



**RETLIF
TESTING
LABORATORIES**

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**FCC Part 15, Subpart C, Section 15.247
Test Report**

On

**Set Top Box
FCC ID: ACQ-XI6**

Customer Name: Arris

Customer P.O.: AR1123756

Date of Report: March 15, 2018

Test Report No.: R-6288N-5

Test Start Date: December 27, 2017

Test Finish Date: January 8, 2018

Test Technician: M. Seamans

Report Approved By: S. Wentworth

Report Prepared By: J. Ramsey

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Fax: (215) 256-4130

Washington Regulatory Compliance
1600 North Oak Street, #1710
Arlington, VA 22209 USA
Tel: (703) 528-3895

Technical Information

Report Number: R-6288N-5

Customer: Arris

Address: 101 Tournament Drive
Horsham, PA 19044

Manufacturer: Arris

Manufacturer Address: 101 Tournament Drive
Horsham, PA 19044

Test Sample: Set Top Box

Model Number: AX061AEI

Serial Numbers: M11742TK0116 (Radiated)
M11742TK0102 (Conducted)

FCC ID: ACQ-XI6

Type: Digital Transmission - Direct Sequence Spread
Spectrum Transmitter

Power Requirements: 5 VDC via 115 VAC, 60 Hz AC/DC Power Adapter

Power Supply: AC Adapter, ARRIS, Model: NBC15B050300VU

Frequency of Operation: 2402.0 MHz to 2480.0 MHz

Equipment Class: DTS

Antenna Type: Patch Antenna, 4.4 dBi Peak Gain

Equipment Use: Television Set-Top Box

Test Specification:

FCC Rules and Regulations Part 15, Subpart C, Section 15.247

Test Procedure:

ANSI C63.4:2014

ANSI C63.10:2013

FCC 558074 D01 DTS Meas Guidance V04, April 5, 2017

Test Facility:

Retlif Testing Laboratories

101 New Boston Road

Goffstown, NH 03045

FCC Designation Number: US5327



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Report No. R-6288N-5

Tests Performed

FCC Part 15, Subpart C	Test Method
15.247(a)(2)	Occupied Bandwidth (6dB Bandwidth)
15.247(b)(3)	Power Output
15.247(c)	Conducted Band Edge/Out of Band Emissions
15.247(d)	Antenna Port, Conducted Emissions
15.247(e)	Antenna Port, Power Density
15.247(d)/15.209(a)	Spurious Radiated Emissions
15.207(b)	Conducted Emissions, Power Leads

EUT Operation:

- The EUT was transmitting a Bluetooth LE signal at 2.402 GHz (Low Band), 2.440 GHz (Mid Band) and 2.480 GHz (High Band).
- For AC Line Conducted Emissions and Spurious Radiated Emissions the EUT was transmitting a modulated signal with all transmitters operating simultaneously.

EUT Description:

The EUT is a Set Top Box which is used for streaming content to televisions for home entertainment purposes. The EUT contains the following transmitters: RF4CE, Bluetooth Classic, Bluetooth Low Energy, 2.4 GHz Wifi and 5 GHz Wifi. The EUT is constructed of plastic with the following connections: DC Power, Ethernet, HDMI Input and HDMI Output.

All equipment that was utilized to achieve the EUT operating state is specified in the table below:

Support Equipment

Description	Manufacturer	Part Number	Model Number
Test PC	Dell	D400	Latitude
USB to Serial Adapter	SIIG	N/A	N/A



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Certification and Signatures

We certify that this report is a true representation of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.



Todd Hannemann
EMC Test Engineer
iNARTE Certified Technician ATL-0255-T



Dean F. Landers
EMC Test Engineer
NVLAP Approved Signatory

Non-Warranty Provision

The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

Non-Endorsement

This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



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Report No. R-6288N-5

Revision History

Revisions to this document are listed below; the latest revised document supersedes all previous issues of this document:

Revision	Date	Pages Affected
-	March 15, 2018	Original Release



Retlif Testing Laboratories

Report No. R-6288N-5

Requirements and Test Results

Requirement:

FCC Section 15.247(a)(2)

Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands. The minimum 6 dB bandwidths shall be at least 500 kHz.

- **Results:**

The minimum 6 dB bandwidth measured 721.442 kHz which complies with the requirement that the Bandwidth be no less than 500 kHz.

Requirement:

FCC Sections 15.247(b)(3)

Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz

The maximum peak conducted output power of the intentional radiator shall not exceed the following:

For systems using digital modulation in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antenna and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antenna and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

- **Results:**

The maximum measured peak conducted output power was 1.53 mW. The maximum antenna gain of the PCB antenna is 4.4 dBi. The device was found to meet the power output requirements of 15.247 (b)(3) including de facto EIRP.



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Requirements and Test Results (con't)

Requirement:

FCC Section 15.247(d):

Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz

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 that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) must also comply with the radiated emissions limits specified in Section 15.209(a) (see Section 15.205(c)).

- **Results:**

In any 100 kHz bandwidth outside the frequency band in which the Spread spectrum intentional radiator was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below that in the 100 kHz bandwidth within the band that contained the highest level of the desired power. All emissions, which fell within the restricted bands specified in 15.205(a), were measured and found to be in compliance with the limits specified in 15.209(a).



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Requirements and Test Results (con't)

Requirement:

FCC Section 15.247(e):

Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

- **Results:**

The power spectral density conducted from the intentional radiator to the antenna was not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density was determined in accordance with Section 15.247(b)(3), herein.

Requirement:

FCC Section 15.209(a) - Radiated Emission Limits, General Requirements

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in Table 1.

Table 1 - Radiated Emission Limits

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 to 88	100	3
88 to 216	150	3
216 to 960	200	3
Above 960	500	3

- **Results:**

The field strength of spurious radiated emissions did not exceed the limits specified in Table 1.



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Requirements and Test Results (con't)

Requirement:

FCC Section 15.207(a) - Conducted Limits

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits shown in Table 2, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of the paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Table 2 - Conducted Emission Limits

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50
*Decreases due to logarithm of the frequency		

- **Results:**

The conducted emissions observed did not exceed the limits specified in Table 2.



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Requirements and Test Results (con't)

Field Strength Calculation/Conversion:

The maximized field strength of the emission was obtained as follows:

$$C_R = M_R + C_F$$

Where:

C_R = Corrected Reading in dB μ V/m

M_R = Uncorrected Meter Reading in dB μ V

C_F = Correction Factor in dB (Antenna Factor, Pre-amp + Cable Loss)

Example:

$$M_R = 15.35 \text{ dB}\mu\text{V}$$

$$C_F = 16.85 \text{ dB}$$

$$C_R = 15.35 \text{ dB}\mu\text{V} + 16.85 = 32.2 \text{ dB}\mu\text{V/m}$$

dB μ V/M is converted to uV/M for comparison to the specified limit using the formula:

$$\text{invLog dB}\mu\text{V/M}/20$$

$$32.2 \text{ dB}\mu\text{V/m} = 40.74 \text{ uV/m}$$

RF Power Conversion:

Power readings in dBm may be converted to mW using the formula:

$$\text{InvLog dBm}/10$$

$$\text{Example: } 20\text{dBm} = 100\text{mW}$$



Retlif Testing Laboratories

Report No. R-6288N-8

Requirements and Test Results (con't)

FCC Section 15.247 (i)

RF Exposure Limits

Spread Spectrum Transmitters operating under 15.247 must be operated in a manner that ensures the public is not exposed to RF energy levels in excess of the commission's guidelines. Based on the transmitter power and maximum antenna gain (see calculation below) the minimum separation distance was calculated to determine the distance for acceptable MPE power density levels to meet both the Occupational/Controlled Exposure and the General Population/Uncontrolled Exposure requirements of FCC Part 1.1310. The calculation below uses the more stringent General Population MPE Limits.

$$S = \frac{PG}{4\pi D^2}$$

D = Minimum Separation Distance in cm

S = Max allowed Power Density in mW/cm²

Per 1.1310 For the Frequency of 2400 MHz S = 1 mW/cm²

Power = Max Power Input to Antenna = 1.53mW

Gain = Max Power Gain of Antenna = 4.4 dBi = 2.75 numeric

$$1 \text{ mW/cm}^2 = \frac{1.53 \times 2.75}{4 \times (3.14) \times D^2} = \frac{4.21}{12.56 \times D^2}$$

$$D^2 = \frac{4.21}{12.56 \times 1}$$

$$D = \sqrt{0.33} = 0.58 \text{ cm}$$

NOTE: The maximum measured RF power output and maximum antenna gain was utilized in the RF Exposure calculation.



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Report No. R-6288N-5

Equipment List

FCC Section 15.247(a)(2) Occupied Bandwidth (6 dB Bandwidth)

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/17/2017	10/31/2018
5134	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 12.4 GHz	757C-10	12/6/2017	12/31/2018

FCC Section 15.247(b)(3) Power Output

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/17/2017	10/31/2018
5134	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 12.4 GHz	757C-10	12/6/2017	12/31/2018

FCC Section 15.247(d) Antenna Port, Conducted Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/17/2017	10/31/2018
5134	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 12.4 GHz	757C-10	12/6/2017	12/31/2018

FCC Section 15.247(e) Antenna Port, Power Density

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/17/2017	10/31/2018
5134	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 12.4 GHz	757C-10	12/6/2017	12/31/2018



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**FCC Section 15.247(d) /15.209(a)
Spurious Radiated Emissions, 30 MHz to 25 GHz**

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
012	ETS / EMCO	ANTENNA, ACTIVE LOOP	10 kHz - 30 MHz	6502	9/29/2017	9/30/2018
1232	AGILENT / HP	PRE-AMPLIFIER	1 - 26.5 GHz	8449B	5/23/2017	5/31/2018
3258	ETS / EMCO	ANTENNA, DOUBLE RIDGED GUIDE	1 - 18 GHz	3115	10/13/2016	4/30/2018
3427B	ETS / EMCO	ANTENNA, BICONICAL	20 - 200 MHz	3104	9/21/2017	3/31/2019
3430	MCS	ANTENNA, HORN	18 - 26.5 GHz	K-5039	No Calibration Required	
3430A	MCS	ANTENNA, HORN	26.5 - 40 GHz	R-5041	No Calibration Required	
4029B	RETLIF	OPEN AREA TEST SITE, ATTENUATION	3 / 10 Meters	RNH	4/13/2016	4/30/2018
443	ELECTRO-METRICS	ANTENNA, LOG PERIODIC	200 MHz - 1000 MHz	LPA-25	10/6/2016	4/30/2018
4972	PHILCO	TERMINATION, COAXIAL	50 OHM, DC - 1 GHz	1608-150	10/26/2017	10/31/2018
5070	ROHDE & SCHWARZ	RECEIVER, EMI	20 Hz - 40 GHz	ESIB40	10/17/2017	10/31/2018
5188	Cybertron	COMPUTER, CONTROL	N/A	TSVQJA2221	No Calibration Required	
5229	FLORIDA RS TECHNOLOGY	CABLE, COAXIAL	DC - 40 GHz	FLRST-2.92 (102ö)	10/13/2017	10/31/2018
5234	PASTERNAK	CABLE, COAXIAL	10 kHz - 18 GHz	PE302-230	7/24/2017	7/31/2018

**FCC Section 15.207(b)
Conducted Emissions, Power Leads, 150 kHz to 30 MHz**

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5030B	NARDA MICROWAVE	ATTENUATOR, COAXIAL	10 dB, DC - 12.4 GHz	757C-10	3/7/2017	3/31/2018
5209	SOLAR ELECTRONICS	LISN	50 uH, 150 kHz - 30 MHz	21106-50-BP-25-BNC	4/4/2017	4/30/2018
5210	SOLAR ELECTRONICS	LISN	50 uH, 150 kHz - 30 MHz	21106-50-BP-25-BNC	4/4/2017	4/30/2018
5231	AGILENT / HP	ANALYZER, SPECTRUM	3 Hz - 26.5 GHz	E4440A	5/24/2017	5/31/2018



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Report No. R-6288N-5

Test Photographs
Occupied Bandwidth (6dB Bandwidth)



Test Setup



Retlif Testing Laboratories

Report No. R-6288N-5

**FCC Part 15, Subpart C, Section 15.247(a)(2)
Occupied Bandwidth (6 dB Bandwidth)
Test Data**

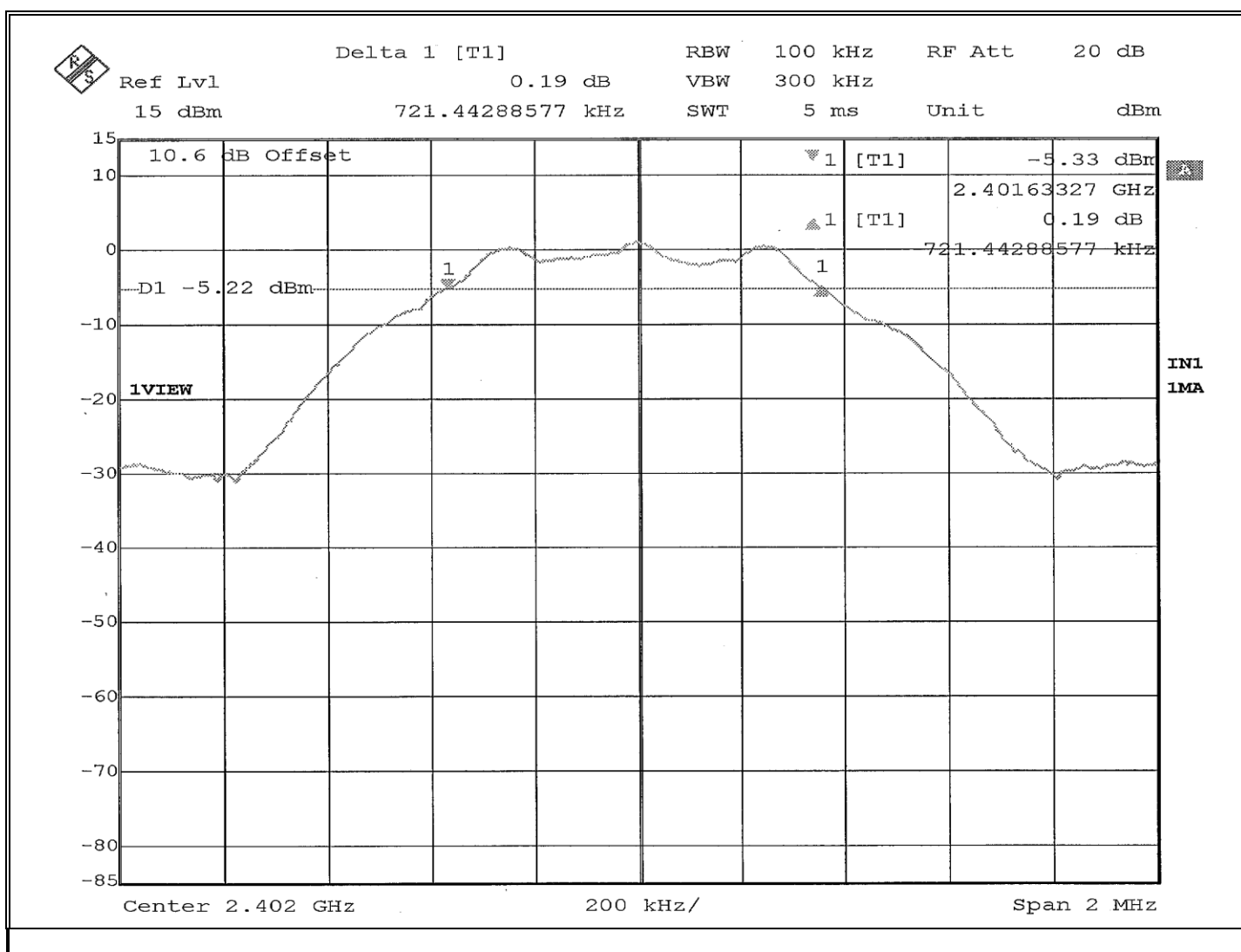


Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Occupied Bandwidth
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.402 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	19.5 °C / 20.1 %
Result:	6dB Bandwidth: 721.442 kHz

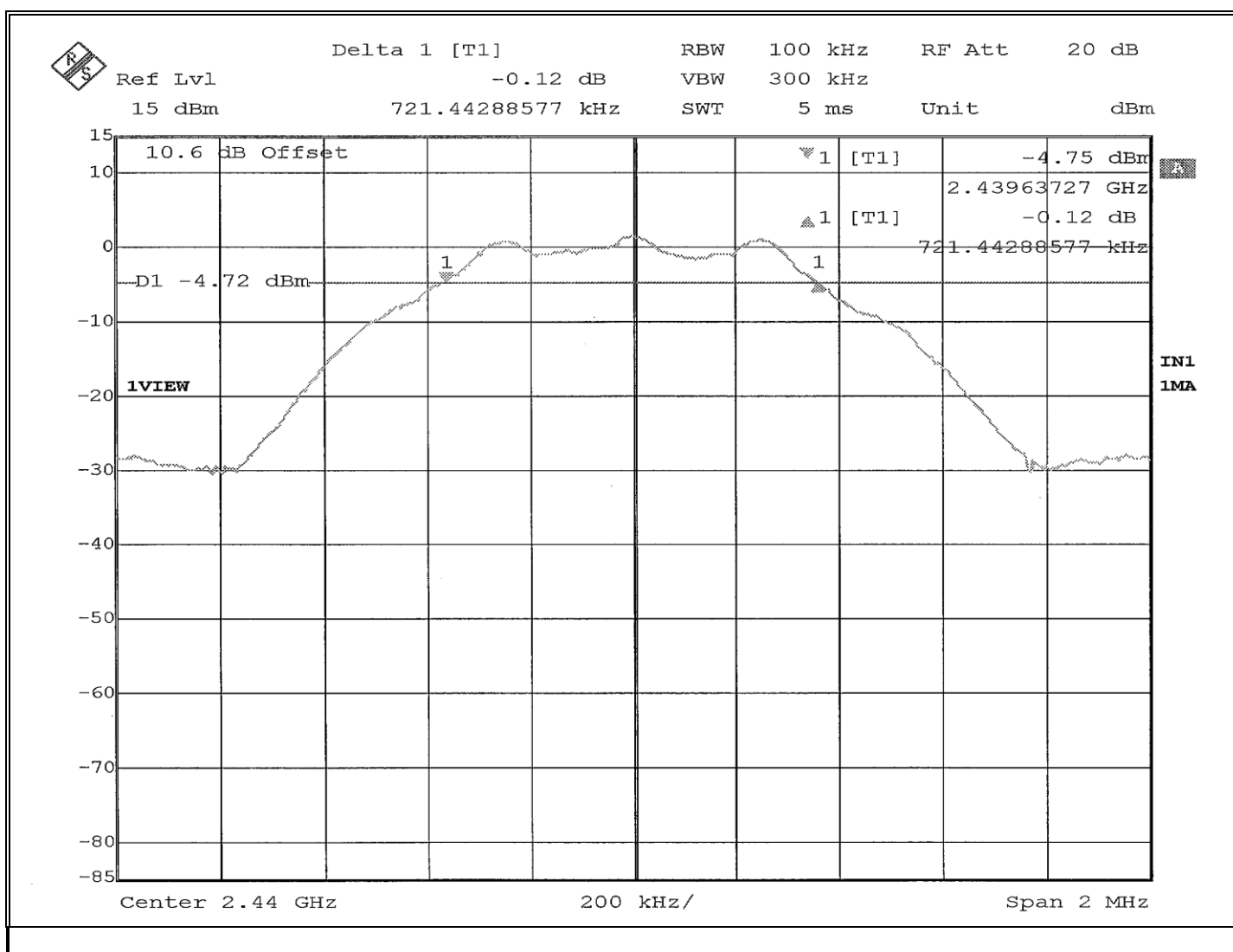


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EMISSIONS TEST DATA SHEET

Method:	Occupied Bandwidth
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.402 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	19.5 °C / 20.1 %
Result:	6dB Bandwidth: 721.442 kHz



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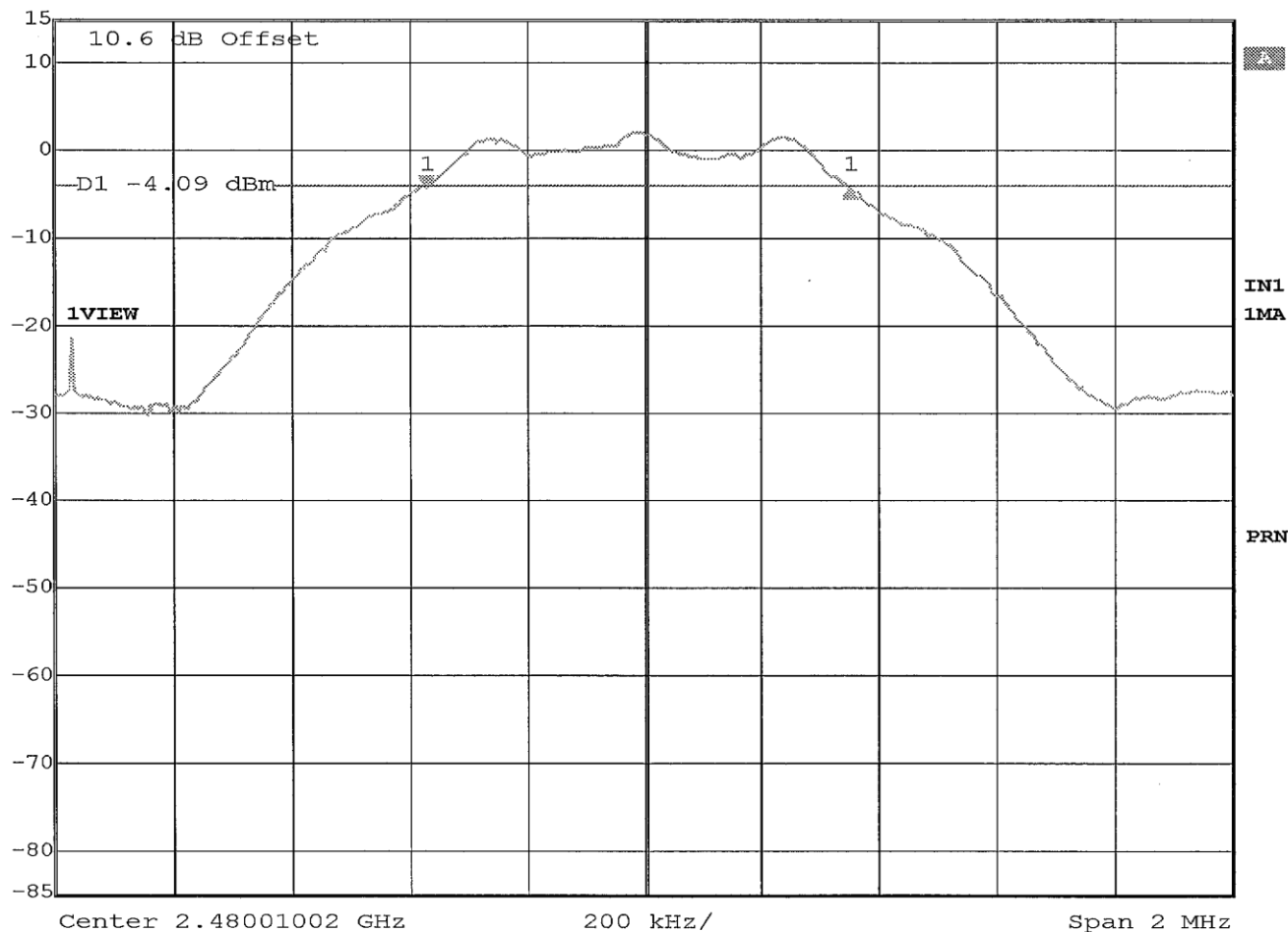
Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Occupied Bandwidth
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.480 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	19.5 °C / 20.1 %
Result:	6dB Bandwidth: 721.442 kHz



Delta 1 [T1] RBW 100 kHz RF Att 20 dB
 Ref Lvl 0.01 dB VBW 300 kHz
 15 dBm 721.44288577 kHz SWT 5 ms Unit dBm



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Test Photographs Power Output



Test Setup



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FCC Part 15, Subpart C, Section 15.247(b)(3)
Power Output
Test Data

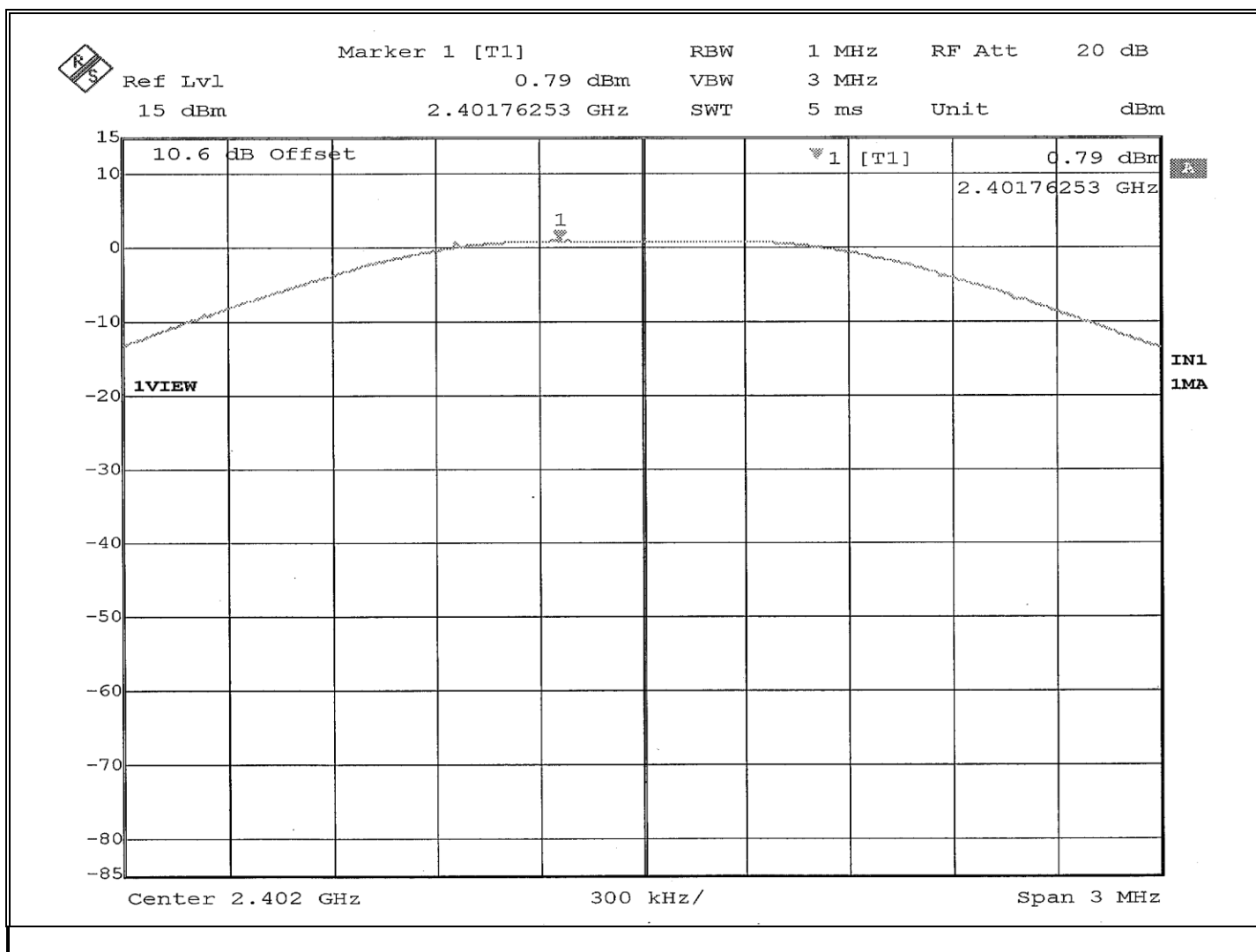


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EMISSIONS TEST DATA SHEET

Method:	Power Output
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.402 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	20.9 °C / 19.7 %
Result:	Power Output:0.79 dBm

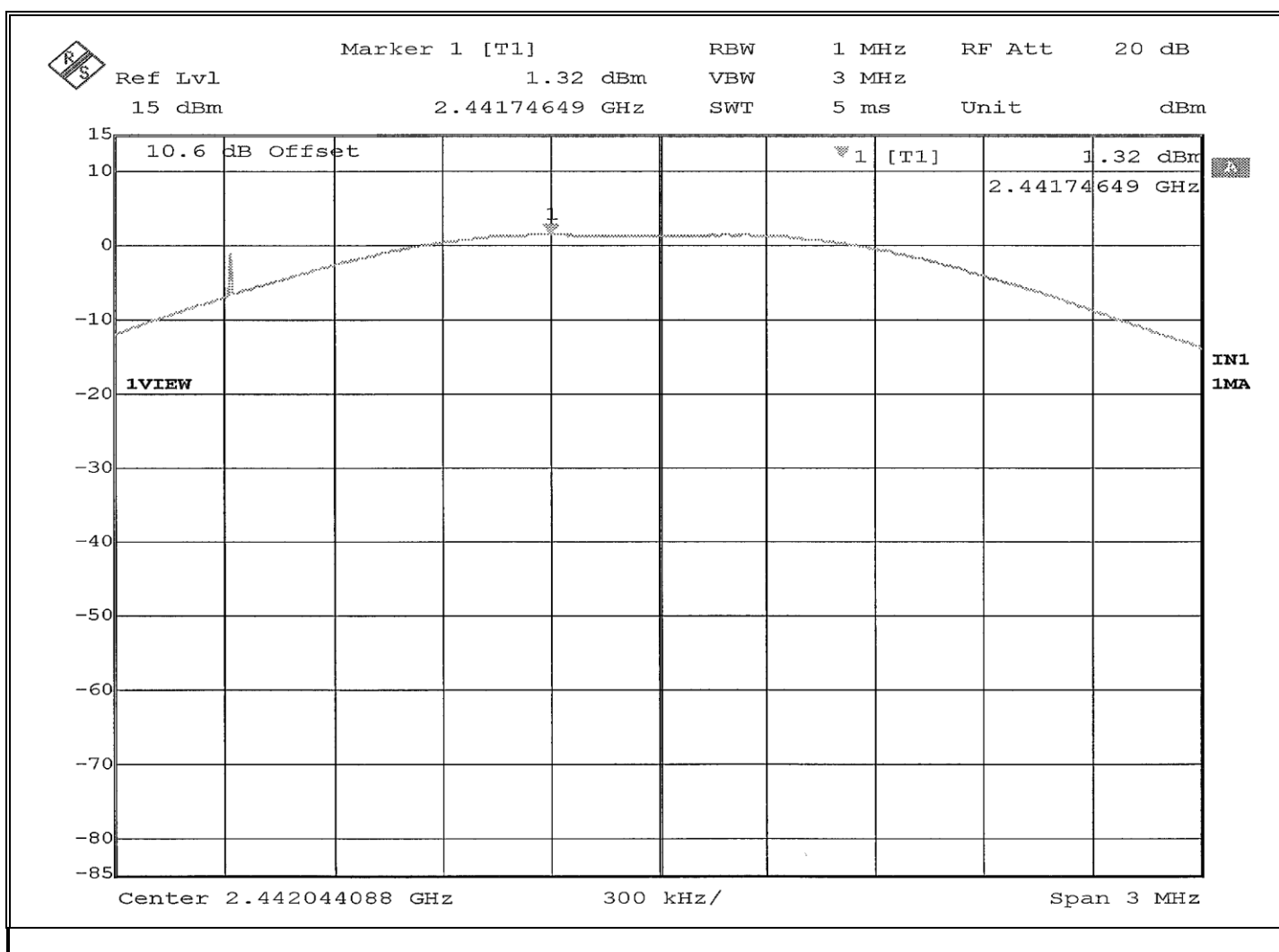


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EMISSIONS TEST DATA SHEET

Method:	Power Output
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.440 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	20.9 °C / 19.7 %
Result:	Power Output: 1.32 dBm

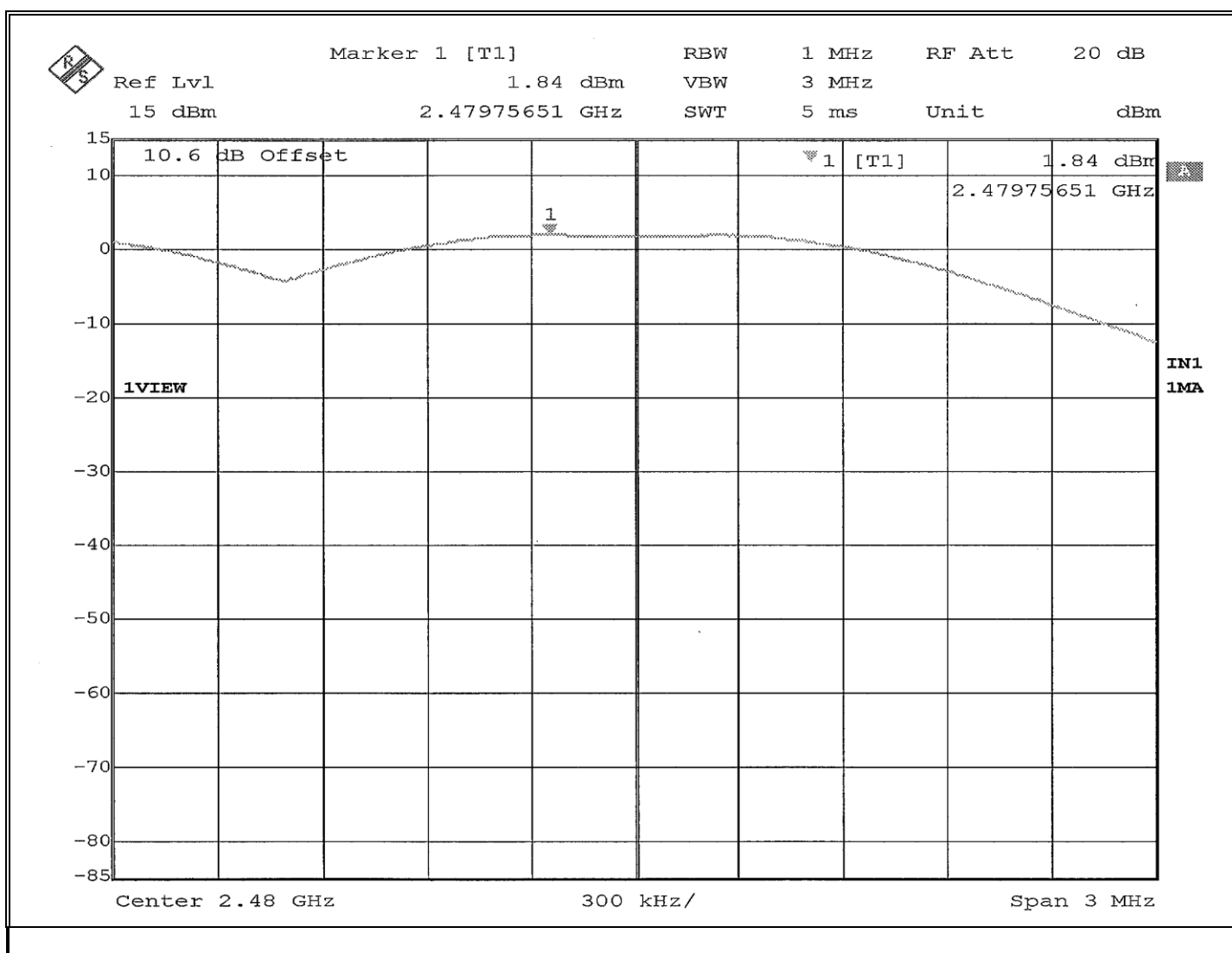


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EMISSIONS TEST DATA SHEET

Method:	Power Output
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.480 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	20.9 °C / 19.7 %
Result:	Power Output: 1.84 dBm



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Test Photographs

Antenna Port, Conducted Emissions



Test Setup



Retlif Testing Laboratories

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**FCC Part 15, Subpart C, Section 15.247(d)
Antenna Port, Conducted Out of Band Emissions
Band Edge Test Data**



Retlif Testing Laboratories

Report No. R-6288N-5

**Conducted Out of Band
Test Data**

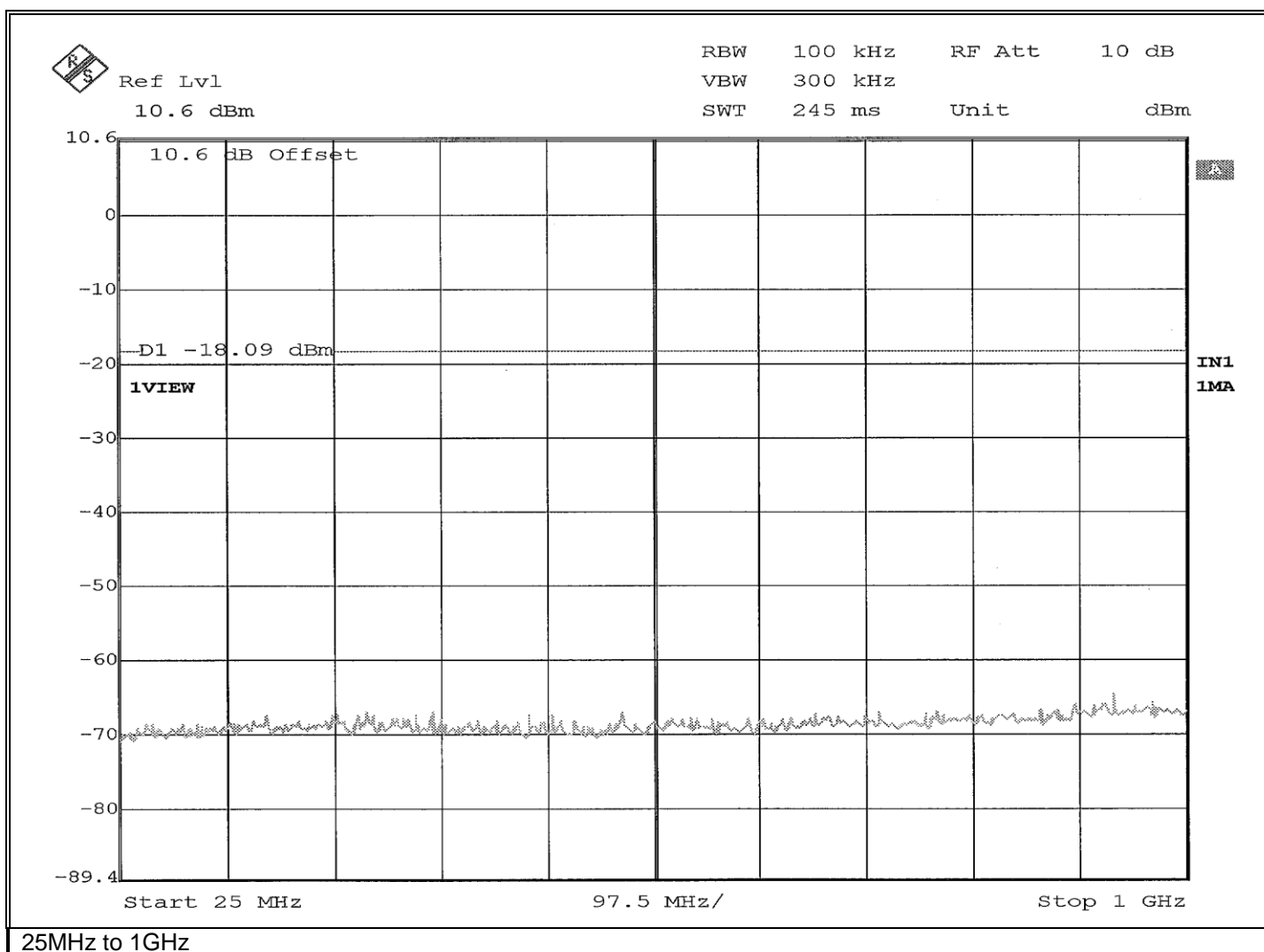


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EMISSIONS TEST DATA SHEET

Method:	Conducted Out of Band
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Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.402 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.4 °C / 20.4 %
Notes:	Limit: -18.09 dBm

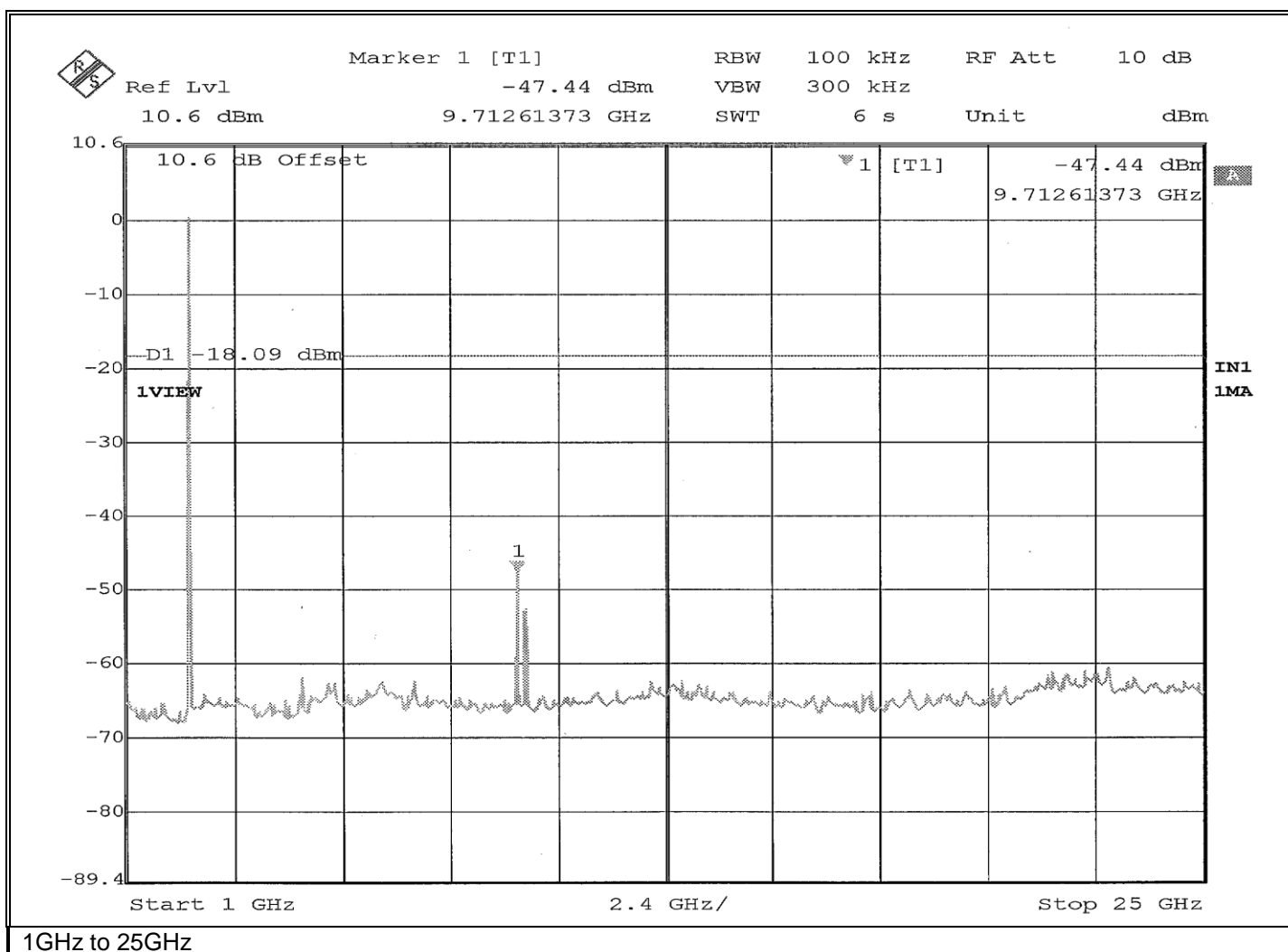


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Temp/ Relative Humidity:	21.4 °C / 20.4 %
Notes:	Limit: -18.09 dBm

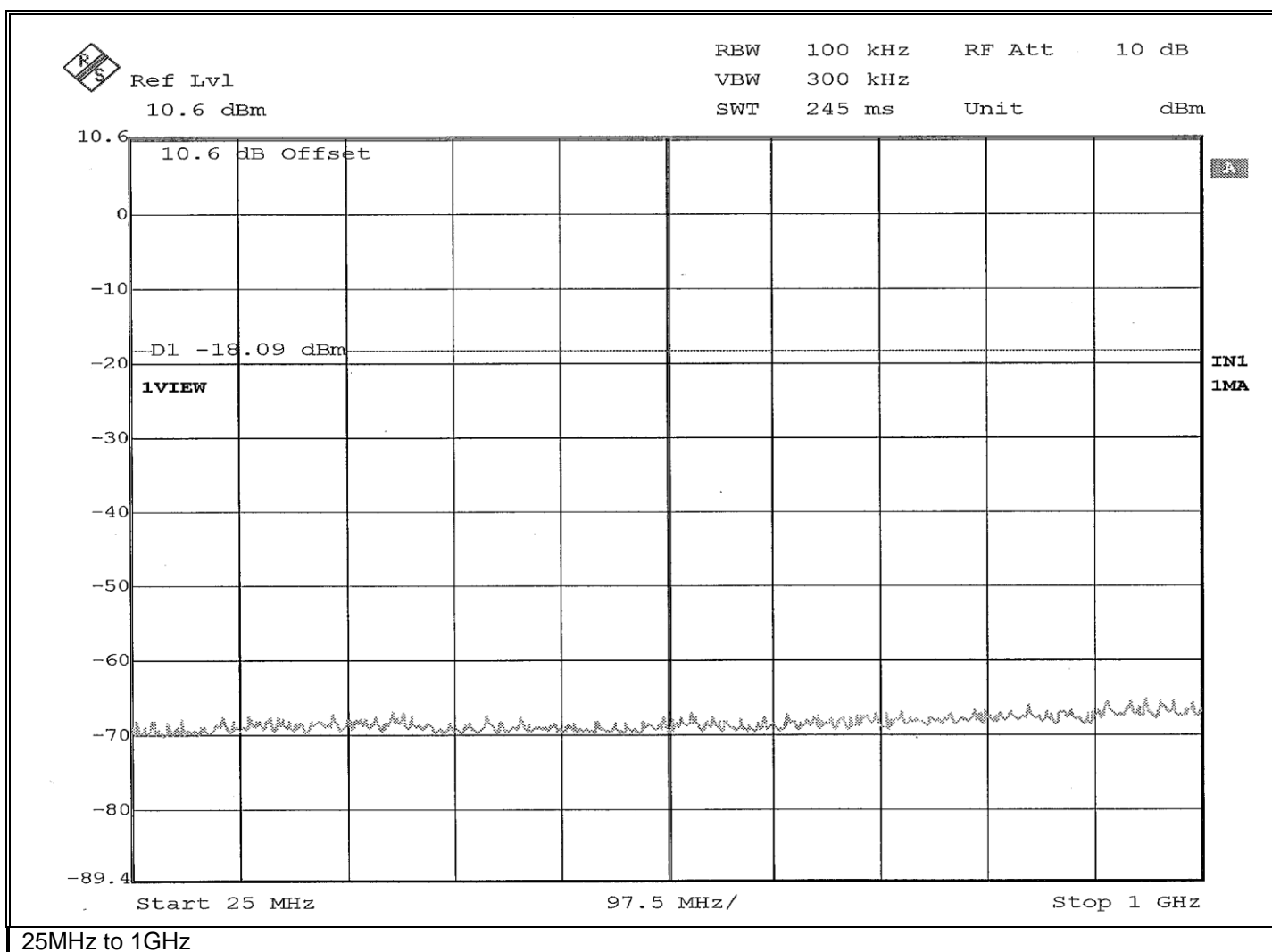


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Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.4 °C / 20.4 %
Notes:	Limit: -18.09 dBm

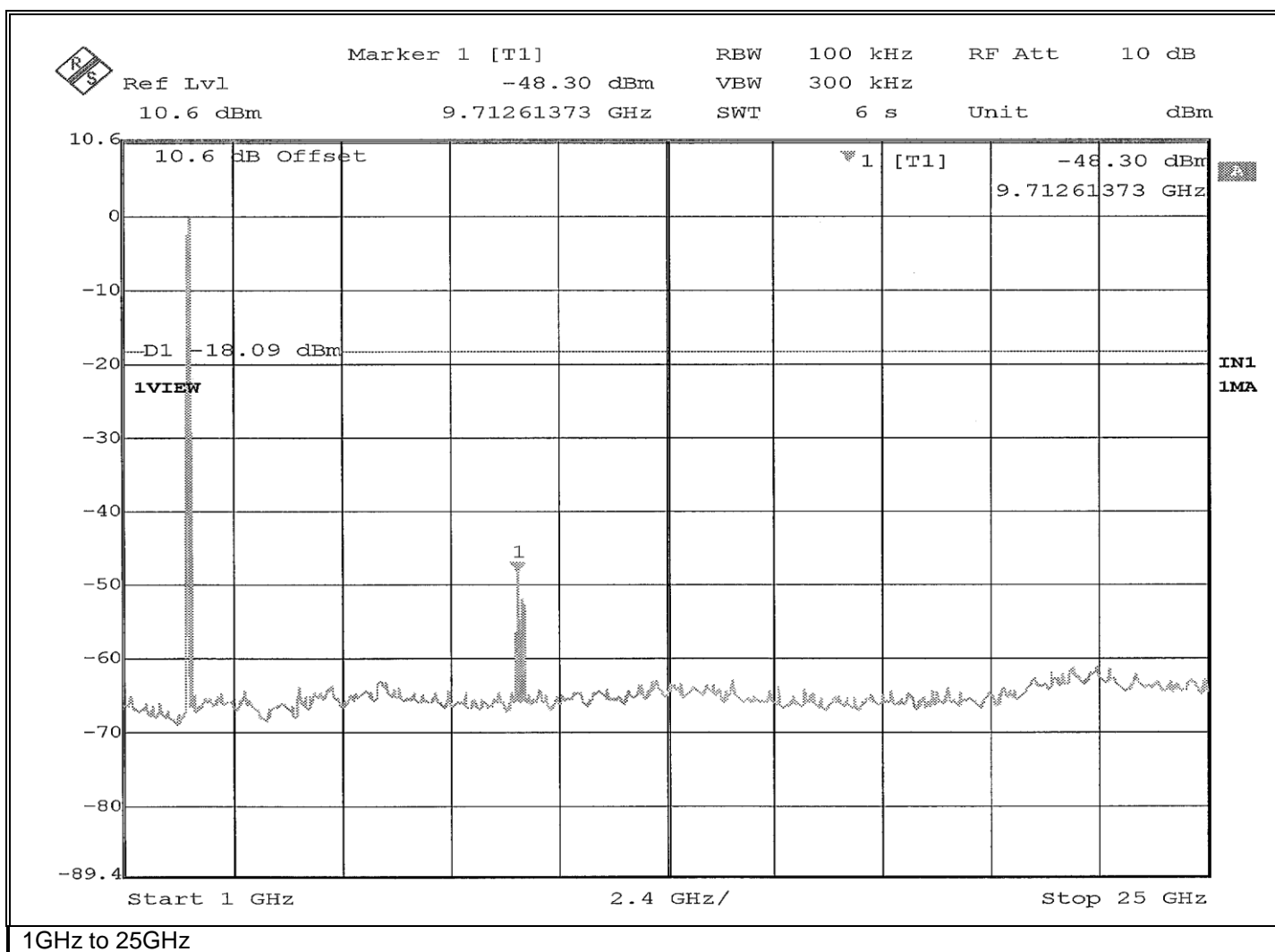


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Temp/ Relative Humidity:	21.4 °C / 20.4 %
Notes:	Limit: -18.09 dBm

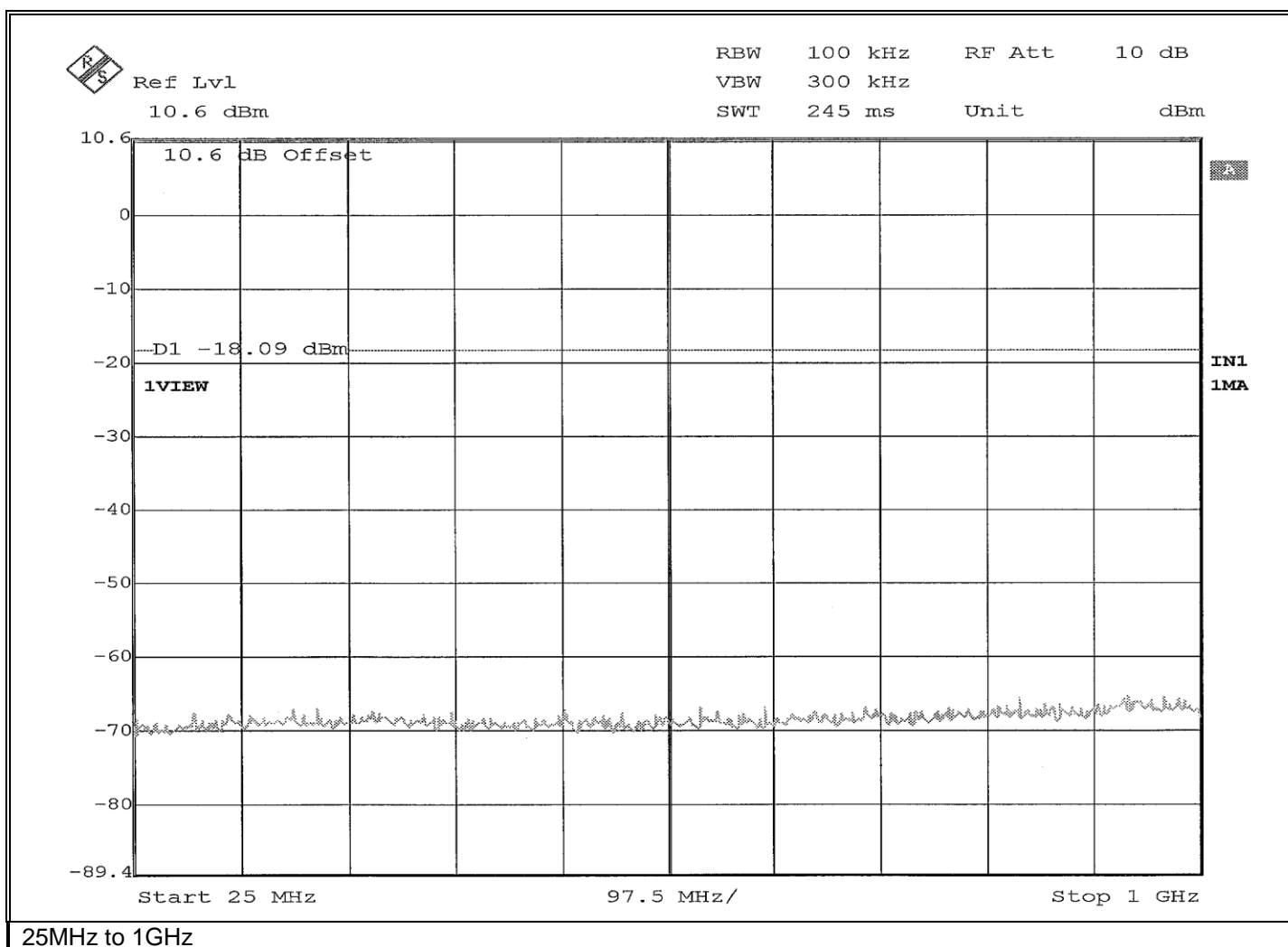


Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Conducted Out of Band
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (d)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.480 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.4 °C / 20.4 %
Notes:	Limit: -18.09 dBm

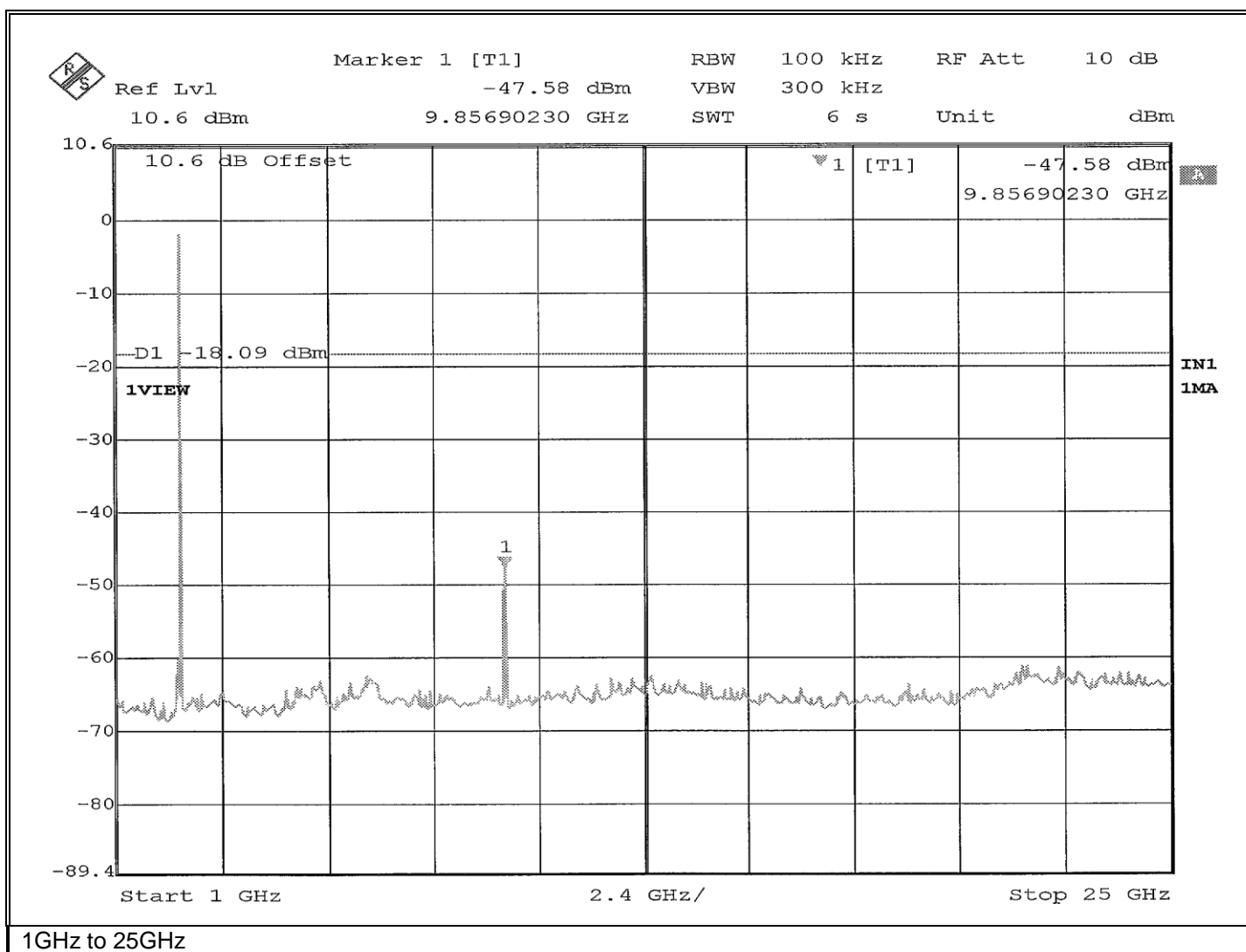


Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Conducted Out of Band
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (d)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.480 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.4 °C / 20.4 %
Notes:	Limit: -18.09 dBm



Retlif Testing Laboratories

Report No. R-6288N-5

**Band Edge
Test Data**

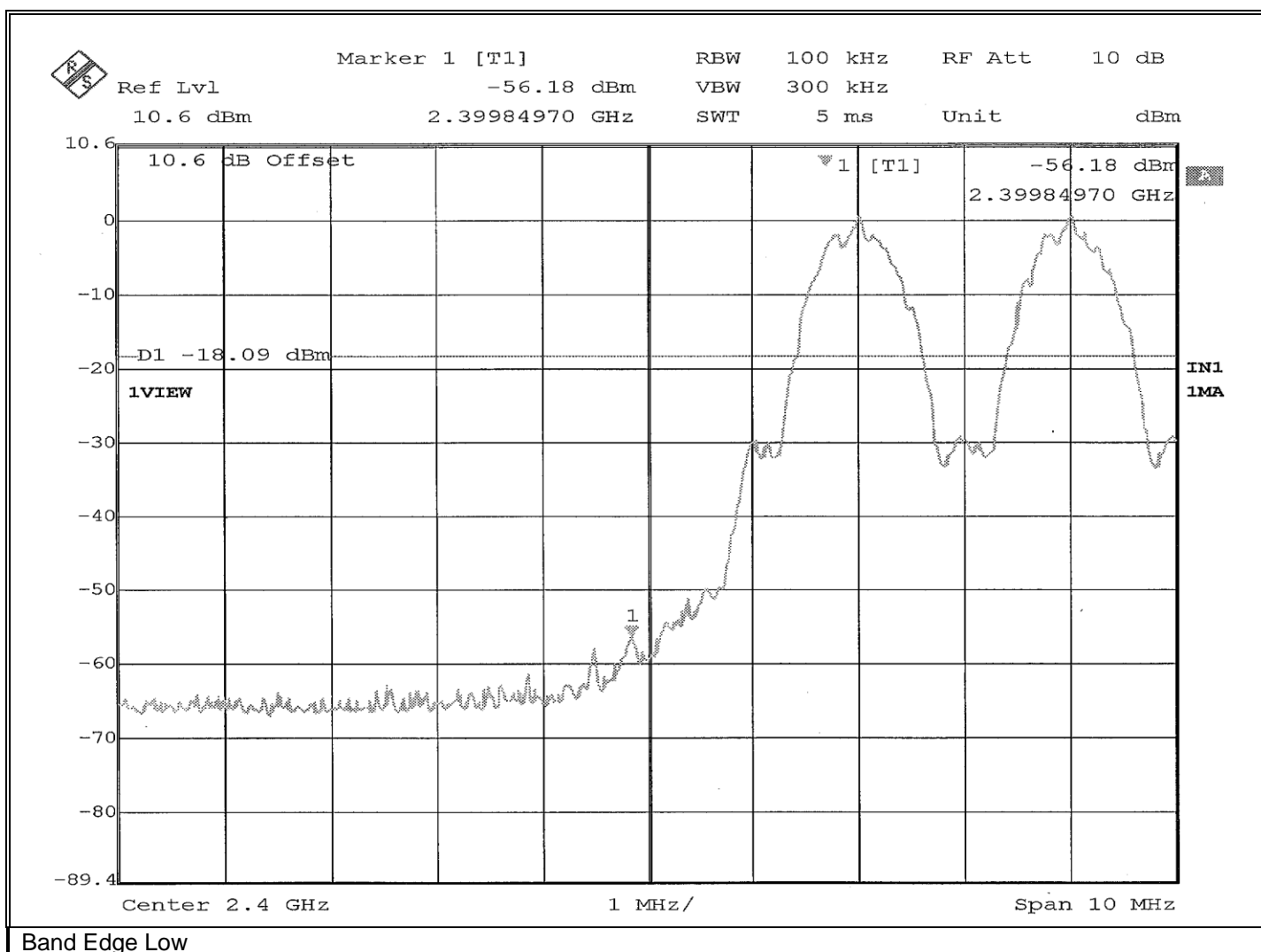


Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Band Edge
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (d)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.402 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.4 °C / 20.4 %
Notes:	Limit: -18.09 dBm

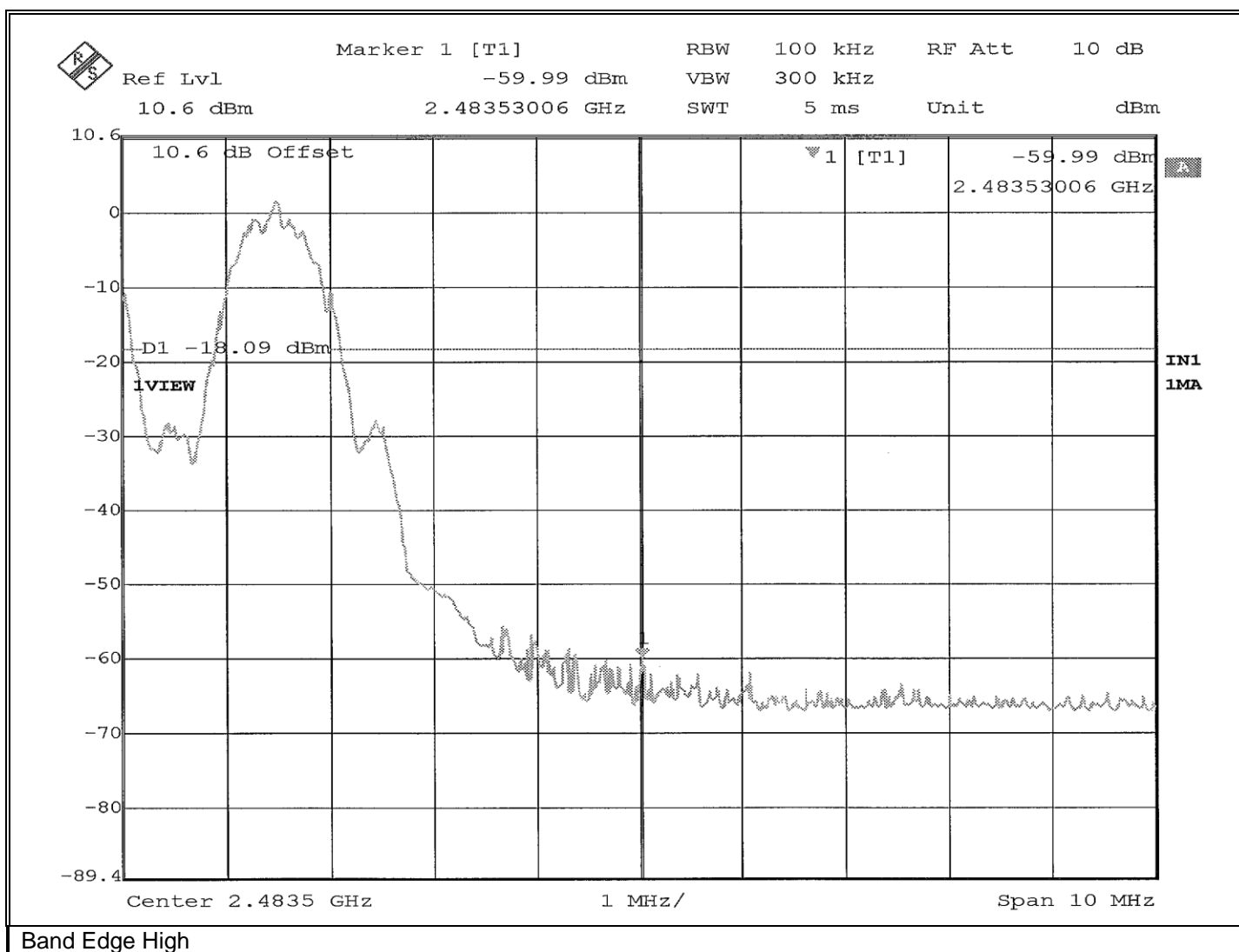


Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Band Edge
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (d)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.480 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.4 °C / 20.4 %
Notes:	Limit: -18.09 dBm



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Emissions, 30 MHz to 25 GHz



Test Setup



Retlif Testing Laboratories

Report No. R-6288N-5

**Unwanted Emissions into Restricted Frequency Bands
Spurious Emissions Test Data**



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Quasi-Peak <1GHz, Average >1GHz X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
37.50	-	-	-	-	-	-	-	-	100.00
	38.00*	-64.73	-	-	-	-64.73	30.527	33.603	
38.25	-	-	-	-	-	-	-	-	100.00
73.00	-	-	-	-	-	-	-	-	100.00
	74.00*	-65.18	-	-	-	-65.18	30.077	31.906	
74.60	-	-	-	-	-	-	-	-	100.00
74.80	-	-	-	-	-	-	-	-	100.00
	75.00*	-64.31	-	-	-	-64.31	30.947	35.267	
75.20	-	-	-	-	-	-	-	-	100.00
108.00	-	-	-	-	-	-	-	-	100.00
	115.00*	-64.52	-	-	-	-64.52	30.737	34.425	
121.94	-	-	-	-	-	-	-	-	100.00
123.00	-	-	-	-	-	-	-	-	100.00
	130.00*	-63.60	-	-	-	-63.60	31.657	38.271	
138.00	-	-	-	-	-	-	-	-	100.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Quasi-Peak <1GHz, Average >1GHz X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
149.90	-	-	-	-	-	-	-	-	100.00
	150.00*	-64.56	-	-	-	-64.56	30.697	34.267	
150.05	-	-	-	-	-	-	-	-	100.00
156.52	-	-	-	-	-	-	-	-	100.00
	156.52*	-63.77	-	-	-	-63.77	31.487	37.530	
156.52	-	-	-	-	-	-	-	-	100.00
156.70	-	-	-	-	-	-	-	-	100.00
	156.80*	-64.18	-	-	-	-64.18	31.077	35.799	
156.90	-	-	-	-	-	-	-	-	100.00
162.01	-	-	-	-	-	-	-	-	150.00
	165.00*	-63.17	-	-	-	-63.17	32.087	40.214	
167.17	-	-	-	-	-	-	-	-	150.00
167.72	-	-	-	-	-	-	-	-	150.00
	170.00*	-64.44	-	-	-	-64.44	30.817	34.743	
173.20	-	-	-	-	-	-	-	-	150.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Quasi-Peak <1GHz, Average >1GHz X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
240.00	-	-	-	-	-	-	-	-	200.00
	260.00*	-64.06	-	-	-	-64.06	31.197	36.297	
285.00	-	-	-	-	-	-	-	-	200.00
322.80	-	-	-	-	-	-	-	-	200.00
	330.00*	-64.25	-	-	-	-64.25	31.007	35.512	
335.40	-	-	-	-	-	-	-	-	200.00
399.90	-	-	-	-	-	-	-	-	200.00
	405.00*	-64.68	-	-	-	-64.68	30.577	33.797	
410.00	-	-	-	-	-	-	-	-	200.00
608.00	-	-	-	-	-	-	-	-	200.00
	611.00*	-64.91	-	-	-	-64.91	30.347	32.913	
614.00	-	-	-	-	-	-	-	-	200.00
960.00	-	-	-	-	-	-	-	-	500.00
	975.00*	-62.11	-	-	-	-62.11	33.147	45.433	
1240.00	-	-	-	-	-	-	-	-	500.00
1300.00	-	-	-	-	-	-	-	-	500.00
	1350.00*	-73.52	-	-	-	-73.52	21.737	12.214	
1427.00	-	-	-	-	-	-	-	-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Quasi-Peak <1GHz, Average >1GHz X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
1435.00	-	-	-	-	-	-	-	-	500.00
	1500.00*	-73.52	-	-	-	-73.52	21.737	12.214	
1646.50	-	-	-	-	-	-	-	-	500.00
1660.00	-	-	-	-	-	-	-	-	500.00
	1680.00*	-73.52	-	-	-	-73.52	21.737	12.214	
1710.00	-	-	-	-	-	-	-	-	500.00
1718.80	-	-	-	-	-	-	-	-	500.00
	1720.00*	-73.52	-	-	-	-73.52	21.737	12.214	
1722.20	-	-	-	-	-	-	-	-	500.00
2200.00	-	-	-	-	-	-	-	-	500.00
	2250.00*	-73.48	-	-	-	-73.48	21.777	12.271	
2300.00	-	-	-	-	-	-	-	-	500.00
2310.00	-	-	-	-	-	-	-	-	500.00
	2390.00	-73.12	4.4	7.798	-	-60.921	34.336	52.098	
2390.00	-	-	-	-	-	-	-	-	500.00
2483.50	-	-	-	-	-	-	-	-	500.00
	2483.50	-71.36	4.4	7.798	-15.597	-74.758	20.498	10.590	
2500.00	-	-	-	-	-	-	-	-	500.00

EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Quasi-Peak <1GHz, Average >1GHz X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
2690.00	-	-	-	-	-	-	-	-	500.00
	2750.00*	-71.72	-	-	-	-71.72	23.537	15.027	
2900.00	-	-	-	-	-	-	-	-	500.00
3260.00	-	-	-	-	-	-	-	-	500.00
	3263.00*	-71.59	-	-	-	-71.59	23.667	15.253	
3267.00	-	-	-	-	-	-	-	-	500.00
3332.00	-	-	-	-	-	-	-	-	500.00
	3336.00*	-71.59	-	-	-	-71.59	23.667	15.253	
3339.00	-	-	-	-	-	-	-	-	500.00
3345.00	-	-	-	-	-	-	-	-	500.00
	3350.00*	-71.59	-	-	-	-71.59	23.667	15.253	
3358.00	-	-	-	-	-	-	-	-	500.00
3600.00	-	-	-	-	-	-	-	-	500.00
	3700.00*	-71.59	-	-	-	-71.59	23.667	15.253	
4400.00	-	-	-	-	-	-	-	-	500.00
4500.00	-	-	-	-	-	-	-	-	500.00
	4880.00	-67.50	4.4	7.798	-	-55.301	39.956	99.500	
5150.00	-	-	-	-	-	-	-	-	500.00

EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Quasi-Peak <1GHz, Average >1GHz X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
5350.00	-	-	-	-	-	-	-	-	500.00
	5400.00*	-70.35	-	-	-	-70.35	24.907	17.594	
5460.00	-	-	-	-	-	-	-	-	500.00
7250.00	-	-	-	-	-	-	-	-	500.00
	7425.00*	-68.49	-	-	-	-68.49	26.767	21.796	
7750.00	-	-	-	-	-	-	-	-	500.00
8025.00	-	-	-	-	-	-	-	-	500.00
	8300.00*	-68.66	-	-	-	-68.66	26.767	21.796	
8500.00	-	-	-	-	-	-	-	-	500.00
9000.00	-	-	-	-	-	-	-	-	500.00
	9100.00*	-69.56	-	-	-	-69.56	25.697	19.269	
9200.00	-	-	-	-	-	-	-	-	500.00
9300.00	-	-	-	-	-	-	-	-	500.00
	9400.00*	-69.56	-	-	-	-69.56	25.697	19.269	
9500.00	-	-	-	-	-	-	-	-	500.00
10600.00	-	-	-	-	-	-	-	-	500.00
	12200.00*	-67.50	-	-	-	-67.50	27.757	24.427	
12700.00	-	-	-	-	-	-	-	-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Quasi-Peak <1GHz, Average >1GHz X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

[illegible]

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



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Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Peak X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
1300.00	-	-	-	-	-	-	-	-	5000.00
	1350.00*	-58.30	-	-	-	-58.30	36.957	70.449	
1427.00	-	-	-	-	-	-	-	-	5000.00
1435.00	-	-	-	-	-	-	-	-	5000.00
	1500.00*	-58.68	-	-	-	-58.68	36.577	67.434	
1646.50	-	-	-	-	-	-	-	-	5000.00
1660.00	-	-	-	-	-	-	-	-	5000.00
	1680.00*	-59.36	-	-	-	-59.36	35.897	62.356	
1710.00	-	-	-	-	-	-	-	-	5000.00
1718.80	-	-	-	-	-	-	-	-	5000.00
	1720.00*	-59.95	-	-	-	-59.95	35.307	58.261	
1722.20	-	-	-	-	-	-	-	-	5000.00
2200.00	-	-	-	-	-	-	-	-	5000.00
	2250.00*	-55.09	-	-	-	-55.09	40.167	101.948	
2300.00	-	-	-	-	-	-	-	-	5000.00
2310.00	-	-	-	-	-	-	-	-	5000.00
	2390.00	-51.91	4.4	7.798	-	-39.711	55.546	598.859	
2390.00	-	-	-	-	-	-	-	-	5000.00

EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



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RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

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Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	

Notes: Detector: Peak X= 0.166(Duty Cycle 16.6%)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
2483.50	-	-	-	-	-	-	-	-	5000.00
	2483.50	-38.5	4.4	7.798	-15.597	-41.898	53.358	465.514	
2500.00	-	-	-	-	-	-	-	-	5000.00
2690.00	-	-	-	-	-	-	-	-	5000.00
	2750.00*	-56.22	-	-	-	-56.22	39.037	89.511	
2900.00	-	-	-	-	-	-	-	-	5000.00
3260.00	-	-	-	-	-	-	-	-	5000.00
	3263.00*	-57.33	-	-	-	-57.33	37.92	78.773	
3267.00	-	-	-	-	-	-	-	-	5000.00
3332.00	-	-	-	-	-	-	-	-	5000.00
	3336.00*	-58.11	-	-	-	-58.11	37.147	72.007	
3339.00	-	-	-	-	-	-	-	-	5000.00
3345.00	-	-	-	-	-	-	-	-	5000.00
	3350.00*	-57.21	-	-	-	-57.21	38.047	79.869	
3358.00	-	-	-	-	-	-	-	-	5000.00
3600.00	-	-	-	-	-	-	-	-	5000.00
	3700.00*	-58.14	-	-	-	-58.14	37.117	71.759	
4400.00	-	-	-	-	-	-	-	-	5000.00

EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	
Notes: Detector: Peak	X= 0.166(Duty Cycle 16.6%)	

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
4500.00	-	-	-	-	-	-	-	-	5000.00
	4880.00	-55.70	4.4	7.798	-	-43.501	51.756	387.101	
5150.00	-	-	-	-	-	-	-	-	5000.00
5350.00	-	-	-	-	-	-	-	-	5000.00
	5400.00*	-56.64	-	-	-	-56.64	38.617	85.286	
5460.00	-	-	-	-	-	-	-	-	5000.00
7250.00	-	-	-	-	-	-	-	-	5000.00
	7425.00*	-52.26	-	-	-	-52.26	42.997	141.214	
7750.00	-	-	-	-	-	-	-	-	5000.00
8025.00	-	-	-	-	-	-	-	-	5000.00
	8300.00*	-55.90	-	-	-	-55.90	39.357	92.870	
8500.00	-	-	-	-	-	-	-	-	5000.00
9000.00	-	-	-	-	-	-	-	-	5000.00
	9100.00*	-55.94	-	-	-	-55.94	39.317	92.444	
9200.00	-	-	-	-	-	-	-	-	5000.00
9300.00	-	-	-	-	-	-	-	-	5000.00
	9400.00*	-54.64	-	-	-	-54.64	40.617	107.369	
9500.00	-	-	-	-	-	-	-	-	5000.00

EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	ARRIS	
Job Number	R-6288N-5	
Test Sample	Set Top Box	
Model Number	AX061AEI	
Serial Number	M11742TK0102	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting modulated signal at 2402 MHz, 2440 MHz and 2480 MHz consecutively.	
Technician	M. Seamans	
Date	December 28 th , 2017	
Notes: Detector: Peak	X= 16.6(Duty Cycle 16.6%)	

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Antenna Gain	Duty Cycle Factor 10log(1/x)	Duty Cycle Factor 20log(x)	Corrected Reading	Converted Field Strength	Converted Reading	Limit at 3M
MHz	MHz	dBm	dB	dB	dBm	dBm	dBuV/m	uV/m	uV/m
10600.00	-	-	-	-	-	-	-	-	5000.00
	12400.00*	-54.42	-	-	-	-54.42	40.837	110.123	
12700.00	-	-	-	-	-	-	-	-	5000.00
13250.00	-	-	-	-	-	-	-	-	5000.00
	15800.00*	-55.26	-	-	-	-55.26	39.997	99.972	
16200.00	-	-	-	-	-	-	-	-	5000.00
17700.00	-	-	-	-	-	-	-	-	5000.00
	19240.00*	-54.75	-	-	-	-54.75	40.507	106.018	
21400.00	-	-	-	-	-	-	-	-	5000.00
22010.00	-	-	-	-	-	-	-	-	5000.00
	22320.00*	-53.91	-	-	-	-53.91	41.347	116.783	
23120.00	-	-	-	-	-	-	-	-	5000.00
23000.00	-	-	-	-	-	-	-	-	5000.00
	23800.00*	-52.86	-	-	-	-52.86	42.397	131.789	
24000.00	-	-	-	-	-	-	-	-	5000.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs

Antenna Port, Power Density



Test Setup



Retlif Testing Laboratories

Report No. R-6288N-5

**FCC Part 15, Subpart C, Section 15.247(e)
Antenna Port, Power Density
Test Data**

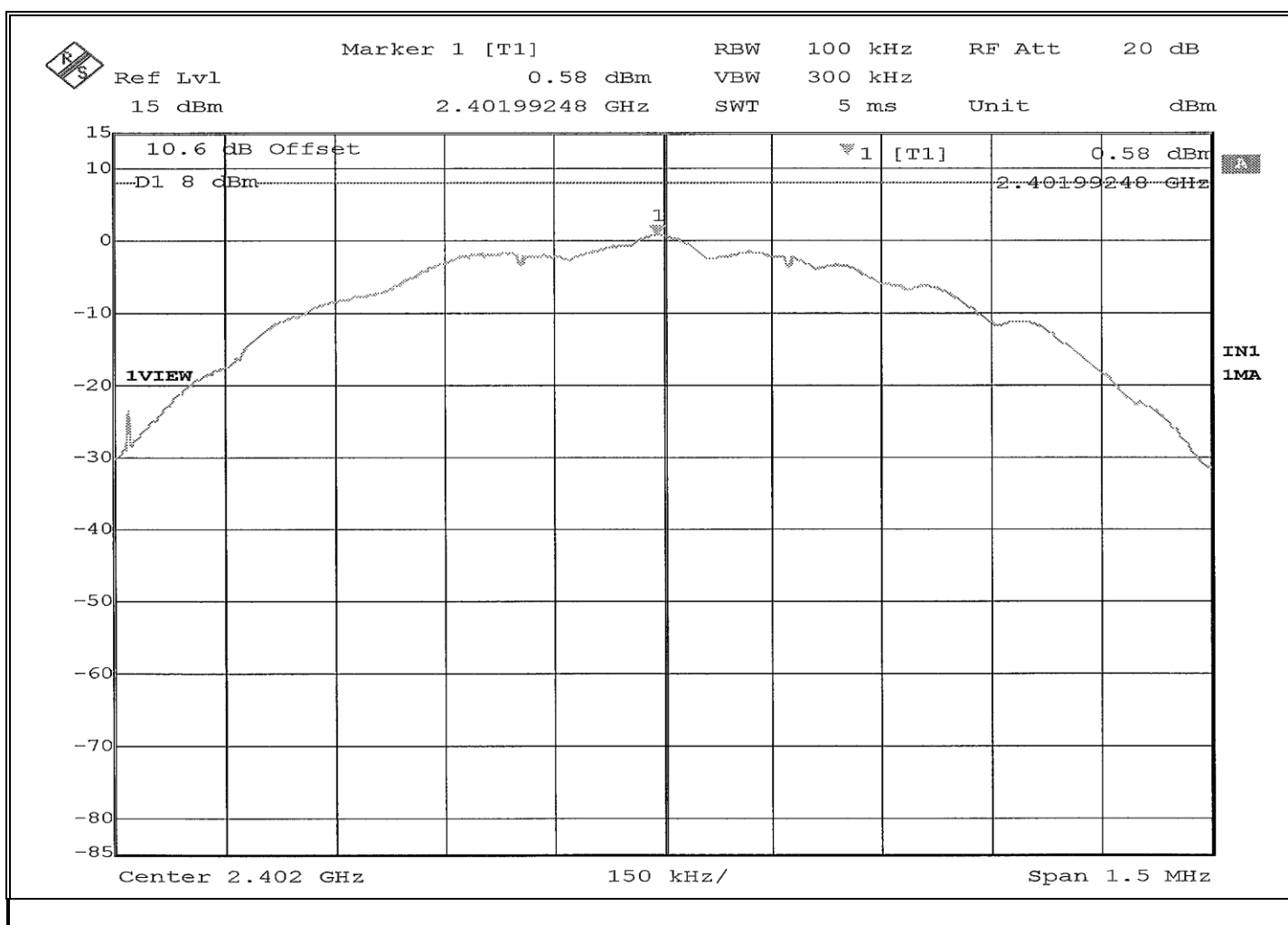


Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Power Spectral Density
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (e)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.402 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.6 °C / 19.4 %
Results:	Power Spectral Density: 0.58 dBm

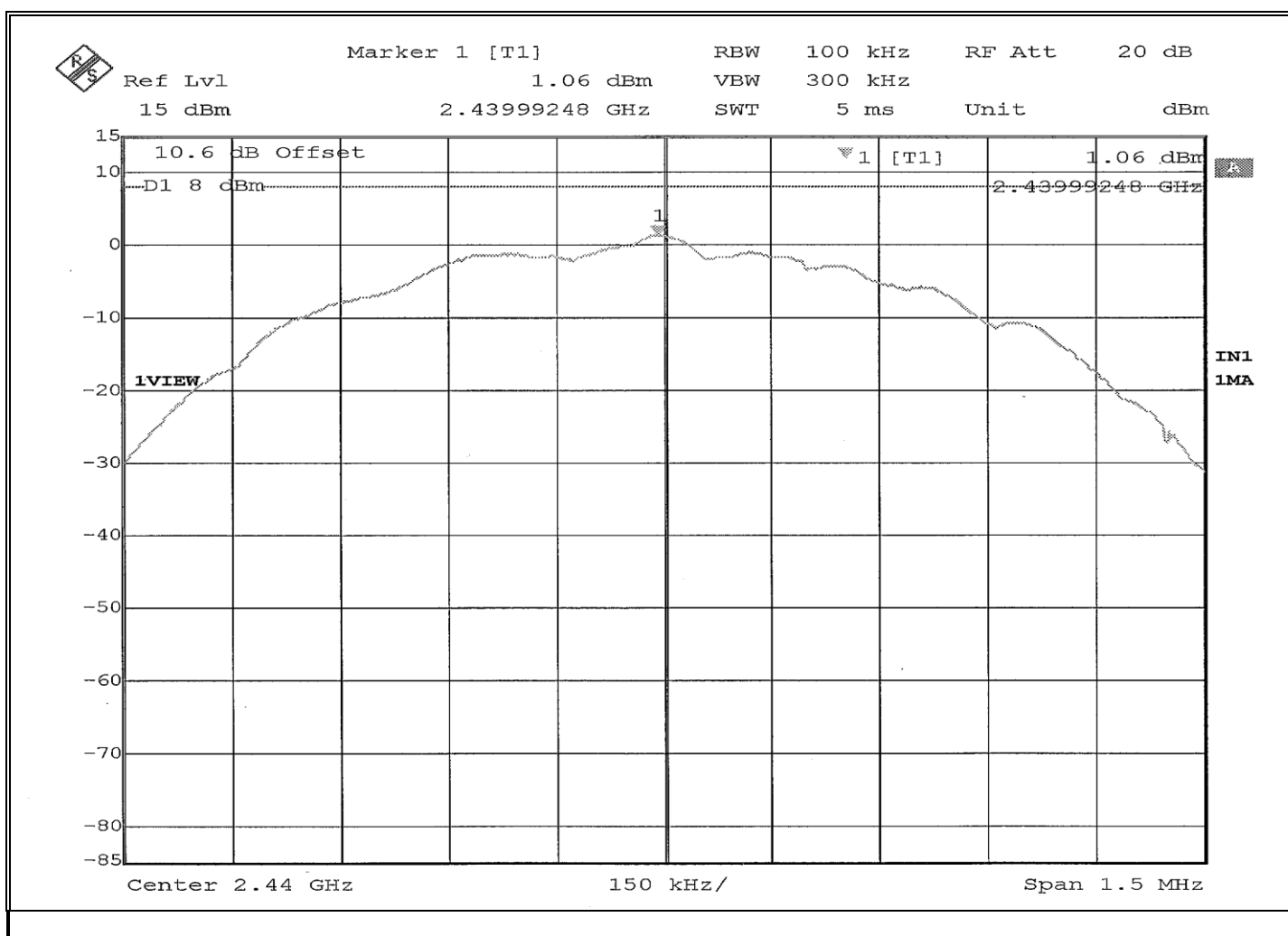


Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Power Spectral Density
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (e)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.402 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.6 °C / 19.4 %
Results:	Power Spectral Density: 1.06 dBm

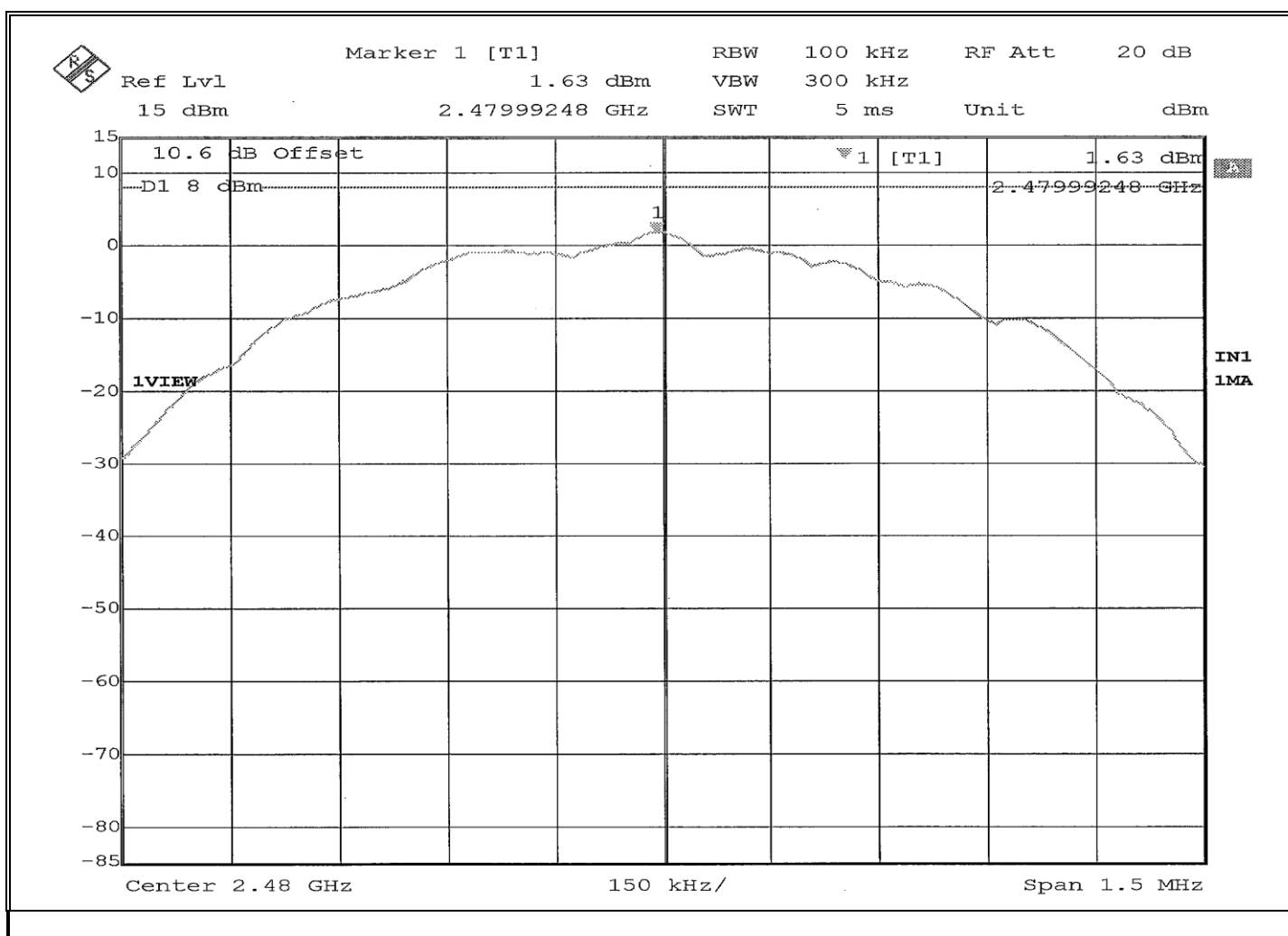


Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Method:	Power Spectral Density
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.247 (e)
Job Number:	R-6288N-5
Customer:	ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Serial Number:	M11742TK0102
Operating Mode:	Transmitting modulated signal at 2.402 GHz
Technician:	M.Seamans
Date(s):	December 27 th , 2017
Temp/ Relative Humidity:	21.6 °C / 19.4 %
Results:	Power Spectral Density: 1.63 dBm



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 30 MHz to 25 GHz



EUT Configuration



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 30 MHz to 25 GHz



Horizontal Polarization, 30 MHz – 200 MHz, Biconical Antenna



Vertical Polarization, 30 MHz – 200 MHz, Biconical Antenna



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 30 MHz to 25 GHz



Horizontal Polarization, 200 MHz - 1 GHz, Log Periodic



Vertical Polarization, 200 MHz - 1 GHz, Log Periodic



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 30 MHz to 25 GHz



Horizontal Polarization, 1- 18 GHz, Double Ridge Guide



Vertical Polarization, 1- 18 GHz, Double Ridge Guide



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 30 MHz to 25 GHz



Horizontal Polarization, 18- 25 GHz, High Gain Horn



Vertical Polarization, 18- 25 GHz, High Gain Horn



Retlif Testing Laboratories

Report No. R-6288N-5

**FCC Part 15, Subpart B, Section 15.209(a)
Spurious Radiated Emissions, 30 MHz to 25 GHz
Test Data**



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Spurious Emissions 30 MHz to 25 GHz
Customer	ARRIS
Job Number	R-6288N-5
Test Sample	Set Top Box
Model Number	AX061AEI
Serial Number	M11742TK0102
Test Specification	FCC 15.247(d)
Operating Mode	Transmitting modulated signal
Technician	M. Seamans
Date	January 3 rd , 2018

Notes: EUT Antenna replaced with Dummy Load

Test Antenna Distance: 3 meters

Detector: Quasi-Peak < 1GHz; Average > 1GHz

Frequency	Antenna Position	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading			Limit at 3M
MHz	(H/V) / Height	Degrees	dBuV	dB	dBuV/m			dBuV/m
30.00	-	-	-	-	-			40.0
	-	-	-	-	-			
37.75	V-1m	180.0	17.88	14.32	32.20			
78.39	V-1.5m	180.0	17.83	8.37	26.20			
	-	-	-	-	-			
88.00	-	-	-	-	-			40.0
88.00	-	-	-	-	-			43.5
	-	-	-	-	-			
128.95	H-1.5m	180.0	26.97	9.33	36.30			
135.56	V-1m	225.0	24.40	9.80	34.20			
209.40	H-1m	180.0	15.17	13.93	29.10			
	-	-	-	-	-			
216.00	-	-	-	-	-			43.5
216.00	-	-	-	-	-			46.0
	-	-	-	-	-			
242.31	H-1m	180.0	10.39	15.81	26.20			
	-	-	-	-	-			
960.00	-	-	-	-	-			46.0
960.00	-	-	-	-	-			54.0
	-	-	-	-	-			
5400.00	V-1m	0.0	30.44	0.92	31.36	*		
12200.00	V-1m	0.0	32.75	8.37	41.12	*		
22320.00	V-1m	0.0	35.42	-5.30	30.12	*		
	-	-	-	-	-			
25000.00	-	-	-	-	-			54.0

EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 9 kHz to 40 GHz



Horizontal Polarization, 30 MHz – 200 MHz, Biconical Antenna



Vertical Polarization, 30 MHz – 200 MHz, Biconical Antenna



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 9 kHz to 40 GHz



Horizontal Polarization, 200 MHz - 1 GHz, Log Periodic



Vertical Polarization, 200 MHz - 1 GHz, Log Periodic



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 9 kHz to 40 GHz



Horizontal Polarization, 1- 18 GHz, Double Ridge Guide



Vertical Polarization, 1- 18 GHz, Double Ridge Guide



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 9 kHz to 40 GHz



Horizontal Polarization, 18- 26 GHz, High Gain Horn



Vertical Polarization, 18- 26 GHz, High Gain Horn



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Spurious Radiated Emissions, 9 kHz to 40 GHz



Horizontal Polarization, 26 - 40 GHz, High Gain Horn



Horizontal Polarization, 26 - 40 GHz, High Gain Horn



Retlif Testing Laboratories

Report No. R-6288N-5

**Spurious Radiated Emissions, 9 kHz to 40 GHz
Test Data**



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Radiated Emissions 9 kHz to 40 GHz
Customer	ARRIS
Job Number	R-6288N-5
Test Sample	Set Top Box
Model Number	AX061AEI
Serial Number	M11742TK0116
Test Specification	FCC 15.209
Operating Mode	All Radios Active
Technician	M. Seamans
Date	January 3 rd , 2018

Notes: Test Antenna Distance: 3 meters Detector: Quasi-Peak < 1GHz; Average > 1GHz

Frequency	Antenna Position	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted to 300M	Converted Reading	Limit at 300M
MHz	(H/V) / Height	Degrees	dBuV	dB	dBuV/m	dBuV/m	uV/m	uV/m
0.009	-	-	-	-	-	-	-	266.67
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
0.490	-	-	-	-	-	-	-	4.89

No EUT emissions were observed at the stated test distance throughout the given frequency spectrum.



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Radiated Emissions 9 kHz to 40 GHz
Customer	ARRIS
Job Number	R-6288N-5
Test Sample	Set Top Box
Model Number	AX061AEI
Serial Number	M11742TK0116
Test Specification	FCC 15.209
Operating Mode	All Radios Active
Technician	M. Seamans
Date	January 3 rd , 2018

Notes: Test Antenna Distance: 3 meters Detector: Quasi-Peak < 1GHz; Average > 1GHz

Frequency	Antenna Position	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted to 30M	Converted Reading	Limit at 30M
MHz	(H/V) / Height	Degrees	dBuV	dB	dBuV/m	dBuV/m	uV/m	uV/m
0.490	-	-	-	-	-	-	-	48.98
	-	-	-	-	-	-	-	
1.705	-	-	-	-	-	-	-	14.08
1.705	-	-	-	-	-	-	-	30.00
	-	-	-	-	-	-	-	
13.110	-	-	-	-	-	-	-	30.00
13.110	-	-	-	-	-	-	-	106.00
	-	-	-	-	-	-	-	
13.410	-	-	-	-	-	-	-	106.00
13.410	-	-	-	-	-	-	-	334.00
	-	-	-	-	-	-	-	
13.553	-	-	-	-	-	-	-	334.00
13.553	-	-	-	-	-	-	-	15848.00
	-	-	-	-	-	-	-	
13.567	-	-	-	-	-	-	-	15848.00
13.567	-	-	-	-	-	-	-	334.00
	-	-	-	-	-	-	-	
13.710	-	-	-	-	-	-	-	334.00
13.710	-	-	-	-	-	-	-	106.00
	-	-	-	-	-	-	-	
14.010	-	-	-	-	-	-	-	106.00

No EUT emissions were observed at the stated test distance throughout the given frequency spectrum.



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Radiated Emissions 9 kHz to 40 GHz
Customer	ARRIS
Job Number	R-6288N-5
Test Sample	Set Top Box
Model Number	AX061AEI
Serial Number	M11742TK0116
Test Specification	FCC 15.209
Operating Mode	All Radios Active
Technician	M. Seamans
Date	January 3 rd , 2018

Notes: Test Antenna Distance: 3 meters Detector: Quasi-Peak < 1GHz; Average > 1GHz

Frequency	Antenna Position	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted to 30M	Converted Reading	Limit at 30M
MHz	(H/V) / Height	Degrees	dBuV	dB	dBuV/m	dBuV/m	uV/m	uV/m
14.010	-	-	-	-	-	-	-	30.00
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
30.00	-	-	-	-	-	-	-	30.00

No EUT emissions were observed at the stated test distance throughout the given frequency spectrum.



Retlif Testing Laboratories

Report No. R-6288N-5

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Radiated Emissions 9 kHz to 40 GHz
Customer	ARRIS
Job Number	R-6288N-5
Test Sample	Set Top Box
Model Number	AX061AEI
Serial Number	M11742TK0116
Test Specification	FCC 15.209
Operating Mode	All radios operating simultaneously
Technician	M. Seamans
Date	January 3 rd , 2018

Notes: Test Antenna Distance: 3 meters Detector: Quasi-Peak < 1GHz; Average > 1GHz

Frequency	Antenna Position	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading			Limit at 3M
MHz	(H/V) / Height	Degrees	dBuV	dB	dBuV/m			dBuV/m
30.00	-	-	-	-	-			40.0
	-	-	-	-	-			
37.75	V-1m	180.0	17.88	14.32	32.20			
78.39	V-1.5m	180.0	17.83	8.37	26.20			
	-	-	-	-	-			
88.00	-	-	-	-	-			40.0
88.00	-	-	-	-	-			43.5
	-	-	-	-	-			
128.95	H-1.5m	180.0	26.97	9.33	36.30			
135.56	V-1m	225.0	24.40	9.80	34.20			
209.40	H-1m	180.0	15.17	13.93	29.10			
	-	-	-	-	-			
216.00	-	-	-	-	-			43.5
216.00	-	-	-	-	-			46.0
	-	-	-	-	-			
242.31	H-1m	180.0	10.39	15.81	26.20			
	-	-	-	-	-			
960.00	-	-	-	-	-			46.0
960.00	-	-	-	-	-			54.0
	-	-	-	-	-			
5400.00	V-1m	0.0	30.44	0.92	31.36	*		
12200.00	V-1m	0.0	32.75	8.37	41.12	*		
22320.00	V-1m	0.0	35.42	-5.30	30.12	*		
	-	-	-	-	-			
40000.00	-	-	-	-	-			54.0

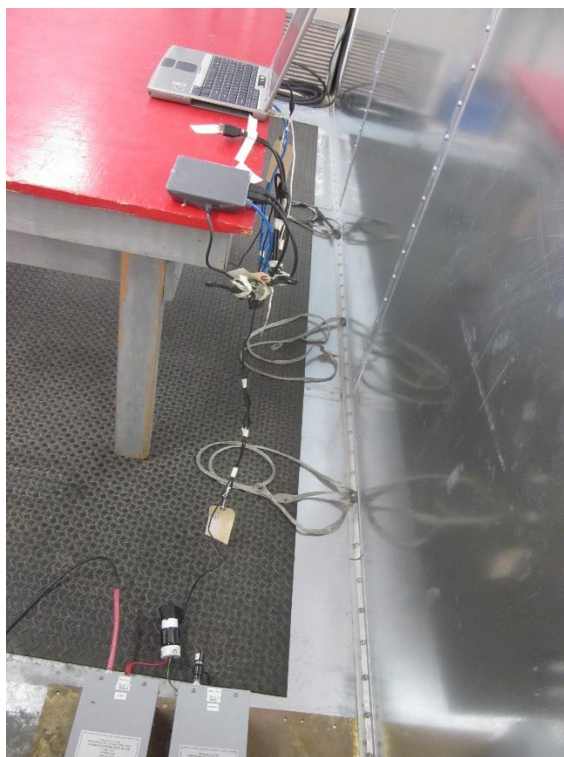
EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-6288N-5

Test Photographs
Conducted Emissions, Power Leads, 150 kHz to 30 MHz



EUT Configuration



Test Setup



Retlif Testing Laboratories

Report No. R-6288N-5

**FCC Part 15, Subpart B, Section 15.207(a)
Conducted Emissions, Power Leads, 150 kHz to 30 MHz
Test Data**



Retlif Testing Laboratories

Report No. R-6288N-5

EMISSIONS TEST DATA SHEET

Test Specification:	FCC Part 15, Subpart B, Section 15.207(a), Conducted Emissions
Method:	ANSI C63.4, Section 7, AC power-line conducted emission measurements
Job Number/Customer:	R-6288N-5 / ARRIS
Test Sample:	Set Top Box
Model Number:	AX061AEI
Part Number:	N/A
Serial Number:	M11742TK0116
Operating Mode:	All Radios Active
Technician:	M.Seamans
Date(s):	January 8 th , 2017
Temperature:	20.8 °C
Relative Humidity:	16.4 %
Lead Tested:	120 VAC 60 Hz

Frequency	Lead Tested	Peak Meter Reading	Quasi-Peak Meter Reading	Average Meter Reading	Quasi-Peak Limit	Average Limit
MHz		dBuV	dBuV	dBuV	dBuV	dBuV
0.152	Hot	50.09	44.16	32.82	65.89	55.89
0.152	Neutral	53.24	45.91	31.88	65.89	55.89
0.227	Hot	45.99	40.12	28.78	62.56	52.56
0.246	Neutral	48.73	41.09	26.65	61.89	51.89
0.290	Hot	41.39	35.88	24.22	60.52	50.52
0.429	Neutral	39.38	30.09	15.51	57.27	47.27
1.244	Hot	45.58	34.73	27.06	56	46
0.899	Neutral	40.62	36.78	26.28	56	46
3.404	Hot	36.46	31.73	23.07	56	46
3.500	Neutral	35.05	25.99	16.20	56	46
24.003	Hot	37.65	33.96	30.23	60	50
24.000	Neutral	33.91	31.01	23.94	60	50

The frequency range was scanned from 0.15 MHz to 30 MHz.

The six highest emissions relative to the limit are presented.

The emissions observed from the EUT do not exceed the specified limits.



Retlif Testing Laboratories

Report No. R-6288N-5