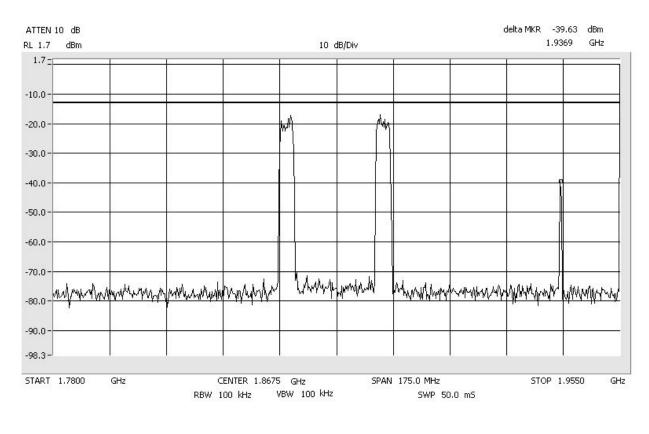
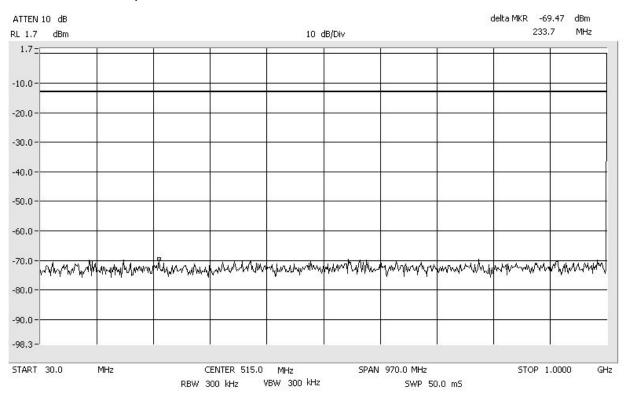


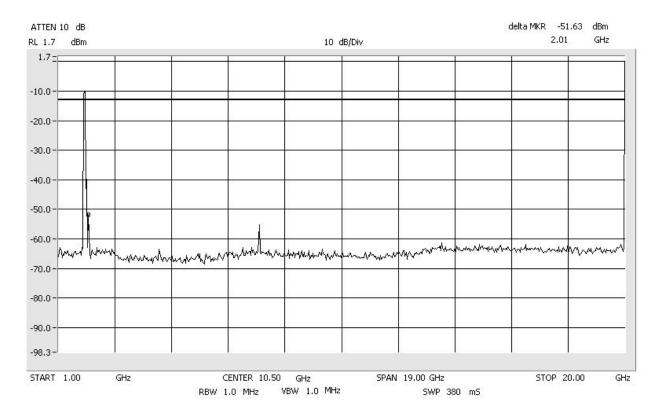
Intermodulation_LowWCDMA_High PCS Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz

Intermodulation_LowWCDMA_Apart PCS Center: 1867.5 MHz Span: 175 MHz RBW/VBW: 100 kHz

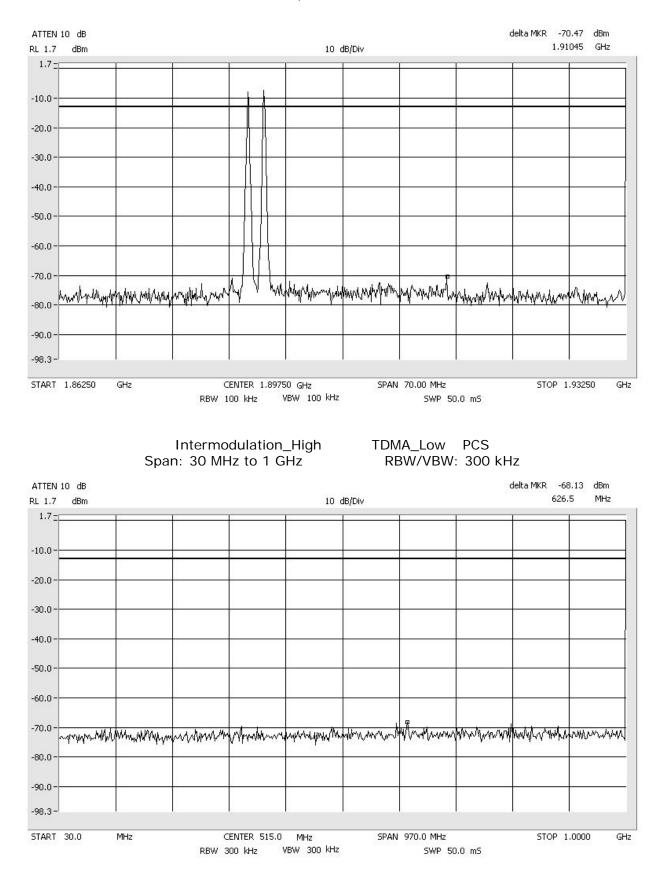


Intermodulation_LowWCDMA_Apart PCS Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz





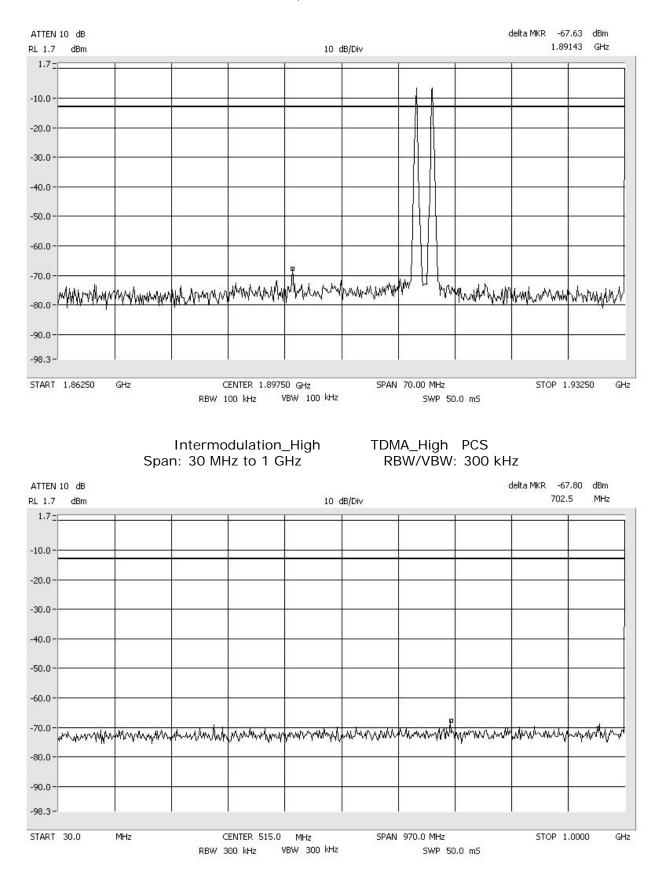
Intermodulation_LowWCDMA_Apart PCS Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



Intermodulation_High TDMA_Low PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

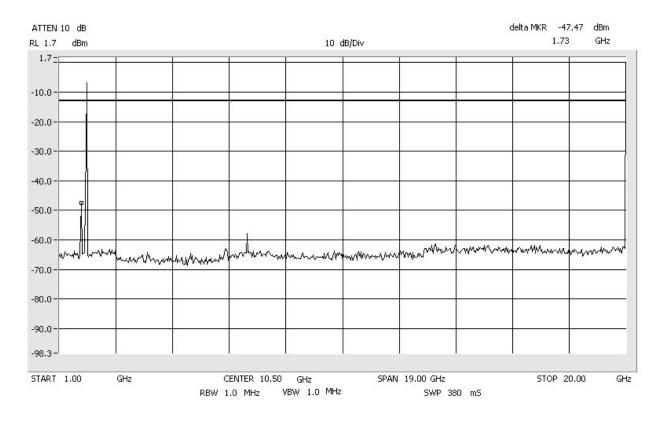
TDMA_Low PCS RBW/VBW: 1 MHz

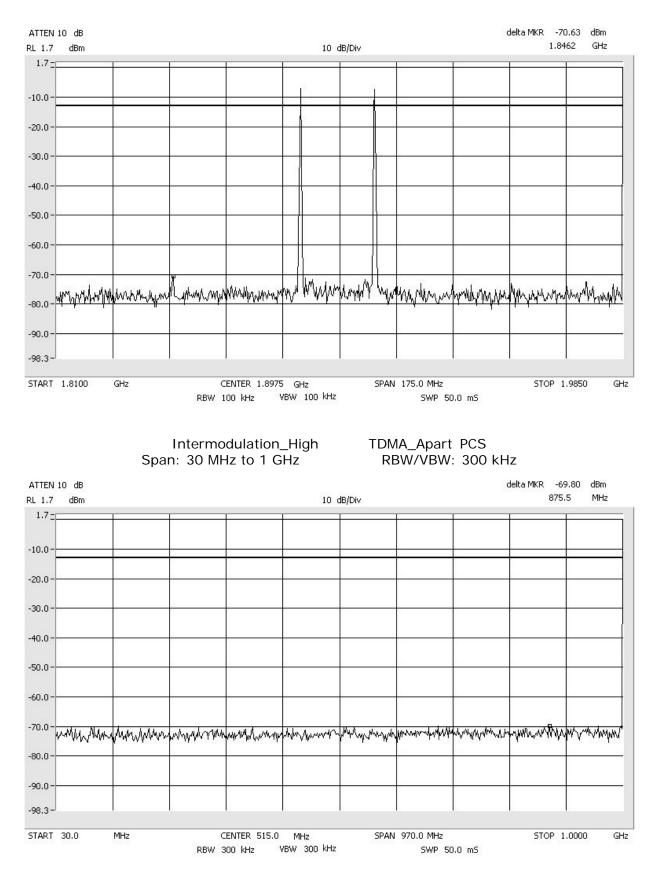
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Intermodulation_High TDMA_High PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

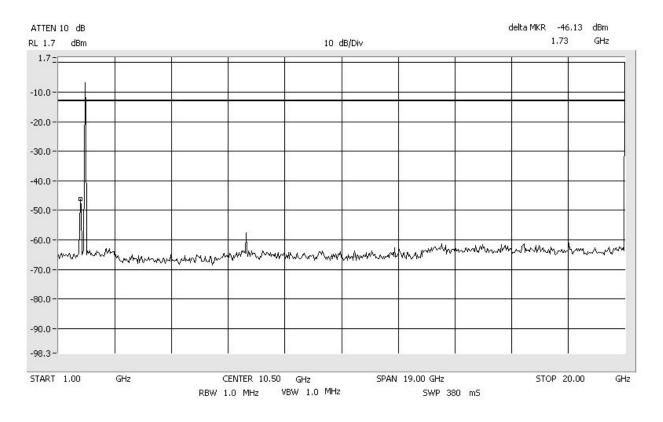
TDMA_High PCS RBW/VBW: 1 MHz

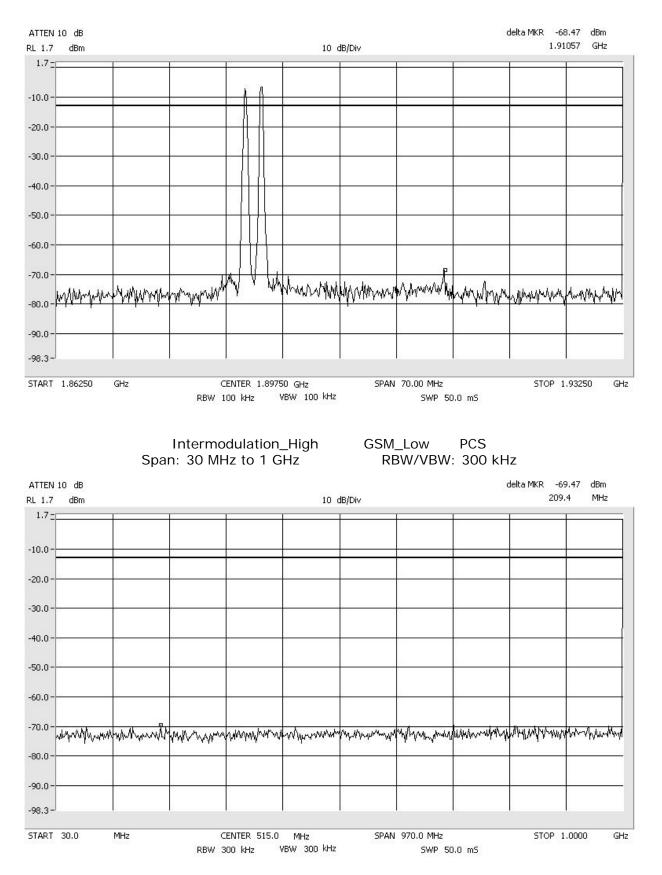




Intermodulation_High TDMA_Apart PCS Center: 1897.5 MHz Span: 175 MHz RBW/VBW: 100 kHz

TDMA_Apart PCS RBW/VBW: 1 MHz

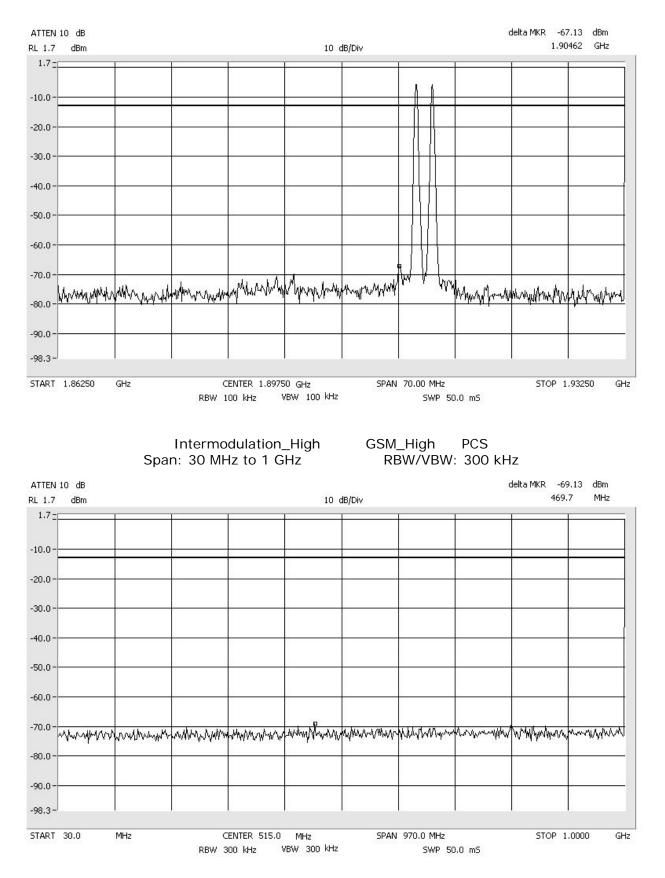




Intermodulation_High GSM_Low PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

GSM_Low PCS RBW/VBW: 1 MHz

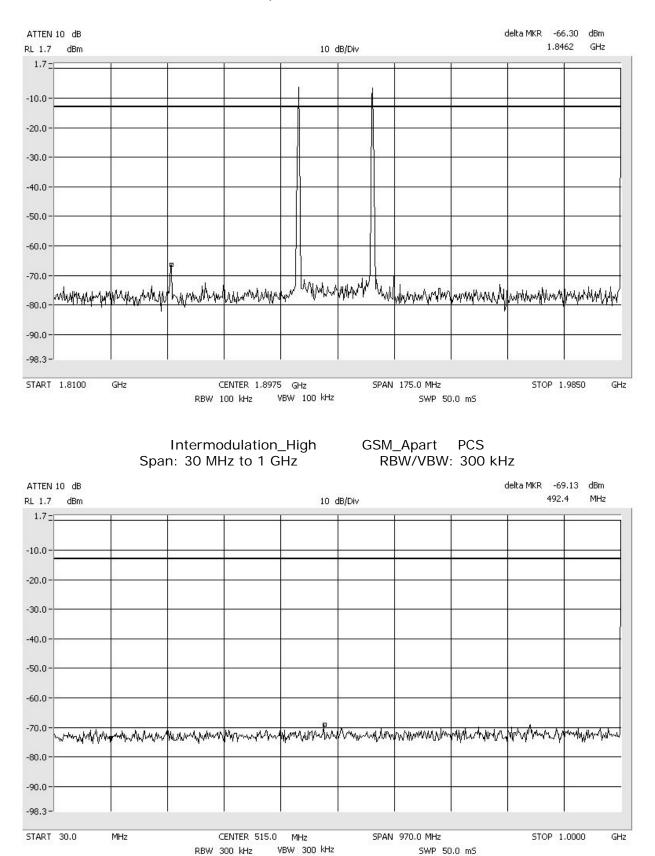
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Intermodulation_High GSM_High PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

GSM_High PCS RBW/VBW: 1 MHz

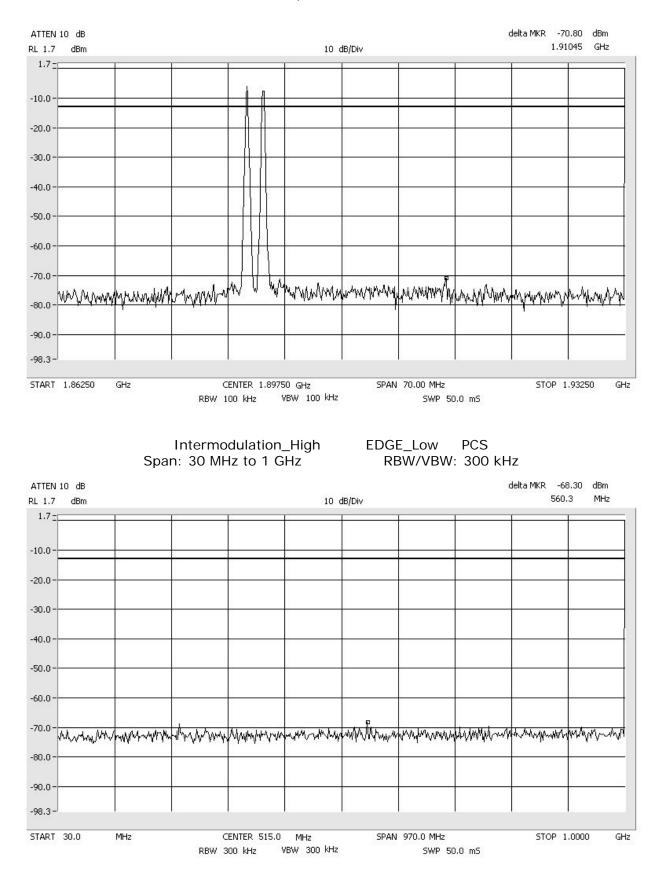
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Intermodulation_High GSM_Apart PCS Center: 1897.5 MHz Span: 175 MHz RBW/VBW: 100 kHz

GSM_Apart PCS RBW/VBW: 1 MHz

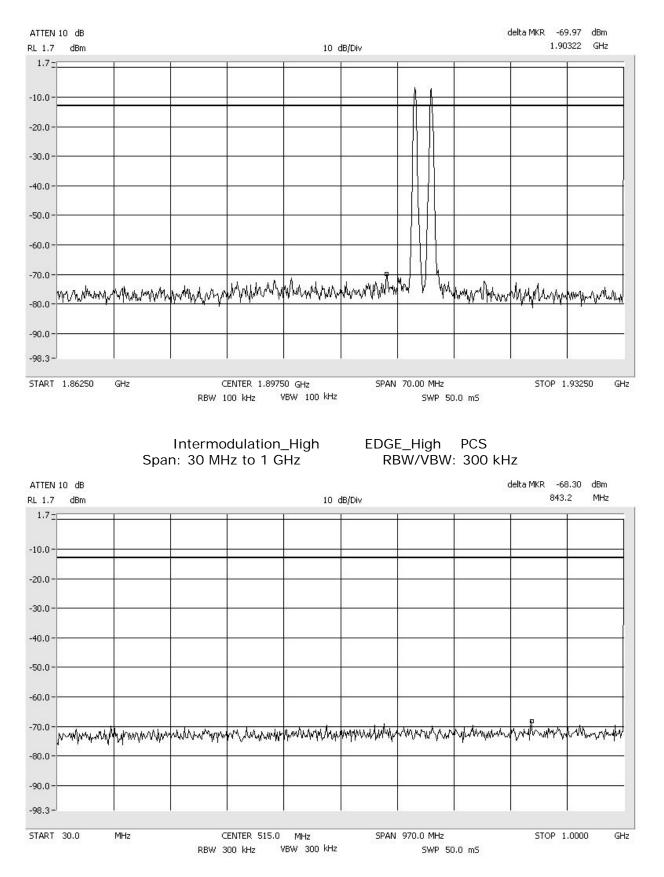
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Intermodulation_High EDGE_Low PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

EDGE_Low PCS RBW/VBW: 1 MHz

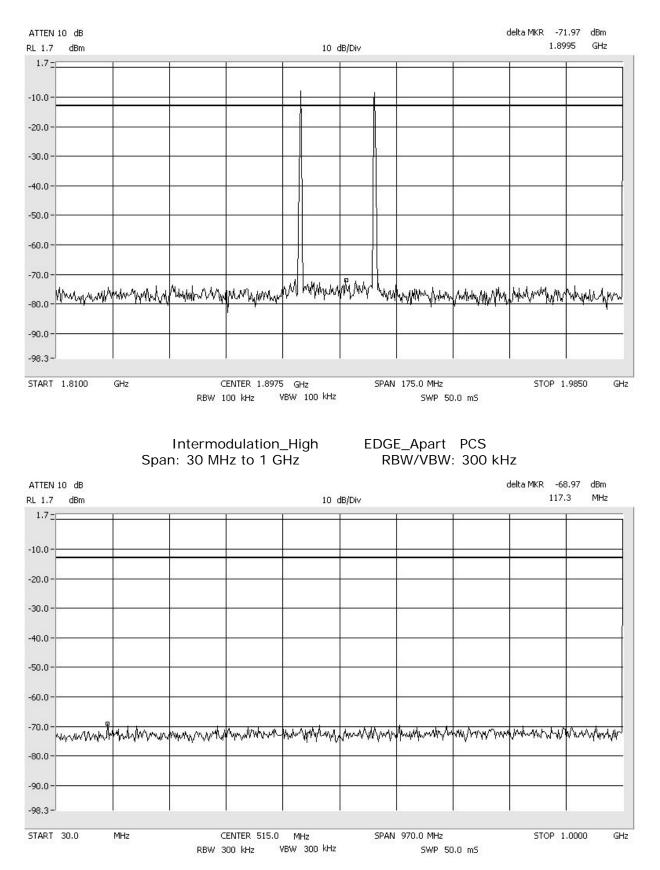
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Intermodulation_High EDGE_High PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

EDGE_High PCS RBW/VBW: 1 MHz

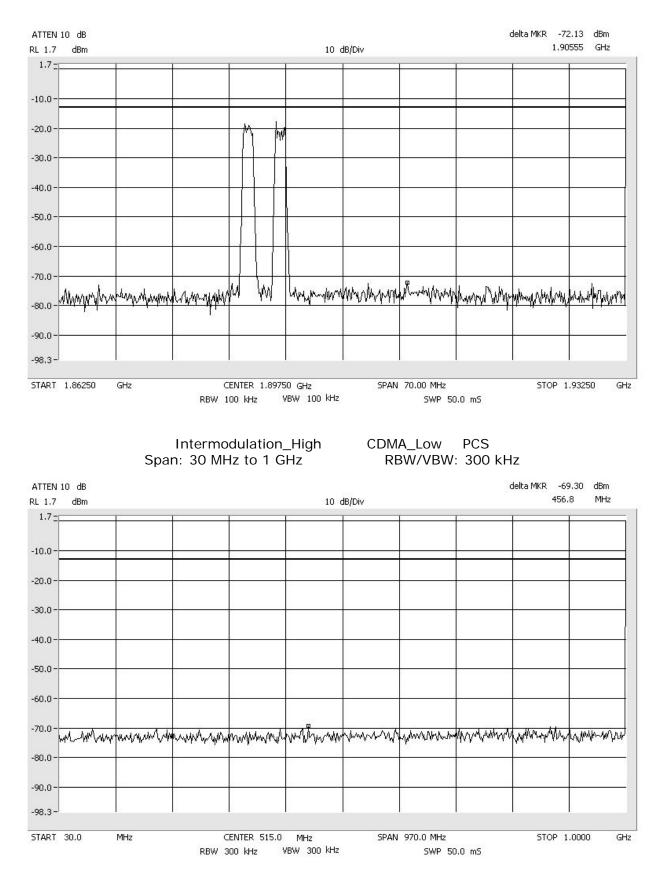
TTEN 10 dB				delta MKR -45.80 dBm
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Intermodulation_High EDGE_Apart PCS Center: 1897.5 MHz Span: 175 MHz RBW/VBW: 100 kHz

EDGE_Apart PCS RBW/VBW: 1 MHz

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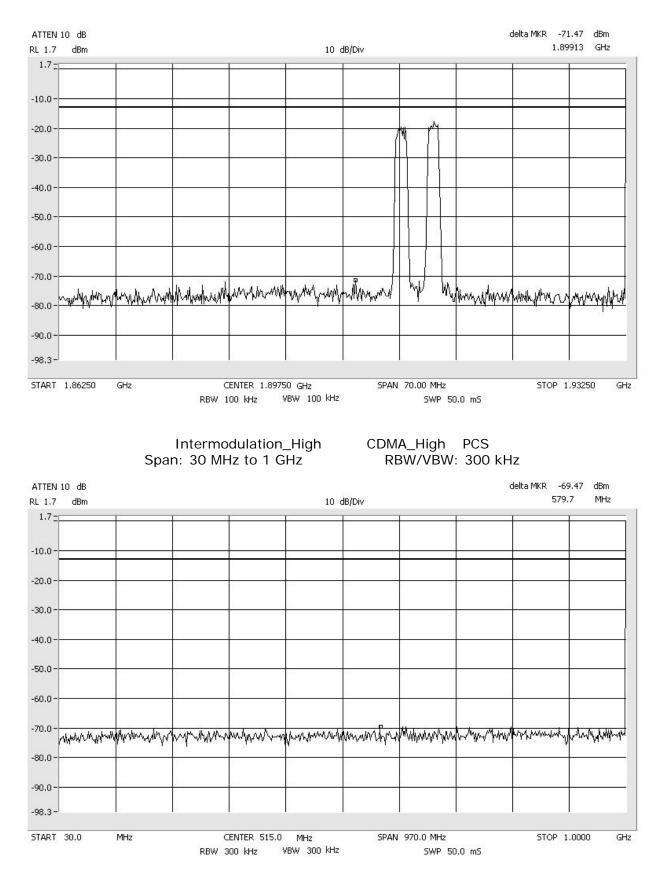


Intermodulation_High CDMA_Low PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

Intermodulation_High CDMA_Low PCS Span: 1 GHz to 20 GHz RBW/VBW: 1 M

RBW/VBW: 1 MHz

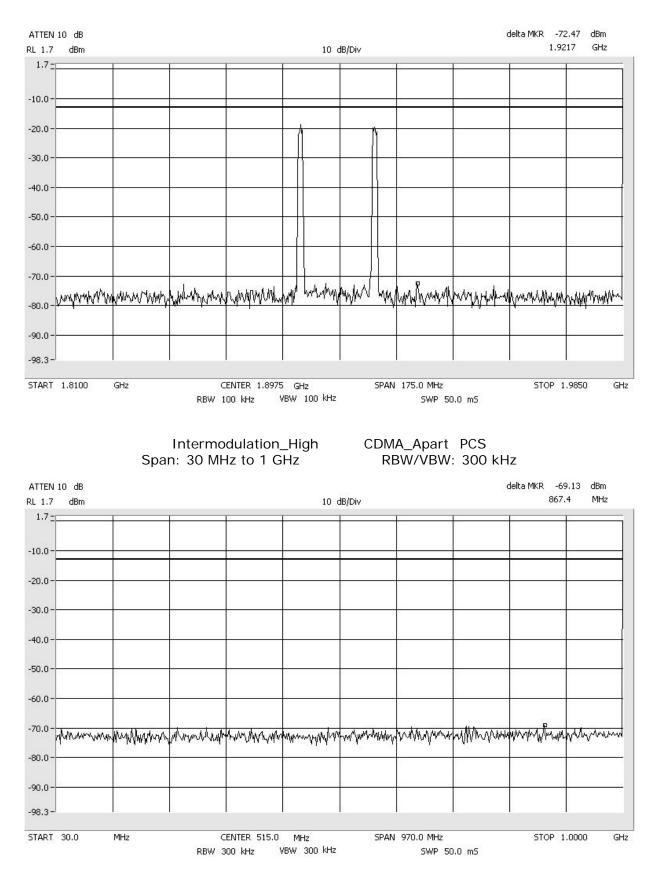
ATTEN 10 dB			delta MKR -52,47 dBm
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Intermodulation_High CDMA_High PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

CDMA_High PCS RBW/VBW: 1 MHz

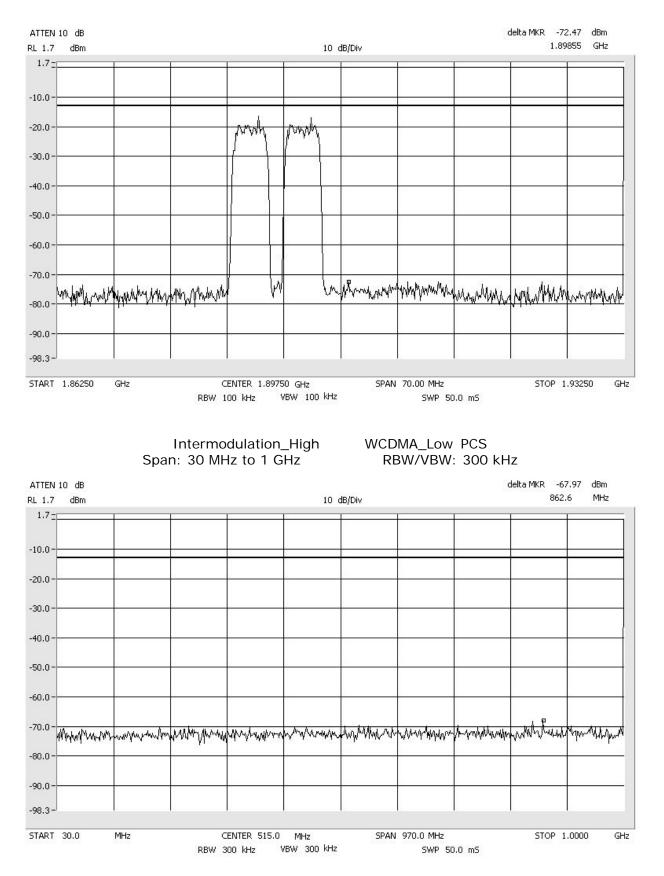
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Intermodulation_High CDMA_Apart PCS Center: 1897.5 MHz Span: 175 MHz RBW/VBW: 100 kHz

CDMA_Apart PCS RBW/VBW: 1 MHz

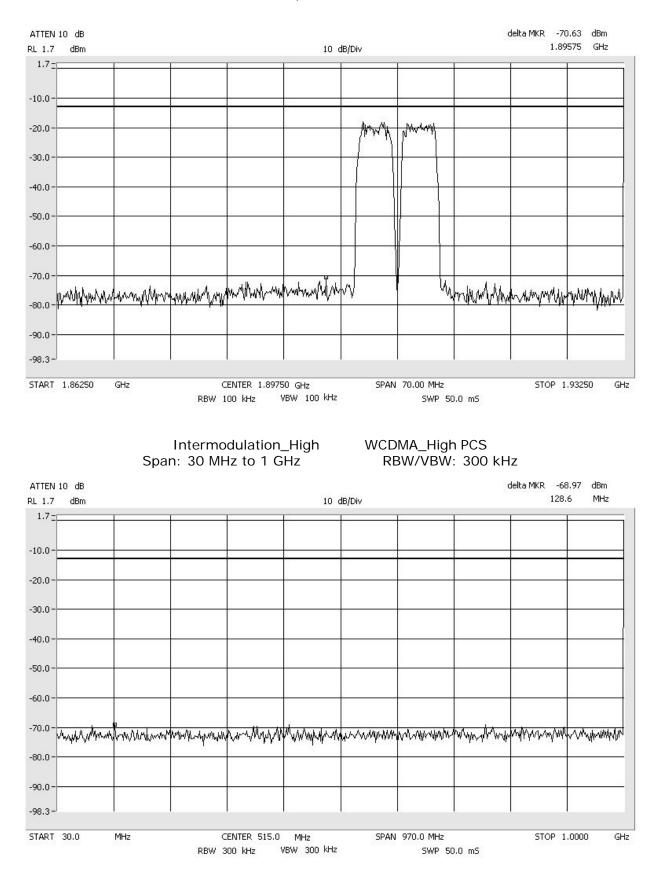
ATTEN 10 dB							delta MKR -4	
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Intermodulation_High WCDMA_Low PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

WCDMA_Low PCS RBW/VBW: 1 MHz

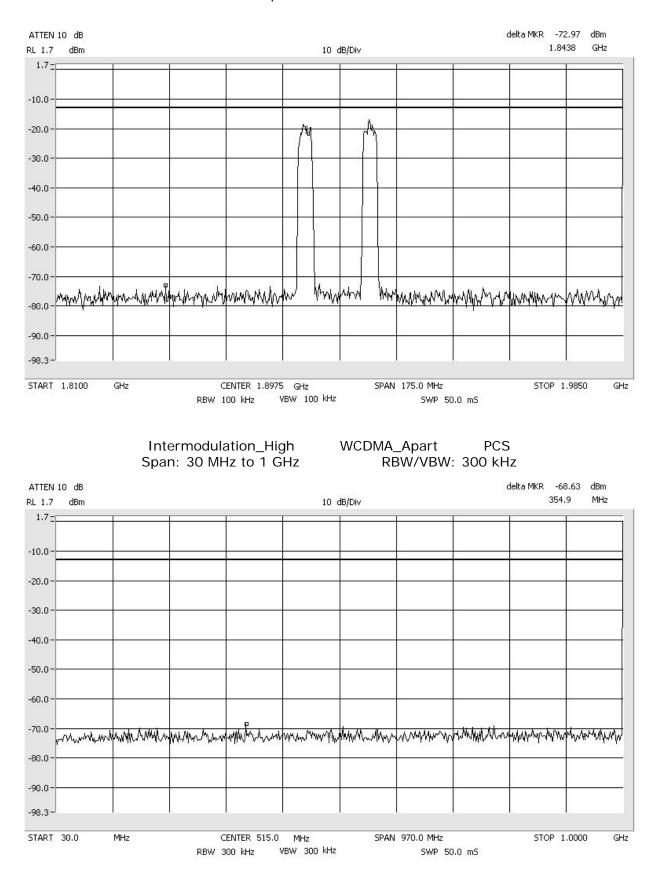
TTEN 10 dB . 1.7 dBm	10 dB,	lDiv	delta MKR -54.13 dBm 1.76 GHz
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Intermodulation_High WCDMA_High PCS Center: 1897.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

WCDMA_High PCS RBW/VBW: 1 MHz

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ART 1.00 GHz	CENTER 10.50 GHz RBW 1.0 MHz VBW 1.0 MHz	SPAN 19.00 GHz	STOP 20.00



Intermodulation_HighWCDMA_ApartPCSCenter: 1897.5 MHzSpan: 175 MHzRBW/VBW: 100 kHz

WCDMA_Apart PCS RBW/VBW: 1 MHz

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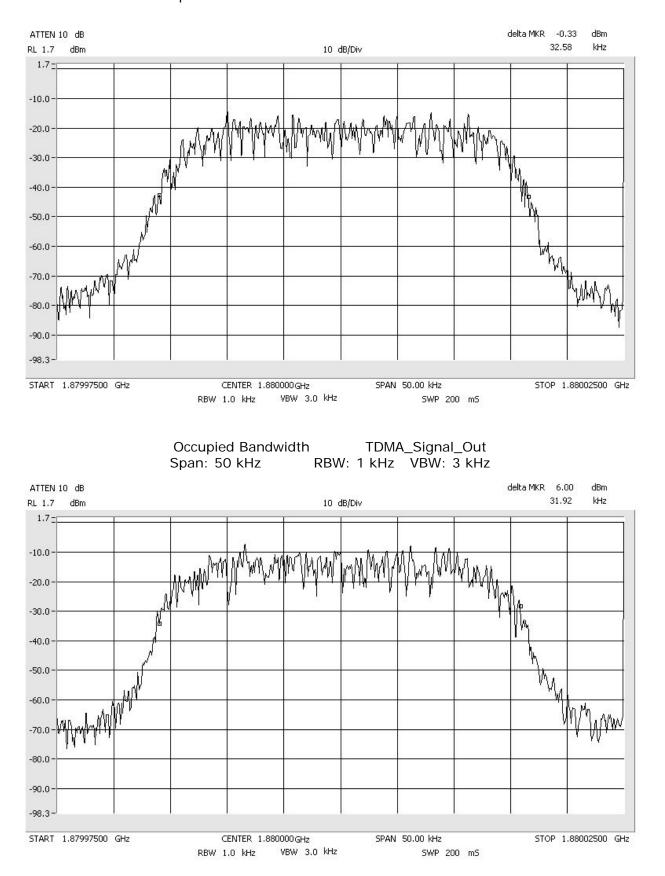
7.5 Occupied Bandwidth Modulation Test

Table of Contents; Section 1.0 Back to Emission Limits; Section 5.1.3

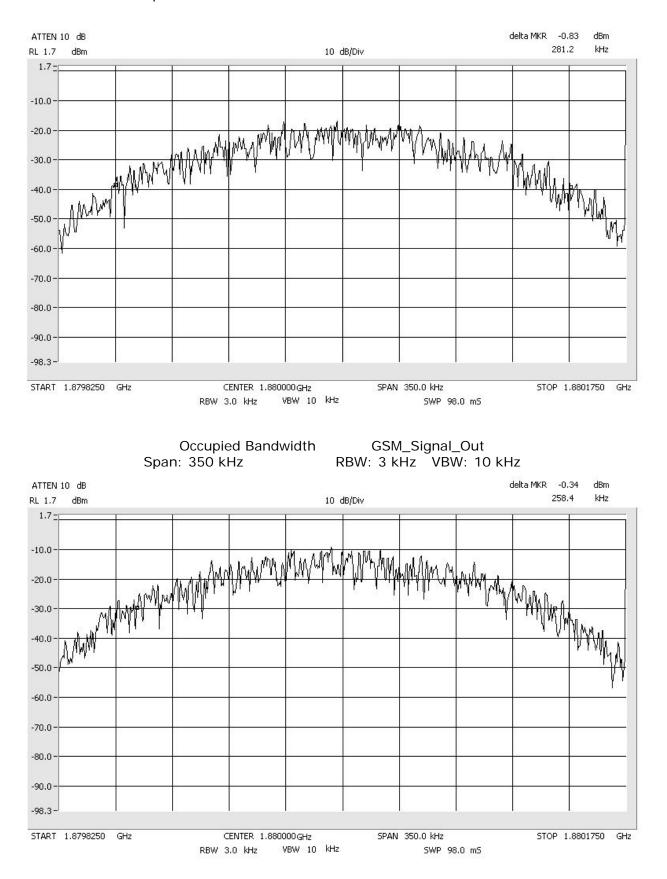
An output Occupied Bandwidth test was done with modulation types: TDMA, GSM, EDGE, CDMA and W-CDMA. The purpose was to determine the amount of occupied bandwidth for the different types of modulation schemes produced by the EUT. The following plots show output signals.

The resolution bandwidth is reduced to 1% of the estimated emission bandwidth and the video bandwidth is set to 3 times the resolution bandwidth. The markers are moved to the -20 dB points (from the previously established center frequency level) on either side of center frequency.

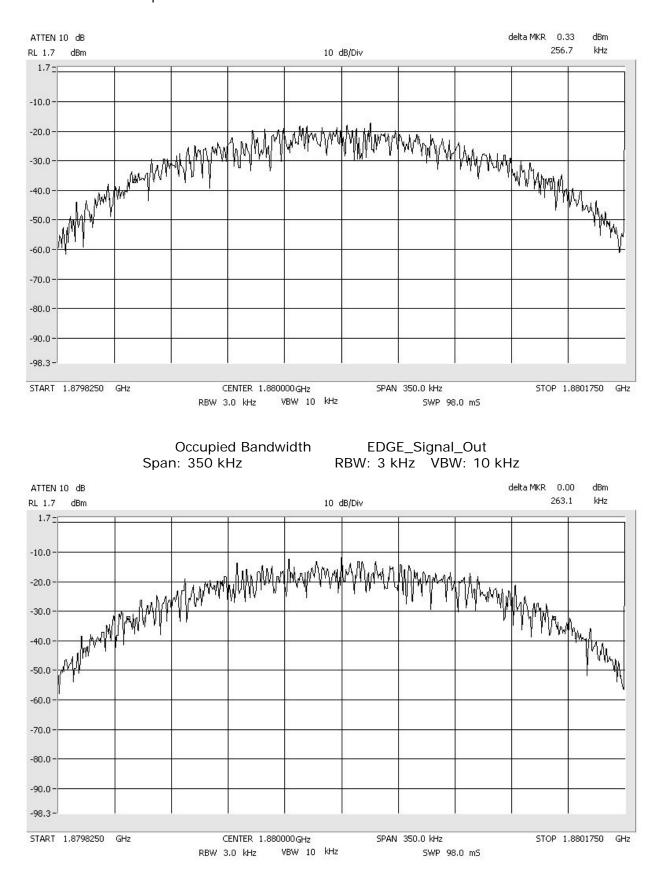
Results: Pass (see plots) Occupied Bandwidth TDMA_Signal_In Span: 50 kHz RBW: 1 kHz VBW: 3 kHz

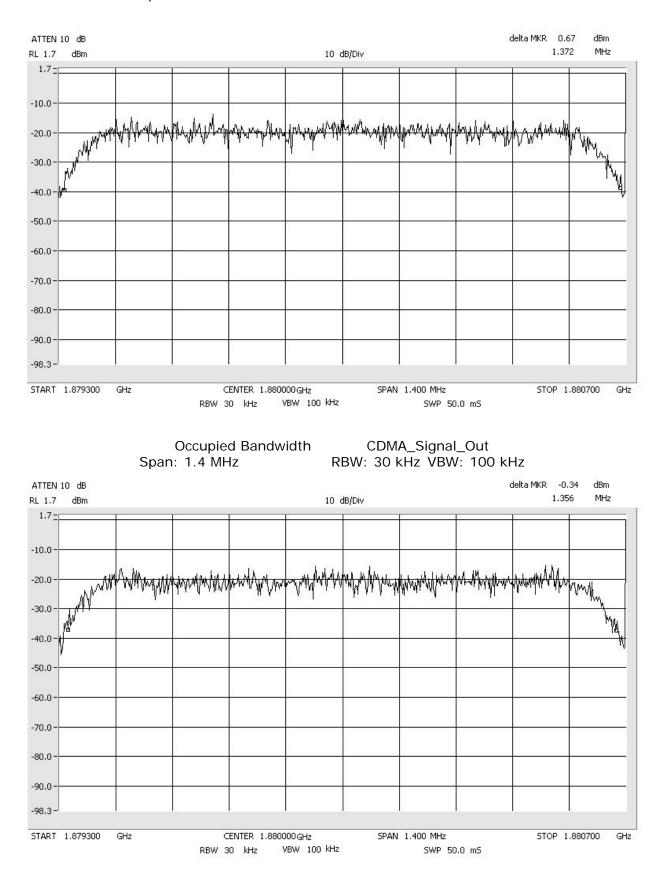


Occupied Bandwidth GSM_Signal_In Span: 350 kHz RBW: 3 kHz VBW: 10 kHz

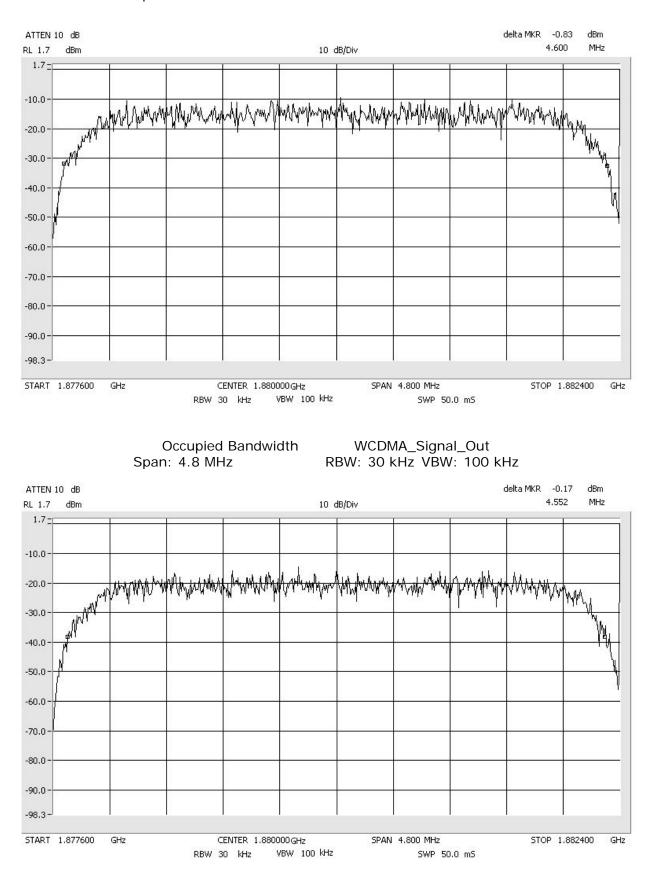


Occupied Bandwidth EDGE_Signal_In Span: 350 kHz RBW: 3 kHz VBW: 10 kHz





Occupied Bandwidth CDMA_Signal_In Span: 1.4 MHz RBW: 30 kHz VBW: 100 kHz



Occupied Bandwidth Span: 4.8 MHz

WCDMA_Signal_In RBW: 30 kHz VBW: 100 kHz

APPENDIX B

Measurement Protocol

Table of Contents; Section 1.0 Back to Emission Limits; Section 5.1.3

Measurement Protocol

Environmental conditions of the lab, (ADC)

Temperature: 21 - 26° C Relative Humidity: 21 - 24 % Atmospheric Pressure: 97.8 - 100.0 kPa

Test Methodology:

Emission testing is performed according to the procedures in ANSI C63.4-2003.

Measurement Uncertainty

The test system for conducted emissions is defined as the signal generator(s), the power meter, the spectrum analyzer and the coaxial cable. The equipment comprising the test systems is calibrated prior to testing the EUT.

Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into its characteristic impedance or left un-terminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

Radiated Emissions

The final level, in dBuV/m, equals the reading from the spectrum analyzer (Level dBuV), adding the antenna correction factor and cable loss factor (Factor dB) to it, and subtracting the preamp gain (and duty cycle correction factor, if applicable). This result then has the limit subtracted from it to provide the Delta, which gives the tabular data as shown in the data sheets in Appendix B.

Example: FREQ (MHz)	LEVEL (dBuV)	CABLE/ANT/PREAMP FINAL (dB) (dB/m) (dB) (dBuV/m)	POL/HGT/AZ (m) (deg)	DELTA1
60.80	42.5Qp +	1.2 + 10.9 - 25.5 = 29.1	V 1.0 0.0	-10.9

Substitution Method

A cabinet (or enclosure) radiated emission scan was also made, at Intertek, with the EUT's antenna replaced with a termination to demonstrate case radiation compliance to the -13 dBm requirement. Radiated emissions from the EUT are measured in the frequency range of 30 to 20,000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimeters above the ground plane. Floor standing equipment is place directly on the turntable/ground plane. Interface cable that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees. The field strength levels were measured per ANSI C63.4. The EUT is then replaced with a tuned dipole antenna (below 1GHz) or horn antenna (above 1 GHz). The substitute antenna was placed in the same polarization as the test antenna. A signal generator was used to generate a signal level that matched the highest level measured from the EUT. The signal generator level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level.

Test Equipment

All measurement instrumentation is traceable to the National Institute of Standards and Technology and is calibrated according to internal procedure.

APPENDIX C

Radiated Emissions Test Data

Table of Contents; Section 1.0

Document Name: 3158189MIN-001_Radiated_Emissions_Test_Report_Part_24

Test Engineer: Simon Khazon

Date: 13 August, 2008

Test Procedure:

Test measurements were made in accordance with ANSI C63.4-2003, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

Test Site Location:

The test site is a 3 meter Semi-Anechoic Chamber, constructed by Panashield $^{\rm IM}$ Inc. and located

inside the building at 7250 Hudson Blvd. Suite 100, Oakdale, MN 55128.

Test Site Description:

The 3 meter Semi-Anechoic Chamber is constructed of Panabolt[™] modular RF shielding and self-supported with structural steel designed for the local seismic zone rating. The chamber has the nominal size of 20' wide x 29' long x 18' high. All walls and ceiling of the chamber are treated with FFG-1000 Ferrite Grid absorber which was developed specifically to meet international requirements for EMC anechoic chambers for emissions and immunity measurements. To meet high frequency testing white HY-35 hybrid absorber is mounted on the ferrites in specular regions of the chamber.

The chamber has a 2 meter diameter ANSI test volume area and meets the requirements of ANSI C63.4 (1992), EN55022, and FCC Part 15 standards for testing at a 3 meter path length.

FCC Registration Number: 90706 IC Registration Number: 4359