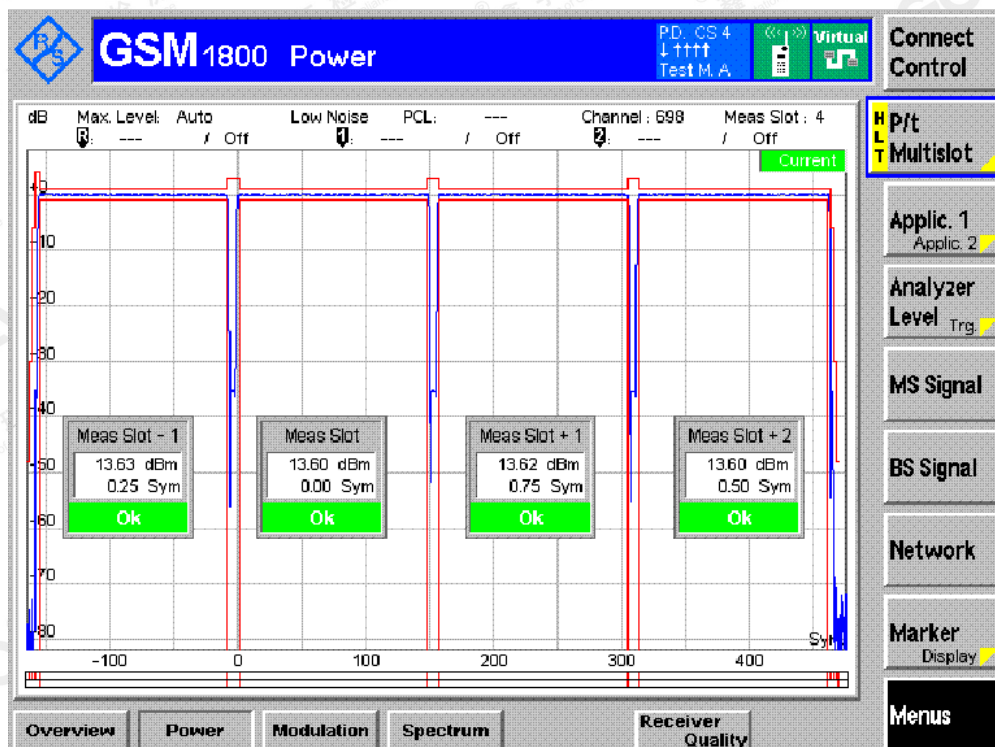


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Channel LCH PCL 8

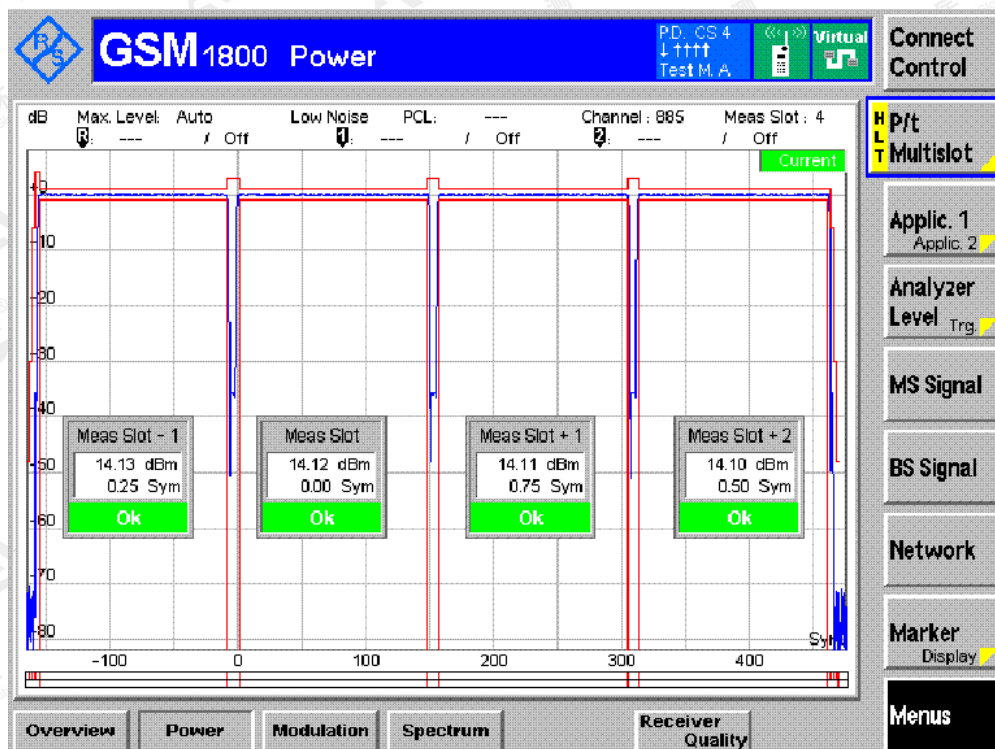


Channel MCH PCL 8

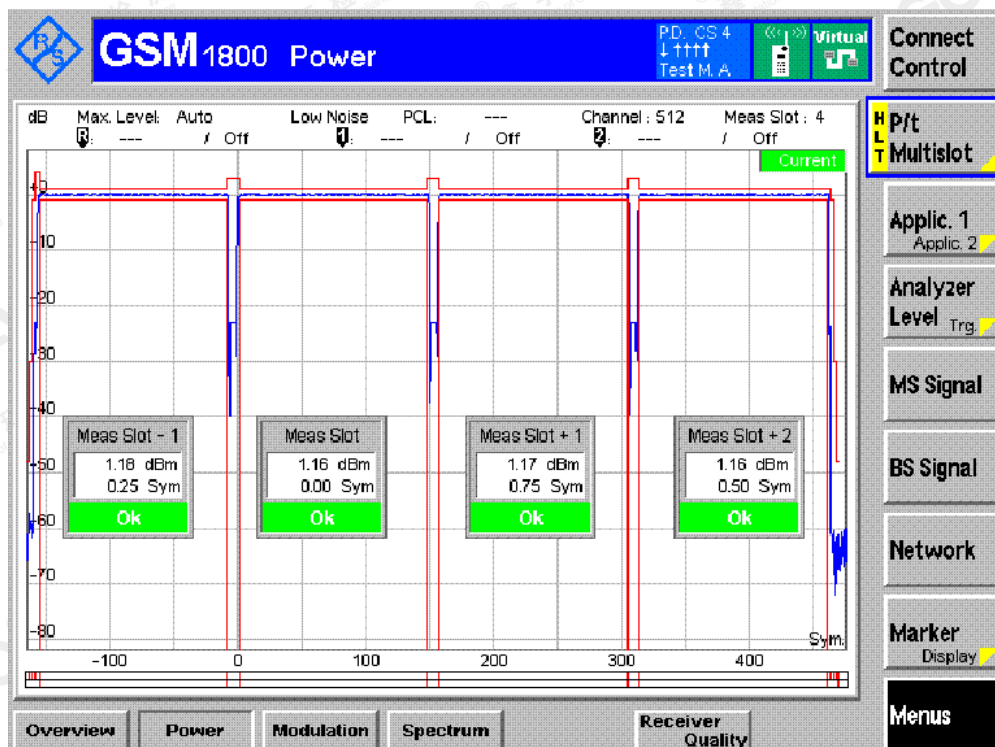


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Channel HCH PCL 8

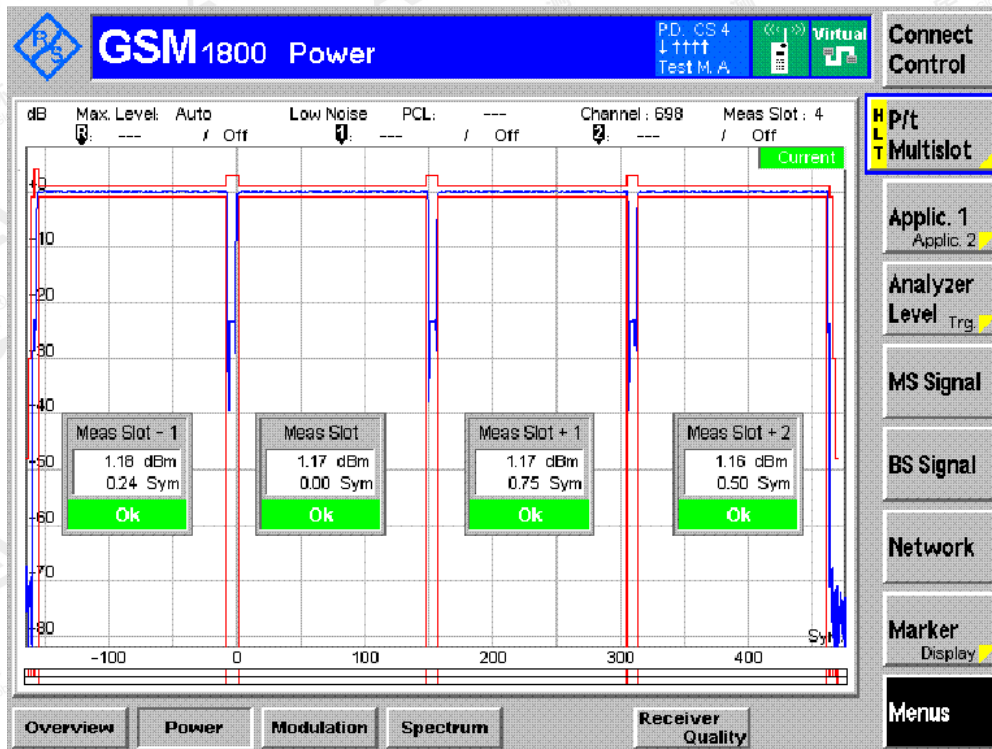


Channel LCH PCL 15

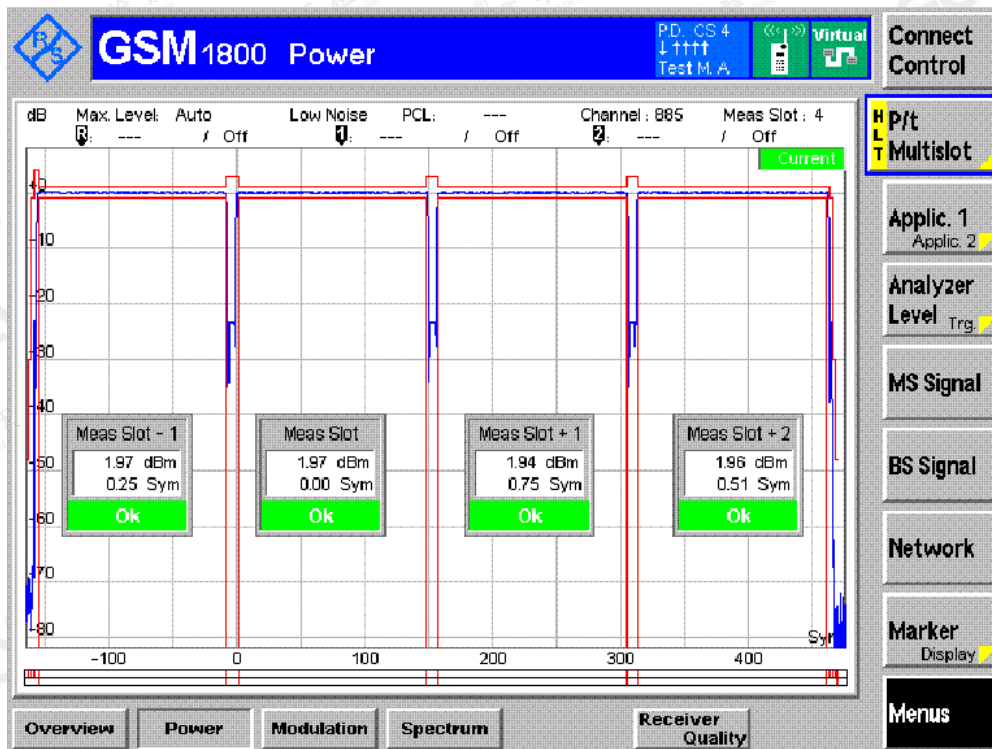


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Channel MCH PCL 15



Channel HCH PCL 15



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Appendix G. Output RF spectrum in GPRS multislot configuration

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of follow:

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

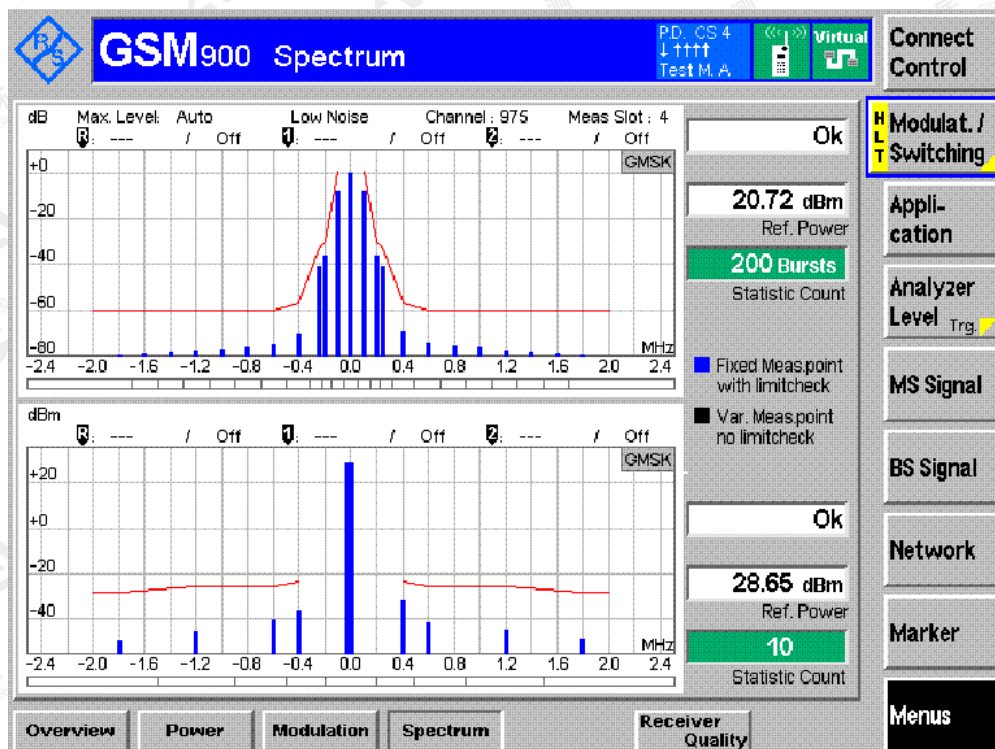
| Modulation& switch Spectrum | Power level | Result | | |
|-----------------------------|-------------|------------------|------|------|
| | | Traffic Channels | | |
| DCS1800 | | LCH | MCH | HCH |
| TN,VN | 0 | PASS | PASS | PASS |
| | 8 | PASS | PASS | PASS |
| | 15 | PASS | PASS | PASS |

Graphs of output RF spectrum in GPRS multislot configuration

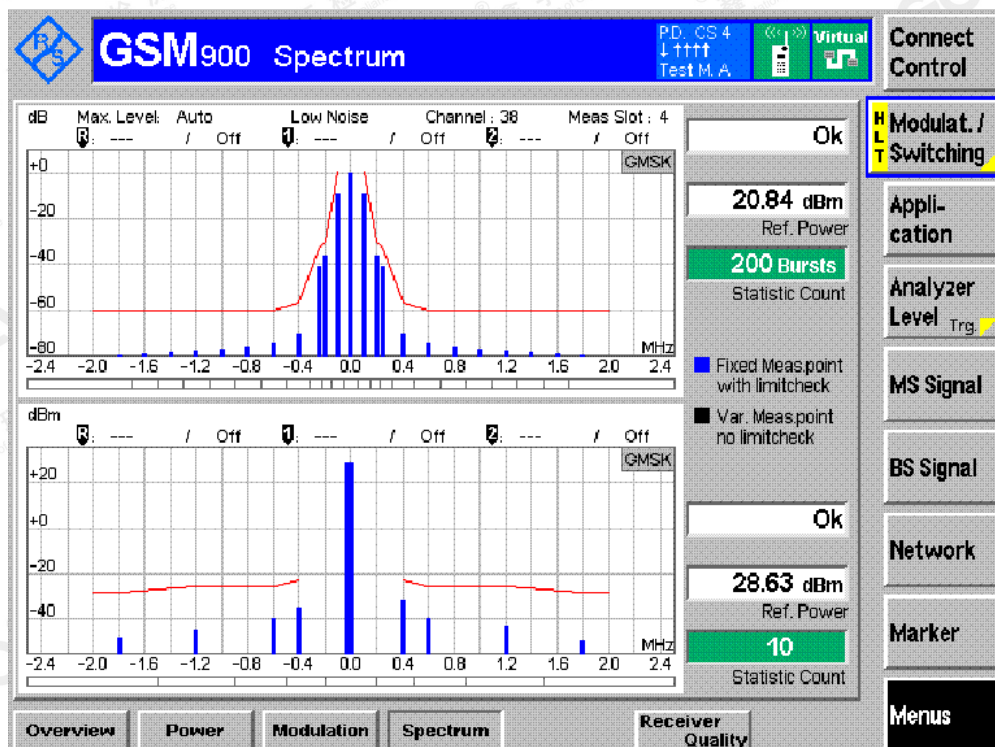
GSM 900 TN,VN

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Channel LCH PCL 5

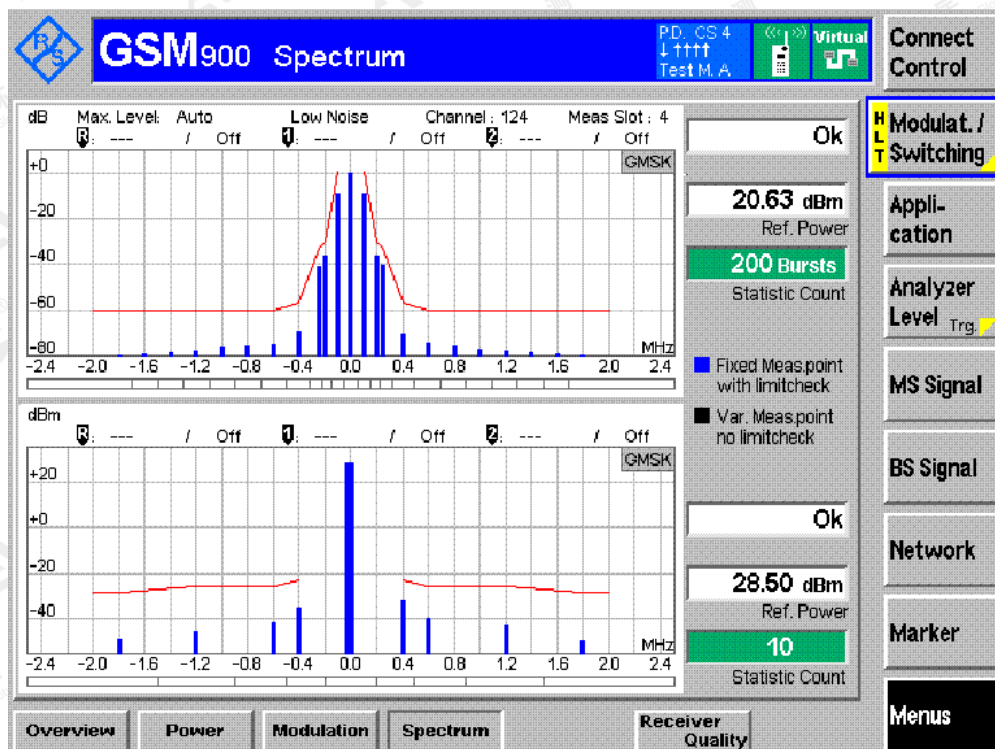


Channel MCH PCL 5

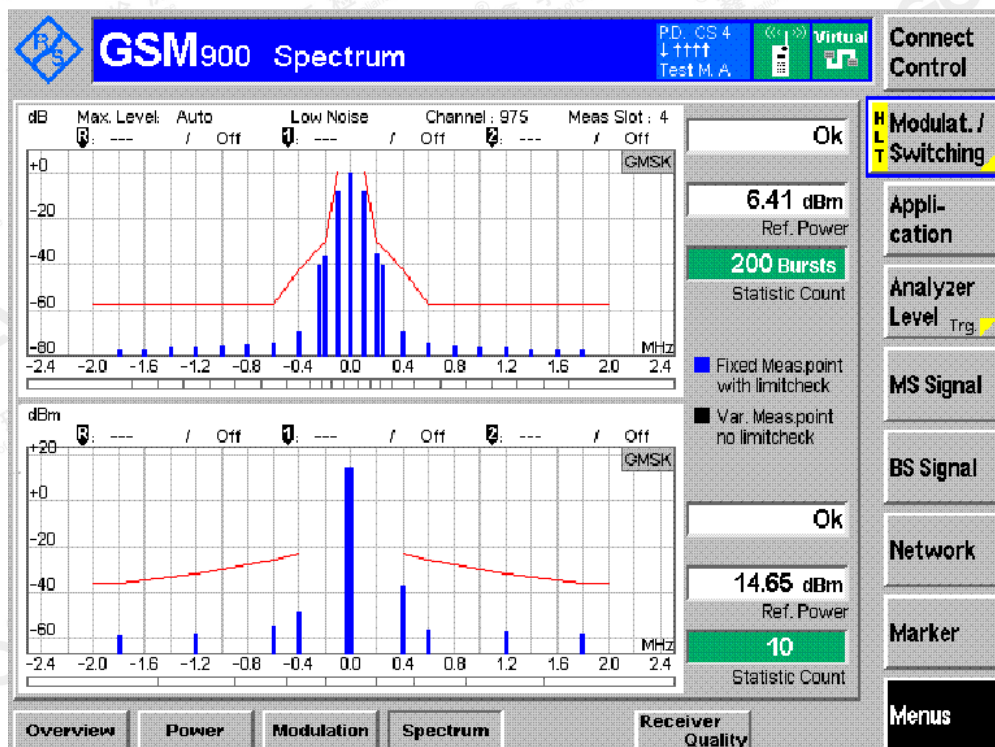


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Channel HCH PCL 5

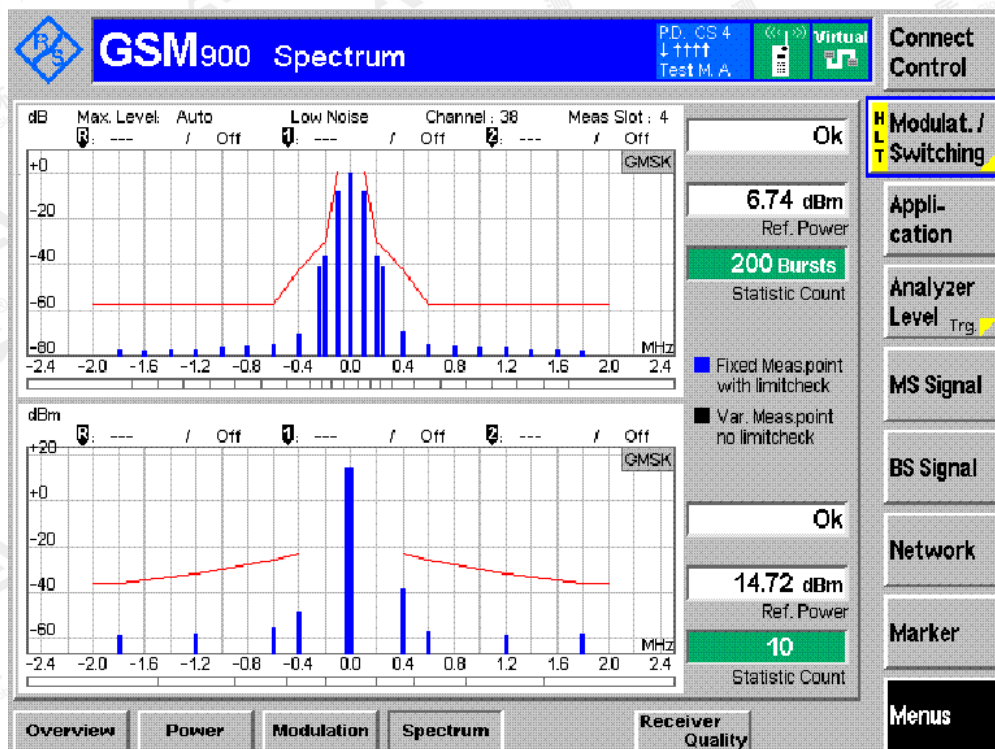


Channel LCH PCL 12

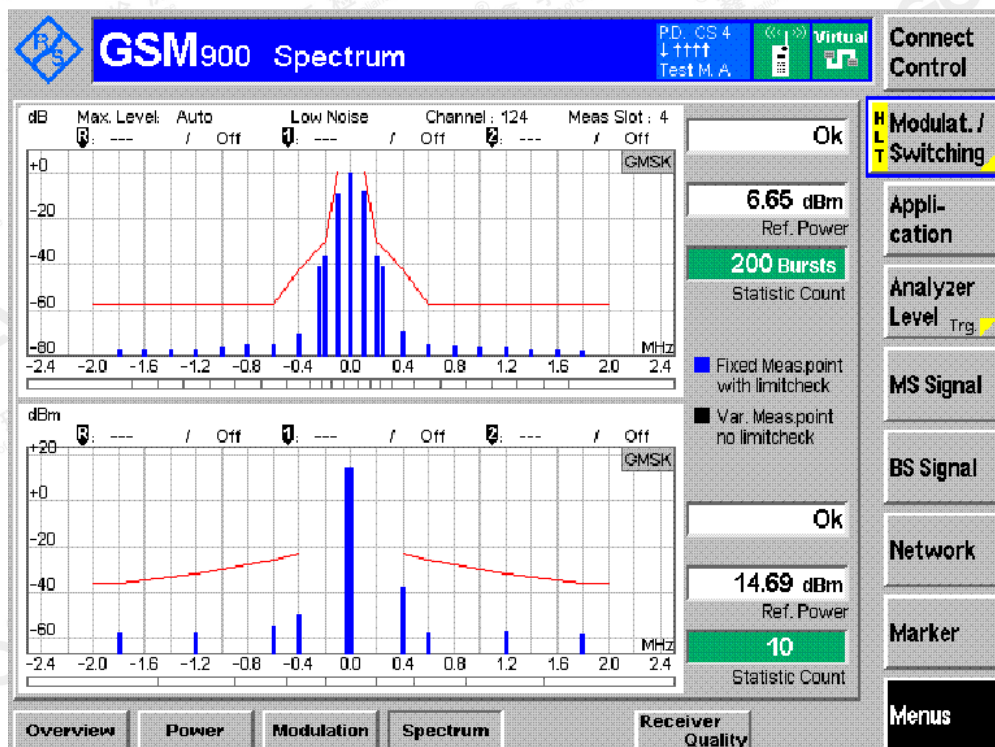


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Channel MCH PCL 12

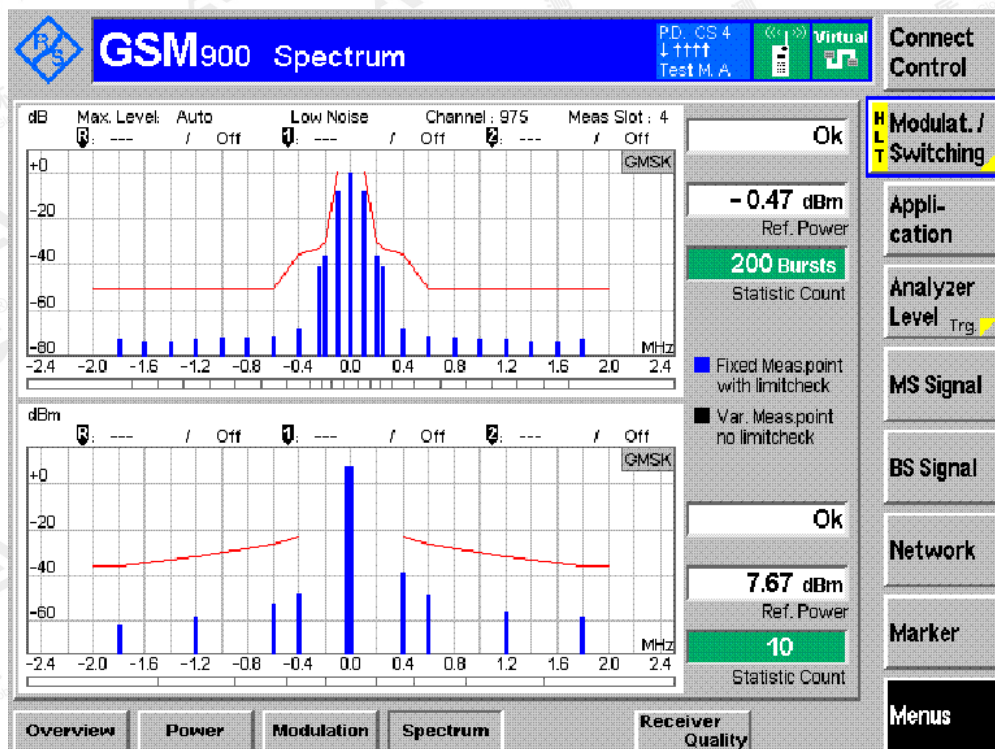


Channel HCH PCL 12

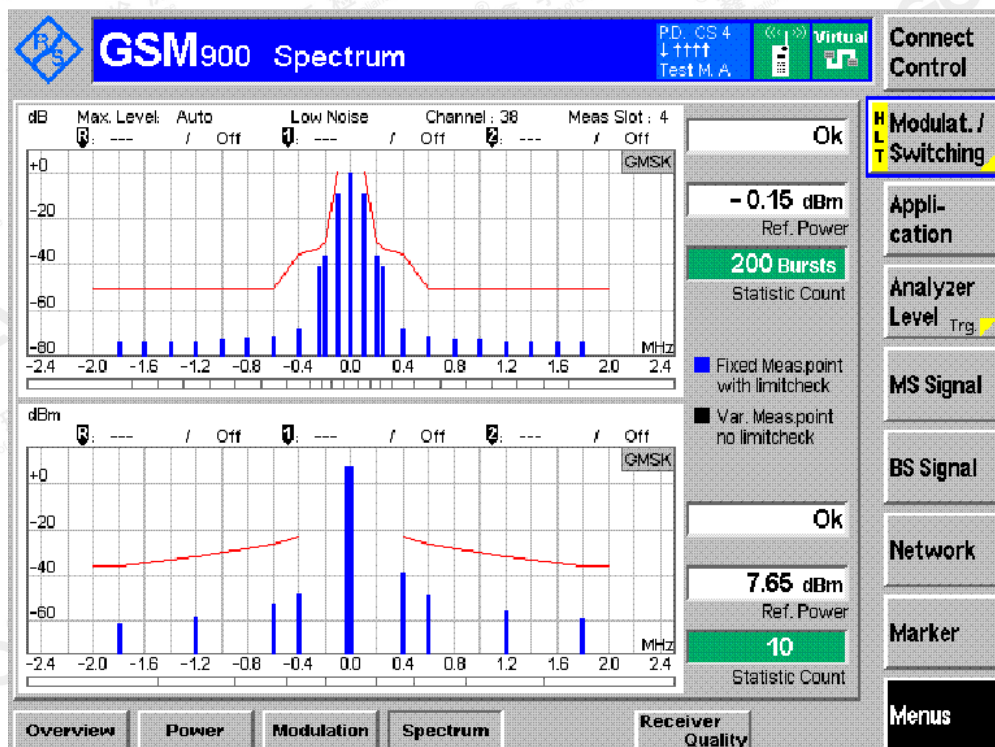


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Channel LCH PCL 19

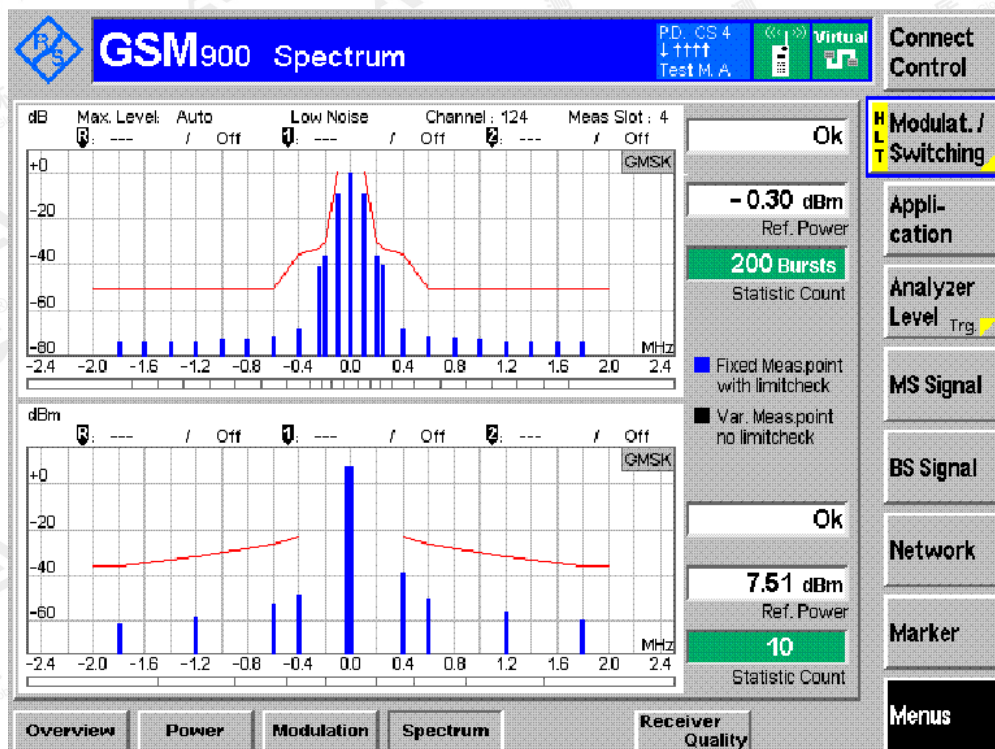


Channel MCH PCL 19



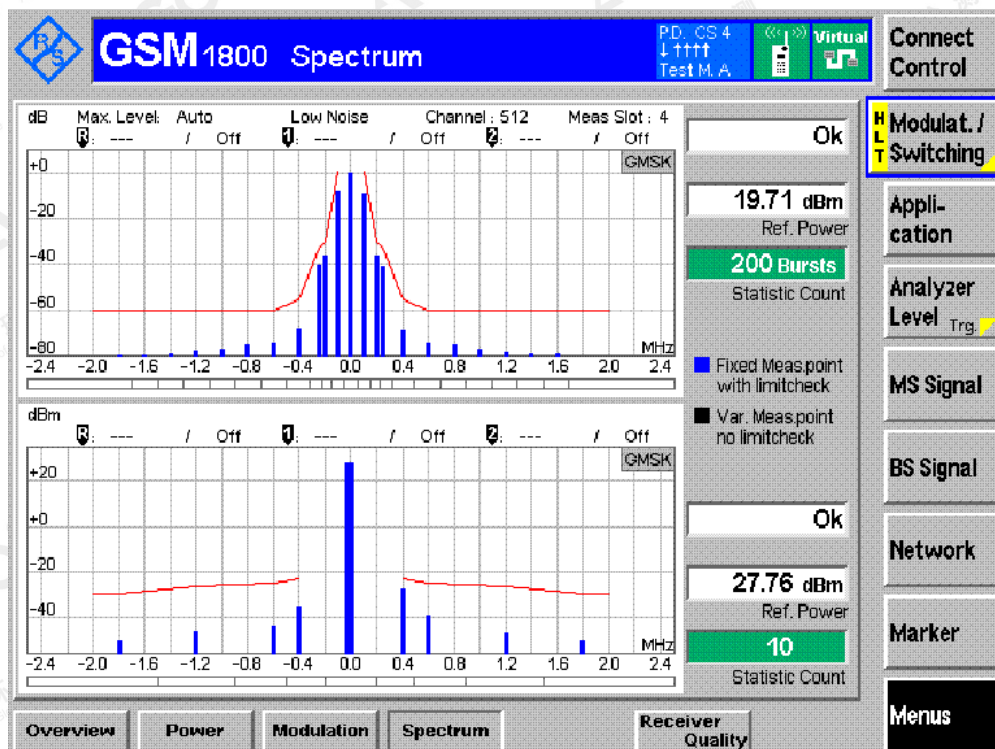
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Channel HCH PCL 19



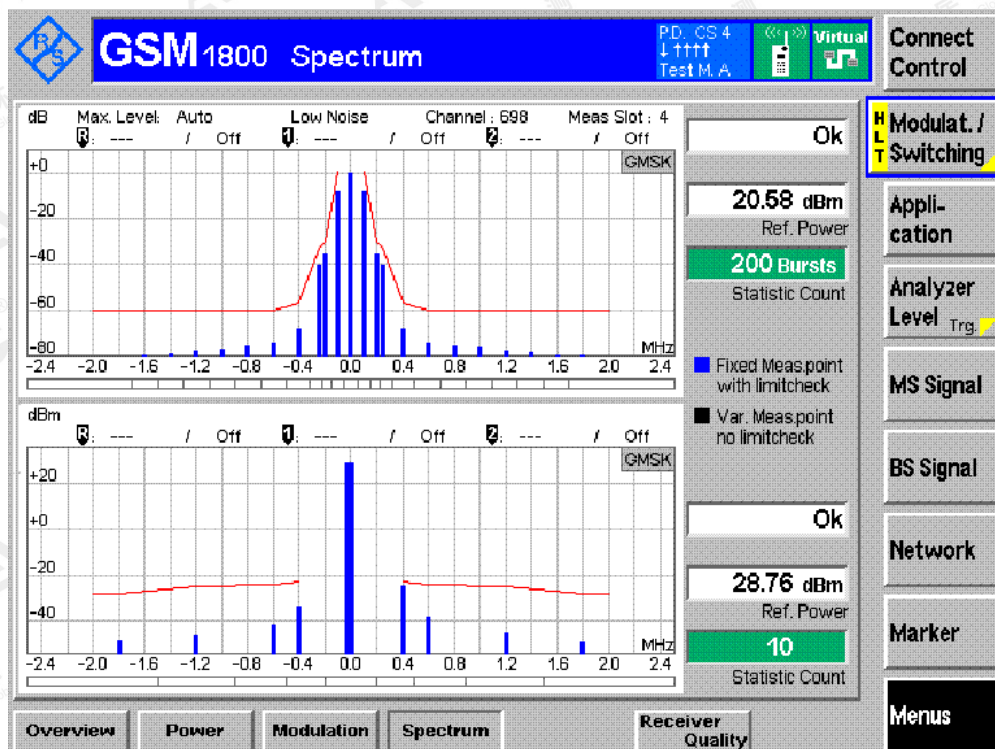
DCS1800 TN,VN

Channel LCH PCL 0

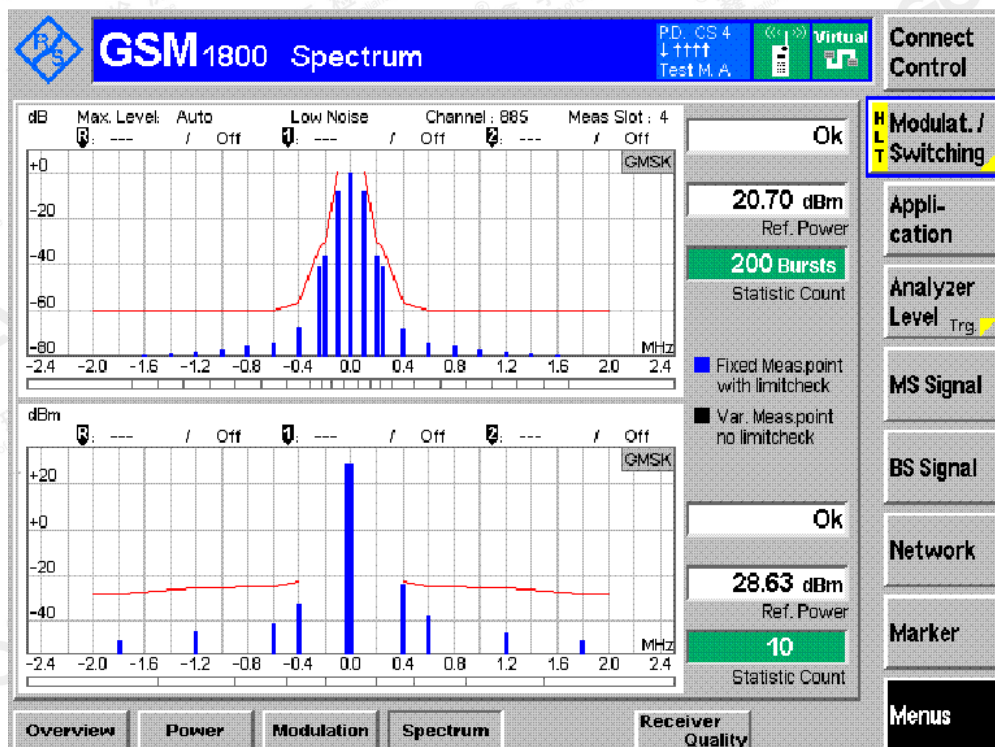


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Channel MCH PCL 0

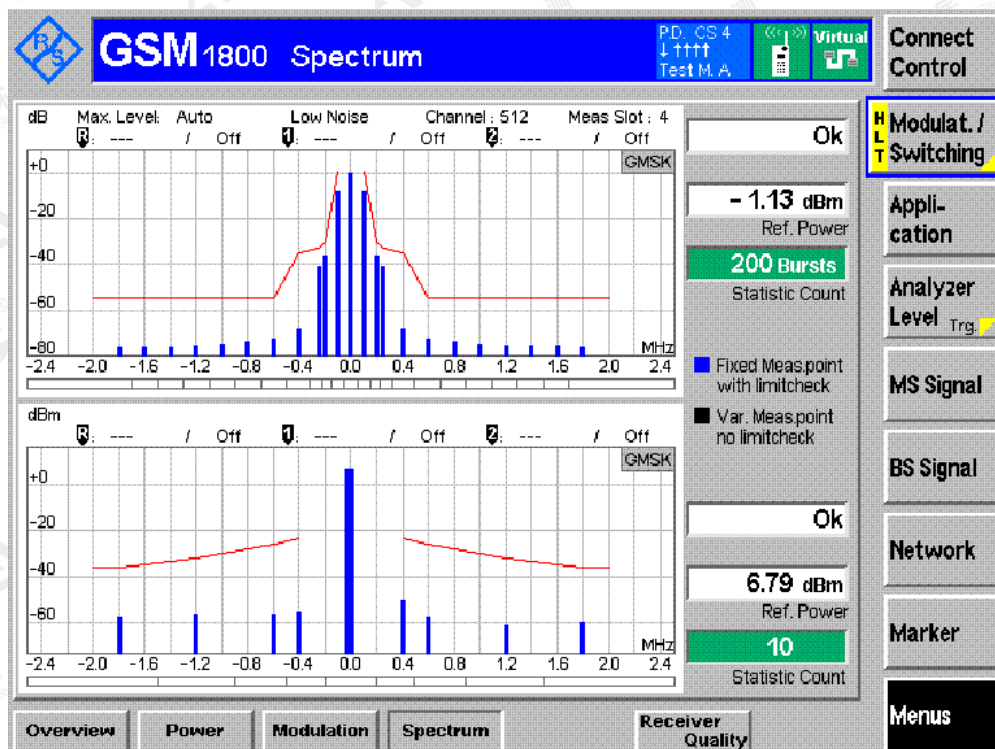


Channel HCH PCL 0

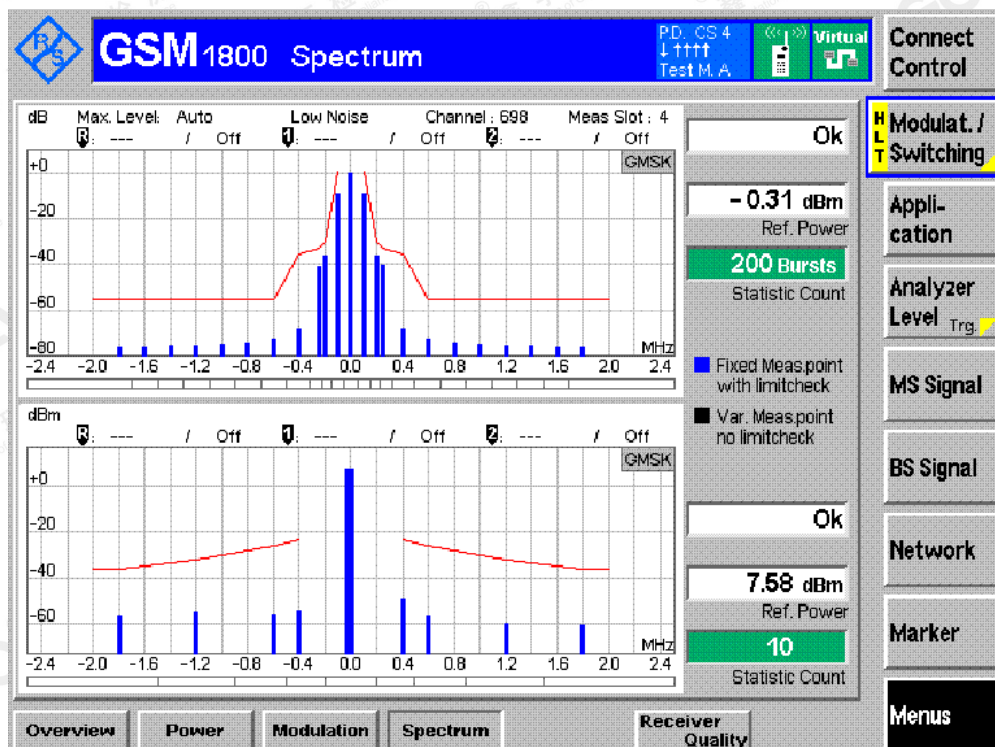


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Channel LCH PCL 8

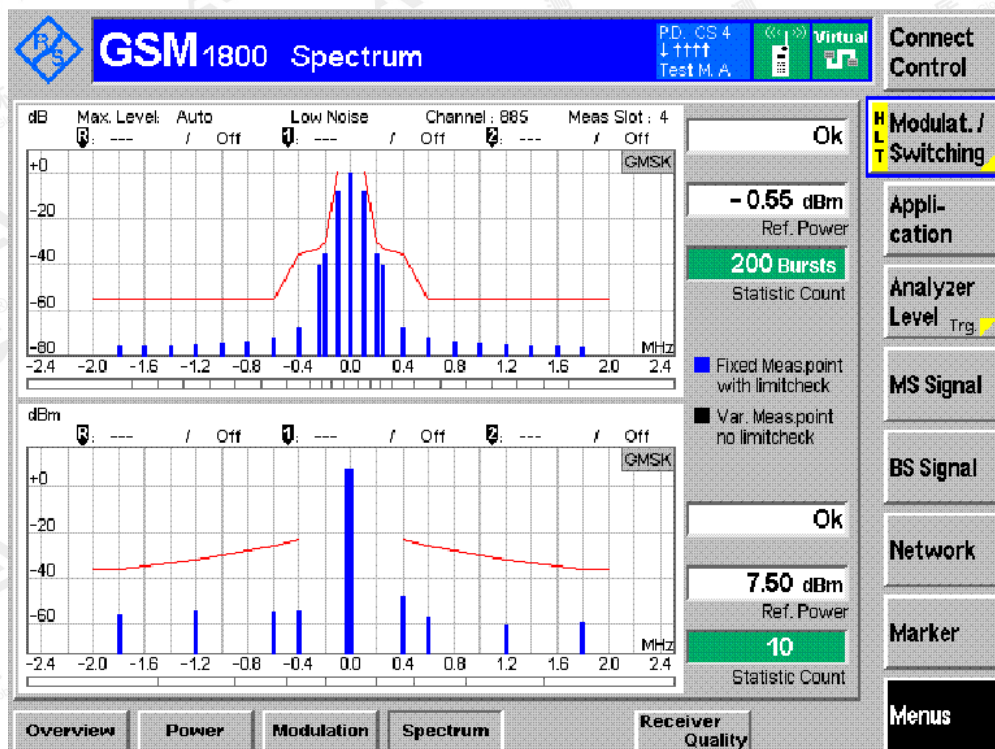


Channel MCH PCL 8

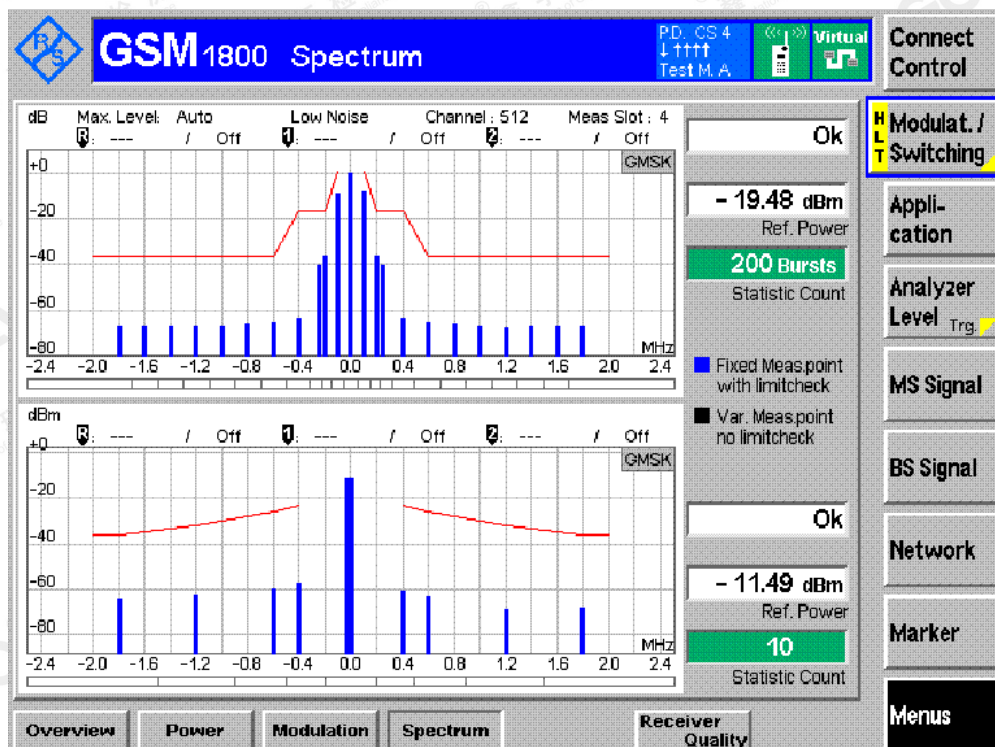


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Channel HCH PCL 8

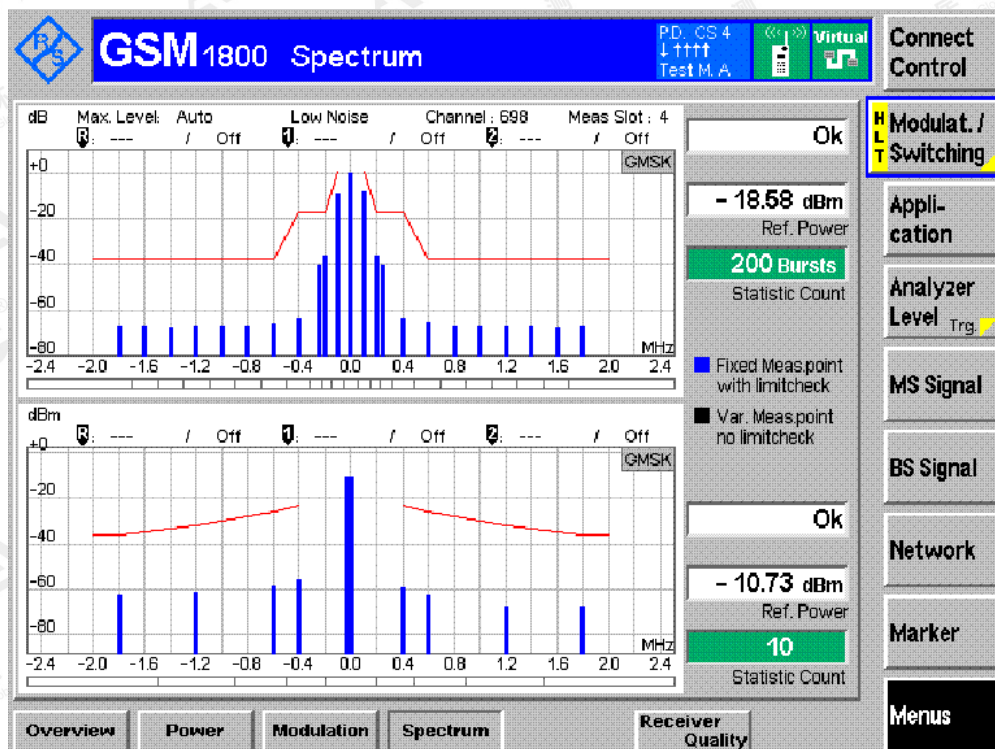


Channel LCH PCL 15

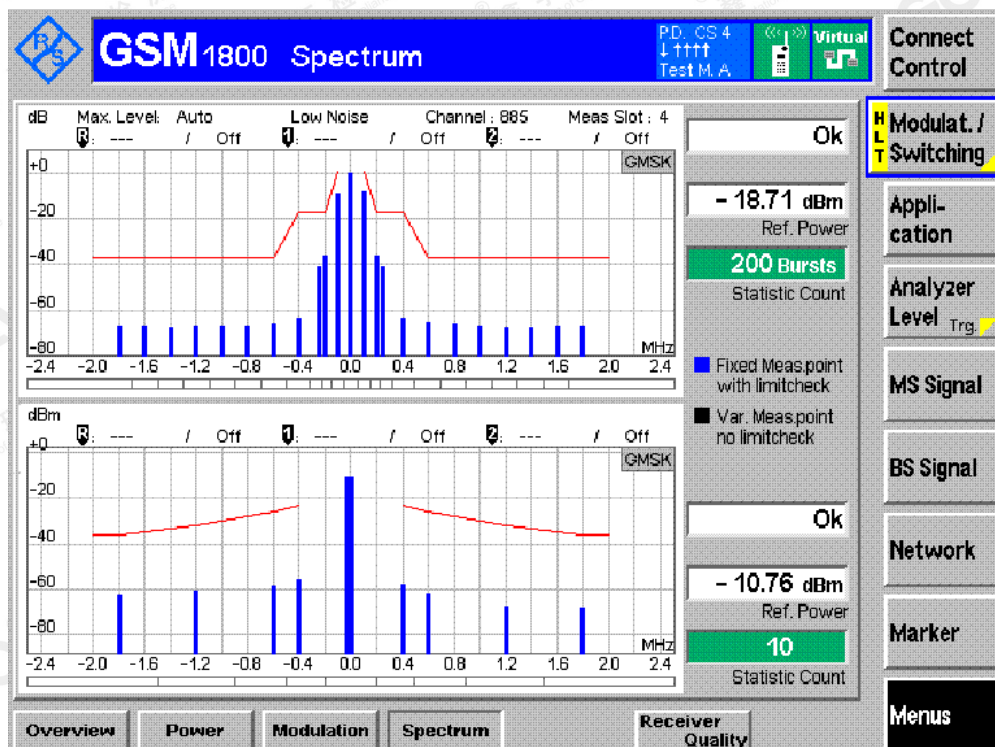


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Channel MCH PCL 15



Channel HCH PCL 15



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Appendix H. Conducted spurious emissions - MS allocated a channel

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

| Conducted spurious emissions | | GSM900;VN | | |
|------------------------------|---------|----------------|----------|--------|
| Frequency range | RBW(Hz) | Max.Limit(dBm) | MCH(dBm) | Result |
| 100kHz~50MHz | 10k | -36 | -57.35 | PASS |
| 50MHz~500MHz | 100k | -36 | -48.88 | PASS |
| 500MHz~850MHz | 3M | -36 | -38.81 | PASS |
| 850MHz~860MHz | 1M | -36 | -43.03 | PASS |
| 860MHz~870MHz | 300k | -36 | -49.13 | PASS |
| 870MHz~880MHz | 100k | -36 | -54.45 | PASS |
| 915MHz~925MHz | 100k | -36 | -54.83 | PASS |
| 960MHz~1GHz | 3M | -36 | -39.35 | PASS |
| 1GHz~1805MHz | 3M | -30 | -39.16 | PASS |
| 1880MHz~12.75GHz | 3M | -30 | -31.72 | PASS |
| 896.6MHz~900.8MHz | 30K | -36 | -58.65 | PASS |
| 904.4MHz~908.6MHz | 30K | -36 | -59.46 | PASS |
| 880MHz~896.6MHz | 100K | -36 | -53.39 | PASS |
| 908.6MHz~915MHz | 100K | -36 | -53.43 | PASS |

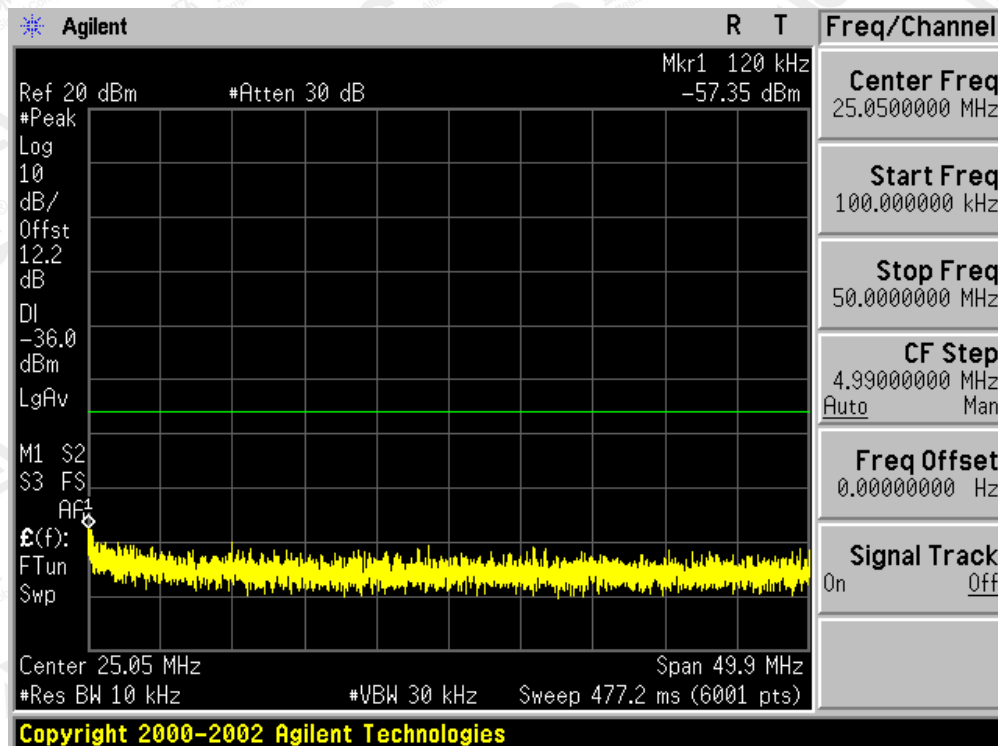
| Conducted spurious emissions | | DCS1800;VN | | |
|------------------------------|---------|----------------|----------|--------|
| Frequency range | RBW(Hz) | Max.Limit(dBm) | MCH(dBm) | Result |
| 100kHz~50MHz | 10k | -36 | -57.86 | PASS |
| 50MHz~500MHz | 100k | -36 | -48.90 | PASS |
| 500MHz~925MHz | 3M | -36 | -39.15 | PASS |
| 960MHz~1GHz | 3M | -36 | -42.80 | PASS |
| 1GHz~1680MHz | 3M | -30 | -38.91 | PASS |
| 1680MHz~1690MHz | 1M | -30 | -42.98 | PASS |
| 1690MHz~1700MHz | 300k | -30 | -49.55 | PASS |
| 1700MHz~1710MHz | 100k | -30 | -53.32 | PASS |
| 1785MHz~1795MHz | 100K | -30 | -53.49 | PASS |
| 1795MHz~1805MHz | 300k | -30 | -48.87 | PASS |
| 1880MHz~12.75GHz | 3M | -30 | -31.01 | PASS |
| 1741.4MHz~1745.6MHz | 30K | -36 | -58.81 | PASS |
| 1749.2MHz~1753.4MHz | 30K | -36 | -59.03 | PASS |
| 1710MHz~1741.4MHz | 100K | -36 | -53.10 | PASS |
| 1753.4MHz~1785MHz | 100K | -36 | -53.34 | PASS |

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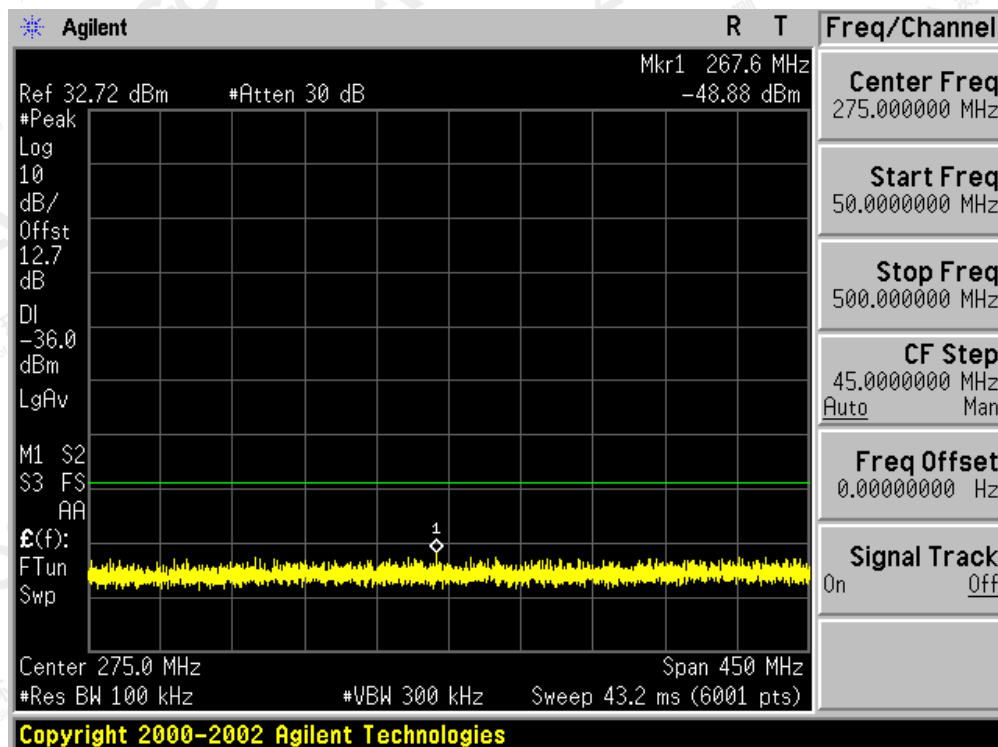
Graphs of conducted spurious emission-MS allocated a channel

GSM900: channel MCH VN

100kHz~50MHz

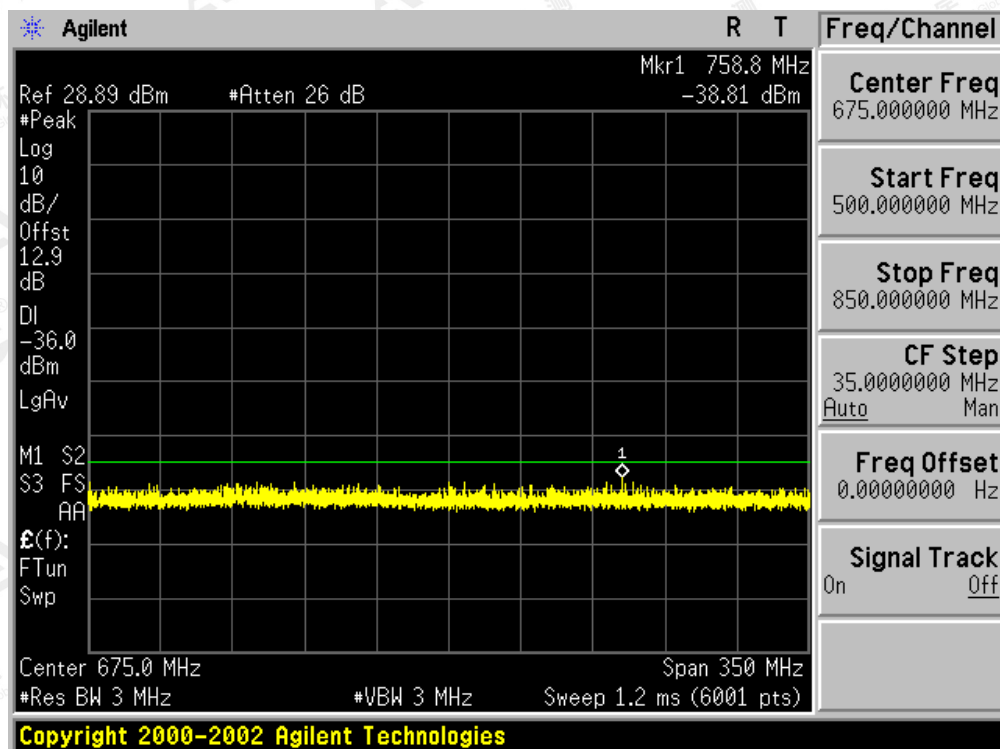


50MHz~500MHz

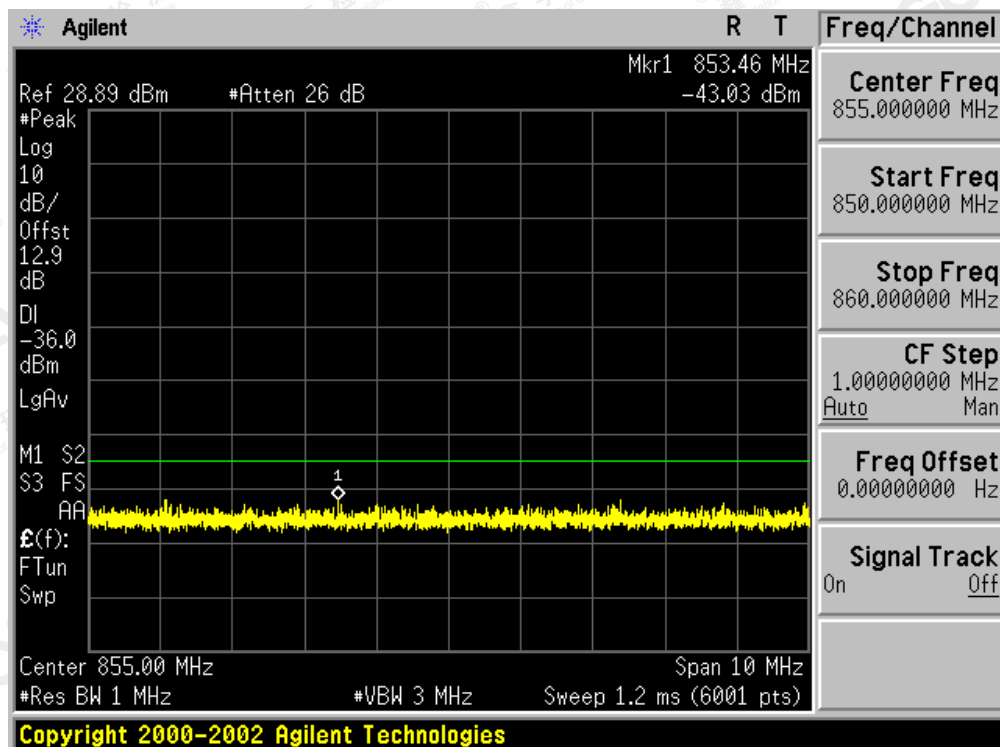


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500MHz~850MHz

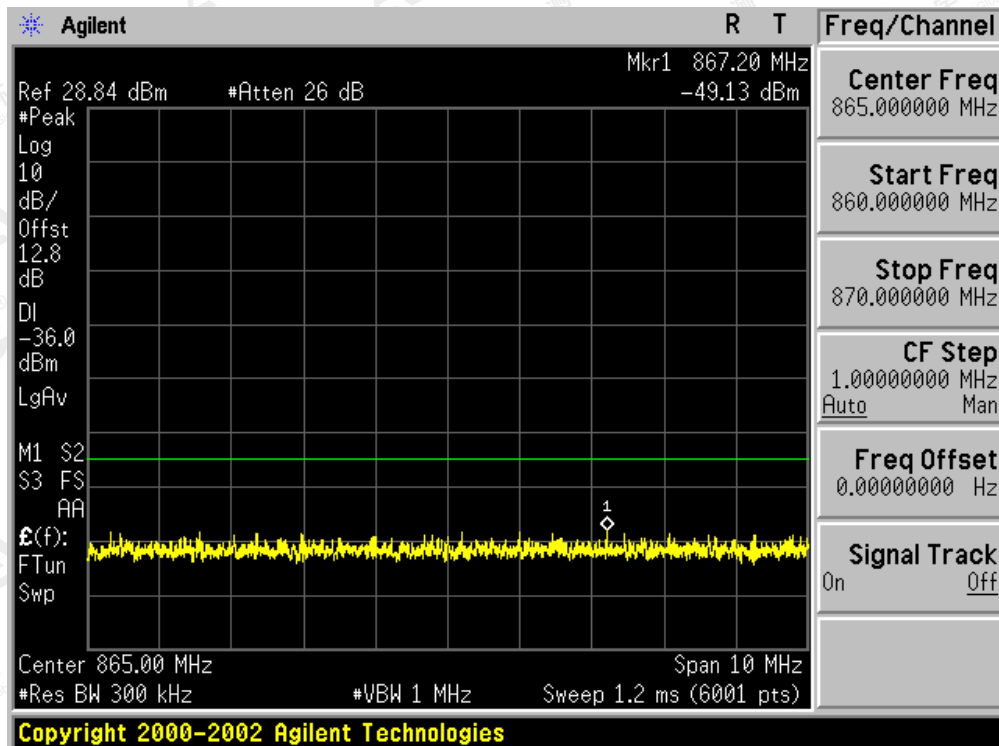


850MHz~860MHz

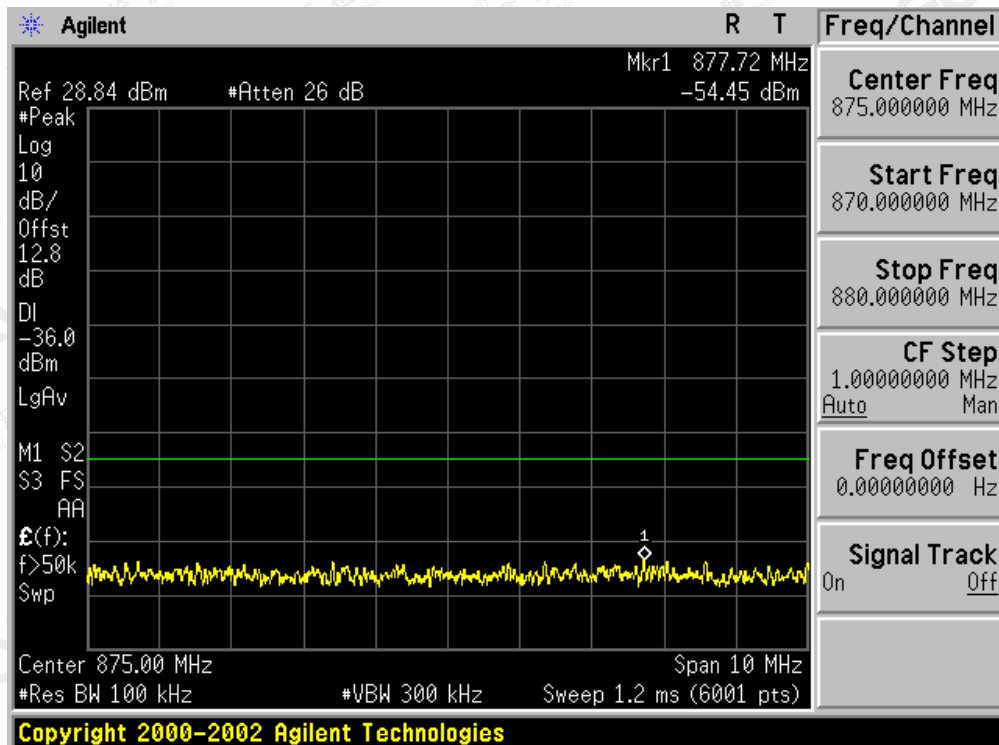


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860MHz~870MHz

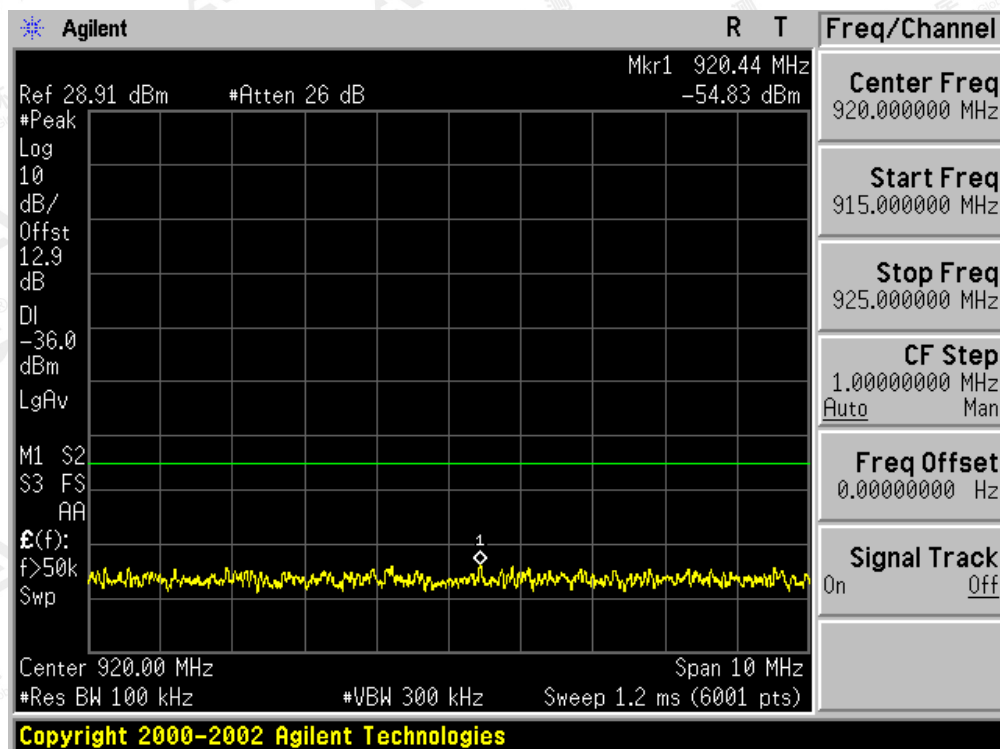


870MHz~880MHz

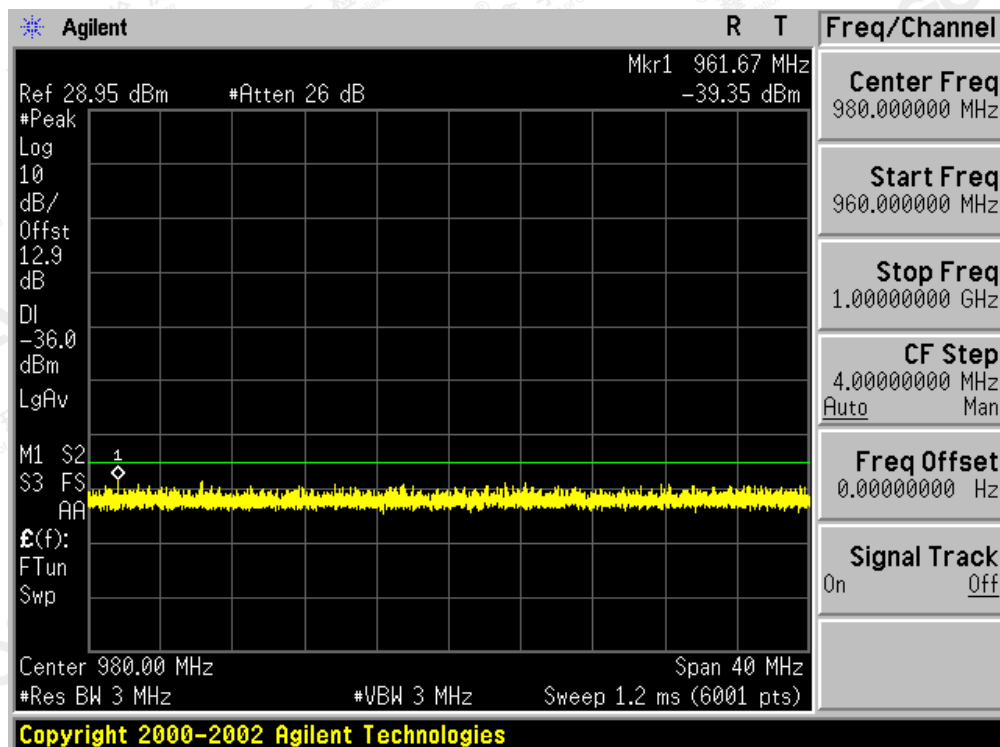


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915MHz~925MHz

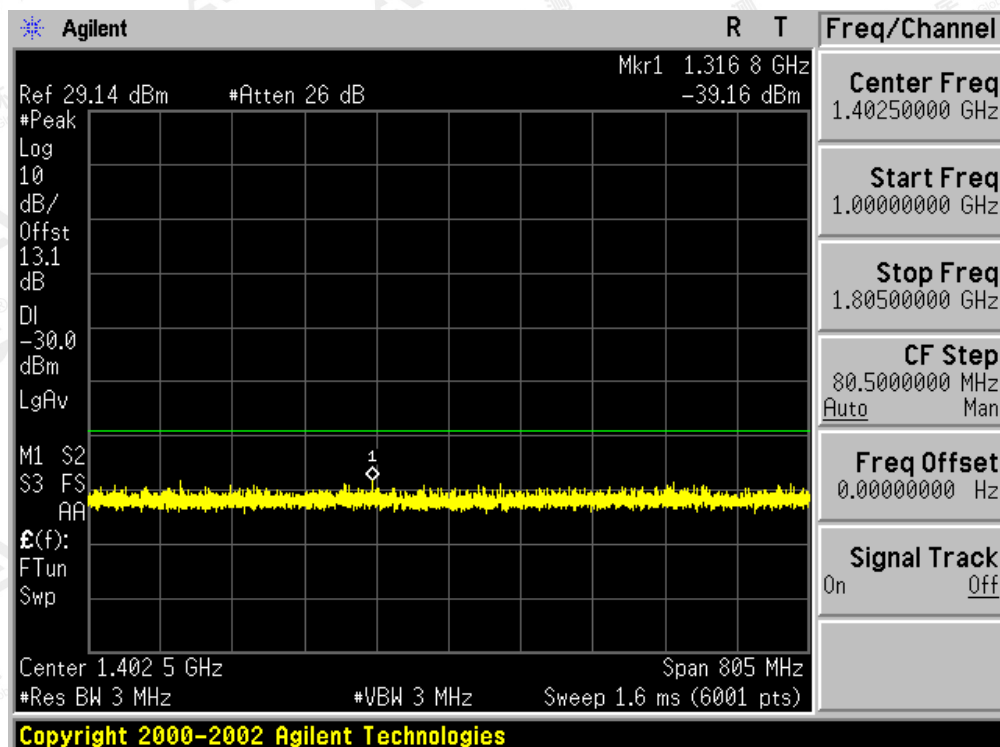


960MHz~1GHz

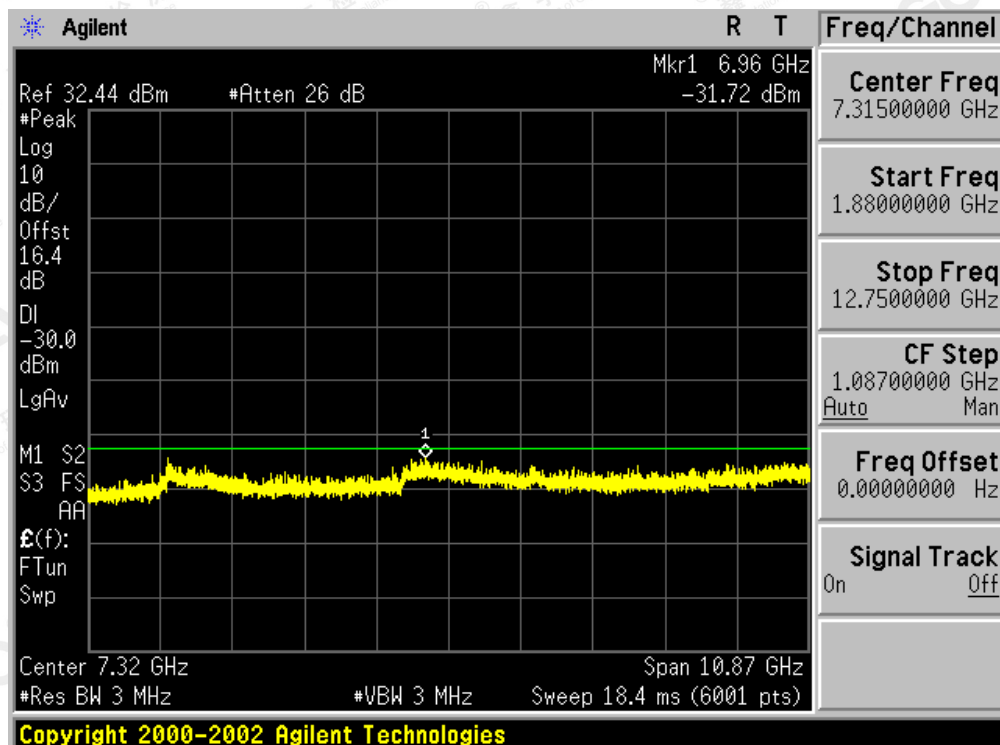


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1GHz~1805MHz

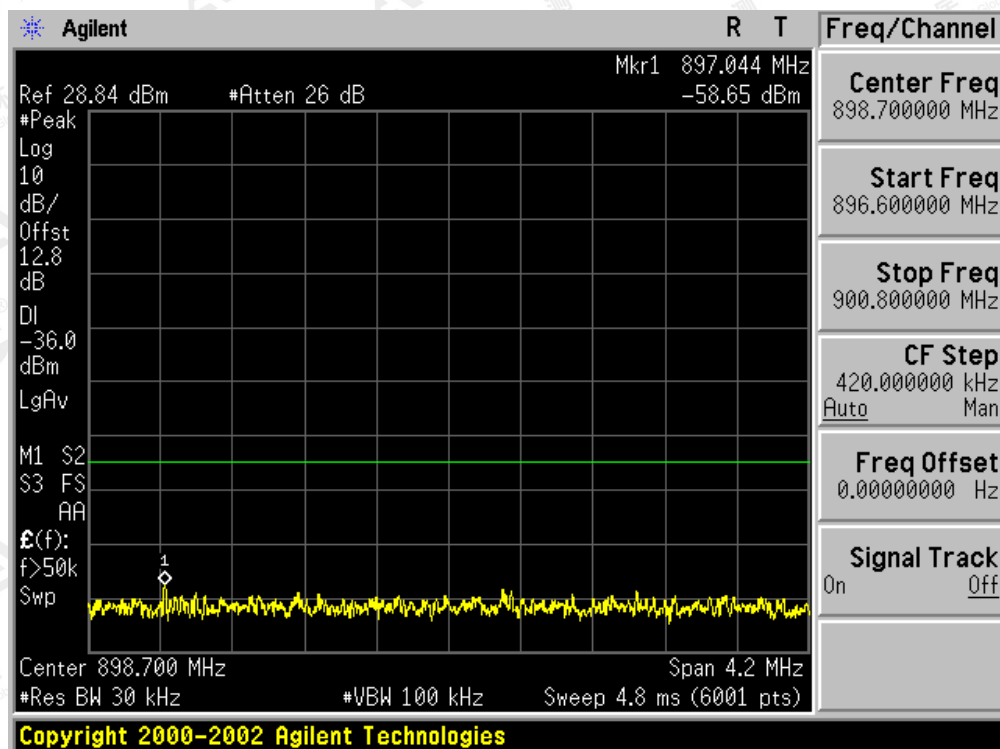


1880MHz~12.75GHz

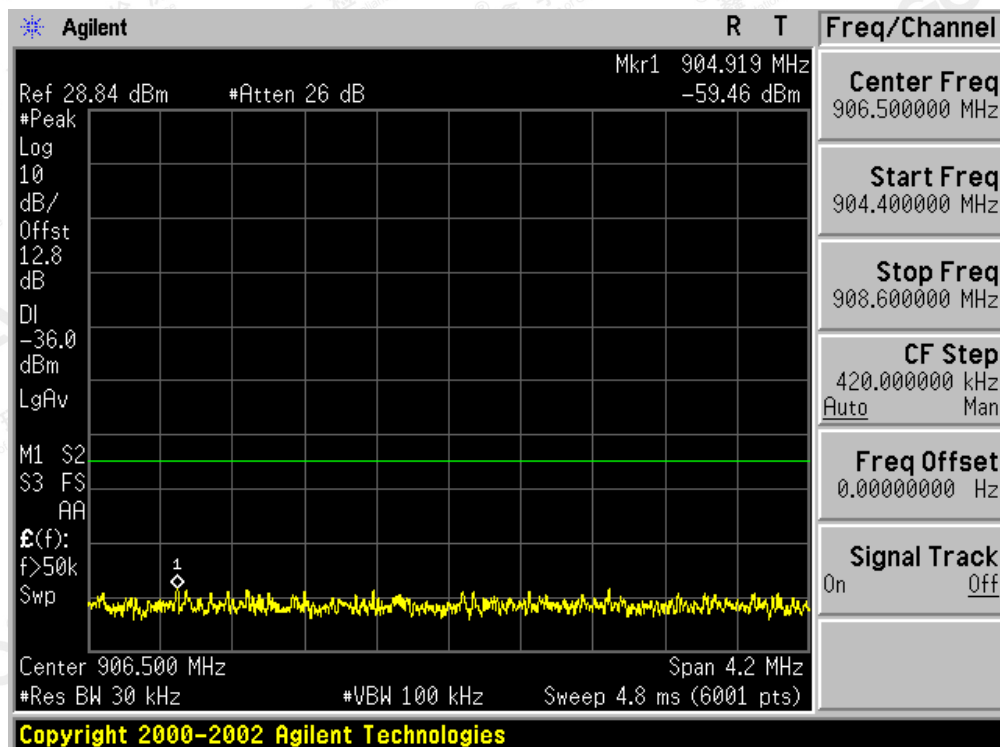


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896.6MHz~900.8MHz

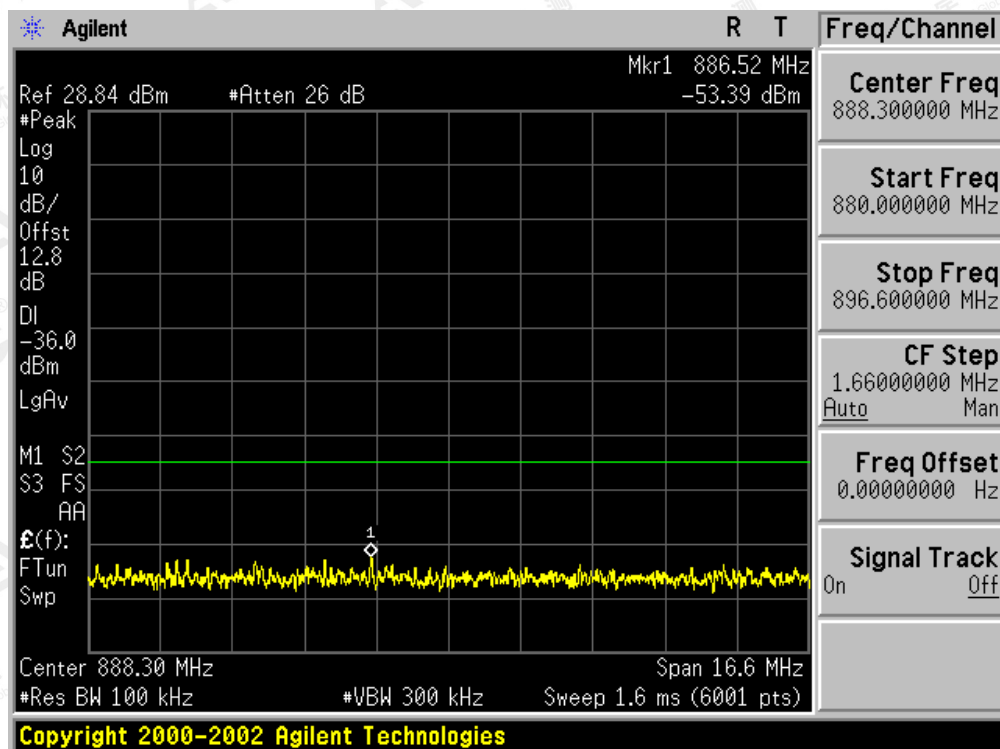


904.4MHz~908.6MHz

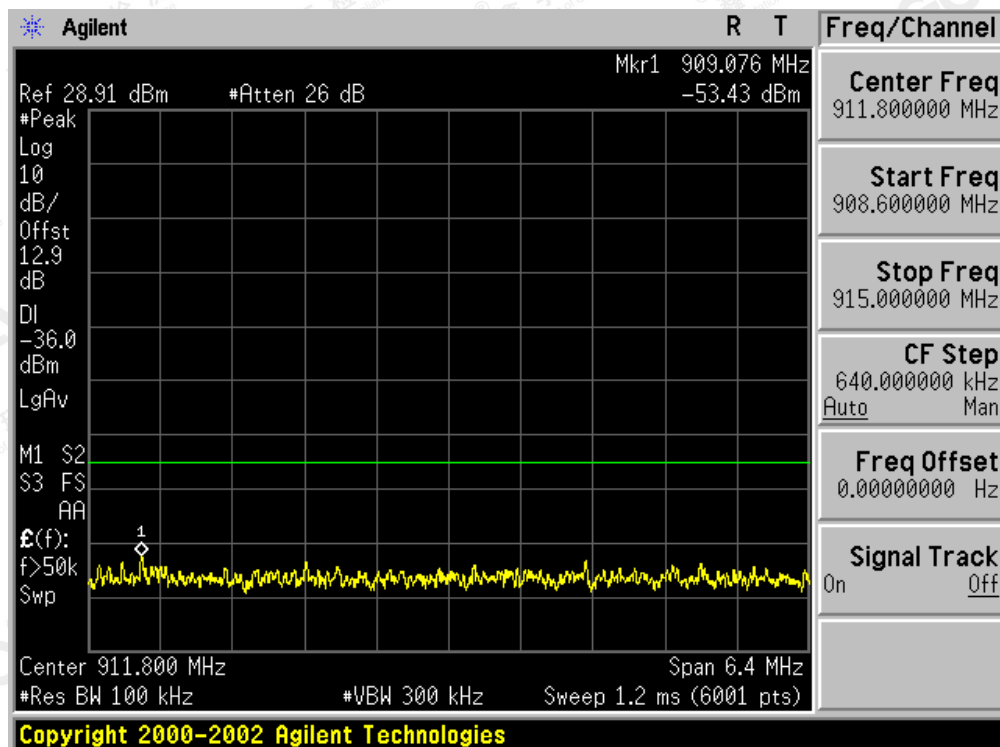


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880MHz~896.6MHz

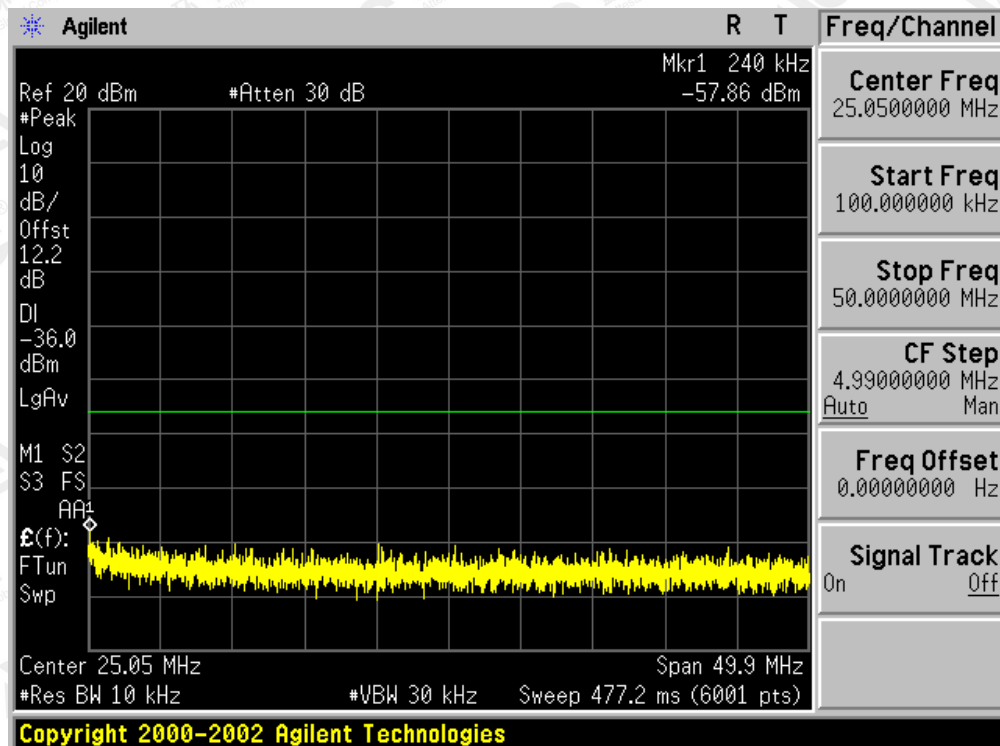


908.6MHz~915MHz

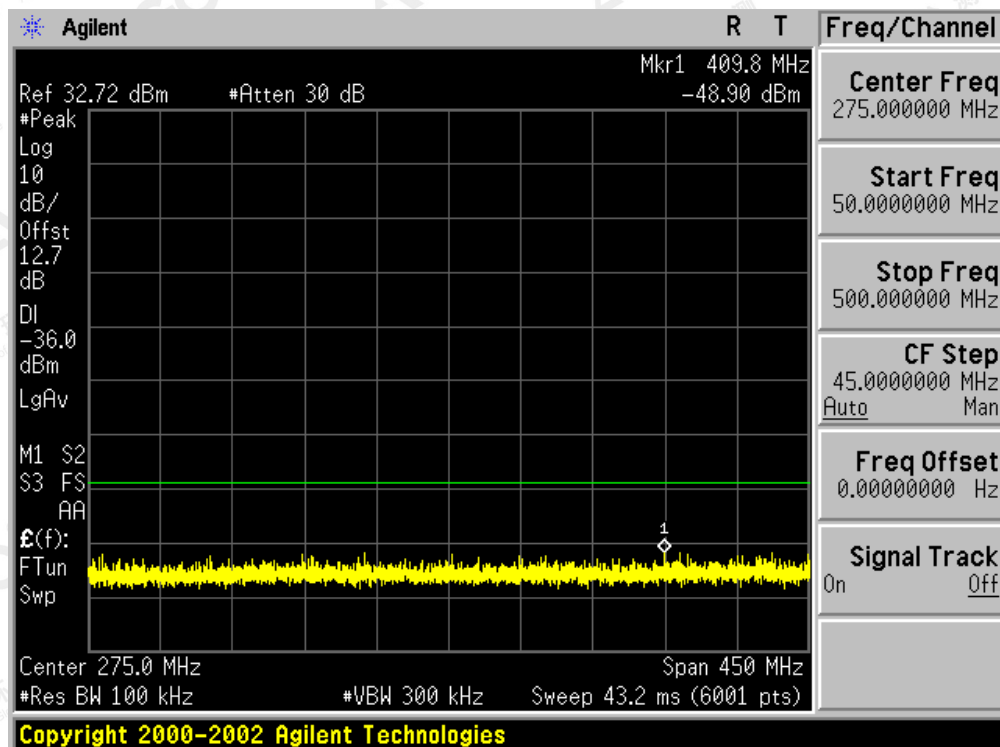


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DCS1800: channel MCH VN
100kHz~50MHz

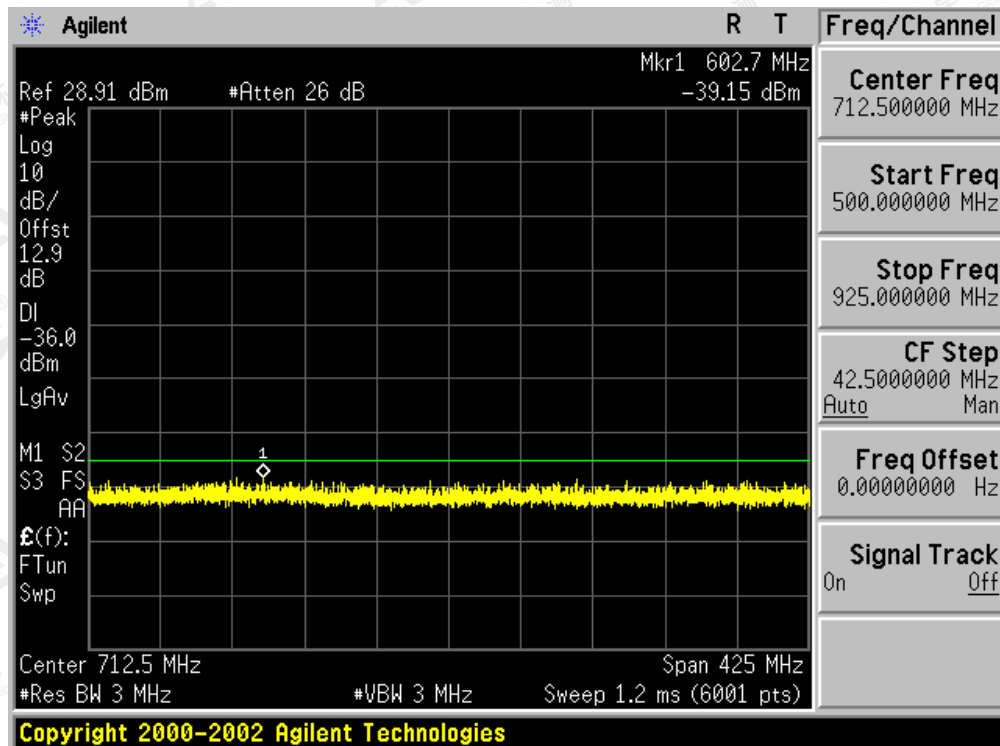


50MHz~500MHz

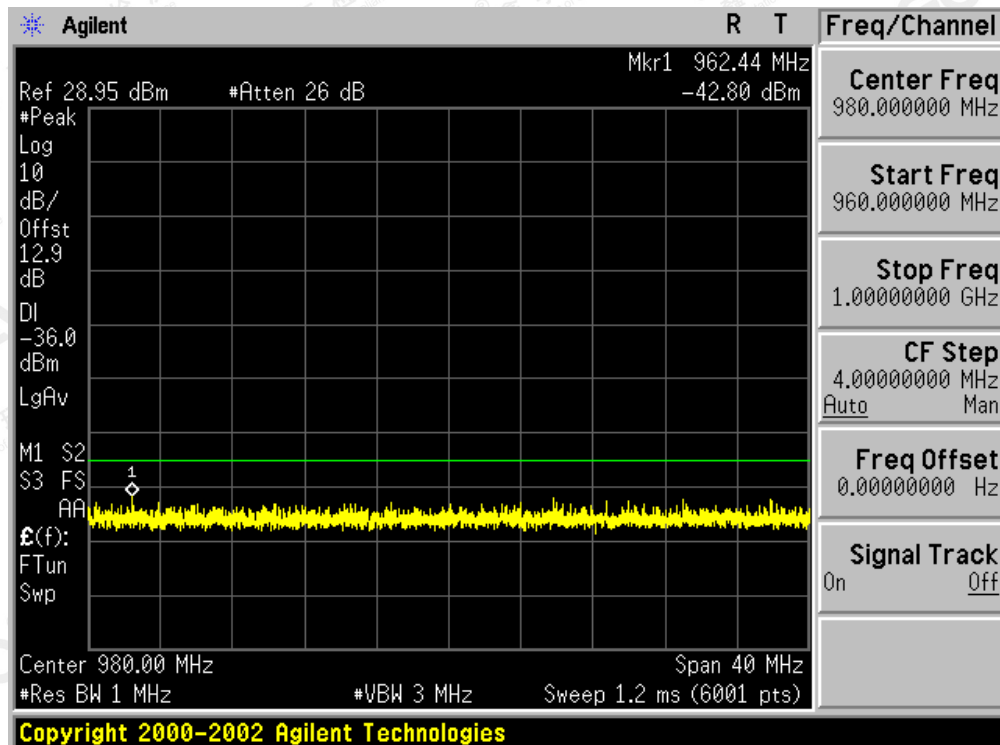


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500MHz~925MHz

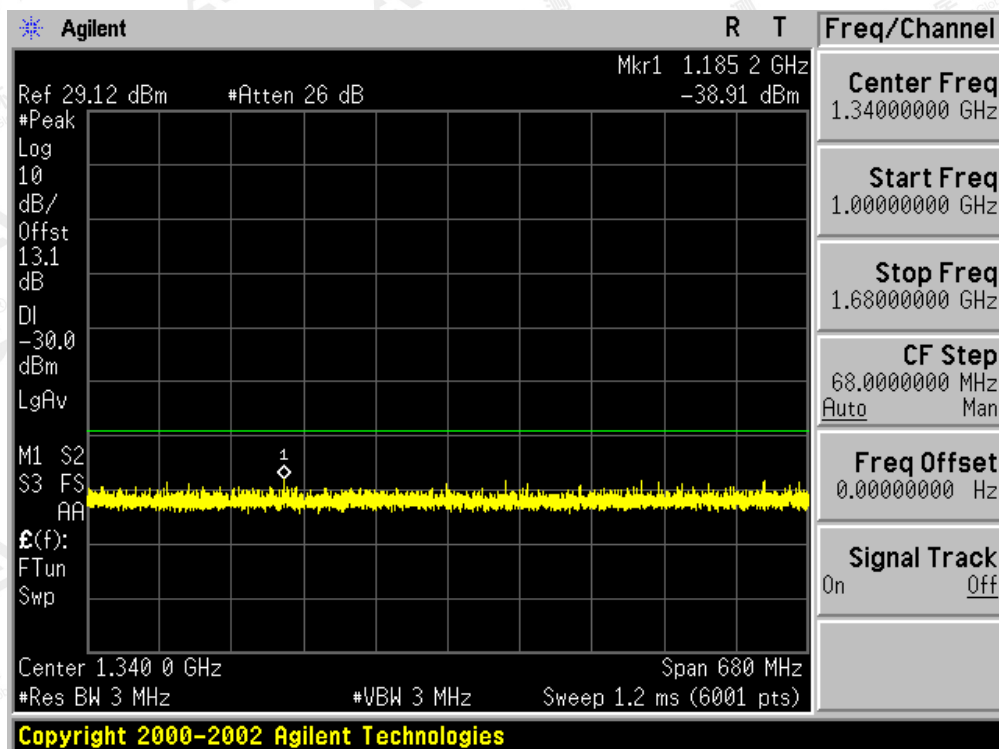


960MHz~1GHz

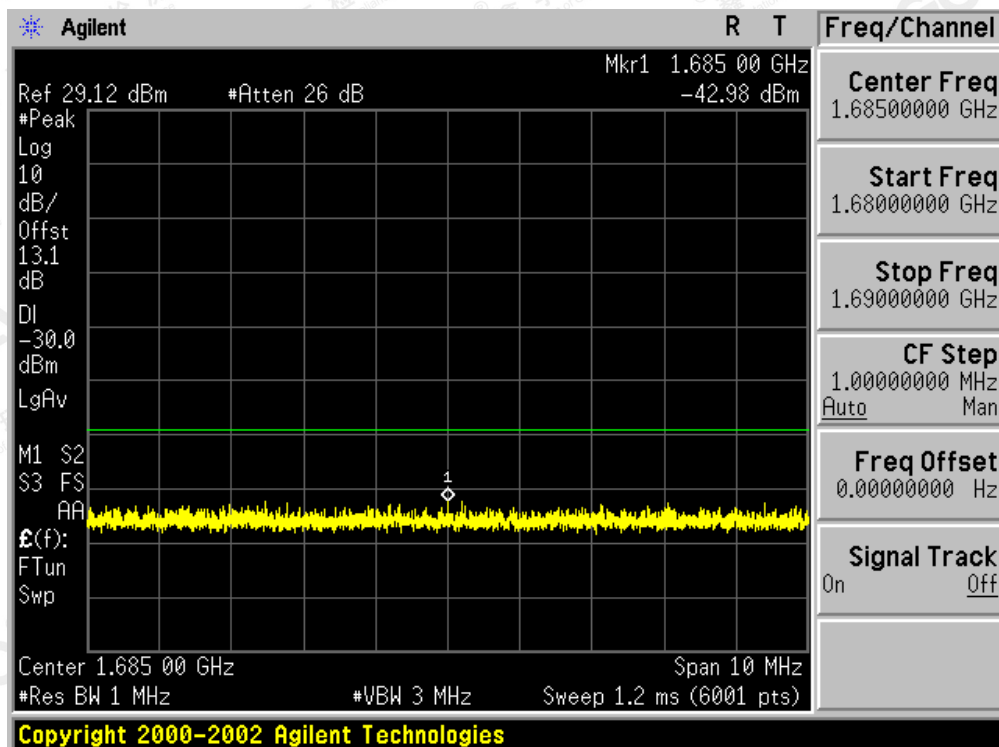


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1GHz~1680MHz

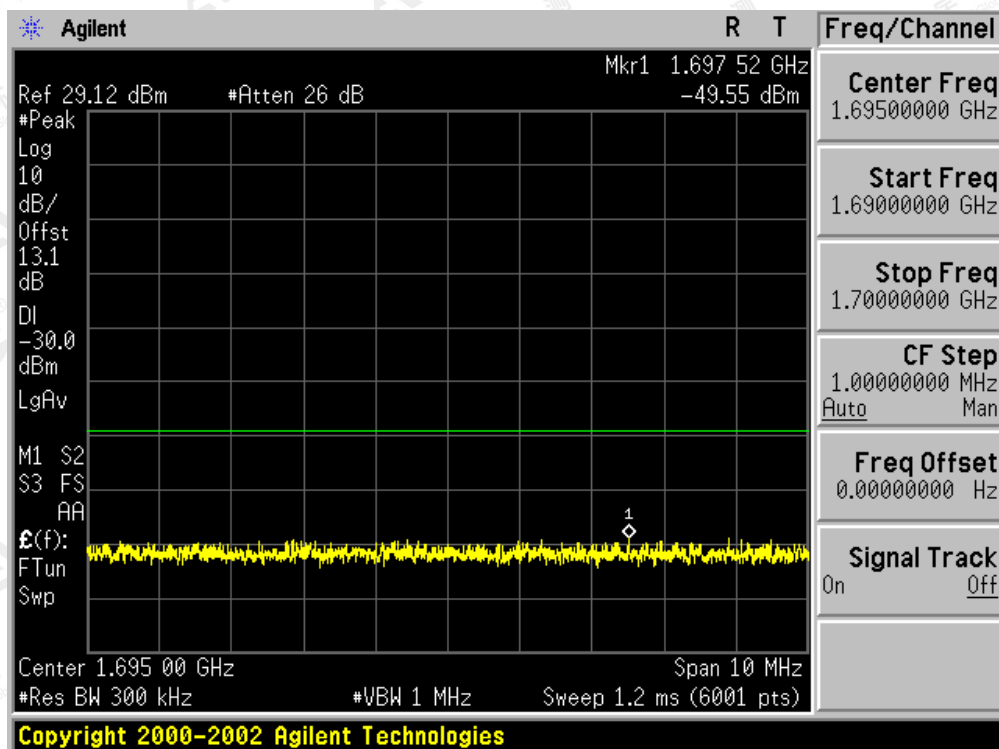


1680MHz~1690MHz

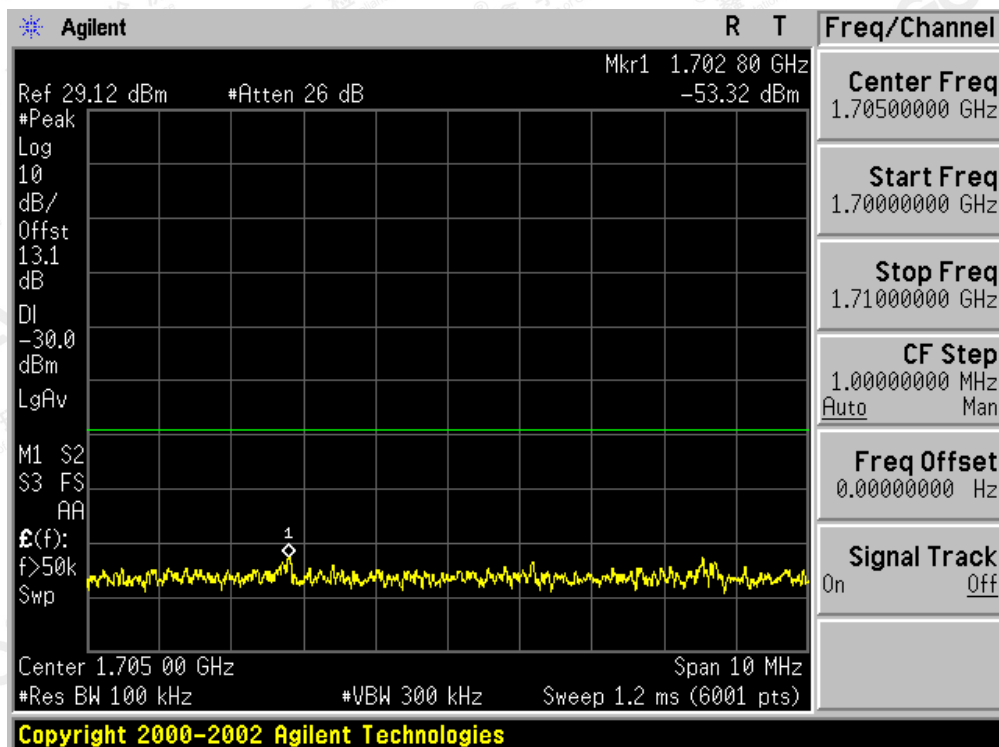


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1690MHz~1700MHz

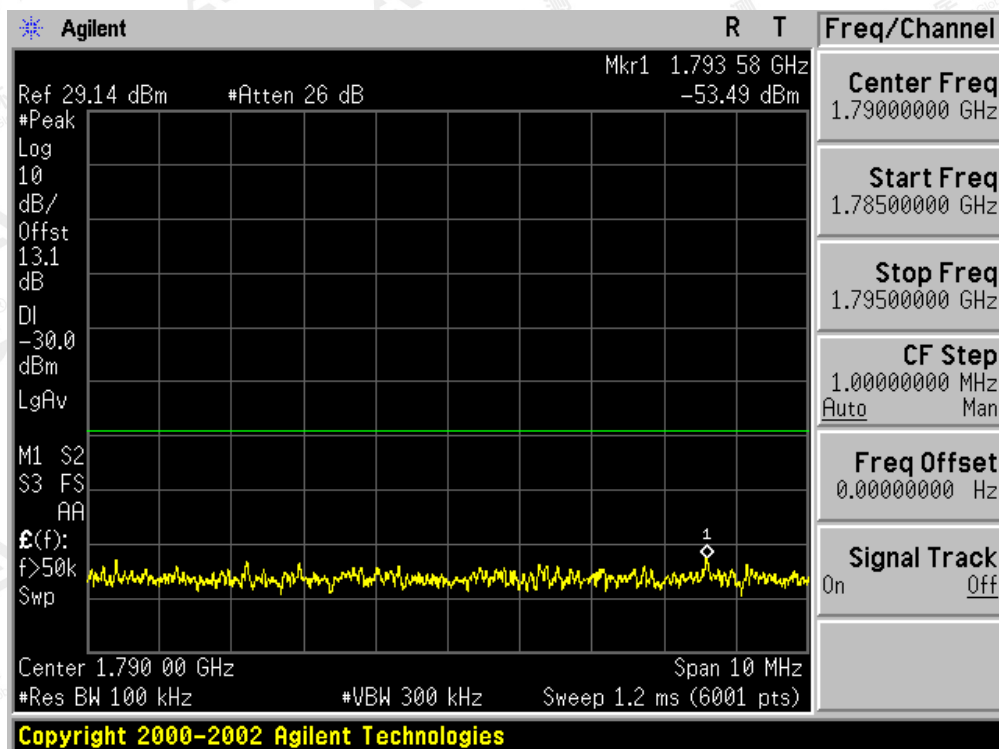


1700MHz~1710MHz

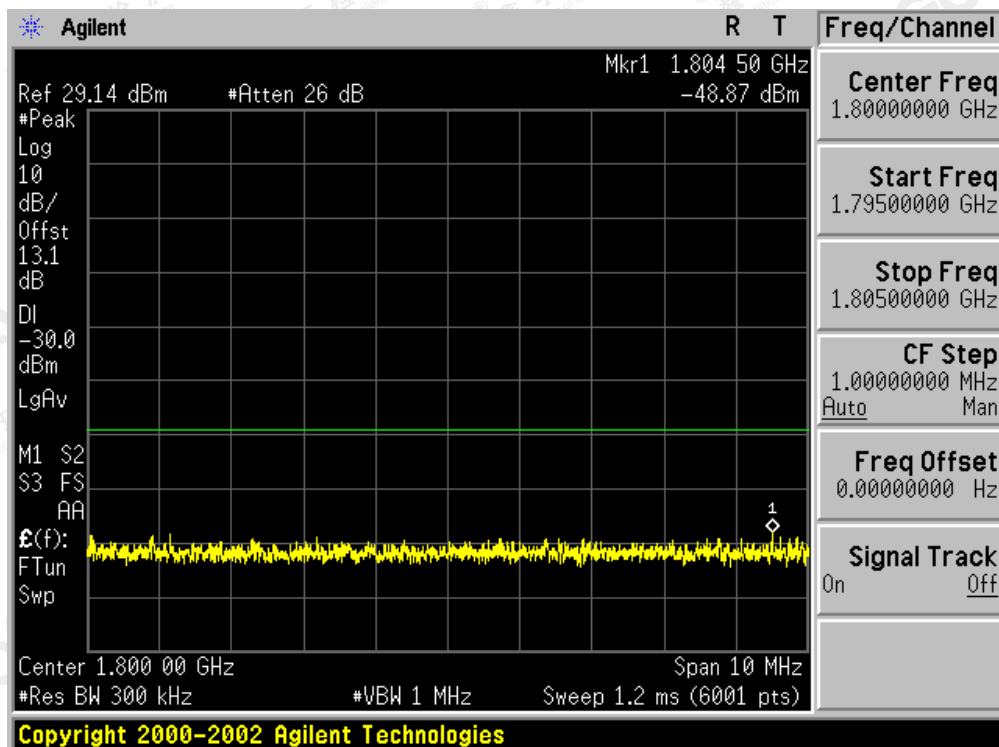


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1785MHz~1795MHz

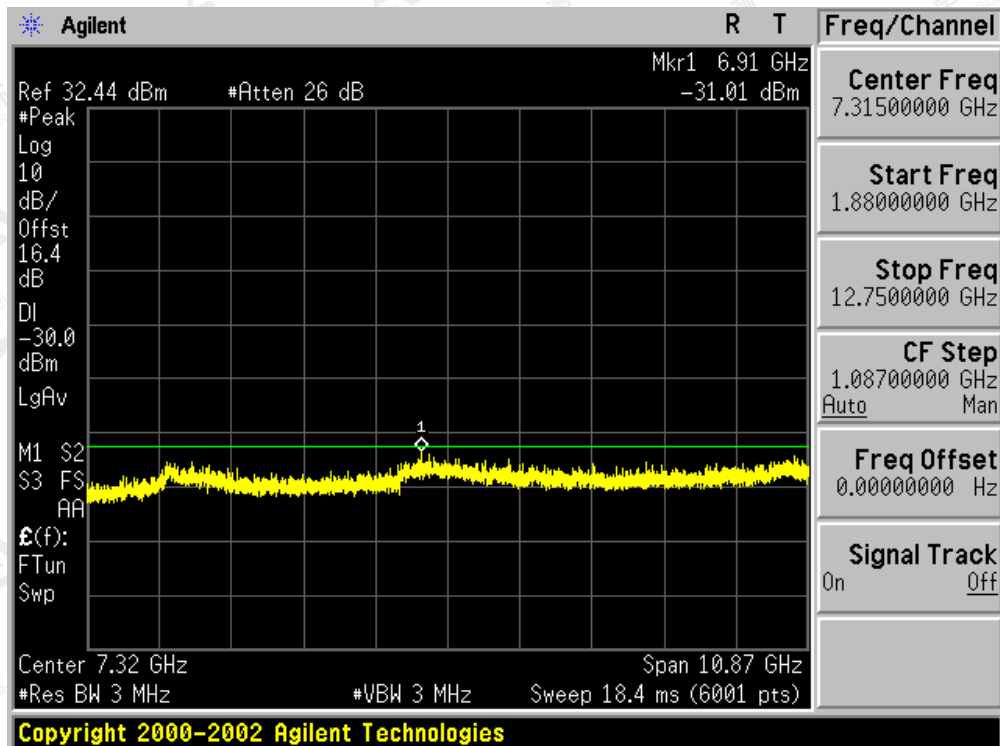


1795MHz~1805MHz

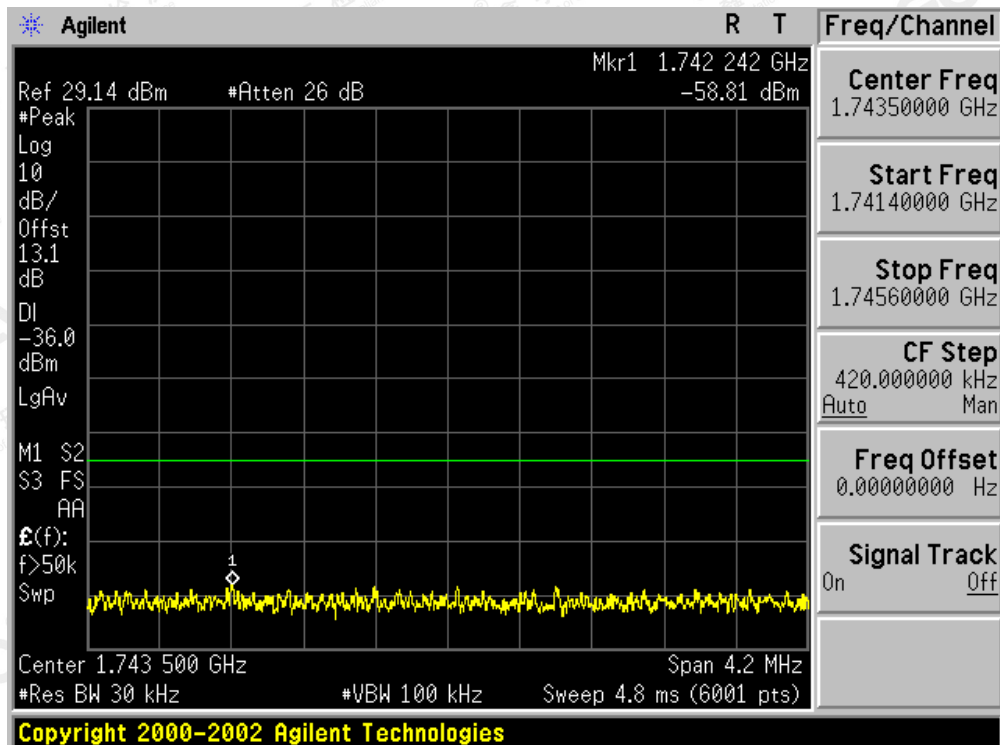


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1880MHz~12.75GHz

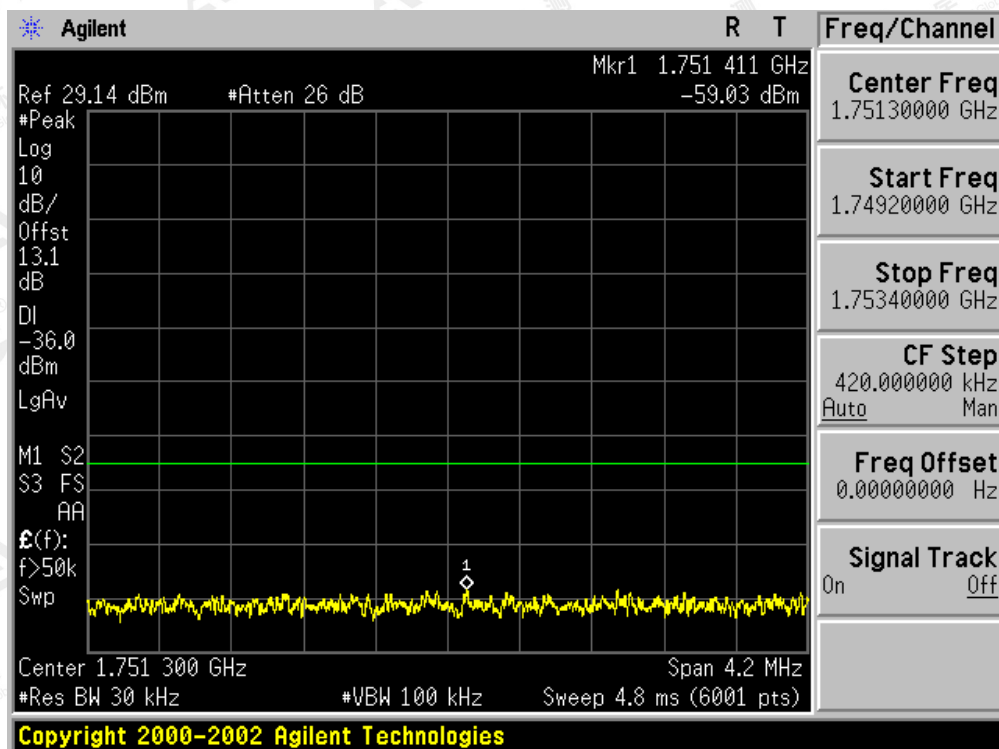


1741.4MHz~1745.6MHz

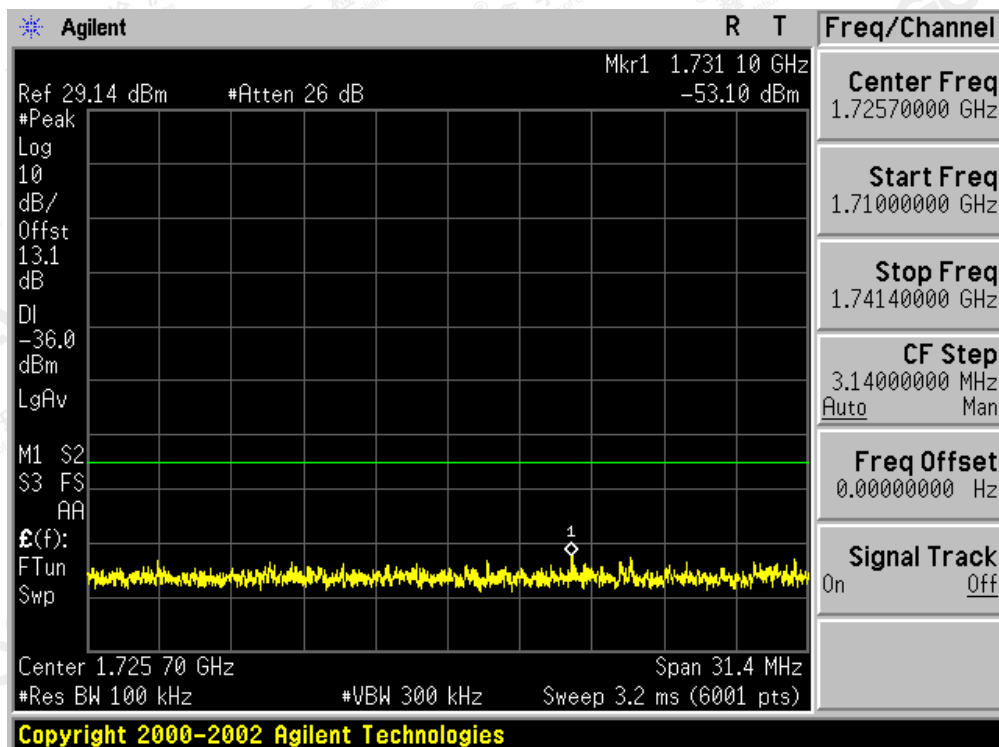


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1749.2MHz~1753.4MHz

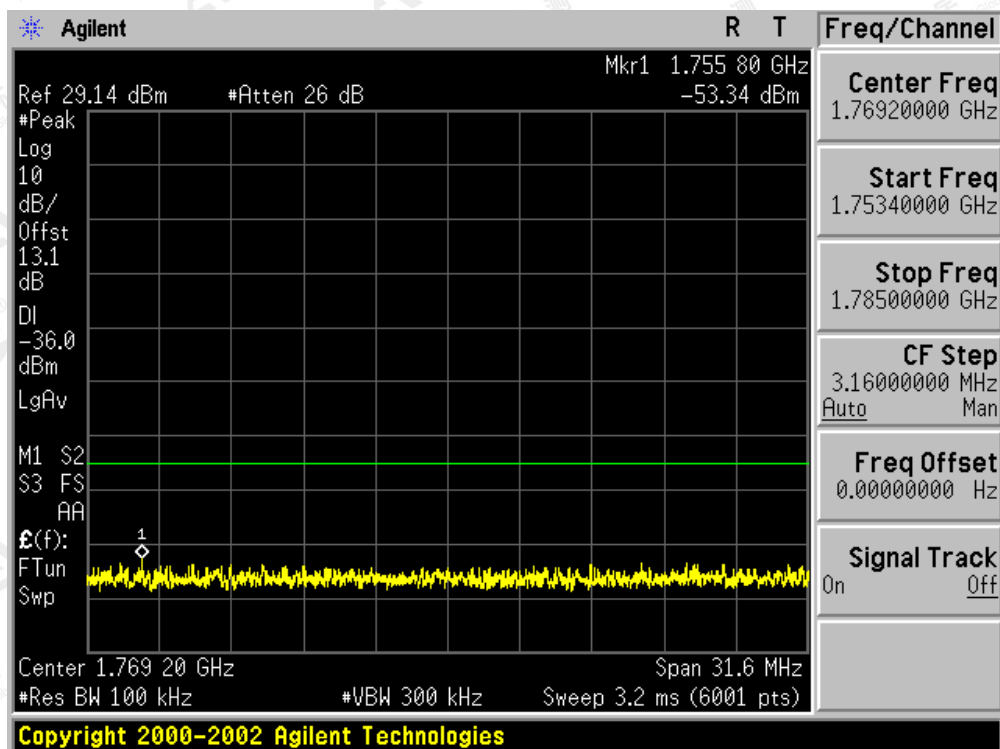


1710MHz~1741.4MHz



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1753.4MHz~1785MHz



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Appendix I. Conducted spurious emissions- MS in idle mode

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

| Conducted spurious emissions | GSM900;VN | | | |
|------------------------------|-----------|----------------|----------|--------|
| Frequency range | RBW(Hz) | Max.Limit(dBm) | MCH(dBm) | Result |
| 100kHz~50MHz | 10k | -57 | -61.90 | PASS |
| 50MHz~880MHz | 100k | -57 | -59.17 | PASS |
| 880MHz~915MHz | 100k | -59 | -59.19 | PASS |
| 915MHz~1000MHz | 100k | -57 | -59.21 | PASS |
| 1GHz~1710MHz | 100k | -47 | -52.10 | PASS |
| 1710MHz~1785MHz | 100k | -53 | -57.75 | PASS |
| 1785MHz~12.75GHz | 100k | -47 | -61.98 | PASS |

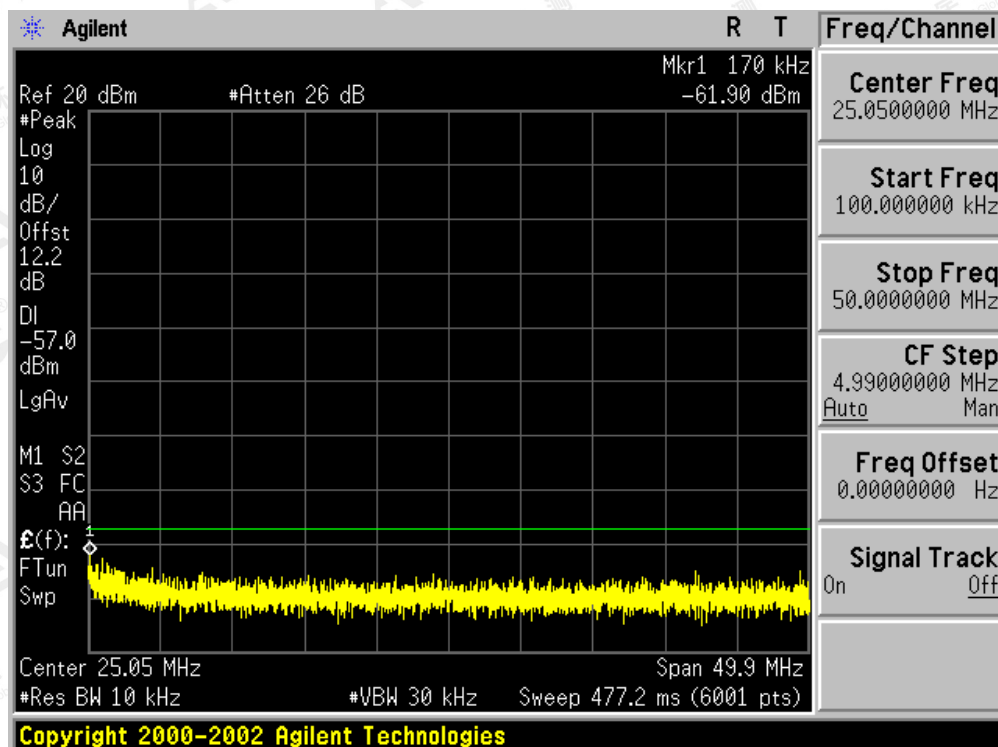
| Conducted spurious emissions | DCS1800;VN | | | |
|------------------------------|------------|----------------|----------|--------|
| Frequency range | RBW(Hz) | Max.Limit(dBm) | MCH(dBm) | Result |
| 100kHz~50MHz | 10k | -57 | -62.71 | PASS |
| 50MHz~880MHz | 100k | -57 | -58.56 | PASS |
| 880MHz~915MHz | 100k | -59 | -59.07 | PASS |
| 915MHz~1000MHz | 100k | -57 | -59.01 | PASS |
| 1GHz~1710MHz | 100k | -47 | -52.66 | PASS |
| 1710MHz~1785MHz | 100k | -53 | -56.60 | PASS |
| 1785MHz~12.75GHz | 100k | -47 | -61.04 | PASS |

Graphs of conducted spurious emission-MS in idle mode

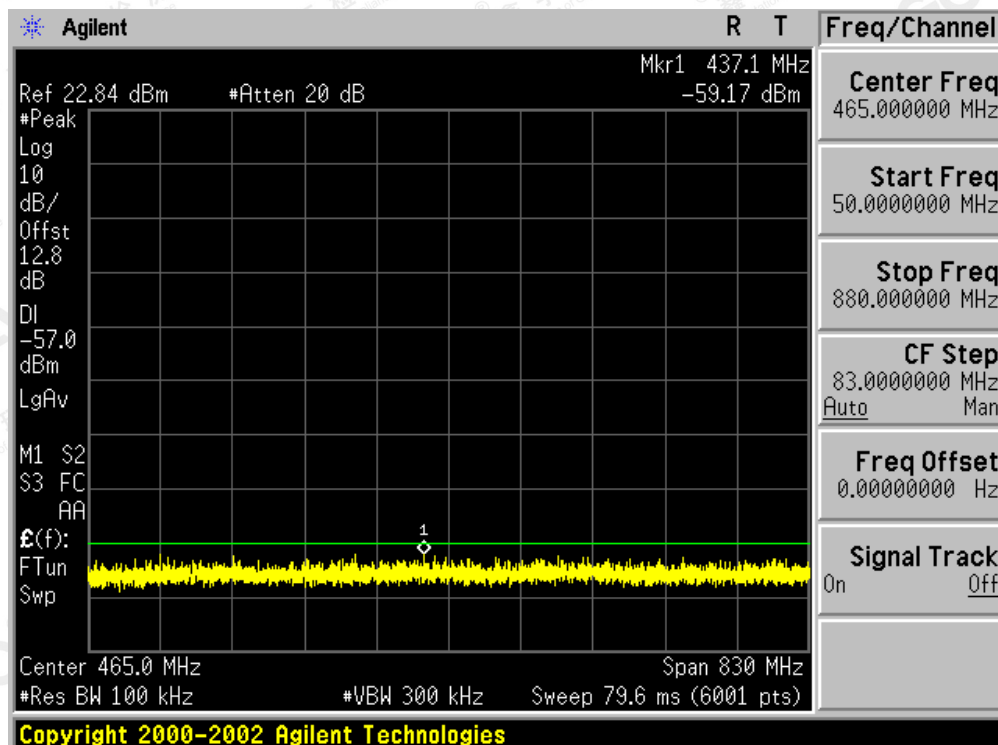
GSM900: channel MCH VN

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100kHz~50MHz

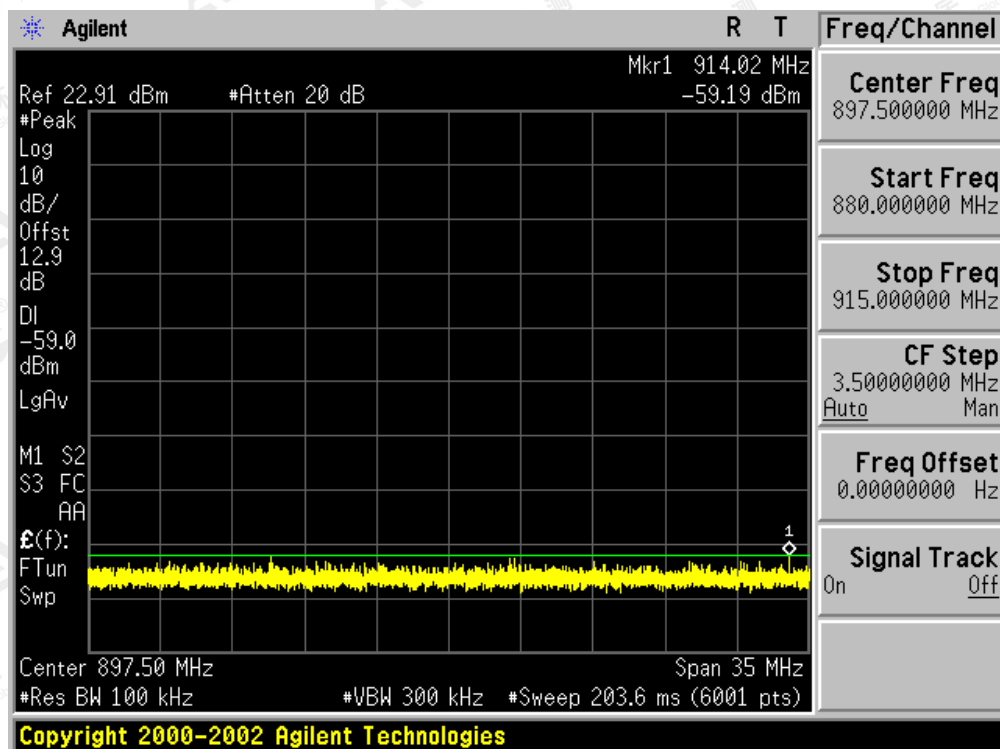


50MHz~880MHz

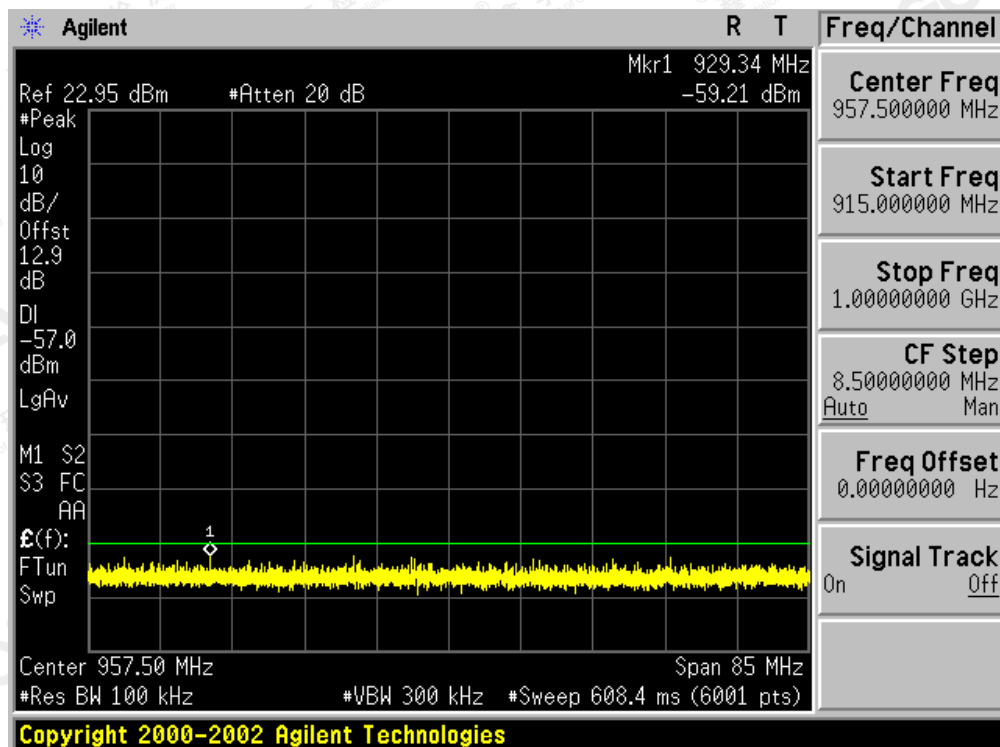


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880MHz~915MHz

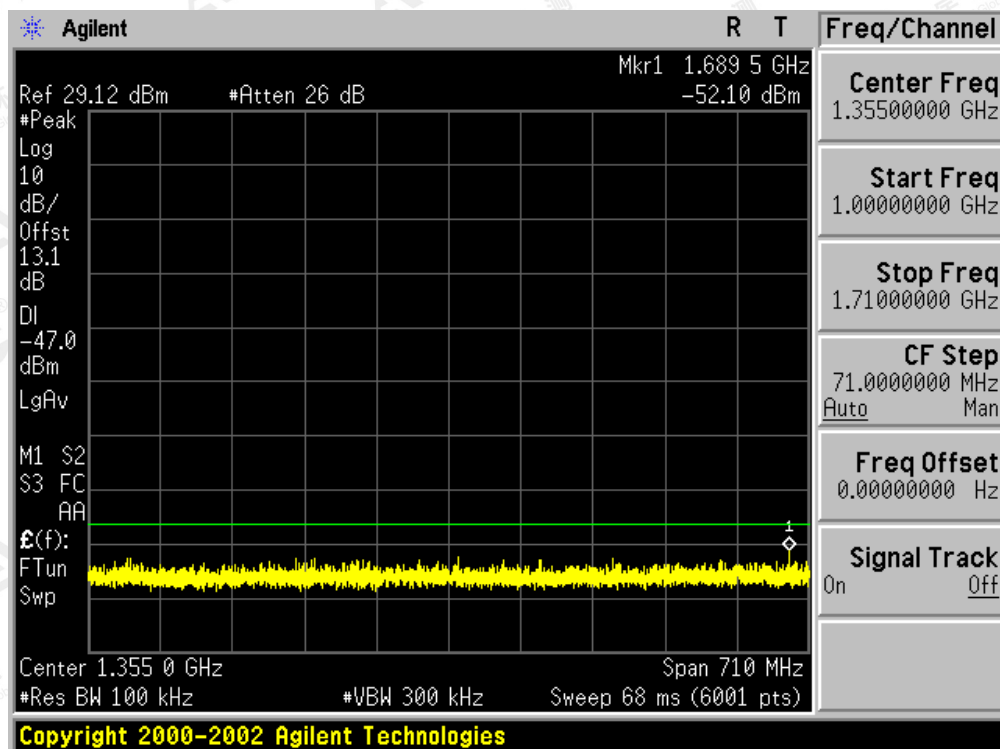


915MHz~1000MHz

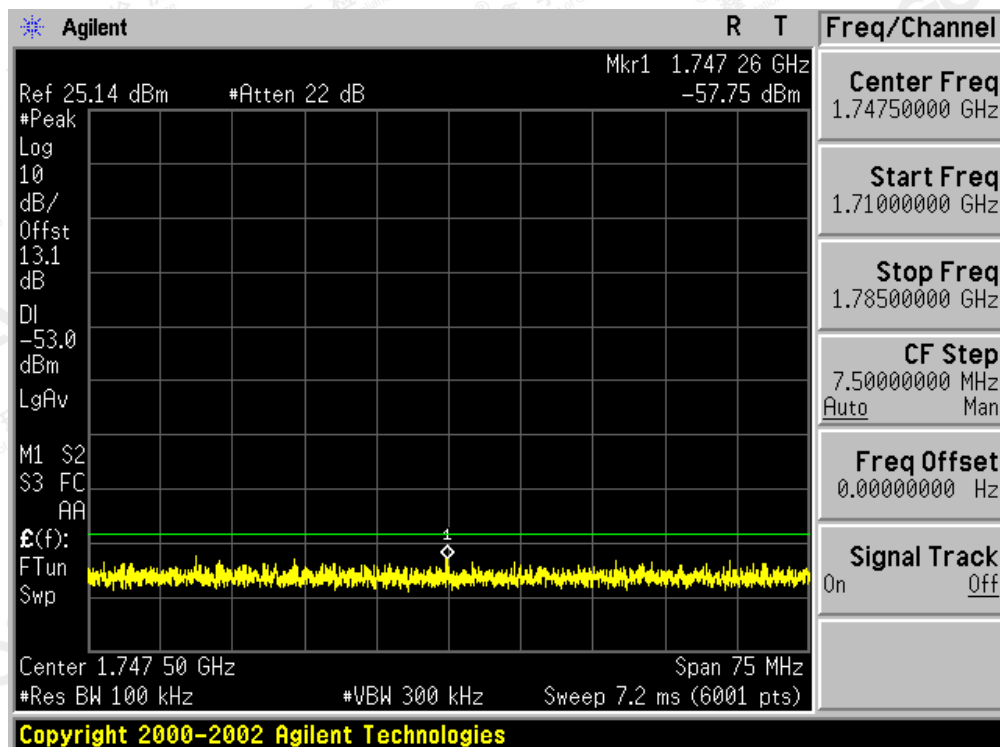


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1GHz~1710MHz

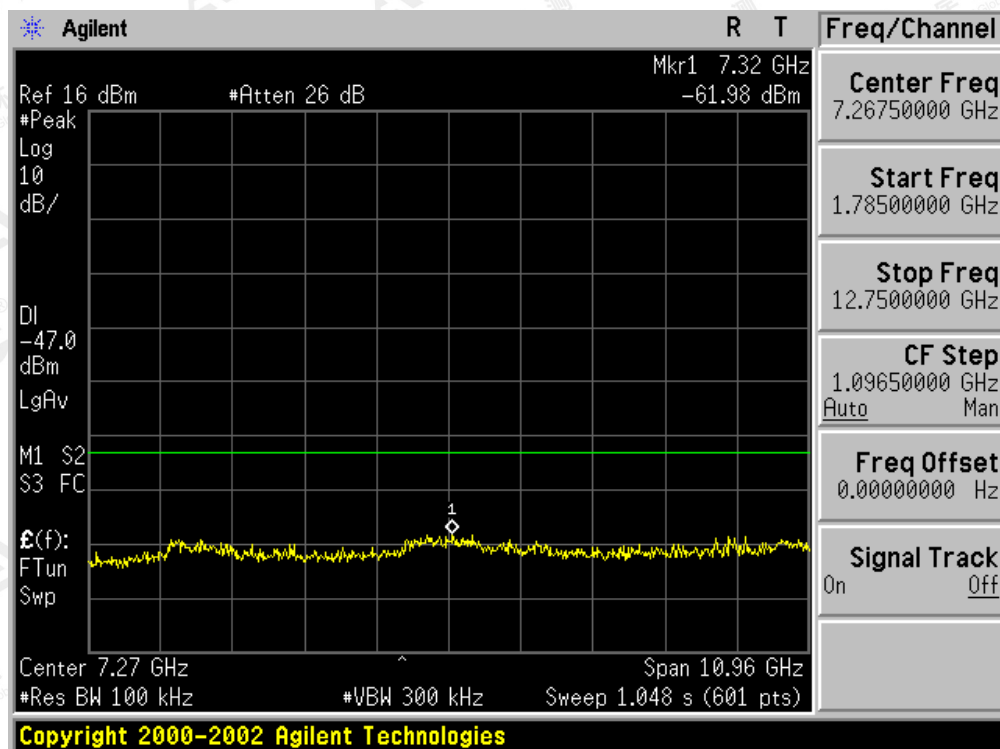


1710MHz~1785MHz



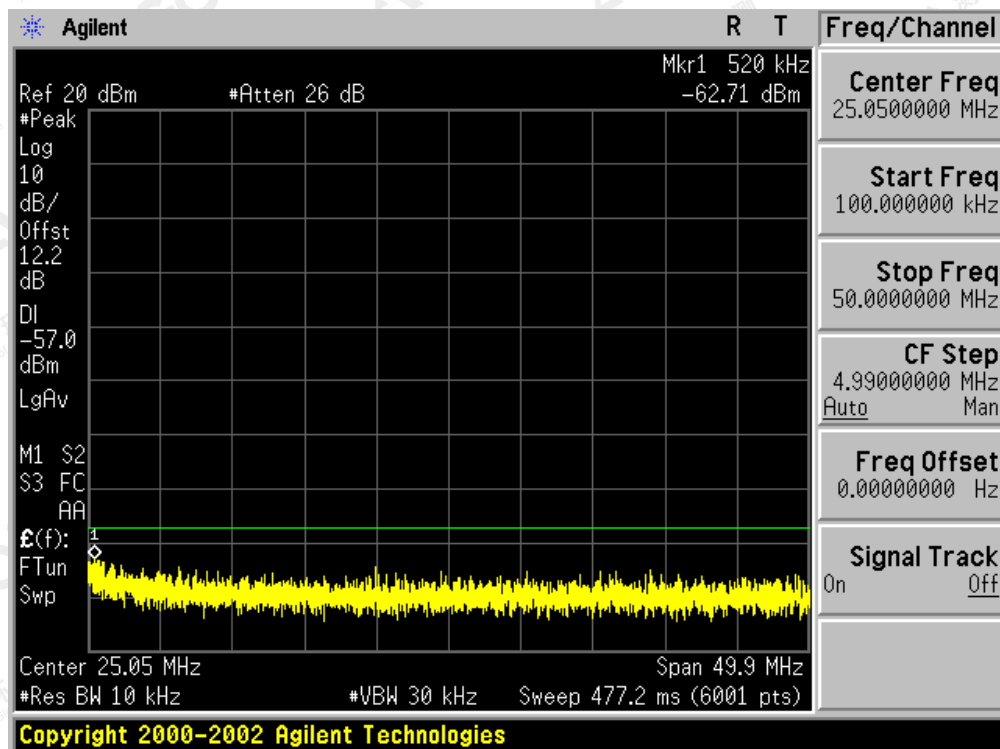
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1785MHz~12.75GHz



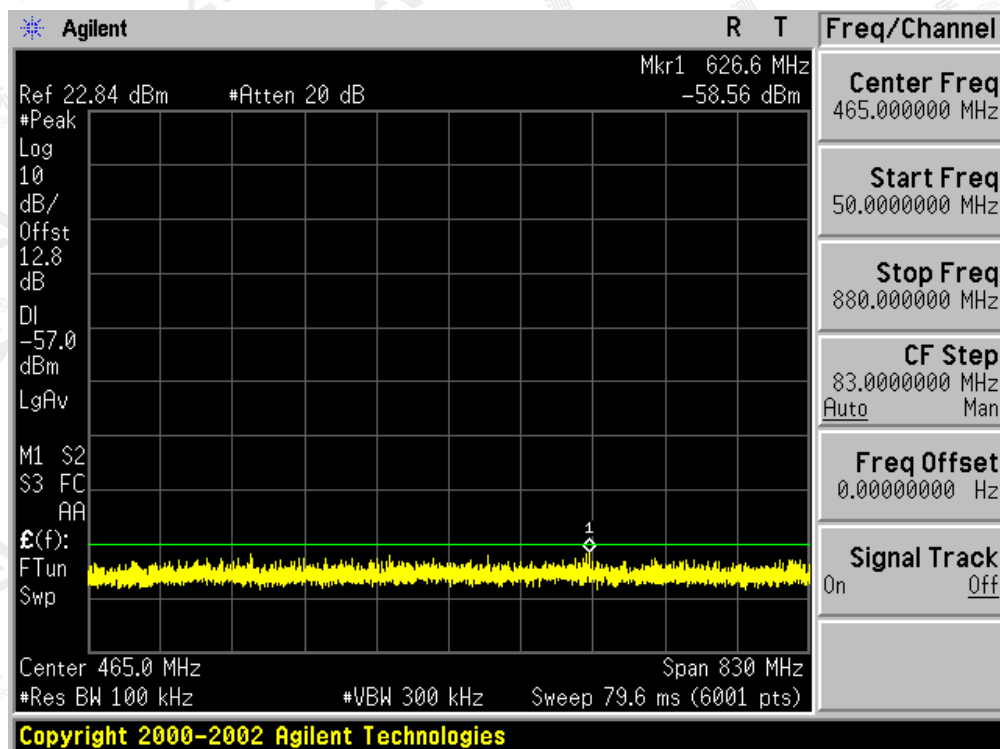
DCS1800: channel MCH VN

100kHz~50MHz

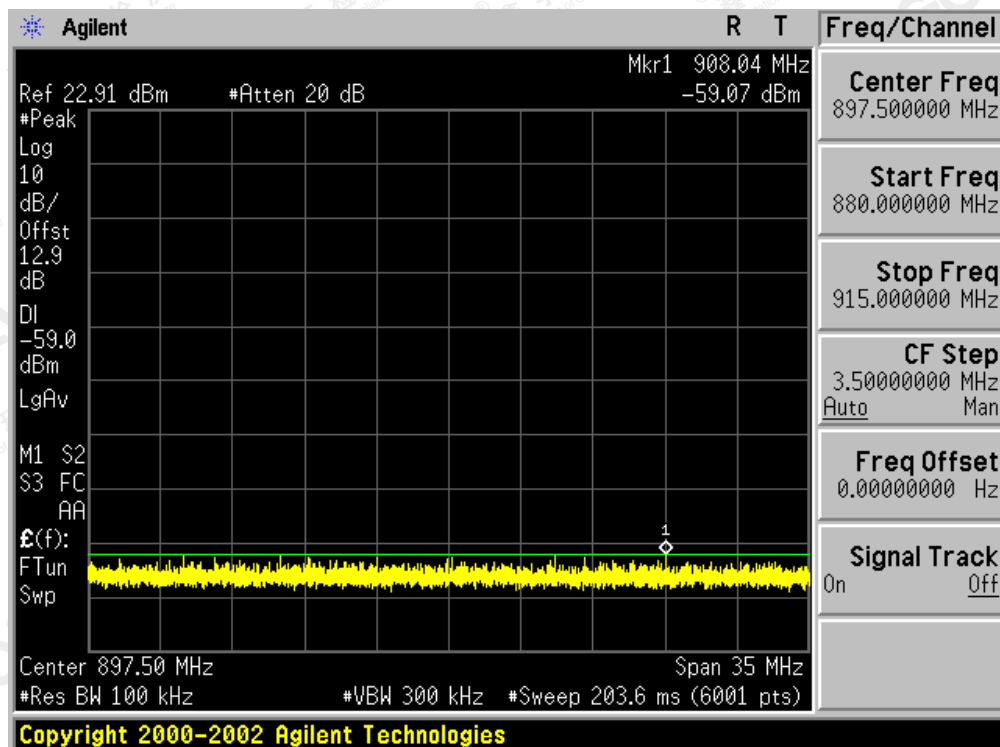


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50MHz~880MHz

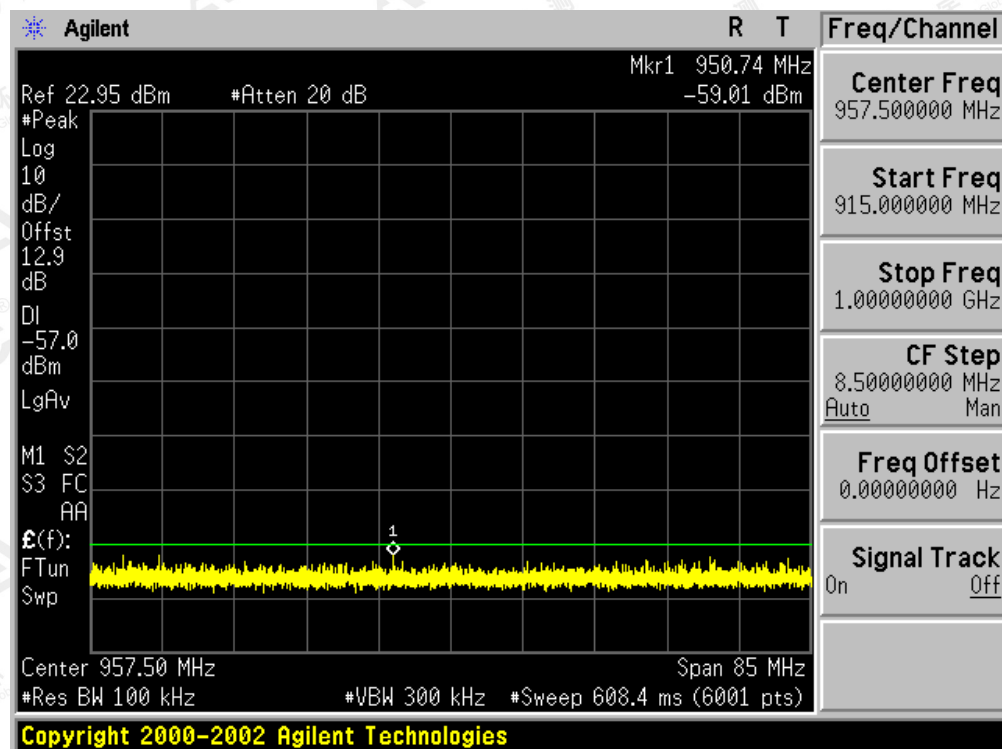


880MHz~915MHz

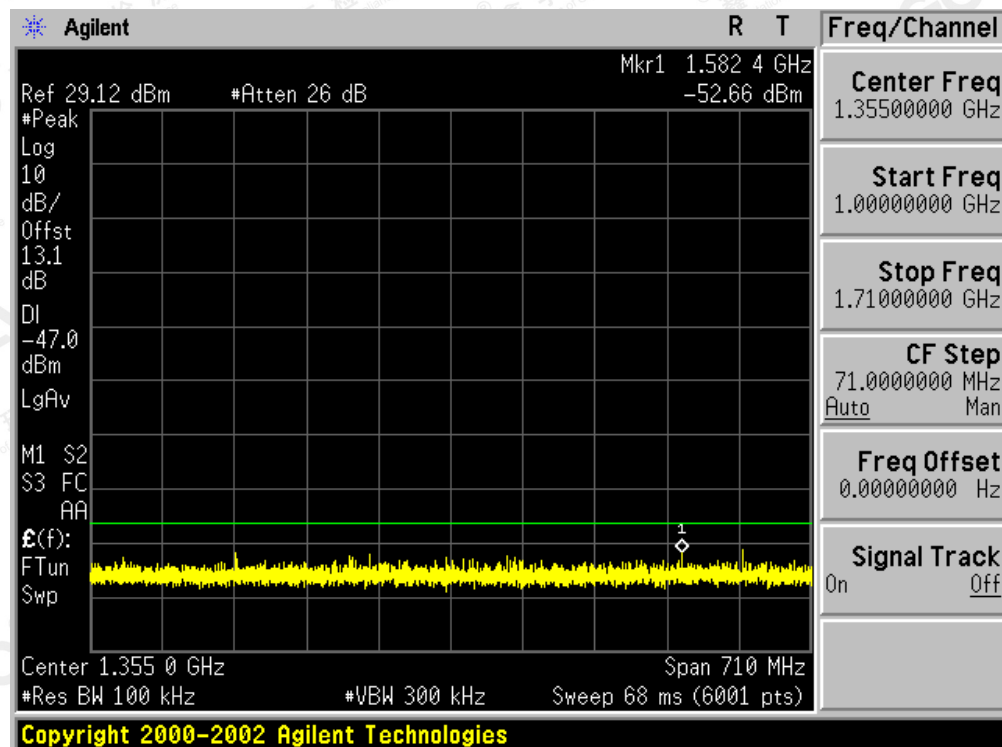


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915MHz~1000MHz

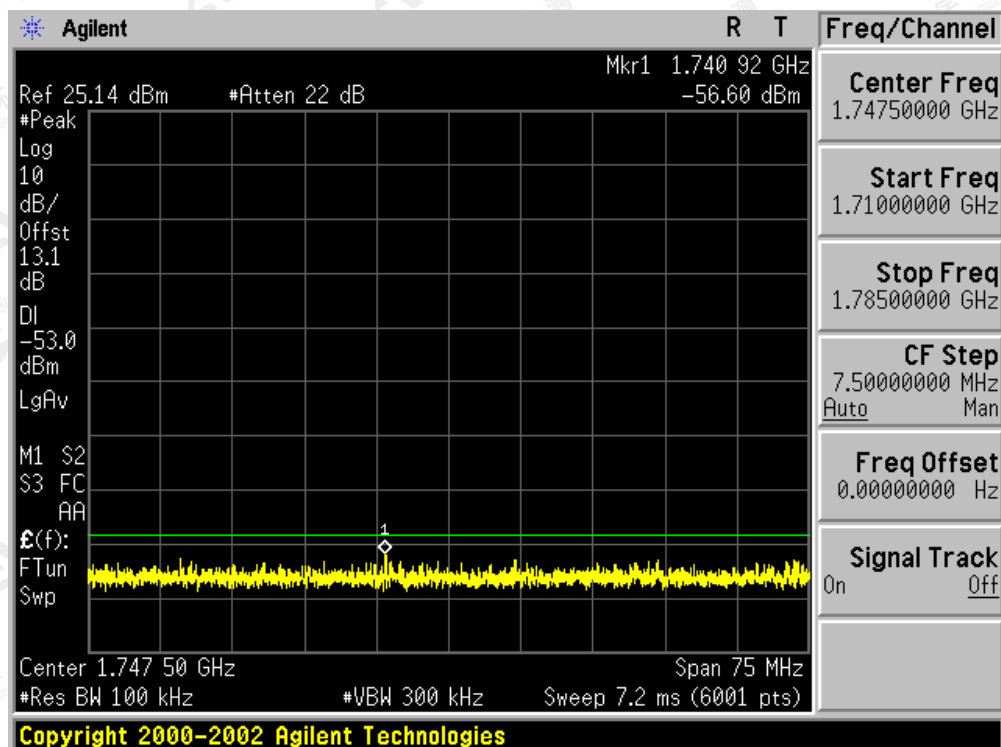


1GHz~1710MHz

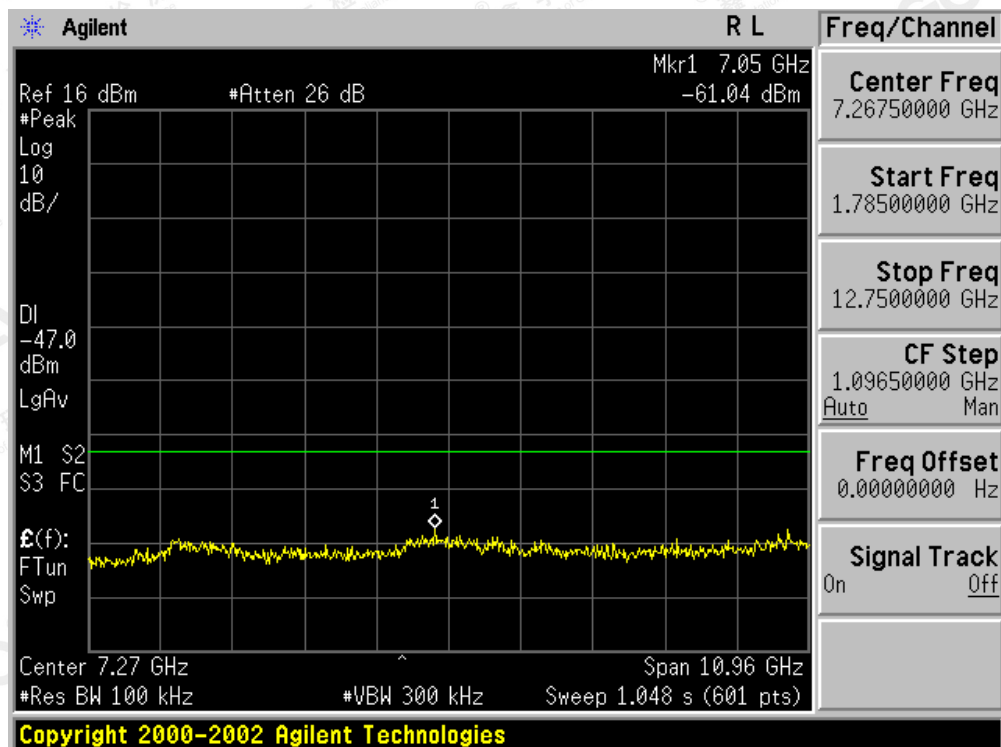


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1710MHz~1785MHz



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. Intermodulation rejection - speech channels

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TNVH) of fellow:

GSM900

| | Intermodulation Test Signal Levels | | Result |
|------|------------------------------------|----|--------|
| 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 L .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 M .Adjacent channel rejection - speech channels (TCH/FS)

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

GSM900

| | Channel | Interference at | Type of Measurement | Test limit error rate % | Minimum No. of samples | Result |
|------|--------------------------|-----------------|---------------------|--|-------------------------------|--------|
| TNVN | TCH/FS class Ib class II | 200 kHz | FER RBER RBER | 6,742* α 0,420/ α 8,333 | 8 900 1 000 000 600 000 | Pass |
| | TCH/FS class Ib class II | 400 kHz | FER RBER RBER | 11,461* α 0,756/ α 9,167 | 8 900 1 000 000 600 000 | Pass |

GSM1800

| | Channel | Interference at | Type of Measurement | Test limit error rate % | Minimum No. of samples | Result |
|------|--------------------------|-----------------|---------------------|---|----------------------------------|--------|
| TNVN | TCH/FS class Ib class II | 200 kHz | FER RBER RBER | 3,371* α 0,270/ α 8,333 | 17 800 2 000 000 1 200 000 | Pass |
| | TCH/FS class Ib class II | 400 kHz | FER RBER RBER | 5,714* α 0,483/ α 9,167 | 10 500 1 200 000 720 000 | Pass |

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Appendix N. Reference sensitivity - TCH/FS

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 TN/VN) of fellow:

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 O. 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 P. Minimum Input level for Reference Performance - GPRS
GSM900

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

GSM1800

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

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Appendix Q. Radiated spurious emissions - MS in idle mode

Note: All test modes were carried out for all operation modes and record the worst test mode (GSM 900/1800 MCH VN) of fellow

GSM900

| Radiated spurious emissions | GSM900 VN | | | |
|-----------------------------|-----------|----------------|----------|--------|
| Frequency range | RBW(Hz) | Max.Limit(dBm) | MCH(dBm) | Result |
| 30MHz~880MHz | 10k | -57 | -71.96 | PASS |
| 880MHz~915MHz | 10k | -59 | -70.42 | PASS |
| 915MHz~1000MHz | 100k | -57 | -71.12 | PASS |
| 1GHz~1710MHz | 100k | -47 | -69.36 | PASS |
| 1710MHz~1785MHz | 100k | -53 | -63.25 | PASS |
| 1785MHz~4GHz | 100k | -47 | -58.55 | PASS |

GSM1800

| Radiated spurious emissions | GSM1800 VN | | | |
|-----------------------------|------------|----------------|----------|--------|
| Frequency range | RBW(Hz) | Max.Limit(dBm) | MCH(dBm) | Result |
| 30MHz~880MHz | 10k | -57 | -63.14 | PASS |
| 880MHz~915MHz | 10k | -59 | -65.24 | PASS |
| 915MHz~1000MHz | 100k | -57 | -63.19 | PASS |
| 1GHz~1710MHz | 100k | -47 | -61.25 | PASS |
| 1710MHz~1785MHz | 100k | -53 | -63.26 | PASS |
| 1785MHz~4GHz | 100k | -47 | -61.17 | PASS |

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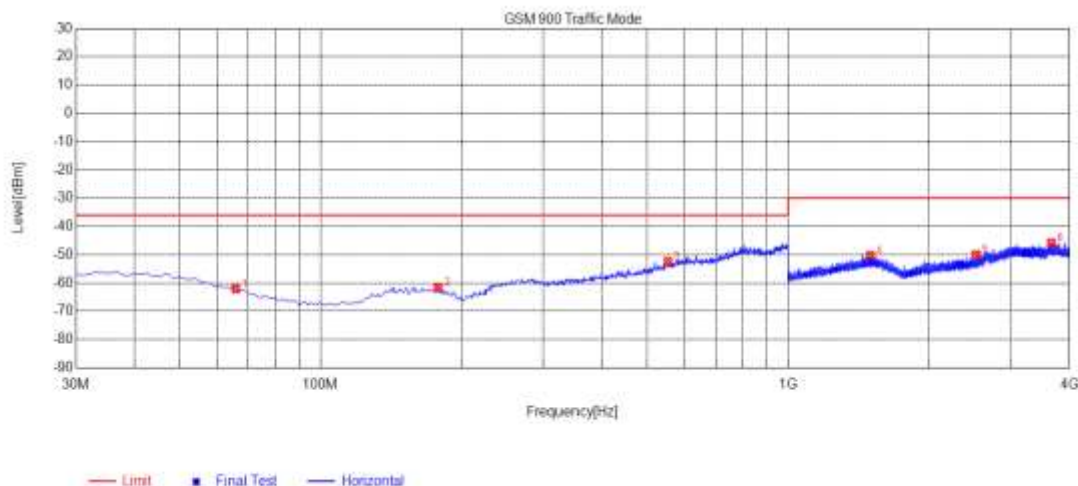
APPENDIX R. RADIATED SPURIOUS EMISSIONS TEST RESULT

All test modes were carried out for all operation modes

The (middle channel) was showed as the follow:

Note: The filter has been used in this test.

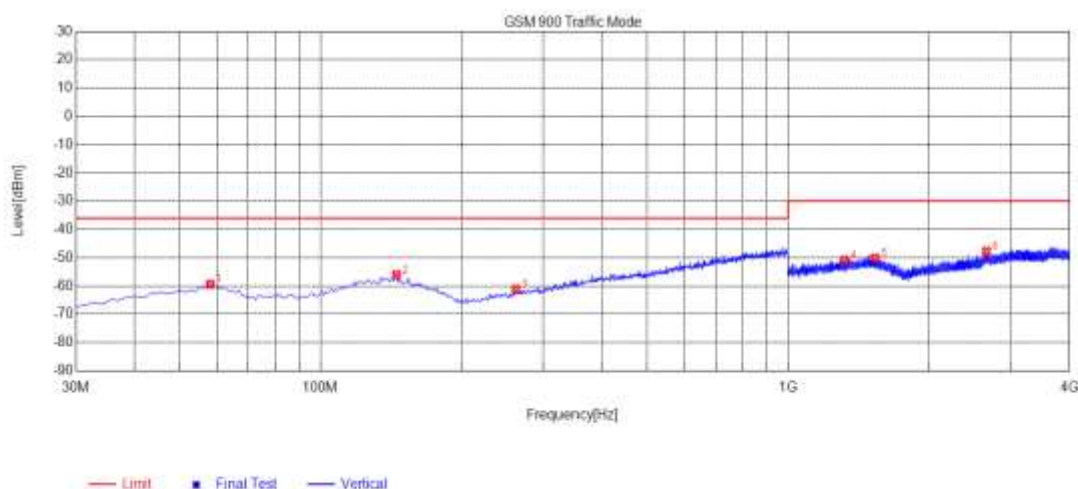
RADIATED SPURIOUS EMISSIONS GSM 900- HORIZONTAL



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1 | 65.8900 | -91.54 | -62.06 | -36.00 | 26.06 | 29.48 | 230 | Horizontal |
| 2 | 178.4100 | -91.25 | -61.73 | -36.00 | 25.73 | 29.52 | 100 | Horizontal |
| 3 | 553.8000 | -90.65 | -52.43 | -36.00 | 16.43 | 38.22 | 80 | Horizontal |
| 4 | 1501.0501 | -52.18 | -50.30 | -30.00 | 20.30 | 1.88 | 100 | Horizontal |
| 5 | 2526.2526 | -52.32 | -49.95 | -30.00 | 19.95 | 2.37 | 320 | Horizontal |
| 6 | 3656.4656 | -52.68 | -45.84 | -30.00 | 15.84 | 6.84 | 250 | Horizontal |

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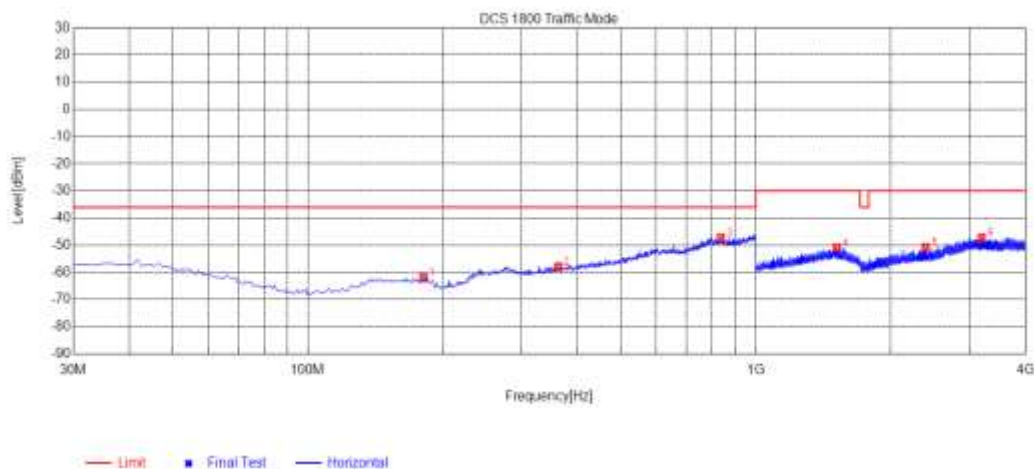
RADIATED SPURIOUS EMISSIONS GSM 900- VERTICAL



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1 | 58.1300 | -90.51 | -59.42 | -36.00 | 23.42 | 31.09 | 190 | Vertical |
| 2 | 145.4300 | -90.11 | -56.09 | -36.00 | 20.09 | 34.02 | 70 | Vertical |
| 3 | 261.8300 | -90.75 | -61.21 | -36.00 | 25.21 | 29.54 | 350 | Vertical |
| 4 | 1320.1320 | -52.31 | -50.90 | -30.00 | 20.90 | 1.41 | 80 | Vertical |
| 5 | 1536.4536 | -52.84 | -50.15 | -30.00 | 20.15 | 2.69 | 360 | Vertical |
| 6 | 2655.8656 | -51.87 | -47.79 | -30.00 | 17.79 | 4.08 | 80 | Vertical |

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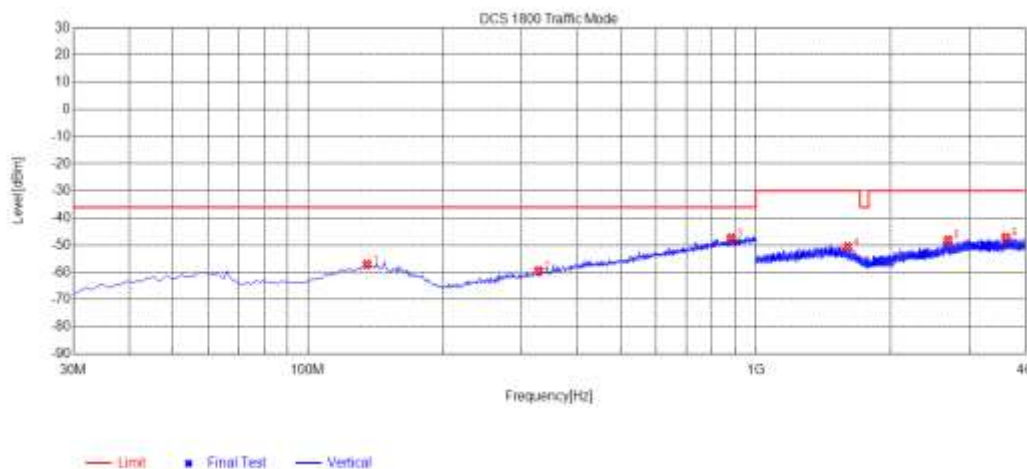
RADIATED SPURIOUS EMISSIONS GSM 1800 – HORIZONTAL



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1 | 181.3200 | -91.34 | -61.97 | -36.00 | 25.97 | 29.37 | 300 | Horizontal |
| 2 | 362.7100 | -91.36 | -57.86 | -36.00 | 21.86 | 33.50 | 170 | Horizontal |
| 3 | 836.0700 | -90.53 | -47.28 | -36.00 | 11.28 | 43.25 | 140 | Horizontal |
| 4 | 1516.9517 | -52.73 | -50.90 | -30.00 | 20.90 | 1.83 | 270 | Horizontal |
| 5 | 2394.2394 | -52.59 | -50.80 | -30.00 | 20.80 | 1.79 | 350 | Horizontal |
| 6 | 3192.6193 | -53.93 | -47.26 | -30.00 | 17.26 | 6.67 | 190 | Horizontal |

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RADIATED SPURIOUS EMISSIONS GSM 1800 – VERTICAL



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1 | 135.7300 | -91.15 | -57.05 | -36.00 | 21.05 | 34.10 | 270 | Vertical |
| 2 | 327.7900 | -91.41 | -59.35 | -36.00 | 23.35 | 32.06 | 60 | Vertical |
| 3 | 880.6900 | -90.47 | -47.34 | -36.00 | 11.34 | 43.13 | 170 | Vertical |
| 4 | 1603.3603 | -53.06 | -50.57 | -30.00 | 20.57 | 2.49 | 90 | Vertical |
| 5 | 2687.6688 | -52.36 | -48.07 | -30.00 | 18.07 | 4.29 | 320 | Vertical |
| 6 | 3612.6613 | -53.83 | -47.17 | -30.00 | 17.17 | 6.66 | 240 | Vertical |

Note: In standby mode test result is less than the limit of 20 db, so didn't do standby mode test data into the report.

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APPENDIX S: PHOTOGRAPHS OF TEST SETUP

RADIATED SPURIOUS EMISSION TEST SETUP



RADIATED SPURIOUS EMISSION ABOVE 1G TEST SETUP



----END OF REPORT----

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