



Global Telecom Solutions Sector

SC4812T-MC 1X/1X-DO @ 1.9 GHz CDMA BTS  
Test Report Exhibit

FCC ID: IHET6DY1

## Equipment Authorization Measurements

FCC Identifier: IHET6DY1  
Name of Grantee: Motorola, Inc  
Equipment Class: Licensed Non-Broadcast Transmitter  
Notes: SC4812T-MC 1X/1X-DO @ 1.9 GHz CDMA BTS

FCC CFR Title 47	Description	Section	Compliant
2.1046	RF Output Power	A	Yes
2.1047	Modulation Characteristics	B	Yes
2.1049	Occupied Bandwidth	C	Yes
2.1051	Spurious Emissions at Antenna Terminals	D	Yes
2.1053	Field Strength of Spurious Radiation	E	Yes
2.1055	Frequency Stability	F	Yes

### Measurements Performed by:

Motorola EMC Facility  
5555 North Beach Street  
Fort Worth, TX 76137  
Authorized Testing Laboratory  
FCC Test Firm Registration No. 90809

Test Engineer

FCC/Package Coordination





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## SECTION A

### RF Output Power - 47CFR2.1046

Channel	Tune Frequency (MHz)	Modulation	Power Level (W)	Power Level (dBm)	Power Level Measured (dBm)	IS-97 Limit (dB)	Pass/Fail
25	1931.25	1X-QPSK	45	46.53	46.90	+2/-4	Pass
25	1931.25	1X-DO-16QAM	45	46.53	46.81	+2/-4	Pass
25	1931.25	1X-DO-8PSK	45	46.53	46.76	+2/-4	Pass
1175	1988.75	1X-QPSK	45	46.53	46.59	+2/-4	Pass
1175	1988.75	1X-DO-16QAM	45	46.53	46.73	+2/-4	Pass
1175	1988.75	1X-DO-8PSK	45	46.53	46.54	+2/-4	Pass
25	1931.25	1X-QPSK	0.45	26.50	26.47	+2/-4	Pass
25	1931.25	1X-DO-16QAM	0.45	26.50	26.71	+2/-4	Pass
25	1931.25	1X-DO-8PSK	0.45	26.50	26.70	+2/-4	Pass
1175	1988.75	1X-QPSK	0.45	26.50	26.80	+2/-4	Pass
1175	1988.75	1X-DO-16QAM	0.45	26.50	26.71	+2/-4	Pass
1175	1988.75	1X-DO-8PSK	0.45	26.50	26.69	+2/-4	Pass



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**Summary of Radiated RF Measurements**  
*Worst Case Radiated RF Spur Level*

<b>Transmit Channel</b>	<b>Power Level (W)</b>	<b>Spur Freq. (MHz)</b>	<b>Spur Level Measured (dB<math>\mu</math>V/meter)</b>	<b>Spur Level Measured (dBm*)</b>	<b>FCC Max Limit (dBm)</b>	<b>Pass/Fail</b>
1175	45	7955.0	57.990	-37.24	-13.0	Pass

**Summary of Conducted RF Measurements**  
*Worst Case Conducted RF Spur Level*

<b>Transmit Channel</b>	<b>Power Level (W)</b>	<b>Freq. (MHz)</b>	<b>Spur Level Measured (dBm)</b>	<b>FCC Max Limit (dBm)</b>	<b>Pass/Fail</b>
1175	45	5.96525	-25.20	-13	Pass



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## **SECTION B**

### **Modulation Characteristics - 47CFR2.1047**

#### **Summary of Modulation Characteristics**

<b>Channel</b>	<b>Tune Frequency (MHz)</b>	<b>Modulation</b>	<b>Power Level (W)</b>	<b>RHO Measured</b>	<b>RHO Spec</b>	<b>Pass/Fail</b>
25	1931.25	1X-QPSK	45	0.98527	>0.912	Pass
25	1931.25	1X-DO-16QAM	45	0.99780	>0.912	Pass
25	1931.25	1X-DO-8PSK	45	0.99788	>0.912	Pass
1175	1988.75	1X-QPSK	45	0.98497	>0.912	Pass
1175	1988.75	1X-DO-16QAM	45	0.99807	>0.912	Pass
1175	1988.75	1X-DO-8PSK	45	0.99733	>0.912	Pass
25	1931.25	1X-QPSK	0.45	0.98526	>0.912	Pass
25	1931.25	1X-DO-16QAM	0.45	0.99736	>0.912	Pass
25	1931.25	1X-DO-8PSK	0.45	0.99818	>0.912	Pass
1175	1988.75	1X-QPSK	0.45	0.98521	>0.912	Pass
1175	1988.75	1X-DO-16QAM	0.45	0.99738	>0.912	Pass
1175	1988.75	1X-DO-8PSK	0.45	0.99794	>0.912	Pass

*Note: The BTS was configured for maximum power out of 46.53 dBm, and minimum power of 26.5dBm respectively.  
The output power was set respectively to 45W, and 450mW using a power meter.*



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# SECTION C

## Occupied Bandwidth - 47CFR2.1049

### Summary of Occupied Bandwidth

Channel	Frequency (MHz)	Modulation	Power Level (dBm)	Measured (MHz)	FCC Limit (MHz)	Pass/Fail
25	1931.25	1X-QPSK	46.90	1.2280	1.30	Pass
25	1931.25	1X-DO-16QAM	46.81	1.2732	1.30	Pass
25	1931.25	1X-DO-8PSK	46.76	1.2747	1.30	Pass
1175	1988.75	1X-QPSK	46.59	1.2224	1.30	Pass
1175	1988.75	1X-DO-16QAM	46.73	1.2753	1.30	Pass
1175	1988.75	1X-DO-8PSK	46.54	1.2761	1.30	Pass
25	1931.25	1X-QPSK	26.47	1.2198	1.30	Pass
25	1931.25	1X-DO-16QAM	26.71	1.2747	1.30	Pass
25	1931.25	1X-DO-8PSK	26.70	1.2761	1.30	Pass
1175	1988.75	1X-QPSK	26.80	1.2241	1.30	Pass
1175	1988.75	1X-DO-16QAM	26.71	1.2764	1.30	Pass
1175	1988.75	1X-DO-8PSK	26.69	1.2741	1.30	Pass

*Note: The BTS was configured for maximum power out of 46.53 dBm, and minimum power of 26.5dBm respectively. The output power was set respectively to 45W, and 450mW using a power meter.*

The following formula is used to obtain the correct power reference point from which the OBW of the CDMA signal is obtained. See example calculation below:

$$\text{Power (measured in 30kHz bandwidth)} + 10 \log (1.2288 \text{ MHz}/30\text{kHz})$$

The occupied bandwidth is measured in a 30 kHz resolution bandwidth. Results are summarized above.



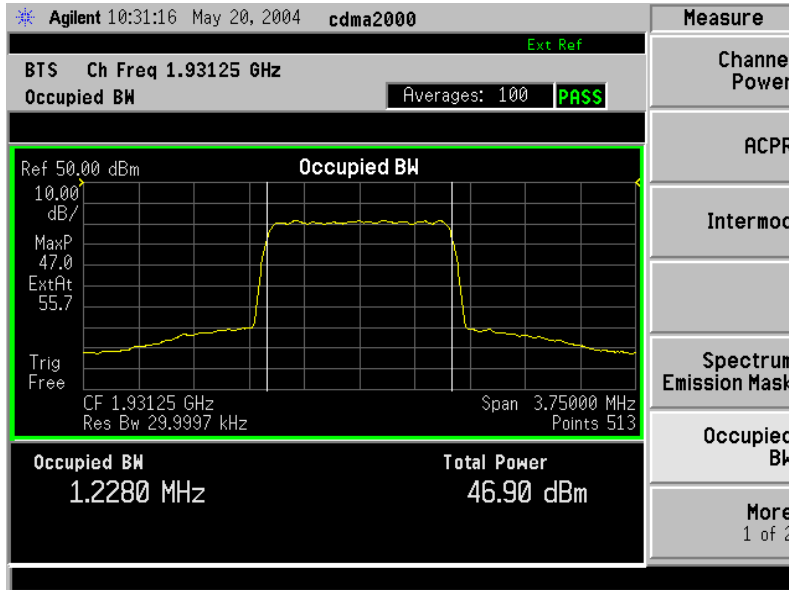


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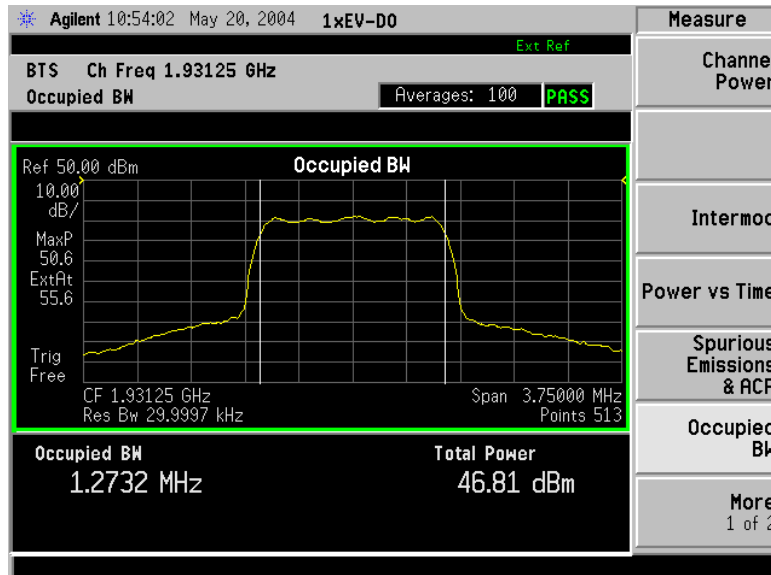
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### Occupied Bandwidth – 45W



### Channel 25 – 1.93125 GHz – QPSK



### Channel 25 – 1.93125 GHz – 16QAM

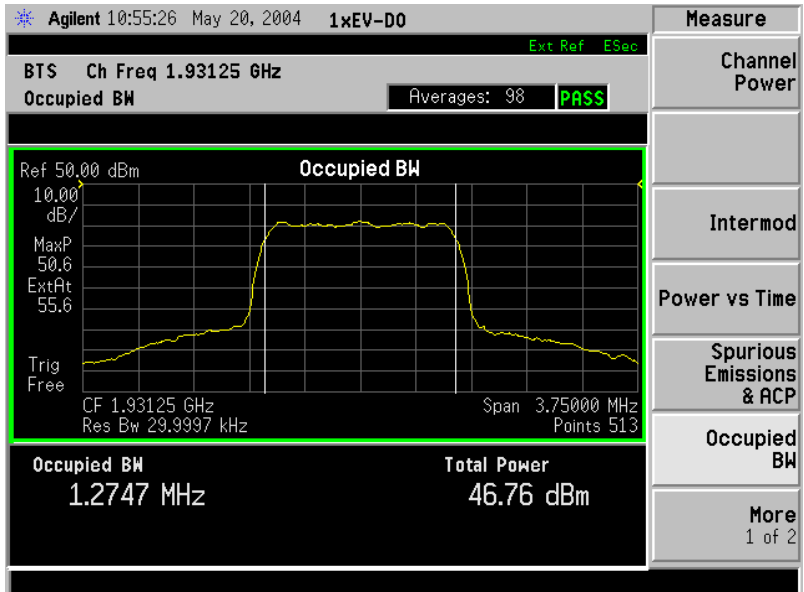


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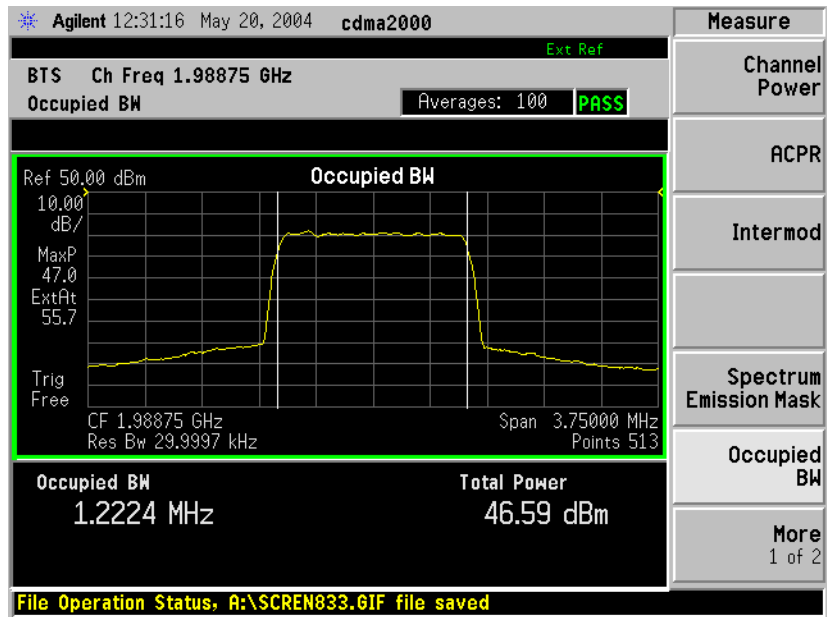
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Channel 25 – 1.93125 GHz – 8PSK



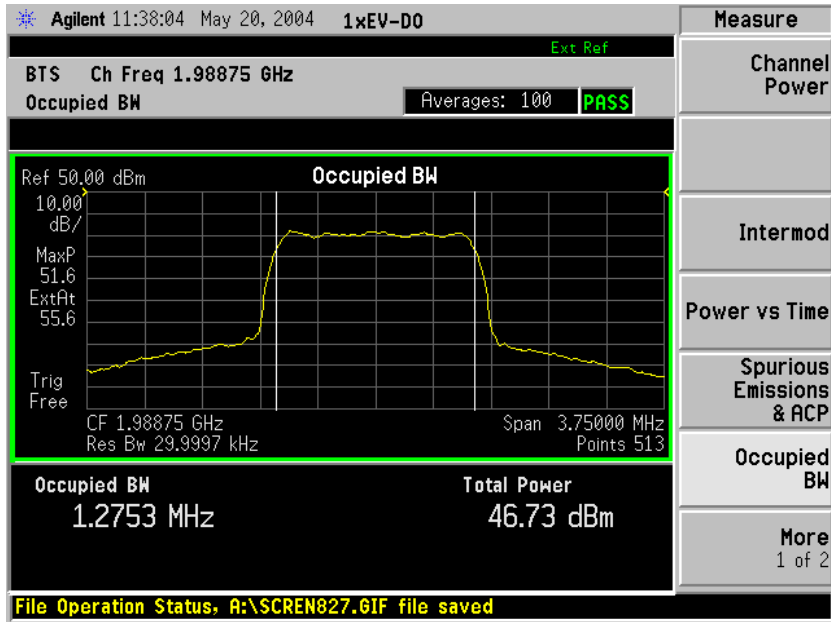
Channel 1175 – 1.98875 GHz – QPSK



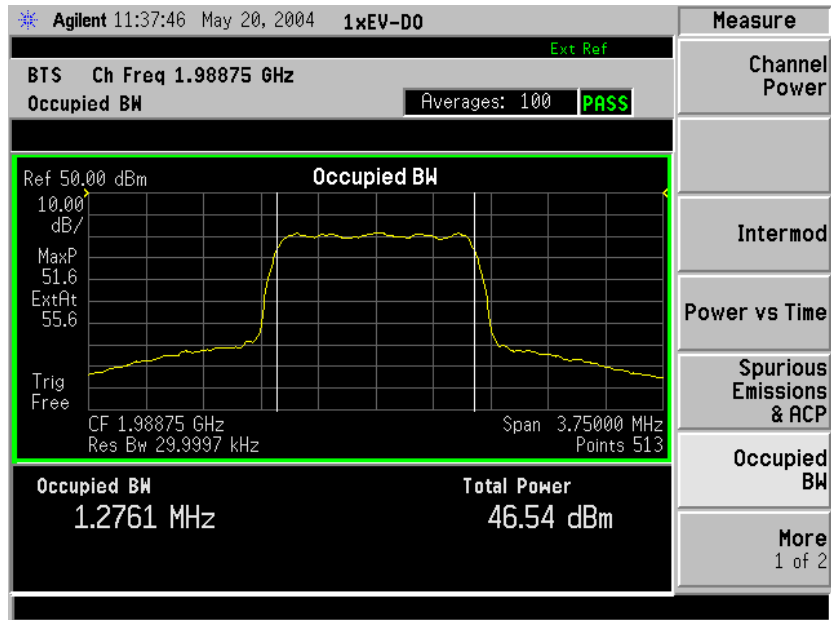
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Channel 1175 – 1.98875 GHz – 16QAM



Channel 1175 – 1.98875 GHz – 8PSK



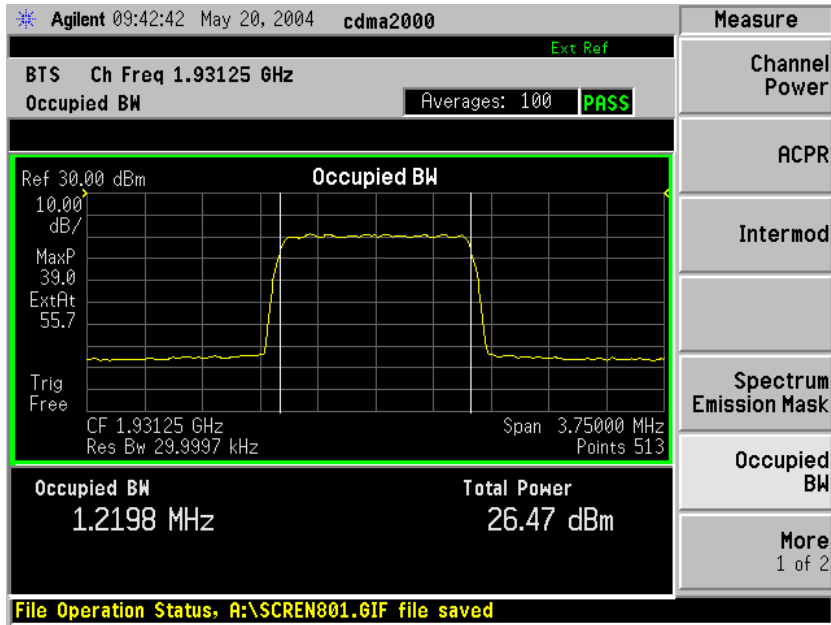


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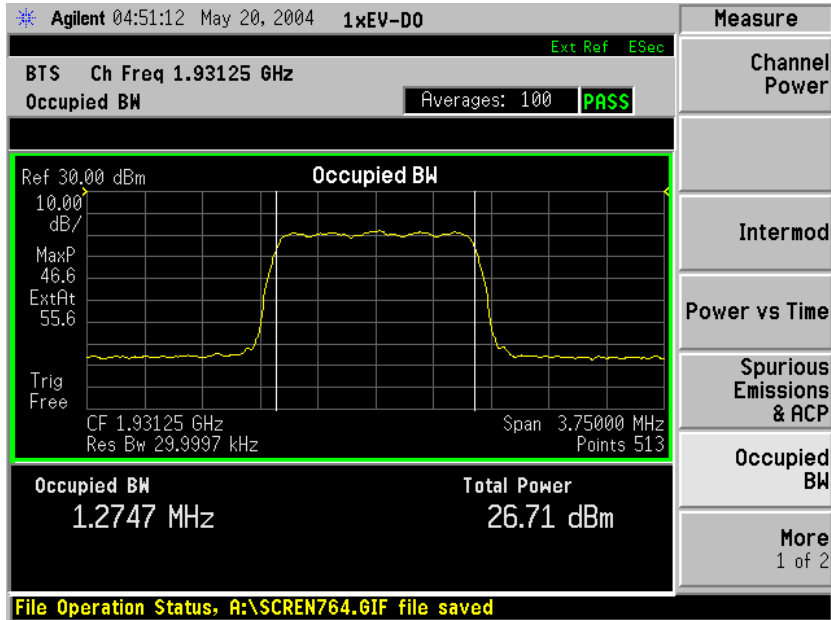
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### Occupied Bandwidth – .45W



### Channel 25 – 1.93125 GHz - QPSK



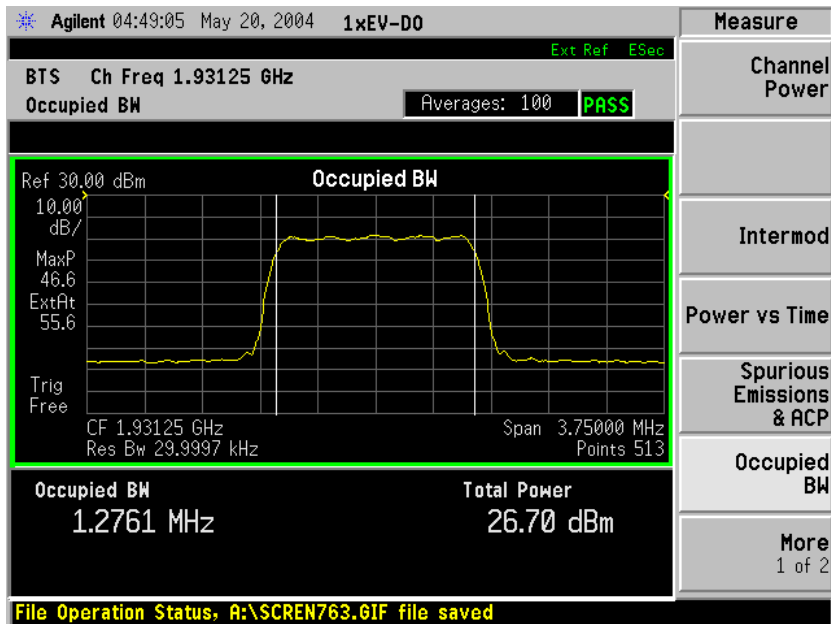
### Channel 25 – 1.93125 GHz – 16QAM



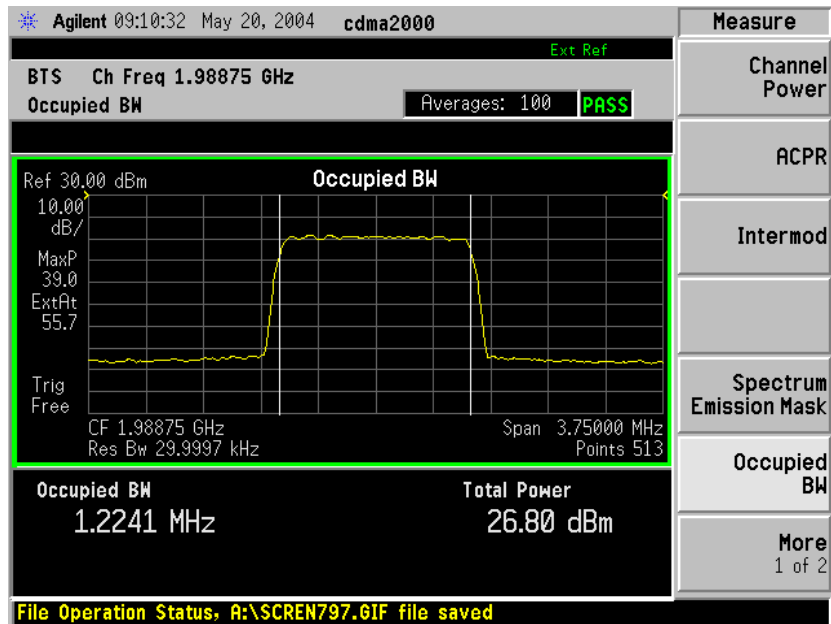
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Channel 25 – 1.93125 GHz – 8PSK



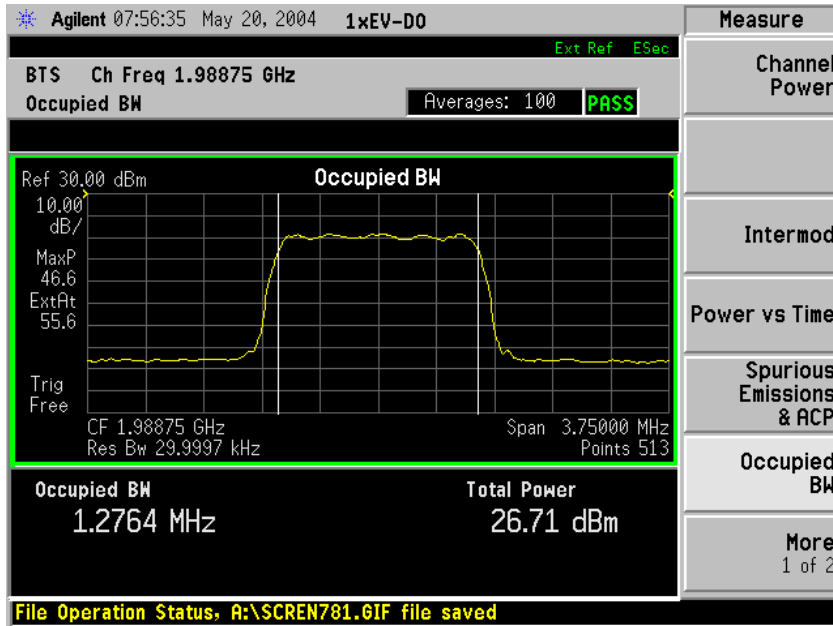
Channel 1175 – 1.98875 GHz – QPSK



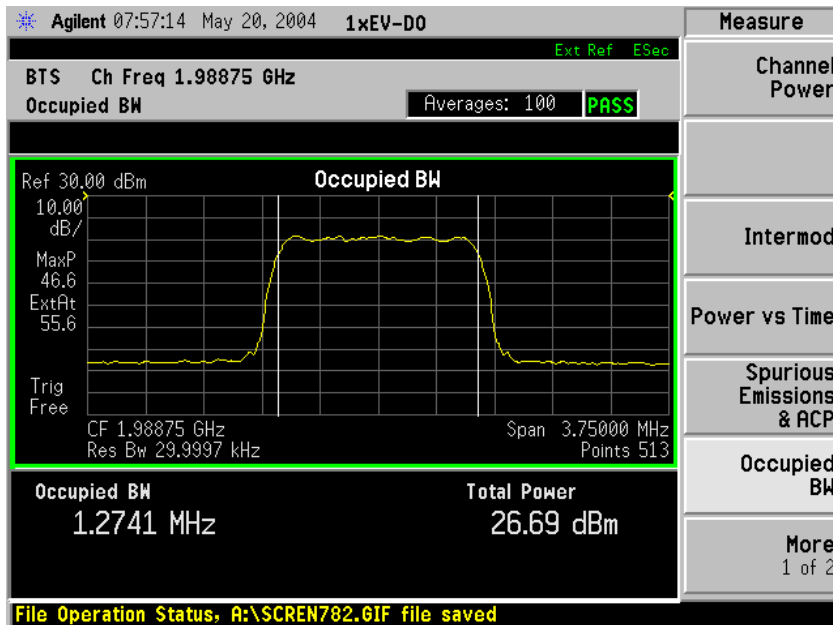
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Channel 1175 – 1.98875 GHz – 16QAM



Channel 1175 – 1.98875 GHz – 8PSK



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## SECTION D

### Spurious Emissions at Antenna Terminal - 47 CFR 2.1051

#### Summary of Worst Case Spurious Emissions at Antenna Terminal

Channel	Modulation	Freq. (GHz)	Spur Level Measured (dBm)	FCC Max Limit (dBm)	Pass/Fail
25	1X-QPSK	5.72975	-25.64	-13	Pass
25	1X-DO-16QAM	5.72975	-25.75	-13	Pass
25	1X-DO-8PSK	5.7475	-25.59	-13	Pass
1175	1X-QPSK	5.96525	-25.20	-13	Pass
1175	1X-DO-16QAM	5.96525	-25.24	-13	Pass
1175	1X-DO-8PSK	5.72975	-25.26	-13	Pass

FCC Max. Limit Per 47 CFR:

= Transmitted Power (10 Log10 (Pwatt)) - (43 + 10 Log10 (Pwatt)) dBW

= 10 Log10 (Pwatt) - (43 + 10 Log10 (Pwatt)) dBW

= -43 dBW

= -13 dBm



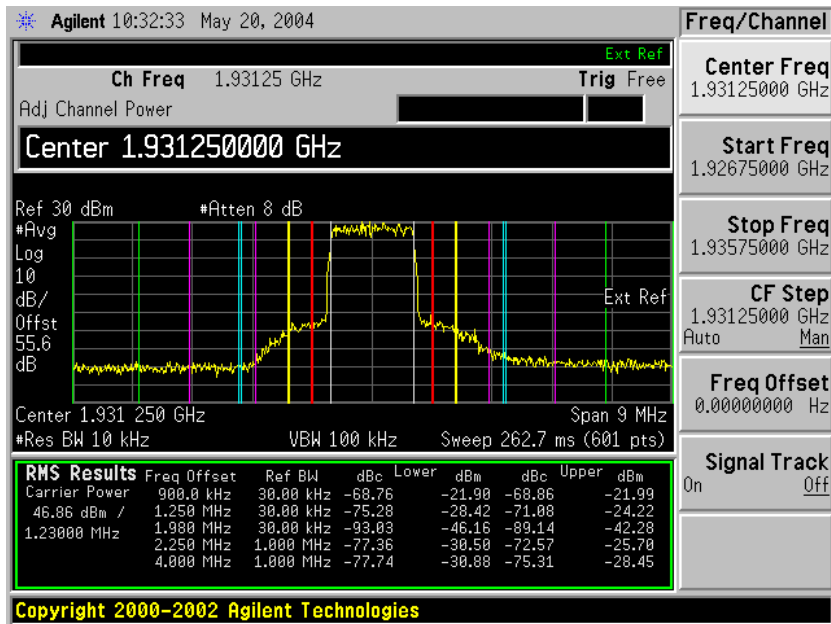
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# Spurious Emissions at Antenna Terminal – 45W Channel 25 – 1.93325 GHz – QPSK

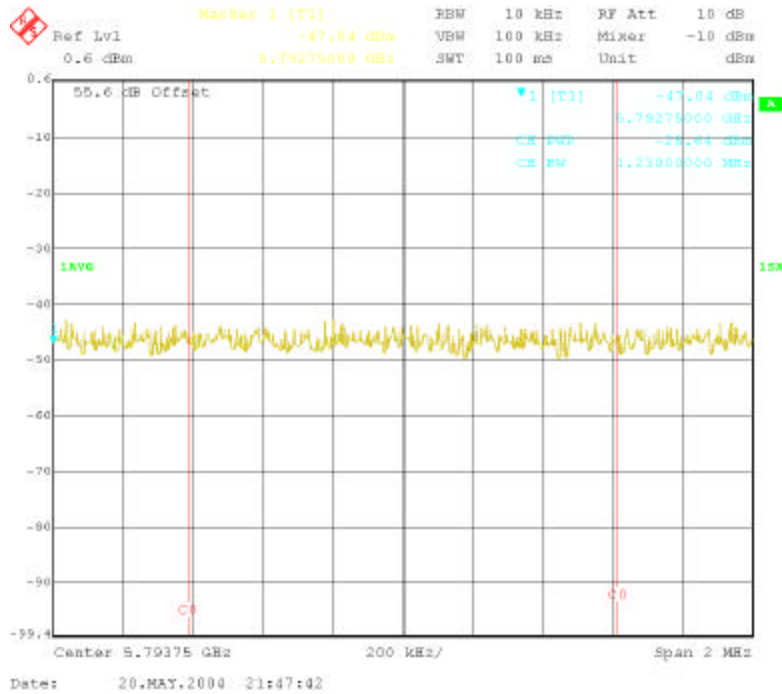
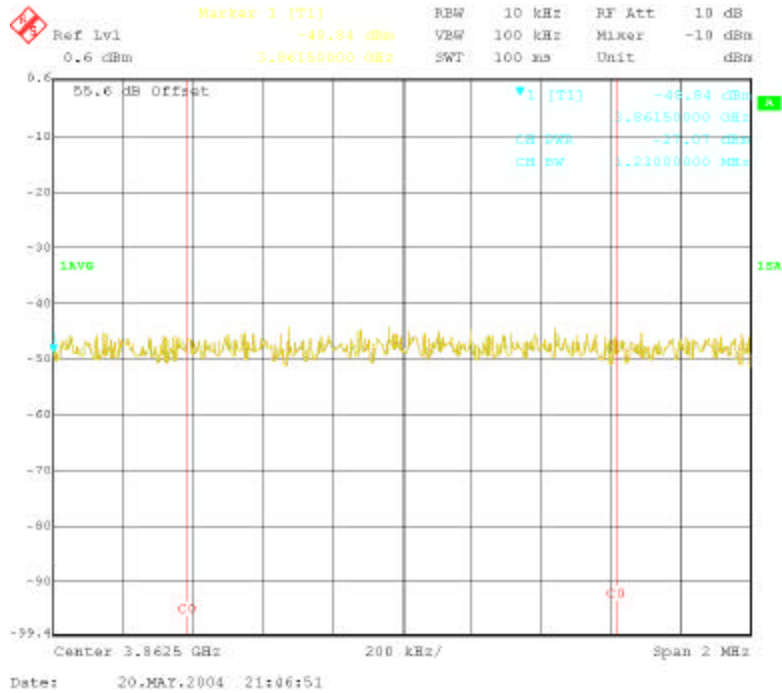




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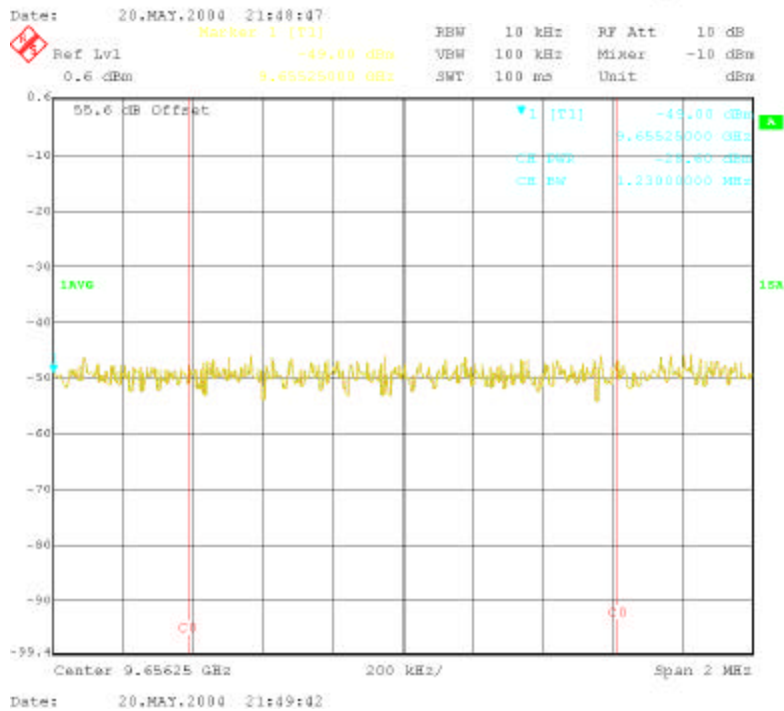
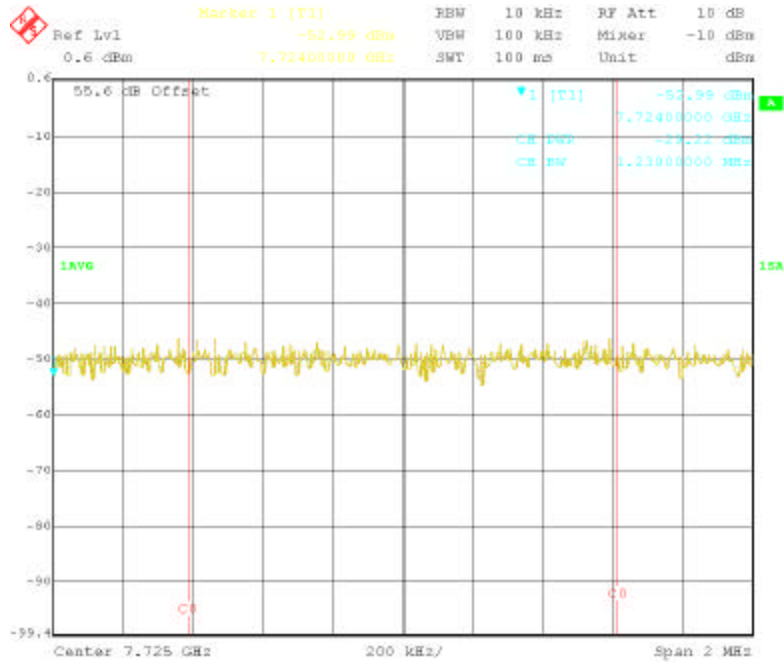




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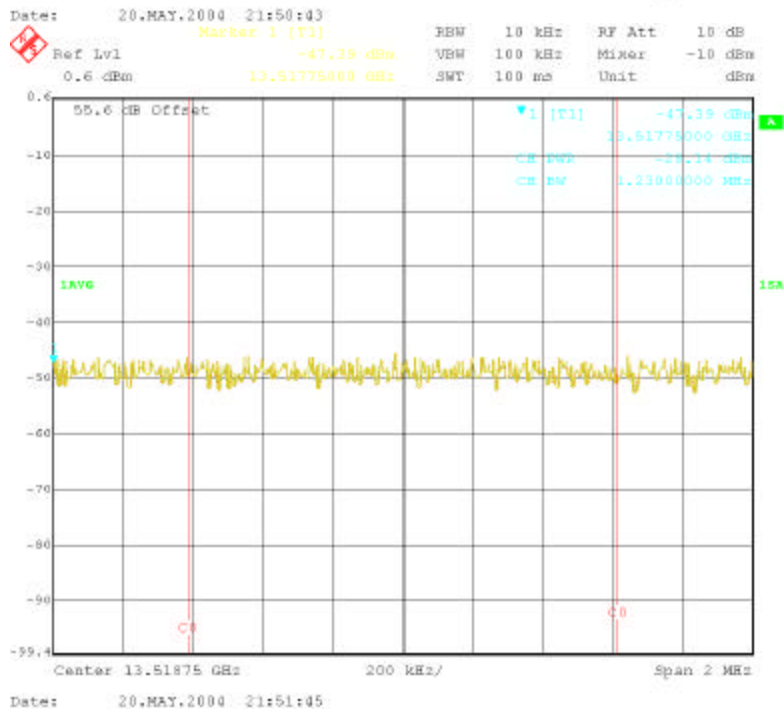
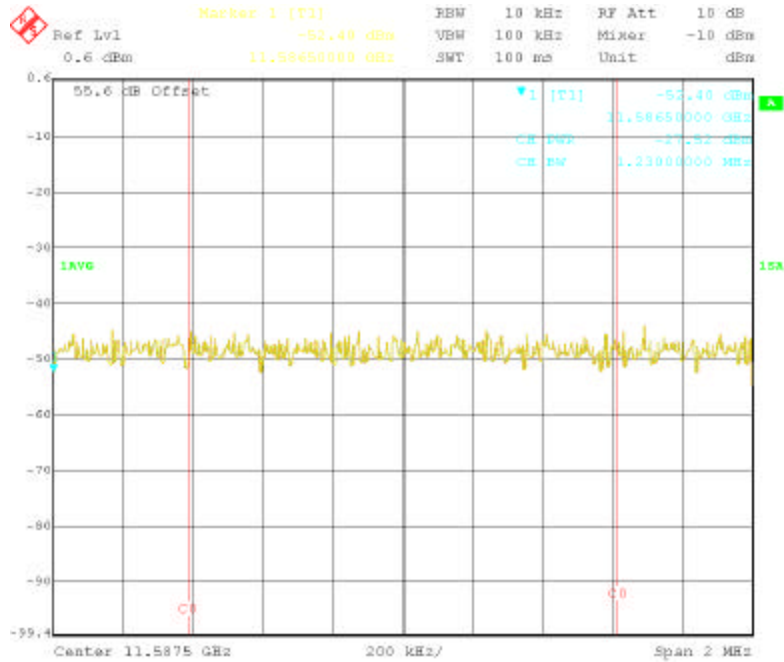




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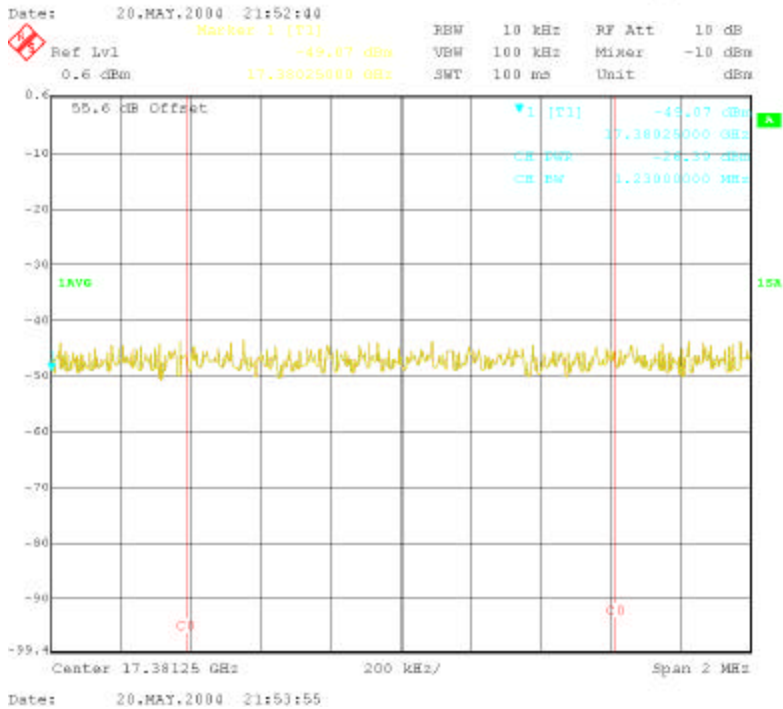
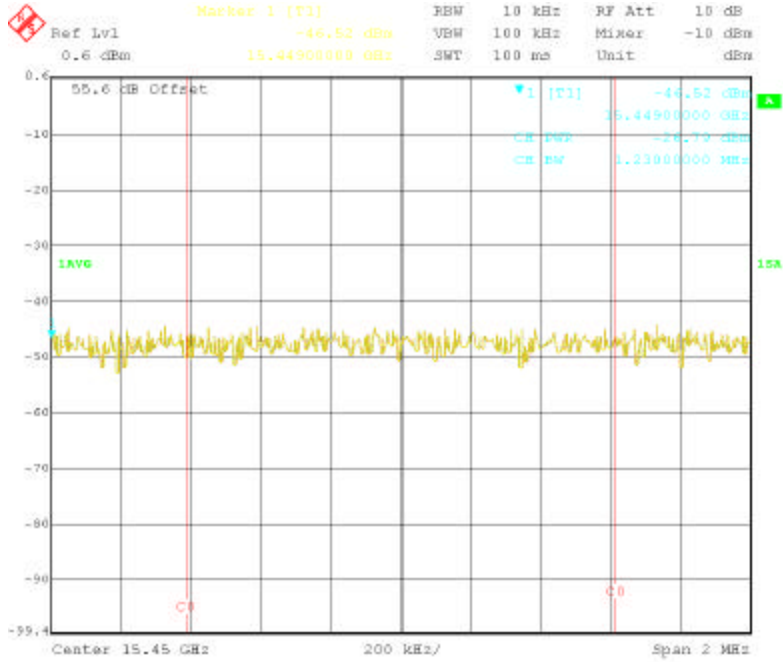




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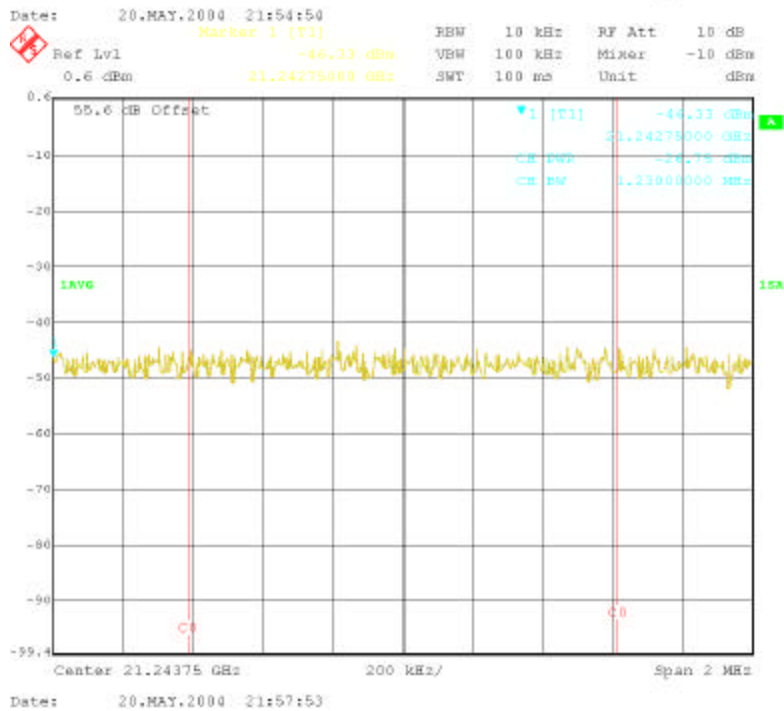
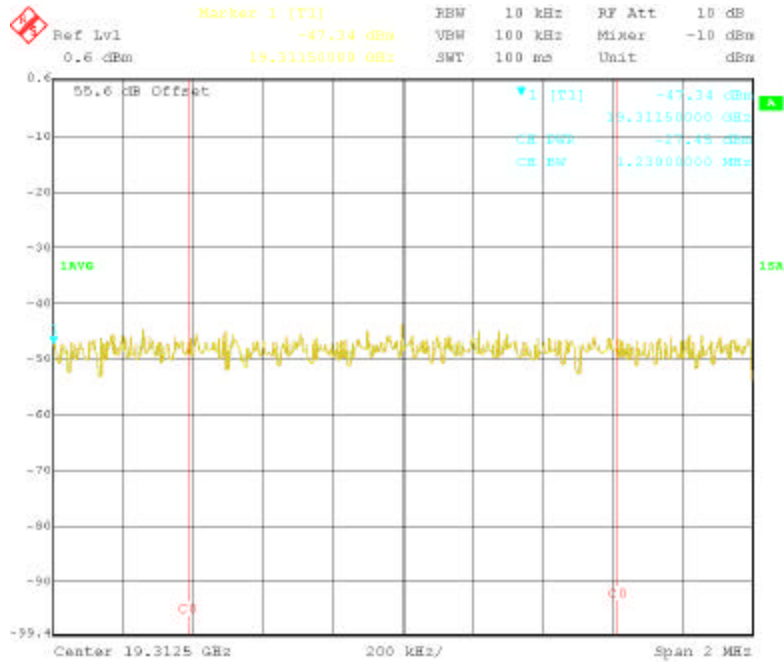




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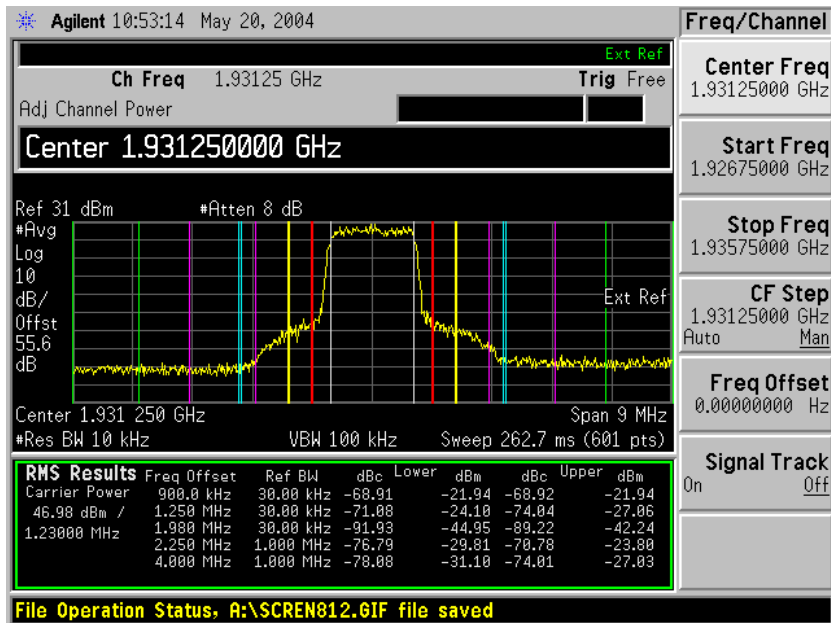
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# Spurious Emissions at Antenna Terminal – 45W Channel 25 – 1.93325 GHz – 16QAM

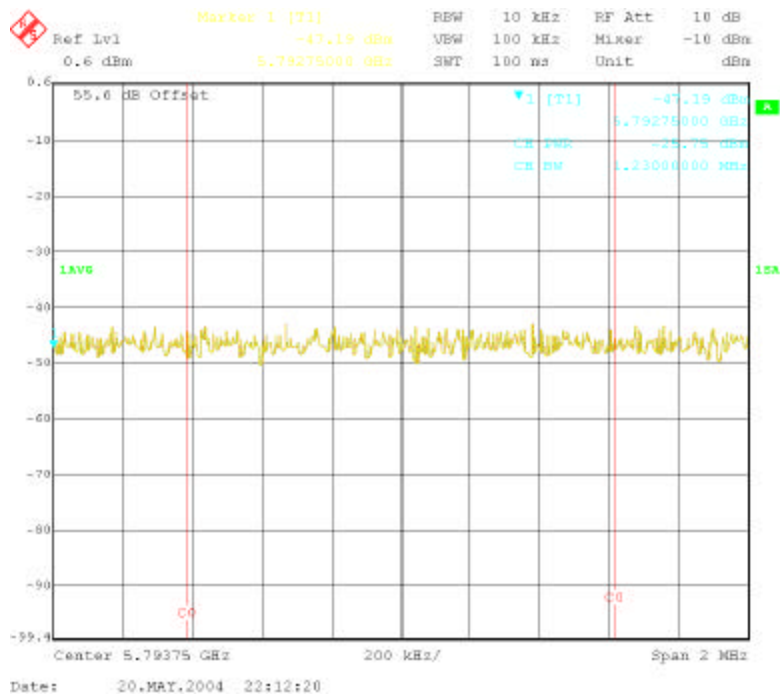
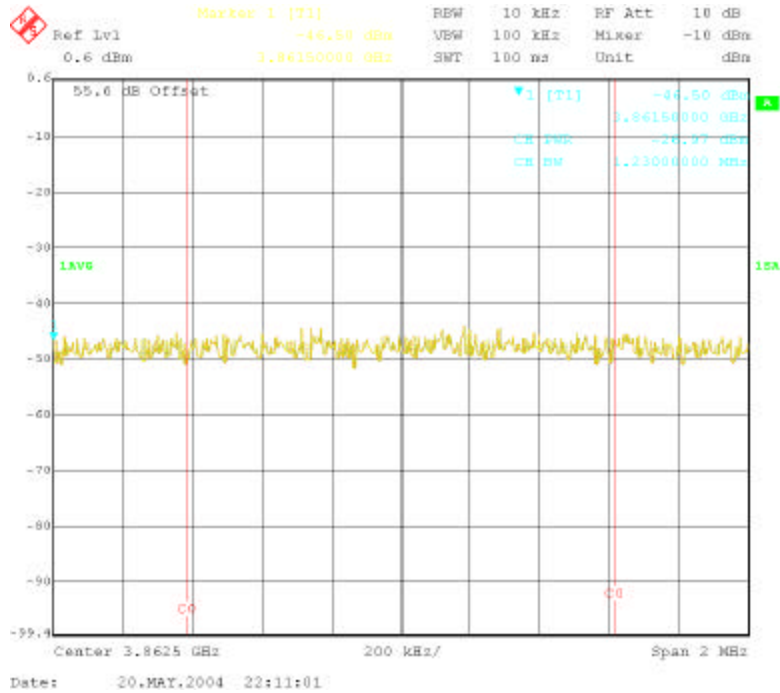




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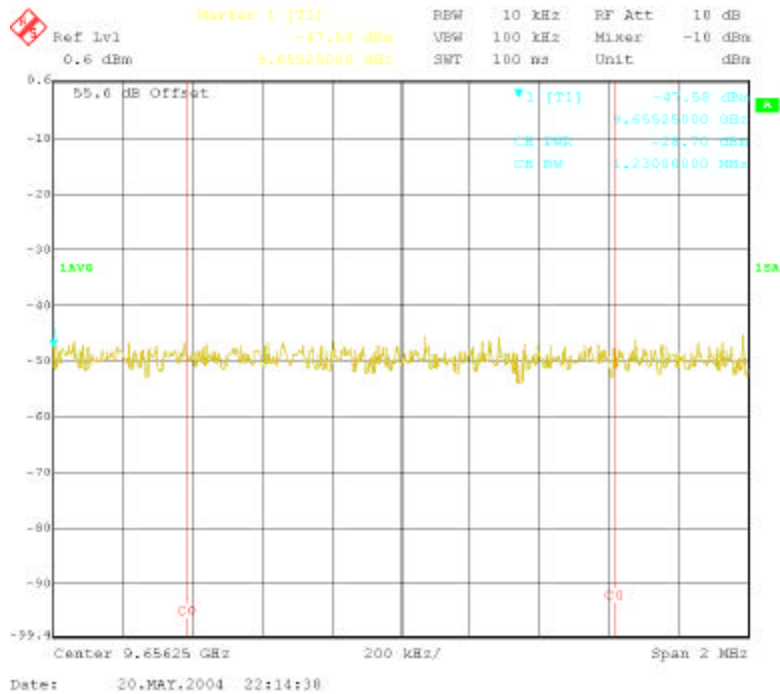
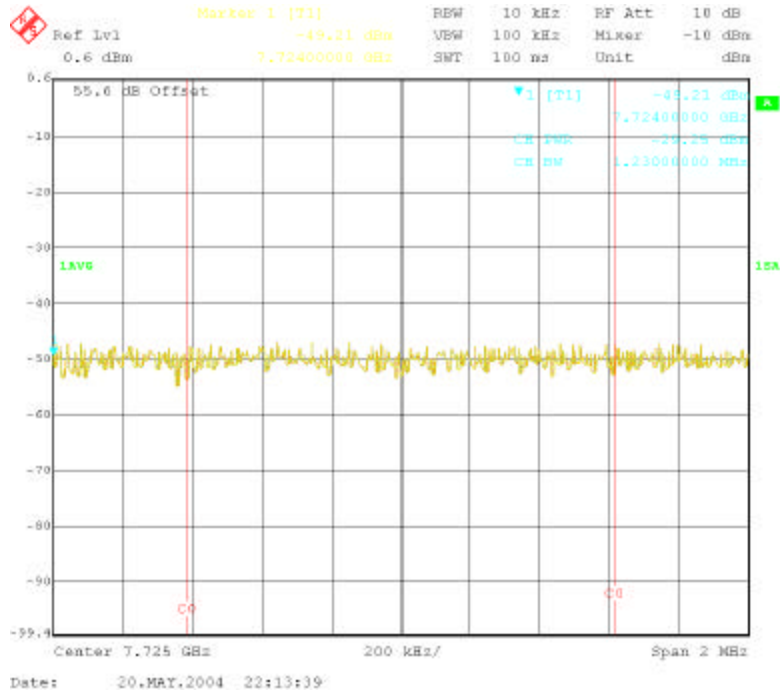




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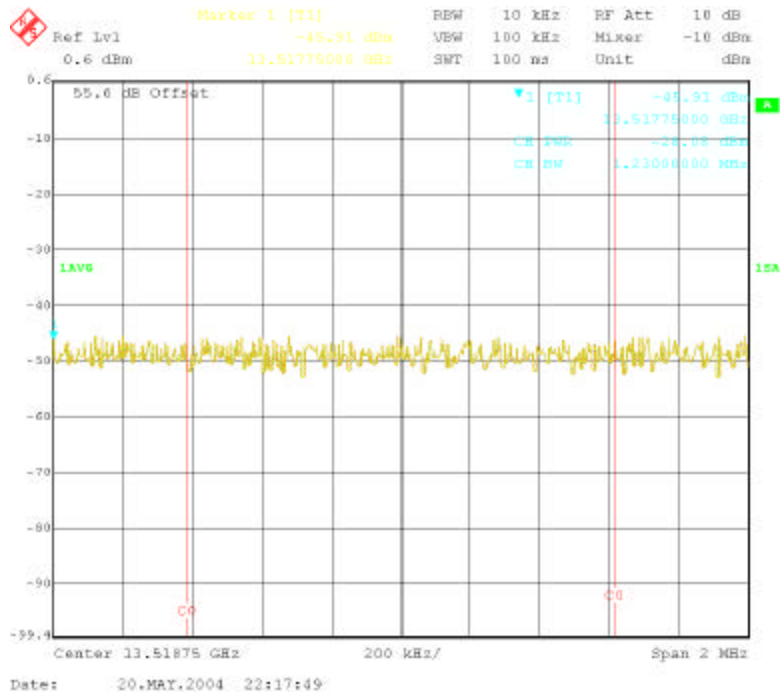
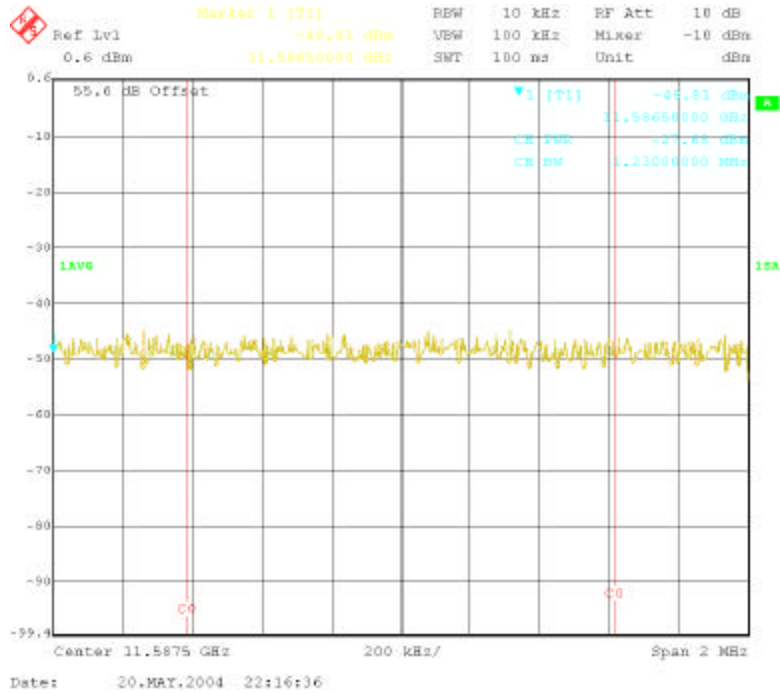




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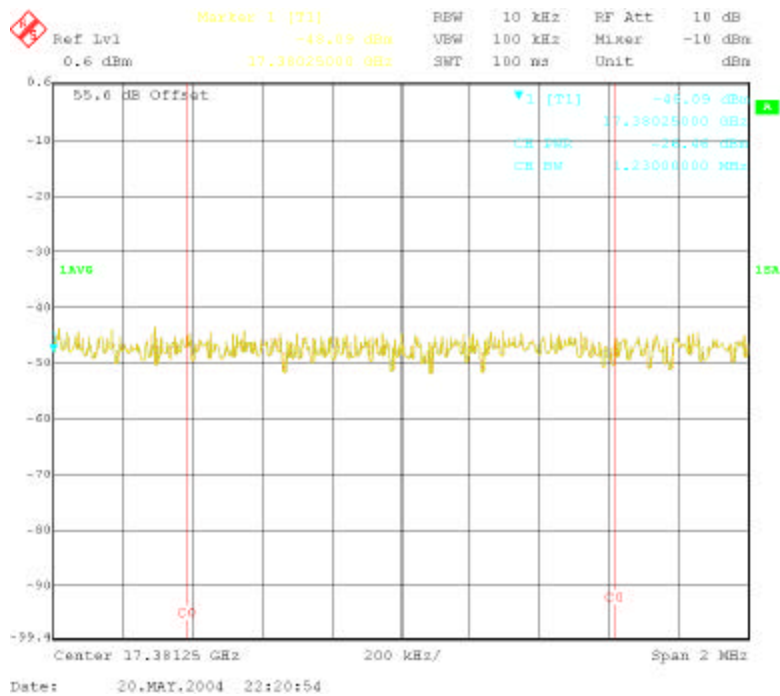
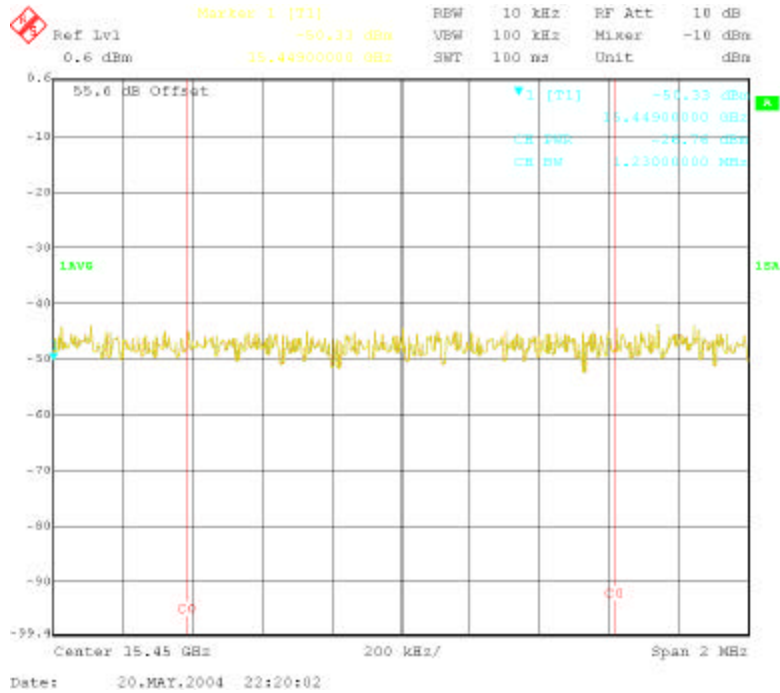




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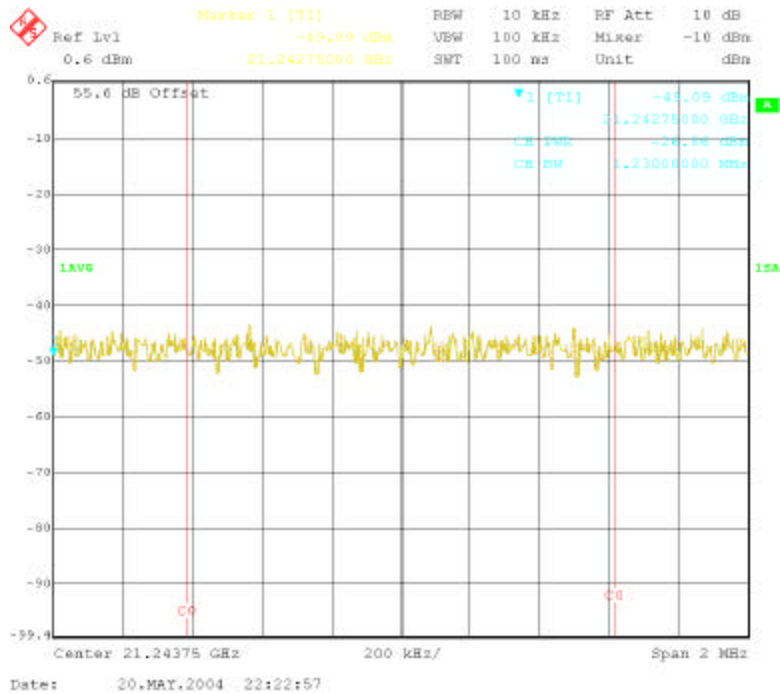
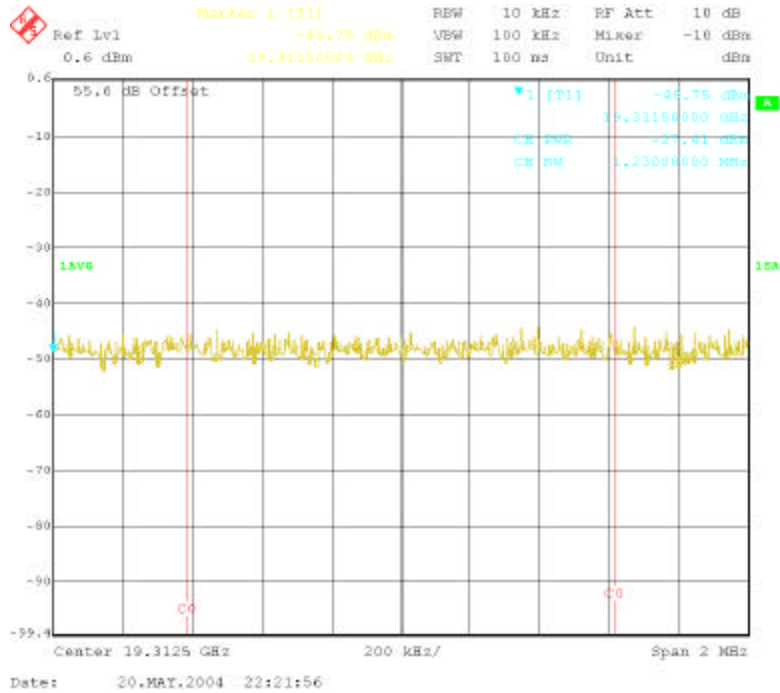




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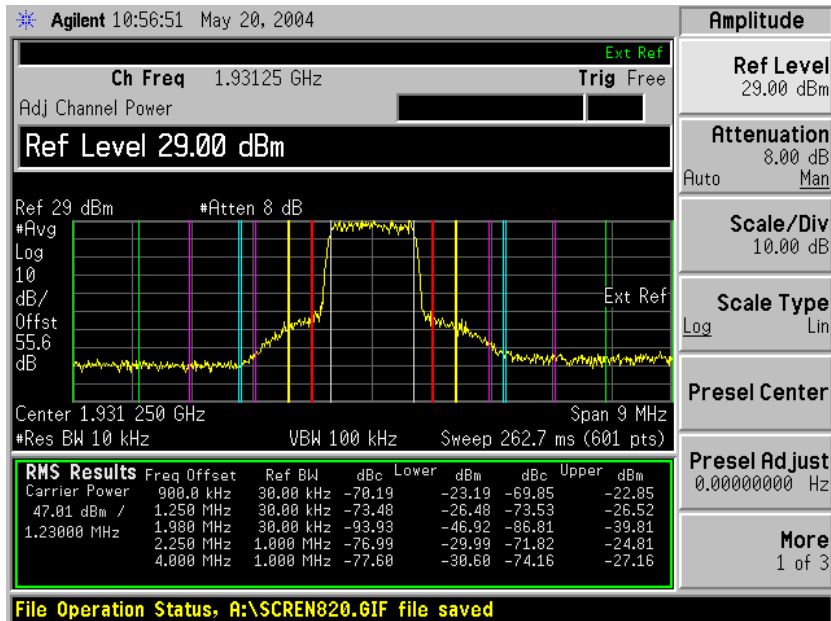


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# Spurious Emissions at Antenna Terminal – 45W Channel 25 – 1.93325 GHz – 8PSK

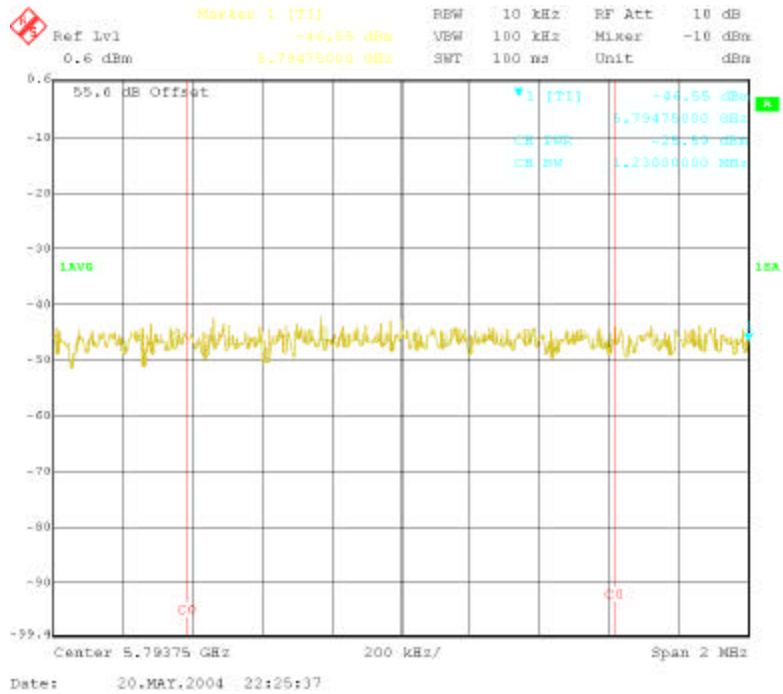
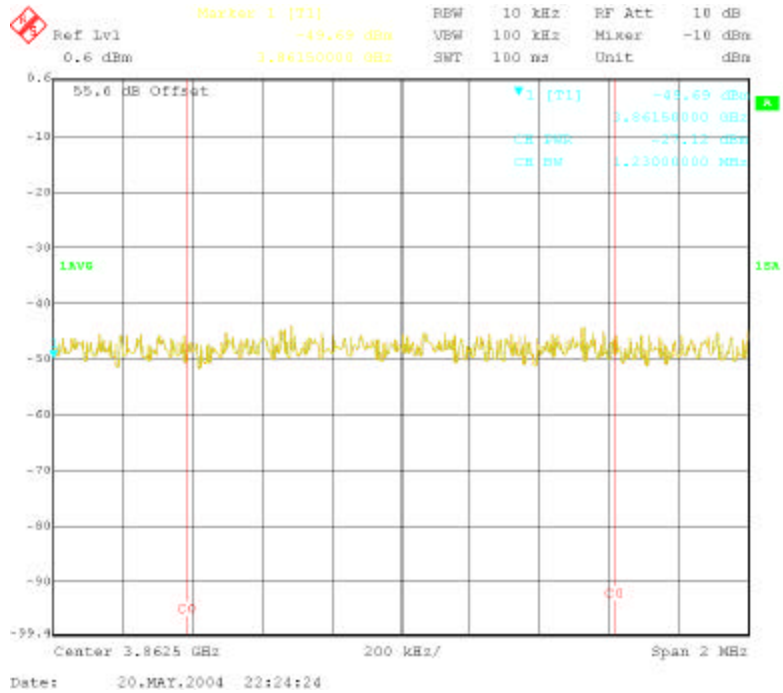




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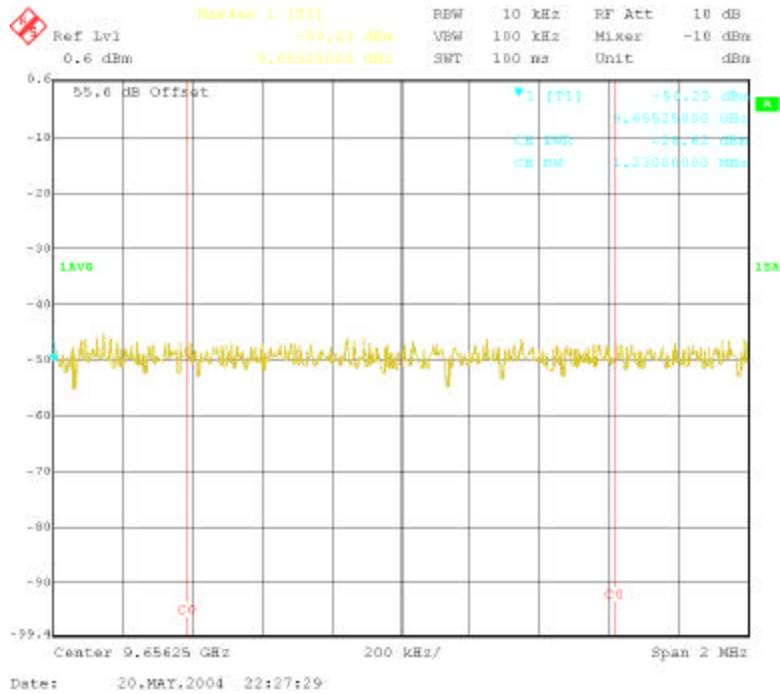
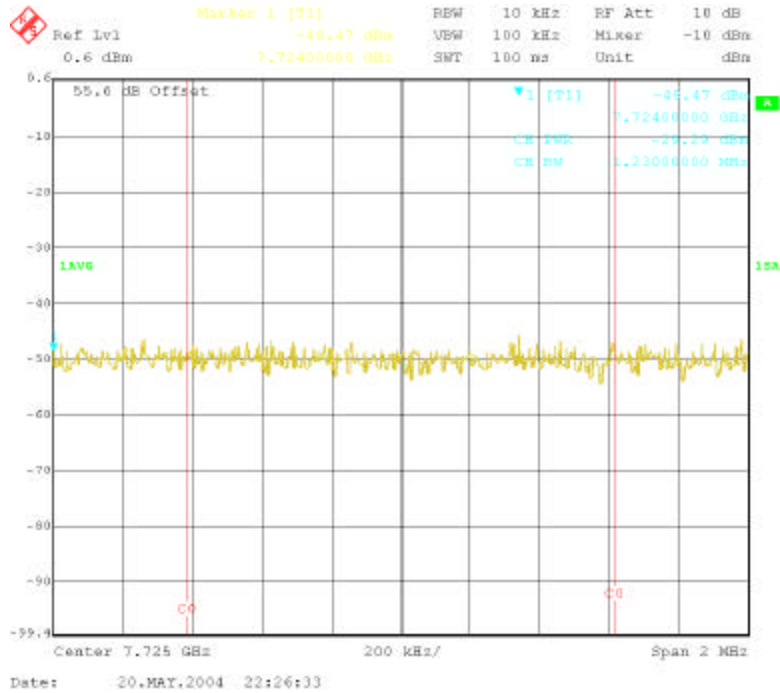




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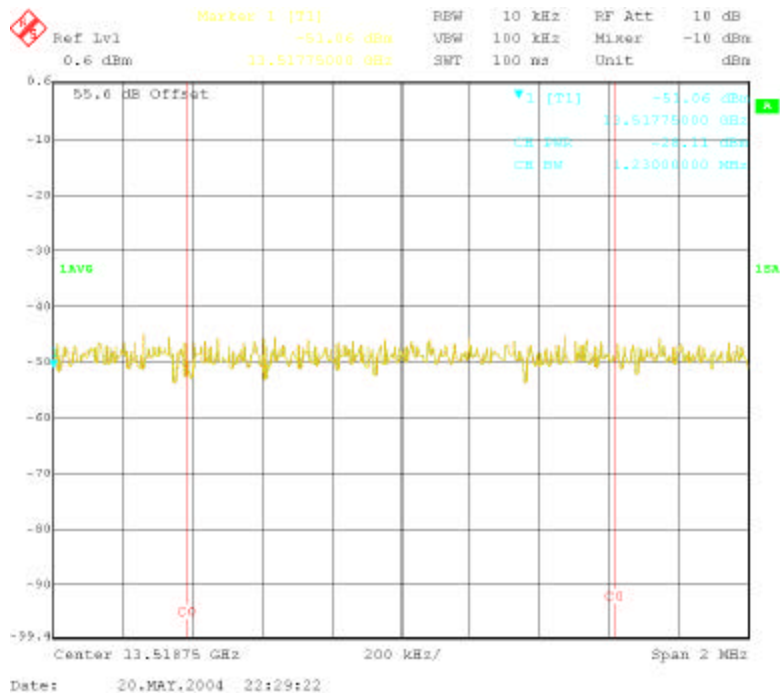
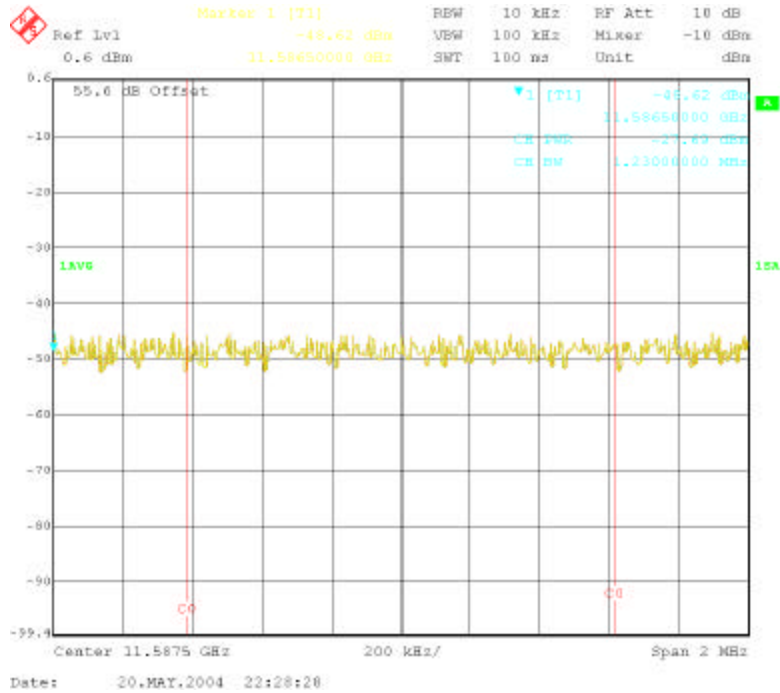




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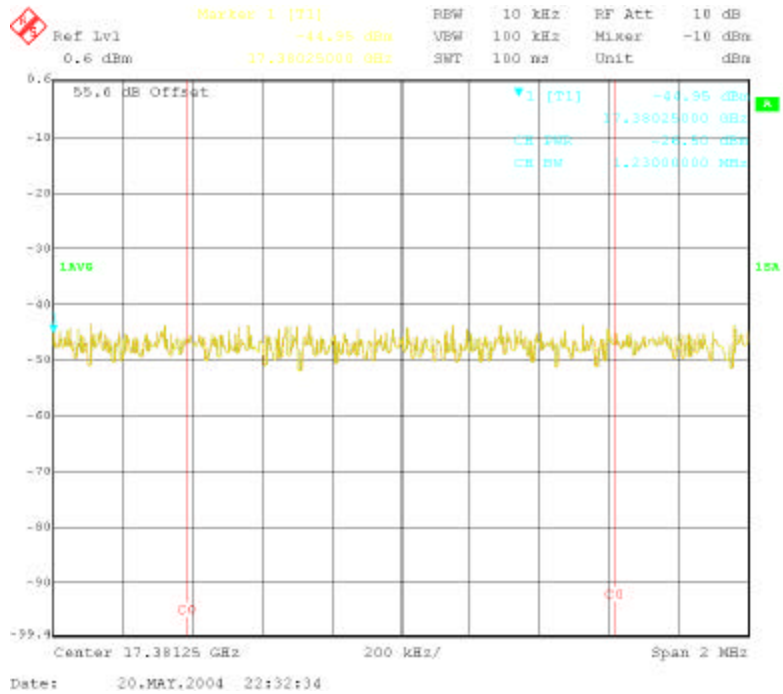
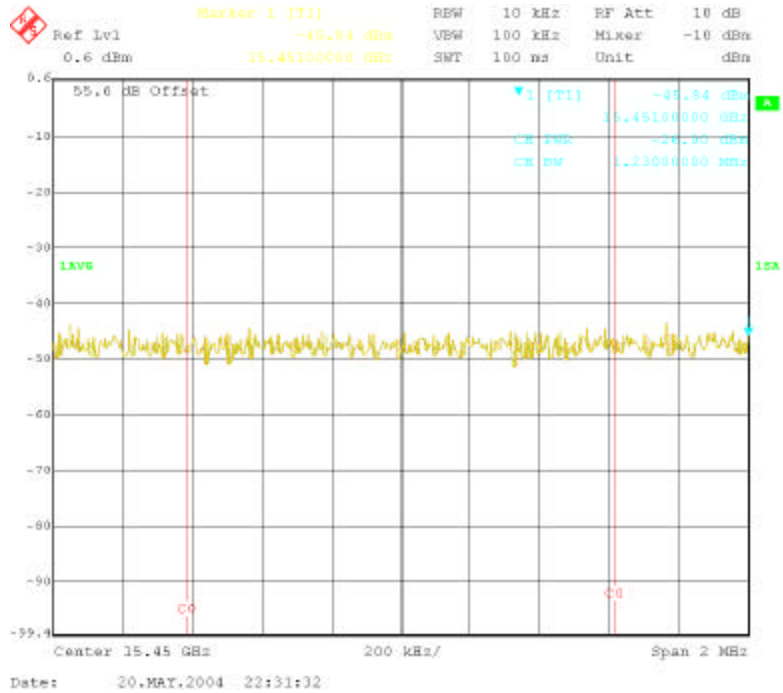




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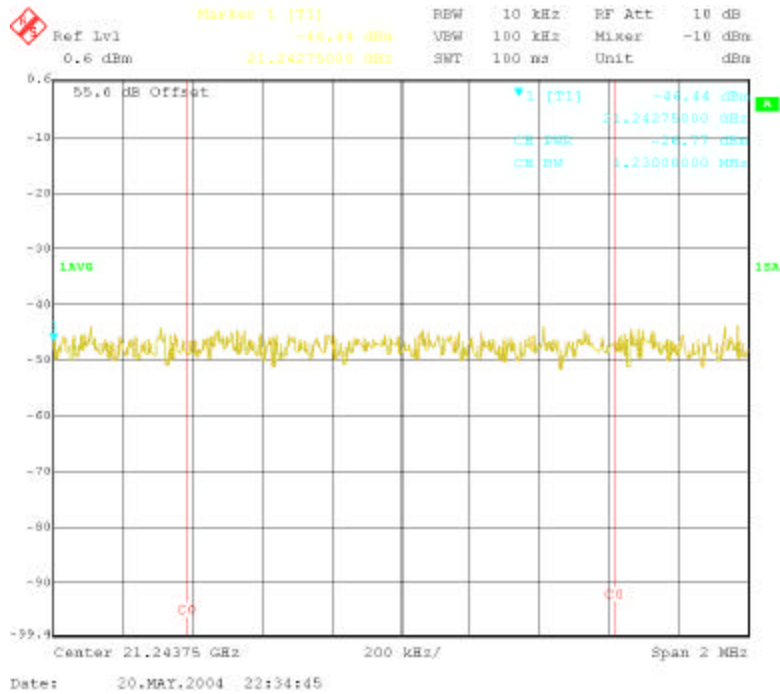
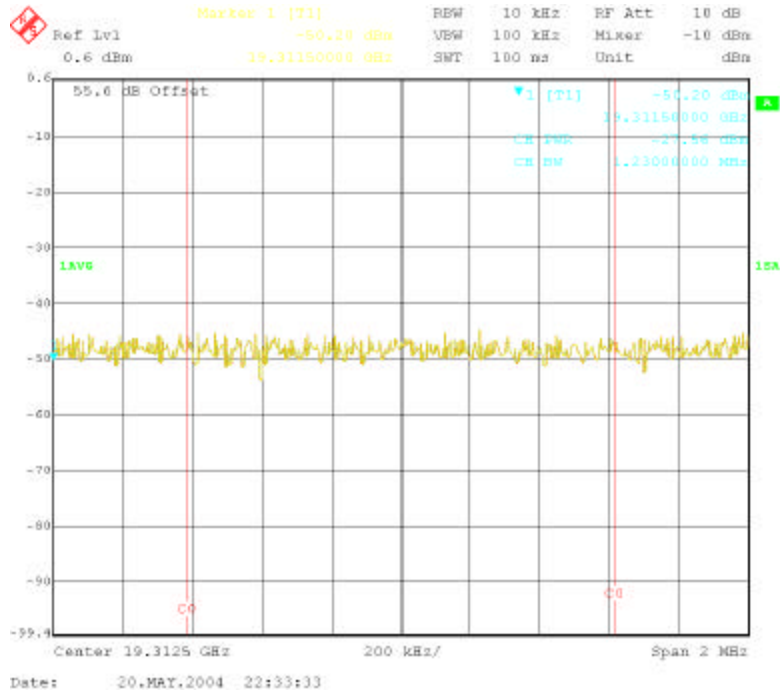




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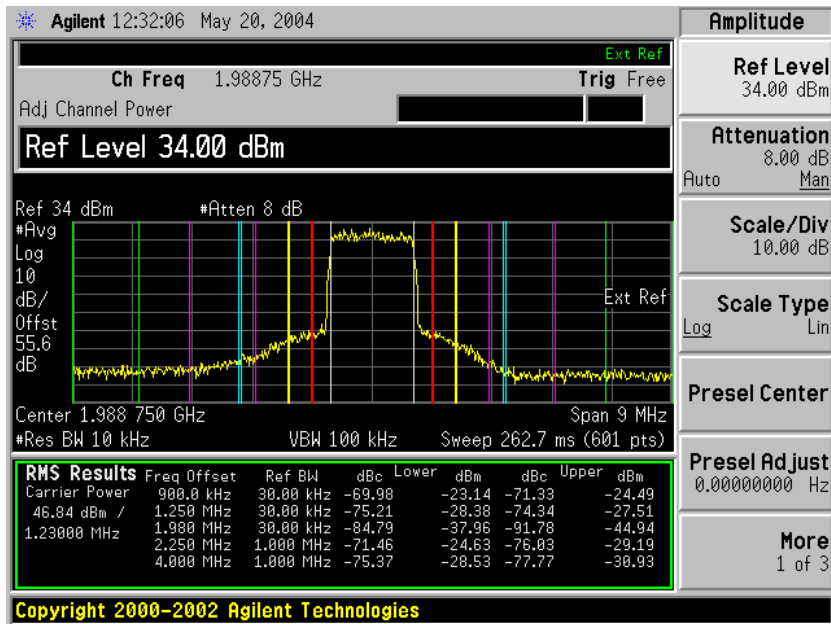


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# Spurious Emissions at Antenna Terminal – 45W Channel 1175 – 1.98875 GHz – QPSK

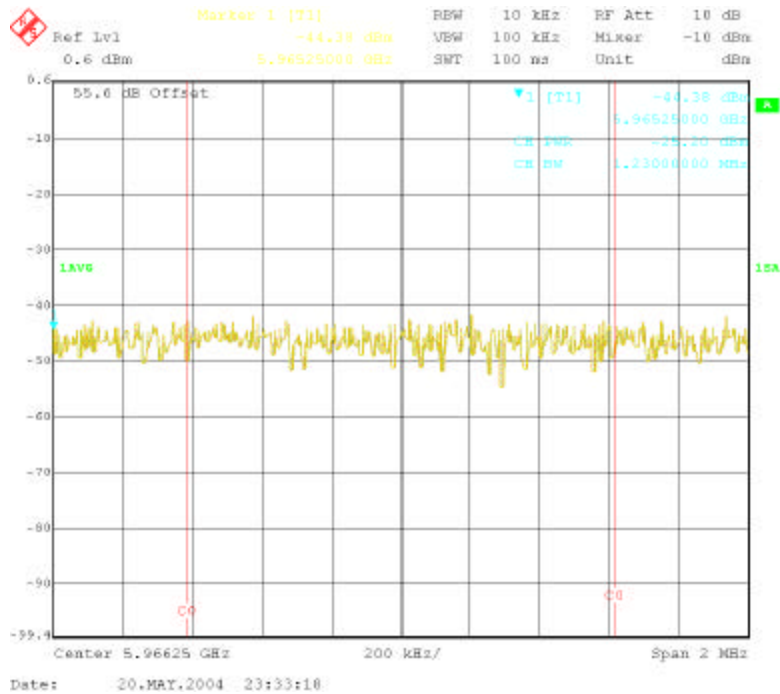
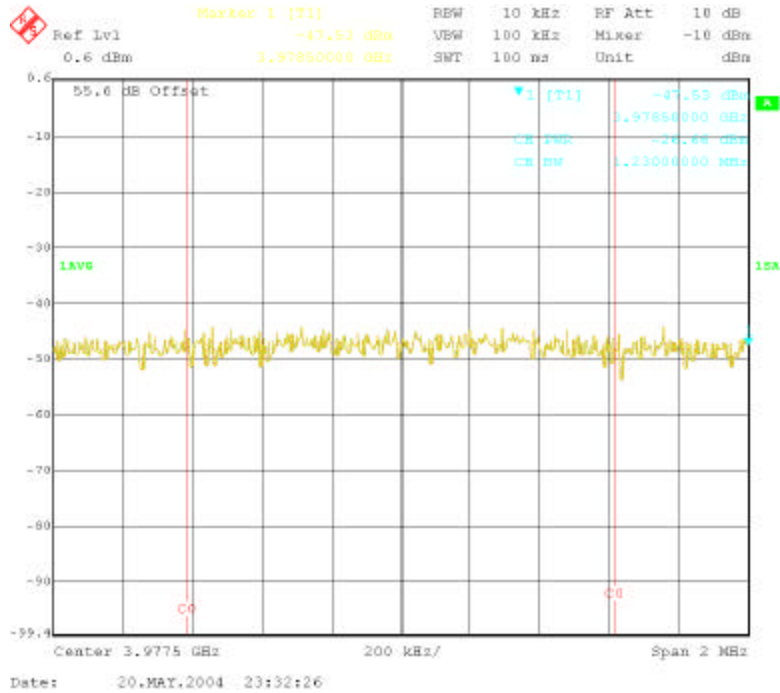




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SC4812T-MC 1X/1X-DO @ 1.9 GHz CDMA BTS  
Test Report Exhibit

FCC ID: IHET6DY1



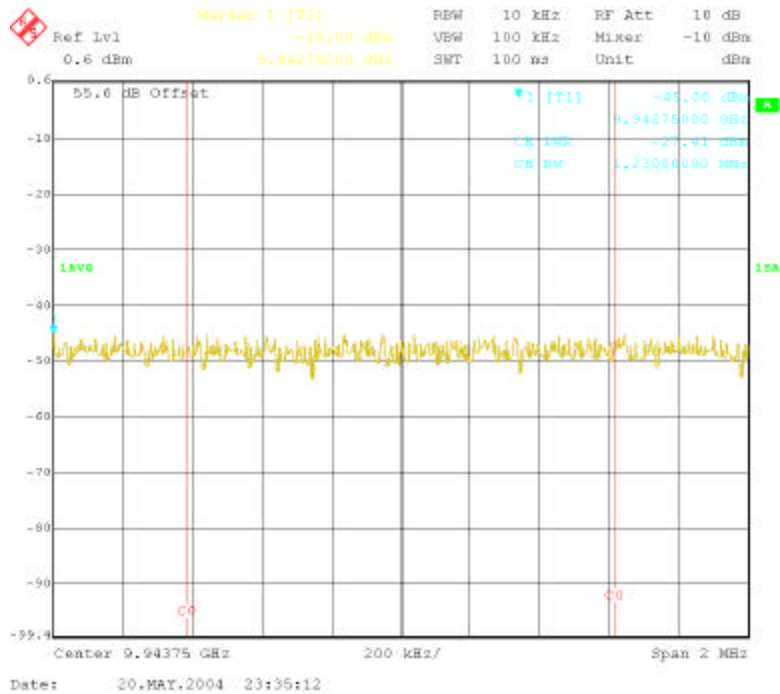
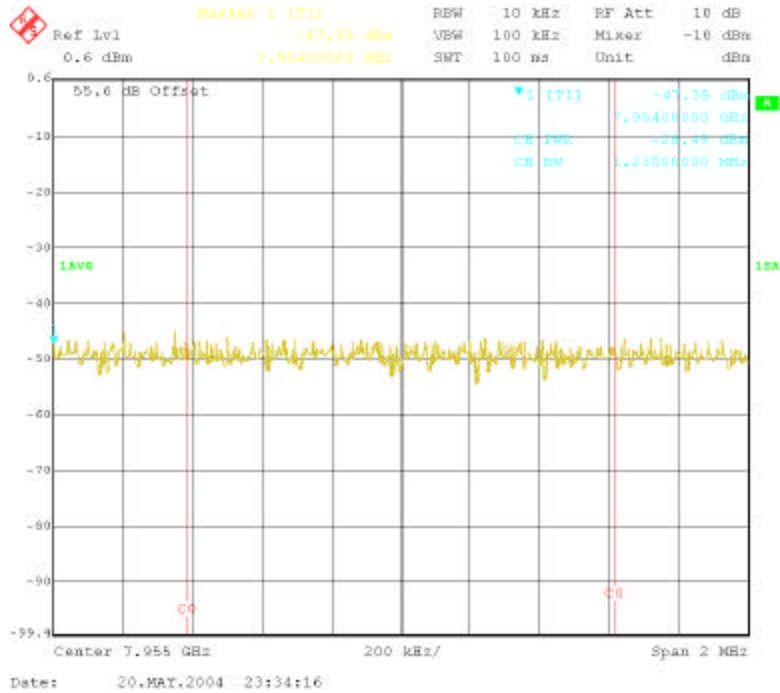




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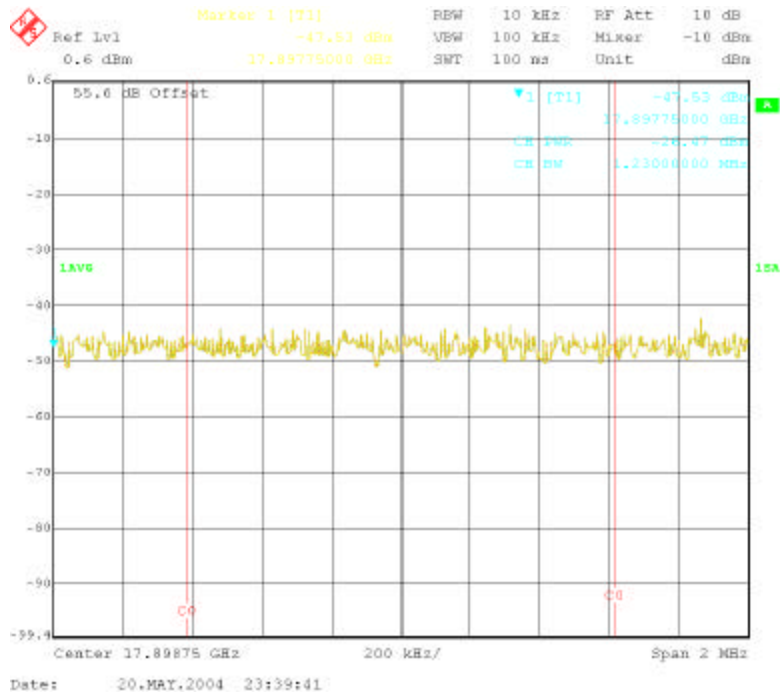
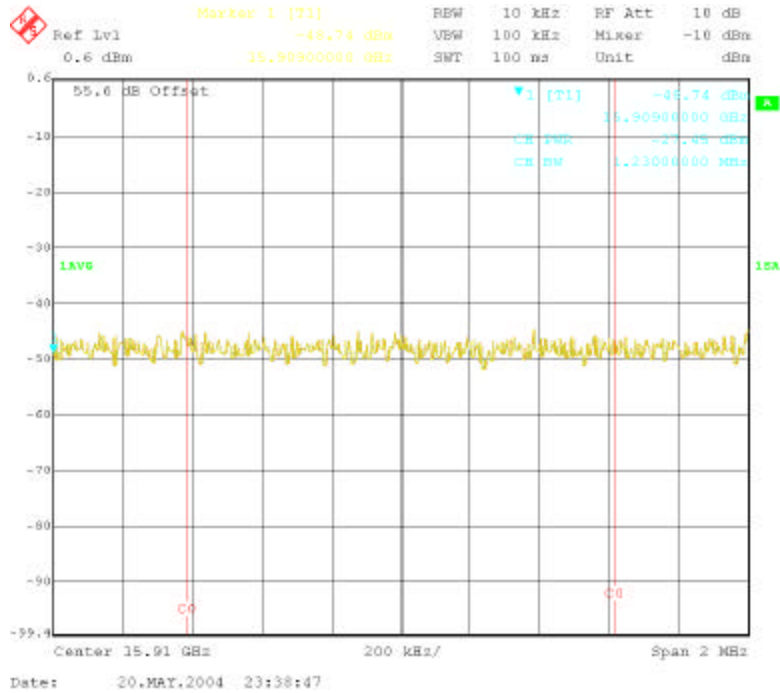




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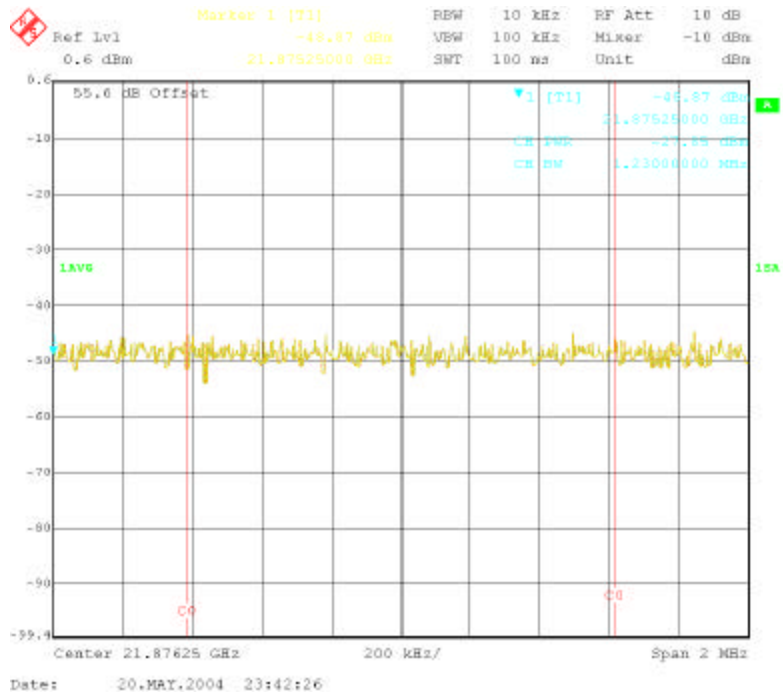
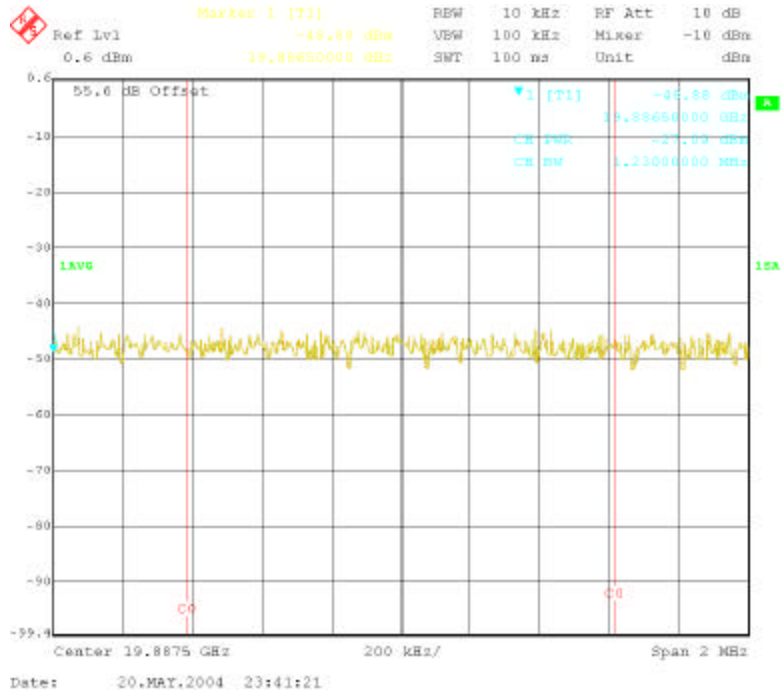




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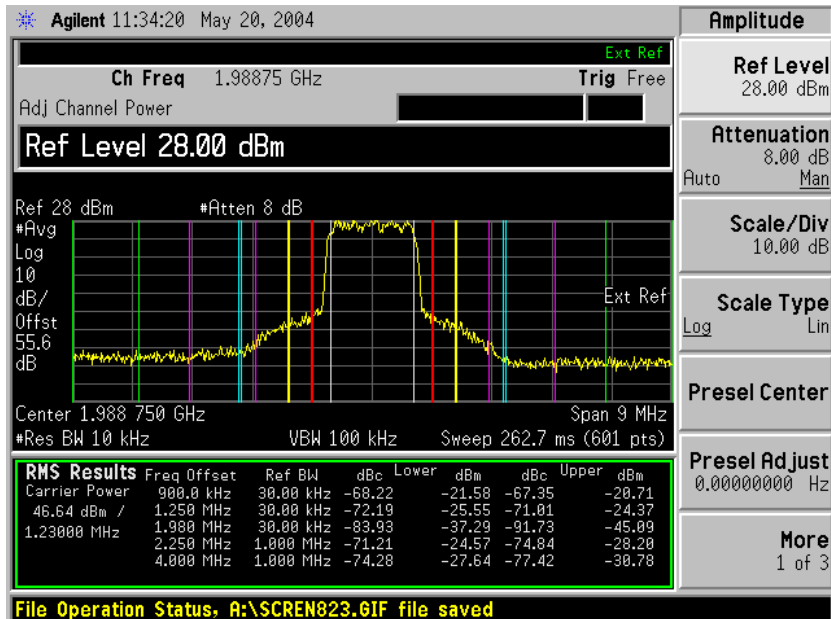
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# Spurious Emissions at Antenna Terminal – 45W Channel 1175 – 1.98875 GHz – 16QAM

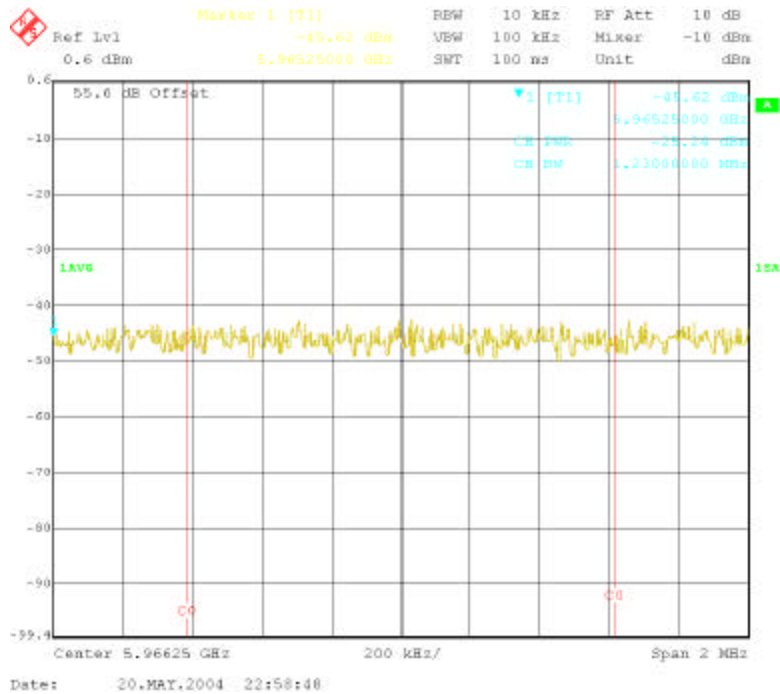
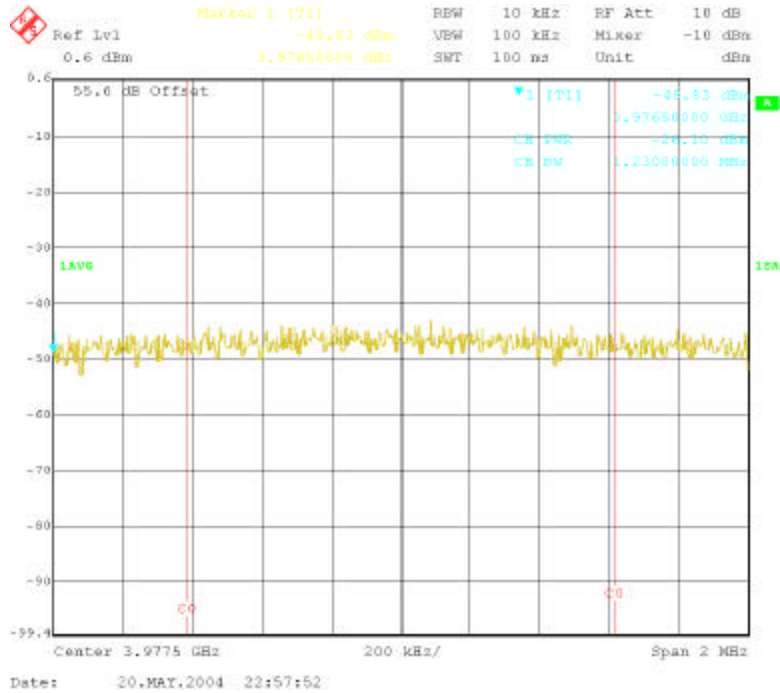




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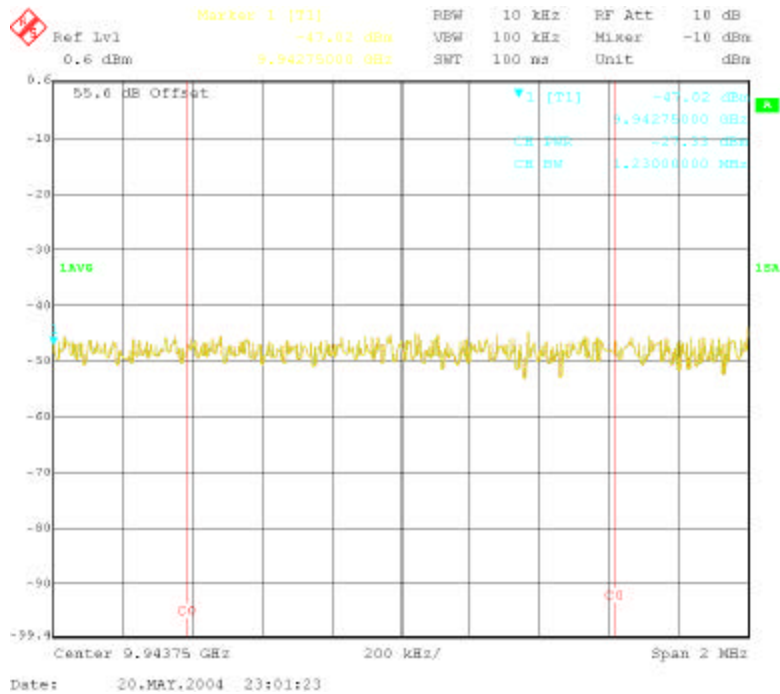
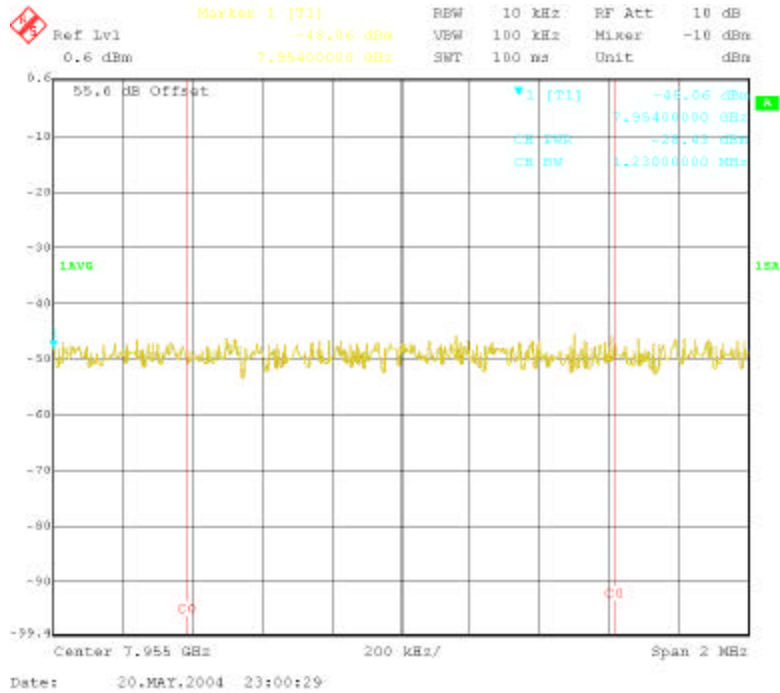




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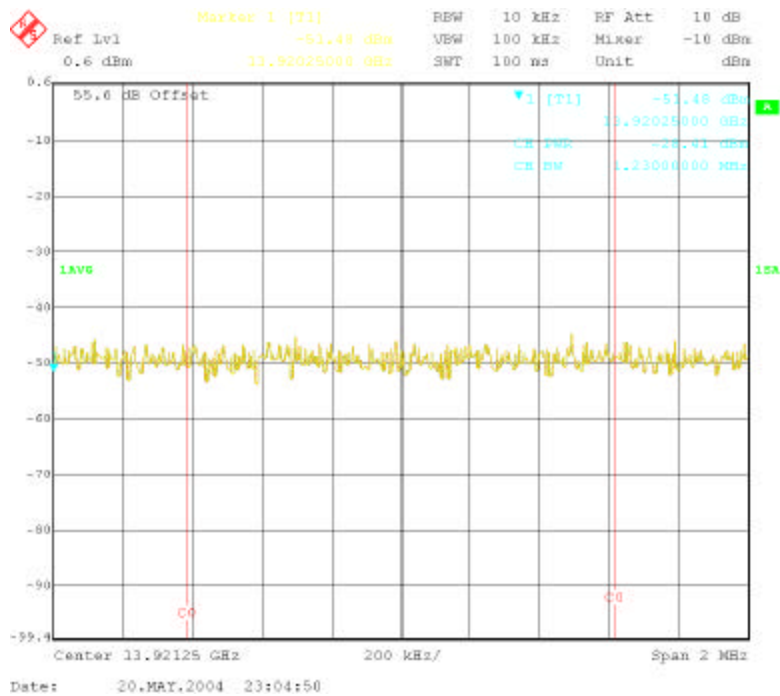
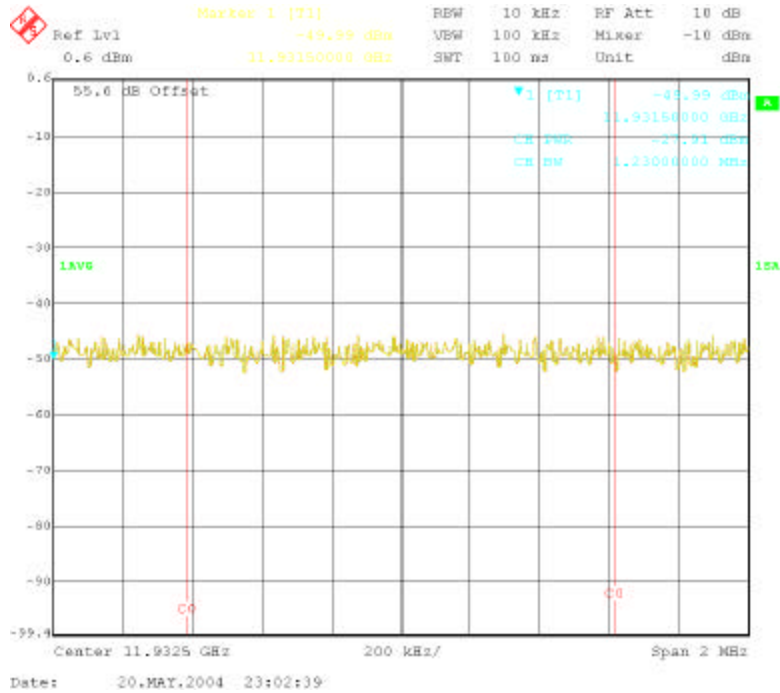




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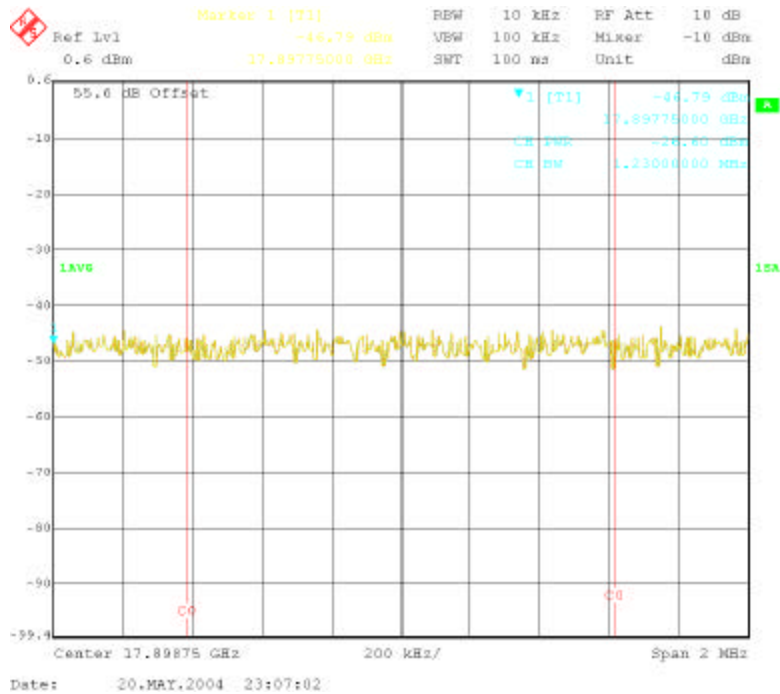
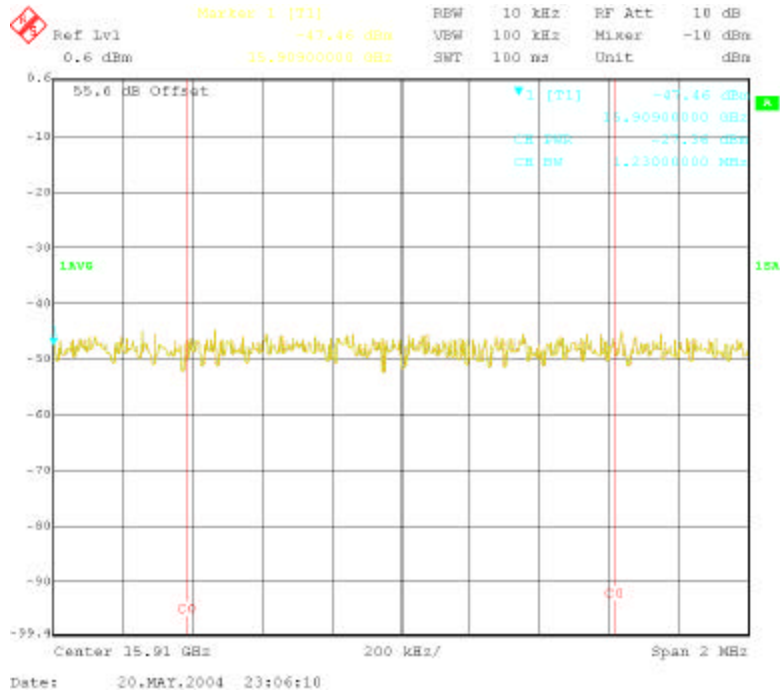




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