

## Attachment B

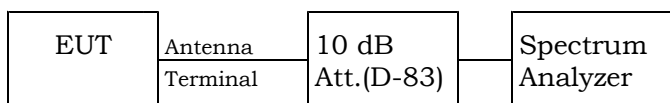
### Antenna Conducted Spurious Emission Measurement (§2.1051,§24.238 )

#### 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

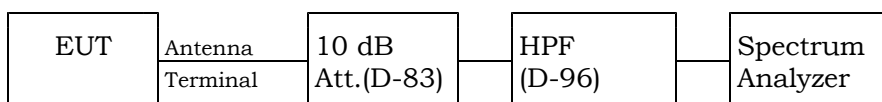


Fig.2 Antenna Conducted Spurious Emission Measurement

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    | November, 2005 | 1 Year        |
| ● - E4446A   | A - 39    |                |               |
| ○ - 4T-10    | D - 73    |                |               |
| ○ - 4T-10    | D - 74    |                |               |
| ○ - 2-10     | D - 79    |                |               |
| ○ - 2-10     | D - 80    | May, 2006      | 1 Year        |
| ○ - 54-10    | D - 82    |                |               |
| ● - 54-10    | D - 83    |                |               |
| ○ - BRM50701 | D - 93    |                |               |
| ○ - HPM13900 | D - 95    |                |               |
| ● - HPM13899 | D - 96    | February, 2006 | 1 Year        |

**Environmental conditions:**

Temperature: 26 °C      Humidity: 61 %

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

Test Date: August 9, 2006  
Temp.: 26 °C, Humi: 61 %

| Transmitting<br>Frequency<br>CH [MHz] | Measured<br>Frequency<br>[MHz] | Corr.<br>Factor<br>[dB] | Meter Readings<br>[dBm] | Limits<br>[dBm] | Results<br>[dBm] | Margin<br>[dB] | Remarks |
|---------------------------------------|--------------------------------|-------------------------|-------------------------|-----------------|------------------|----------------|---------|
| 512 1850.200                          | 3700.400                       | 11.3                    | -55.4                   | -13.0           | -44.1            | +31.1          | C       |
|                                       | 5550.600                       | 11.3                    | -57.6                   | -13.0           | -46.3            | +33.3          | C       |
|                                       | 7400.800                       | 11.1                    | < -60.0                 | -13.0           | < -48.9          | > +35.9        | C       |
|                                       | 9251.000                       | 11.1                    | < -60.0                 | -13.0           | < -48.9          | > +35.9        | C       |
|                                       | 11101.200                      | 11.4                    | < -60.0                 | -13.0           | < -48.6          | > +35.6        | C       |
|                                       | 12951.400                      | 11.6                    | < -60.0                 | -13.0           | < -48.4          | > +35.4        | C       |
|                                       | 14801.600                      | 11.8                    | < -60.0                 | -13.0           | < -48.2          | > +35.2        | C       |
|                                       | 16651.800                      | 11.9                    | < -60.0                 | -13.0           | < -48.1          | > +35.1        | C       |
|                                       | 18502.000                      | 12.1                    | < -60.0                 | -13.0           | < -47.9          | > +34.9        | C       |
| 661 1880.000                          | 3760.000                       | 11.3                    | -56.7                   | -13.0           | -45.4            | +32.4          | C       |
|                                       | 5640.000                       | 11.3                    | < -60.0                 | -13.0           | < -48.7          | > +35.7        | C       |
|                                       | 7520.000                       | 11.1                    | < -60.0                 | -13.0           | < -48.9          | > +35.9        | C       |
|                                       | 9400.000                       | 11.1                    | < -60.0                 | -13.0           | < -48.9          | > +35.9        | C       |
|                                       | 11280.000                      | 11.4                    | < -60.0                 | -13.0           | < -48.6          | > +35.6        | C       |
|                                       | 13160.000                      | 11.6                    | < -60.0                 | -13.0           | < -48.4          | > +35.4        | C       |
|                                       | 15040.000                      | 11.8                    | < -60.0                 | -13.0           | < -48.2          | > +35.2        | C       |
|                                       | 16920.000                      | 11.9                    | < -60.0                 | -13.0           | < -48.1          | > +35.1        | C       |
|                                       | 18800.000                      | 12.1                    | < -60.0                 | -13.0           | < -47.9          | > +34.9        | C       |
| 810 1909.800                          | 3819.600                       | 11.3                    | < -60.0                 | -13.0           | < -48.7          | > +35.7        | C       |
|                                       | 5729.400                       | 11.2                    | < -60.0                 | -13.0           | < -48.8          | > +35.8        | C       |
|                                       | 7639.200                       | 11.1                    | < -60.0                 | -13.0           | < -48.9          | > +35.9        | C       |
|                                       | 9549.000                       | 11.2                    | < -60.0                 | -13.0           | < -48.8          | > +35.8        | C       |
|                                       | 11458.800                      | 11.4                    | < -60.0                 | -13.0           | < -48.6          | > +35.6        | C       |
|                                       | 13368.600                      | 11.6                    | < -60.0                 | -13.0           | < -48.4          | > +35.4        | C       |
|                                       | 15278.400                      | 11.8                    | < -60.0                 | -13.0           | < -48.2          | > +35.2        | C       |
|                                       | 17188.200                      | 12.0                    | < -60.0                 | -13.0           | < -48.0          | > +35.0        | C       |
|                                       | 19098.000                      | 12.1                    | < -60.0                 | -13.0           | < -47.9          | > +34.9        | C       |

Calculated result at 3700.4 MHz, as the worst point shown on underline:

|                   |   |           |
|-------------------|---|-----------|
| Corr. Factor      | = | 11.3 dB   |
| + ) Meter Reading | = | -55.4 dBm |
| Result            | = | -44.1 dBm |

Minimum Margin:  $-13.0 - (-44.1) = 31.1$  (dB)

#### NOTES

- The spectrum was checked from 9 kHz to 20 GHz.
- The spectrum analyzer displays were printed out in attachment B.
- Applied limits :  $-13.0$  [dBm] =  $10\log(\text{TP}[\text{mW}]) - (43 + 10\log(\text{tp}[\text{W}])) = 10\log(\text{TP}[\text{mW}]) - (43 + (10 \log(\text{TP}[\text{mW}]) - 30))$   
 where,  $\text{tp}[\text{W}] = \text{TP}[\text{mW}] / 1000$  : Transmitter power at antenna terminal
- The correction factor is shown as follows:  
 Corr. Factor [dB] = Cable Loss + 10dB Pad Att. [dB] (9 kHz - 2.2 GHz)  
 Corr. Factor [dB] = Cable Loss + 20dB Pad Att. + High Pass Filter Loss (D-42) - Pre-Amp. Gain [dB] (over 2.2 GHz)
- The symbol of "<" means "or less".
- The symbol of ">" means "more than".
- Setting of measuring instrument(s) :

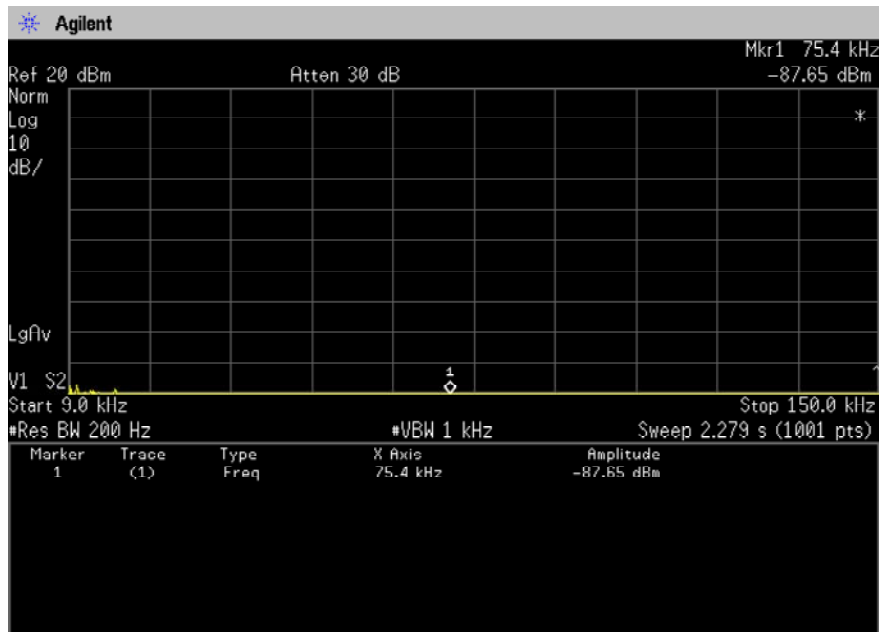
|   | Detector Function | RES B.W. | V.B.W.  | Sweep Time |
|---|-------------------|----------|---------|------------|
| A | Peak              | 10 kHz   | 30 kHz  | 20 msec.   |
| B | Peak              | 100 kHz  | 300 kHz | 20 msec.   |
| C | Peak              | 1 MHz    | 3 MHz   | 20 msec.   |

Tester : Shigeru Kinoshita

### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1850.200 MHz (512 ch)

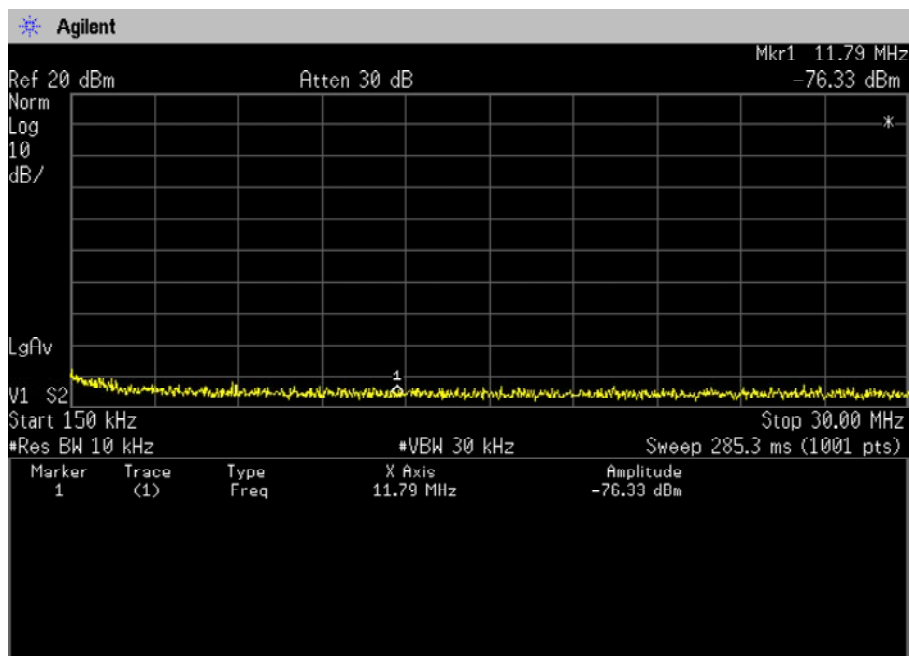
Frequency Range : 9kHz - 150 kHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1850.200 MHz (512 ch)

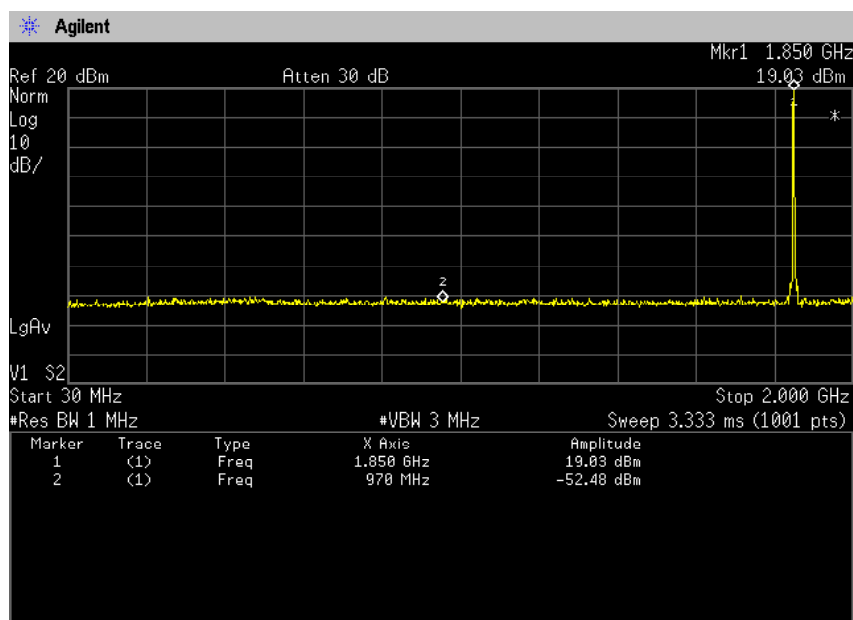
Frequency Range : 150kHz - 30MHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1850.200 MHz (512 ch)

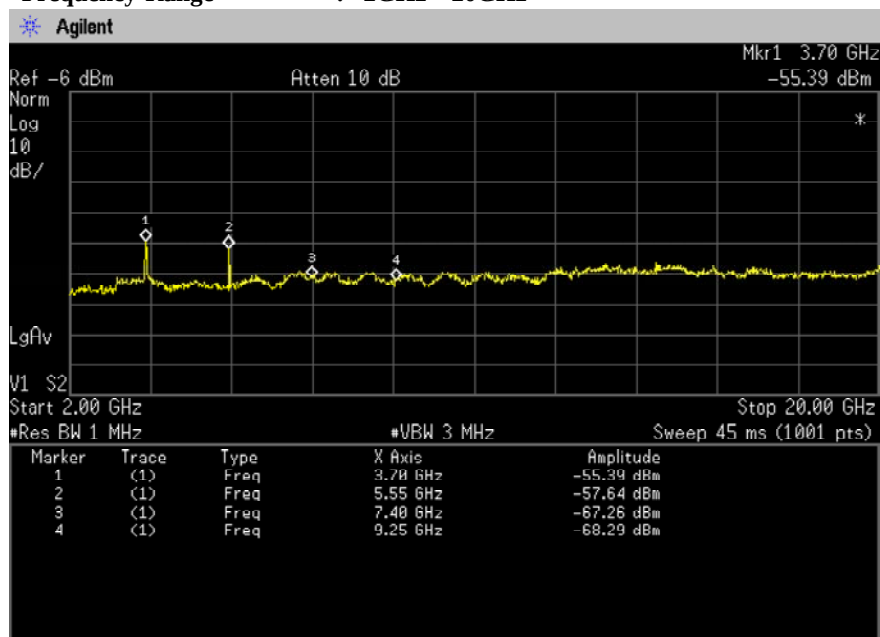
Frequency Range : 30MHz - 2GHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1850.200 MHz (512 ch)

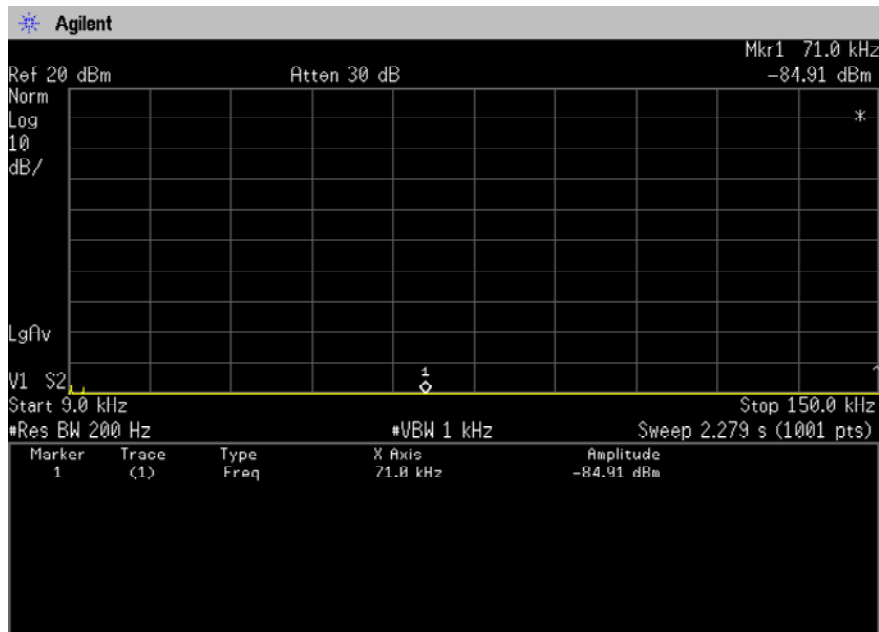
Frequency Range : 2GHz - 20GHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1880.000 MHz (661 ch)

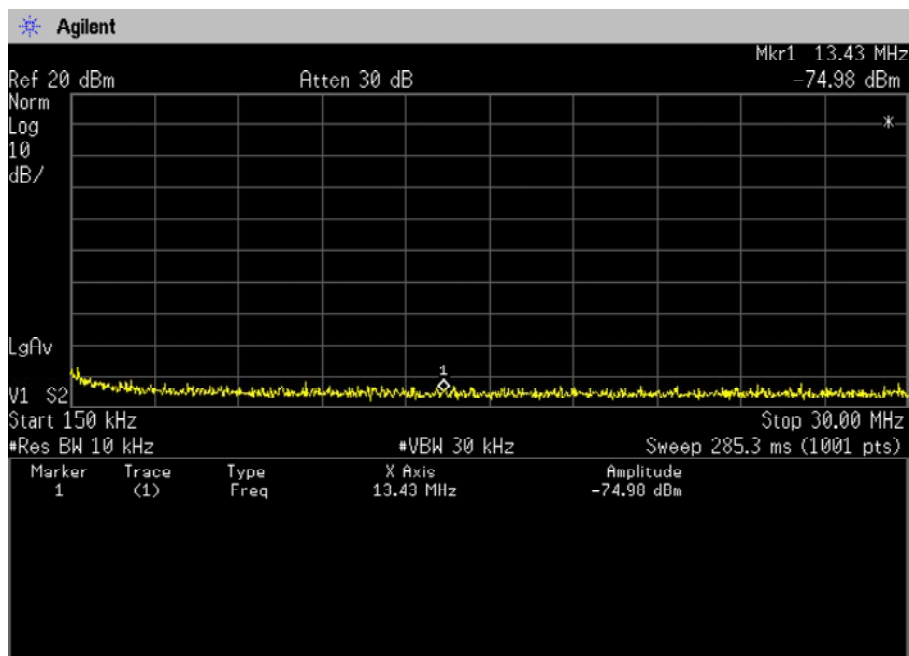
Frequency Range : 9kHz - 150 kHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1880.000 MHz (661 ch)

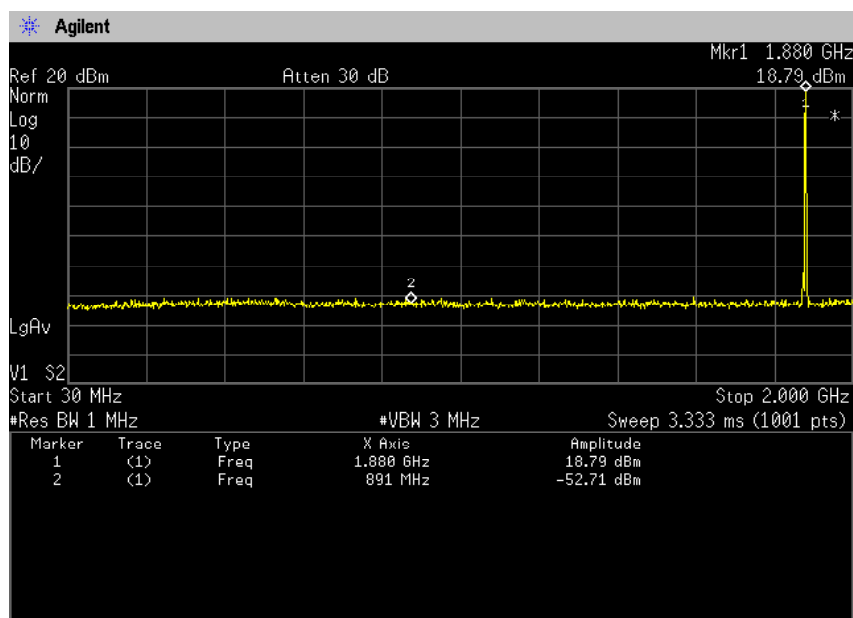
Frequency Range : 150kHz - 30MHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1880.000 MHz (661 ch)

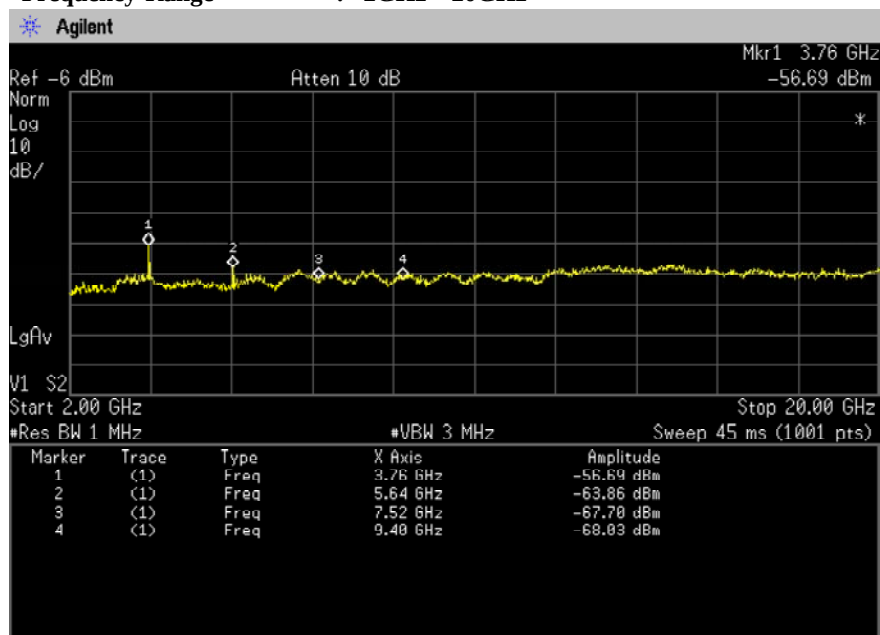
Frequency Range : 30MHz - 2GHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1880.000 MHz (661 ch)

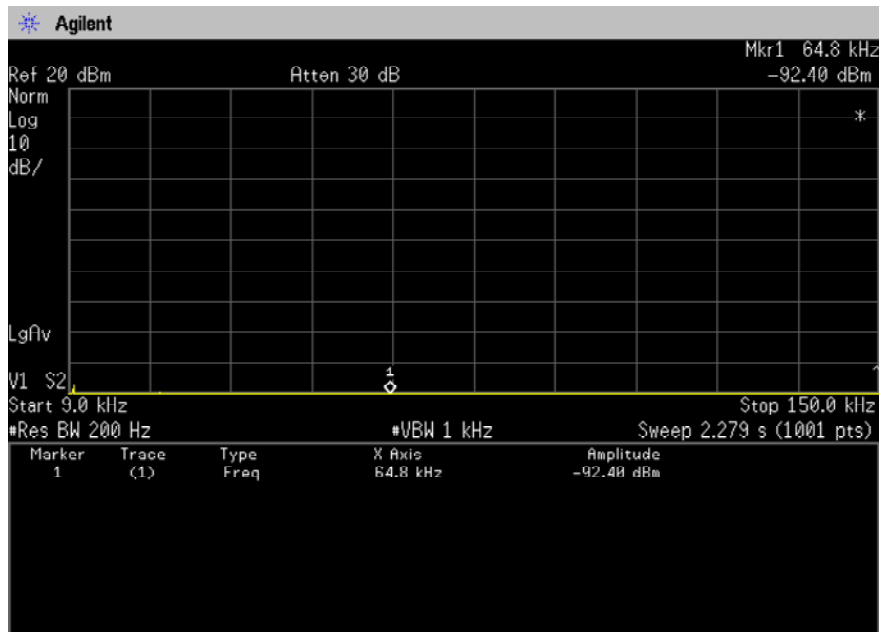
Frequency Range : 2GHz - 20GHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1909.800 MHz (810 ch)

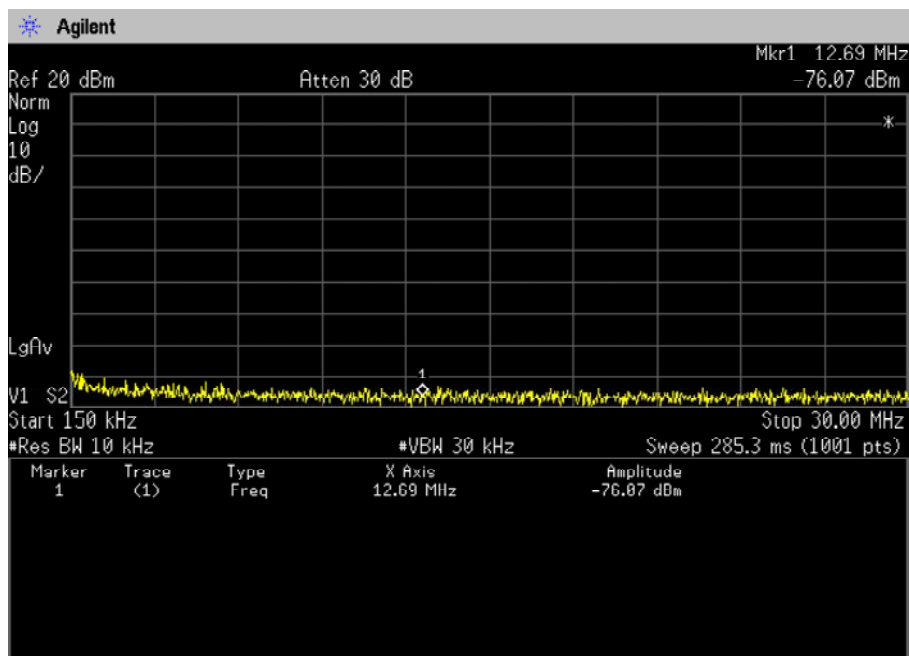
Frequency Range : 9kHz - 150 kHz



### Antenna Conducted Spurious Emission Measurement

Transmitting Frequency : 1909.800 MHz (810 ch)

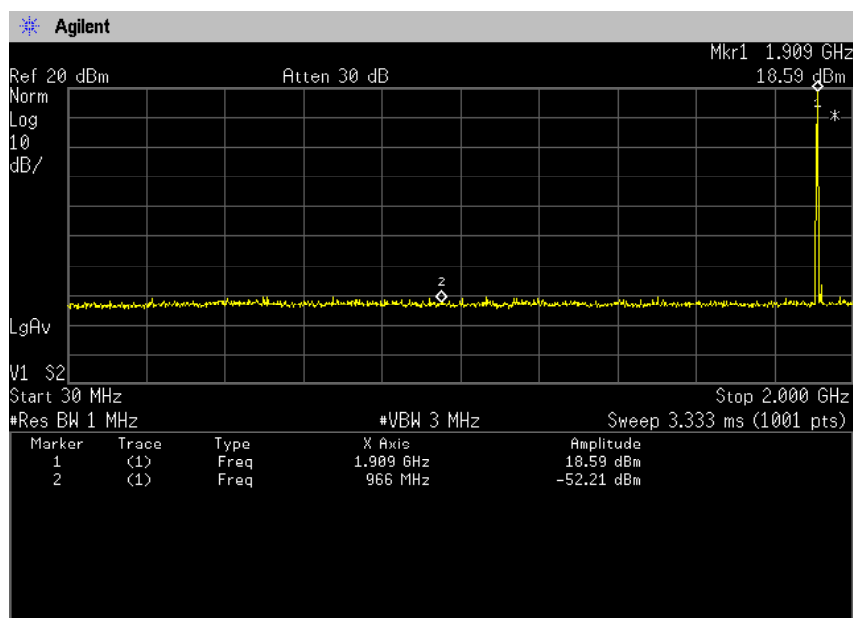
Frequency Range : 150kHz - 30MHz



### 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

