

Attachment B

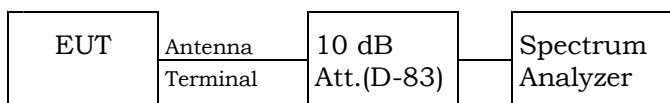
Antenna Conducted Spurious Emission Measurement (§2.1051,§24.238)

Test Procedure :

The Antenna Conducted Emission was measured with a spectrum analyzer. The test system is shown as follows:

PCS1900

1) Frequency Range : 9kHz - 2GHz



2) Frequency Range : 2GHz - 20GHz

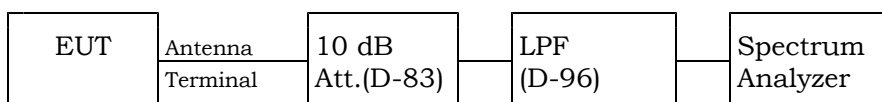


Fig.2 Antenna Conducted Spurious Emission Measurement

The setting of the spectrum analyzer are shown as follows :

Frequency Range	9kHz - 150kHz	150kHz - 30 MHz	30 MHz - 20 GHz
Res. Bandwidth	200 Hz	10 kHz	1 MHz
Video Bandwidth	1 kHz	30 kHz	3 MHz
Sweep Time	AUTO	AUTO	AUTO
Trace	Maxhold	Maxhold	Maxhold

Test location :

KITA-KANSAI Testing Center

7-7, Ishimaru, 1-Chome, Mino-Shi, Osaka, 562-0027, Japan

● - Shielded room

KAMEOKA EMC Branch

9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan

○ - Shielded room

Used test instruments:

Model No.	Device ID	Last Cal. Date	Cal. Interval
○ - 8566B	A - 13	October, 2004	1 Year
● - E4446A	A - 39		
○ - 4T-10	D - 73		
○ - 4T-10	D - 74		
○ - 2-10	D - 79		
○ - 2-10	D - 80	November, 2004	1 Year
○ - 54-10	D - 82		
● - 54-10	D - 83		
○ - BRM50701	D - 93		
○ - HPM13900	D - 95		
● - HPM13899	D - 96	February, 2005	1 Year

Environmental conditions:

Temperature: 20 °C Humidity: 53 %

Antenna-Conducted Spurious Emission Measurement (PCS 1900 MHz Band)

Test Date: April 20, 2005
 Temp.: 20 °C, Humi: 53 %

CH	Transmitting Frequency [MHz]	Measured Frequency [MHz]	Corr. Factor [dB]	Meter Readings [dBm]	Limits [dBm]	Results [dBm]	Margin [dB]	Remarks
512	1850.200	3700.400	-10.9	< -60.0	-13.0	< -70.9	> +57.9	C
		5550.600	-10.8	< -60.0	-13.0	< -70.8	> +57.8	C
		7400.800	-10.6	< -60.0	-13.0	< -70.6	> +57.6	C
		9251.000	-10.6	< -60.0	-13.0	< -70.6	> +57.6	C
		11101.200	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
		12951.400	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
		14801.600	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
		16651.800	-10.8	< -60.0	-13.0	< -70.8	> +57.8	C
661	1880.000	18502.000	-10.9	< -60.0	-13.0	< -70.9	> +57.9	C
		3760.000	-10.9	< -60.0	-13.0	< -70.9	> +57.9	C
		5640.000	-10.8	< -60.0	-13.0	< -70.8	> +57.8	C
		7520.000	-10.6	< -60.0	-13.0	< -70.6	> +57.6	C
		9400.000	-10.6	< -60.0	-13.0	< -70.6	> +57.6	C
		11280.000	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
		13160.000	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
		15040.000	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
810	1909.800	16920.000	-10.8	< -60.0	-13.0	< -70.8	> +57.8	C
		18800.000	-10.9	< -60.0	-13.0	< -70.9	> +57.9	C
		3819.600	-10.9	< -60.0	-13.0	< -70.9	> +57.9	C
		5729.400	-10.8	< -60.0	-13.0	< -70.8	> +57.8	C
		7639.200	-10.6	< -60.0	-13.0	< -70.6	> +57.6	C
		9549.000	-10.6	< -60.0	-13.0	< -70.6	> +57.6	C
		11458.800	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
		13368.600	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
810	1909.800	15278.400	-10.7	< -60.0	-13.0	< -70.7	> +57.7	C
		17188.200	-10.8	< -60.0	-13.0	< -70.8	> +57.8	C
		19098.000	-10.9	< -60.0	-13.0	< -70.9	> +57.9	C

Sample of calculated result at 7400.8 MHz, as the Minimum Margin point:

Corr. Factor = -10.6 dB
 +) Meter Reading = <-60.0 dB(μV)
 Result = <-70.6 dB(μV)

Minimum Margin: -13.0 - (<-70.6) = >57.6 (dB)

The point shown on “ _____ ” is the Minimum Margin Point.

Applied Limits:

$-13.0 \text{ [dBm]} = 10\log(\text{TP[mW]}) - (43 + 10\log(\text{tp[W]})) = 10\log(\text{TP[mW]}) - (43 + (10 \log(\text{TP[mW]}) - 30))$

where $\text{tp[W]} = \text{TP[mW]} / 1000$: Transmitter power at antenna terminal

$10\log(\text{tp[W]}) = 10\log(\text{TP[mW]}) - 30$

Correction factor details:

Cable Loss + 10dB Pad Att. [dB] (9 kHz - 2.0 GHz)

Cable Loss + 10dB Pad Att. + High Pass Filter Loss (D-96)

- Note: 1) The spectrum was scanned 9 kHz to 20 GHz and all emissions not reported were more than 20 dB below the applied limits.
 2) The spectrum analyzer displays were printed out in Attachment B.

Remarks:

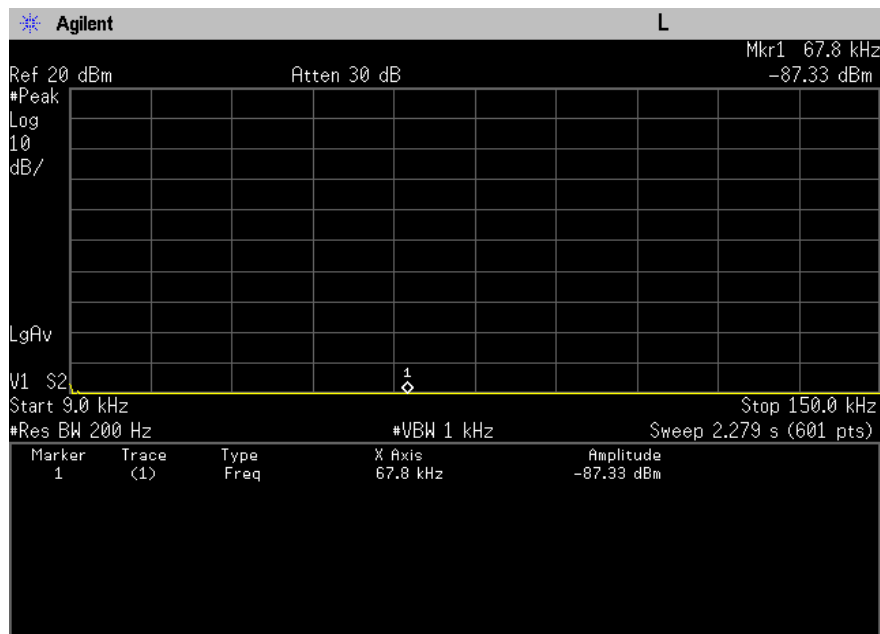
	Detector Function	RES B.W.	V.B.W.	Sweep Time
A	Peak	200 Hz	1 kHz	AUTO
B	Peak	10 kHz	300 kHz	AUTO
C	Peak	1 MHz	3 MHz	AUTO

Tester : Shigeru Kinoshita

Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1850.200 MHz (512 ch)

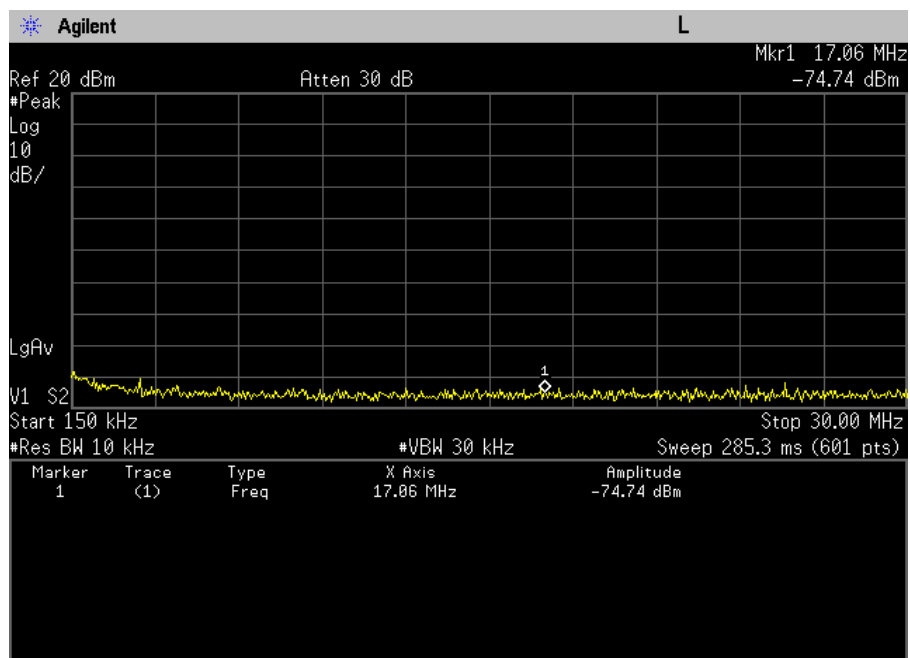
Frequency Range : 9kHz - 150 kHz



Antenna Conducted Spurious Emission Measurement

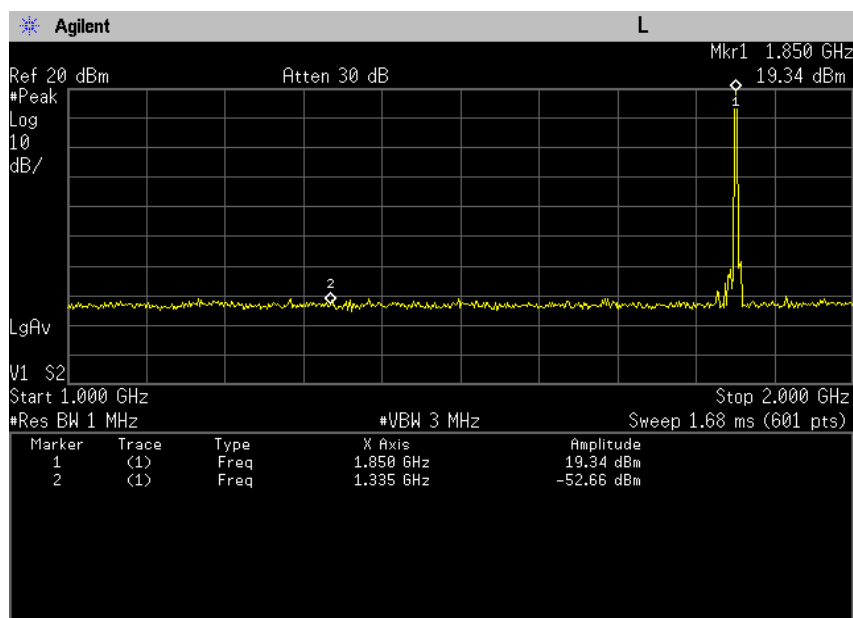
Transmitting Frequency : 1850.200 MHz (512 ch)

Frequency Range : 150kHz - 30MHz



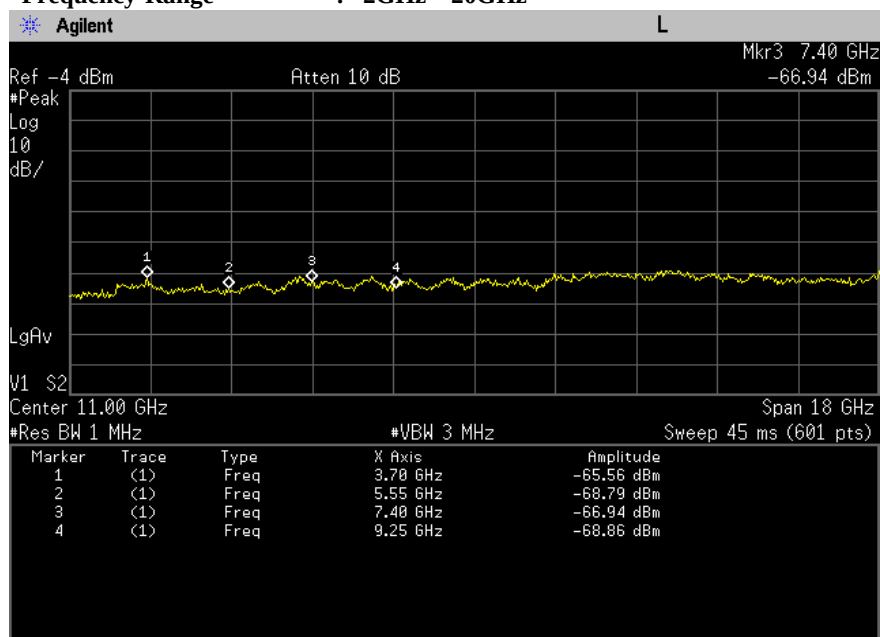
Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1850.200 MHz (512 ch)
 Frequency Range : 30MHz - 2GHz



Antenna Conducted Spurious Emission Measurement

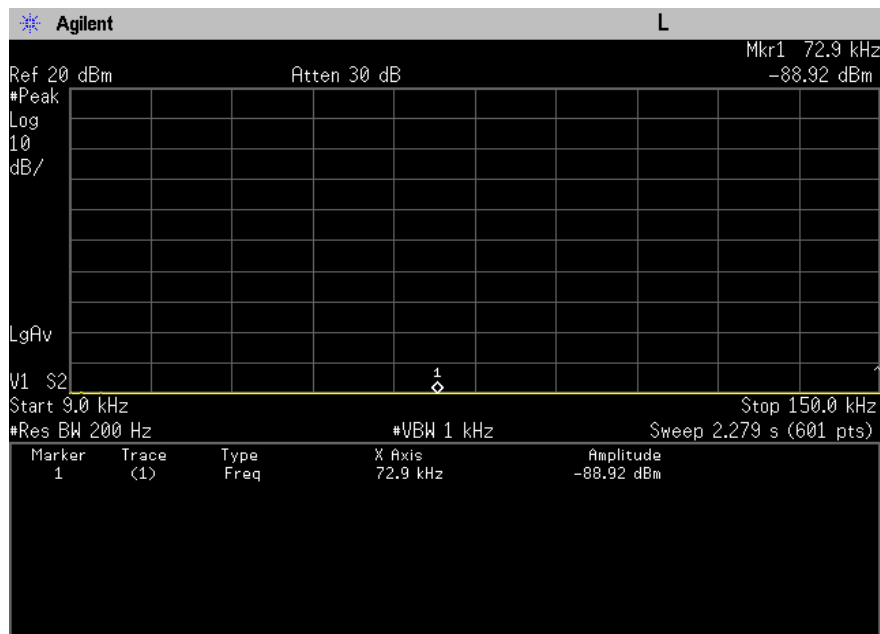
Transmitting Frequency : 1850.200 MHz (512 ch)
 Frequency Range : 2GHz - 20GHz



Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1880.000 MHz (661 ch)

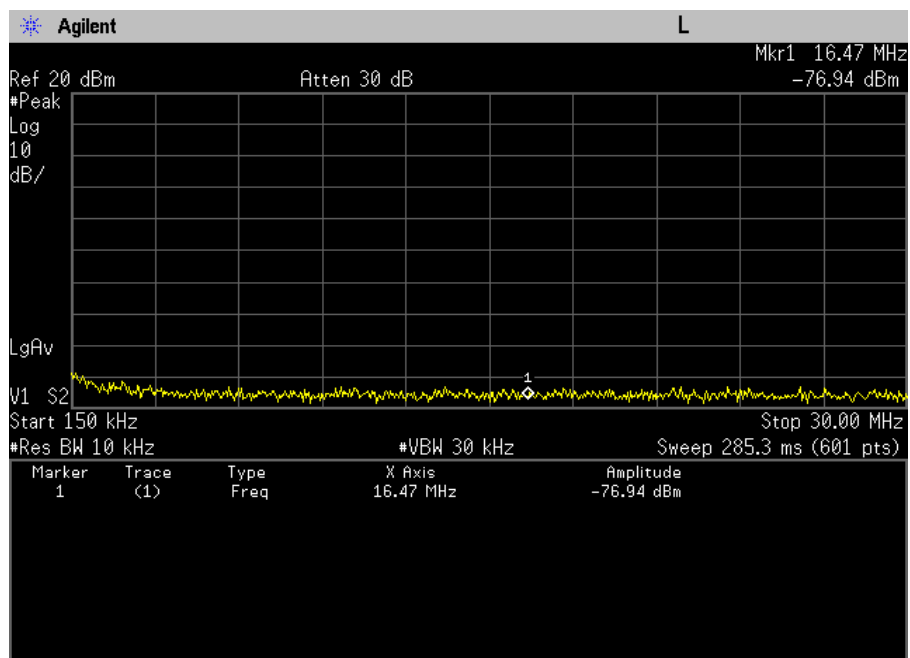
Frequency Range : 9kHz - 150 kHz



Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1880.000 MHz (661 ch)

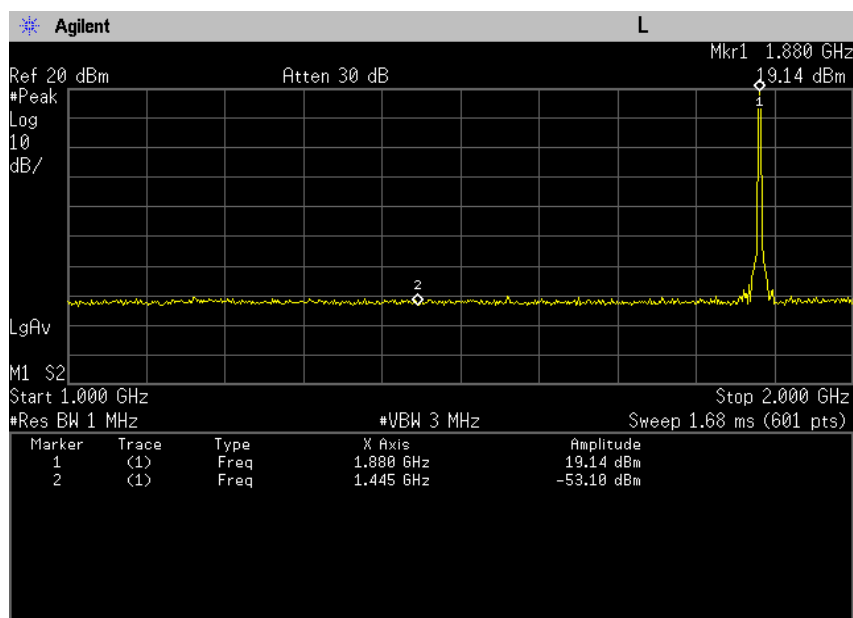
Frequency Range : 150kHz - 30MHz



Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1880.000 MHz (661 ch)

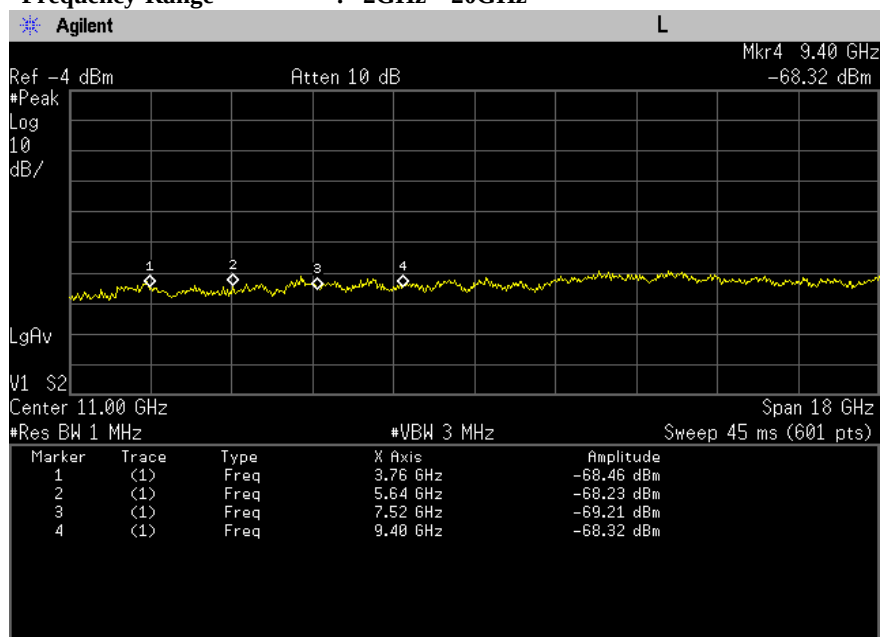
Frequency Range : 30MHz - 2GHz



Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1880.000 MHz (661 ch)

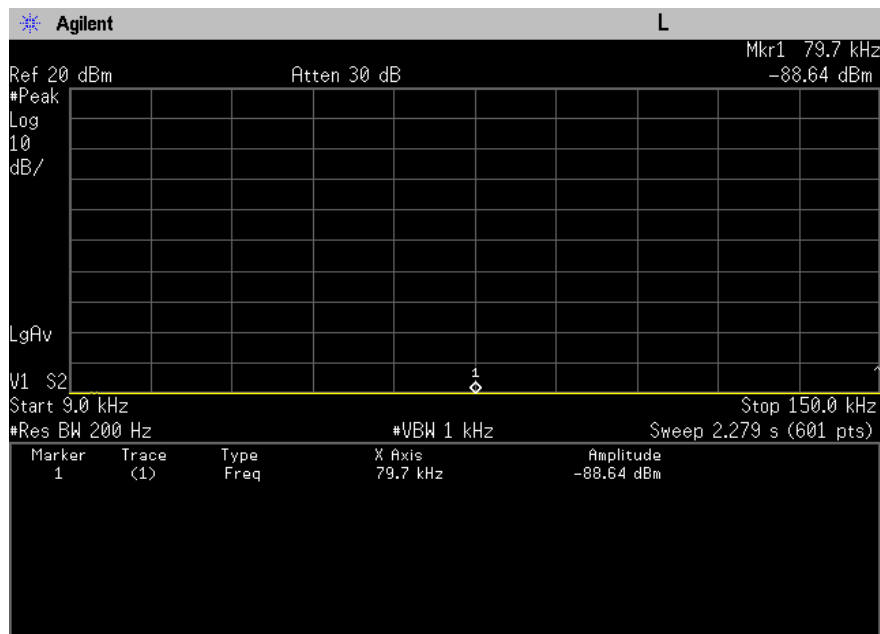
Frequency Range : 2GHz - 20GHz



Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1909.800 MHz (810 ch)

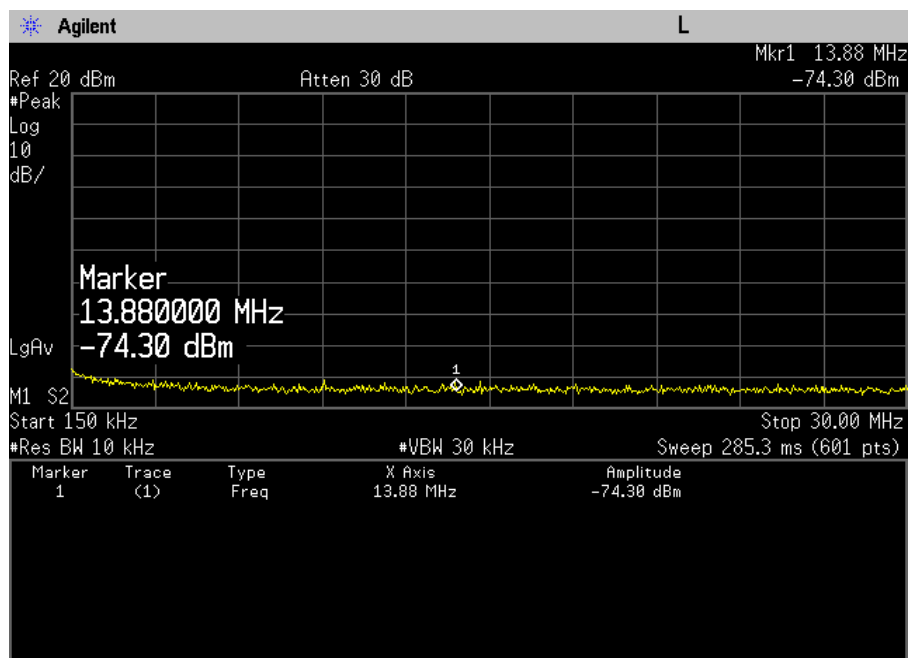
Frequency Range : 9kHz - 150 kHz



Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1909.800 MHz (810 ch)

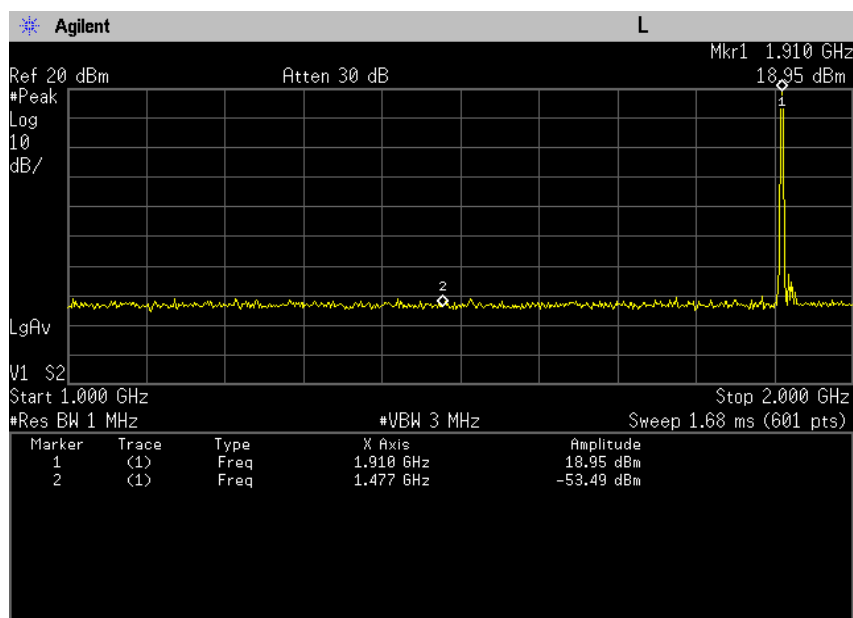
Frequency Range : 150kHz - 30MHz



Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1909.800 MHz (810 ch)

Frequency Range : 30MHz - 2GHz



Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1909.800 MHz (810 ch)

Frequency Range : 2GHz - 20GHz

