4.3   6DB BANDWIDTH MEASUREMENT

4.3.1   LIMITS OF 6dB BANDWIDTH MEASUREMENT

The Limit of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2   TEST INSTRUMENTS

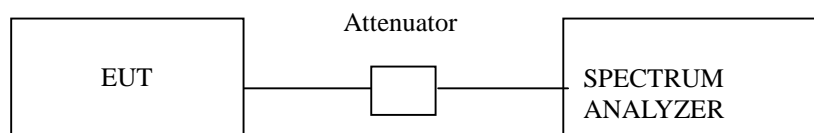| Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839379/002	Aug. 04, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

Notes:

1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2.The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3   TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 kHz RBW and 100 kHz VBW. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

4.3.4   TEST SETUP

```
┌──────────┐         Attenuator    ┌──────────────┐
│          │         ┌─────┐       │  SPECTRUM    │
│   EUT    │─────────┤     ├───────┤  ANALYZER    │
│          │         └─────┘       │              │
└──────────┘                       └──────────────┘
```

For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

4.3.5   EUT OPERATING CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.
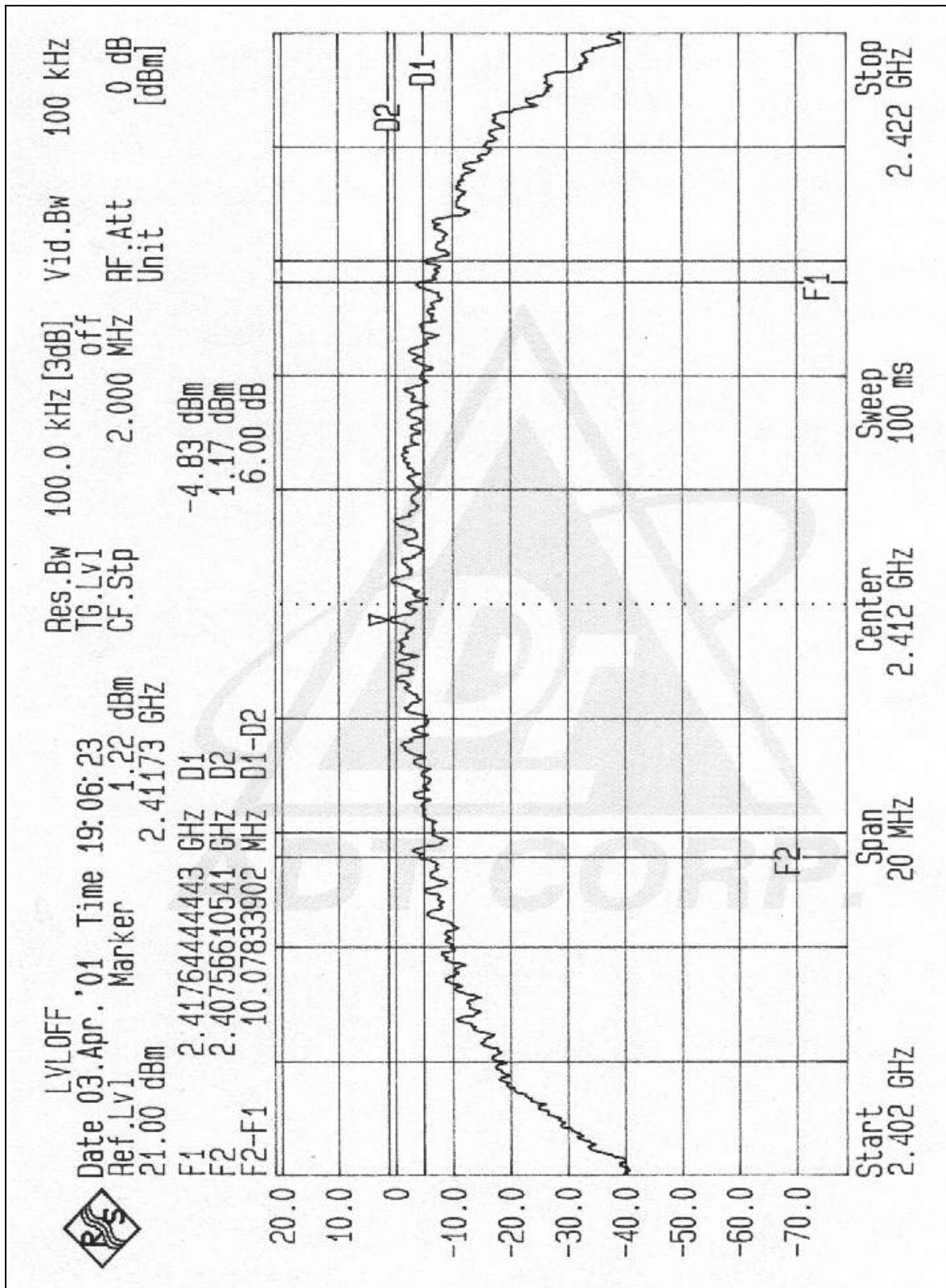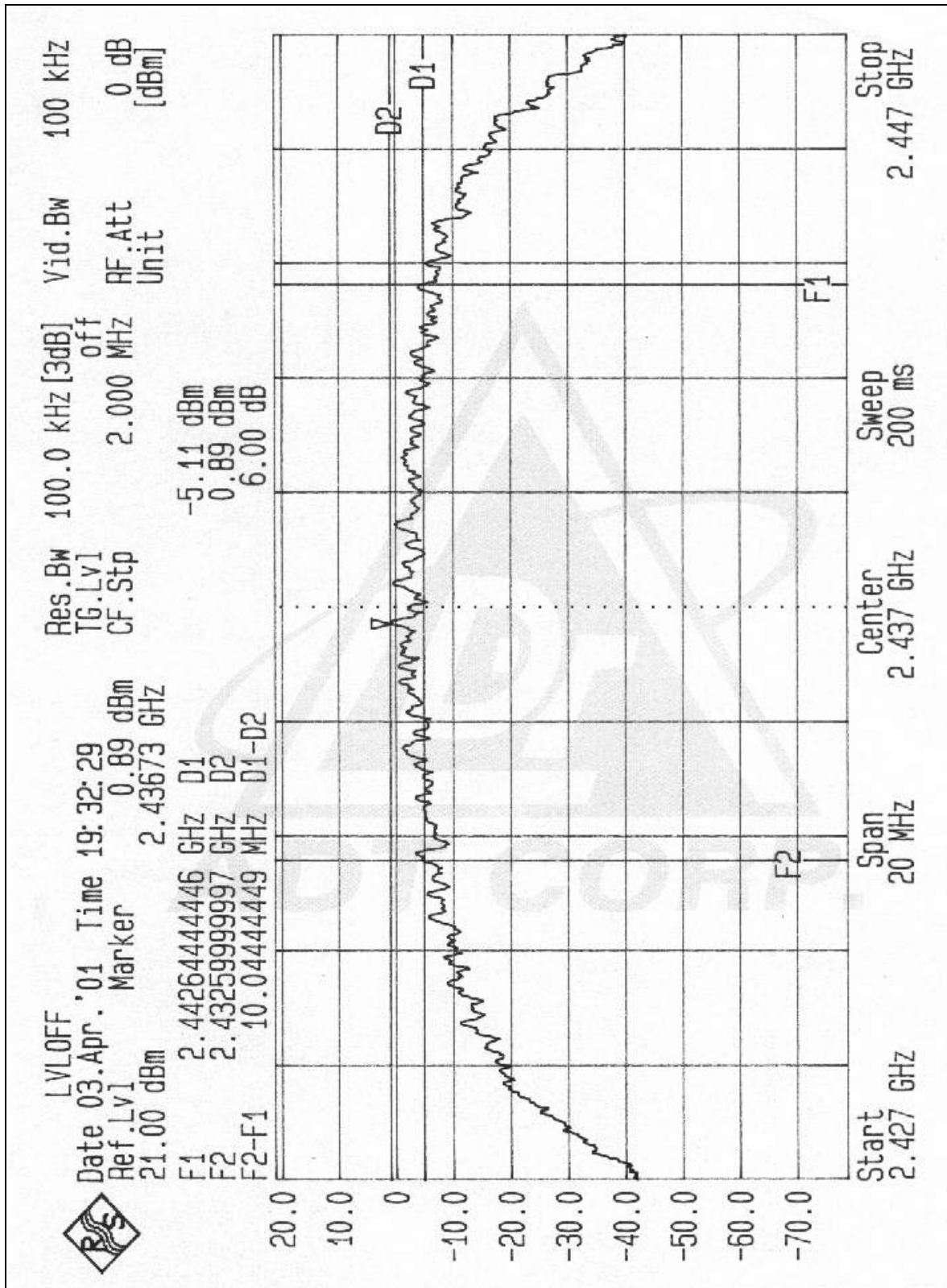
4.3.6   TEST RESULTS

EUT	Wireless USB Adapter	Model	GL2411EU GL2411IU
Environmental Conditions	22℃, 60%RH	Tested By	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	10.08	0.5	PASS
6	2437	10.04	0.5	PASS
11	2462	10.02	0.5	PASS

CH1

CH6

CH11

Res.Bw 100.0 kHz [3dB]
Vid.Bw 100 kHz
TG.Lvl off
RF.Att 0 dB
CF.Stp 2.000 MHz
Unit [dBm]

D1 -4.68 dBm
D2 1.32 dBm
D1-D2 6.00 dB

LVLOFF
Date 03.Apr.'01 Time 19:52:51
Ref.Lvl 1.32 dBm
21.00 dBm Marker 2.46173 GHz

F1 2.46762222224 GHz
F2 2.45759999999 GHz
F2-F1 10.02222225 MHz

Start 2.452 GHz
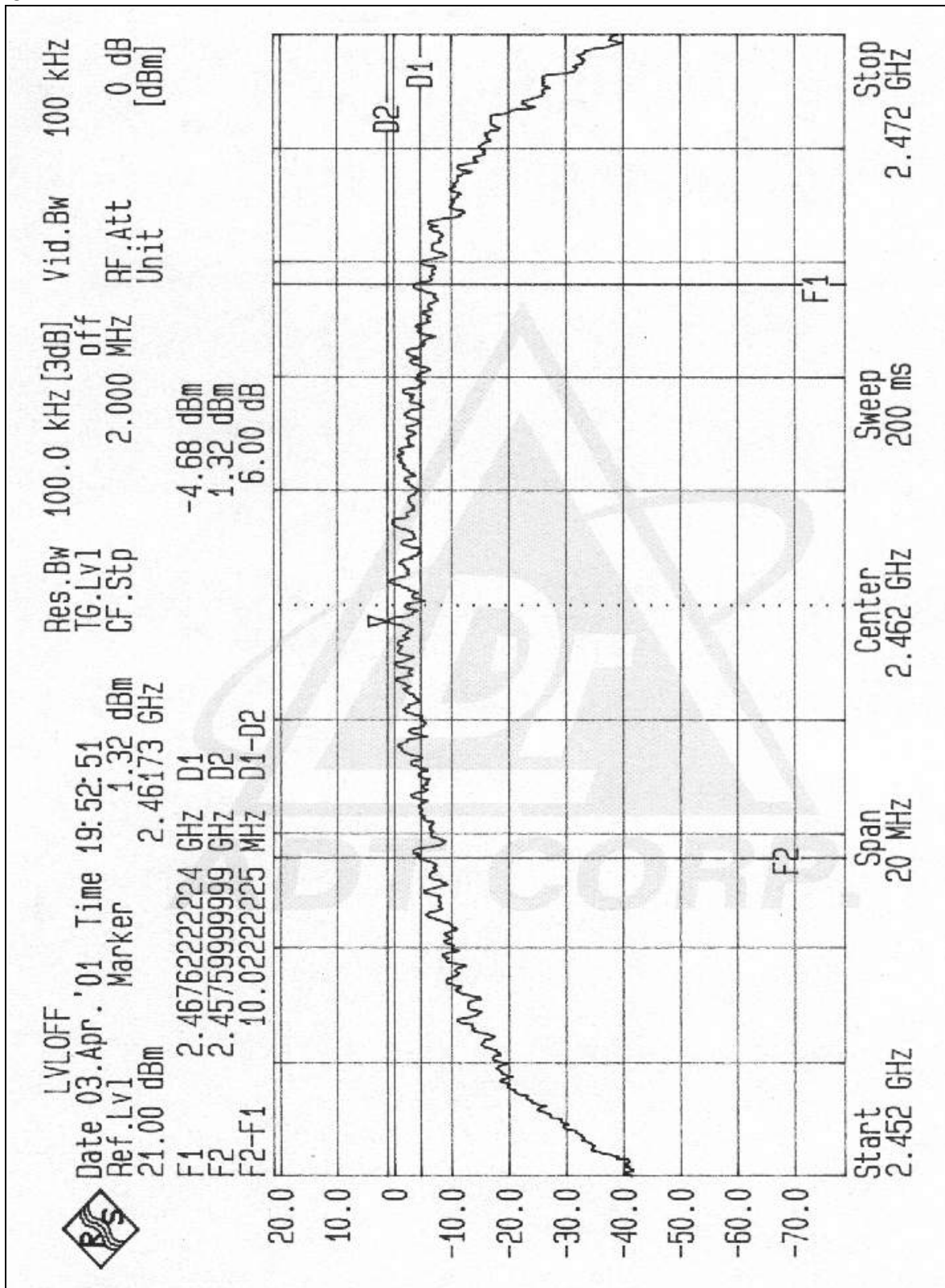Center 2.462 GHz
Span 20 MHz
Sweep 200 ms
Stop 2.472 GHz

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1   LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Limit of Maximum Peak Output Power Measurement is 30dBm.

4.4.2   INSTRUMENTS

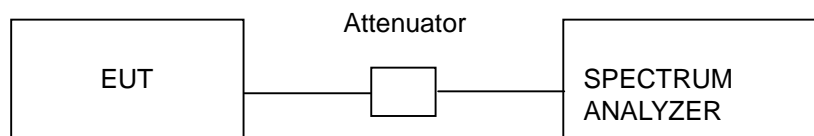| Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839379/002	Aug. 04, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

Notes:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

4.4.3   TEST PROCEDURES

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3 MHz RBW and 3 MHz VBW.
3. The span of the spectrum analyzer should be larger than 6dB BandWidth plus 10MHz.
4. Use Peak Search to read the peak power after Maximum Hold function is activated.
5. Shift the marker to +/- 3MHz and +/-6MHz, and record the reading.
6. The Maximum Peak Output Power is the linear summation of the 5 readings in (4) and (5).

Note: This measurement is the total power of 15MHz bandwidth which is far more wider than 6dB bandwidth.

4.4.4   TEST SETUP

Attenuator

| EUT | | SPECTRUM ANALYZER |

For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

4.4.5   EUT OPERATING CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

4.4.6　　TEST RESULTS

Output Power Into Antenna:

EUT	Wireless USB Adapter	Model	GL2411EU GL2411IU
Environmental Conditions	22℃, 60%RH	Tested By	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	17.23	30	PASS
6	2437	17.39	30	PASS
11	2462	17.82	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1   LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Limit of Power Spectral Density Measurement is 8dBm.

4.5.2   TEST INSTRUMENTS

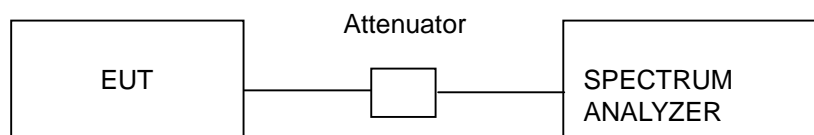| Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839379/002	Aug. 04, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

Notes:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

4.5.3   TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time=span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

4.5.4   TEST SETUP

```
┌─────────────┐        Attenuator      ┌─────────────┐
│             │                        │             │
│     EUT     │──────────┌───┐─────────│  SPECTRUM   │
│             │          └───┘         │  ANALYZER   │
│             │                        │             │
└─────────────┘                        └─────────────┘
```

For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

4.5.5   EUT OPERATING CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.
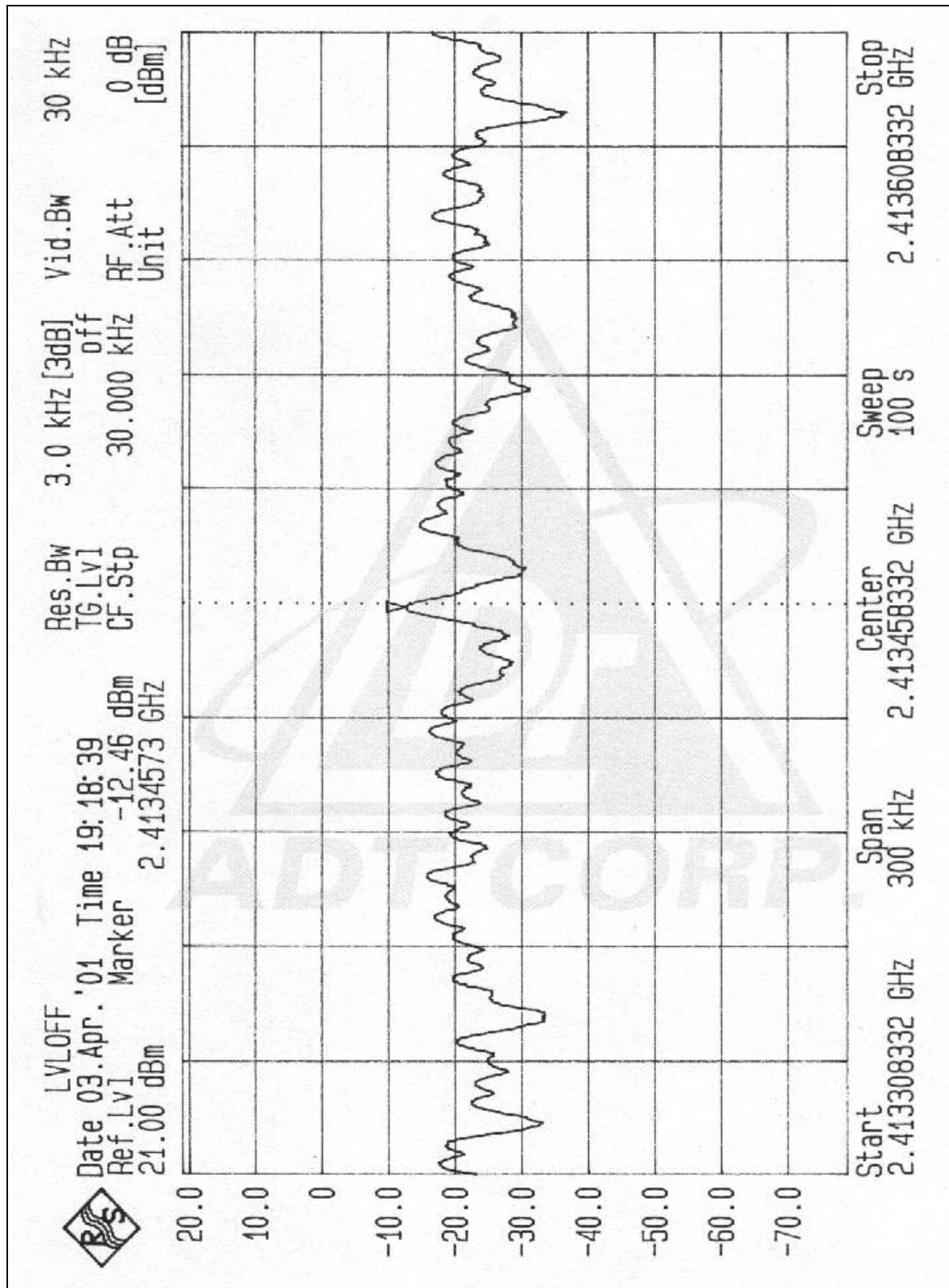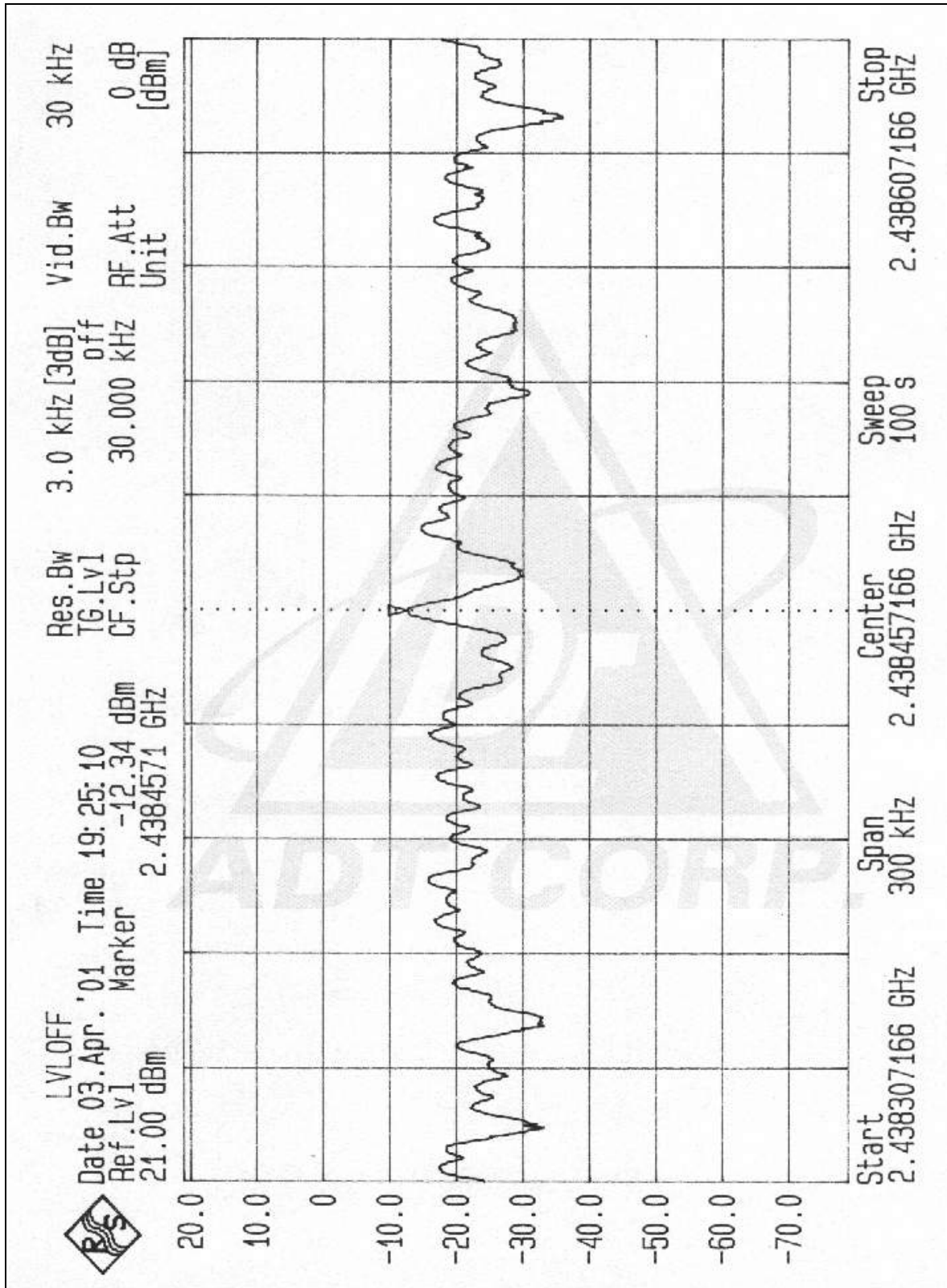
4.5.6   TEST RESULTS

EUT	Wireless USB Adapter	Model	GL2411EU GL2411IU
Environmental Conditions	20℃, 60%RH	**Tested By**	Steven Lu

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-12.46	8	PASS
6	2437	-12.34	8	PASS
11	2462	-11.96	8	PASS

CH1

CH6

CH11