TIMCO ENGINEERING, Inc.

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FCC PART 15B

ANALOGUE SCANNING RECEIVER

TEST REPORT

Applicant	**BRIDGECOM SYSTEMS, INC**
Address	**102 NE STATE ROUTE 92 HIGHWAY, SUITE C SMITHVILLE, MO 64089**
FCC ID:	**SK4BCM-440**
Model Number	**BCM-440**
Product Description	UHF/70CM MOBILE RADIO FOR AMATEUR USE
Date Sample Received	1/26/2017
Final Test Date	1/27/2017
Tested By	Tim Royer
Approved By	Cory Leverett
Test Results	☒ PASS ☐ FAIL

Report Number	Version Number	Description	Issue Date
171UT17TestReport	Rev1	Initial Issue	01/31/17
171UT17TestReport	Rev2	Updated antenna connector info.	02/10/17
171UT17TestReport	Rev3	Updated Setup pictures	02/13/17

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

Date: 01/29/2017

Reviewed and approved by:
Name and Title: Cory Leverett, Project Manager

Date: 01/31/2017

GENERAL INFORMATION

The test results relate only to the items tested.	
EUT Description	**UHF/70CM MOBILE RADIO FOR AMATEUR USE**
FCC ID	**SK4BCM-440**
Model Number	**BCM-440**
Range	400.0 – 470.0 MHz
Receiver Circuit Type	Double-conversion Super-het receiver
Lowest Internal Frequency	44.845 MHz
Antenna Connector	Female PL259
EUT Power Source	☐ 110–120Vac/50– 60Hz
	☒ 12.6 VDC Nominal
	☐ Battery Operated Exclusively
Test Item	☐ Prototype
	☐ Pre-Production
	☒ Production
Modifications required for Testing	None

REPORT SUMMARY

Regulatory Standard	CFR Title 47 FCC Rule part 15B § 15.109
Test Procedures	FCC Part 15.31, 15.33, 15.35 ANSI C63.4 – 2014
Operational Modes	Stopped at the Lowest, middle, and highest frequency of tuning range. In addition scanning all frequencies of tuning range
Test Frequencies	Low: 400.0 MHz
	Middle: 450.0 MHz
	High: 469.9 MHz
	Scan: 400.0 – 470.0 MHz
Setup	The EUT's antenna terminals were connected to tuned dipole through a 50 Ω coaxial cable.
Environmental Condition in the laboratory	Temperature: 24-26ºC Relative humidity: 50-65% Barometric Pressure: 30.01"
1Deviation from the standard/procedure	No deviation

RESULTS SUMMARY

Requirement	Test Result	Limit	Pass/Fail
15.109 Radiated Emissions	28.12 dBuV/m @ 215MHz	43.5 dBuV/m	Pass

Notes:

1) Manufacturer provided attestation letter, no test required.

RADIATED SPURIOUS EMISSIONS

Rule Part No.: FCC Part 15 Subpart B

Requirements: FCC Part 15.109(a) Radiated Emission Limit

Class B Field Strength Limits @ 3 Meters	
Frequency (MHz)	**Level (dBuV/m)**
30 – 88	40.0
80 – 216	43.5
216 – 960	46.0
Above 960	54.0

FCC Part 15.109(f) Radiated Emission Limit
For a receiver which employs terminals for the connection of an external receiving antenna, the receiver shall be tested to demonstrate compliance with the provisions of this section with an antenna connected to the antenna terminals unless the antenna conducted power is measured as specified in §15.111(a).

Procedure: FCC Part 15.33(b)(3) Frequency range of radiated measurements

FCC Part 15.35(a) Measurement detector functions and bandwidths

ANSI C63.4 Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment 9 kHz to 40 GHz

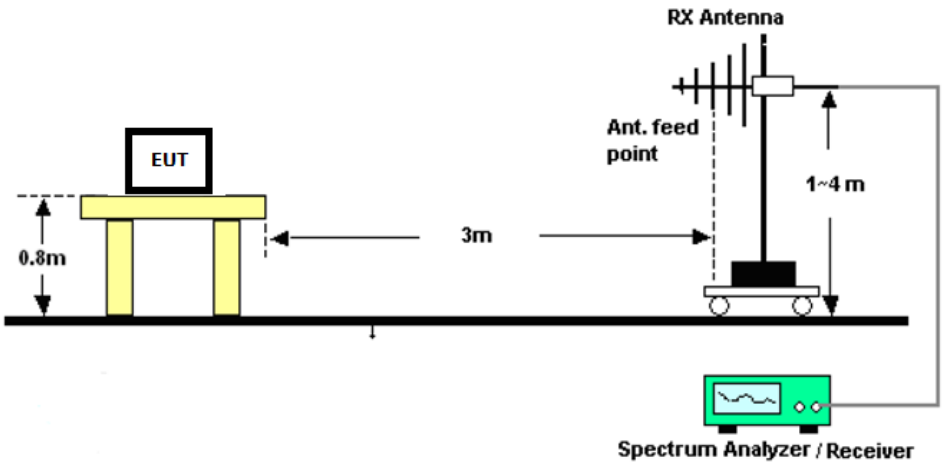
§ 6.2 Operating conditions
§ 6.3 Arrangement of EUT
§ 8.3.1 Exploratory radiated emissions measurements
§ 8.3.2 Final radiated emission measurements

Configuration: The scanner receiver spurious emissions are to be measured when the receiver is in the scanning mode and repeated when the scanning is stopped, all while the antenna terminals are terminated into a non-radiating 50 Ω load.

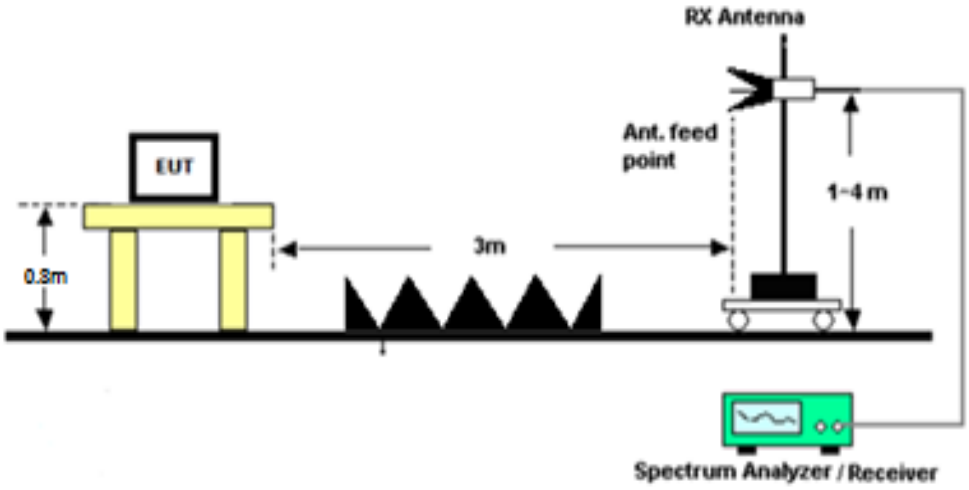
RADIATED SPURIOUS EMISSIONS

Setup:

Emissions 30 – 1000 MHz



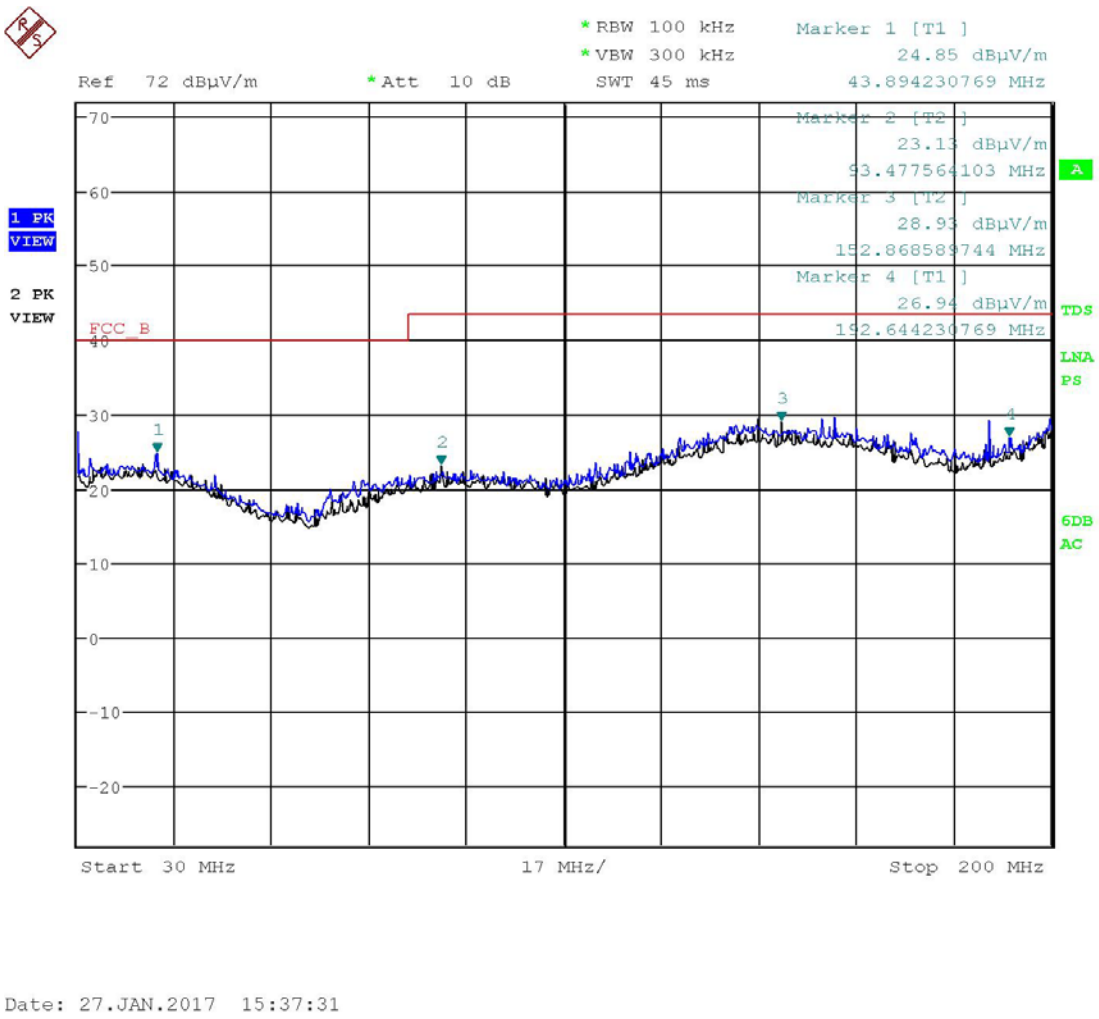
Emissions above 1 GHz



RADIATED SPURIOUS EMISSIONS

Test Data: Low End of Band 30 – 200 MHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 15:37:31

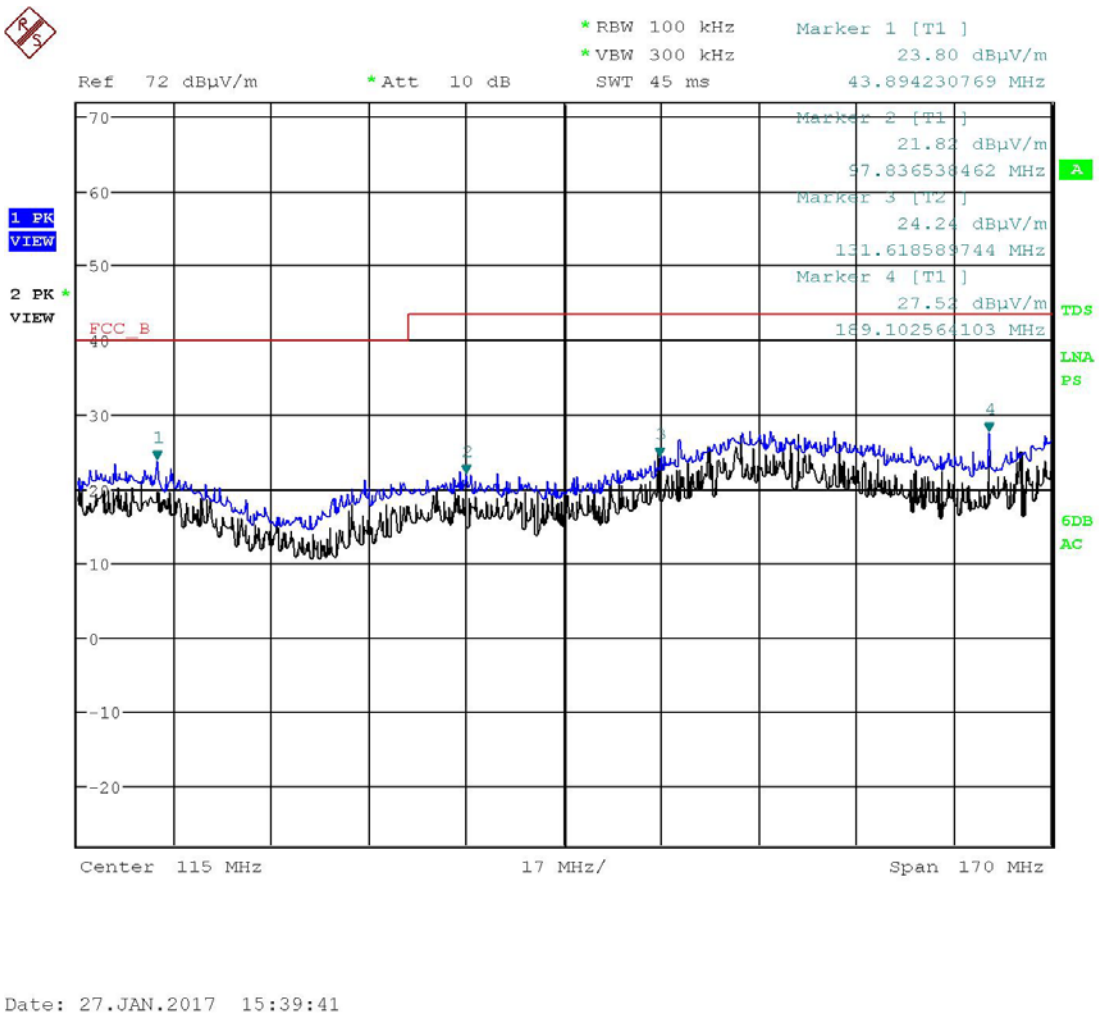
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: Middle of Band 30 – 200 MHz Peak Field Strength Plot

3 Meter Field Strength Plot



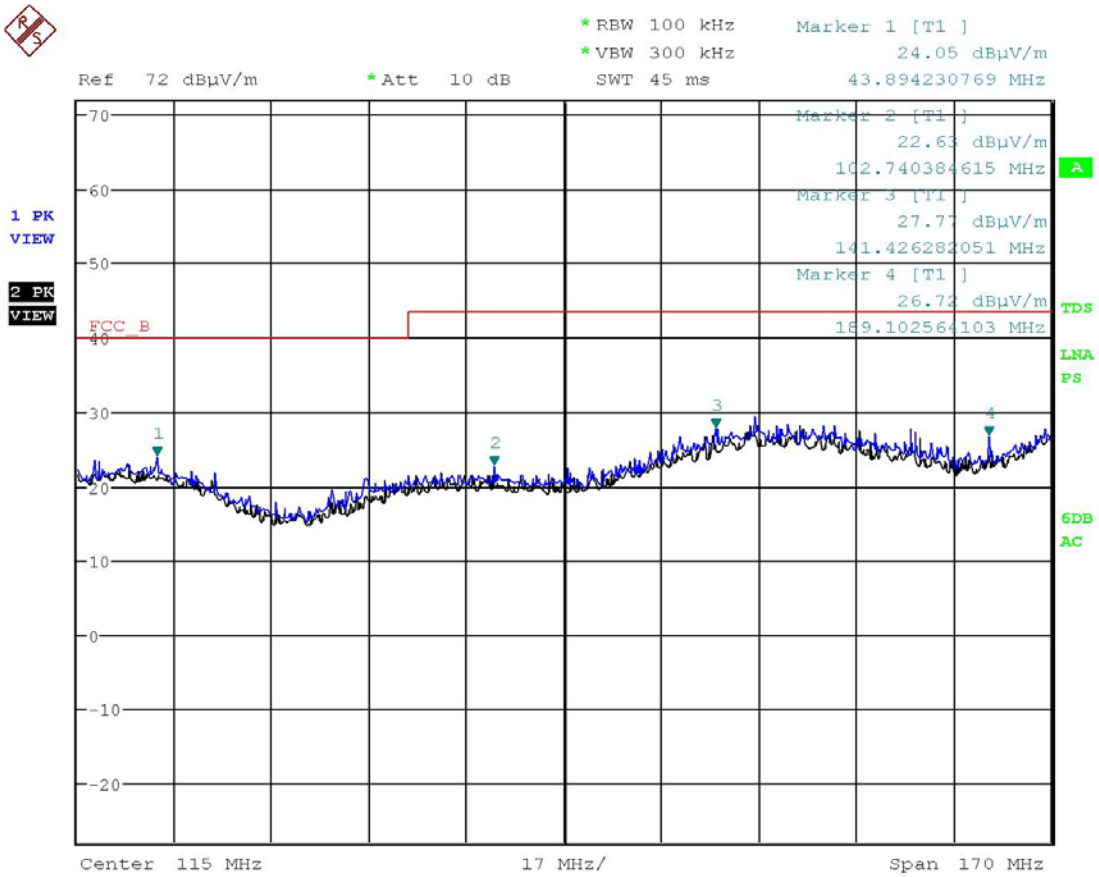
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: High End of Band 30 – 200 MHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 15:42:15

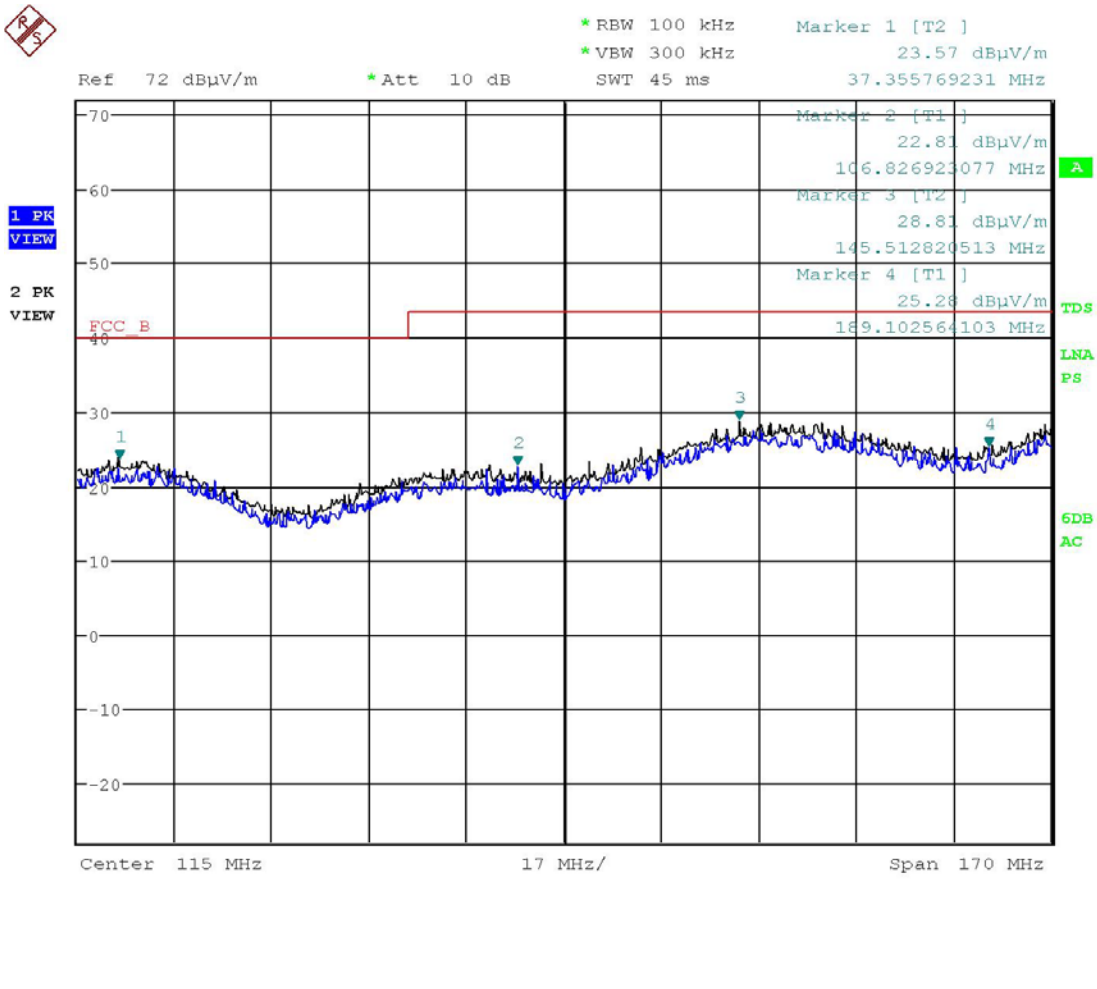
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: Scanning 30 – 200 MHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 15:45:59

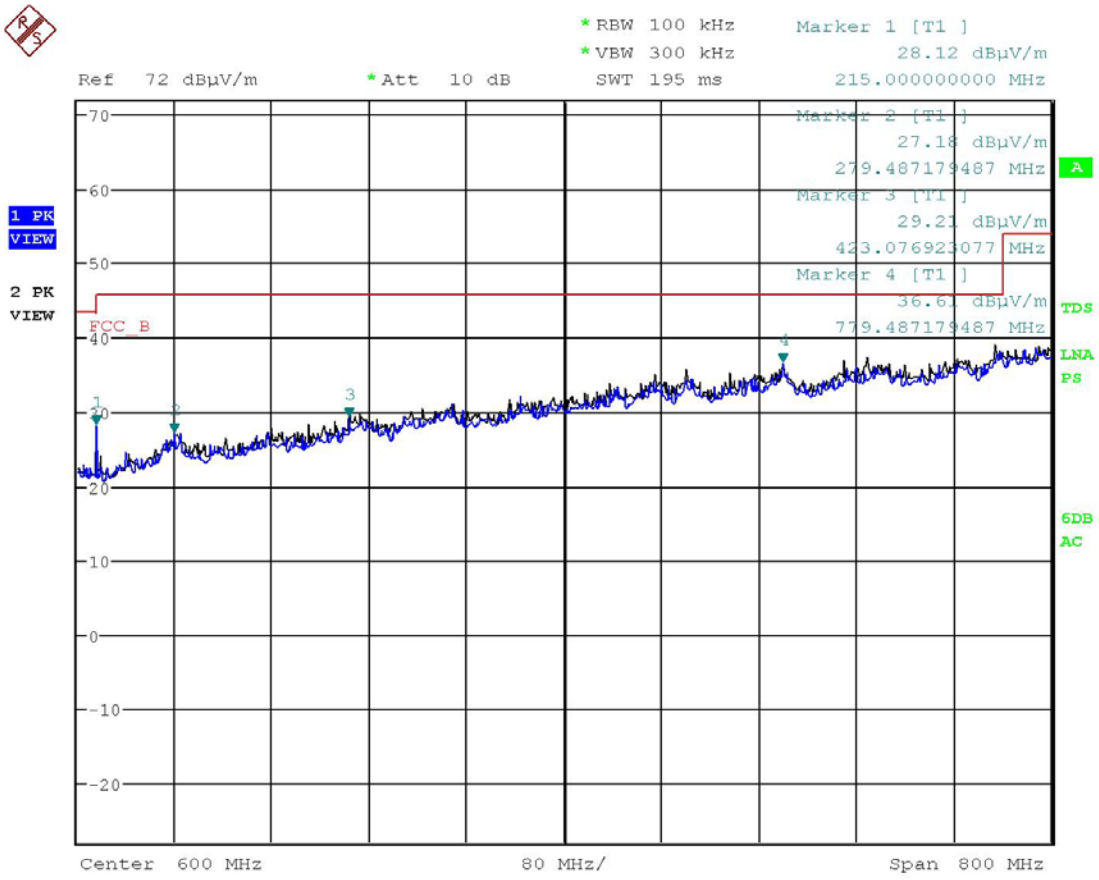
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: Low End of Band 200 - 1000 MHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 15:31:06

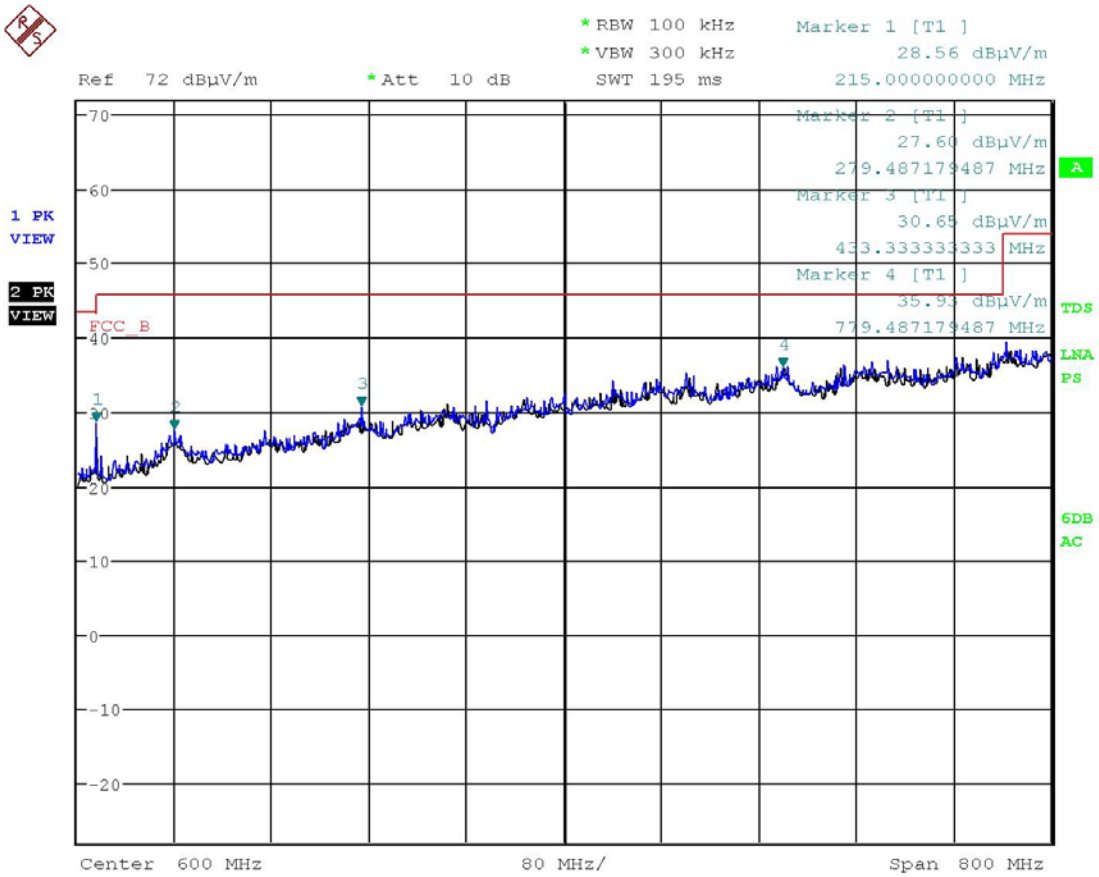
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: Middle of Band 200 - 1000 MHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 15:29:07

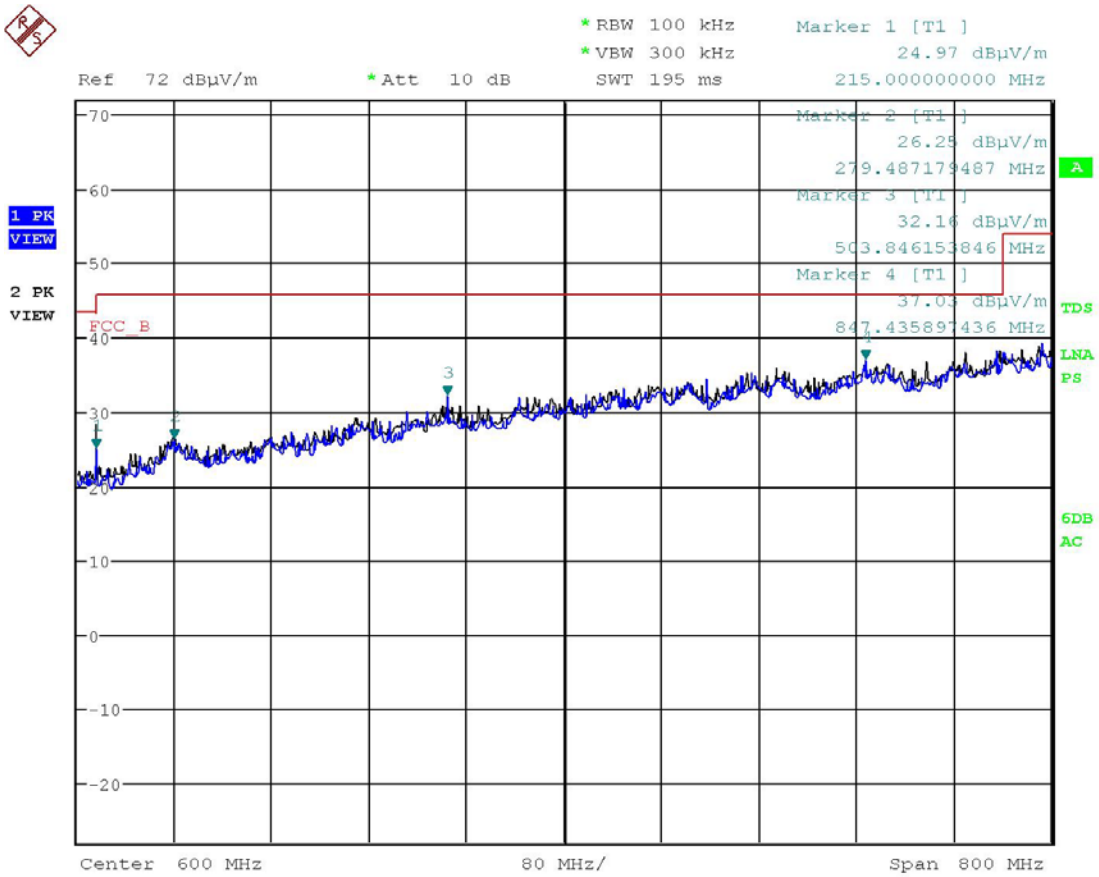
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: High End of Band 200 - 1000 MHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 15:27:05

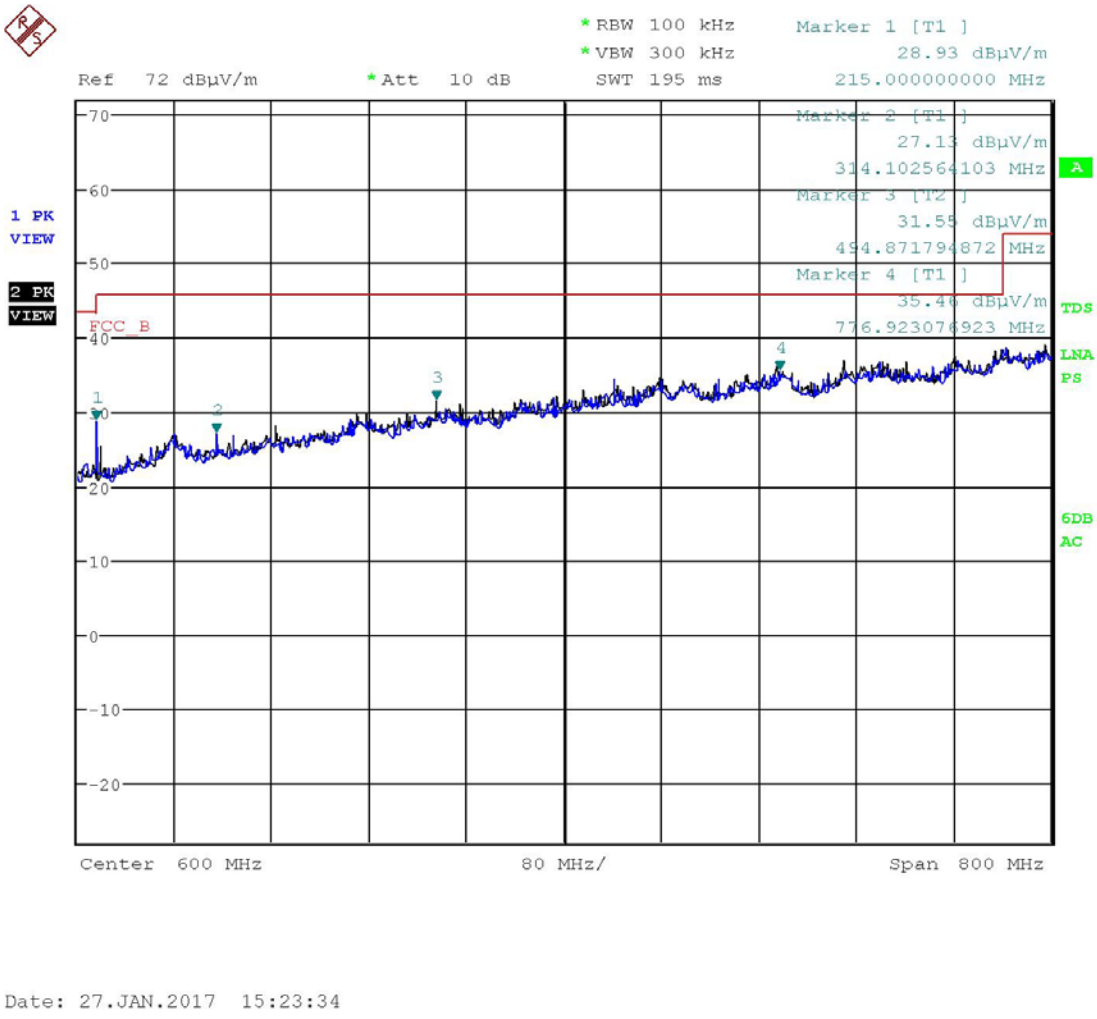
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: Scanning 200 - 1000 MHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 15:23:34

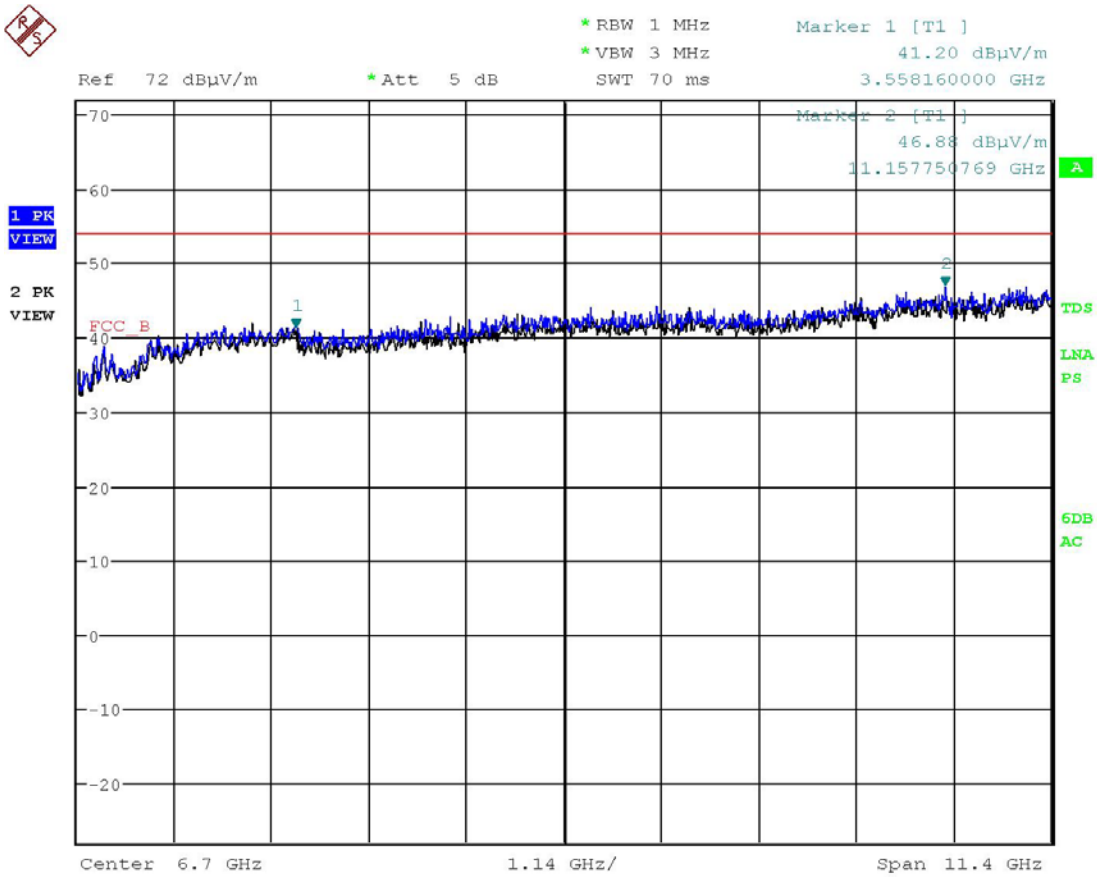
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: Low End of Band 1 – 12.4 GHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 16:46:38

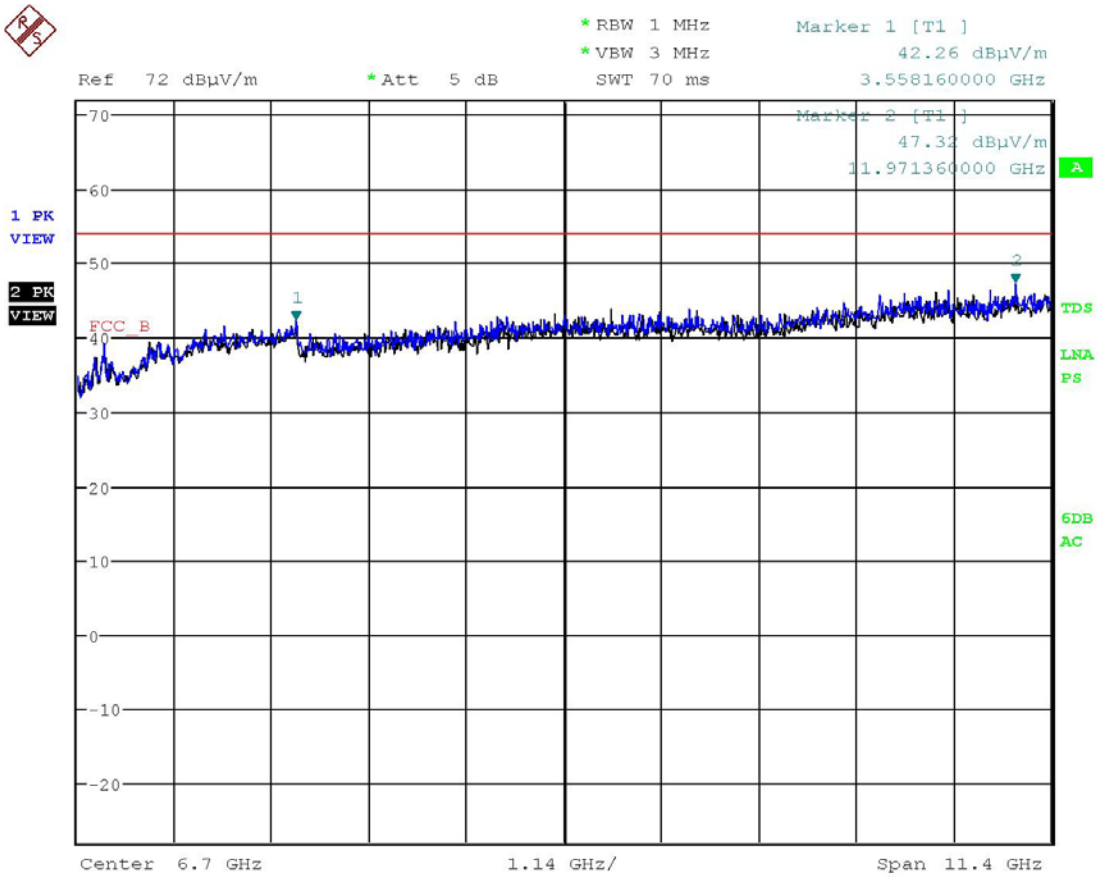
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: Middle of Band 1- 12.4 GHz Peak Field Strength Plot

3 Meter Field Strength Plot



Date: 27.JAN.2017 16:48:46

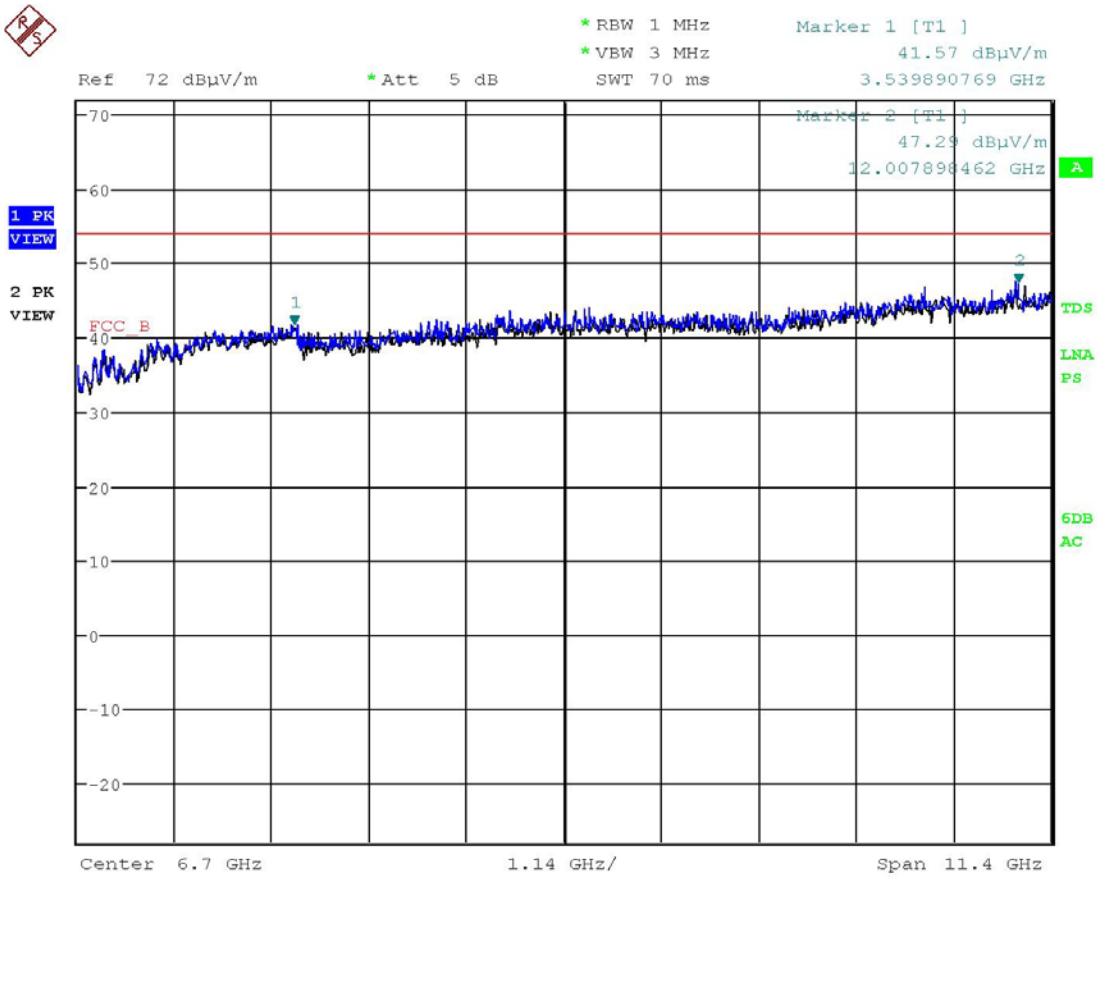
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: High End of Band 1 – 12.4 GHz Peak Field Strength Plot

3 Meter Field Strength Plot



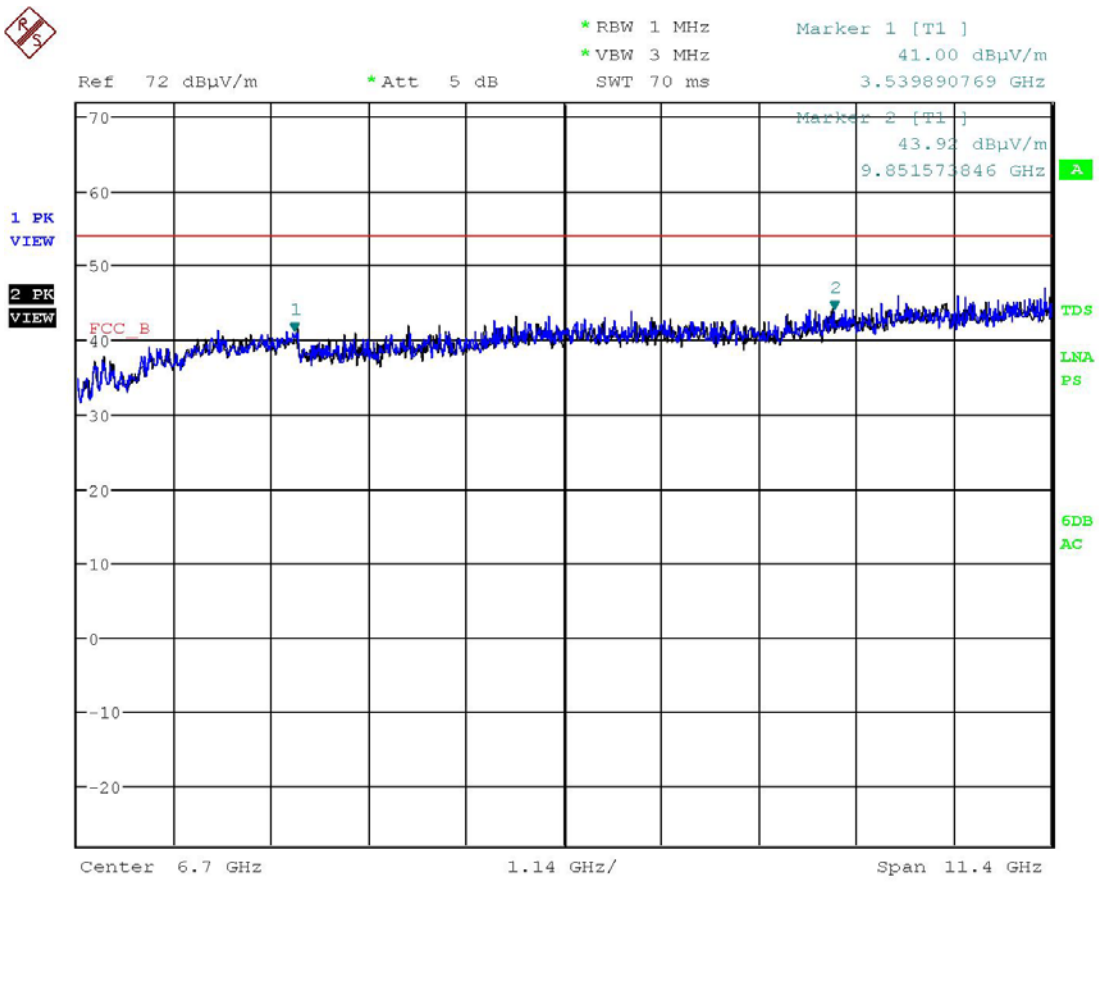
Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

RADIATED SPURIOUS EMISSIONS

Test Data: Scanning 1- 12.4 GHz Peak Field Strength Plot

3 Meter Field Strength Plot



Ant Polarity: T1 (Blue) = Vertical, T2 (Black) = Horizontal

Results Meets Requirements

TEST 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 Chamber	Eaton	94455-1	1096	07/14/15	07/14/17
Antenna: Log-Periodic 1122	Electro-Metrics	LPA-25	1122	07/14/15	07/14/17
CHAMBER	Panashield	3M	N/A	04/25/16	12/31/17
Antenna: Double-Ridged Horn/ETS Horn 2	ETS-Lindgren Chamber	3117	00041534	02/25/15	02/25/17
Software: Field Strength Program	Timco	N/A	Version 4.0	N/A	N/A
EMI Test Receiver R & S ESU 40 Chamber	Rohde & Schwarz	ESU 40	100320	04/01/16	04/01/18
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
Bore-sight Antenna Positioning Tower	Sunol Sciences	TLT2	N/A	N/A	N/A
Pre-amp	RF-LAMBDA	RLNA00M45GA	N/A	01/04/16	01/04/18

***EMI RECEIVER SOFTWARE VERSION**

The receiver firmware used was version 4.43 Service Pack 3

END OF TEST REPORT