



6.4 Maximum Peak Output Power

6.4.1 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ TEST RECEIVER	ESMI	846839/018 848926/005	Dec. 03, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

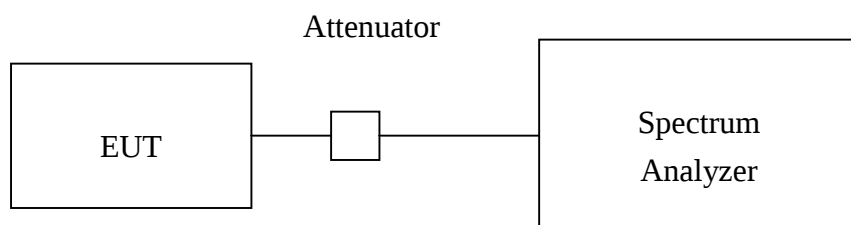
The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMAS document NIS81.

6.4.2 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.

6.4.3 Test Setup



6.4.4 EUT Operating Condition

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

6.4.5 Climate Condition

The temperature and related humidity is 24Degree C and 80% respectively.

6.4.6 Test Result

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	17.06	30	PASS
6	2437	17.08	30	PASS
11	2462	17.49	30	PASS

6.6 Power Spectral Density Measurement

6.6.1 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ TEST RECEIVER	ESMI	846839/018 848926/005	Dec. 03, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

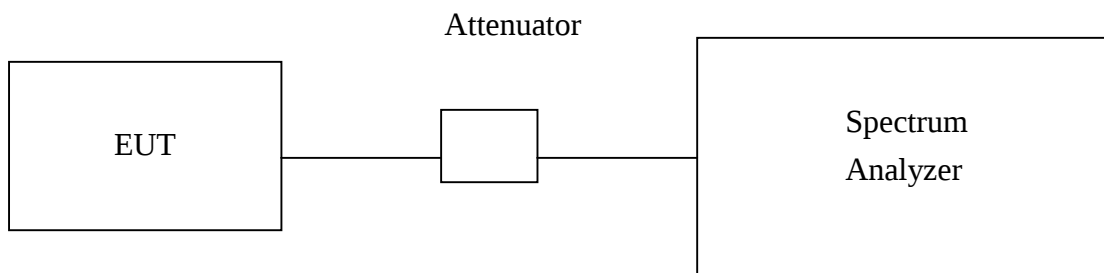
The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMAS document NIS81.

6.6.2 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.

6.6.3 Test Setup



6.6.4 EUT Operating Condition

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



6.6.5 Climate Condition

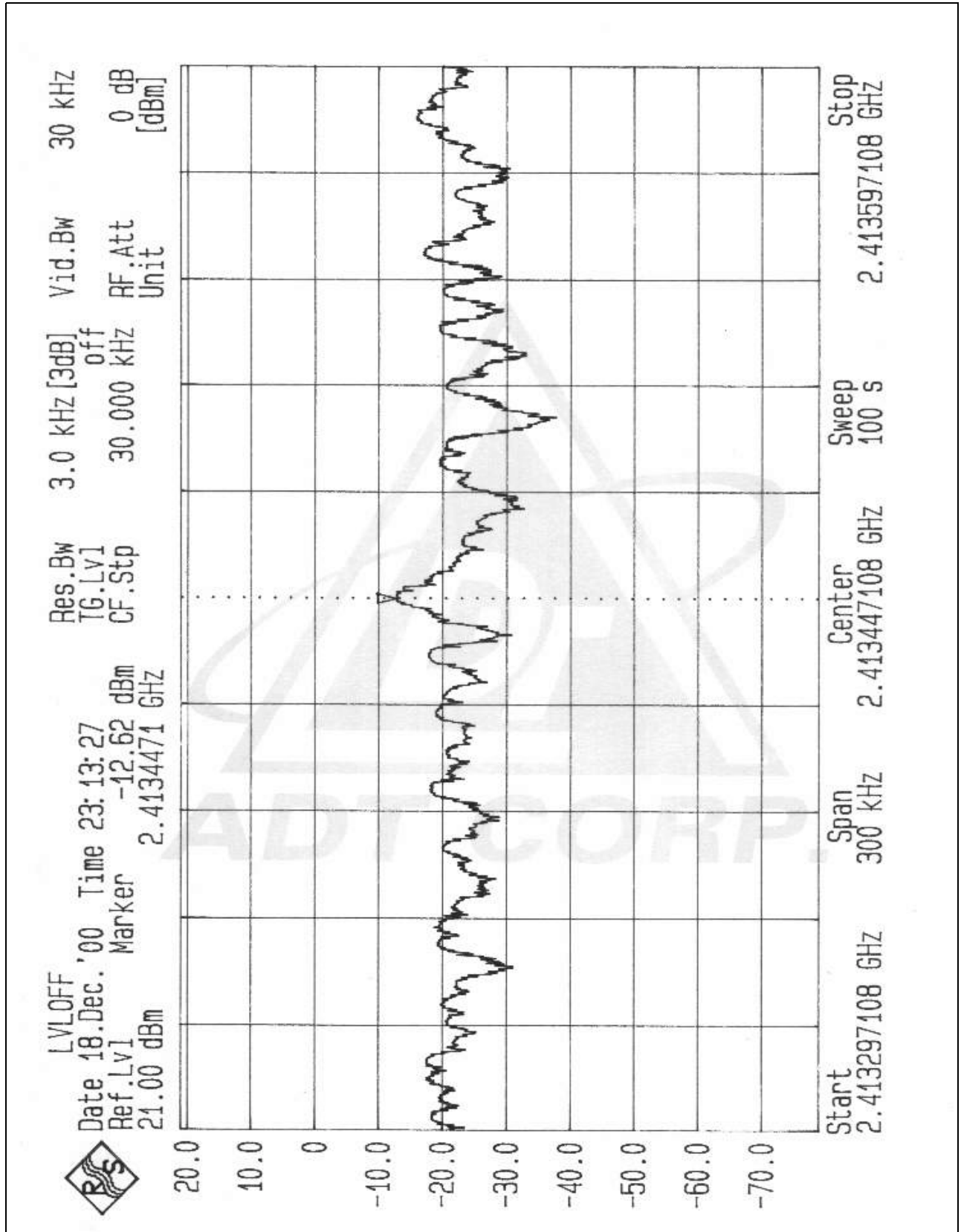
The temperature and related humidity is 24Degree C and 80%.

6.6.6 Test Result

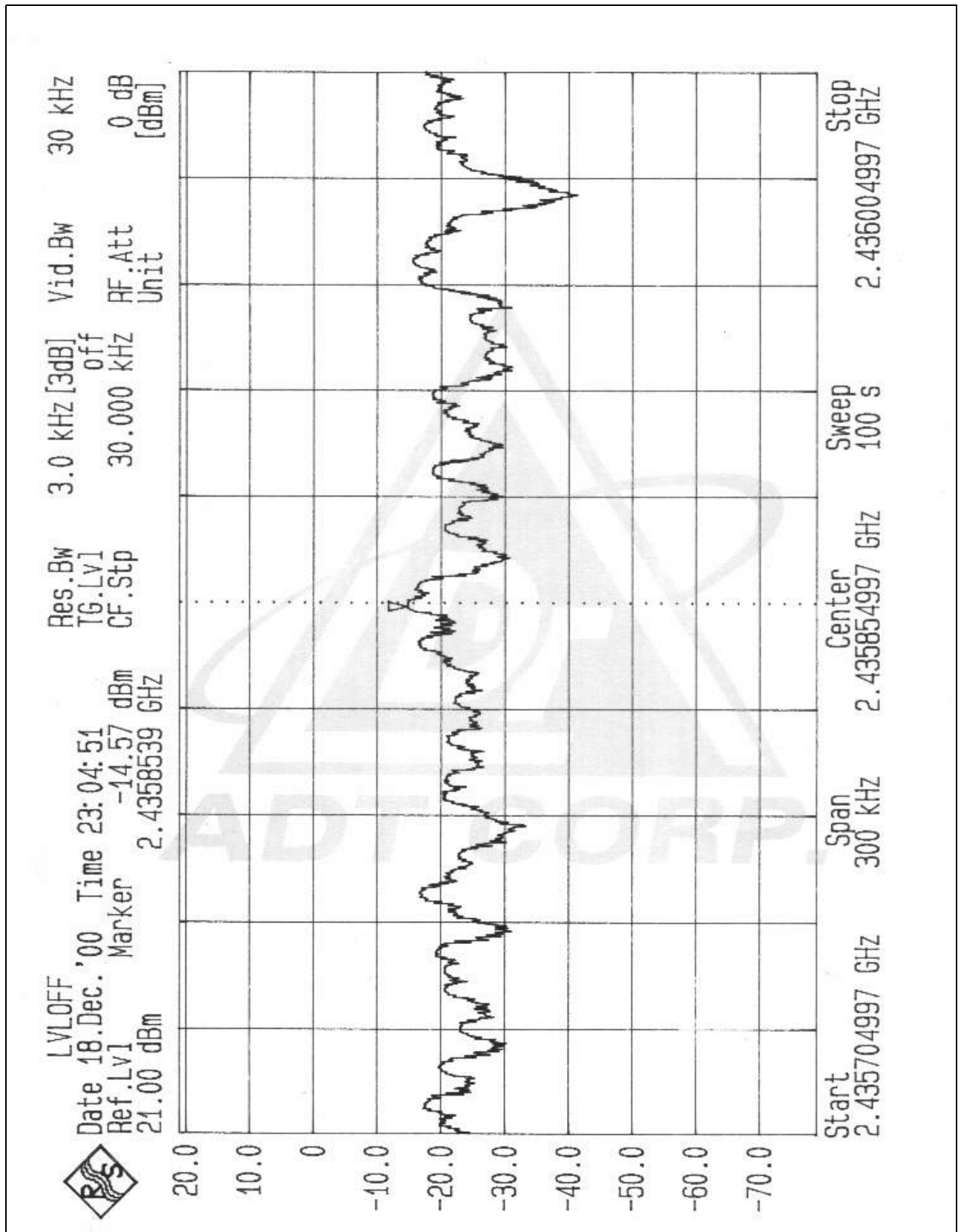
CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-12.62	8	PASS
6	2437	-14.57	8	PASS
11	2462	-12.21	8	PASS

The spectrum plots of test result are attached as below.

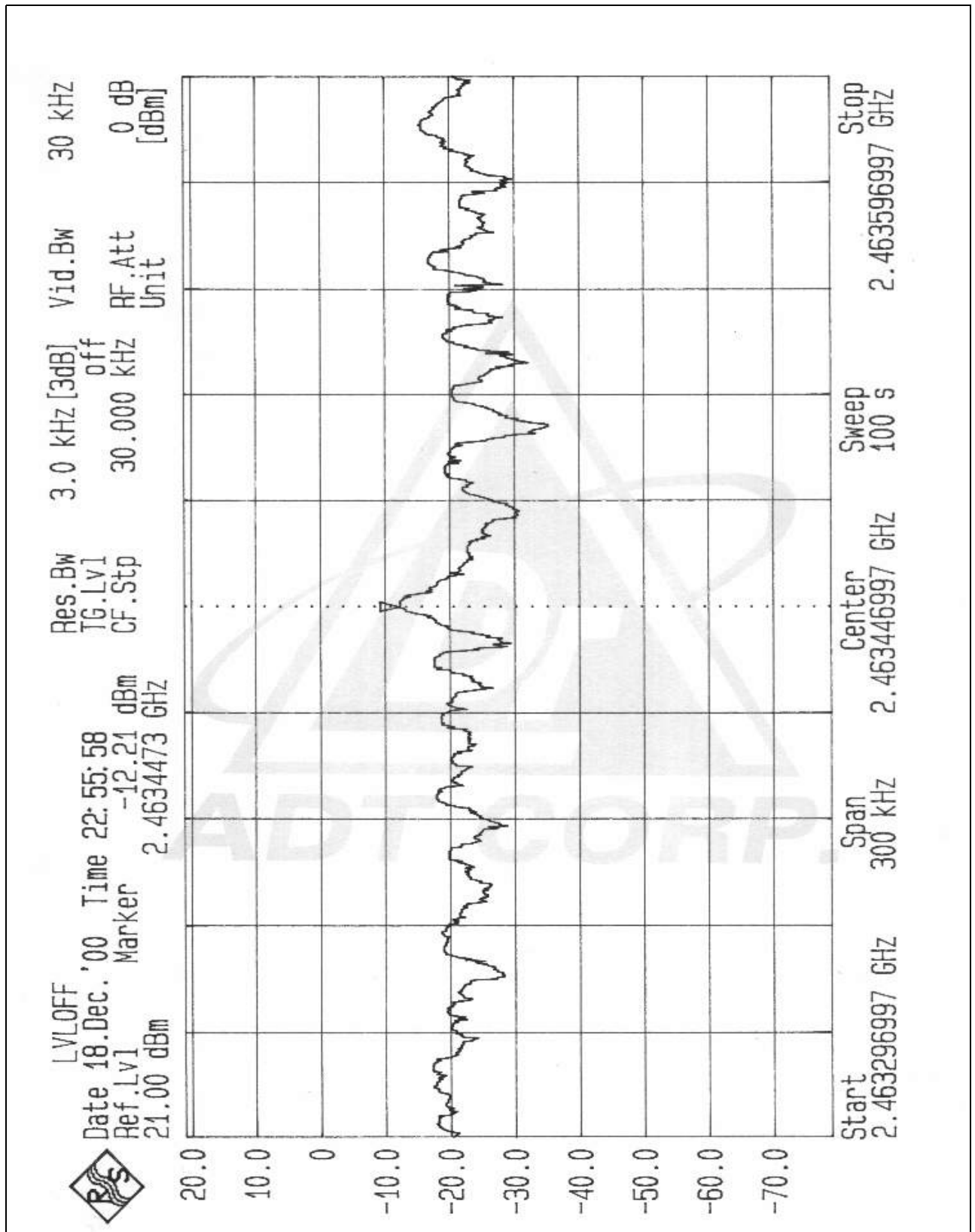
CH1



CH6



CH11





6.7 Band Edges Measurement

6.7.1 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ TEST RECEIVER	ESMI	848926/005 846839/018	Dec 03, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMAS document NIS81.

6.7.2 Test Procedure

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

6.7.3 EUT Operating condition

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



6.7.4 Climate Condition

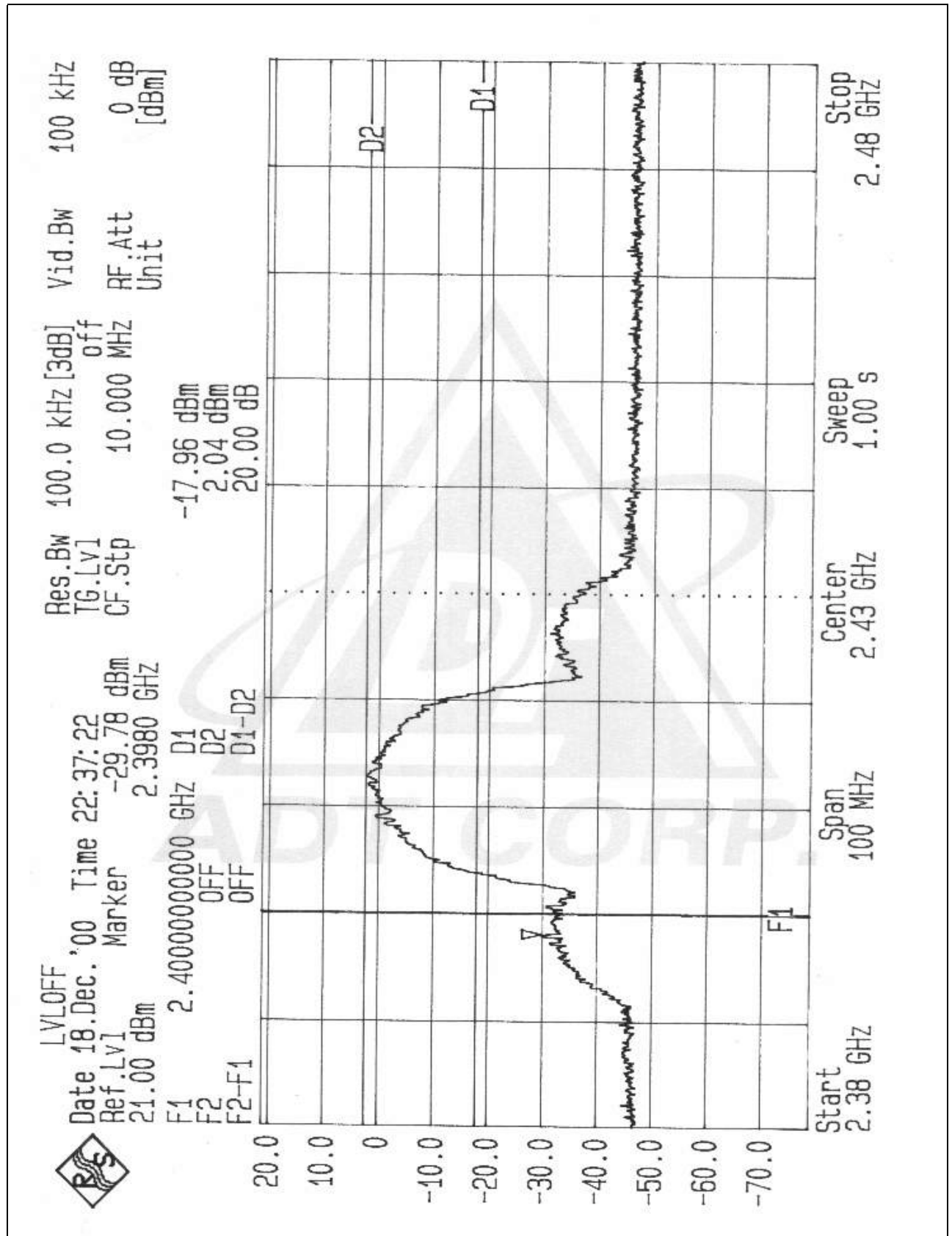
The temperature and related humidity: 26Degree C and 75%RH

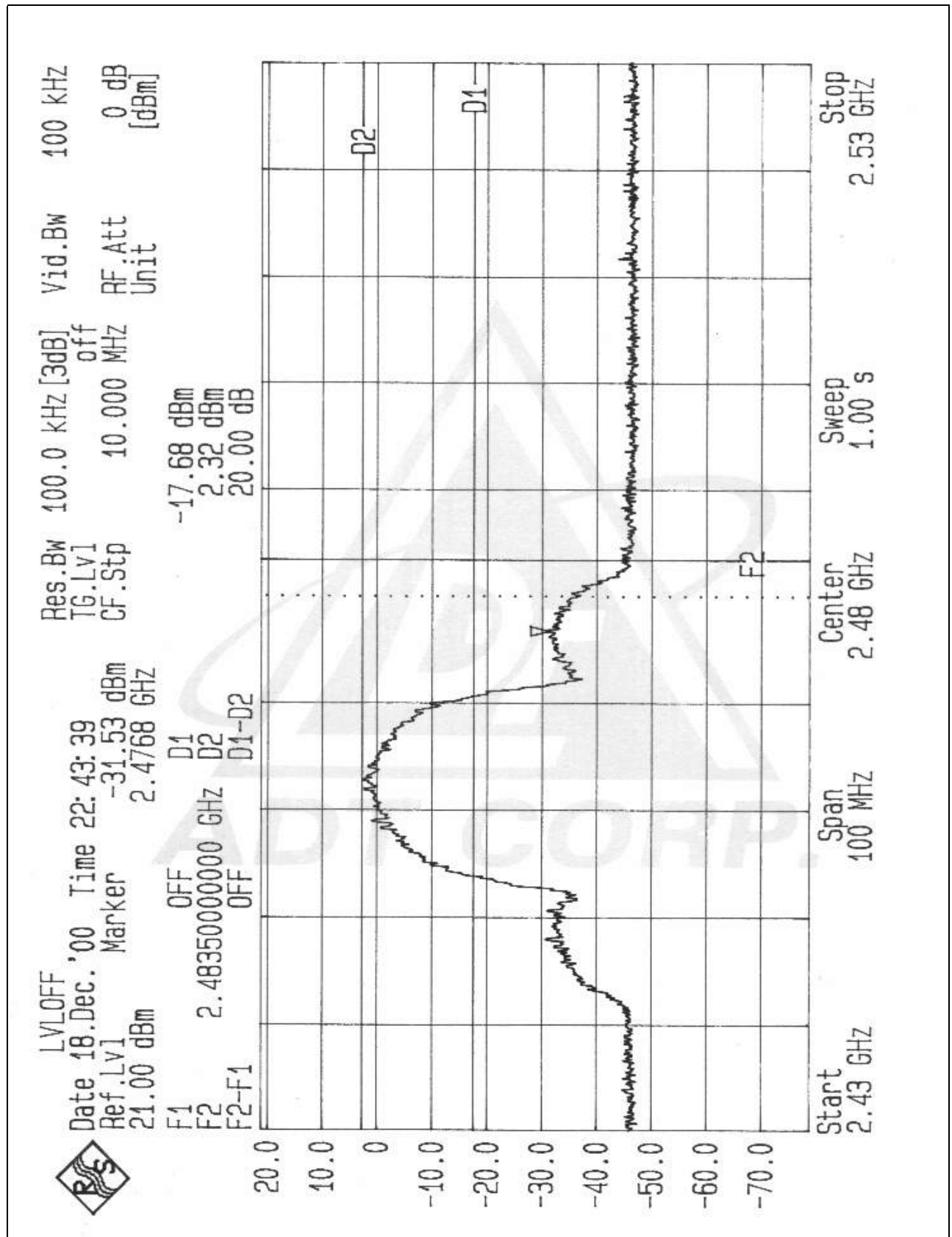
6.7.5 Limit

Below -20dB of the highest emission level of operating band (in 100KHz RB).

6.7.6 Test Results

The spectrum plots are attached below. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).







6.8 Radiated Emission in Restricted Band 2483.5MHz ~ 2500MHz

6.8.1 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
HP Spectrum Analyzer	8590L	3544A01176	Apr 18, 2001
HP Preamplifier	8447D	2944A08485	Oct. 23, 2000
HP Preamplifier	8347A	3307A01088	Sep. 04, 2001
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Aug. 3, 2001
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	N/A
CHASE BILOG Antenna	CBL6112A	2221	Aug. 4, 2001
SCHWARZBECK Horn Antenna	BBHA9120-D	D130	Jul. 9, 2001
SCHWARZBECK Horn Antenna	BBHA9170	123	Jan. 30, 2001
EMCO Turn Table	1060	1115	N/A
SHOSHIN Tower	AP-4701	A6Y005	N/A
Open Field Test Site	Site 5	ADT-R05	Aug. 08, 2001

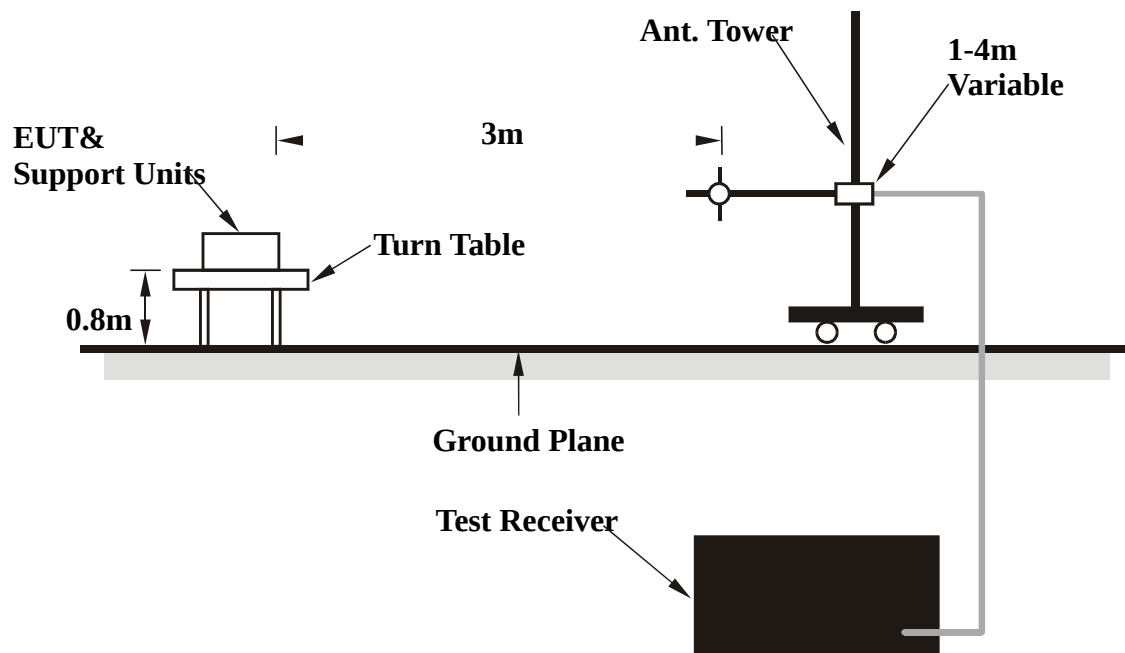
The measurement uncertainty is less than +/- 3dB, which is calculated as per NAMAS document NIS81.



6.8.2 Test Procedures

- a. The EUT was placed on the turn table 0.8 meter above ground in 3 meter open area test site.
- b. Set the resolution and video bandwidth of the spectrum analyzer to 1MHz and select Peak and Average function
- c. Shift the interference-receiving antenna located in antenna tower upwards and downwards between 1 and 4 meters above ground and find out the local peak emission on frequency domain.
- d. Locate the interference-receiving antenna at the position where the local peak reach the maximum emission.
- e. Rotate the turn table and stop at the angle where the measurement device has maximum reading
- f. Shift the interference-receiving antenna again to detect the maximum emission of the local peak

6.8.3 Test Setup





6.8.4 EUT Operating Condition

1. Place the EUT on the turn table.
2. Connect antenna with antenna port if needed.
3. Power on.
4. Prepare the same setup as above, but place it outside testing area.
5. Send data to EUT (on the turn table) by command "PIN".
6. The linkage of these two PC have been established when the address of the other PC is shown on the monitor.
7. Rotate the turn table and scan the antenna mast to detect the maximum emission.

6.8.5 Climate Condition

The temperature and related humidity is 20Degree C and 70%.

6.8.6 Test Result

Channel 1 ANTENNA POLARITY: Vertical		Detector Function : Peak Average				RB: 1 MHz				Distance : 3 M Frequency Range : 2483.5MHz ~ 2500MHz	
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Antenna Height (cm)	Table Angle (Degree)
		P.K.	A.V.	P.K.	A.V.	P.K.	A.V.	P.K.	A.V.		
2483.5	36.4	20.04	-	56.4	-	74.0	54.0	-17.6	-	99	78
2483.5	36.4	-	9.0	-	45.4	74.0	54.0	-8.6	-	99	78

Channel 1 ANTENNA POLARITY: Horizontal		Detector Function : Peak Average				RB: 1 MHz				Distance : 3 M Frequency Range : 2483.5MHz ~ 2500MHz	
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Antenna Height (cm)	Table Angle (Degree)
		P.K.	A.V.	P.K.	A.V.	P.K.	A.V.	P.K.	A.V.		
2483.5	36.4	19.07	-	55.5	-	74.0	54.0	-18.5	-	99	80
2483.5	36.4	-	9.0	-	45.4	74.0	54.0	-8.6	-	99	80

- Remarks:**
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
 2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. The limit value is defined as per 15.247
 6. " * " : Fundamental Frequency