849 NW State Road 45
Newberry, FL 32669 USA
Ph.: 888.472.2424 or
352.472.5500
Email: info@timcoengr.com
Website: www.timcoengr.com

FCC PART 15.247

2.4 GHz DTS Test Report

Applicant	BELTRONICS USA INC.
Address	5442 WEST CHESTER ROAD
	WEST CHESTER OH 45069
FCC ID	QL4G1S5
Model Number	BEL GT-1
Product Description	RADAR DETECTOR WITH BLUETOOTH MODULE
Date Sample Received	04/17/2018
Final Test Date	05/15/2018
Tested By	Tim Royer
Approved By	Franklin Rose

Report Number	Version Number	Description	Issue Date
529AUT18TestReport	Rev1	Initial Issue	05/15/2018

TIMCO ENGINEERING, Inc.

TABLE OF CONTENTS

GENERAL REMARKS

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

Summary

The device under test does:

☒ Fulfill the general approval requirements as identified in this test report and was selected by the customer.

☐ Not fulfill the general approval requirements as identified in this test report

Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

I attest that the necessary measurements were made at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, FL 32669

Tested by: Sr. EMC Engineer EMC-003838-NE

Name and Title: Tim Royer, Project Manager/Testing Engineer

Date: 5/21/2018

Reviewed and approved by:

Name and Title: Franklin Rose, Project Manager/Testing Engineer

Date: 05/22/2018

GENERAL INFORMATION

EUT Specification

Regulatory Standards	FCC Title 47 CFR Part 15.247 IC RSS-247 Issue 1 IC RSS-GEN Issue 4		
FCC ID	QL4G1S5		
Model	BEL GT-1		
EUT Description	RADAR DETECTOR WITH BLUETOOTH MODULE		
Modulation Type	Bluetooth LE (GFSK 1 Mbps)		
Operating Frequency	TX: 2402 – 2480 MHz	RX: 2402 – 2480 MHz	
EUT Power Source	☐ 110–120Vac/50– 60Hz (While in charging Cradle)		
	☐ DC Power		
	☒ Battery Operated		
Test Item	☐ Prototype	☒ Pre-Production	☐ Production
Type of Equipment	☐ Fixed	☒ Mobile	☐ Portable
Antenna Connector	None (Temp Connector Provided for testing)		
Antenna	Integral PCB Chip		
Test Facility	**Timco Engineering Inc. located at 849 NW State Road 45 Newberry, FL 32669 USA. Designation #: US1070**		
Test Conditions	Temperature: 24-26ºC Relative humidity: 50-65%		
Measurement Standard	ANSI C63.10-2013 (Measurement Procedures) ANSI C63.4-2014 (Radiated Site Validation)		
Test Exercise	The EUT was tested in a continuous transmission mode		

Test Supporting Equipment

Device	Manufacturer	Model	S/N	Supplied By	Used For
N/A					

RESULTS SUMMARY

FCC Rule Part No.	Requirement	Test Item	Result
15.215 (c)	Occupied Bandwidth	99% Bandwidth	**Pass**
		20 dB Bandwidth	**Pass**
15.247(a)(e)	Digital Transmission Systems	6 dB Bandwidth	**Pass**
		Power Spectral Density	**Pass**
15.247(b)	Transmitter Output Power and Equivalent Isotropically Radiated Power	Peak Power Output (ERP)	**Pass**
		Antenna Gain (EIRP)	**Pass**
15.247(d)	Unwanted Emissions	Bandedge	**Pass**
		Radiated Spurious	**Pass**

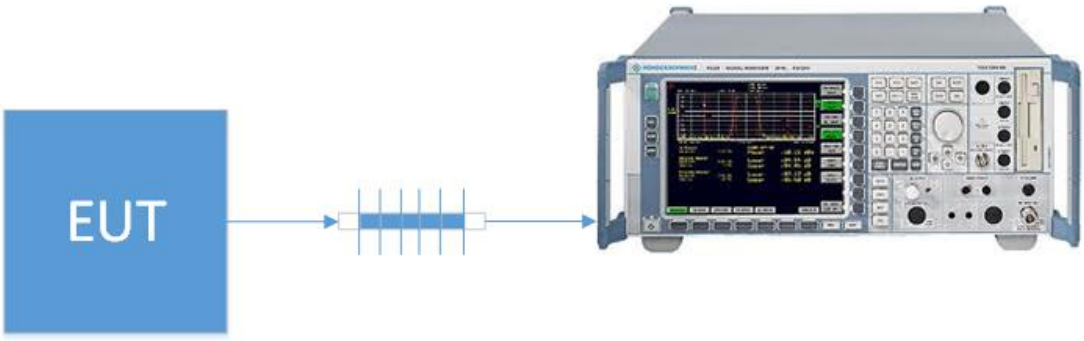
DTS BANDWIDTH

Rules Part No.: FCC 15.247 (a)(2)

Requirements: The minimum 6 dB bandwidth shall be 500 kHz.

Test Method: ANSI C63.10 § 11.8.1 DTS Bandwidth Option 1

Setup:



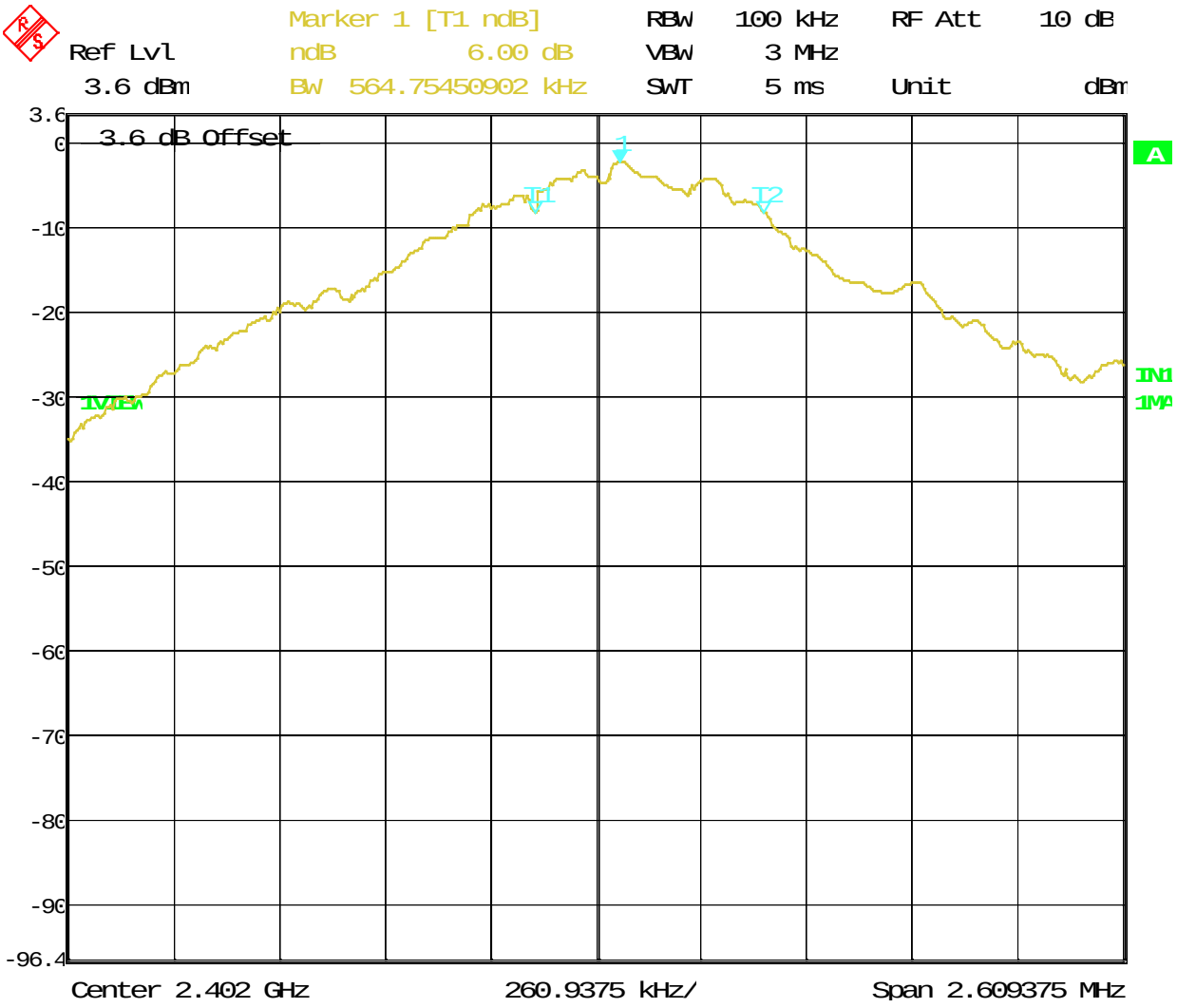
Test Data: 6 dB Occupied Bandwidth Measurement Table

Tuned Frequency (MHz)	6 dB BW (KHz)	Limit (KHz)	Margin (KHz)
2402	564.75	≥ 500	64.75
2442	716.4	≥ 500	216.4
2480	679.79	≥ 500	179.79

RESULTS: Meets Requirements

DTS BANDWIDTH

Test Data: **6dB Bandwidth Plot Low End of Band**

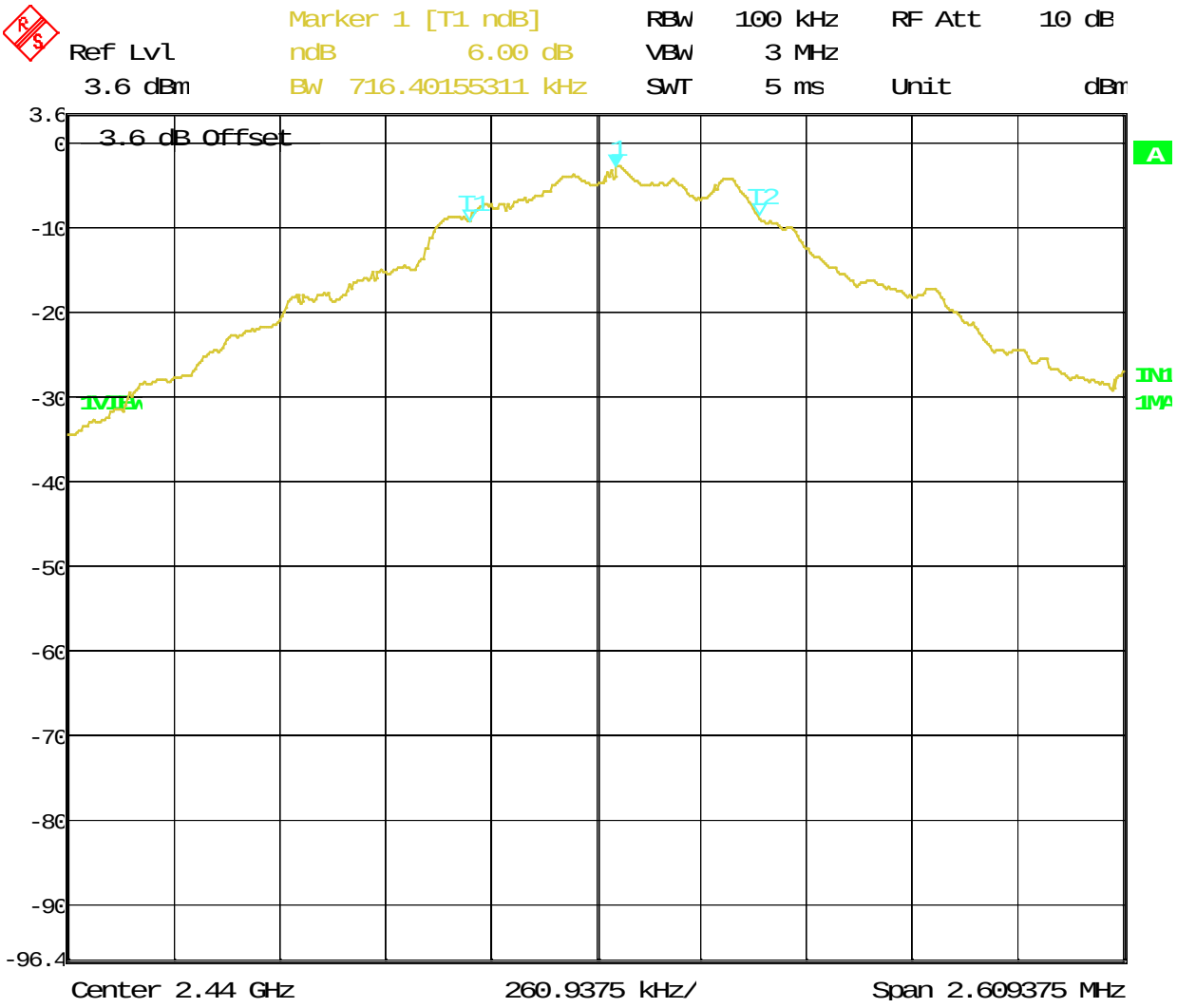


Date: 1.JAN.1997 01:52:18

RESULTS: Meets Requirements

DTS BANDWIDTH

Test Data: **6dB Bandwidth Plot Middle of Band**

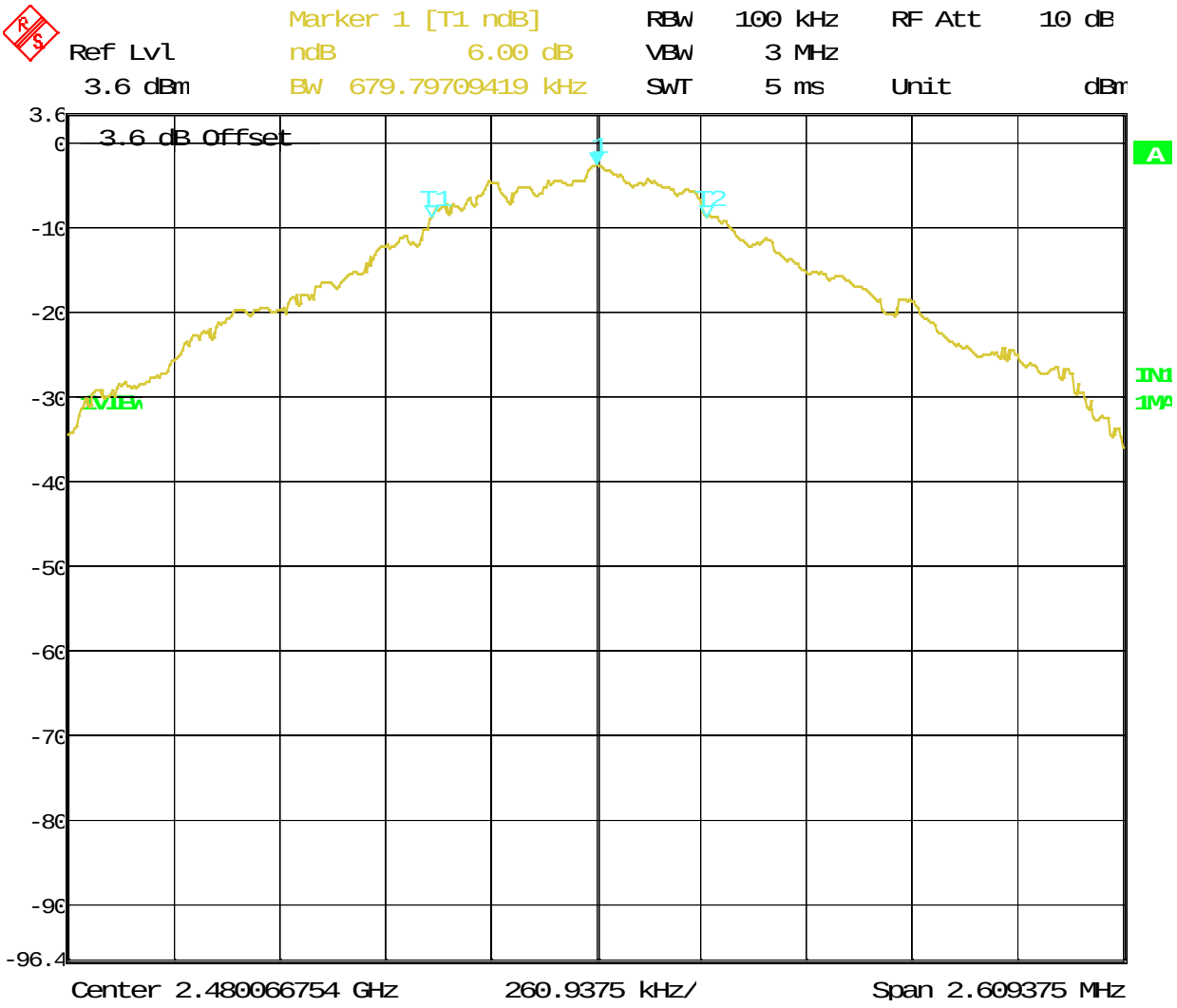


Date: 1.JAN.1997 01:51:01

RESULTS: Meets Requirements

DTS BANDWIDTH

Test Data: **6dB Bandwidth Plot High end of Band**



Date: 1.JAN.1997 01:48:47

RESULTS: Meets Requirements

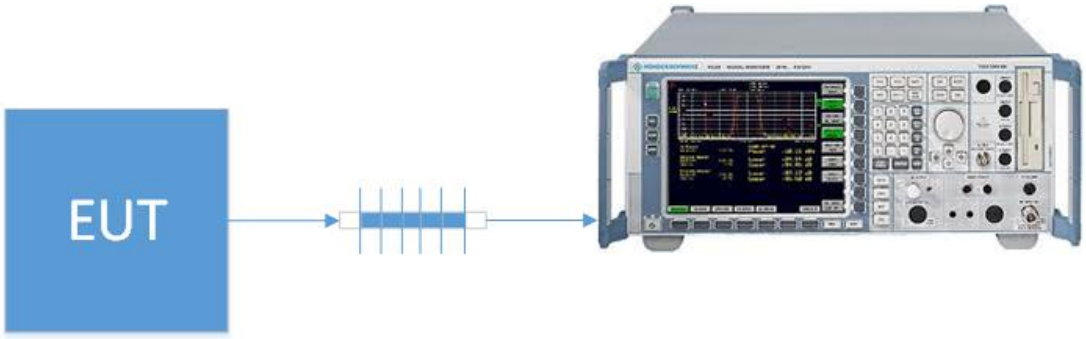
PEAK POWER OUTPUT

Rules Part No.: FCC 15.247(b) (3) (4)

Requirements: Maximum Conducted Peak Power Output shall not exceed 1 Watt
Also the Peak Power Output shall not exceed 4 Watts EIRP

Test Method: ANSI C63.10 § 11.2 Power Limits, definitions, and device configuration
ANSI C63.10 § 11.9.1.1 Fundamental Output Power RBW ≥ DTS Bandwidth
ANSI C63.10 § Annex G Relationship among Field Strength and ERP/EIRP

Setup:



PEAK POWER OUTPUT

Test Data: **Peak Conducted Power Output Measurement Table**

Peak Conducted Power Output Measurement				
Tuned Frequency (MHz)	$P_{Conducted}$ (dBm)	$P_{Conducted}$ (W)	Limit (W)	Margin (W)
2402	-2.76	0.00053	1.00	0.99947
2442	-3	0.00050	1.00	0.99950
2480	-3.02	0.00050	1.00	0.99950

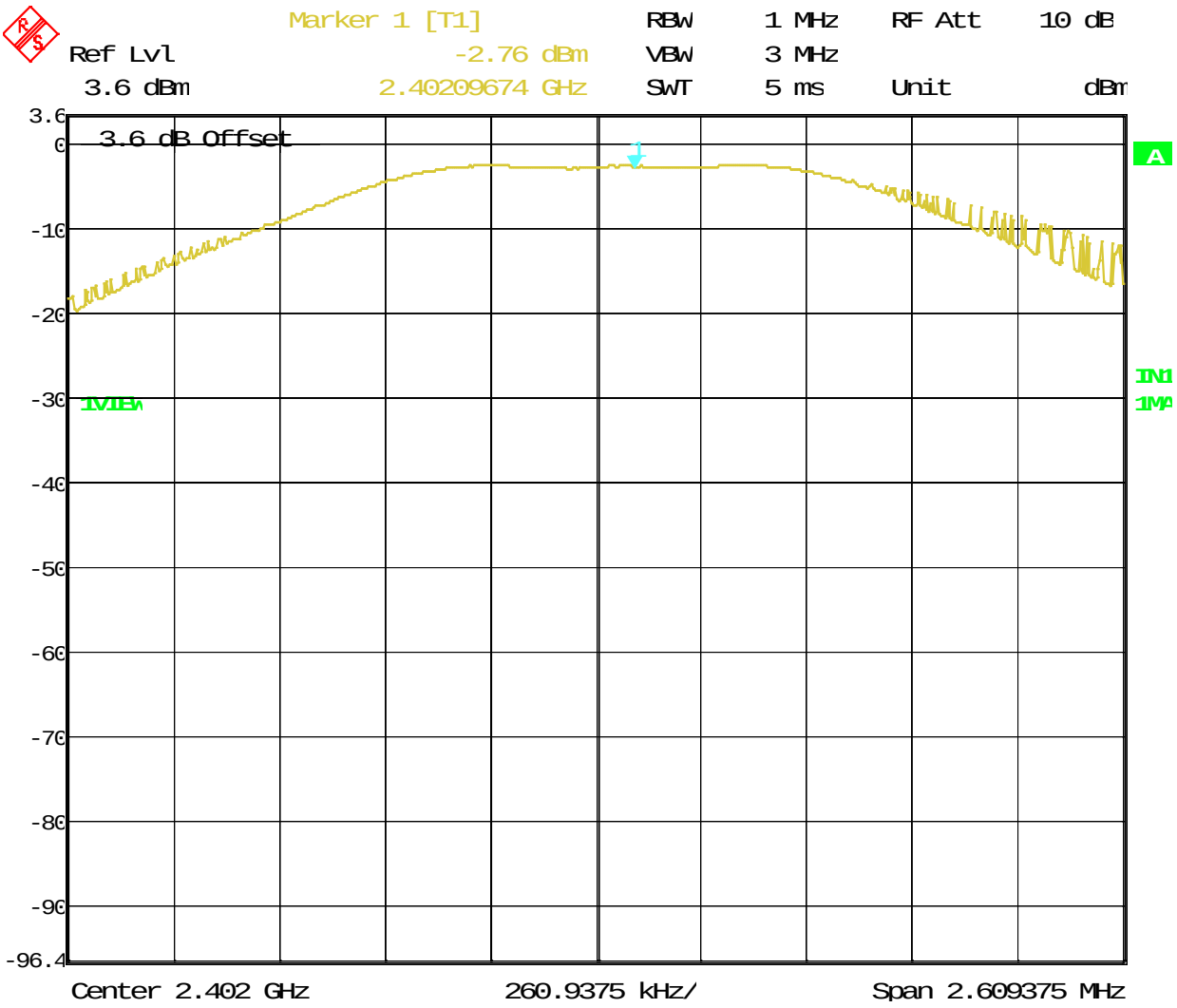
ERP to EIRP Conversion formula: EIRP = ERP + 2.15 dB	

Peak EIRP Power Output Calculation					
Tuned Frequency (MHz)	$P_{Conducted}$ (dBm)	ERP (W)	EIRP (W)	Limit (W)	Margin (W)
2402	-2.76	0.00053	0.00087	4.00	3.99913
2442	-3	0.00050	0.00082	4.00	3.99918
2480	-3.02	0.00050	0.00082	4.00	3.99918

RESULTS: Meets Requirements

PEAK POWER OUTPUT

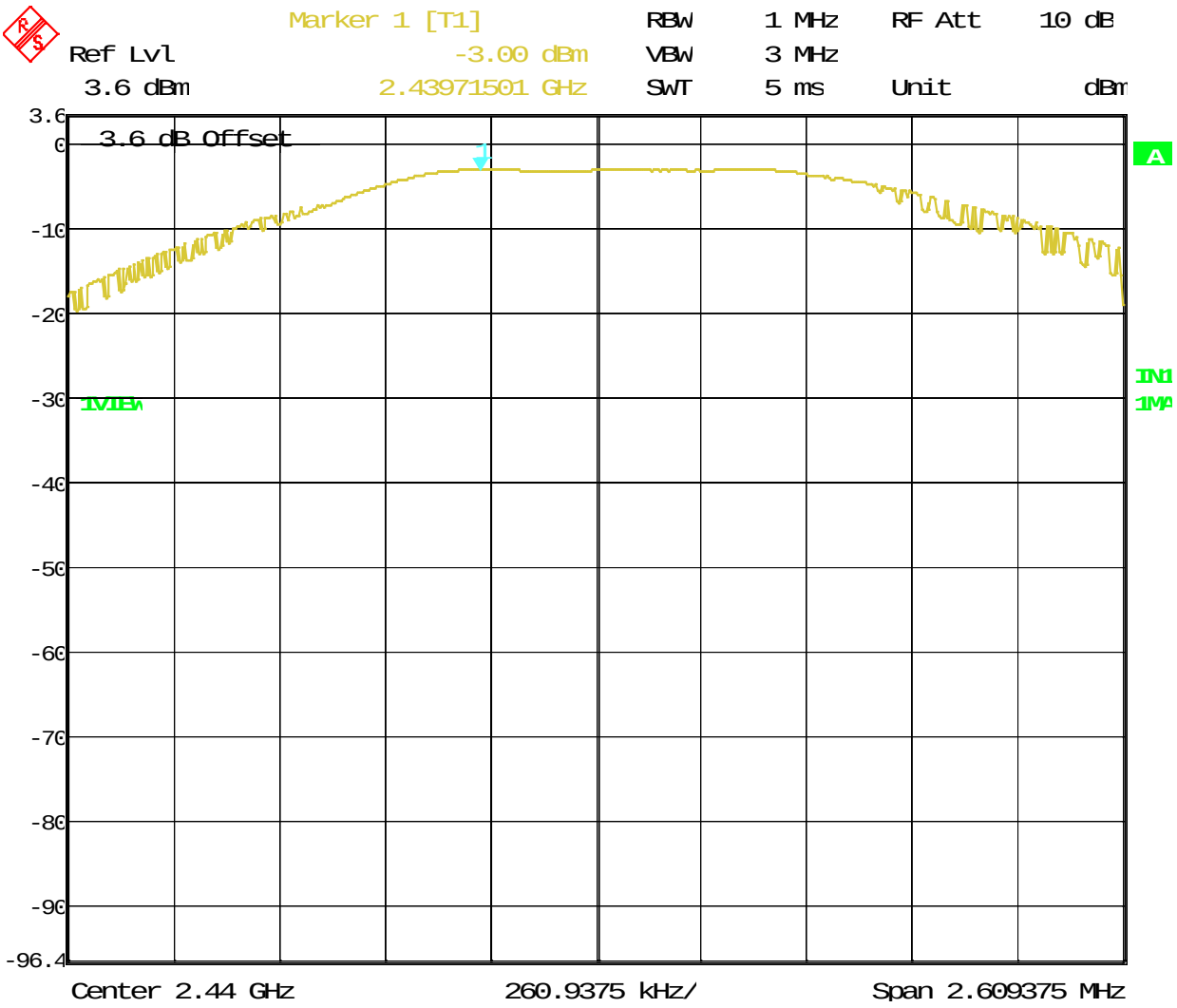
Test Data: **Peak Power Output Plot Low End of Band**



RESULTS: Meets Requirements

PEAK POWER OUTPUT

Test Data: **Peak Power Output Plot Middle of Band**

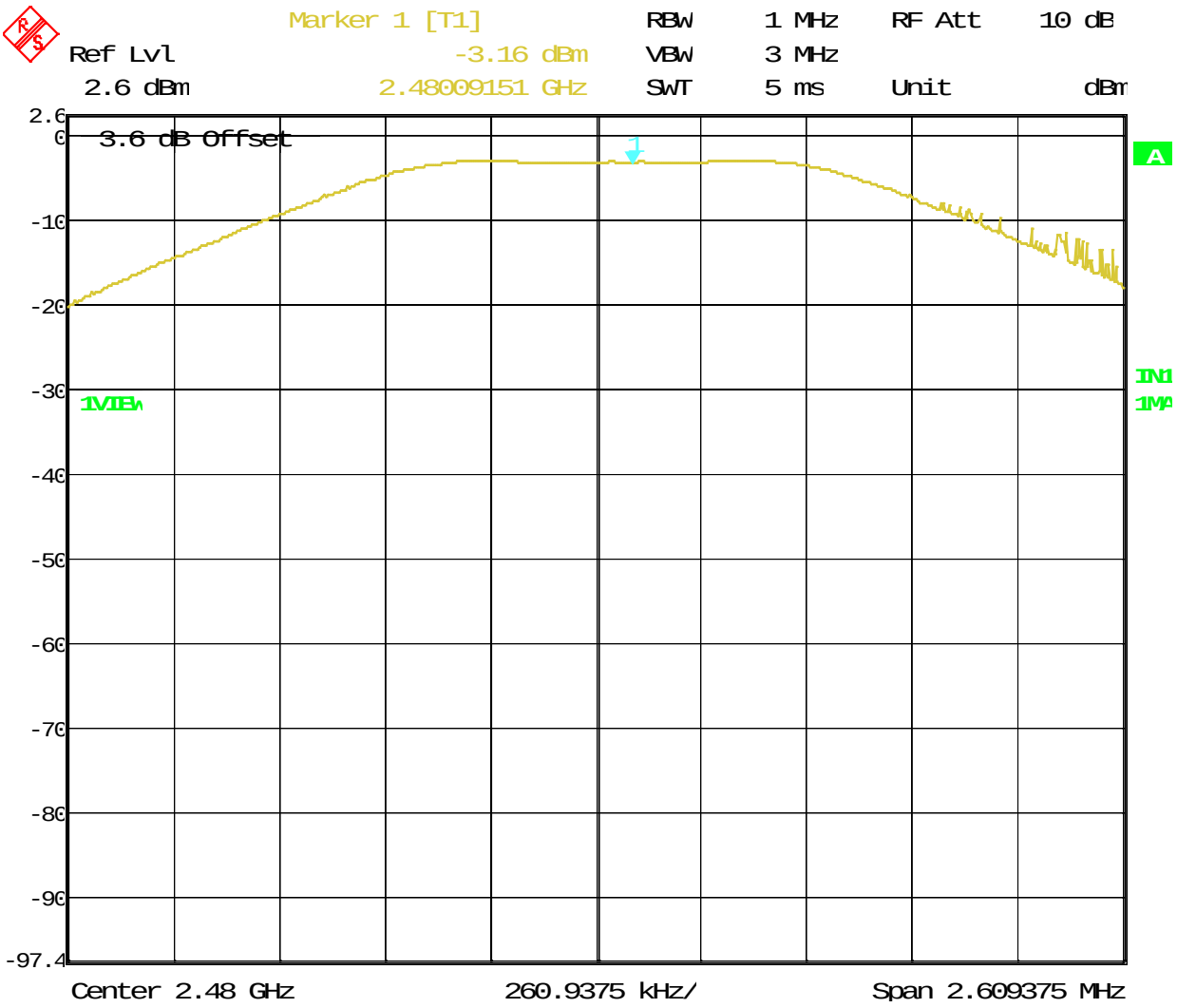


Date: 1.JAN.1997 02:20:59

RESULTS: Meets Requirements

PEAK POWER OUTPUT

Test Data: **Peak Power Output High End of Band**



Date: 1.JAN.1997 02:23:26

RESULTS: Meets Requirements

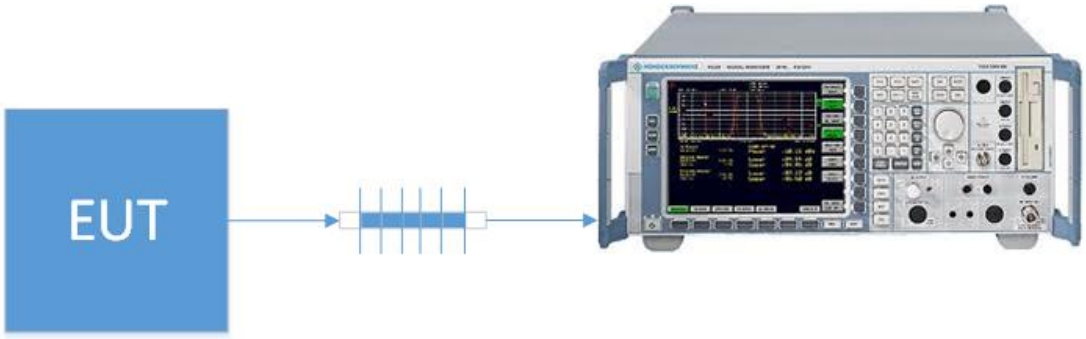
POWER SPECTRAL DENSITY

Rules Part No.: FCC 15.247(e), IC RSS 247 § 5.2.2

Requirements: The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Test Method: ANSI C63.10 § 11.2 Power Limits, definitions, and device configuration
ANSI C63.10 § 11.10.2 Maximum PSD in the fundamental- Method PKPSD

Setup:



POWER SPECTRAL DENSITY

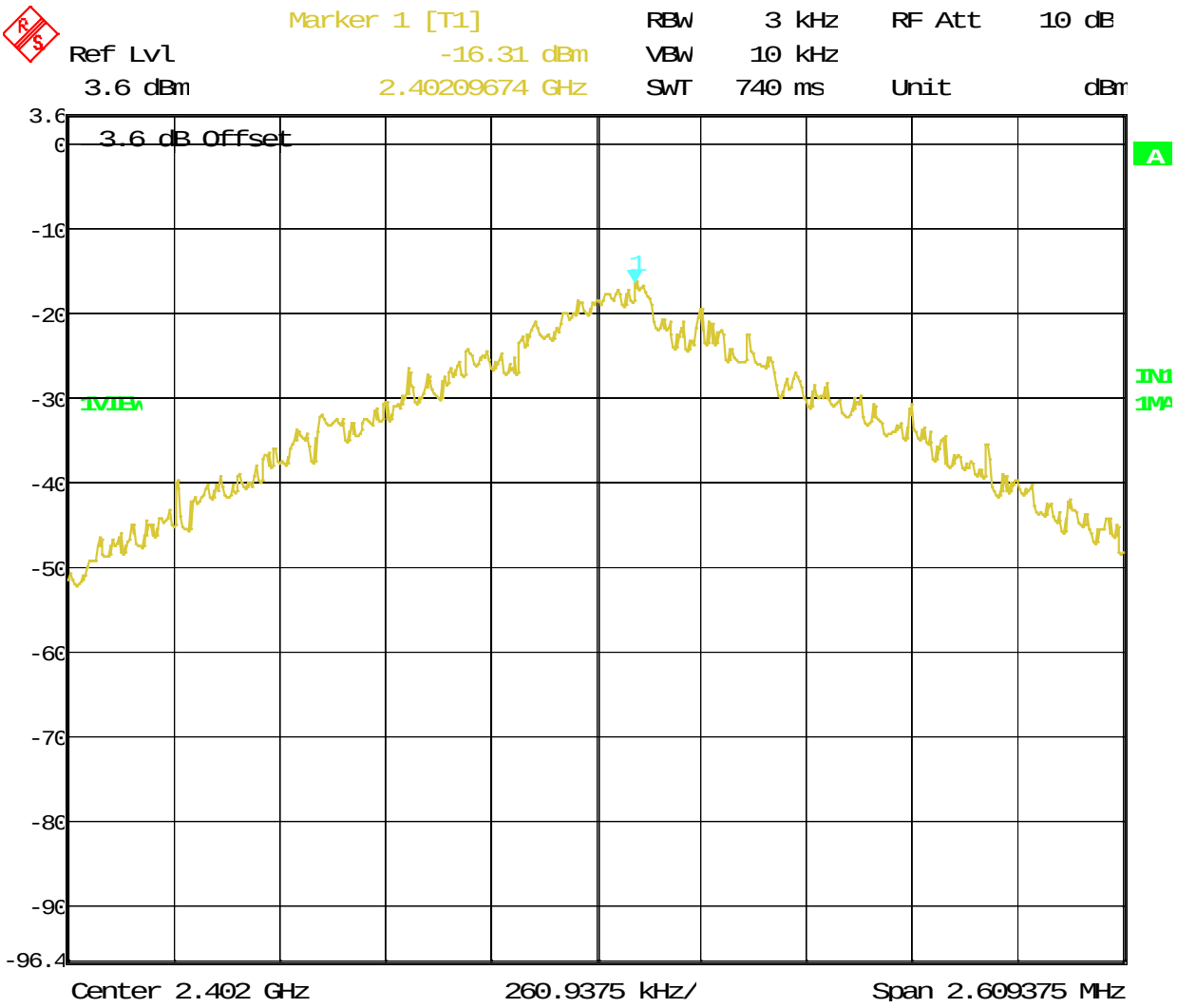
Test Data: **Power Spectral Density Measurement Table**

Peak Conducted Power Spectral Density			
Tuned Frequency (MHz)	Level (dBm/3KHz)	Limit (dBm/3KHz)	Margin (dB)
2402	-16.31	8.00	24.31
2442	-18.28	8.00	26.28
2480	-17.63	8.00	25.63

RESULTS: Meets Requirements

POWER SPECTRAL DENSITY

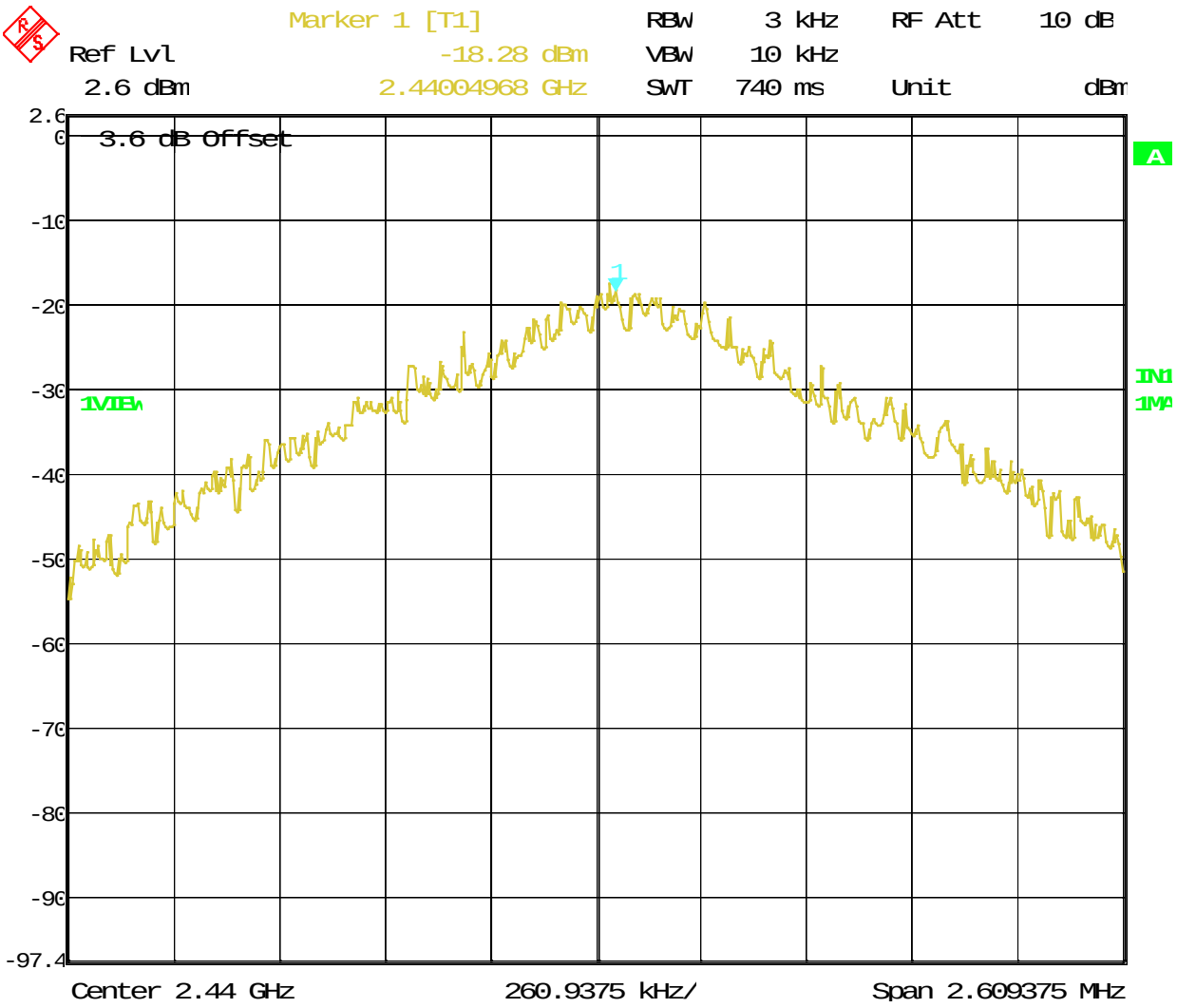
Test Data: **Power Spectral Density Plot Low End of Band**



RESULTS: Meets Requirements

POWER SPECTRAL DENSITY

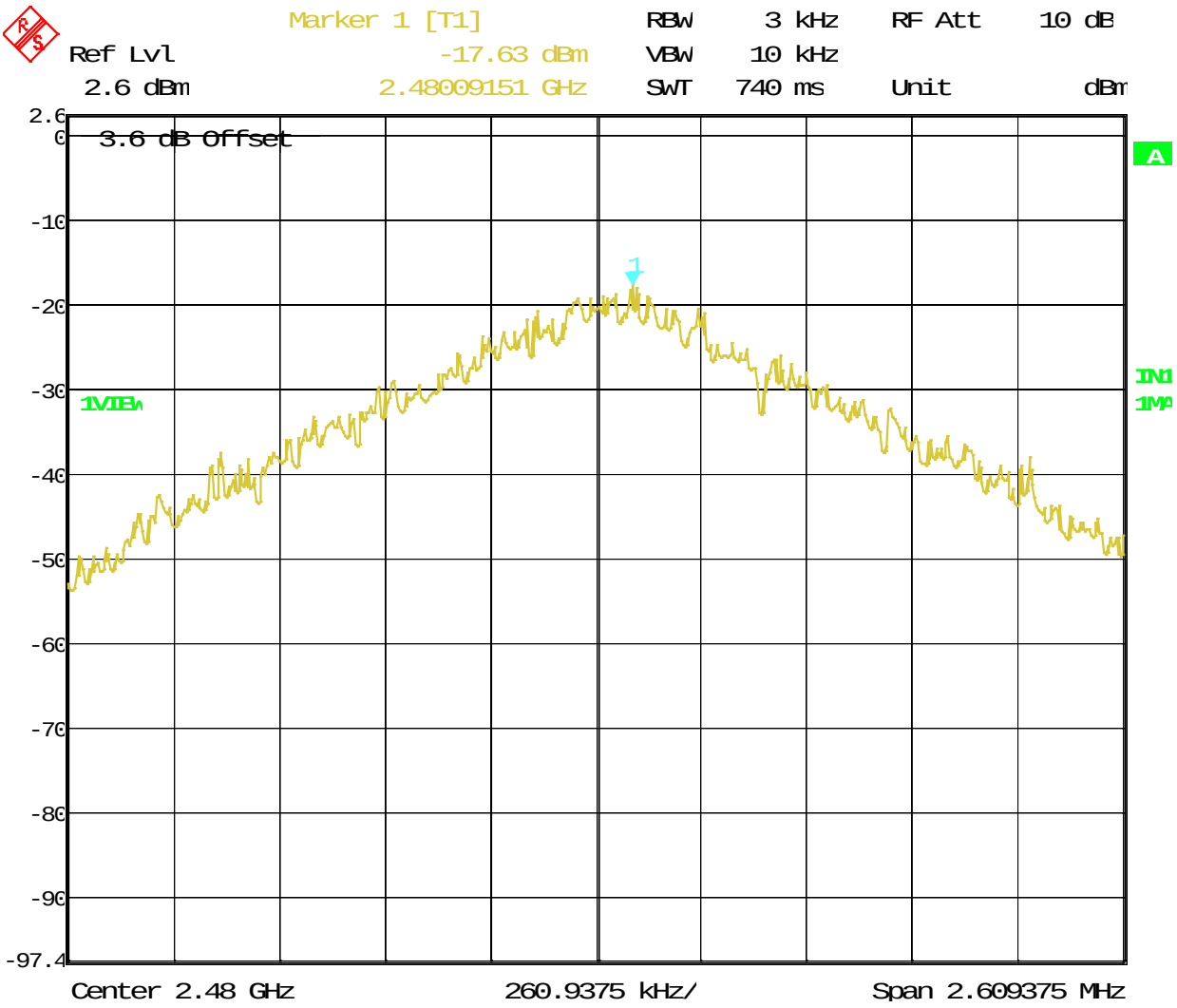
Test Data: **Power Spectral Density Plot Middle of Band**



RESULTS: Meets Requirements

POWER SPECTRAL DENSITY

Test Data: **Power Spectral Density Plot High End of Band**



Date: 1.JAN.1997 02:22:43

RESULTS: Meets Requirements

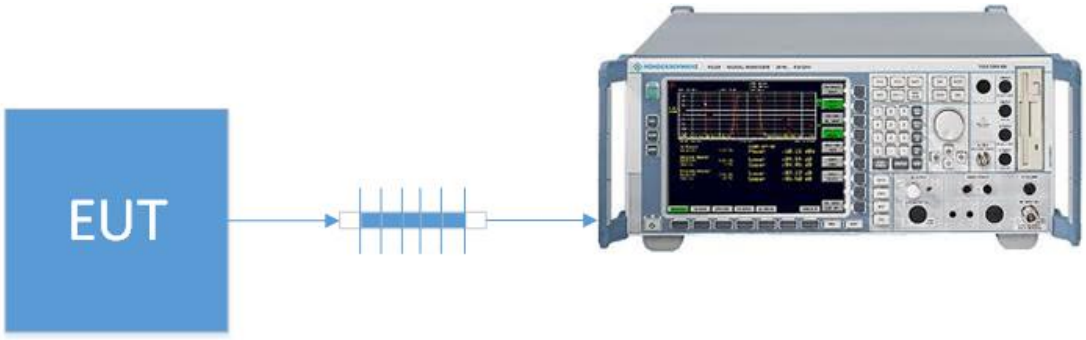
OCCUPIED BANDWIDTH

Rules Part No.: IC RSS GEN § 6.6

Requirements: The 99% Bandwidth is for reporting only.

Test Method: ANSI C63.10 § 6.9.3 Occupied Bandwidth- 99% Power Bandwidth procedure

Setup:



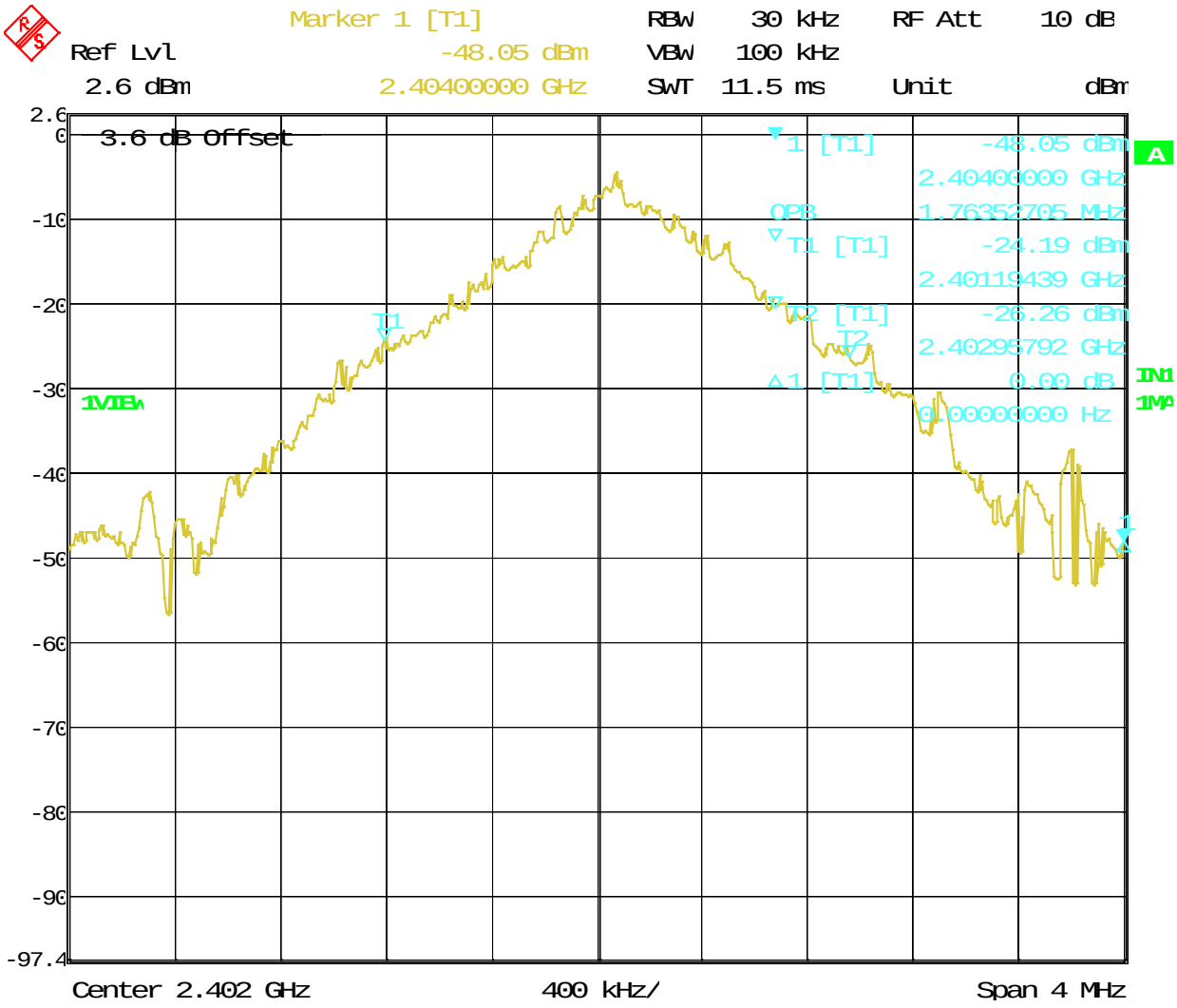
Test Data: **Occupied Bandwidth Measurement Table**

Tuned Frequency (MHz)	99% BW (MHz)
2402	1.76
2442	1.72
2480	1.72

RESULTS: Meets Requirements

OCCUPIED BANDWIDTH

Test Data: **99% Bandwidth Plot Low End of Band**

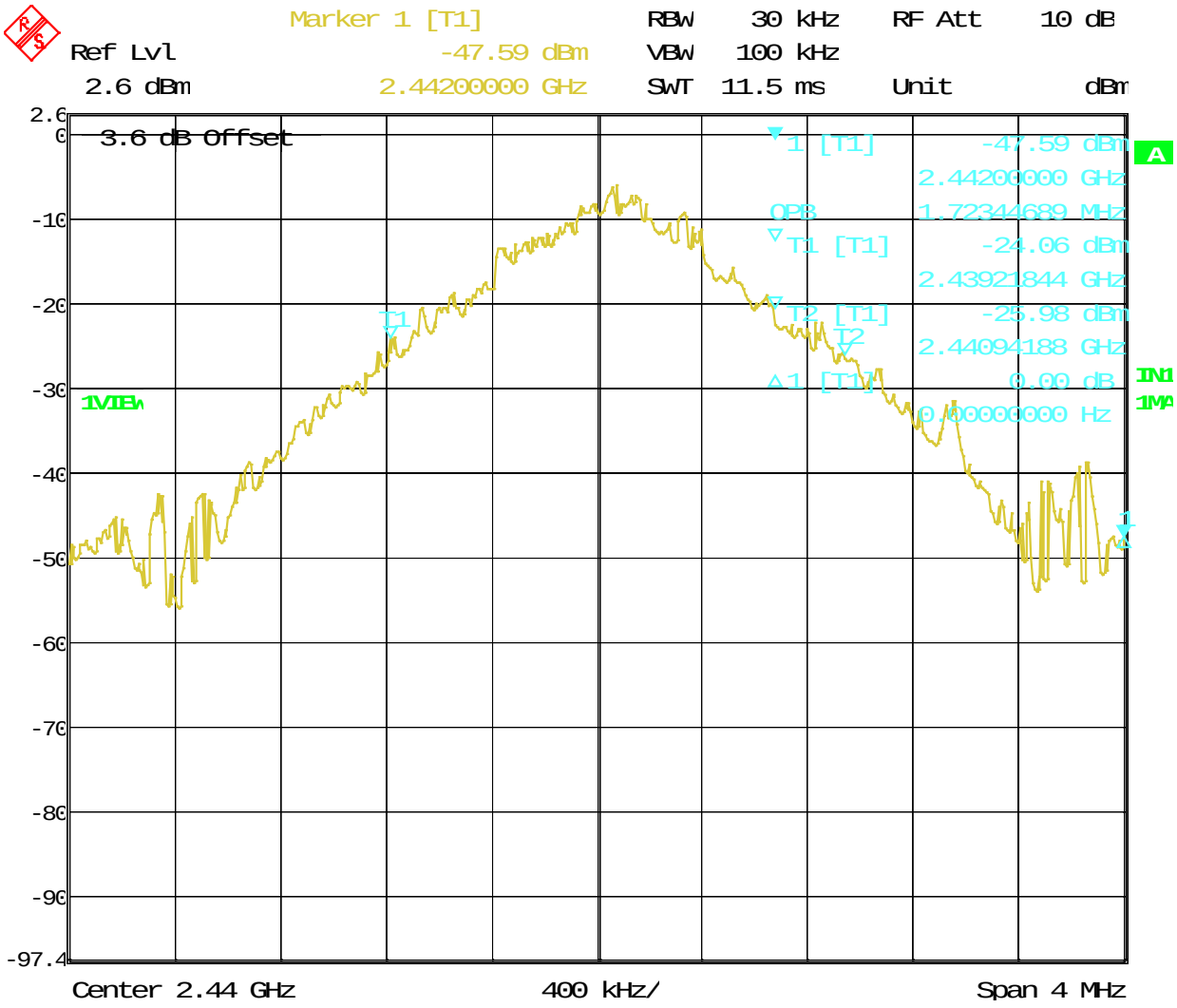


Date: 1.JAN.1997 02:29:04

RESULTS: Meets Requirements

OCCUPIED BANDWIDTH

Test Data: **99% Bandwidth Plot Middle of Band**

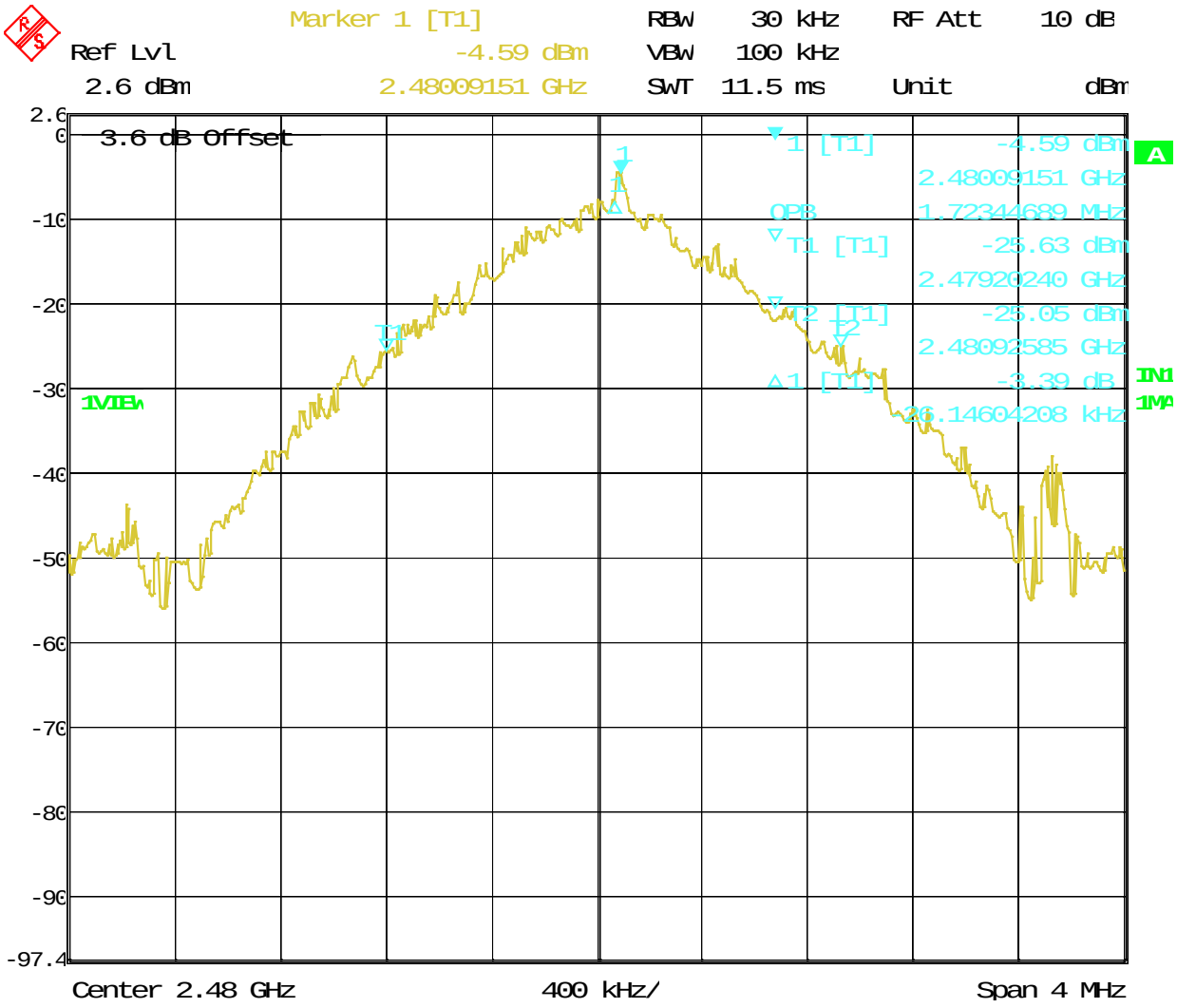


Date: 1.JAN.1997 02:28:12

RESULTS: Meets Requirements

OCCUPIED BANDWIDTH

Test Data: **99% Bandwidth Plot High end of Band**



Date: 1.JAN.1997 02:27:26

RESULTS: Meets Requirements

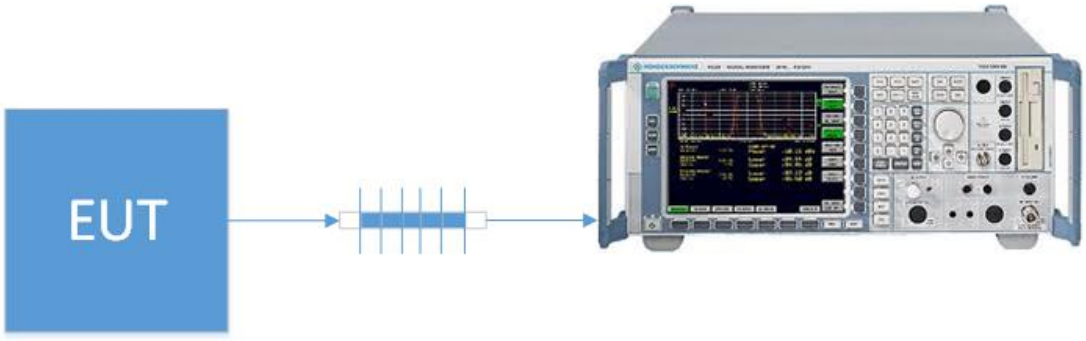
BANDEDGE

Rule Part No.: FCC 15.247(d)

Requirements: Emissions must be at least 20dB down from the highest emission level Within the authorized band as measured with a 100 kHz RBW.

Test Method: ANSI C63.10 § 6.10.4 Authorized band-edge relative method (non-restricted)
ANSI C63.10 § 6.10.6 Marker Delta Method (restricted band edge)

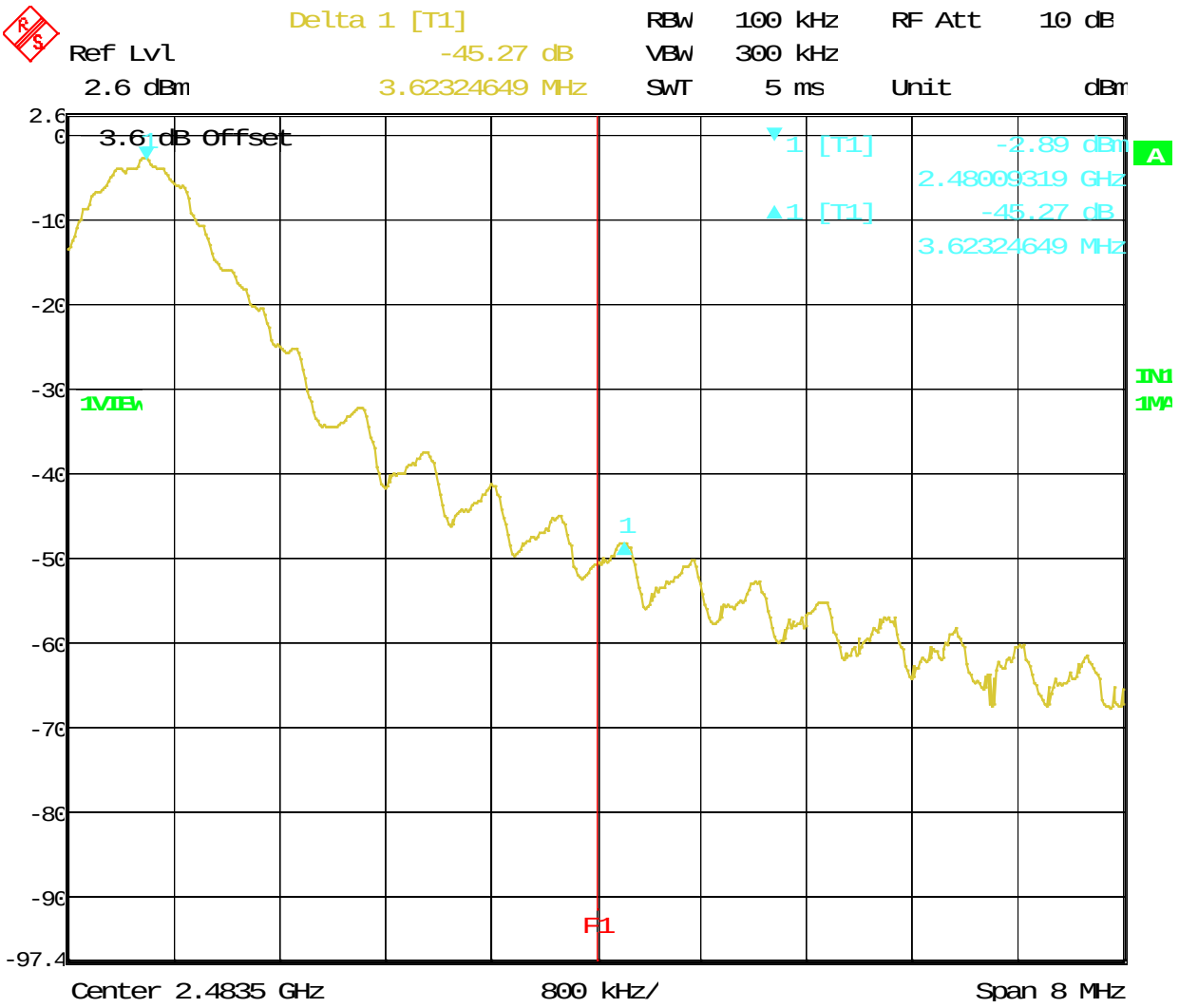
Setup:



BANDEDGE

Test Data: **Upper Band Edge Plot**

Peak/ Average	Field Strength of Carrier (dBuV/m)	Emission Level Below Carrier (dB)	Field Strength of Emission (dBuV/m)	Emission Limit (dBuV/m)	Margin (dB)
Peak	84.18	45.27	38.91	74	35.09
Average	36.25	45.27	-9.02	54	63.02

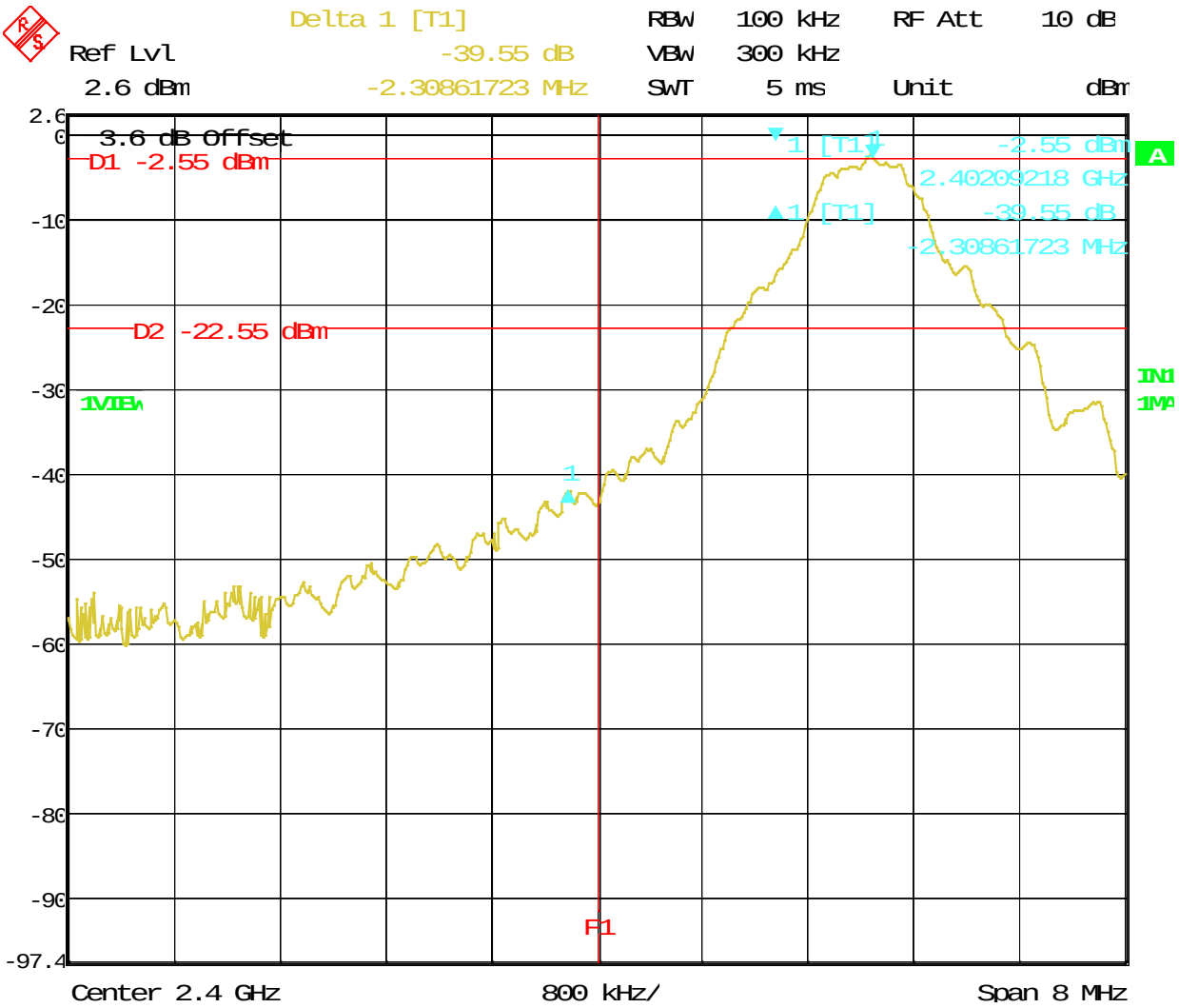


Date: 1.JAN.1997 02:33:21

RESULTS: Meets Requirements

BANDEDGE

Test Data: **Lower Band Edge Plot**



RESULTS: Meets Requirements

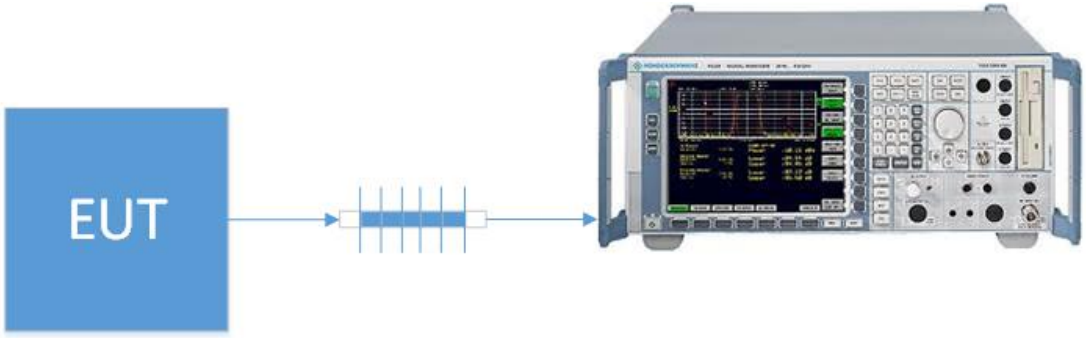
ANTENNA CONDUCTED SPURIOUS EMISSIONS

Rules Part No.: FCC part 15.247 (d) & 15.209, IC RSS 247 § 5.5 & RSS GEN § 8.9

Requirements: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below

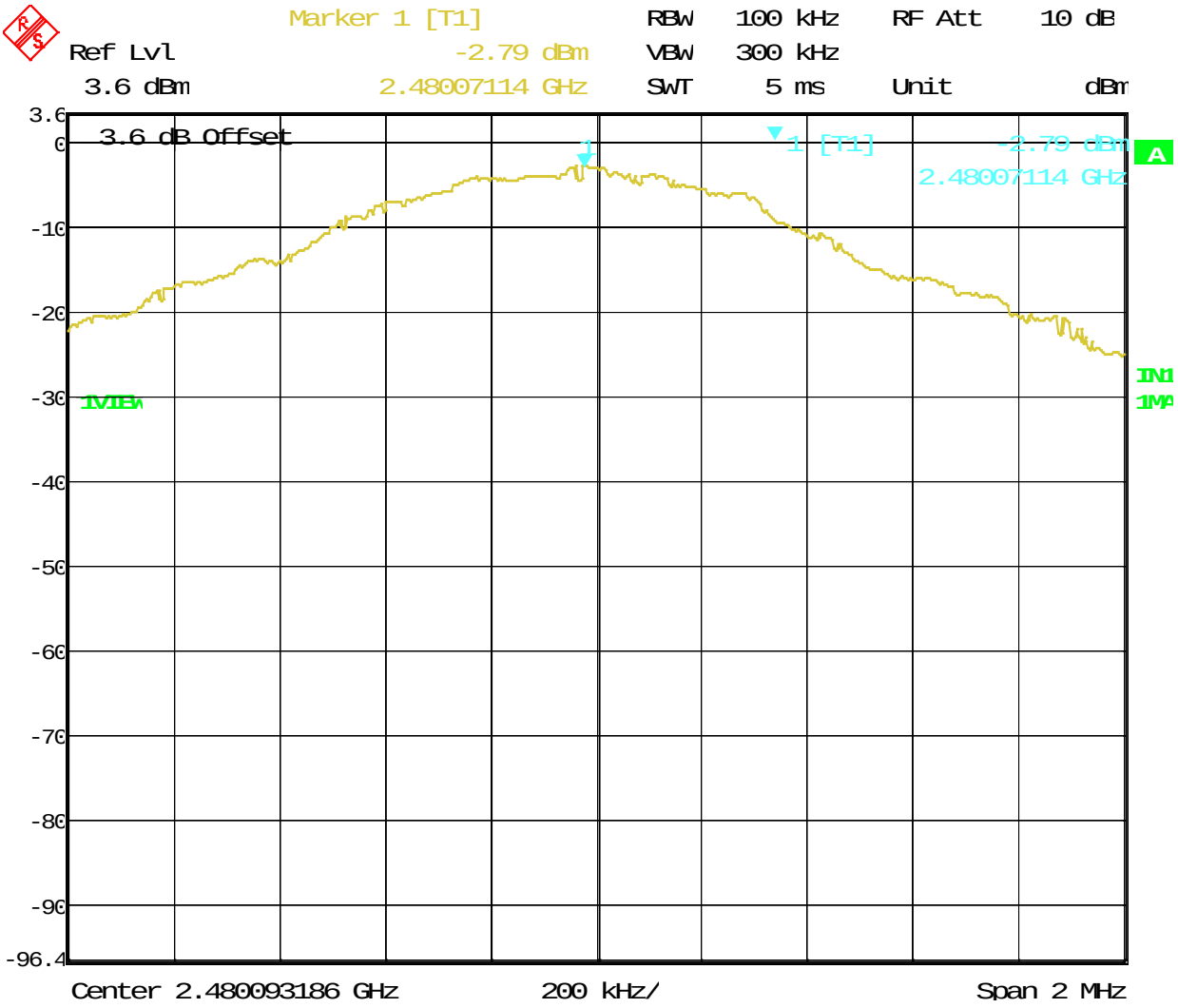
Test Method: ANSI C63.10 § 11.11.1 General Information
ANSI C63.10 § 11.11.2 Reference level measurement
ANSI C63.10 § 11.11.3 Emission level measurement

Setup:



ANTENNA CONDUCTED SPURIOUS EMISSIONS

Test Data: **100 KHz Reference Level Plot**

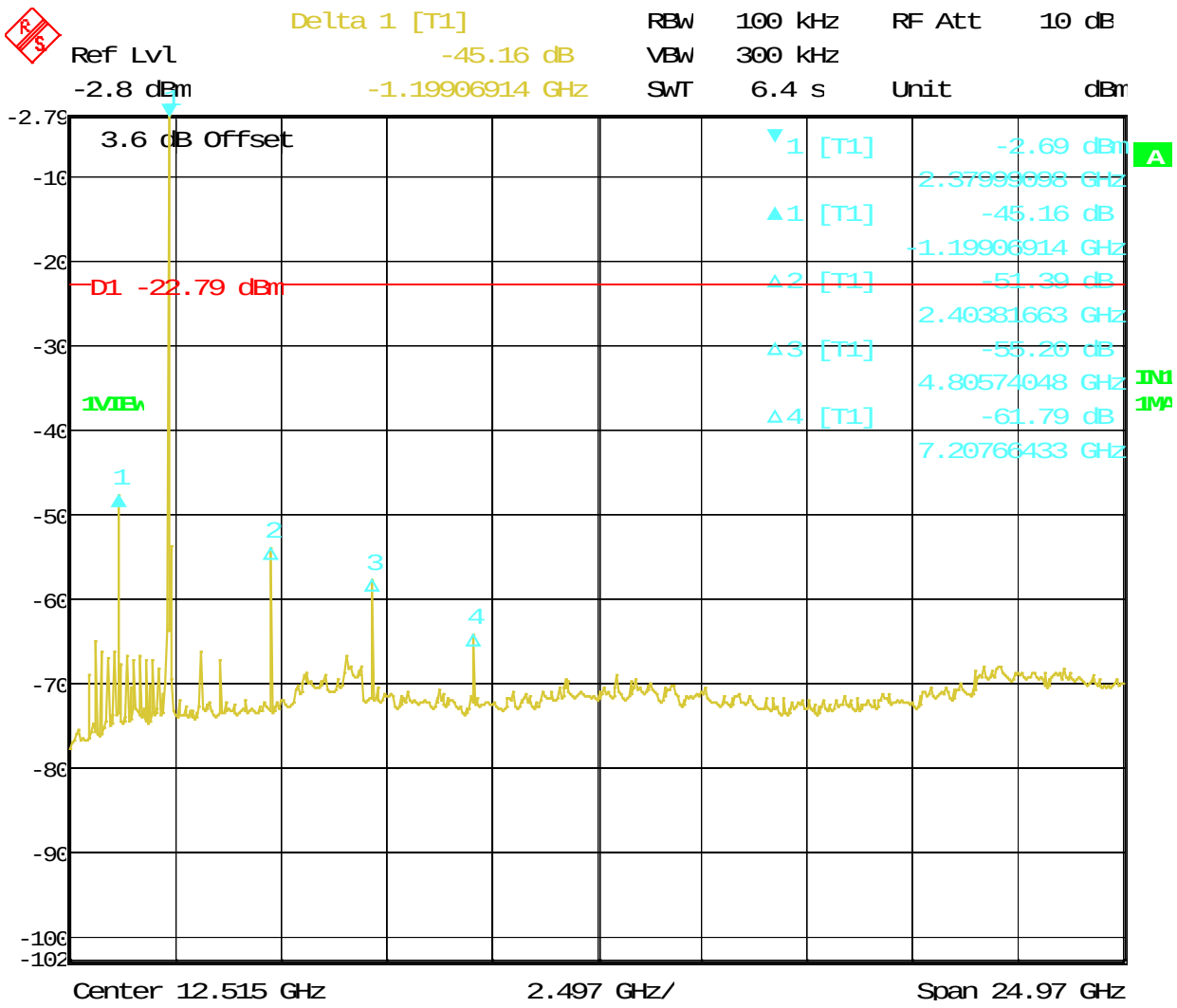


Date: 1.JAN.1997 02:36:32

RESULTS: Meets Requirements

ANTENNA CONDUCTED SPURIOUS EMISSIONS

Test Data: **Low End of Band 30 MHz – 25 GHz Plot**

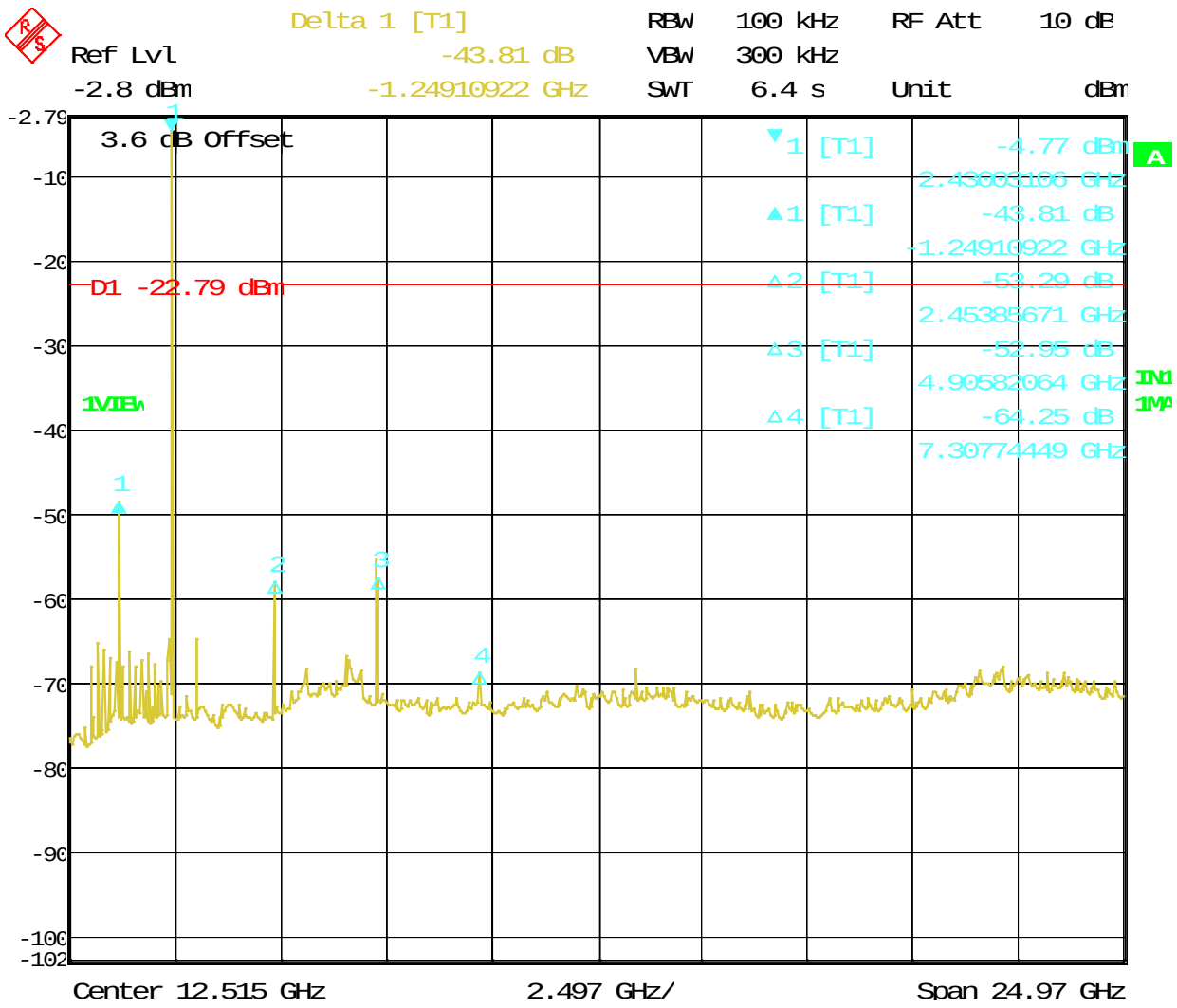


Date: 1.JAN.1997 02:47:01

RESULTS: Meets Requirements

ANTENNA CONDUCTED SPURIOUS EMISSIONS

Test Data: **Middle of Band 30 MHz – 25 GHz Plot**

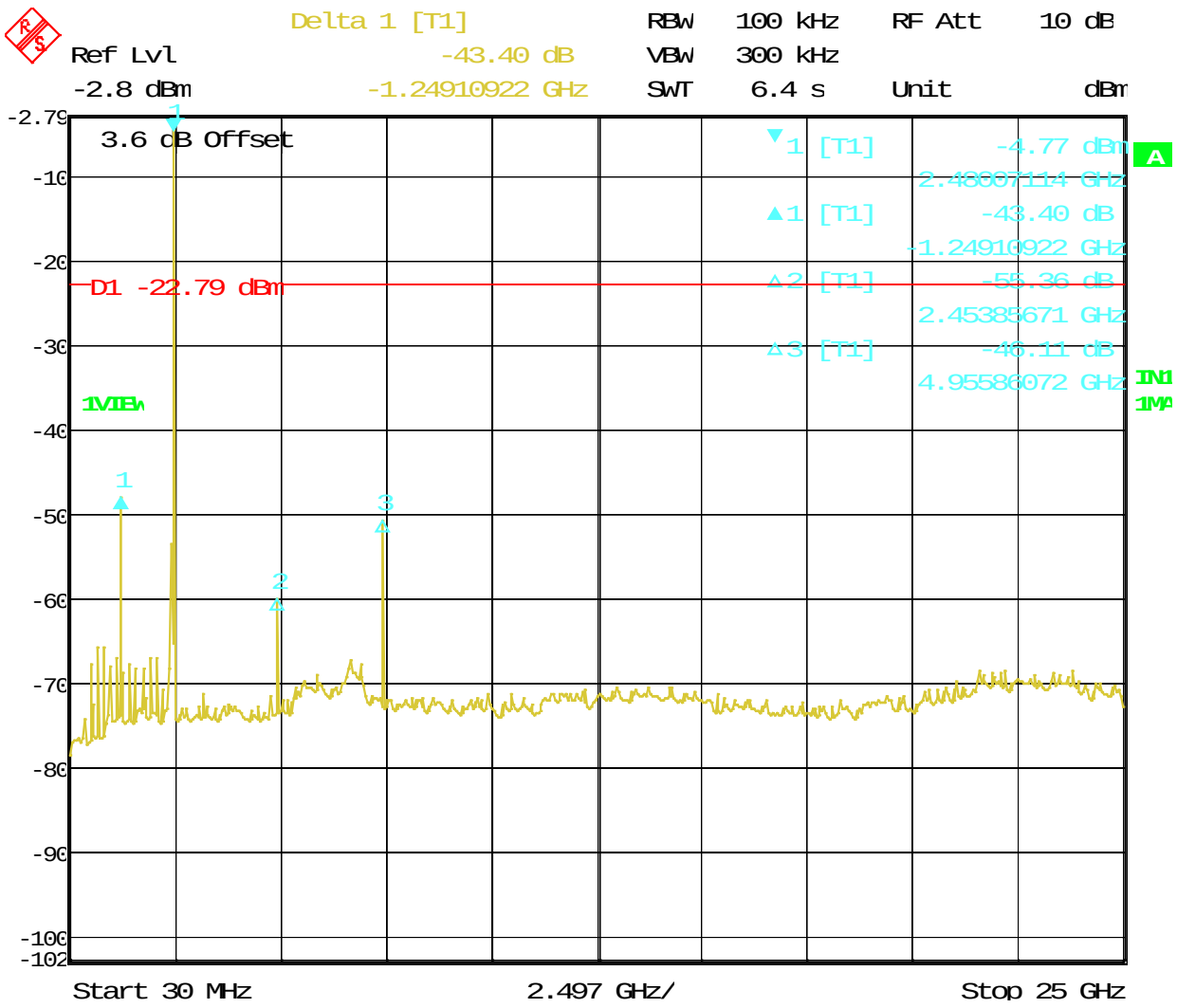


Date: 1.JAN.1997 02:40:53

RESULTS: Meets Requirements

ANTENNA CONDUCTED SPURIOUS EMISSIONS

Test Data: **High End of Band 30 MHz – 25 GHz Plot**



Date: 1.JAN.1997 02:39:35

RESULTS: Meets Requirements

RADIATED SPURIOUS EMISSIONS

Rules Part No.: FCC part 15.247 (d) & 15.209, IC RSS 247 § 5.5 & RSS GEN § 8.9

Requirements: Emissions found in restricted bands the levels must comply with the general limits found in FCC part 15.209

Frequency	Limits
FCC Part 15.209, IC RSS-GEN 8.9	
9 to 490 kHz	2400/F (kHz) µV/m @ 300 meters
490 to 1705 kHz	24000/F (kHz) µV/m @ 30 meters
1705 kHz to 30 MHz	29.54 dBµV/m @ 30 meters
30 – 88	40.0 dBµV/m @ 3 meters
80 – 216	43.5 dBµV/m @ 3 meters
216 – 960	46.0 dBµV/m @ 3 meters
Above 960	54.0 dBµV/m @ 3 meters

Test Method: ANSI C63.4 § Annex D Validation of radiated emissions standard test sites
ANSI C63.10 § 6.3 Common requirements radiated emissions
ANSI C63.10 § 6.4 Emissions below 30 MHz
ANSI C63.10 § 6.5 Emissions between 30 & 1000 MHz
ANSI C63.10 § 6.6 Emissions above 1 GHz

Field Strength Calculation:

The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBµV) to the antenna correction factor supplied by the antenna manufacturer plus the coax loss. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

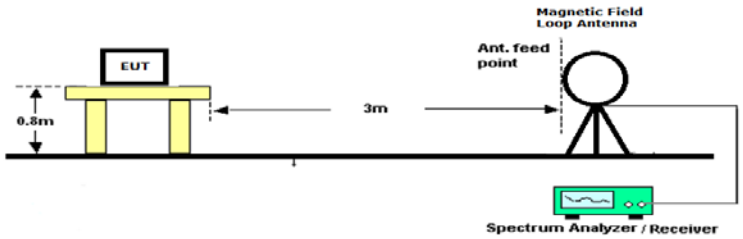
Example:			
Freq (MHz)	Meter Reading	+ ACF	+ CL = FS
33	20 dBµV	+ 10.36 dB	+ 0.5 = 30.86 dBµV/m @ 3m

Notes: Only emissions within 20dB of the limit are reported from 9 KHz to 25 GHz

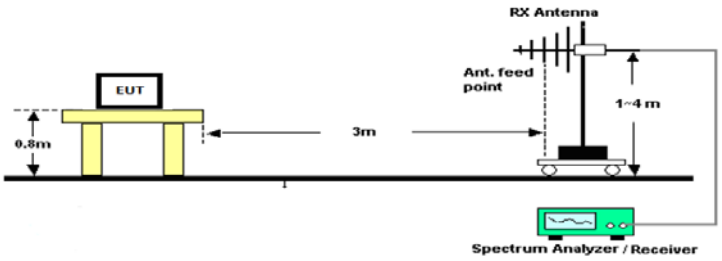
RADIATED SPURIOUS EMISSIONS

Setup:

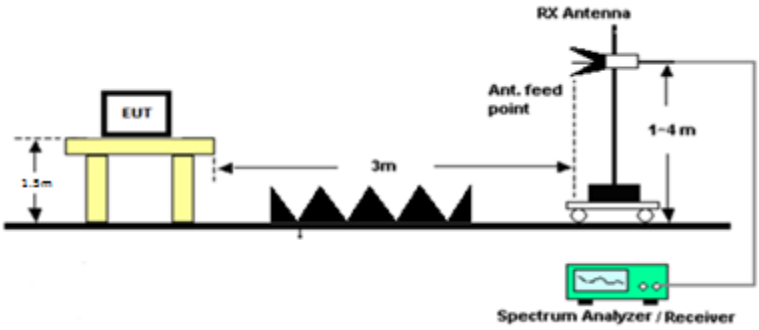
Emissions below 30 MHz



Emissions 30 – 1000 MHz



Emissions above 1 GHz



RADIATED SPURIOUS EMISSIONS

Notes: The EUT was checked in three orthogonal planes as required, a setup photo is provided to show the orientation of the worst case position.

The spectrum was measured from 9 KHz to 25 GHz, emissions discovered in bands listed in part 15.205 were compared with limit of 15.209 and only emissions found within 20 dB from limit are reported

Test Data: **Low End of band Field Strength table**

Tuned Freq MHz	Emission Frequency MHz	Meter Reading dBu V	Detector	Antenna Polarity	Coax Loss Db	Correction Factor dB/M	Field Strength dBu V/M	Margin
2402	48.25	14.08	PK	V	0.80	11.90	26.78	13.22
2402	69.23	20.94	PK	V	0.98	6.22	28.14	11.86
2402	85.57	12.09	PK	V	1.11	10.01	23.21	16.79
2402	105.73	12.55	PK	V	1.18	10.63	24.36	19.14
2402	141.15	14.14	PK	V	1.35	15.63	31.12	12.38
2402	159.67	12.84	PK	V	1.45	17.00	31.29	12.21
2402	168.66	15.81	PK	H	1.51	15.97	33.29	10.21
2402	137.06	8.64	PK	H	1.33	14.91	24.88	18.62
2402	106.55	5.87	PK	H	1.19	10.60	17.66	25.84
2402	387.20	5.30	PK	V	2.25	14.90	22.45	23.55
2402	332.20	9.75	PK	V	2.10	13.80	25.65	20.35
2402	255.12	9.65	PK	V	1.95	12.31	23.91	22.09
2402	212.80	11.89	PK	H	1.65	10.80	24.34	21.66
2402	332.05	9.23	PK	H	2.10	13.80	25.13	20.87
2402	433.30	3.71	PK	H	2.39	16.77	22.87	23.13
2402	3385.20	17.95	PK	H	6.93	32.96	57.84	16.16
2402	3385.20	-20.80	AV	H	6.93	32.96	19.09	34.91
2402	3793.50	18.11	PK	V	7.33	33.48	58.92	15.08
2402	3793.50	-19.50	AV	V	7.33	33.48	21.31	32.69
2402	4704.40	14.50	PK	H	8.19	34.05	56.74	17.26
2402	4704.40	-20.50	AV	H	8.19	34.05	21.74	32.26
2402	4735.80	17.86	PK	V	8.22	34.04	60.12	13.88
2402	4735.80	-20.80	AV	V	8.22	34.04	21.46	32.54
2402	5929.48	12.82	PK	H	9.22	35.19	57.23	16.77
2402	5929.48	-21.90	AV	H	9.22	35.19	22.51	31.49

Results Meet Requirements

RADIATED SPURIOUS EMISSIONS

Notes: The EUT was checked in three orthogonal planes as required, a setup photo is provided to show the orientation of the worst case position.

The spectrum was measured from 9 KHz to 25 GHz, emissions discovered in bands listed in part 15.205 were compared with limit of 15.209 and only emissions found within 20 dB from limit are reported

Test Data: **Low End of band Field Strength table Cont.**

Tuned Freq MHz	Emission Frequency MHz	Meter Reading dBu V	Detector	Antenna Polarity	Coax Loss Db	Correction Factor dB/M	Field Strength dBu V/M	Margin
2402	6039.40	16.33	PK	V	9.36	35.38	61.07	12.93
2402	6039.40	-21.90	AV	V	9.36	35.38	22.84	31.16
2402	7641.30	23.04	PK	V	10.44	35.76	69.24	4.76
2402	7641.30	-23.60	AV	V	10.44	35.76	22.60	31.40
2402	8677.80	18.13	PK	H	11.17	35.86	65.16	8.84
2402	8677.80	-22.90	AV	H	11.17	35.86	24.13	29.87
2402	9510.25	17.06	PK	H	11.59	36.73	65.38	8.62
2402	9510.25	-22.50	AV	H	11.59	36.73	25.82	28.18
2402	11000.00	23.04	PK	V	12.54	37.93	73.51	0.49
2402	11000.00	-23.00	AV	V	12.54	37.93	27.47	26.53
2402	11190.70	14.96	PK	H	12.69	38.07	65.72	8.28
2402	11190.70	-22.60	AV	H	12.69	38.07	28.16	25.84

Results Meet Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: **Middle of band Field Strength table**

Tuned Freq MHz	Emission Frequency MHz	Meter Reading dBu V	Detector	Antenna Polarity	Coax Loss Db	Correction Factor dB/M	Field Strength dBu V/M	Margin
2440	69.50	20.14	PK	V	0.99	6.25	27.38	12.62
2440	105.19	13.36	PK	V	1.18	10.68	25.22	18.28
2440	134.34	7.42	PK	H	1.31	14.20	22.93	20.57
2440	140.88	13.82	PK	V	1.35	15.59	30.76	12.74
2440	159.67	11.67	PK	V	1.45	17.00	30.12	13.38
2440	160.76	17.14	PK	H	1.46	16.92	35.52	7.98
2440	193.46	7.07	PK	V	1.60	14.98	23.65	19.85
2440	238.46	12.63	PK	H	1.77	11.10	25.50	20.50
2440	264.10	7.62	PK	V	2.03	12.82	22.47	23.53
2440	329.48	9.71	PK	H	2.09	13.75	25.55	20.45
2440	329.48	7.77	PK	V	2.09	13.75	23.61	22.39
2440	414.10	7.00	PK	V	2.32	16.61	25.93	20.07
2440	3542.30	17.32	PK	V	7.09	33.34	57.75	16.25
2440	3542.30	-19.60	AV	V	7.09	33.34	20.83	33.17
2440	3735.80	18.49	PK	H	7.26	33.73	59.48	14.52
2440	3735.80	-20.10	AV	H	7.26	33.73	20.89	33.11
2440	4673.00	17.77	PK	H	8.17	34.16	60.10	13.90
2440	4673.00	-20.10	AV	H	8.17	34.16	22.23	31.77
2440	4720.19	15.71	PK	V	8.20	34.05	57.96	16.04
2440	4720.19	-20.80	AV	V	8.20	34.05	21.45	32.55
2440	5960.80	13.57	PK	V	9.27	35.29	58.13	15.87
2440	5960.80	-22.00	AV	V	9.27	35.29	22.56	31.44
2440	6023.70	16.68	PK	H	9.34	35.36	61.38	12.62
2440	6023.70	-22.00	AV	H	9.34	35.36	22.70	31.30
2440	7562.80	13.65	PK	V	10.39	35.76	59.80	14.20
2440	7562.80	-22.00	AV	V	10.39	35.76	24.15	29.85
2440	7957.00	22.90	PK	H	10.69	35.86	69.45	4.55
2440	7957.00	-21.30	AV	H	10.69	35.86	25.25	28.75
2440	8693.50	19.04	PK	V	11.18	35.91	66.13	7.87
2440	8693.50	-23.20	AV	V	11.18	35.91	23.89	30.11
2440	8960.00	16.24	PK	H	11.29	36.12	63.65	10.35
2440	8960.00	-22.50	AV	H	11.29	36.12	24.91	29.09
2440	9510.20	16.94	PK	V	11.59	36.73	65.26	8.74
2440	9510.20	-22.30	AV	V	11.59	36.73	26.02	27.98
2440	10970.80	17.42	PK	H	12.54	37.89	67.85	6.15
2440	10970.80	-22.40	AV	H	12.54	37.89	28.03	25.97
2440	11127.80	16.61	PK	V	12.65	38.01	67.27	6.73
2440	11127.80	-22.90	AV	V	12.65	38.01	27.76	26.24

Results Meet Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: **High End of band Field Strength table**

Tuned Freq MHz	Emission Frequency MHz	Meter Reading dBu V	Detector	Antenna Polarity	Coax Loss Db	Correction Factor dB/M	Field Strength dBu V/M	Margin
2480	60.51	19.09	PK	V	0.91	7.40	27.40	12.60
2480	84.70	8.51	PK	V	1.11	9.87	19.49	20.51
2480	106.00	13.21	PK	V	1.18	10.60	24.99	18.51
2480	138.97	14.00	PK	V	1.33	15.29	30.62	12.88
2480	159.95	12.46	PK	V	1.45	17.00	30.91	12.59
2480	168.94	17.39	PK	H	1.51	15.91	34.81	8.69
2480	136.79	9.48	PK	H	1.32	14.84	25.64	17.86
2480	208.97	11.29	PK	V	1.63	10.90	23.82	19.68
2480	330.77	8.89	PK	V	2.09	13.80	24.78	21.22
2480	414.10	7.15	PK	V	2.32	16.61	26.08	19.92
2480	332.05	8.22	PK	H	2.10	13.80	24.12	21.88
2480	269.23	10.41	PK	H	2.07	13.55	26.03	19.97
2480	1704.40	15.78	PK	H	4.73	29.13	49.64	24.36
2480	3416.60	17.15	PK	V	6.97	32.63	56.75	17.25
2480	3416.60	-19.80	AV	V	6.97	32.63	19.80	34.20
2480	3573.70	17.92	PK	H	7.12	33.03	58.07	15.93
2480	3573.70	-19.70	AV	H	7.12	33.03	20.45	33.55
2480	4704.40	15.01	PK	V	8.19	33.88	57.08	16.92
2480	4704.40	-20.20	AV	V	8.19	33.88	21.87	32.13
2480	5945.19	14.69	PK	V	9.24	35.04	58.97	15.03
2480	5945.19	15.08	PK	V	9.24	35.04	59.36	14.64
2480	5945.19	-21.30	AV	V	9.24	35.04	22.98	31.02
2480	5945.19	-21.70	AV	V	9.24	35.04	22.58	31.42
2480	5976.60	14.45	PK	H	9.29	35.09	58.83	15.17
2480	5976.60	-20.00	AV	H	9.29	35.09	24.38	29.62
2480	8662.10	18.19	PK	V	11.15	36.01	65.35	8.65
2480	8662.10	-22.70	AV	V	11.15	36.01	24.46	29.54
2480	8866.30	19.47	PK	H	11.30	35.99	66.76	7.24
2480	8866.30	-20.70	AV	H	11.30	35.99	26.59	27.41
2480	9525.96	17.13	PK	V	11.59	36.52	65.24	8.76
2480	9525.96	-22.10	AV	V	11.59	36.52	26.01	27.99
2480	9541.60	17.54	PK	H	11.59	36.51	65.64	8.36
2480	9541.60	-20.70	AV	H	11.59	36.51	27.40	26.60
2480	11143.50	16.83	PK	V	12.66	38.24	67.73	6.27
2480	11143.50	-22.80	AV	V	12.66	38.24	28.10	25.90
2480	11206.40	16.42	PK	H	12.70	38.42	67.54	6.46
2480	11206.40	-22.40	AV	H	12.70	38.42	28.72	25.28

Results Meet Requirements

EMC EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
DC Power Supply	HP	6286A	1744A03842	N/A	N/A
Antenna: Biconical 1096	Eaton	94455-1	1096	08/01/17	08/01/19
Antenna: Log-Periodic 1122	Electro-Metrics	LPA-25	1122	07/26/17	07/26/19
LISN (Primary)	Electro-Metrics	ANS-25/2	225363	08/26/17	08/26/19
CHAMBER	Panashield	3M	N/A	12/31/17	12/31/19
Antenna: Double-Ridged Horn/ETS Horn 2	ETS-Lindgren	3117	00041534	03/01/17	03/01/19
Software: Field Strength Program	Timco	N/A	Version 4.10.7.0	N/A	N/A
Antenna: Active Loop	ETS-Lindgren	6502	00062529	12/11/17	12/11/19
EMI Test Receiver R & S ESU 40 Chamber	Rohde & Schwarz	ESU 40	100320	04/01/16	04/01/19
Coaxial Cable - Chamber 3 cable set (Primary)	Micro-Coax	Chamber 3 cable set (Primary)	KMKM-0244-01; KMKM-0670-00; KFKF-0198-01	08/09/16	08/09/18
Band Reject Filter 2.4 GHz	Micro-Tronics	BRM50702-02	-G042	09/27/16	09/27/18
Pre-amp	RF-LAMBDA	RLNA00M45GA	NA	01/04/16	01/04/19

*EMI RECEIVER SOFTWARE VERSION

The receiver firmware used was version 4.43 Service Pack 3

STATE OF THE MEASUREMENT UNCERTAINTY

The data and results referenced in this document are true and accurate. The measurement uncertainty was calculated for all measurements listed in this test report according To CISPR 16–4 or ENTR 100-028 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: "Uncertainty in EMC Measurements" and is documented in the Timco Engineering, Inc. quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.
Hereafter the best measurement capability for Timco Engineering, Inc. is reported:

Test Items	Measurement Uncertainty	Notes
RF Frequency Accuracy	± 49.5 Hz	(1)
RF Conducted Power	±0.93dB	(1)
Conducted spurious emission of transmitter valid up to 40GHz	±1.86dB	
Occupied Bandwidth	±2.65%	
Audio Frequency Response	±1.86dB	
Modulation limiting	±1.88%	
Radiated RF Power	±1.4dB	
Maximum frequency deviation: Within 300 Hz and 6kHz of audio freq. Within 6kHz and 25kHz of audio Freq.	 ±1.88% ±2.04%	
Rad Emissions Sub Meth up to 26.5GHz	±2.14dB	
Adjacent channel power	±1.47dB	(1)
Transient Frequency Response	±1.88%	
Temperature	±1.0°C	(1)
Humidity	±5.0%	

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

End of REPORT