



SC4812TLite 1X/EVDO @ 1.9 GHz CDMA BTS

TEST REPORT EXHIBIT

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Section A

Summary of RF Measurements

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Summary of Radiated RF Measurements

Maximum Radiated RF Spur Level for SC4812TLite EVDO @ 1.9GHz CDMA BTS

Radiated RF Measurements					Spec	Result
Channel	Spurious Frequency (MHz)	Antenna Polarity	Measured Radiated Field Strength (dBuV/m)	Measured Radiated Field Strength (dBm) (Note 1)	FCC Part 22/24 MAX LIMIT (dBm)	(Pass/Fail)
25	11587.574	V	54.94	-40.29	-13	Pass

Maximum Radiated RF Spur Level for SC4812TLite 1X @ 1.9GHz CDMA BTS

Radiated RF Measurements					Spec	Result
Channel	Spurious Frequency (MHz)	Antenna Polarity	Measured Radiated Field Strength (dBuV/m)	Measured Radiated Field Strength (dBm) (Note 1)	FCC Part 22/24 MAX LIMIT (dBm)	(Pass/Fail)
25	11587.432	V	58.90	-36.33	-13	Pass

Notes:

1. Converting dBuV/M to dBm at 3 meters:
 $(\text{dBuV/M}) + 9.542 - 104.77 = \text{dBm}$
Converting dBuV/M to dBm at 10 meters:
 $(\text{dBuV/M}) + 20 - 104.77 = \text{dBm}$
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Summary of Maximum Conducted RF Measurements

FCC Part 24

SC4812TLite EVDO @ 1.9GHz CDMA BTS

CHANNEL	FREQUENCY (MHz)	SPUR LEVEL MEASURED (dBμV)	SPUR LEVEL MEASURED Avg. (dBm)	FCC MAX LIMIT (dBm)	PASS / FAIL
25	3862.5792	85.50	-21.50	-13	Pass

SC4812TLite 1X @ 1.9GHz CDMA BTS

CHANNEL	FREQUENCY (MHz)	SPUR LEVEL MEASURED (dBμV)	SPUR LEVEL MEASURED Avg. (dBm)	FCC MAX LIMIT (dBm)	PASS / FAIL
1175	5966.2745	85.21	-21.79	-13	Pass

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Section B

Summary of Modulation Characteristics

SC4812TLite EVDO @ 1.9 GHz CDMA BTS

CHANNEL	TUNE FREQUENCY (MHz)	RHO Measured	RHO Specifications	PASS / FAIL
25	1931.25	0.98822	> 0.970	Pass
1175	1988.75	0.98858	> 0.970	Pass

SC4812TLite 1X @ 1.9 GHz CDMA BTS

CHANNEL	TUNE FREQUENCY (MHz)	RHO Measured	RHO Specifications	PASS / FAIL
25	1931.25	0.98545	> 0.912	Pass
1175	1988.75	0.97792	> 0.912	Pass

The BTS was configured for maximum power out of 46.00 dBm and minimum power out of 26.00 dBm depending on the configuration. The output power was set respectively to 40.0 Watts or 400 mWatts using an HP437B power meter. The external attenuation was 45.5 dB for channel 25 and channel 1175.

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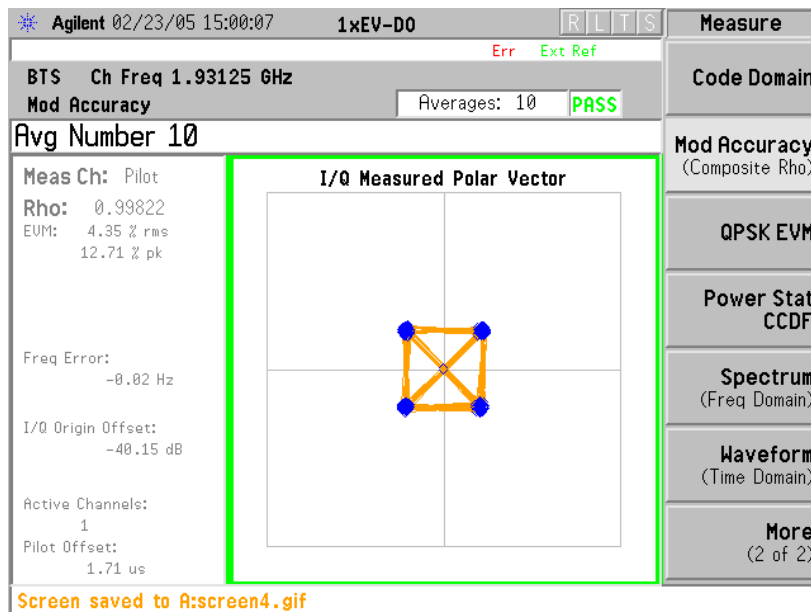
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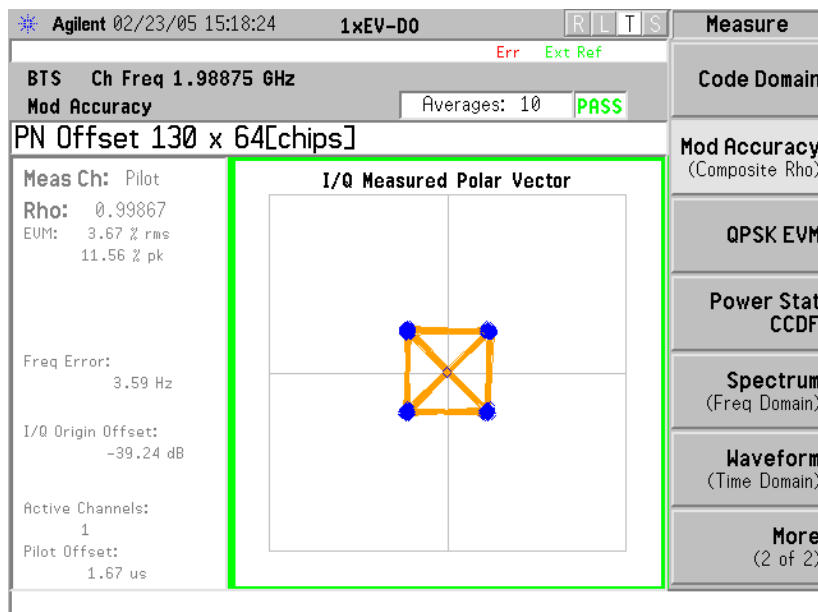


SC4812TLite EVDO – Modulation Characteristics

High Power – 46.00 dBm – EVDO



Channel 25 – 1931.25 MHz

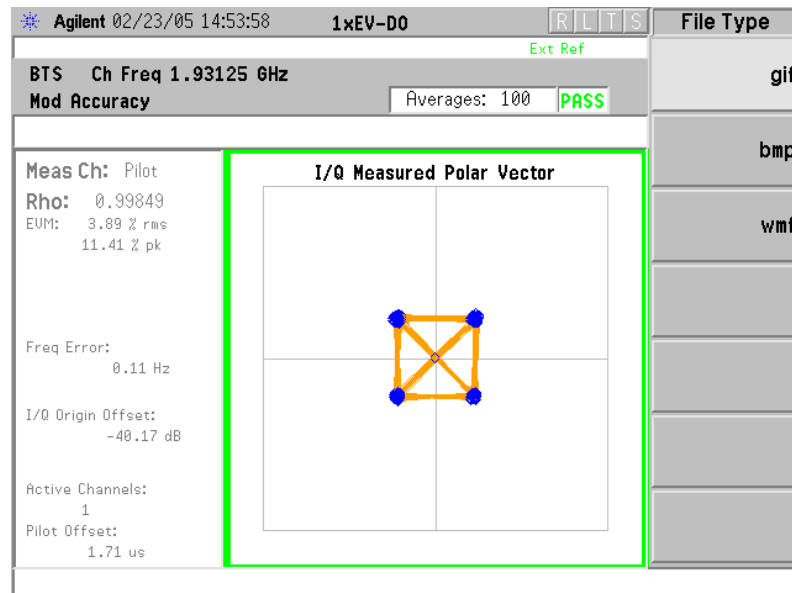


Channel 1175 – 1988.75 MHz

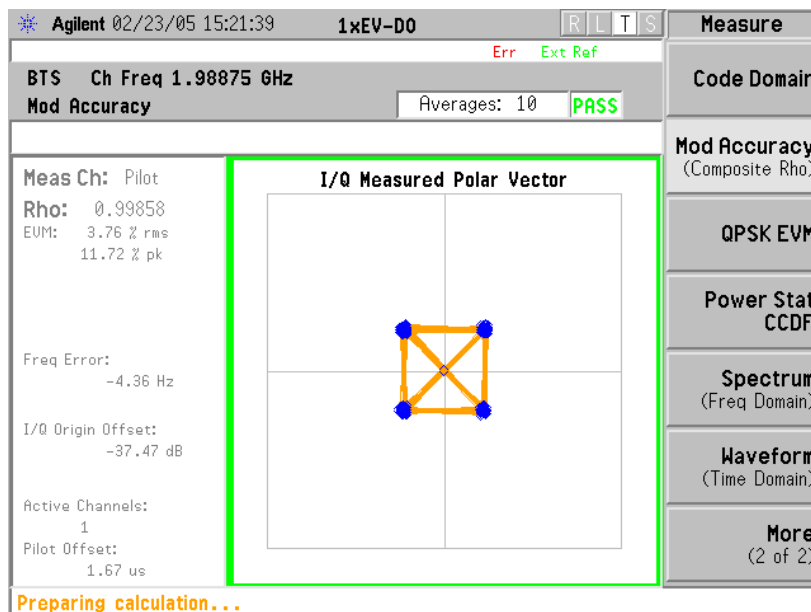


SC4812TLite EVDO – Modulation Characteristics

High Power – 36.5 dBm – EVDO



Channel 25 – 1931.25 MHz

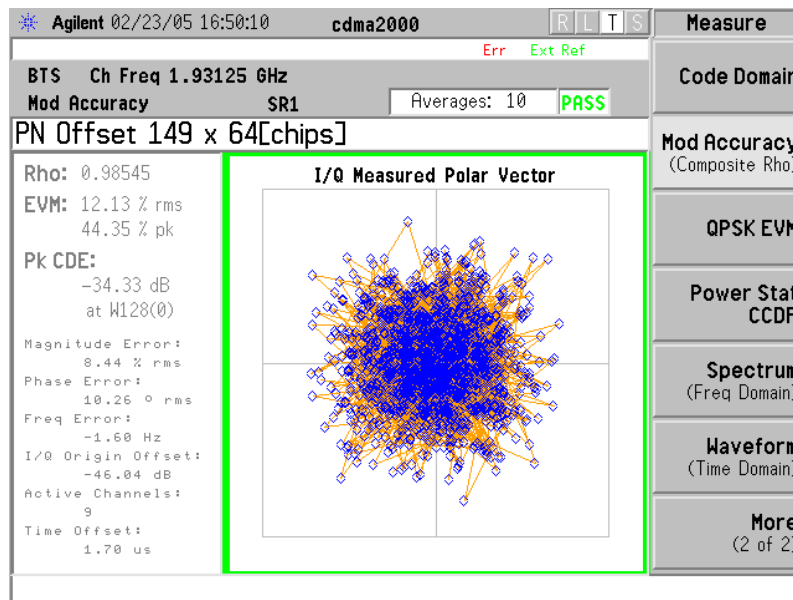


Channel 1175 – 1988.75 MHz

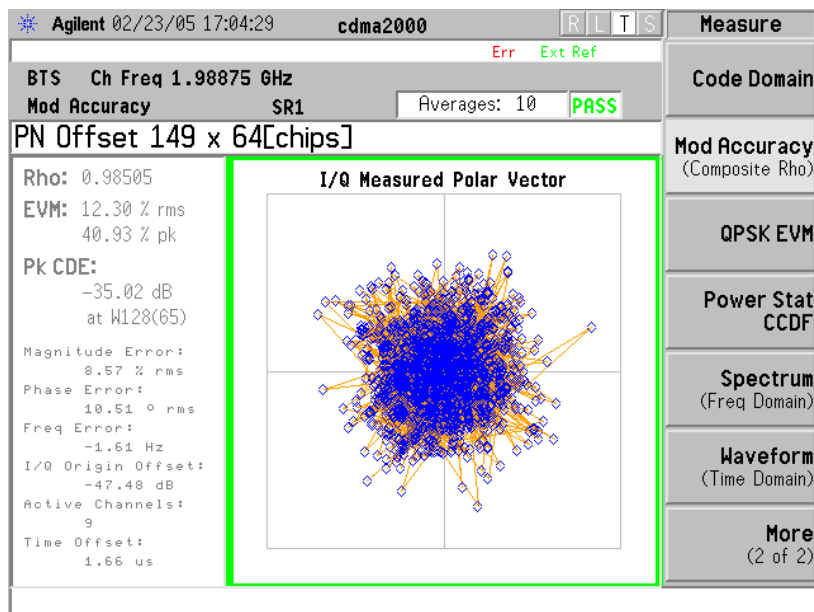


SC4812TLite 1X – Modulation Characteristics

Low Power – 46.0 dBm – 1X



Channel 25 – 1931.25 MHz

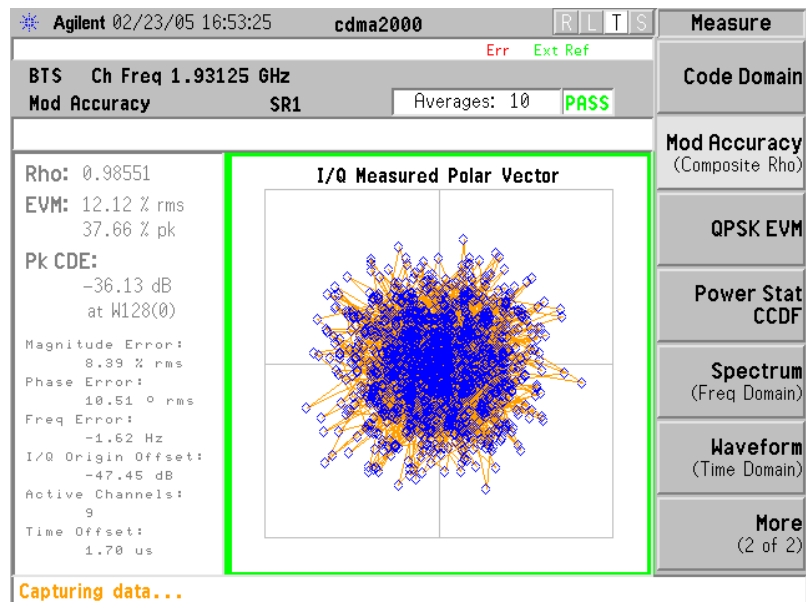


Channel 1175 – 1988.75 MHz

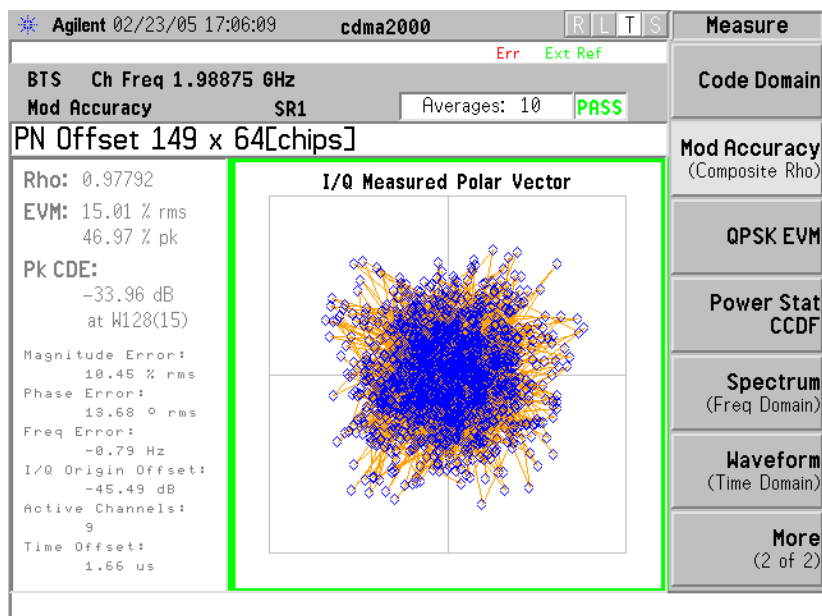


SC4812TLite 1X – Modulation Characteristics

Low Power – 26.0 dBm – 1X



Channel 25 – 1931.25 MHz



Channel 1175 – 1988.75 MHz



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Section C

Spurious and Harmonic Emissions Radiated

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Radiated RF Measurements

Maximum Radiated RF Spur Levels for SC4812TLite EVDO @ 1.9 GHz CDMA BTS

Radiated RF Measurements					Spec	Result
Channel	Spurious Frequency (MHz)	Antenna Polarity	Measured Radiated Field Strength (dBuV/m)	Measured Radiated Field Strength (dBm) (Note 1)	FCC Part 22/24 MAX LIMIT (dBm)	(Pass/Fail)
25	5793.590	V	52.34	-42.89	-13	Pass
25	11587.574	V	54.94	-40.29	-13	Pass

Maximum Radiated RF Spur Levels for SC4812TLite 1X @ 1.9 GHz CDMA BTS

Radiated RF Measurements					Spec	Result
Channel	Spurious Frequency (MHz)	Antenna Polarity	Measured Radiated Field Strength (dBuV/m)	Measured Radiated Field Strength (dBm) (Note 1)	FCC Part 22/24 MAX LIMIT (dBm)	(Pass/Fail)
25	11587.555	V	58.25	-36.98	-13	Pass
25	11587.432	V	58.90	-36.33	-13	Pass

Notes:

1. Converting dBuV/M to dBm at 3 meters:
 $(\text{dBuV/M}) + 9.542 - 104.77 = \text{dBm}$
 Converting dBuV/M to dBm at 10 meters:
 $(\text{dBuV/M}) + 20 - 104.77 = \text{dBm}$



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Section C

Spurious and Harmonic Emissions Conducted

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Conducted RF Measurements

SC4812TLite EVDO @ 1.9 GHz CDMA BTS FCC Part 24

CHANNEL	FREQUENCY (MHz)	SPUR LEVEL MEASURED (dBμV)	SPUR LEVEL MEASURED Avg. (dBm)	FCC MAX LIMIT (dBm)	PASS / FAIL
25	3862.5792	85.50	-21.50	-13	Pass
25	5793.8036	84.83	-22.17	-13	Pass
1175	3977.5874	84.70	-22.30	-13	Pass
1175	5966.2850	84.97	-22.03	-13	Pass

SC4812TLite 1X @ 1.9 GHz CDMA BTS FCC Part 24

CHANNEL	FREQUENCY (MHz)	SPUR LEVEL MEASURED (dBμV)	SPUR LEVEL MEASURED Avg. (dBm)	FCC MAX LIMIT (dBm)	PASS / FAIL
25	3862.5831	83.74	-23.26	-13	Pass
25	5793.7916	83.84	-23.16	-13	Pass
1175	3977.5972	84.82	-22.18	-13	Pass
1175	5966.2745	85.21	-21.79	-13	Pass

FCC Maximum Limit Per 47 CFR:

- “ = Transmitted Power ($10 \log_{10}(P_{\text{watt}})$) - (43 + $10 \log_{10}(P_{\text{watt}})$) dBW
- “ = $10 \log_{10}(P_{\text{watt}})$ - (43 + $10 \log_{10}(P_{\text{watt}})$) dBW
- “ = -43 dBW
- “ = -13 dBm

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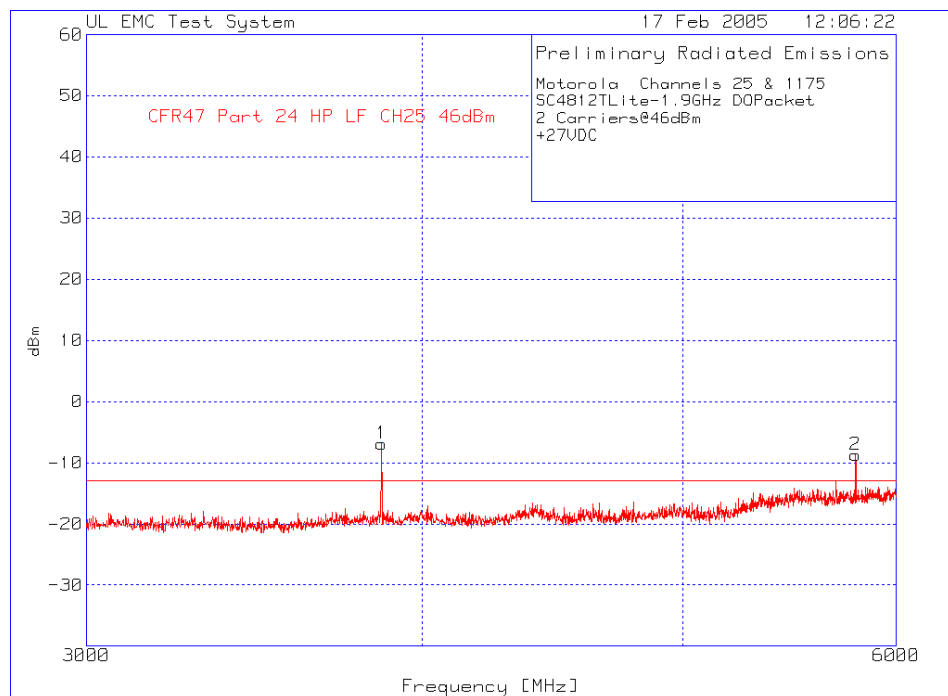
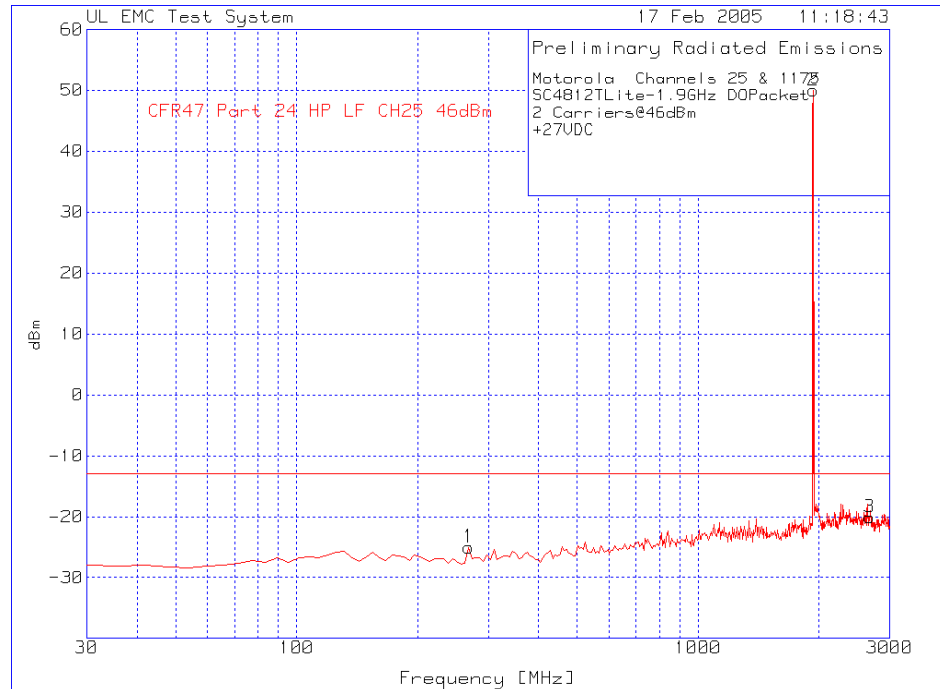
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Spurious and Harmonic Emissions Conducted
CDMA Channel 25 – 46.00 dBm – EVDO



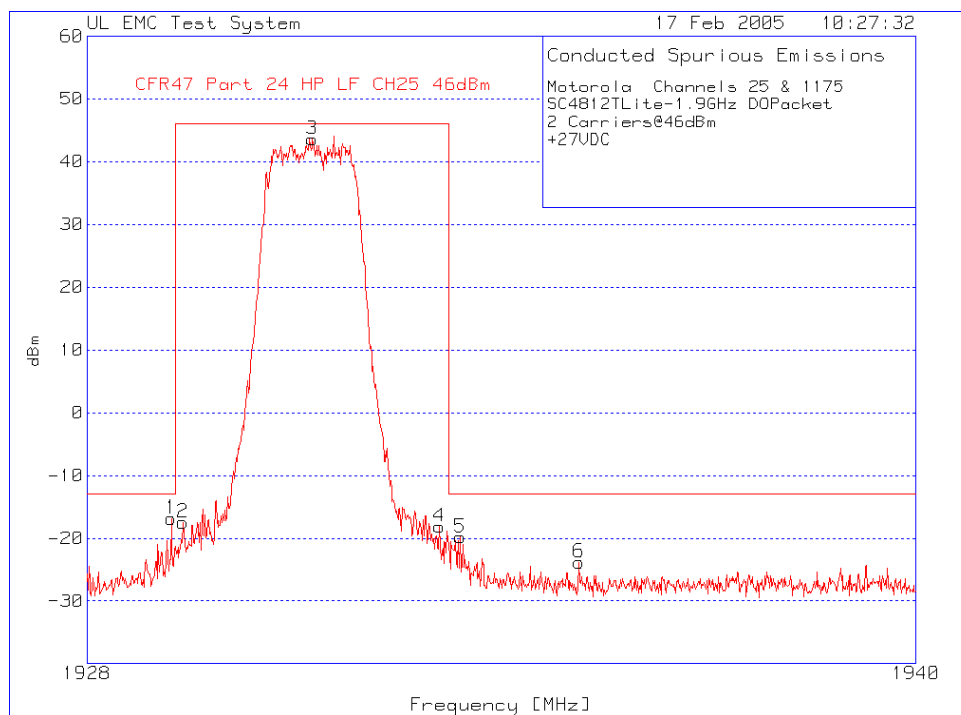
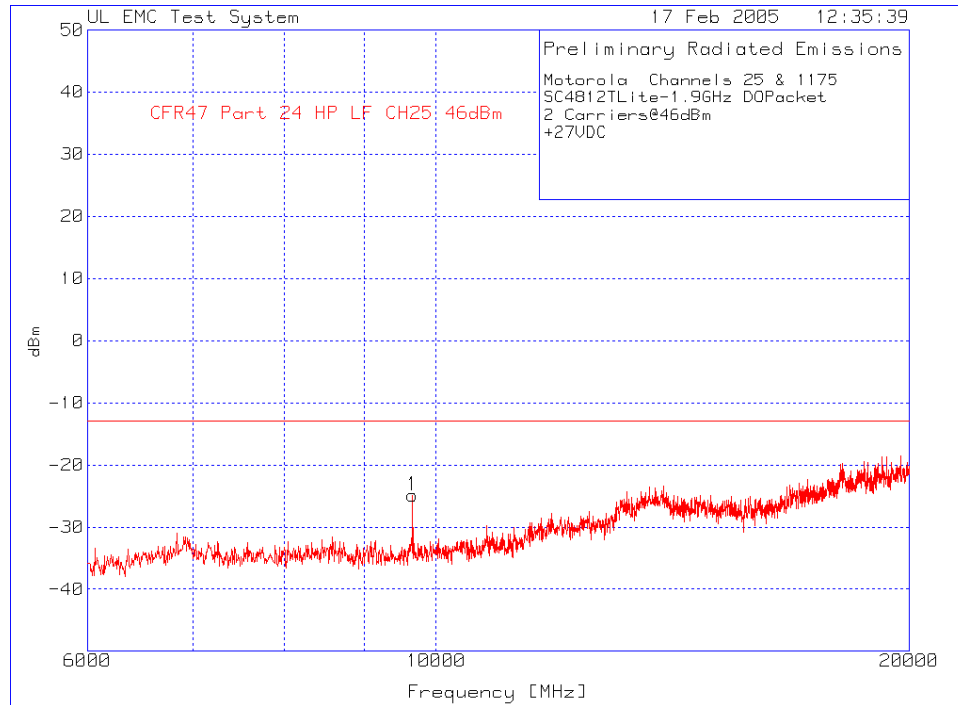


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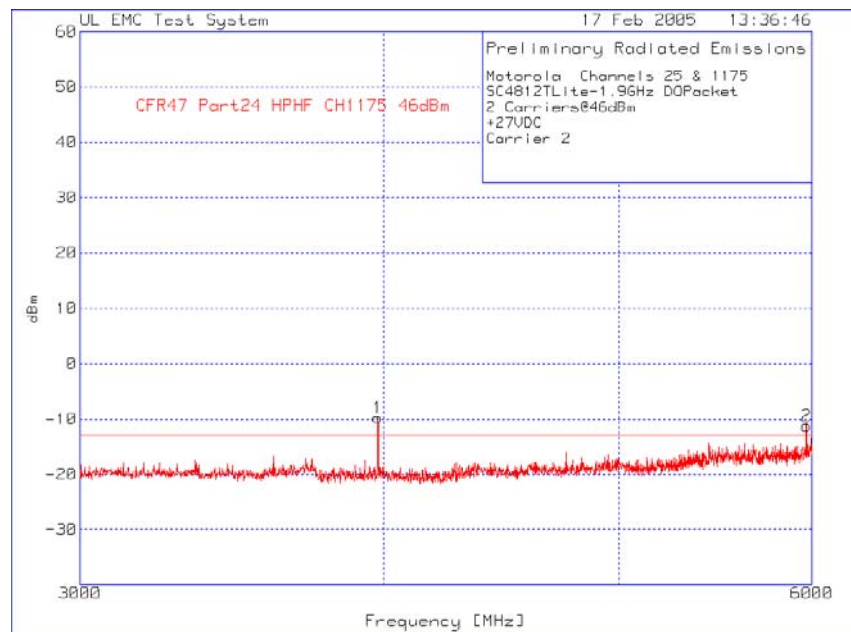
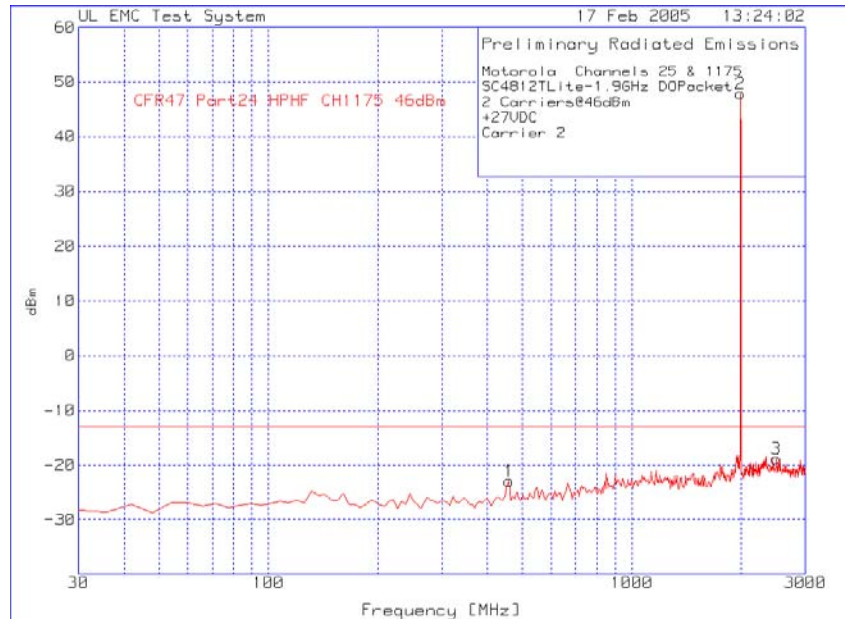
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Spurious and Harmonic Emissions Conducted
CDMA Channel 1175 – 46.00 dBm – EVDO



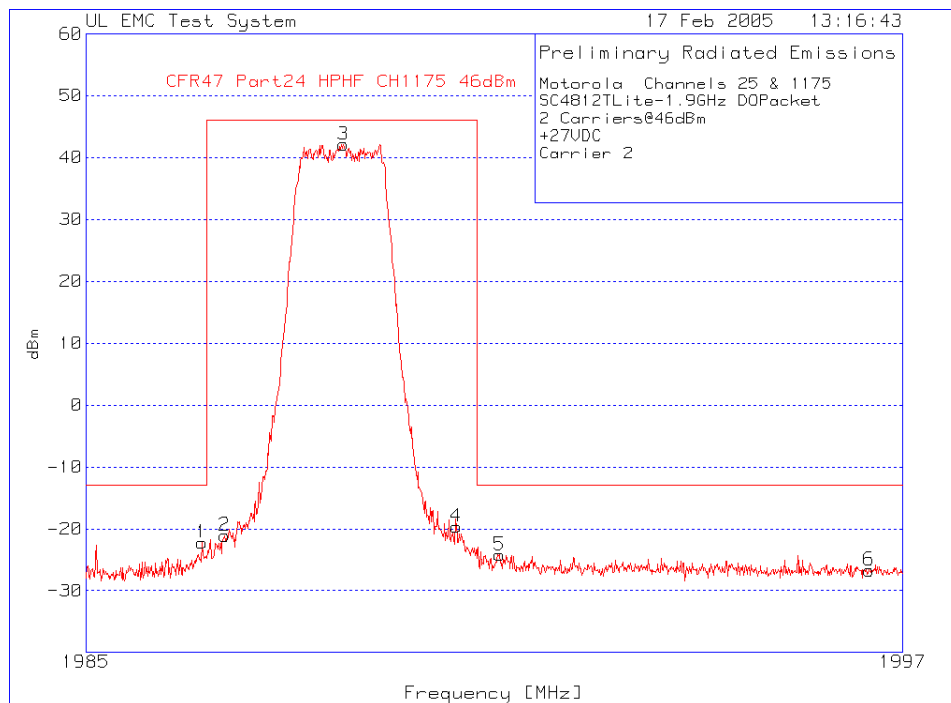
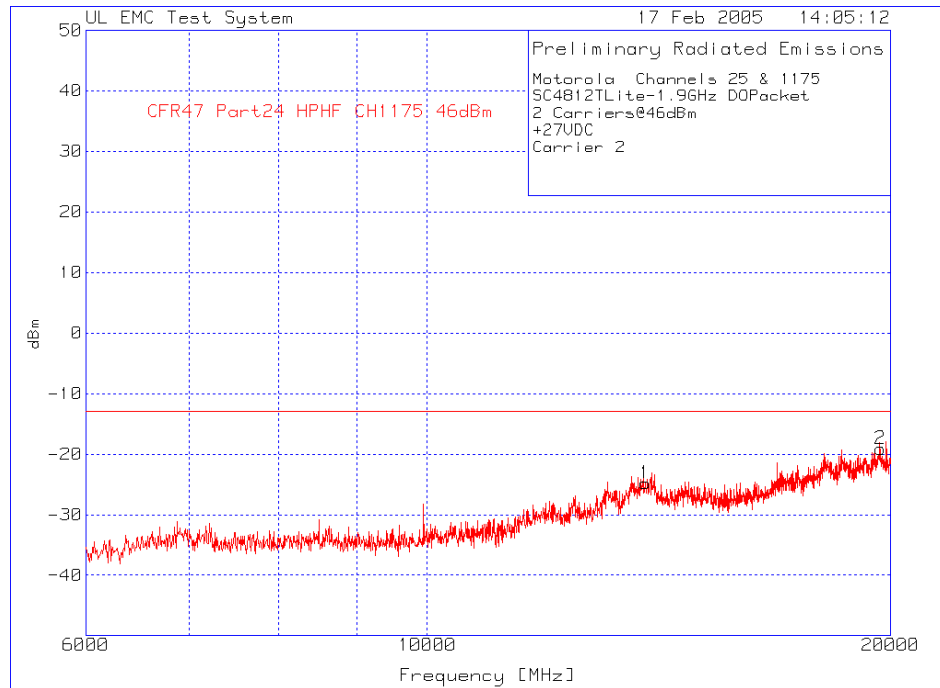


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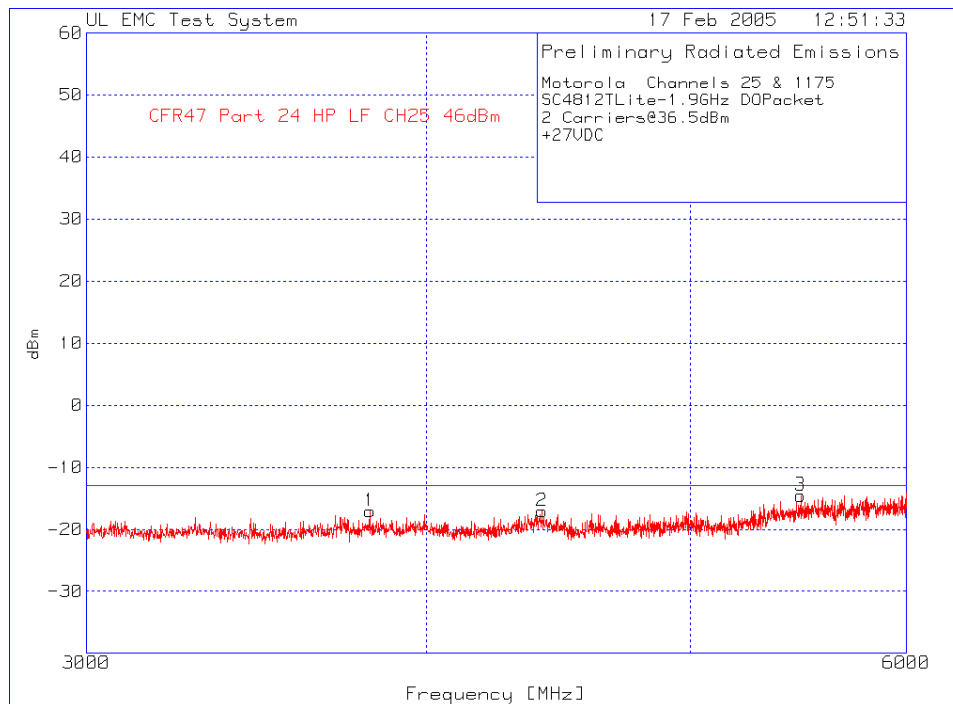
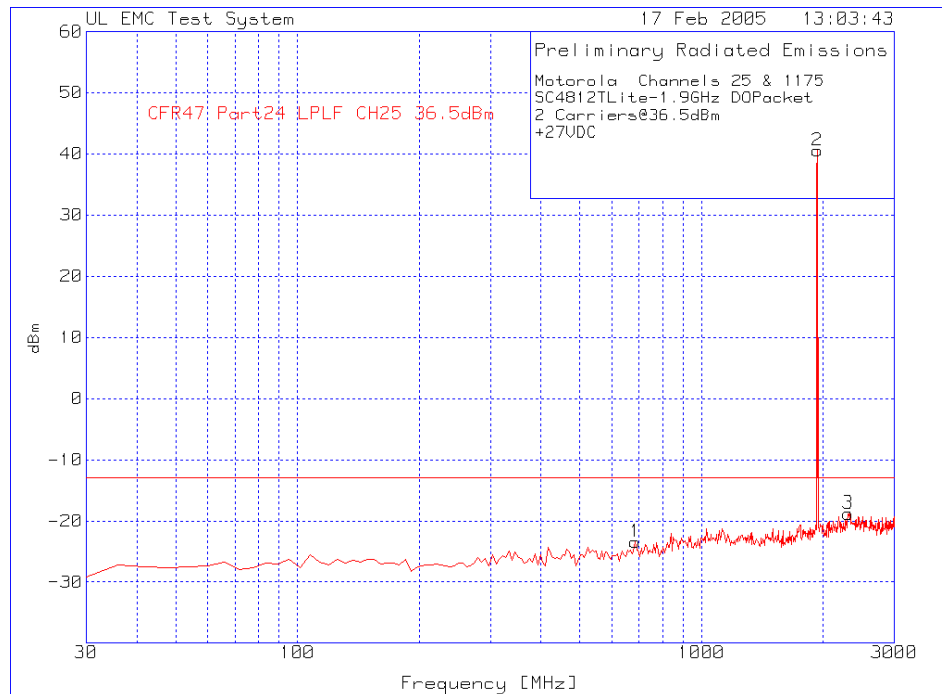
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Spurious and Harmonic Emissions Conducted
CDMA Channel 25 – 36.5 dBm – EVDO



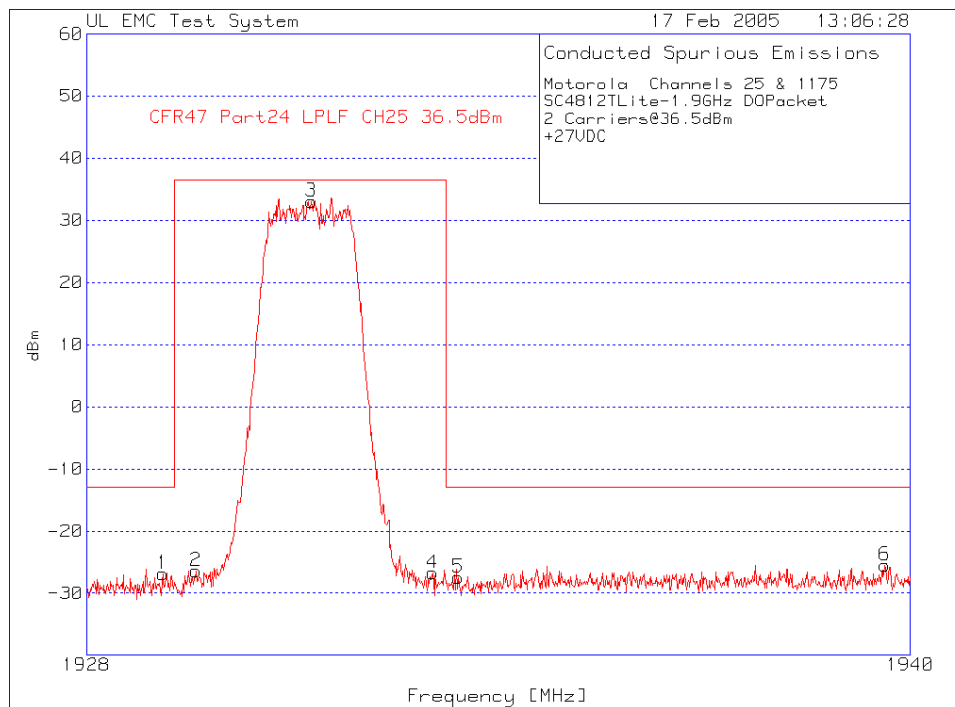
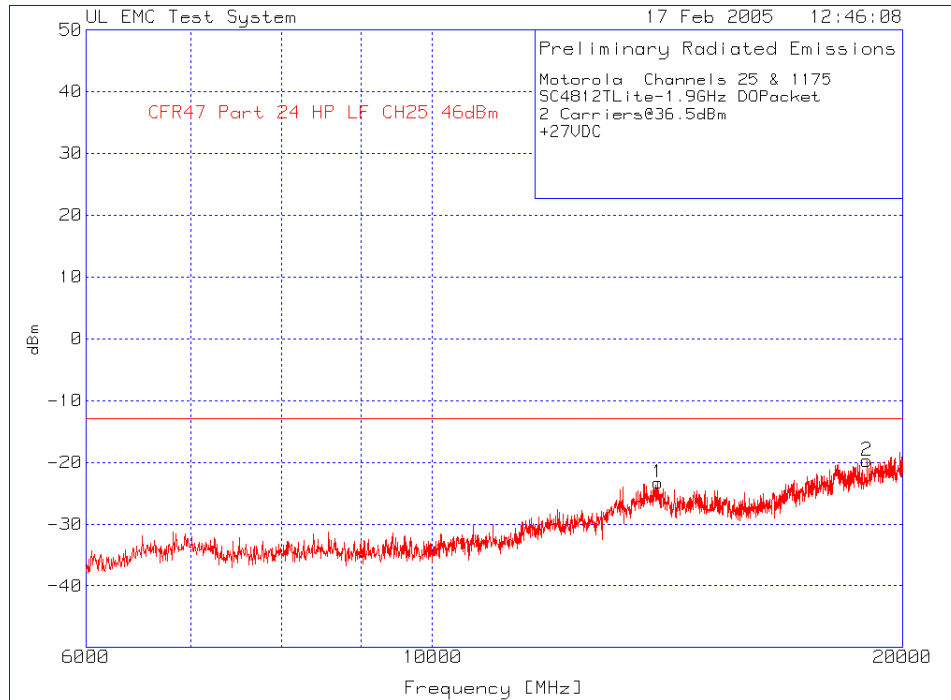


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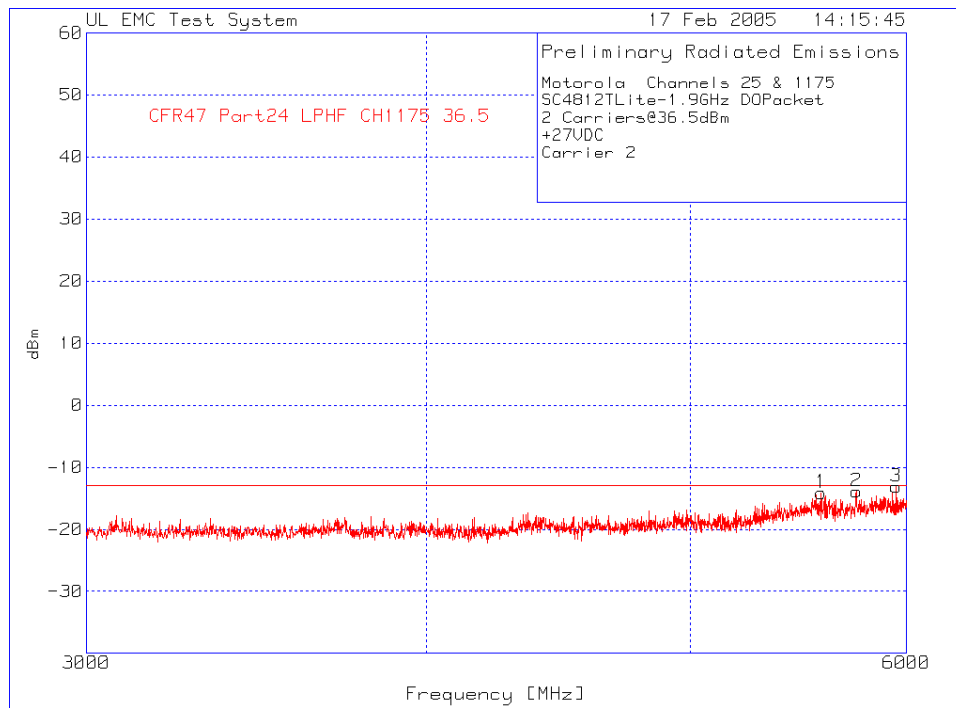
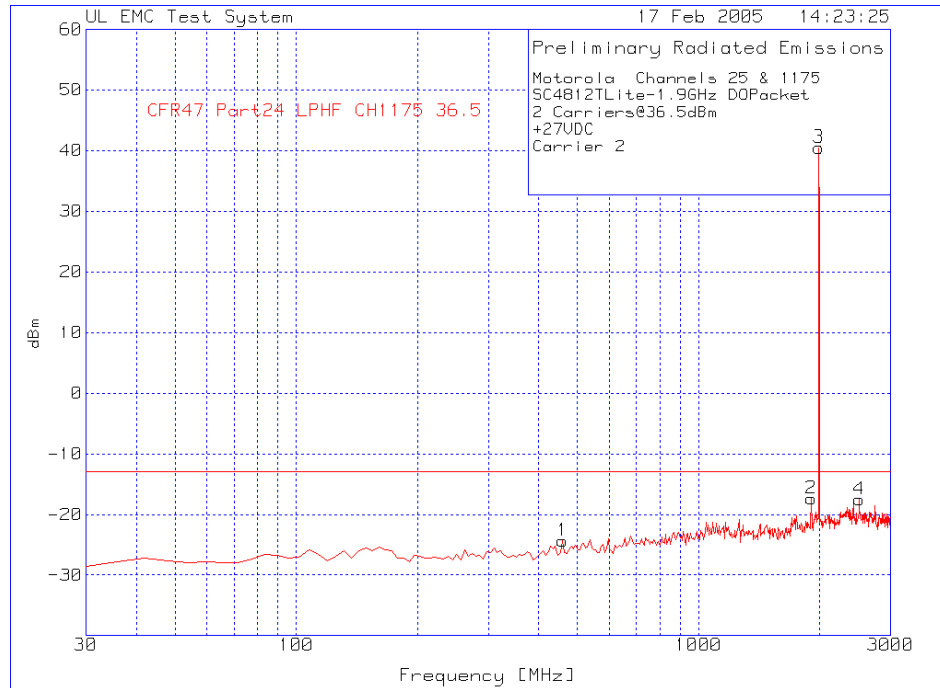
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FCC ID: IHET6FE1





Spurious and Harmonic Emissions Conducted
CDMA Channel 1175 – 36.5 dBm – EVDO



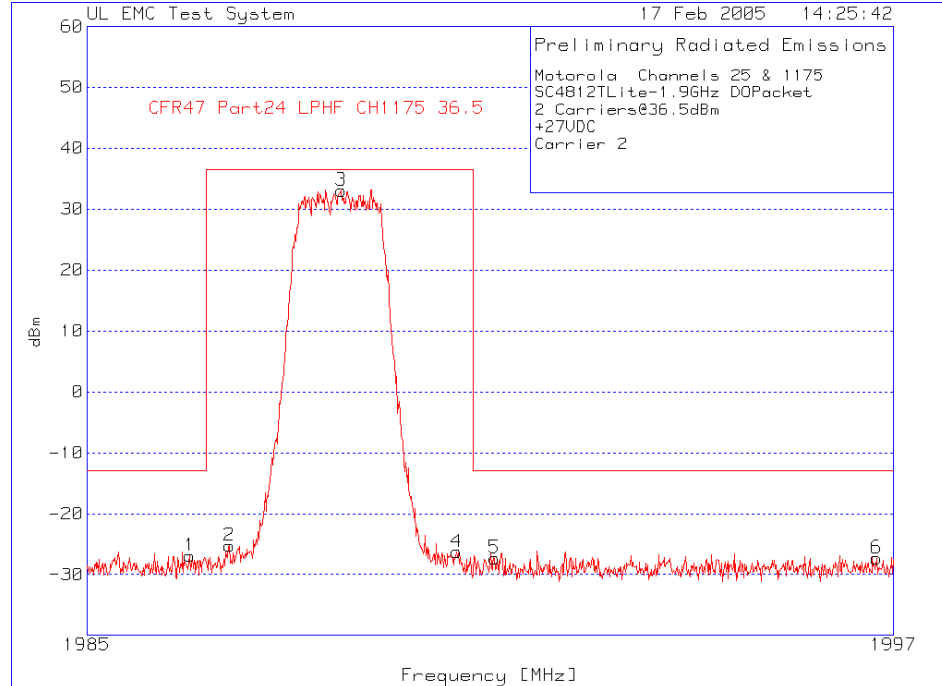
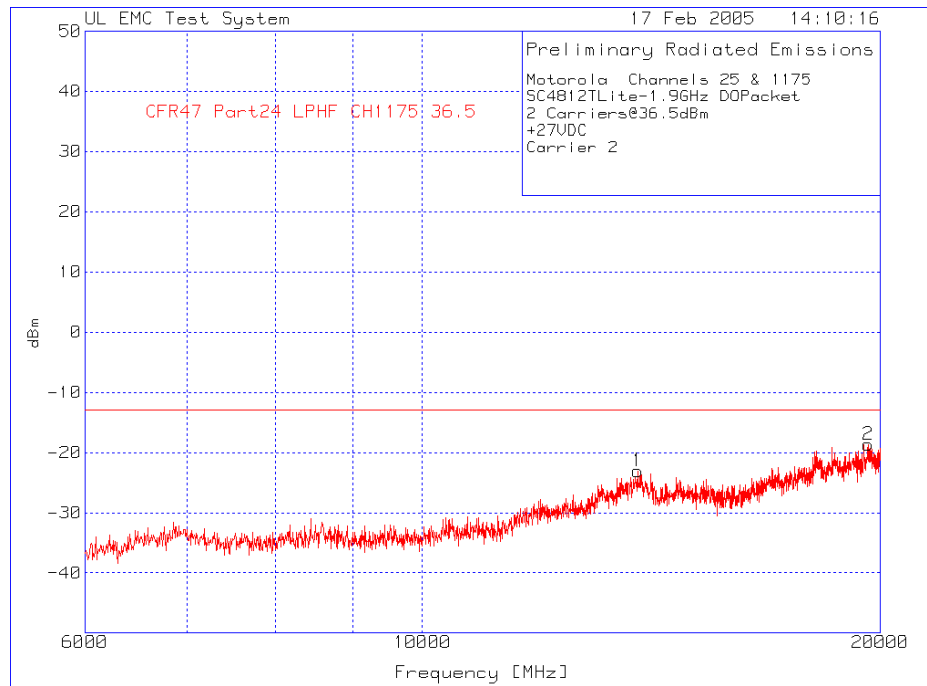


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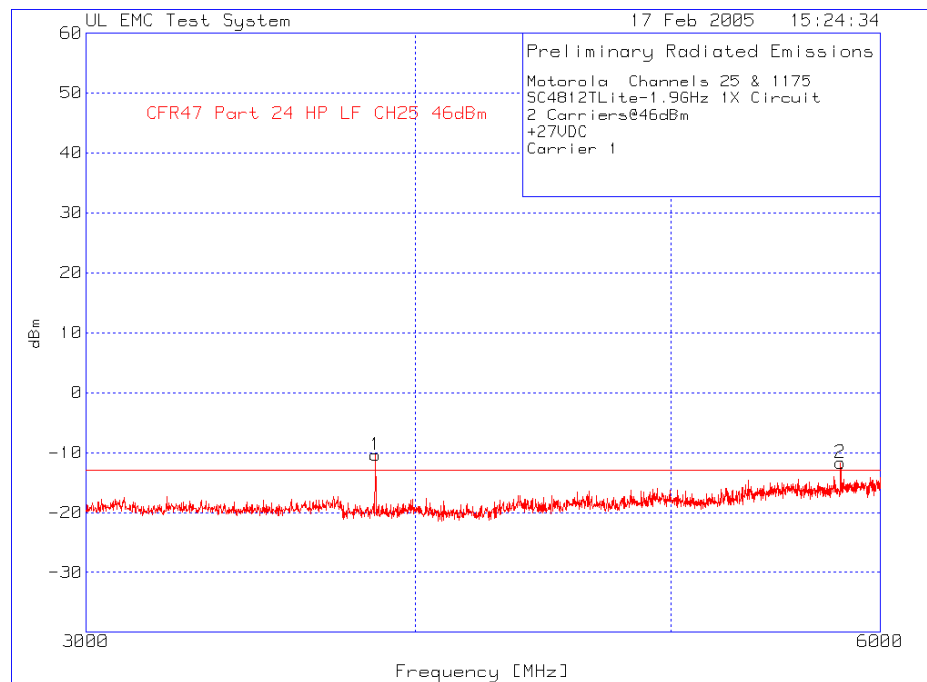
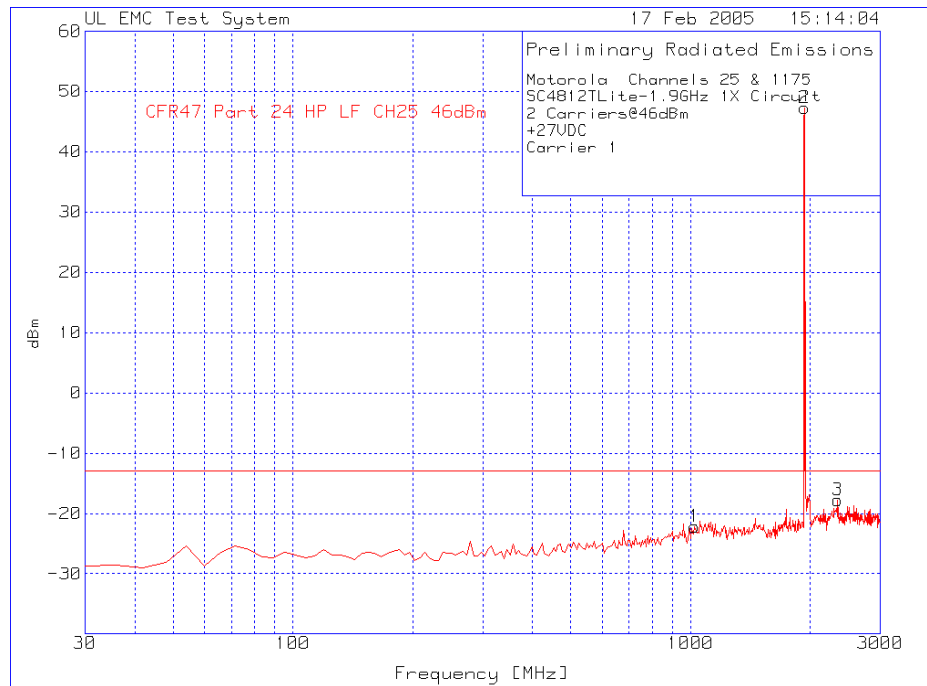
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Spurious and Harmonic Emissions Conducted
CDMA Channel 25 – 46.00 dBm – 1X



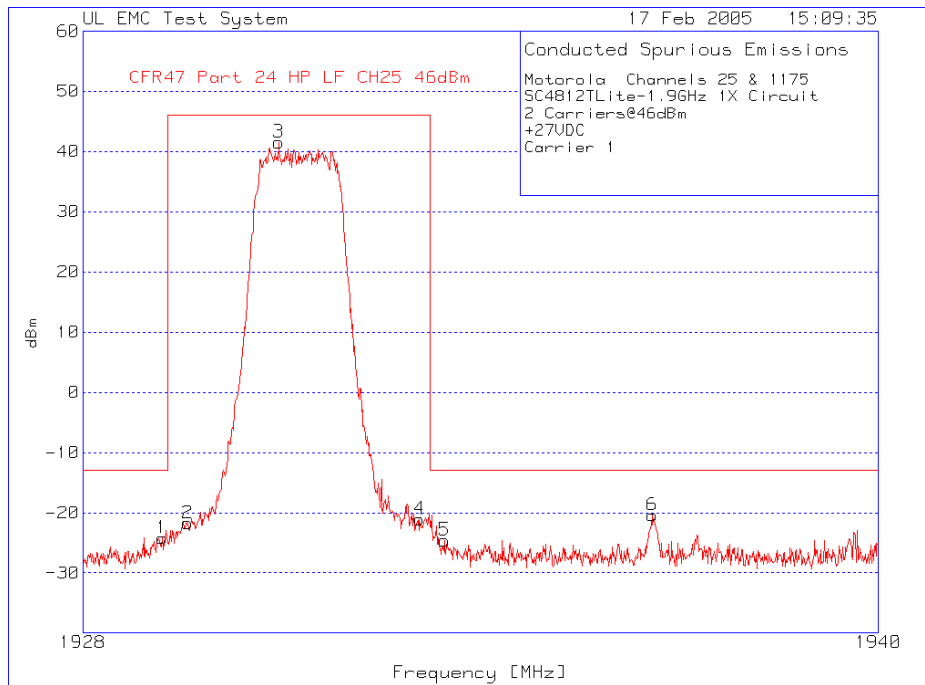
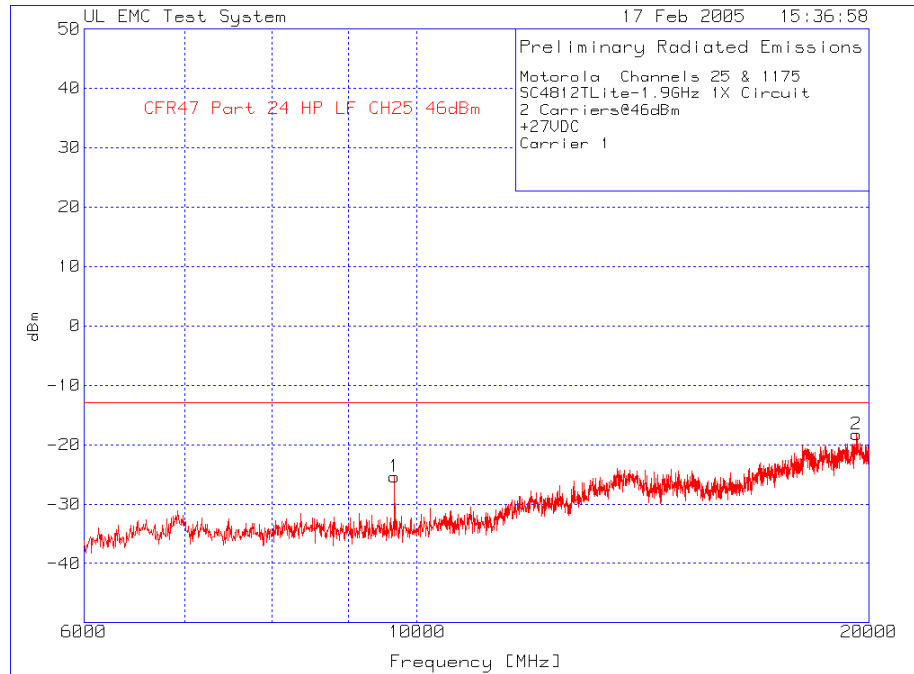


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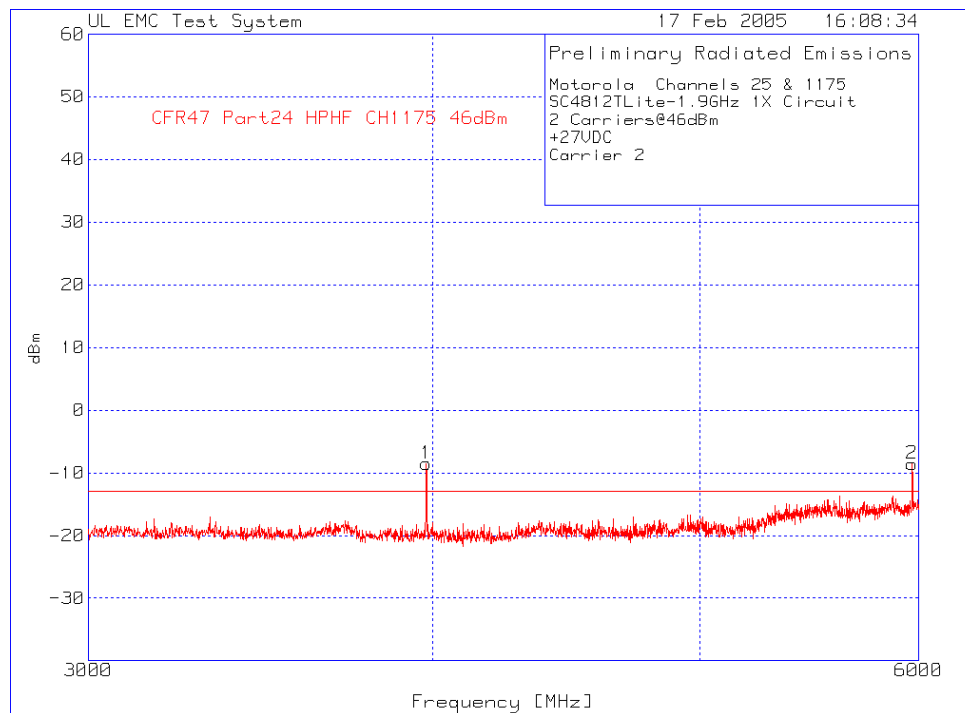
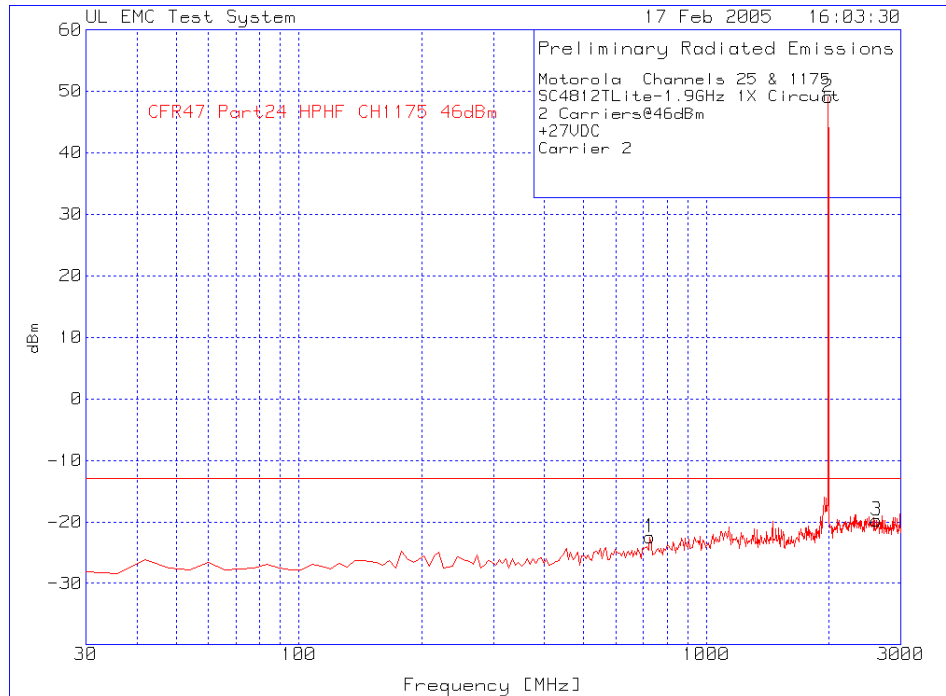
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Spurious and Harmonic Emissions Conducted
CDMA Channel 1175 – 46.00 dBm – 1X



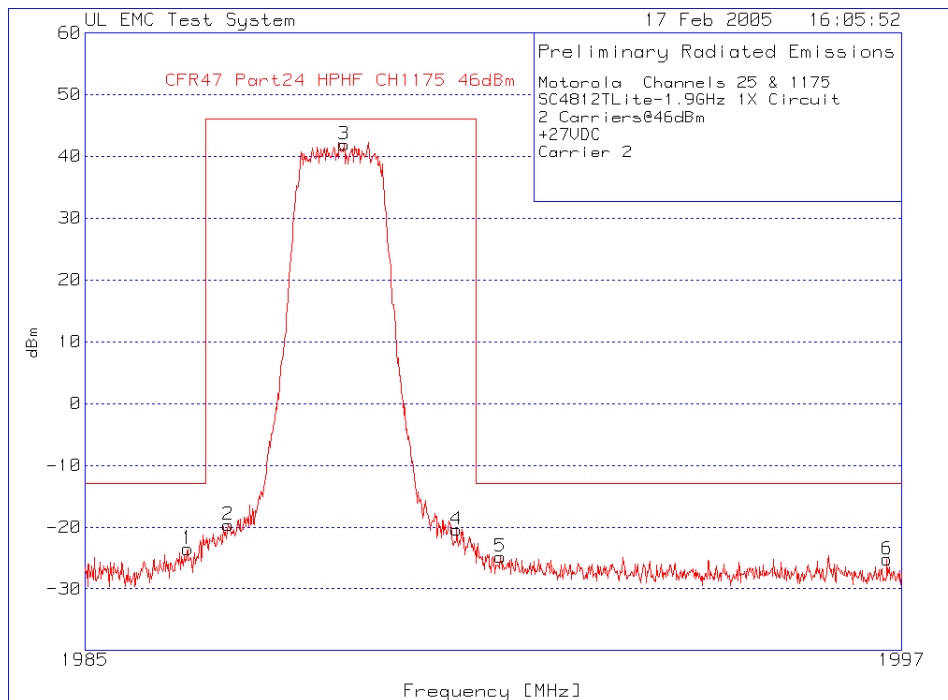
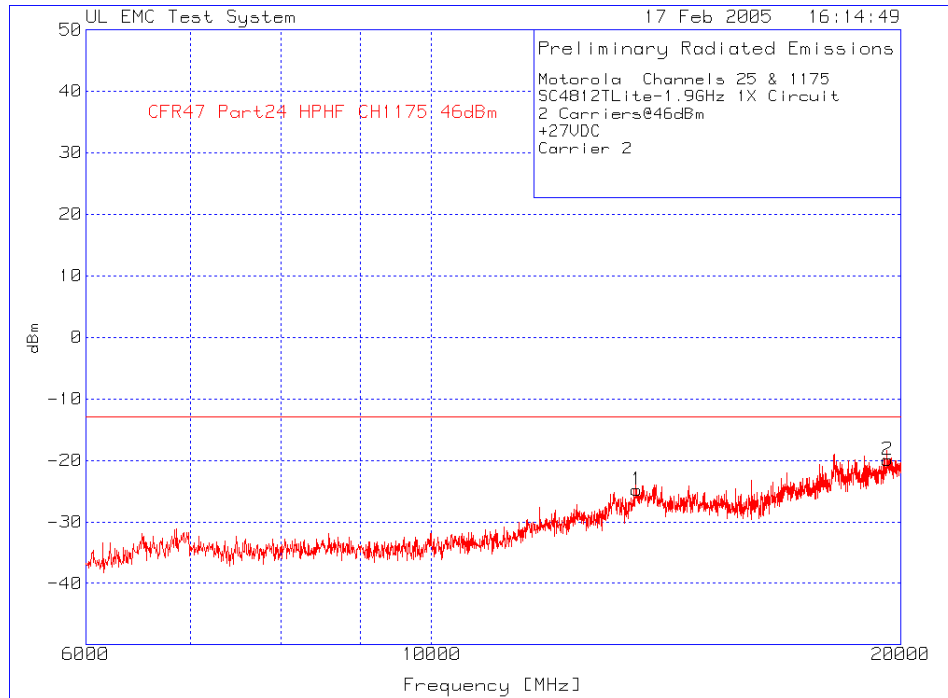


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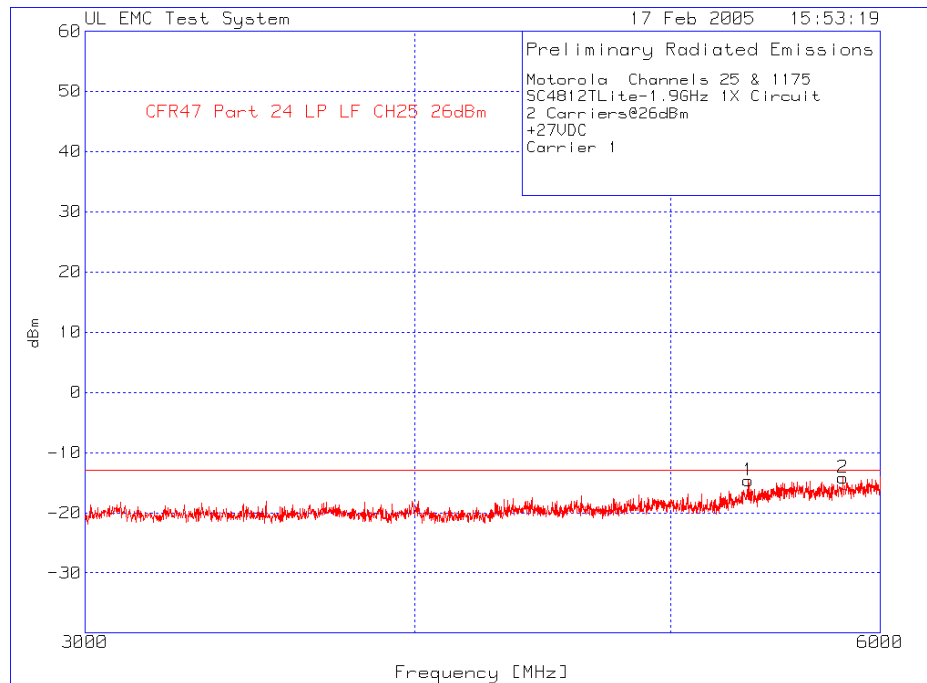
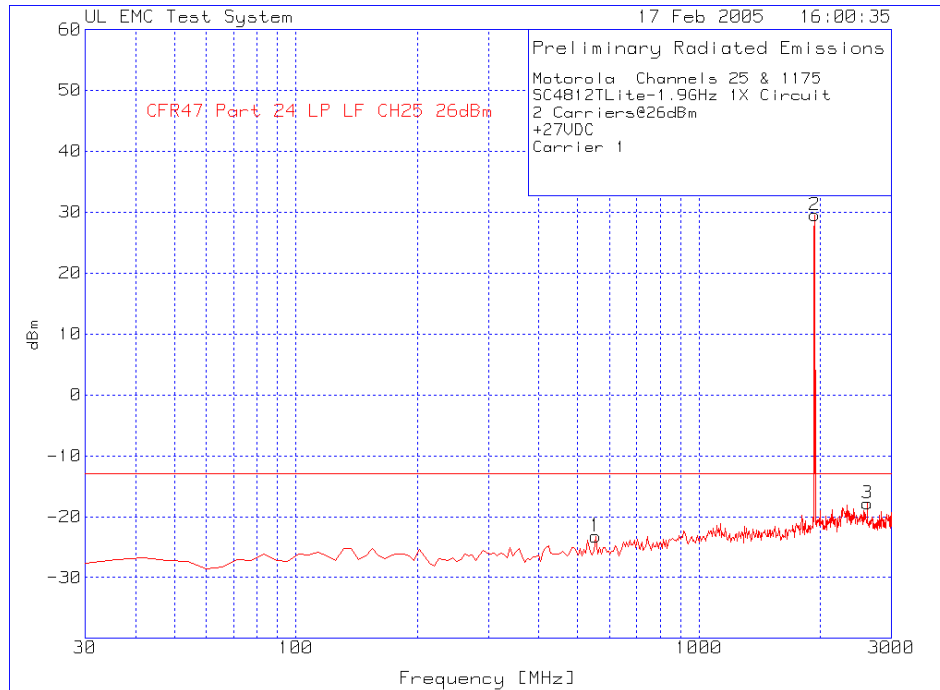
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Spurious and Harmonic Emissions Conducted
CDMA Channel 25 – 26.0 dBm – 1X



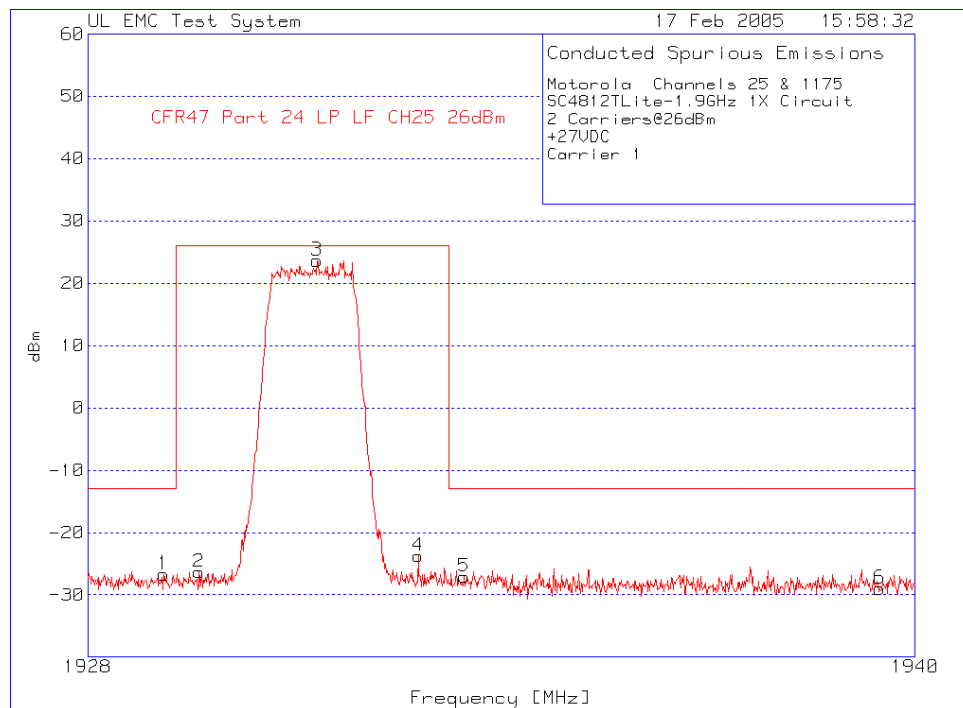
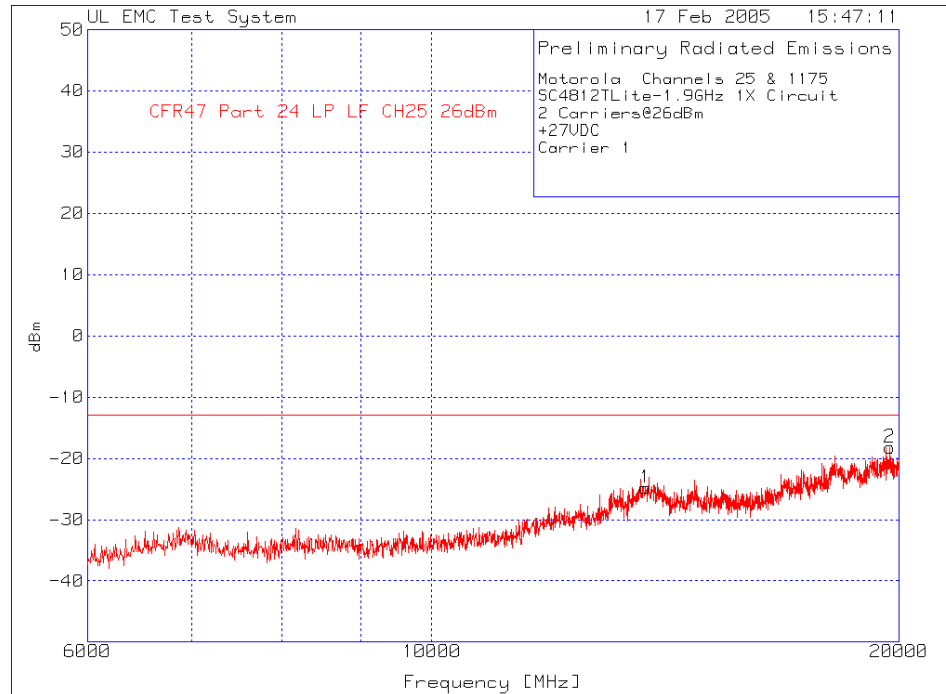


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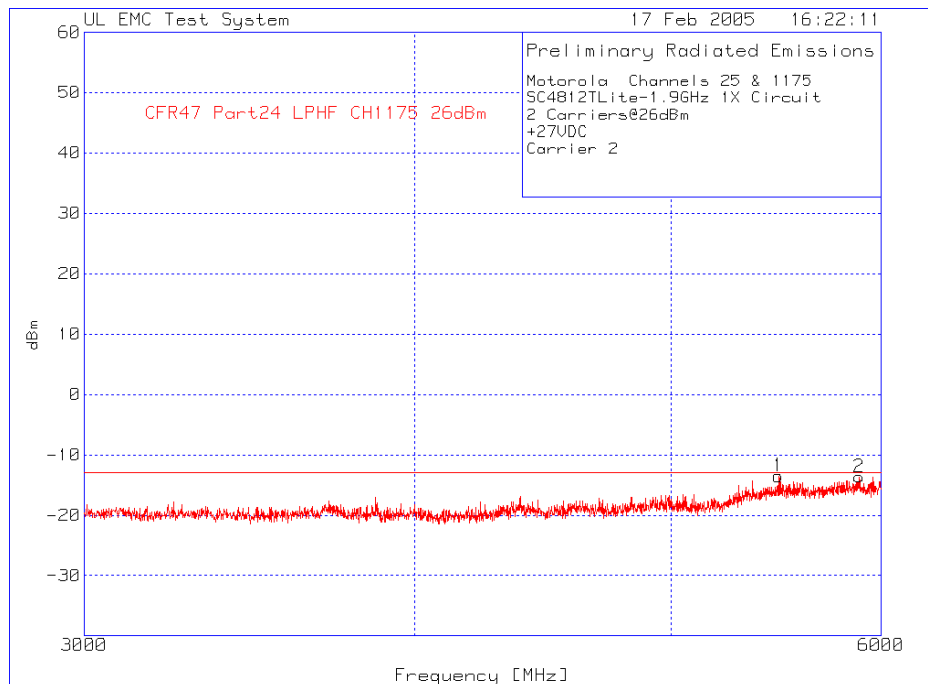
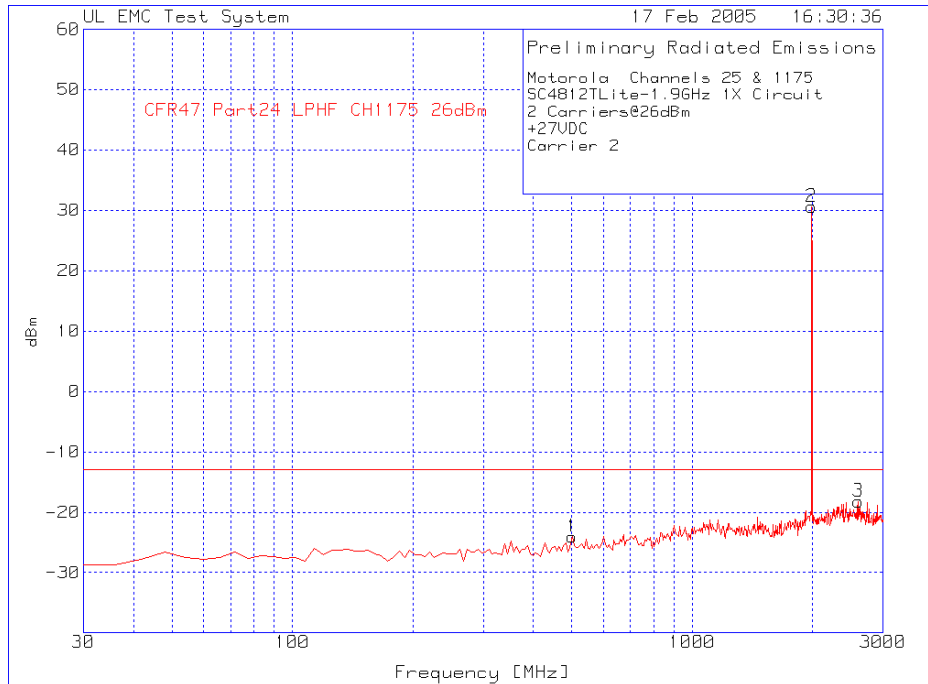
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Spurious and Harmonic Emissions Conducted
CDMA Channel 1175 – 26.0 dBm – 1X



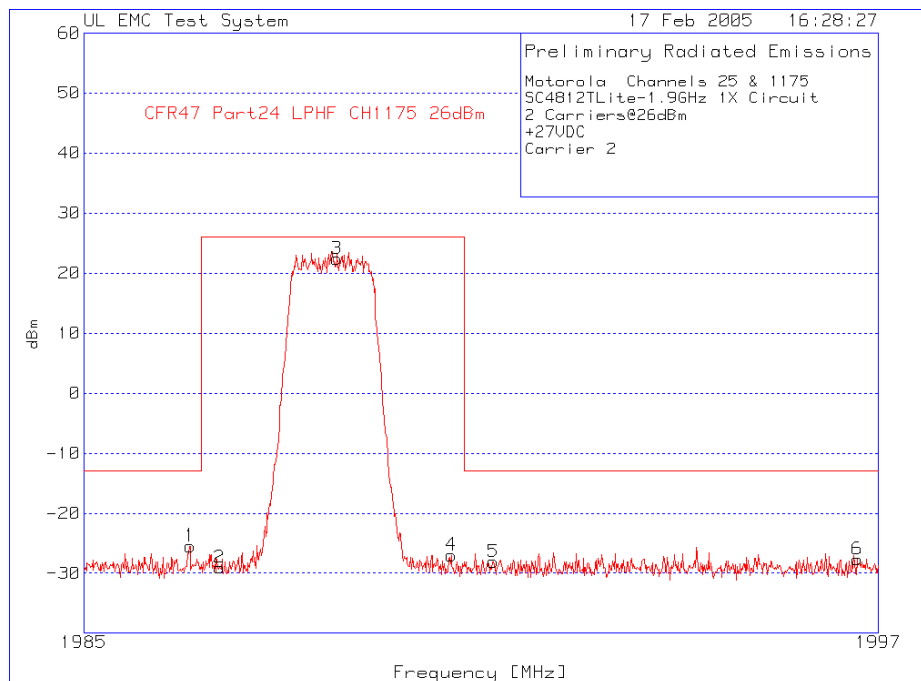
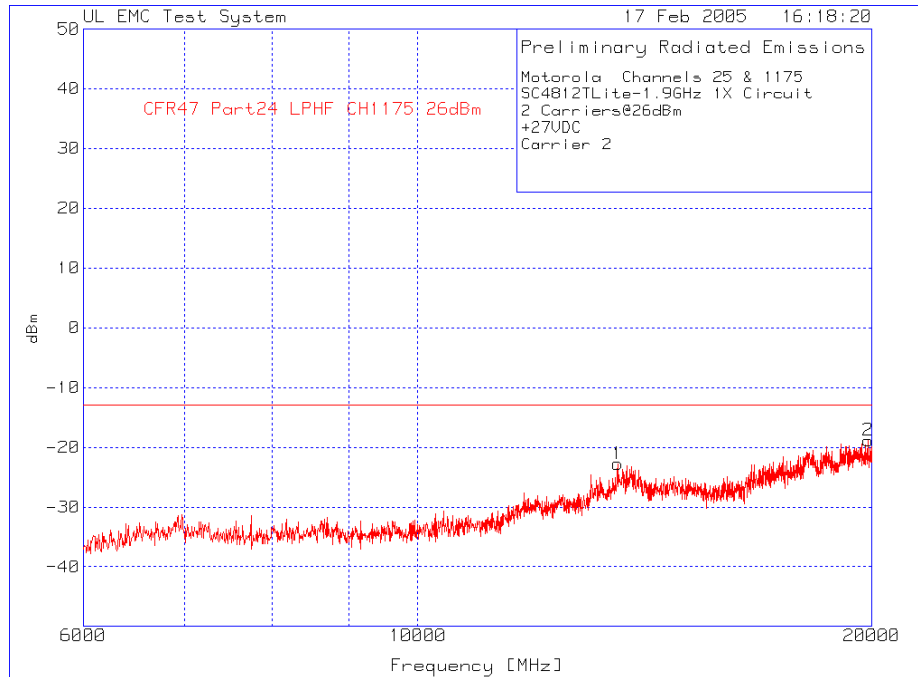


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SECTION E

OCCUPIED BANDWIDTH

NOTE: The BTS was configured for maximum power out of 46.00 dBm and minimum power out of 26.00 dBm depending on the configuration. The output power was set respectively to 40.0 Watts or 400 mWatts using an HP437B power meter. The external attenuation was 45.5 dB for channel 25 and channel 1175.

The occupied bandwidth is measured in a 30 kHz resolution bandwidth. The summary is listed below.

SC4812TLite EVDO @ 1.9GHz SUMMARY OF OCCUPIED BANDWIDTH

CHANNEL	Power Level (dBm)	FREQUENCY (MHz)	MEASURED (MHz)	FCC LIMIT (MHz)	Pass / Fail
25	46.0	1931.25	1.2776	1.30	Pass
1175	46.0	1988.75	1.2736	1.30	Pass

SC4812TLite 1X @ 1.9GHz SUMMARY OF OCCUPIED BANDWIDTH

CHANNEL	Power Level (dBm)	FREQUENCY (MHz)	MEASURED (MHz)	FCC LIMIT (MHz)	Pass / Fail
25	26.0	1931.25	1.2280	1.30	Pass
1175	26.0	1988.75	1.2315	1.30	Pass

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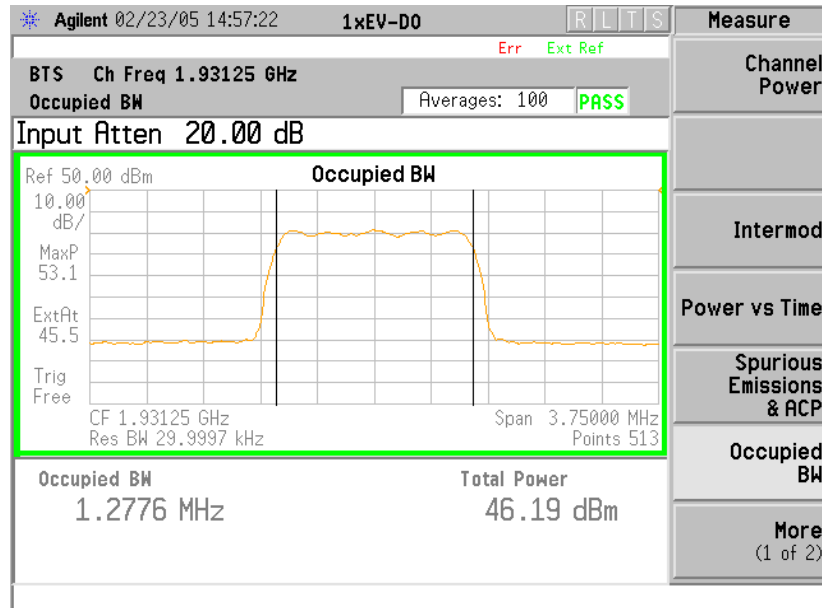
Signature

Date

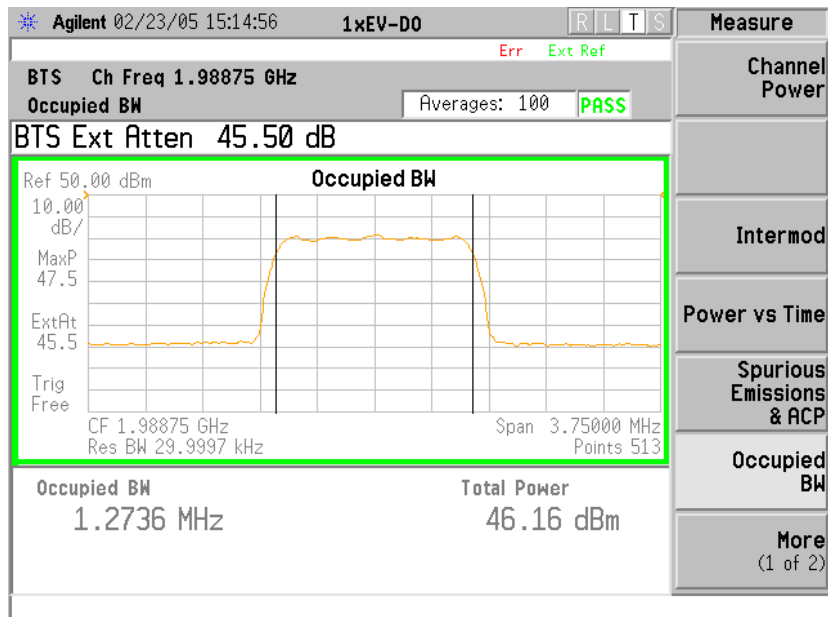
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SC4812TLite EVDO – Occupied Bandwidth – 46.00 dBm



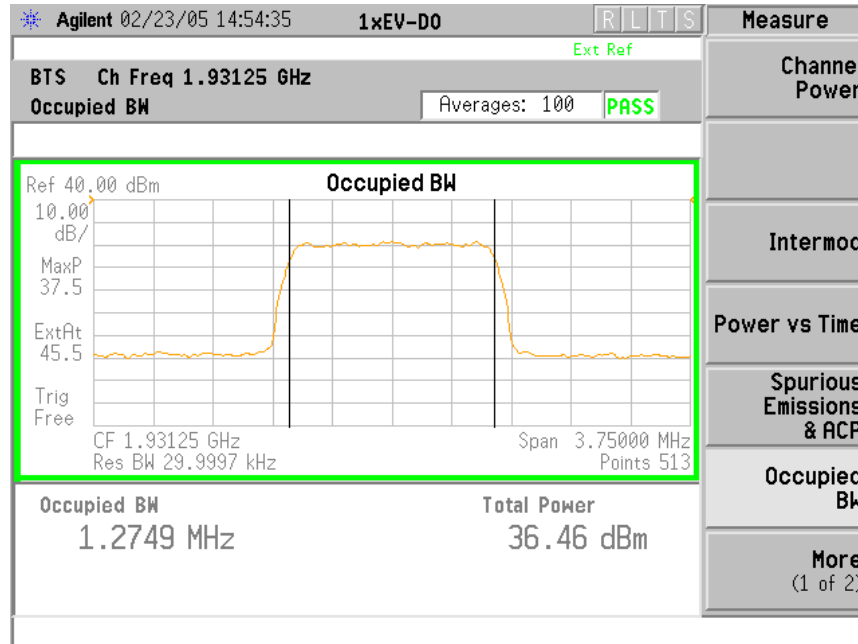
Channel 25 – 1931.25 MHz



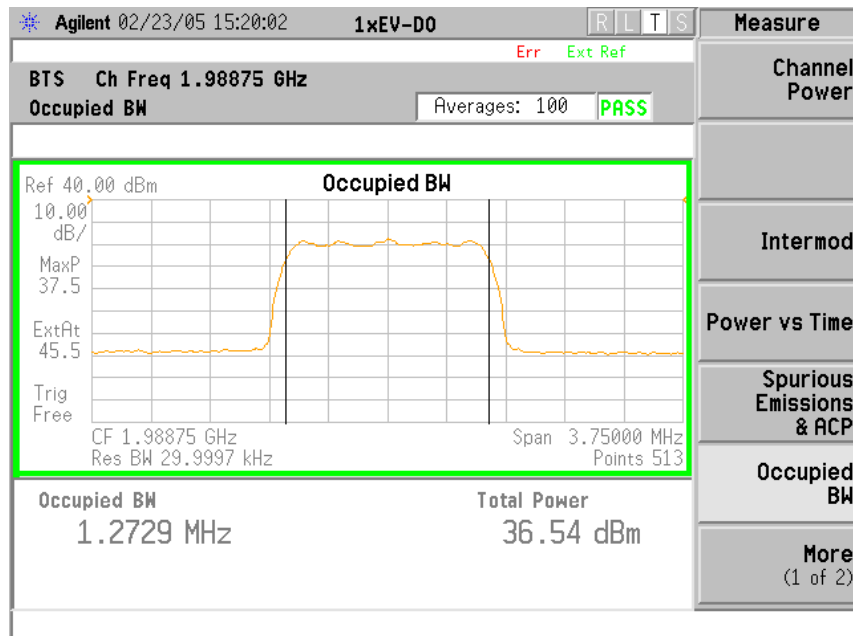
Channel 1175 – 1988.75 MHz



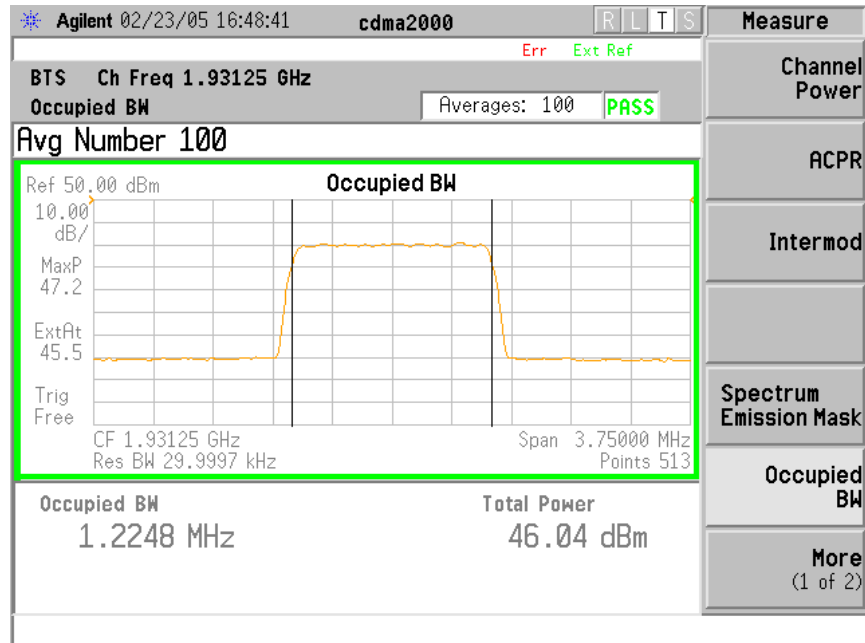
SC4812TLite EVDO – Occupied Bandwidth – 36.5 dBm



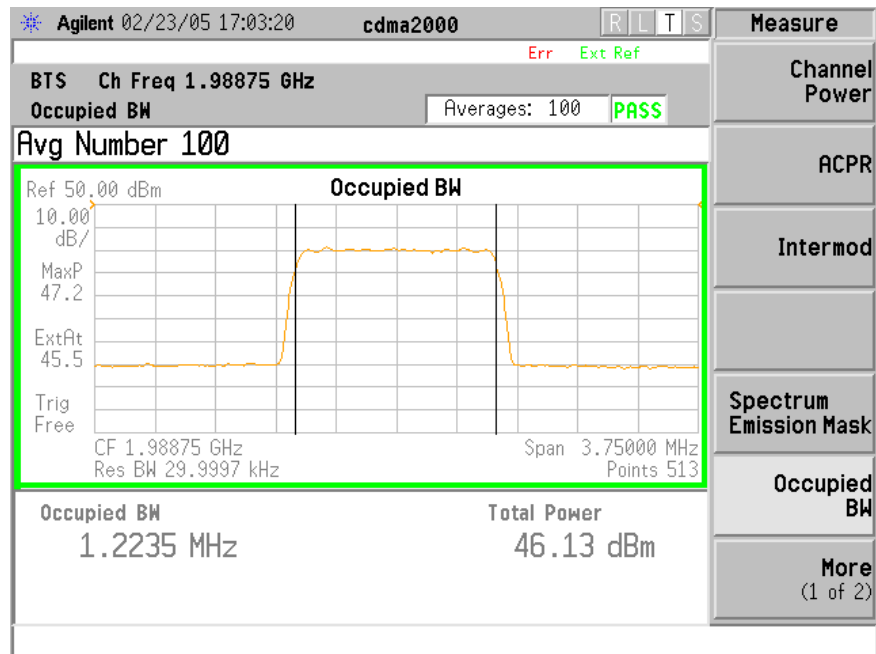
Channel 25 – 1931.25 MHz



Channel 1175 – 1988.75 MHz

**SC4812TLite 1X – Occupied Bandwidth – 46.0 dBm**

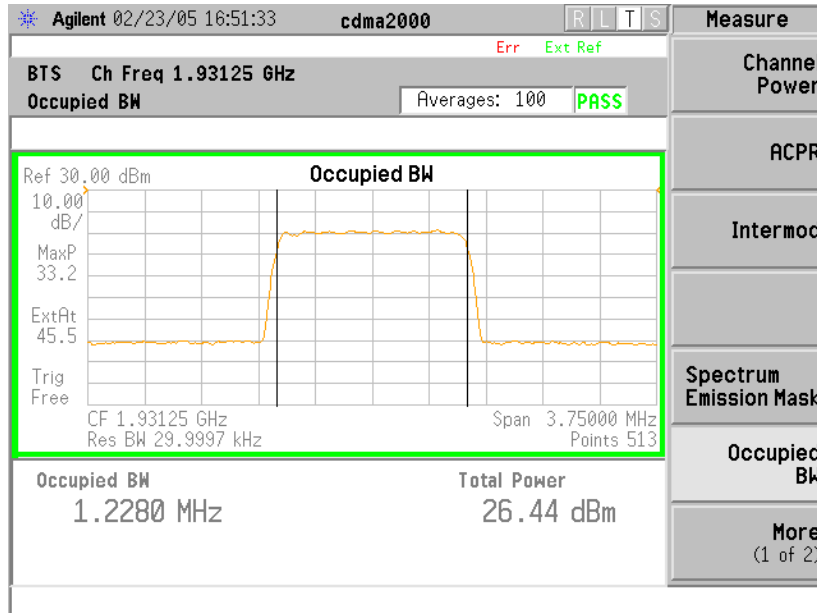
Channel 25 – 1931.25 MHz



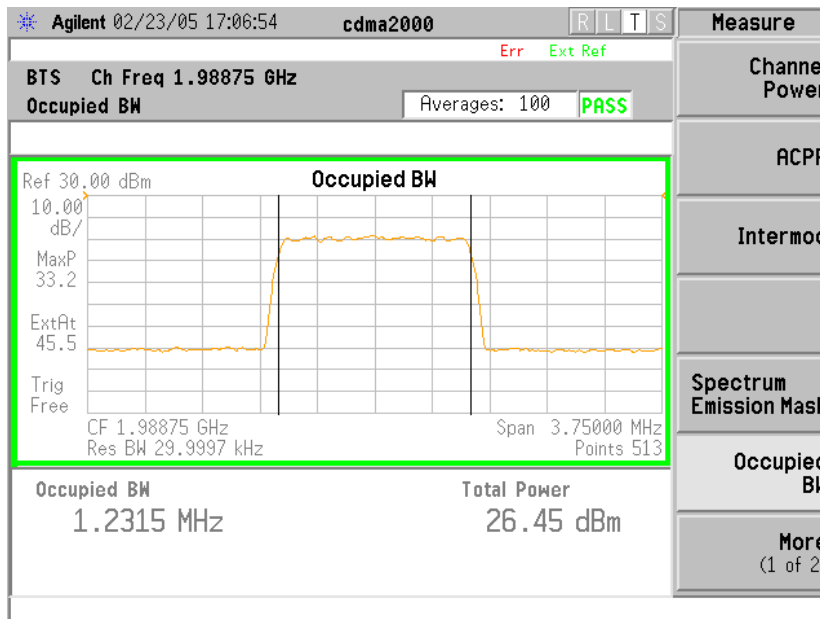
Channel 1175 – 1988.75 MHz



SC4812TLite 1X – Occupied Bandwidth – 26.0 dBm



Channel 25 – 1931.25 MHz



Channel 1175 – 1988.75 MHz



SECTION F

FREQUENCY STABILITY

MODE	27V POWER	WORST CASE Δ PPM	FCC REQUIREMENT	Pass / Fail
CSM1	85-115%	<0.02	+/- 1.5 PPM MAX	Pass
CSM2	85-115%	<0.02	+/- 1.5 PPM MAX	Pass

MODE	TEMPERATURE	WORST CASE Δ PPM	FCC REQUIREMENT	Pass / Fail
CSM1	-30° to +50° C	<0.2	+/- 1.5 PPM MAX	Pass
CSM2	-30° to +50° C	<0.2	+/- 1.5 PPM MAX	Pass

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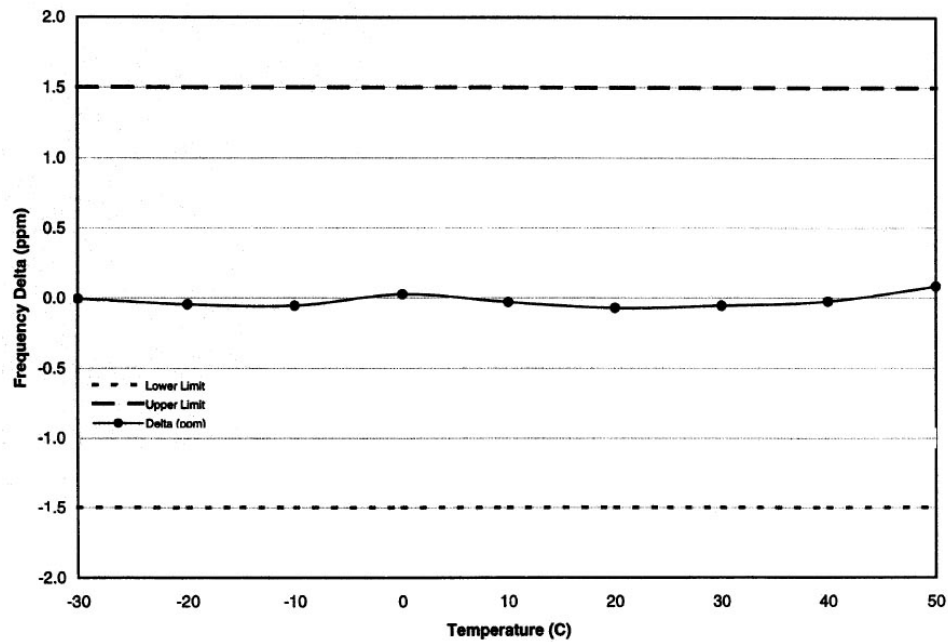
Terry Schwenk

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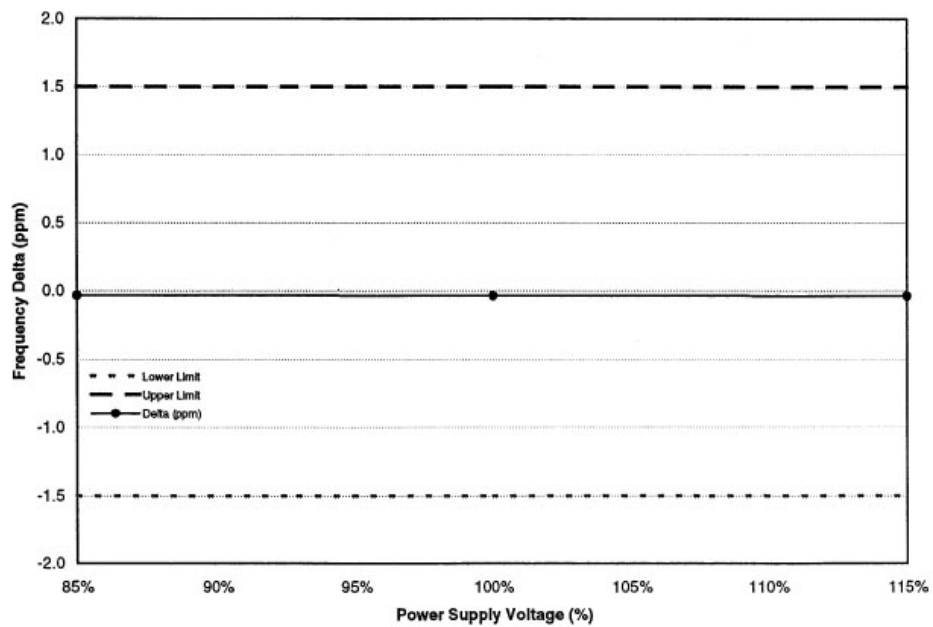
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Frequency Stability Over Temperature - CSM1

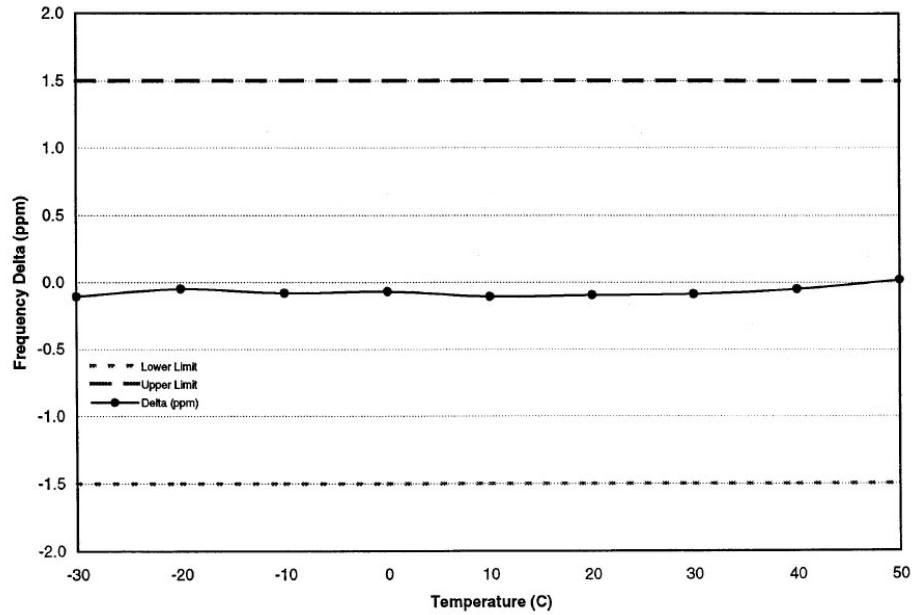


Frequency Stability with Varying Supply Voltage - CSM1





Frequency Stability Over Temperature - CSM2



Frequency Stability with Varying Supply Voltage - CSM2

