



Engineering Test Report No. 2101580-01				
Report Date	June 25, 2021			
Manufacturer Name	Astronics			
Manufacturer Address	One Corporate Drive, Suite 110 Lake Zurich, IL 60047			
Model No.	Resideo Thermostat, Model No. Focus Pro			
Date Received	June 1, 2021			
Test Dates	June 1, 2021 – June 7, 2021	June 1, 2021 – June 7, 2021		
Specifications	FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 FCC "Code of Federal Regulations" Title 47, Part15, Subpart 15B Innovation, Science, and Economic Development Canada, RSS-247 Innovation, Science, and Economic Development Canada, RSS-GEN			
Test Facility	Elite Electronic Engineering, Inc. 1516 Centre Circle, Downers Grove, IL 60515	FCC Reg. Number: 269750 IC Reg. Number: 2987A CAB Identifier: US0107		
Signature	MARK E. LONGINOTTI			
Tested by	Mark E. Longinotti			
Signature	Raymond J Kloude			
Approved by	Raymond J. Klouda, Registered Professional Engineer of Illinois – 44894			
PO Number 44842				
This report is for your e our name or trademark respect to the test sam quality or characteristic and expressly noted. O information that you pro- or omission caused by the issue you wish to ra acceptance of the com	Exclusive use. Any copying or replication of this report, is permitted only with our prior written permission, ples identified herein. The results set forth in this re- is of the lot from which a test sample was taken or a Our report includes all of the tests requested by you ovided to us. You have 60 days from date of issuan our negligence, provided, however, that such notic aise. A failure to raise such issue within the prescribu- pleteness of this report, the tests conducted and th	ort to or for any other person or entity, or use of . This report sets forth our findings solely with eport are not indicative or representative of the any similar or identical product unless specifically and the results thereof based upon the lice of this report to notify us of any material error e shall be in writing and shall specifically address bed time shall constitute your unqualified e correctness of the report contents.		
This report shall not be reproduced, except in full, without the written approval of Life Electronic Engineering Inc.				

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 and Innovation, Science, and Economic Development Canada, RSS-247 and RSS-GEN test specifications. The data presented in this test report pertains to the EUT on the test dates specified. Any electrical or mechanical modifications made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification. This report must not be used to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.



Table of Contents

1.	Report Revision History	3
2.	Introduction	4
2.1.	Scope of Tests	4
2.2.	Purpose	4
2.3.	Identification of the EUT	4
3.	Power Input	4
4.	Grounding	4
5.	Support Equipment	4
6.	Interconnect Leads	5
7.	Modifications Made to the EUT	5
8.	Modes of Operation	5
9.	Test Specifications	6
10.	Test Plan	7
11.	Deviations, Additions, or Exclusions from Test Specifications	7
12.	Laboratory Conditions	7
13.	Summary	7
14.	Sample Calculations	7
15.	Statement of Conformity	8
16.	Certification	8
17.	Photograph of EUT	9
18.	Equipment List	. 10
19.	Block Diagram of Test Setup	.11
20.	Digital Device Conducted Emissions	. 12
21.	Digital Device Radiated Emissions	. 19
22.	Transmitter Conducted Emissions	.29
23.	6dB Bandwidth	.36
24.	Occupied Bandwidth (99%)	100
25.	Maximum Peak Conducted Output Power	164
26.	Effective Isotropic Radiated Power (EIRP)	228
27.	Duty Cycle Factor Measurements	232
28.	Case Spurious Radiated Emissions	243
29.	Band-Edge Compliance	348
30.	Power Spectral Density	382
31.	Scope of Accreditation	446

This report shall not be reproduced, except in full, without the written approval of Elite Electronic Engineering Inc.



1. Report Revision History

Revision	Date	Description
_	25 JUN 2021	Initial Release of Engineering Test Report No. 2101580-01

2. Introduction

2.1. Scope of Tests

This document presents the results of a series of RF emissions tests that were performed on the Astronics Resideo Thermostat (hereinafter referred to as the Equipment Under Test (EUT)). The EUT was manufactured and submitted for testing by Astronics, located in Lake Zurich, IL.

2.2. Purpose

The test series was performed to determine if the EUT meets the RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part15, Subpart 15B, Section 15.107 and 15.109 for Receivers and Part 15, Subpart C, Sections 15.247 for a Digital Modulation intentional radiator operating within the 2400-2483.5MHz band.

The test series was also performed to determine if the EUT meets the RF emission requirements of the Innovation, Science, and Economic Development Canada Radio Standards Specification RSS-Gen and Innovation, Science, and Economic Development Canada Radio Standards Specification RSS-247 for a Digital Modulation intentional radiator operating within the 2400-2483.5MHz band.

Testing was performed in accordance with ANSI C63.10-2013.

2.3. Identification of the EUT

The EUT was identified as follows:

EUT Identification				
Product Description	Resideo Thermostat			
Model/Part No.	Focus Pro			
Serial No.	1378317 (Used for EIRP, high band edge, and spurious radiated emissions tests) 1378290 (Used for antenna conducted tests only)			
Device Type	Digitally Modulated Transmission Device			
Band of Operation	2412 – 2462MHz			
Software/Firmware Version	XTR_CFPro_1.1			
Conducted Output Power	22.47dBm (176.6mW)			
Antenna Type	Pulse Larsen Antennas, M/N: W3300, Chip Antenna			
Manufacturer Supplied* Antenna Gain (dBi)	1.3dBi			
6dB Bandwidth	17.72MHz			
Occupied Bandwidth (99% CBW)	17.67MHz			
Size of EUT	3 9/16" x 5 13/16" x 1 ½"			

*- Antenna gain is supplied by the manufacturer and Elite is not responsible for the accuracy of the antenna gain.

3. Power Input

The EUT obtained 24V, 60Hz via a 2 wire output power cord from a Hammond Manufacturing Power Supply, M/N: BPE2G. The Hammond Manufacturing Power Supply, M/N: BPE2G was powered with 115V 60Hz.

4. Grounding

The EUT was not connected to ground.

5. Support Equipment

The EUT was submitted for testing with no support equipment.



6. Interconnect Leads

No interconnect leads were used during the tests.

7. Modifications Made to the EUT

No modifications were made to the EUT during the testing.

8. Modes of Operation

The EUT and all peripheral equipment were energized. The unit was programmed to transmit in one of the following modes. The following frequencies were used for testing each mode:

- 2412MHz
- 2437MHz
- 2462MHz

Mode	Description
	The following data rates were used during testing:
	2412MHz (channel 1)
	 1Mbps, power setting = 107
	 2Mbps, power setting = 107
	 5.5Mbps, power setting = 107
	- 11Mbps, power setting = 107
	2437MHz (channel 6)
802 11h	 1Mbps, power setting = 107
002.110	 2Mbps, power setting = 107
	- 5.5Mbps, power setting = 107
	 11Mbps, power setting = 107
	2462MHz (channel 11)
	- 1Mbps, power setting = 107
	- 2Mbps, power setting = 107
	- 5.5Mbps, power setting = 107
	- 11Mbps, power setting = 107
	The following data rates were used during testing:
	2412MHz (channel 1)
	- 6Mbps, power setting = 75
	- 9Mbps, power setting = 75
	- 12Mbps, power setting = 75
	- 18Mbps, power setting = 75
	- 24Mbps, power setting = 75
	- 36Mbps, power setting = 75
	- 48Mbps, power setting = 75
	- 54Mbps, power setting = 60
	2437MHz (channel 6)
	- 6Mbps, power setting = 75
802.11g	- 9Mbps, power setting = 75
5	- 12Mbps, power setting = 75
	- 18Mbps, power setting = 75
	- 24Mbps, power setting = 75
	- 36Mbps, power setting = 75
	- 48Mbps, power setting = 75
	- 54Mbps, power setting = 60
	2462MHz (channel 11)
	- 6Mbps, power setting = 75
	- 9Mbps, power setting = 75
	- 12Mbps, power setting = 75
	- 18Mbps, power setting = 75
	- 24Mbps power setting = 75



 48Mbps, power setting = 75 54Mbps, power setting = 60 The following data rates were used during testing: 2412MHz (channel 1) MCS0, power setting = 68 MCS1, power setting = 68 MCS2, power setting = 68 MCS3, power setting = 68 MCS4, power setting = 68 MCS5, power setting = 68 MCS5, power setting = 68 MCS6, power setting = 57 MCS7, power setting = 57 2437MHz (channel 6) MCS1, power setting = 68 	
- 54Mbps, power setting = 60 The following data rates were used during testing: 2412MHz (channel 1) - MCS0, power setting = 68 - MCS1, power setting = 68 - MCS2, power setting = 68 - MCS3, power setting = 68 - MCS4, power setting = 68 - MCS5, power setting = 68 - MCS6, power setting = 57 - MCS7, power setting = 57 - MCS0, power setting = 68 - MCS0, power setting = 68 - MCS7, power setting = 57 2437MHz (channel 6) - - MCS0, power setting = 68 - MCS0, power setting = 68 - MCS0, power setting = 68 - MCS0, power setting = 68	
The following data rates were used during testing:2412MHz (channel 1)MCS0, power setting = 68-MCS2, power setting = 68-MCS3, power setting = 68-MCS4, power setting = 68-MCS5, power setting = 68-MCS6, power setting = 57-MCS7, power setting = 572437MHz (channel 6)-MCS0, power setting = 68-MCS1, power setting = 68-MCS0, power setting = 68-MCS1, power setting = 68-MCS2, power setting = 68	
2412MHz (channel 1) - MCS0, power setting = 68 - MCS1, power setting = 68 - MCS2, power setting = 68 - MCS3, power setting = 68 - MCS4, power setting = 68 - MCS5, power setting = 57 - MCS7, power setting = 57 2437MHz (channel 6) - MCS0, power setting = 68 - MCS1, power setting = 68 - MCS1, power setting = 68	
 MCS0, power setting = 68 MCS1, power setting = 68 MCS2, power setting = 68 MCS3, power setting = 68 MCS4, power setting = 68 MCS5, power setting = 68 MCS6, power setting = 57 MCS7, power setting = 57 2437MHz (channel 6) MCS0, power setting = 68 MCS1, power setting = 68 MCS1, power setting = 68 	
 MCS1, power setting = 68 MCS2, power setting = 68 MCS3, power setting = 68 MCS4, power setting = 68 MCS5, power setting = 68 MCS6, power setting = 57 MCS7, power setting = 57 2437MHz (channel 6) MCS0, power setting = 68 MCS1, power setting = 68 	
 MCS2, power setting = 68 MCS3, power setting = 68 MCS4, power setting = 68 MCS5, power setting = 68 MCS6, power setting = 57 MCS7, power setting = 57 2437MHz (channel 6) MCS0, power setting = 68 MCS1, power setting = 68 	
 MCS3, power setting = 68 MCS4, power setting = 68 MCS5, power setting = 68 MCS6, power setting = 57 MCS7, power setting = 57 2437MHz (channel 6) MCS0, power setting = 68 MCS1, power setting = 68 	
 MCS4, power setting = 68 MCS5, power setting = 68 MCS6, power setting = 57 MCS7, power setting = 57 2437MHz (channel 6) MCS0, power setting = 68 MCS1, power setting = 68 	
 MCS5, power setting = 68 MCS6, power setting = 57 MCS7, power setting = 57 2437MHz (channel 6) MCS0, power setting = 68 MCS1, power setting = 68 	
 MCS6, power setting = 57 MCS7, power setting = 57 2437MHz (channel 6) MCS0, power setting = 68 MCS1, power setting = 68 	
 MCS7, power setting = 57 2437MHz (channel 6) MCS0, power setting = 68 MCS1, power setting = 68 	
2437MHz (channel 6) - MCS0, power setting = 68 - MCS1, power setting = 68 MCS2, power setting = 68	
 MCS0, power setting = 68 MCS1, power setting = 68 MCS2, power setting = 68 	
- MCS1, power setting = 68	
- MCS2, power setting = 68	
802.11n - MCS3, power setting = 68	
- MCS4, power setting = 68	
- $MCS5$, power setting = 68	
- MCS6, power setting = 57	
- $MCS7$, power setting = 57	
2402MHZ (channel 11)	
- MCS0, power setting = 68	
- MCS1, power setting = 69	
- INCS2, power setting = 69	
- INCS3, power setting = 68	
- MCS5 power setting = 68	
- iviOSS, power setting = 57	
MCS7 power setting = 57	

9. Test Specifications

The tests were performed to selected portions of, and in accordance with the following test specifications:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subpart C
- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subpart B
- ANSI C63.4-2014, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz"
- ANSI C63.10-2013, "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
- Federal Communications Commission Office of Engineering and Technology Laboratory Division, Guidance For Compliance Measurements On Digital Transmission Systems, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section 15.247 April 2, 2019 KDB 558074 D01v05r02
- RSS-247 Issue 2, February 2017, "Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices"
- RSS-Gen Issue 5, March 2019, Amendment 1 March 2019, Amendment 2 February 2021, Innovation, Science, and Economic Development Canada, "Spectrum Management and Telecommunications,



Radio Standards Specification, General Requirements for Compliance of Radio Apparatus"

10. Test Plan

No test plan was provided. Instructions were provided by personnel from Astronics and used in conjunction with the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 and Innovation, Science, and Economic Development Canada, RSS-247, and ANSI C63.4-2014 specifications.

11. Deviations, Additions, or Exclusions from Test Specifications

There were no deviations, additions to, or exclusions from the test specifications during this test series.

12. Laboratory Conditions

Ambient Parameters	Value
Temperature	23°C
Relative Humidity	23%
Atmospheric Pressure	1017mb

13. Summary

The following EMC tests were performed, and the results are shown below:

Test Description	Requirements	Test Methods	S/N	Results
Digital Device Conducted Emissions	FCC 15B 15.107 ISED RSS-GEN	ANSI C63.4:2014	1378317	Conforms
Digital Device Radiated Emission	FCC 15B 15.107 ISED RSS-GEN	ANSI C63.4:2014	1378317	Conforms
Transmitter Conducted Emissions	FCC 15B 15.207 ISED RSS-GEN	ANSI C63.10:2013	1378317	Conforms
6dB Bandwidth	FCC 15C 15.247 ISED RSS-247	ANSI C63.10:2013	1378290	Conforms
Occupied Bandwidth (99%)	FCC 15C 15.247 ISED RSS-247	ANSI C63.10:2013	1378290	Conforms
Maximum Peak Conducted Output Power	FCC 15C 15.247 ISED RSS-247	ANSI C63.10:2013	1378290	Conforms
Effective Isotropic Radiated Power (EIRP)	FCC 15C 15.247 ISED RSS-247	ANSI C63.10:2013	1378317	Conforms
Duty Cycle Factor Measurements	FCC 15C 15.247 ISED RSS-247	ANSI C63.10:2013	1378290	—
Case Spurious Radiated Emissions	FCC 15C 15.247 ISED RSS-247	ANSI C63.10:2013	1378317	Conforms
Band-Edge Compliance	FCC 15C 15.247 ISED RSS-247	ANSI C63.10:2013	1378317, 1378290	Conforms
Power Spectral Density	FCC 15C 15.247 ISED RSS-247	ANSI C63.10:2013	1378290	Conforms

14. Sample Calculations

For Powerline Conducted Emissions:

The resultant voltage level (VL) is a summation in decibels (dB) of the receiver meter reading (MTR) and the cable loss factor (CF).

Formula 1: VL (dBuV) = MTR (dBuV) + CF (dB).



For Radiated Emissions:

The resultant field strength (FS) is a summation in decibels (dB) of the receiver meter reading (MTR), the antenna correction factor (AF), and the cable loss factor (CF). If an external preamplifier is used, the total is reduced by its gain (-PA). If a distance correction (DC) is required, it is added to the total.

Formula 1: FS (dBuV/m) = MTR (dBuV) + AF (dB/m) + CF (dB) + (-PA (dB)) + DC (dB)

To convert the Field Strength dBuV/m term to uV/m, the dBuV/m is first divided by 20. The Base 10 AntiLog is taken of this quotient. The result is the Field Strength value in uV/m terms.

Formula 2: FS (uV/m) = AntiLog [(FS (dBuV/m))/20]

15. Statement of Conformity

The Astronics Resideo Thermostat, Model No. Focus Pro, did fully conform to the selected requirements of FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 and Innovation, Science, and Economic Development Canada, RSS-247.

16. Certification

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 and Innovation, Science, and Economic Development Canada, RSS-247 test specifications. The data presented in this test report pertains to the EUT on the test date specified. Any electrical or mechanical modifications made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification.



17. Photograph of EUT





18. Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW0	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-30- 20G20R6G	PL2926/0646	20GHZ- 26.5GHZ	9/24/2020	9/24/2021
APW14	PREAMPLIFIER	PLANAR	PE2-35-120- 5R0-10-12-SFF	PL22671	1-20GHz	9/24/2020	9/24/2021
CDZ3	LAB WORKSTATION	ELITE	LWS-10		WINDOWS 10	CNR	
NHG0	STANDARD GAIN HORN ANTENNA	NARDA	638		18-26.5GHZ	NOTE 1	
NWQ2	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS LINDGREN	3117	66659	1GHZ-18GHZ	4/7/2020	4/7/2022
PLF1	CISPR16 50UH LISN	ELITE	CISPR16/70A	001	.15-30MHz	4/8/2021	4/8/2022
PLF3	CISPR16 50UH LISN	ELITE	CISPR16/70A	003	.15-30MHz	4/8/2021	4/8/2022
RBG3	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101592	2HZ-44GHZ	5/27/2021	5/27/2022
SES0	24VDC POWER SUPPLY	P-TRANS	FS-32024-1M	001	18-27VDC	NOTE 1	
T1N2	10DB 20W ATTENUATOR	NARDA	766-10		DC-4GHZ	4/2/2020	4/2/2022
T2D5	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-43	AY9244	DC-18GHZ	1/9/2020	1/9/2022
T2S7	20DB 25W ATTENUATOR	WEINSCHEL	46-20-34	BU8139	DC-18GHZ	3/10/2020	3/10/2022
VBR8	CISPR EN FCC CE VOLTAGE.exe					N/A	
VBV2	CISPR EN FCC ICES RE.EXE	ELITE	CISPR EN FCC ICES RE.EXE			N/A	
WKA1	SOFTWARE, UNIVERSAL RCV EMI	ELITE	UNIV_RCV_EMI	1		I/O	
XOB2	ADAPTER	HEWLETT PACKARD	K281C,012	09407	18-26.5GHZ	NOTE 1	
XPR0	HIGH PASS FILTER	K&L MICROWAVE	11SH10- 4800/X20000	001	4.8-20GHZ	9/6/2019	9/6/2021

N/A: Not Applicable I/O: Initial Only CNR: Calibration Not Required NOTE 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.



19. Block Diagram of Test Setup



Radiated Measurements Test Setup



20. Digital Device Conducted Emissions

EUT Information		
Manufacturer	Astronics	
Product	Resideo Thermostat	
Model No.	Focus Pro	
Serial No.	1378317	
Mode	Transmitter in Standby	

Test Setup Details		
Setup Format	Tabletop	
Type of Test Site	Semi-Anechoic Chamber or Shielded Enclosure	
Test Site Used	Room 29	
Note	N/A	

Measurement Unce	rtainty
Measurement Type	Expanded Measurement Uncertainty
Conducted disturbance (mains port) (150 kHz – 30 MHz)	2.7

 Requirements

 All radio frequency voltages on the power lines for any frequency or frequencies of an unintentional radiator shall not exceed the limits in the following table.

FCC Part 15 Subpart B Conducted Emissions Class B Limits						
Frequency of Emission (MHz)	Conducted Limits (dBµV)					
	Quasi-peak	Average				
0.15 – 0.5	66 to 56*	56-46*				
0.5 – 5	56	46				
5 – 30	60	50				
*Decreases with the logarithm of the frequency						

Page 12 of 454





Procedure

The interference on each power lead of the EUT was measured by connecting the measuring equipment to the appropriate meter terminal of the Line Impedance Stabilization Network (LISN). The meter terminal of the LISN not under test was terminated with 50 ohms.

- 1) The EUT was operated in the transmitter in standby mode.
- 2) Measurements were first made on the 120VAC high line of the Hammond Manufacturing BPE2G Power Supply which provided 24VAC to the EUT.
- 3) The frequency range from 150 kHz to 30 MHz was broken up into smaller frequency sub-bands.
- 4) Conducted emissions measurements were taken on the first frequency sub-band using a peak detector.
- 5) The data thus obtained was then searched by the computer for the highest levels. Any emissions levels that were within 4dB of the average limit were then measured again using both a quasi-peak detector and an average detector. (If no peak readings were within 4dB of the average limit, quasi-peak and average readings were taken on the highest emissions levels measured during the peak detector scan.)
- 6) Steps (4) and (5) were repeated for the remainder of the frequency sub-bands until the entire frequency range from 150kHz to 30MHz was investigated. The peak trace was automatically plotted. The plot also shows quasi-peak and average readings that were taken on discrete frequencies. A table showing the quasi-peak and average readings was also generated. This tabular data compares the quasi-peak and average conducted emissions to the applicable conducted emissions limits.
- 7) Steps (3) through (6) were repeated on the 120VAC return line of the Hammond Manufacturing BPE2G Power Supply which provided 24VAC to the EUT.





Test Setup for RF Conducted Emissions (AC Mains)



FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

Manufacturer Model DUT Revision Serial Number	: .	Astronics Focus Pro 1378317
DUT Mode	:	Transmitter in standby
Line Tested	:	120V, 60Hz High
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-4
Notes	:	Tested with a Hammond Manufacturing BPE2G Power Supply (24VAC Output)
Test Engineer	:	M. Longinotti
Limit	:	Class B
Test Date	:	Jun 07, 2021 03:07:27 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 4 dB margin below limit

Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.150	46.9	66.0		11.8	56.0	
0.270	35.6	61.1		8.8	51.1	
0.586	9.7	56.0		2.9	46.0	
1.096	9.0	56.0		3.0	46.0	
1.385	8.2	56.0		1.8	46.0	
2.340	9.5	56.0		2.8	46.0	
4.724	18.9	56.0		9.5	46.0	
8.398	21.8	60.0		12.2	50.0	
16.272	13.5	60.0		8.5	50.0	
27.815	16.0	60.0		12.1	50.0	





FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer Model DUT Revision Serial Number DUT Mode Line Tested Scan Step Time [ms] Meas. Threshold [dB] Notes Test Engineer Limit	 Astronics FocusPro Transmitter in standby 120V, 60Hz High 30 -4 Tested with a Hammond Manufacturing BPE2G Power Supply (24VAC Output) M. Longinotti Class B
Test Date	: Class B : Jun 07, 2021 03:07:27 PM
Model DUT Revision Serial Number DUT Mode Line Tested Scan Step Time [ms] Meas. Threshold [dB] Notes Test Engineer Limit Test Date	FocusPro Transmitter in standby 120V, 60Hz High 30 -4 Tested with a Hammond Manufacturing BPE2G Power Supply (24VAC Output) M. Longinotti Class B Jun 07, 2021 03:07:27 PM



Emissions Meet QP Limit Emissions Meet Ave Limit



FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

Manufacturer : Astronics Model Focus Pro : **DUT Revision** Serial Number : 1378317 DUT Mode : Transmitter in standby Line Tested : 120V, 60Hz Return Scan Step Time [ms] : 30 Meas. Threshold [dB] : -4 Notes Tested with a Hammond Manufacturing BPE2G Power Supply (24VAC Output) 2 Test Engineer : M. Longinotti Limit : Class B Test Date : Jun 07. 2021 03:01:41 PM Data Filter : Up to 80 maximum levels detected with 6 dB level excursion threshold over 4 dB margin below limit

Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.150	47.7	66.0		13.6	56.0	
0.270	36.3	61.1		9.2	51.1	
0.505	13.1	56.0		3.7	46.0	
1.047	10.0	56.0		4.3	46.0	
1.898	9.3	56.0		4.0	46.0	
2.619	9.7	56.0		3.4	46.0	
4.724	15.3	56.0		7.9	46.0	
8.398	21.5	60.0		12.6	50.0	
15.678	9.7	60.0		4.3	50.0	
28.346	16.4	60.0		11.8	50.0	



FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer	:	Astronics
Model	:	Focus Pro
DUT Revision	:	
Serial Number	:	1378317
DUT Mode	:	Transmitter in standby
Line Tested	:	120V, 60Hz Return
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-4
Notes	:	
Test Engineer	:	M. Longinotti
Limit	:	Class B
Test Date	:	Jun 07, 2021 03:01:41 PM



Emissions Meet QP Limit Emissions Meet Ave Limit



21. Digital Device Radiated Emissions

EUT Information			
Manufacturer	Astronics		
Product	Resideo Thermostat		
Model No.	Focus Pro		
Serial No.	1378317		
Mode	Transmitter Standby		

Test Setup Details				
Setup Format	Tabletop			
Type of Test Site	Semi-Anechoic Chamber			
Test Site Used	Room 29			
Type of Antennas Used	Below 1GHz: Bilog (or equivalent) Above 1GHz: Double-ridged waveguide (or equivalent)			
Highest Internal Frequency of the EUT	2.4GHz			
Highest Measurement Frequency	13GHz			
Notes	The cables were manually maximized during the preliminary emissions sweeps. The cable arrangement which resulted in the worst-case emissions was utilized.			

Measurement Uncertainty				
Measurement Type	Expanded Measurement Uncertainty			
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3			
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 6 GHz)	3.1			
Radiated disturbance (electric field strength on an open area test site or alternative test site) (6 GHz – 18 GHz)	3.2			
Radiated disturbance (electric field strength on an open area test site or alternative test site) (18 GHz – 26.5 GHz)	3.3			
Radiated disturbance (electric field strength on an open area test site or alternative test site) (26.5 GHz – 40 GHz)	3.4			

 Requirements

 The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values.

Requirements				
Frequency of Emission (MHz)	Field Strength (µV/m)			
30 – 88	100			
88 – 216	150			
216 – 960	200			
Above 960	500			



Procedures

Since a quasi-peak detector and an average detector requires a long integration times, it is not practical to automatically sweep through the quasi-peak and average levels. Therefore, radiated emissions from the EUT were first scanned using a peak detector and automatically plotted. The frequencies where significant emission levels were noted were then remeasured using the quasi-peak detector or average detector.

The EUT was placed on an 80cm high non-conductive stand. The broadband measuring antenna was positioned at a 3 meter distance from the EUT. The frequency range from 30MHz to 1GHz was investigated using a peak detector function with the bilog antenna at several heights, horizontal and vertical polarization, and with several different orientations of the EUT with respect to the antenna. The frequency range from 1GHz to 13GHz was investigated using a peak detector function with the double ridged waveguide antenna at several heights, horizontal and vertical polarization, and with several heights, horizontal and vertical polarization, and with several heights, horizontal and vertical polarization, and with several different orientations of the EUT with respect to the antenna. The maximum levels for each antenna polarization were plotted.

Final radiated emissions were performed on all significant broadband and narrowband emissions found in the exploratory sweeps using the following methods:

- Measurements from 30MHz to 1GHz were made using a quasi-peak detector and a broadband bilog antenna. Measurements above 1GHz were made using an average detector and a broadband double ridged waveguide antenna.
- 2) To ensure that maximum or worst case, emission levels were measured, the following steps were taken:
 - a) The EUT was rotated so that all sides were exposed to the receiving antenna.
 - b) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - c) The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.





Test Setup for Radiated Emissions: 30MHz to 1GHz, Vertical Polarization





Test Setup for Radiated Emissions: 1GHz to 13GHz, Vertical Polarization

Page 22 of 454



SW ID/Rev: VBV2 10/01/2020

Manufacturer	:	Astronics
Model	:	Focus Pro
Serial Number	:	1378317
DUT Mode	:	Transmitter in standby
Antenna Polarization	:	Vertical
Scan Type	:	Stepped Scan
Test RBW	:	120 kHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	
Test Engineer	:	M. Longinotti
Test Date	:	Jun 07, 2021 12:44:15 PM





SW ID/Rev: VBV2 10/01/2020

Manufacturer	: Astronics	
Model	: Focus Pro	
Serial Number	: 1378317	
DUT Mode	: Transmitter in Standb	у
Antenna Polarization	: Horizontal	-
Scan Type	: Stepped Scan	
Test RBW	: 120 kHz	
Prelim Dwell Time (s)	: 0.0001	
Notes	:	
Test Engineer	: M. Longinotti	
Test Date	: Jun 07, 2021 12:44:15	5 PM





SW ID/Rev: VBV2 10/01/2020

Manufacturer	:	Astronics
Model	:	FocusPro
Serial Number	:	1378317
DUT Mode	:	Transmitter in Standby
Scan Type	:	Stepped Scan
Test RBW	:	120 kHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	
Test Engineer	:	M. Longinotti
Test Date	:	Jun 07, 2021 12:44:15 PM

Freq MHz	Peak Mtr Rdg dBuV	QP Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBµV/m	QP Total dBµV/m	QP Limit dBµV/m	QP Lim Mrg dB	Ant Pol	Mast Ht cm	Azim	Excessive QP Level
31.680	12.4	5.9	23.9	0.0	0.4	0.0	36.7	30.2	40.0	-9.8	V	340	0	
44.580	16.6	6.0	17.2	0.0	0.4	0.0	34.2	23.6	40.0	-16.4	V	200	135	
52.980	14.6	11.1	13.9	0.0	0.4	0.0	28.9	25.4	40.0	-14.6	V	120	90	
79.920	16.9	2.5	13.3	0.0	0.4	0.0	30.6	16.1	40.0	-23.9	V	120	45	
80.220	18.5	4.1	13.3	0.0	0.4	0.0	32.2	17.8	40.0	-22.2	V	120	180	
117.460	9.1	2.8	18.1	0.0	0.5	0.0	27.7	21.4	43.5	-22.1	V	200	270	
240.480	23.3	7.5	17.4	0.0	0.8	0.0	41.4	25.7	46.0	-20.3	V	340	225	
240.660	18.9	3.8	17.4	0.0	0.8	0.0	37.0	21.9	46.0	-24.1	V	340	180	
241.200	17.9	2.4	17.4	0.0	0.8	0.0	36.1	20.6	46.0	-25.4	V	200	180	
399.540	18.8	2.2	21.8	0.0	1.1	0.0	41.8	25.2	46.0	-20.8	V	120	180	
400.080	16.7	-0.9	21.9	0.0	1.1	0.0	39.7	22.0	46.0	-24.0	V	120	315	
400.860	10.5	-2.3	21.9	0.0	1.1	0.0	33.5	20.8	46.0	-25.2	V	340	180	
559.860	16.7	-0.4	24.7	0.0	1.1	0.0	42.5	25.4	46.0	-20.6	H	120	180	
942.720	4.1	-3.0	27.0	0.0	1.5	0.0	32.6	25.5	46.0	-20.5	V	120	315	



SW ID/Rev: VBV2 02/18/2021

Manufacturer	: Astr	onics
Model	: Focu	us Pro
Serial Number	: 1378	8317
DUT Mode	: Trar	smitter in standby
Antenna Polarization	: Hori	zontal
Scan Type	: Step	oped Scan
Test RBW	: 1 M	Hz
Prelim Dwell Time (s)	: 0.00	01
Notes	:	
Test Engineer	: M. L	.onginotti
Test Date	: Jun	07, 2021 10:14:32 AM





SW ID/Rev: VBV2 02/18/2021

Manufacturer	: Astronics	
Model	: Focus Pro	
Serial Number	: 1378317	
DUT Mode	: Transmitter in standby	
Antenna Polarization	: Vertical	
Scan Type	: Stepped Scan	
Test RBW	: 1 MHz	
Prelim Dwell Time (s)	: 0.0001	
Notes	:	
Test Engineer	: M. Longinotti	
Test Date	: Jun 07, 2021 10:14:32 A	M





SW ID/Rev: VBV2 02/18/2021

Manufacturer	:	Astronics
Model	:	Focus Pro
Serial Number	:	1378317
DUT Mode	:	Transmitter in standby
Scan Type	:	Stepped Scan
Test RBW	:	1 MHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	
Test Engineer	:	M. Longinotti
Test Date	:	Jun 07, 2021 10:14:32 AM

Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBµV/m	Peak Limit dBµV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1340.500	51.0	29.0	-40.9	1.8	0.0	41.0	74.0	-33.0	V	340	135	
2340.000	49.9	32.0	-40.5	2.5	0.0	43.9	74.0	-30.1	Н	200	45	
2425.500	51.4	32.2	-40.5	2.6	0.0	45.8	74.0	-28.2	V	200	0	
5500.500	47.4	34.7	-40.3	4.0	0.0	45.9	74.0	-28.1	Н	200	225	
6432.000	51.0	35.8	-40.4	4.4	0.0	50.7	74.0	-23.2	Н	120	225	
12820.500	47.9	38.8	-39.5	6.1	0.0	53.2	74.0	-20.7	Н	200	45	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBµV/m	Average Limit dBµV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim	Excessive Average Level
1340.500	37.5	29.0	-40.9	1.8	0.0	27.4	54.0	-26.6	V	340	135	
2340.000	36.0	32.0	-40.5	2.5	0.0	30.0	54.0	-24.0	Н	200	45	
2425.500	35.7	32.2	-40.5	2.6	0.0	30.0	54.0	-24.0	V	200	0	
5500.500	33.7	34.7	-40.3	4.0	0.0	32.1	54.0	-21.8	Н	200	225	
6432.000	43.0	35.8	-40.4	4.4	0.0	42.7	54.0	-11.2	Н	120	225	
12820.500	33.8	38.8	-39.5	6.1	0.0	39.2	54.0	-14.8	Н	200	45	



22. Transmitter Conducted Emissions

EUT Information						
Manufacturer	Astronics					
Product	Resideo Thermostat					
Model No.	Focus Pro					
Serial No.	1378317					
Mode	Transmit at 2437MHz, 802.11b, 11MBPS					

Test Setup Details						
Setup Format	Tabletop					
Type of Test Site	Semi-Anechoic Chamber					
Test Site Used	Room 29					
Note	None					

Measurement Uncertainty							
Measurement Type	Expanded Measurement Uncertainty						
Conducted disturbance (mains port) (150 kHz – 30 MHz)	2.7						

Requirements

All radio frequency voltages on the power lines for any frequency or frequencies of an intentional radiator shall not exceed the limits in the following table.

FCC Part 15 Subpart B Conducted Emissions Class B Limits							
Frequency of Emission (MHz)	Conducted Limits (dBµV)						
	Quasi-peak	Average					
0.15 – 0.5	66 to 56*	56-46*					
0.5 – 5	56	46					
5 – 30	60	50					
*Decreases with the logarithm of the frequence	V						





Procedures

The interference on each power lead of the EUT was measured by connecting the measuring equipment to the appropriate meter terminal of the Line Impedance Stabilization Network (LISN). The meter terminal of the LISN not under test was terminated with 50 ohms.

- 1) The EUT was operated in the Transmit at 2437MHz, 802.11b, 11MBPS mode.
- 2) Measurements were first made on the 120VAC high line of the Hammond Manufacturing BPE2G Power Supply which provided 24VAC to the EUT.
- 3) The frequency range from 150 kHz to 30 MHz was broken up into smaller frequency sub-bands.
- 4) Conducted emissions measurements were taken on the first frequency sub-band using a peak detector.
- 5) The data thus obtained was then searched by the computer for the highest levels. Any emissions levels that were within 4dB of the average limit were then measured again using both a quasi-peak detector and an average detector. (If no peak readings were within 4dB of the average limit, quasi-peak and average readings were taken on the highest emissions levels measured during the peak detector scan.)
- 6) Steps (4) and (5) were repeated for the remainder of the frequency sub-bands until the entire frequency range from 150kHz to 30MHz was investigated. The peak trace was automatically plotted. The plot also shows quasi-peak and average readings that were taken on discrete frequencies. A table showing the quasi-peak and average readings was also generated. This tabular data compares the quasi-peak and average conducted emissions to the applicable conducted emissions limits.
- 7) Steps (3) through (6) were repeated on the 120VAC return line of the Hammond Manufacturing BPE2G Power Supply which provided 24VAC to the EUT.





Test Setup for RF Conducted Emissions (AC Mains)





FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

Manufacturer : Astronics Model Focus Pro : **DUT Revision** Serial Number : 1378317 DUT Mode : Transmit at 2437MHz, 802.11b, 11MBPS Line Tested : 120V, 60Hz High Scan Step Time [ms] : 30 Meas. Threshold [dB]: -4 Notes Tested with a Hammond Manufacturing BPE2G Power Supply (24VAC Output) 2 Test Engineer : M. Longinotti Limit : Class B Test Date : Jun 07, 2021 03:13:35 PM Data Filter : Up to 80 maximum levels detected with 6 dB level excursion threshold over 4 dB margin below limit

Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.150	56.2	66.0		24.4	56.0	
0.270	44.5	61.1		13.7	51.1	
0.527	23.7	56.0		14.0	46.0	
1.051	21.3	56.0		12.2	46.0	
1.574	21.2	56.0		12.1	46.0	
2.624	20.0	56.0		10.2	46.0	
4.724	23.6	56.0		13.3	46.0	
8.398	28.8	60.0		18.2	50.0	
9.450	15.0	60.0		7.1	50.0	
24.517	11.3	60.0		6.6	50.0	





FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

Manufacturer	:	Astronics
Model	:	Focus Pro
DUT Revision	:	
Serial Number	:	1378317
DUT Mode	:	Transmit at 2437MHz, 802.11b, 11MBPS
Line Tested	:	120V, 60Hz High
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-4
Notes	:	Tested with a Hammond Manufacturing BPE2G Power Supply (24VAC Output)
Test Engineer	:	M. Longinotti
Limit	:	Class B
Test Date	:	Jun 07, 2021 03:13:35 PM



Emissions Meet QP Limit Emissions Meet Ave Limit





FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

Manufacturer : Astronics : Model Focus Pro **DUT Revision** Serial Number : 1378317 DUT Mode : Transmit at 2437MHz, 802.11b, 11MBPS Line Tested : 120V, 60Hz Return Scan Step Time [ms] : 30 Meas. Threshold [dB]: -4 Notes Tested with a Hammond Manufacturing BPE2G Power Supply (24VAC Output) 2 Test Engineer : M. Longinotti Limit : Class B Test Date : Jun 07, 2021 03:19:57 PM Data Filter : Up to 80 maximum levels detected with 6 dB level excursion threshold over 4 dB margin below limit

Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.150	56.3	66.0		24.3	56.0	
0.270	44.6	61.1		12.9	51.1	
0.523	23.1	56.0		12.2	46.0	
1.051	20.2	56.0		11.5	46.0	
1.574	20.0	56.0		11.3	46.0	
2.624	18.4	56.0		10.6	46.0	
4.724	19.0	56.0		10.1	46.0	
8.398	28.1	60.0		17.7	50.0	
16.268	13.1	60.0		7.2	50.0	
29.912	18.0	60.0		12.5	50.0	





FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

Manufacturer	:	Astronics
Model	:	Focus Pro
DUT Revision	:	
Serial Number	:	1378317
DUT Mode	:	Transmit at 2437MHz, 802.11b, 11MBPS
Line Tested	:	120V, 60Hz Return
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-4
Notes	:	Tested with a Hammond Manufacturing BPE2G Power Supply (24VAC Output)
Test Engineer	:	M. Longinotti
Limit	:	Class B
Test Date	:	Jun 07, 2021 03:19:57 PM



Emissions Meet QP Limit Emissions Meet Ave Limit



23. 6dB Bandwidth

EUT Information			
Manufacturer	Astronics		
Product	Resideo Thermostat		
Model No.	Focus Pro		
Serial No.	1378290		
Mode	802.11b, 802.11g, 802.11n		

Test Setup Details			
Setup Format	Tabletop		
Measurement Method	Antenna Conducted		
Notes	N/A		

Requirements

Systems using digital modulation techniques shall have a minimum 6dB bandwidth of 500kHz.

Procedures

The antenna port of the EUT was connected to the spectrum analyzer through 40dB of attenuation.

The EUT was allowed to transmit continuously. The transmit channel was set separately to low, middle, and high channels. The resolution bandwidth (RBW) was set to 100kHz, the video bandwidth (VBW) was set to the same as or 3 times greater than the RBW, and the span was set to 3 times the RBW.

The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined. The analyzer's display was plotted using a 'screen dump' utility.


Test Details								
Manufacturer	Astronics							
Model No.	Focus Pro							
Serial No.	1378290							
Mode	802.11b							
Parameters	6dB BW							
Notes	N/A							

Protocol	Freq	Data Rate	6dB BW
	(MHz)	(Mbps)	(MHZ)
	2412		9.62
	2437	1	10.09
	2462		10.07
	2412		10.03
	2437	2	9.79
802 11b	2462		9.95
802.110	2412		10.21
	2437	5.5	9.37
	2462		9.66
	2412		9.81
	2437	11	10.33
	2462		9.33



Test Details								
Manufacturer	Astronics							
Model No.	Focus Pro							
Serial No.	1378290							
Mode	802.11b – 1Mbps							
Carrier Frequency	2412MHz							
Parameters	6dB BW							
Notes	6dB BW = 9.62MHz							

MultiView 88	Receiver	Spectrum	🕱 Sp	ectrum 2	Spectrum	3 🖾			
Ref Level 40. Att	.60 dBm Offse 10 dB SWT	t 40.60 dB • RE 1.04 ms • VE	3W 100 kHz 3W 300 kHz 1	Mode Auto Swee	þ		Fre	equency 2.41	20000 GHz
1 Frequency S	weep	ON NO	iun on						•1Pk View
								D1[1]	-1.05 dB
									9.6200 MHz
an daw								M1[1]	3.24 dBm
30 dBm									.4074150 GHz
20. dBm									
20 0011									
10 dBm					0.0.0.0				
			M1 A A	MUMUM	Junnan				
	H1 4.300 dBm		Multin		/	www.l.Juli			
0 dBm		1 and	t /	h	/	1	W a		
		a pulli	\sum				why a		
-10 dBm		- And Com	VV.			en e	- Vind		
	J						Υ.		
-20 dBm	V							M	
	Ň							N	
-30 dBm									
man	mm.							hm	m
<mark>,-4Ų~d</mark> Bm	, v							. Υ	1 Mr
									~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-50 dBm									
55 dbm									
CE 2 412 GHz			1001 nt	<u> </u>	3	0 MHz /		<u>ا</u>	nan 30.0 MHz
	1		1001 pt	5			<b>110</b> 01.06.2	021 Ref Level	
					Measuring		20:23	3:29	

20:23:29 01.06.2021



Test Details								
Manufacturer	Astronics							
Model No.	Focus Pro							
Serial No.	1378290							
Mode	802.11b – 2Mbps							
Carrier Frequency	2412MHz							
Parameters	6dB BW							
Notes	6dB BW = 10.03MHz							

Multi¥iew 88	Receiver	Sp.	ectrum	X	Spectrum 2	X	Spectrum 3	X	Spectrum 4	spi	ectrum 5 🛛 🔆	$\mathbb{X}$		
Ref Level Att	40.60 dBm 10 dB 1 AC	Offset SWT PS	40.60 dB 1.02 ms	<ul> <li>RB</li> <li>VB</li> <li>No</li> </ul>	W 100 kHz W 300 kHz	Mode	e Auto Sweep	)				Frequency	2.4	120000 GHz
1 Frequence	v Sweep	10	on											o1Pk Max
												[	D1[1]	-0.69 dB 10.0300 MHz
30 dBm												N	41[1]	3.57 dBm
So ubin													2	2.4070050 GHz
20 dBm														
10 dBm			M1		mun	-	~~~~	- mark	um	many				
	H1 3.7	00 dBm -		~~				/						
0 dBm			$\leftarrow + -$			-	₩	f				$-\frac{m_{\chi}}{2}$		
10 d0m	and the second	~	$\bigvee$									/ ~	and the second s	~
														- And
-20 dBm														
-30 dBm														
-40 dBm	_					+								
-50 dBm———														
CF 2.412 GH	-lz				1001 p	ts			2	.0 MHz/			5	Span 20.0 MHz
								М	leasuring		<b>40</b> 01. 2	06.2021 R 0:52:11	ef Level •	RBW

20:52:11 01.06.2021



Test Details								
Manufacturer	Astronics							
Model No.	Focus Pro							
Serial No.	1378290							
Mode	802.11b – 5.5Mbps							
Carrier Frequency	2412MHz							
Parameters	6dB BW							
Notes	6dB BW = 10.21MHz							

Multi¥iew 🔠 I	Receiver	XX Spe	ectrum	X	Spectrum 2	X	Spectrum 3	X	Spectrum 4	+	pectrum 5	××			
Ref Level - Att Input	40.60 dBm 10 dB 1 AC	Offset SWT PS	40.60 dB 1.02 ms On	<ul> <li>RE</li> <li>VB</li> <li>No</li> </ul>	W 100 kHz W 300 kHz otch Off	Mode	Auto Sweep	)				Fre	equency	2.41	20000 GHz
1 Frequency	/ Sweep														o1Pk Max
													D	1[1]	-0.21 dB
															10.2100 MHz
													M	1111	3.95 dBm
30 dBm															4068250 GHz
														-	14000230 0112
20 dBm															
10. d8m															
10 0011			M1		man	m	some way		mm	www.					
	H1 4.4	20 dBm		~^^^	4 - M(24-						and all and and	D1			
0 dBm		N	nn									- ~~~	Yana		
o abiii	~~~~	~											and the		
	m													www	
-10 dBm	<i></i>														- Marine Contraction
N.															l de la companya de l
and the second sec															1
-20 dBm						_									
1															L L
-30 dBm															
-40 dBm															
-50 dBm						-									
CF 2.412 GH	lz				1001 p	ts			2	.0 MHz/				5	pan 20.0 MHz
								M	easuring			01.06.2	021 Re	fLevel	RBW
<u> </u>									5			21:13	5:43		

21:13:43 01.06.2021



Test Details								
Manufacturer	Astronics							
Model No.	Focus Pro							
Serial No.	1378290							
Mode	802.11b – 11Mbps							
Carrier Frequency	2412MHz							
Parameters	6dB BW							
Notes	6dB BW = 9.81MHz							

MultiView 88 Reco	siver 🛛 🖾	Spectrum	X	Spectrum 2	Spectrum 3	Sp	ectrum 4	Spect	brum 5 🛛 🔆 🔀		
Ref Level 40 Att Input	.60 dBm 01 10 dB 51 1 AC P5	ffset 40.60 di NT 1.02 m S O	B  B  RB s VB' n No	W 100 kHz W 300 kHz tch Off	Mode Auto Swee	p			Fr	equency 2.41	.20000 GHz
1 Frequency S	weep										●1Pk View
										D1[1]	0.44 dB
										Diff.	0.9100 MHz
										M1E11	4.00 dBm
30 dBm										wit[1]	4.23 dBm
										2	4073250 GHz
20 dBm											
10 dBm				۸. ۵	nomenting	mm					
		10	M1	www.www.w				mon	D1		
	H1 4.280 (		0000						multim	0	
0 dBm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							V	have	
	- Ann									- man	
	~~~									hm	N
-10 dBm											N DAY
and a second											m h
and the second sec											Mr.
-20 dBm											- Martin
and the second se											h
-30 dBm											
-40 dBm											
-50 dBm											
CE 2 412 CU-				1001			2.0.M	U/		c	non 20.0 MHz
	20			1001 þí	.3		∠,0 №	1127	01.07		
l	Д					Meas	suring (21:3		RBW

21:34:09 01.06.2021



Test Details								
Manufacturer	Astronics							
Model No.	Focus Pro							
Serial No.	1378290							
Mode	802.11b – 1Mbps							
Carrier Frequency	2437MHz							
Parameters	6dB BW							
Notes	6dB BW = 10.09MHz							

MultiView 88 Receiver	XX s	ipectrum	Spectrum 2	Spectrum 3	Spectrum 4	1 🔆 🔀 Spec	:trum 5 🛛 🔆 🔀		
Ref Level 40.60 Att	dBm Offse 10 dB SWT	t 40.60 dB • RI 1.02 ms • VI	3W 100 kHz 3W 300 kHz I	Mode Auto Swee	þ		Fn	equency 2.43	70000 GHz
1 Frequency Swe	rac P3	ON N	otan on						●1Pk View
i i requerey e i t	зор							D1[1]	-1.56 dB
									10.0900 MHz
								M1[1]	3.97 dBm
30 dBm-									.4319450 GHz
								-	1019 100 0112
20 dBm									
20 00.00									
10 dBm					8 8 6 6	0			
		M1	I. A. Andul	white (Julin	Inter A.	6 o		
	H1 4.320 dBm	Jula	chi chi		1		m m		
0 dBm	o M			بر	}			WI D	
۸	M	\mathbb{N}						- why	
-10 dBm								~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	P-A
M									M.
-20 dBm									
\mathcal{I}									\sim
-20 dBm-									
30 0.0m									
-40 dBm									
-50 dBm									
CF 2.437 GHz			1001 pt	s	2	.0 MHz/		5	pan 20.0 MHz
					Measuring		01.06.2 22:0	9:58	RBW

22:09:58 01.06.2021



	Test Details
Manufacturer	Astronics
Model No.	Focus Pro
Serial No.	1378290
Mode	802.11b – 2Mbps
Carrier Frequency	2437MHz
Parameters	6dB BW
Notes	6dB BW = 9.79MHz

MultiView 88	Receiver	X s	pectrum 🦂		Spectrum 2 <	×	Spectrum 3	X	Spectrum 4	× × × ×	Spectrum 5	×x			
Ref Level Att Input	40.60 dBm 10 dB 1 AC	Offse SWT PS	t 40.60 dB 1.02 ms On	 RB VB No 	W 100 kHz W 300 kHz tch Off	Mod	e Auto Swee	p				Fre	equency	2.43	70000 GHz
1 Frequenc	y Sweep														●1Pk View
													D	1[1]	-0.53 dB
															9,7900 MHz
													м	1[1]	4.08 dBm
30 dBm														-1-1-	4321450 GHz
														1	14021400 0112
00. ID															
20 dBm															
10 dBm															
TO UBIII			M1		······		m~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- Mar	mm	m					
	H1 4.2	00 dBm			- market "			1		- man	man	D1			
0 dBm		~					\	1					m		
0 ubiii	.lw	and a	\mathcal{S}				1						and the second		
	- And		$1 \lambda \ell$											Some -	
-10 dBm	and the second s		V									V		'n	M.
10 ubin															
															n and the second s
-20 dBm															<u> </u>
20 dbm															
~															1
-30 dBm															
-40 dBm															
-50 dBm															
CE 2 437 G	H7				1001									c	nan 20.0 MHz
GI 21737 G)(1001	513							021 Rei	امیما	
L								M	leasuring			21:02	2:03	•	

21:02:03 01.06.2021



	Test Details
Manufacturer	Astronics
Model No.	Focus Pro
Serial No.	1378290
Mode	802.11b – 5.5Mbps
Carrier Frequency	2437MHz
Parameters	6dB BW
Notes	6dB BW = 9.37MHz

Multi¥iew 🔠	Receiver	Spectrum	X	Spectrum 2	Spectrum 3	Spectrum 4	4 🔆 🕅 Spe	ectrum 5 🛛 🔆 🔀		
Ref Level Att Input	40.60 dBm 10 dB 1 AC	Offset 40.6 SWT 1.02 PS	0 dB ● RB 2 ms ● VB On No	W 100 kHz W 300 kHz I tch Off	Mode Auto Swee	c		Fre	equency 2.43	70000 GHz
1 Frequence	v Sweep									o1Pk View
									D1[1]	-0.05 dB
									M1[1]	4 27 dBm
30 dBm									2	4326040 GHz
20 dBm										
to day										
IU dBm	H1 5.0	20 dBm	M1	mmm	monter	me was a second and a second a	mm	D1		
0.40.00		man						min		
o ubm	manne								www	2
-10 dBm	/									- M
26 ^m dbm										ma
-20 UBM										كر
-30 dBm										
-40 dBm										
-50 dBm										
CE 0 497 C				1001 pt					<u> </u>	non 20.0 MHz
GF 2,437 G				1001 pt	3				021 Ref Louel	
						Measuring		21:22	2:29	KBW

21:22:29 01.06.2021



	Test Details
Manufacturer	Astronics
Model No.	Focus Pro
Serial No.	1378290
Mode	802.11b – 11Mbps
Carrier Frequency	2437MHz
Parameters	6dB BW
Notes	6dB BW = 10.33MHz

Multi¥iew 88 Re	eceiver	Spe	ectrum	X	Spectrum 2	X	Spectrum 3	X	Spectrum 4	🔆 🗶 Spec	ctrum 5 🛛 🔆	X		
RefLevel 4 Att Input	0.60 dBm 10 dB 1 AC	Offset SWT PS	40.60 dB 1.02 ms On	 RB VB No 	W 100 kHz W 300 kHz tch Off	Mod	e Auto Sweep					Frequency	2.43	370000 GHz
1 Frequency	Sweep													⊙1Pk Max
												D1	[1]	0.24 dB
													1-1	10.3300 MHz
												N.	E 1 1	4.49 dBm
30 dBm	-											WI.	·[·]	4,40 UDIII
													2	4318050 GHZ
20 dBm						-								
10 dBm					annon	m	ᡔᡗᢦᢛᢍᢦ᠆᠇	سممم	m	manne				
	H1 4 7	0 dBm		m	ver						M D1			
	_	<i>.</i>	mart									man and		
0 dBm	~	~~~~				-						- many		
	- and													
	and the second s												~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	M
-10 dBm						-								- M
المعنى														No.
میں میں ایک می														N.
-20 dBm						-								
S.														٦. ٦
-30 dBm														
-40 dBm						-								
-50 dBm						-								
CF 2.437 GH	Z				1001 p	ts			2.	0 MHz/			S	pan 20.0 MHz
ſ								M	easuring		100 01.0	06.2021 Re	f Level	RBW
L											2	1:42:02 🕒	•	

21:42:03 01.06.2021



	Test Details
Manufacturer	Astronics
Model No.	Focus Pro
Serial No.	1378290
Mode	802.11b – 1Mbps
Carrier Frequency	2462MHz
Parameters	6dB BW
Notes	6dB BW = 10.07MHz

MultiView 88	Receiver	X s	Spectrum	X	Spectrum 2	X	Spectrum 3	X	Spectrum 4	× × ×	Spectrum 5	×X		
Ref Level Att Input	40.60 dBm 10 dB 1 AC	Offse SWT PS	t 40.60 dB 1.02 ms On	 RB VB No 	W 100 kHz W 300 kHz tch Off	Mode	e Auto Swee	þ				Fre	quency 2.4	4620000 GH
1 Frequence	y Sweep													⊙1Pk Max
													D1[1]	0.10 d
														10.0700 MH
00.40.0													M1[1]	1 4.35 dBr
3U dBm														2 4569450 GH
														214000400 011
00.40.0														
20 dBm-														
10 dBm								A						
TO UBIII			M1		Δ Δ Δ	\mathbb{A}	Jul	- Mu	1. Mul	ΑΛΑ				
	H1 4.7	740 dBm	1	A J	-Martin Ca	-	~~~			m m []				
0 dBm		I	(J~~	~~~			\				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		<u>a</u>	
10 d0m	form	Jun	\bigvee				×.	v				\mathbb{N}	many	
														- M
-20 dBm														
V .														
-20 d8m														
-30 0811														
-40 dBm														
-50 dBm						<u> </u>								-
CF 2.462 G	Hz				1001 pt	s			2	.0 MHz/				Span 20.0 MH
)[) IV	leasuring			01.06.20	21 Ref Lev	el RBW

20:46:28 01.06.2021



	Test Details
Manufacturer	Astronics
Model No.	Focus Pro
Serial No.	1378290
Mode	802.11b – 2Mbps
Carrier Frequency	2462MHz
Parameters	6dB BW
Notes	6dB BW = 9.95MHz

MultiView 88	Receiver	S s	pectrum	X	Spectrum 2	X	Spectrum 3	X	Spectrum 4	+ 🔆 🕅 s	pectrum 5	×x			
Ref Level Att Input	40.60 dBm 10 dB 1 AC	Offse SWT PS	t 40.60 dB 1.02 ms On	 RB' VB' Not 	₩ 100 kHz ₩ 300 kHz t ch Off	Mode	• Auto Swee	р				Fre	equency :	2.46	520000 GHz
1 Frequence	y Sweep														⊙1Pk View
													D1	[1]	0,00 dB
															9.9500 MHz
													M1	E11	2.90 dBm
30 dBm	-													4 × J	
														4	4370230 GHZ
20 dBm															
10 dBm						am	m	~~	N.A						
			M1	ant	monethe	1	~~~~~	1	0.00.000	mont	~~~	D1			
	H1 4.	180 dBm		- Wa				/							
0 dBm		<u>\</u>	k /										ma		
	Nu Nu		$\left[\lambda \right] $									()	www	٦.	
	and have a		$ \rangle$											m	h.
-10 dBm	×		· ·			+									- Not
manan															Mark 1
-20 dBm											_				<u> </u>
N															N
-30 dBm						-									
-40 dBm						-									
-50 dBm						-									
CE 2 462 G					1001 pt				2						nan 20.0 MHz
GI 21402 G	12			_	1001 þ	1.3			2			01.06.2	021 (Pof	Jouel	
L								N	leasuring			21:06	5:50 Ref	•	RBW

21:06:51 01.06.2021



	Test Details
Manufacturer	Astronics
Model No.	Focus Pro
Serial No.	1378290
Mode	802.11b – 5.5Mbps
Carrier Frequency	2462MHz
Parameters	6dB BW
Notes	6dB BW = 9.65MHz

MultiView 88	Receiver		ipectrum	X	Spectrum 2	X	Spectrum 3	X	Spectrum 4	× 🔆 🕅	Spectrum 5	- ¥⊠			
Ref Level Att Input	40.60 dBm 10 dB 1 AC	Offse SWT PS	t 40.60 dB: 1.02 ms On	 RE VE No 	3W 100 kHz 3W 300 kHz otch Off	Mod	e Auto Swee	þ				Fre	equency 2	2.46	20000 GHz
1 Frequen	sy Sweep														●1Pk View
													D1	[1]	-0.12 dB
															9.6500 MHz
													M1	E11	4 44 dBm
30 dBm													WII		4572250 CU5
														4	.4572250 GHZ
20 dBm						-									
10 dBm			0.01		n mm	m	mmm	m	m -	mmm					
	H1.4.f	500 dBm	.	n	man.						man	D1			
		M-	- North									m			
0 dBm	- Ani	m											- Mr.		
	and and and												~~~~	m	
	man													m.	Man
-10 dBm	of														They want
															Mar Internet
and the second s															r y
-20 dBm						-									- And
\checkmark															\ \
-30 dBm															
-40 dBm															
L															
-50 dBm															
CF 2.462 C	Hz				1001 p	ts			2	.0 MHz/				S	pan 20.0 MHz
									leasuring			DØ 01.06.2	021 Ref I	evel	RBW
L									.cesaring			21:2	B:18		

21:28:19 01.06.2021



Test Details								
Manufacturer	Astronics							
Model No.	Focus Pro							
Serial No.	1378290							
Mode	802.11b – 11Mbps							
Carrier Frequency	2462MHz							
Parameters	6dB BW							
Notes	6dB BW = 9.33MHz							

MultiView 88	Receiver	X	Spectrum	X	Spectrum 2	X	Spectrum 3	X	Spectrum 4	• 🔆 🕅	Spectrum 5	×X			
Ref Level Att Input	40.60 dBm 10 dB 1 AC	Offse SWT PS	et 40.60 dE 1.02 m Or	8 = RI s = VE n Ne	BW 100 kHz BW 300 kHz otch Off	Mod	e Auto Sweep)				Fre	equency 2	.46	20000 GHz
1 Frequen	cy Sweep														●1Pk View
													D1[11	-0.43 dB
														-1	9 3310 MHz
															4.00 dBm
30 dBm													110		4.90 dBm
														2	:4573450 GHz
20 dBm															
10 dBm						. n.	man	mm	MA	<u></u>					
				M1 ▼ • • • • •	month	111	· · · · ·			1 minun	Mr. D1				
	H1 4.	980 aBM	· and									maria			
0 dBm		- Charles	~~~			_						171	May Martin		
	man												- mark	M	m.
-10 dBm	~~														N.
and the second sec															· March
-20 dBm															h
V															Ň
-30 dBm															
-40 dBm															
-50 dBm						_									
CF 2.462 C	iHz		1		1001	pts			2	.0 MHz/			1	S	pan 20.0 MHz
-									lescuring			a 01.06.2	021 🛛 Ref L	evel	RBW
L									leasuring			21:58	3:44		

21:58:45 01.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g						
Parameters	6dB BW						
Notes	N/A						

Protocol	Freq (MHz)	Data Rate (Mbps)	6dB BW (MHZ)
	2412		16.36
	2437	6	16.4
	2462		16.36
	2412		16.42
	2437	9	16.38
	2462		16.4
	2412		16.44
	2437	12	16.46
	2462		16.44
	2412		16.44
	2437	18	16.42
802.11g	2462		16.42
	2412		16.46
	2437	24	16.46
	2462		16.5
	2412		16.42
	2437	36	16.5
	2462		16.48
	2412		16.44
	2437	48	16.46
	2462		16.5
	2412		16.4
	2437	54	16.46
	2462		16.38



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 6Mbps						
Carrier Frequency	2412MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.36MHz						

MultiView 88 Receiver		Spectrum 🔆 🛛	🕻 Spectrum 2 🛛 🔌	Spectrum 3	Spectrum 4	4 🔆 🔀 Spe	ctrum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input) dBm Offs 10 dB • SW1 1 AC PS	et 40.60 dB ● [2 ms ● On	RBW 100 kHz VBW 300 kHz Notch Off	Mode Auto Swe	ер		Fre	equency 2	.4120000 GHz
1 Frequency Swe	еер								⊙1Pk Max
								D1[1]	-0.01 dB
									16.3640 MHz
10 dBm								M1[1]	-5.73 dBm
									2 4038080 GHz
									214030000 0112
0 dBm	Δ Δ	Δ	ΔΔ	Λ	Λ.	Λ Λ	N N	Δ. Δ	
		mm	M Marine M	mmy	month	$\sim \sim $	mm	Mar Charles	MR1
/	H1 -3.020 dBi				/				
-10 dBm					/				
2									5
an daw									No.
-20 dBm									"ha
m									"h
-30 dBm									
30 dbm									
-40 dBm									
-50 dBm			-						
-60 dBm									
-70 dBm								<u> </u>	
-80 dBm									
CF 2.412 GHz			1001 pt	S	2	.0 MHz/			Span 20.0 MHz
	П				Measuring		02.06.2	021 Ref Le	RBW

01:51:58 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 9Mbps						
Carrier Frequency	2412MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.42MHz						

MultiView 88 Received	r 🕅 s	pectrum 🔆	Spectrum	2 🎽 🕅	Spectrum 3	Spectrum ·	4 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
RefLevel 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB (2 ms (On	 RBW 10 VBW 30 Notch 	0 kHz 0 kHz Mo Off	ode Auto Swee	ep		Fre	equency	2.4120000 GHz
1 Frequency Sw	еер									⊙1Pk Max
									D1[1]	-0.10 dB
										16,4240 MHz
10 dBm									M1[1]	-6.56 dBm
										2.4037880 GHz
0 dBm	Δ Δ	Δ.	Δ. Δ.	. /	. A	A	A. A	No	Λ	Δ
M1		mm	NUCY	w ww	wrwy	www.ww		man prove	1 min	V mp1
		-								À
-10 UBM					ť					
<u>ارم</u>										5
-20 dBm-										4
20 0011										~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
M ^v										and the second second
-30 dBm										
-40 dBm										
-50 dBm										
-60 dBm										
- /U dBm										
00 d0m										
			1	001 ptc						Spap 20.0 MU-
UF 2.412 GHZ				loor pts				00.06.0	001 (Dof	
L	ЛЛ					Measuring]	01:56	5:29 Ref	• RBW

01:56:29 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 12Mbps						
Carrier Frequency	2412MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.44MHz						

MultiView 88 Receiver	r 🕅 🕅	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input) dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● F 2 ms ● V On N	NBW 100 kHz NBW 300 kHz Notch Off	Mode Auto Swee	ep		Fre	quency 2	.4120000 GHz
1 Frequency Swe	еер								⊙1Pk Max
								D1[1]	-0,77 dB
									16,4440 MHz
10 dBm								M1[1]	-5.64 dBm
								mit[1]	2 4027690 GHz
									214037000 0112
0 dBm	Δ Δ	Δ	Δ Δ.	Λ	. A.	ΔΔ	. /\	Δ /	
MI		$\sim \sim \sim \sim$	nun	$\sim\sim\sim\sim\sim$	NWW	N MANN	mm	<u>rhni</u>	M _{B1}
									Ĩ À
-10 dBm									
-20 dBm									- W.
. ~ ~ ~									"hy
~~ 20. dDm									× V
-30 dBm									
-40 d9m									
-40 ubin									
-50 dBm									
00 40.00									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.412 GHz			1001 pt	S	2	.0 MHz/			Span 20.0 MHz
					Measuring		02.06.20	021 Ref L	evel RBW
							02:01	:07	

02:01:08 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 18Mbps						
Carrier Frequency	2412MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.44MHz						

Multi¥iew 88 Receive	r 🖾 s	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● F 2 ms ● \ On N	RBW 100 kHz /BW 300 kHz Notch Off	Mode Auto Swee	≥p		Fre	quency 2.	4120000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-0.48 dB
									16,4440 MHz
10 dBm								M1[1]	-5.55 dBm
									2.4037680 GHz
0 dBm M1	Δ	0.0 0.0	ΔΔ.		m = 1 00	A a a water		Δ Δ.	
	H1 -5.390 dBm			~~~~		~~~~~~		1 mm	
-10 d8m-					[1
10 0000				ι	/				
6									<u>h</u>
-20 dBm									h
M M									The second
M									· W-
-30 dBm									
-40 dBm									
-50 dBm									
co dom									
-60 dBm									
-70 dBm									
. o abiii									
-80 dBm									
CF 2.412 GHz		1	1001 pt	S	2	2.0 MHz/	11		Span 20.0 MHz
	Y				Moacuring		110 02.06.2	D21 Ref Lev	vel RBW
	Л				measuring	J	02:05	:41	

02:05:41 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 24Mbps						
Carrier Frequency	2412MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.46MHz						

MultiView 88 Receive	er 🔣 S	ipectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	l 🔆 🕅 Spec	:trum 5 🛛 🔆 🔀		
Ref Level 18.0 Att Input	0 dBm Offse 10 dB • SWT 1 AC PS	et 40.60 dB • P 2 ms • V On N	BW 100 kHz BW 300 kHz lotch Off	Mode Auto Swee	≥p		Fre	quency 2	.4120000 GHz
1 Frequency Sw	/eep								⊙1Pk Max
								D1[1]	-0.66 dB
									16,4640 MHz
10 dBm								M1[1]	-5.27 dBm
									2.4037480 GHz
0 dBm	Λ. Λ	h A	Andra	$ (\land $	~^^^_	. Ann AA	00 1000	$\sqrt{1}$	
	₩ <mark>H1 -5.240 dBn</mark>	VW WV	A AM AM AN			M V V V V V	NN WWV	-M	<u>~</u>
10 40 m		T							1
-10 uBm)	1				
5									h
-20 dBm									Υ.
									M.
~~~									m
-30 dBm									~\
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
00 d0m									
CE 2 412 CH-			1001 pt	 	<b></b>				Spap 20.0 MHz
	10		1001 pt	3				121 ( Bofi	
	儿				Measuring		02:09	:44	KBW

02:09:45 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 36Mbps						
Carrier Frequency	2412MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.42MHz						

MultiView 88 Receiver	r 🕅 🕅 sı	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	) dBm Offse 10 dB ● SWT 1 AC PS	t 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swee	ep		Fre	quency 2.4	120000 GHz
1 Frequency Swo	еер								o1Pk Max
								D1[1]	-0.47 dB
									16.4240 MHz
10 dBm								M1[1]	-5.30 dBm
								MILI	2 4027990 CH-
									214037880 GHZ
0 dBm	Λ Λ	/	0 0 0 0	Λ. Δ	Λ	Λ	0	Λ ο Λ	
		$\mathcal{M}$	$\gamma \langle \gamma \rangle $	$\sim \sim $	MNVVV	$m_{1}$	V~V W~V	<u>MMML/</u>	Q1
/ Y					1				Ĩ <b>▲</b>
-10 dBm					1				
-20 dBm									- M
$\wedge O^{\vee}$									M.
V V									$\sim$
-30 dBm-									
-40 dBm									
-40 0011									
-50 dBm									
00 0011									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.412 GHz			1001 pt	S	2	.0 MHz/			Span 20.0 MHz
					Measuring		02.06.20	021 Ref Leve	RBW
L,							02:15	:06	

02:15:07 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 48Mbps						
Carrier Frequency	2412MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.44MHz						

MultiView 88 Received	r 🕅 🕅 sı	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🕅 Spe	ctrum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	t 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swee	ер		Fre	equency	2.4120000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-0,49 dB
									16.4440 MHz
10 dBm								M1[1]	-5 55 dBm
								WITTI	-5.55 dBm
									2,4037880 GHZ
0 dBm	Δ Δ		A //	<u> </u>	0.0	δ. <u>Λ</u>	0.0.0	Λ	Δ
M1	MAA N	MMM	March	$\Lambda M M \Lambda \Lambda$	m	M M M	M/N	MAAA	
	- HI -5.330 UBM	· · · ·		1				× v v ·	
-10 dBm				<u> </u>	(				
				v					
									h
-20 dBm									
									M.
V ~									· ~~
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
70.40.0									
-70 dBm									
00.40									
-60 0Bm			1001-+						Enon 20.0 Mille
			1001 pt	3			02.06.2	001 00-6	
	ЛЛ				Measuring		<b>102.06.2</b> 02:19	021 Ref	KBW

02:19:27 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 54Mbps						
Carrier Frequency	2412MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.40MHz						

MultiView 88	Receiver	Spectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🔀 Spec	:trum 5 🛛 🔆 🔀		
Ref Level Att Input	18.00 dBm Of 10 dB • SV 1 AC PS	fset 40.60 dB ● F VT 2 ms ● V S On N	NBW 100 kHz NBW 300 kHz Notch Off	Mode Auto Swe	ер		Fre	equency 2.4	4120000 GHz
1 Frequency	/ Sweep								⊙1Pk Max
								D1[1]	-0.14 dB
									16.4040 MHz
10 dBm								M1[1]	-8.84 dBm
									2.4038080 GHz
0 dBm									
		1 monton	hm	mann	$\sim \sim \sim$	MAAA	m	Ann	~
-10 dBm	7 V H1 -8.810 c	18m	* * V - V-	10 · 0 · 0 1		<u> </u>			4
				\					
-20 dBm									
ANN									m
V30 uBm									
-40 dBm									
-50 dBm									
co in									
-60 авт									
-70 dBm-									
70 GDIII									
-80 dBm									
CE 2.412 GE	17	1	1001 nt	i S	2	.0 MHz/	Í .		Span 20.0 MHz
S. 21112 OF	)(		1001 pt		Z		<b>114</b> 02,06.2	021 Reflev	el (RBW)
					Measuring		02:23	8:56	

02:23:57 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 6Mbps						
Carrier Frequency	2437MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.40MHz						

MultiView 88 Receiver	y 🕅 🕅	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	) dBm Offse 10 dB = SWT 1 AC PS	t 40.60 dB ● F 2 ms ● \ 0n N	XBW 100 kHz /BW 300 kHz	Mode Auto Swee	ep		Fre	equency	2.4370000 GHz
1 Frequency Swe	eep								⊙1Pk Max
								D1[1]	-0.40 dB
									16.4040 MHz
10 dBm								M1[1]	-5.87 dBm
								MILI	2 4207000 CU-
									2.4207000 002
0 dBm	A ()	Δ	A	Λ	Λ			Λ	Λ
M1	H1 -5.270 dBm	$\sim\sim\sim\sim\sim\sim$	V MAN M	why	mmm	WWW P	man ham	2 hora	1mn
									À
-10 dBm				t	/				
$\wedge$									հ
									M _e
-20 dBm-									and a
الممر									"Wy
-30 dBm									
00 4511									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
00.40.0									
			1001-+						Enon 20 0 Milia
GF Z.437 GHZ			1001 pt	3		MHZ/	00.06.0	001 00-6	span Zulu MHZ
	Л				Measuring		01:53	8:46 Ref	RBW

01:53:46 02.06.2021



Test Details							
Manufacturer	Astronics						
Model No.	Focus Pro						
Serial No.	1378290						
Mode	802.11g – 9Mbps						
Carrier Frequency	2437MHz						
Parameters	6dB BW						
Notes	6dB BW = 16.38MHz						

MultiView 88	Receiver	Spectrum	×x	Spectrum 2 🛛 🐥	Spectrum 3	Spectrum 4	i 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level Att Input	18.00 dBm 0 10 dB • 5 1 AC F	Offset 40.60 SWT 2 SS	)dB ● RI ms ● VE On No	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swe	ep		Fre	quency 2.	4370000 GHz
1 Frequence	v Sweep									⊙1Pk Max
									D1[1]	-0.43 dB
										16 3840 MHz
10 dBm									M1E11	5.74 dBm
									MILII	-5.74 ubm
										2,4288080 GHz
0 dBm	-		<b>γ</b>	<u>~</u> ^	0		A A	٨	<u>// // // // // // // // // // // // // </u>	
	M1	Umm	m	Marth	man	mount	MMM	when	Mont	A.a1
		U GBM				1				
-10 dBm	/				Y Y	V				
	/									
-20 dBm										- 69.
$\sim \sim$										$\sim $
<i>\</i> ~										- TV
-30 dBm										
-40 dBm										
-50 dBm										
-60 dBm										
-70 dBm										
-80 dBm										
CF 2.437 G	Hz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
	T T					Measuring		02.06.20	Ref Lev	vel RBW
<u> </u>								01:57:	39	

01:58:00 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 12Mbps					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.46MHz					

Multi¥iew 88 Receiver	r 🕅 SI	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● P 2 ms ● V On N	BW 100 kHz BW 300 kHz Jotch Off	Mode Auto Swee	ep		Fre	equency 2	2.4370000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-0,60 dB
									16,4640 MHz
10 dBm								M1[1]	-6.04 dBm
									2 4287680 GHz
									2,4207000 0112
0 dBm	Λ Λ		Δ. Δ	. A	. <u>A</u> 0	A	Λ	Δ	Λ
M1			howww	murin	M	MMMM	wwww	Vm	101
									4
-10 dBm				V	J				
لہ									Υ.
									4
-20 dBm-									- Ju
~~~~									the second second
20. dBm									
-30 UBM									
-40 dBm									
40 0011									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.437 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
ſ					Measuring		02.06.20	D21 Ref L	evel RBW
L							02:02	:57	

02:02:58 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 18Mbps					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.42MHz					

MultiView 88 Receiver	r 🕅 🕅	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input) dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● F 2 ms ● V On F	XBW 100 kHz / BW 300 kHz Notch Off	Mode Auto Swee	ep		Fre	equency 2	.4370000 GHz
1 Frequency Swe	еер								⊙1Pk Max
								D1[1]	-0.74 dB
									16,4240 MHz
10 dBm								M1[1]	-5.25 dBm
									2.4288080 GHz
0 dBm M1	Λ_{++}	A . A . A	Ma a Ma	a la conta	0.0.00	$\Delta = \Delta$	00000	1	
<u> </u>	H1 -5.090 dBm		<u>v v ~ ~ v v v</u>			<u> </u>	VY~~~~	1 mil	M Mai
-10 dBm					/				1
10 0.011				\ \					
\sim									η
-20 dBm									- Ma
									°\ _\ ∧
									· w
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-00 ubm-									
-70 dBm									
-80 dBm									
CF 2.437 GHz			1001 pt	s	2	.0 MHz/	· · · · · · · · · · · · · · · · · · ·		Span 20.0 MHz
					Measuring		02.06.20	D21 Ref Le	vel RBW
L,							02:06	:59 👅 🔍	

02:06:59 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 24Mbps					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.46MHz					

MultiView 88 Receiver	r 🖾 s	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
RefLevel 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● 2 ms ● On	RBW 100 kHz VBW 300 kHz Notch Off	Mode Auto Swee	ep		Fre	quency 2	.4370000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-0,49 dB
									16,4640 MHz
10 dBm								M1[1]	-5.64 dBm
									2 4287680 GHz
									214207000 0112
0 dBm	<u> </u>	0 0 0 -	A A A	0.000	- And	AnanA	no. Anno	7 ~ 1	1
	-11-5.110 dBm		$\sim \sim $			$\sim \sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{$	~~~ VY V	<u>r www</u>	
									4
-10 dBm					/				
2				````					
									5
-20 dBm									5
w v									тъ.
									- V0
-30 dBm									
-40 dBm									
-40 0611									
-50 dBm									
00 0011									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.437 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
					Measuring		02.06.20	D21 Ref L	evel RBW
							02:11	:39 🔍 🔍	

02:11:39 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 36Mbps					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.50MHz					

Multi¥iew 88 Receiver	r 🖾 s	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB = SWT 1 AC PS	t 40.60 dB • I 2 ms • ۱ 0n I	RBW 100 kHz VBW 300 kHz Notch Off	Mode Auto Swee	ep		Fre	equency 2	.4370000 GHz
1 Frequency Swe	еер								⊙1Pk Max
	-							D1[1]	-0,30 dB
									16.5030 MHz
10 dBm								M1[1]	-5.86 dBm
								(int[1]	2 4297470 GHz
									2,4207470 0112
0 dBm	<u> </u>		$\Lambda_{\rm H} = \Lambda_{\rm H}$	0.0 D	- A	Δορο		7	1
		AMA A COMA	<u>n www</u>	WWWWW	Mym	$\sim \sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{$	$\sqrt{\sqrt{N}}$	v hand	
									•
-10 dBm				4					
									4
									- K
-20 dBm									M.
M									"Why
-20 dBm									~
-SU UBIII									
-40 dBm									
io abiii									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.437 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
	IT I				Measuring		02.06.2	021 Ref L	evel RBW
							- 02:16	0:43	

02:16:44 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 48Mbps					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.46MHz					

Multi¥iew 88 Receiver	r 🕅 SI	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● F 2 ms ● V On N	XBW 100 kHz /BW 300 kHz Jotch Off	Mode Auto Swee	ep		Fre	equency 2.	.4370000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-0.68 dB
									16,4640 MHz
10 dBm								M1[1]	-5.32 dBm
									2,4287680 GHz
0 dBm M1	Λ Λ	A Ann	A A	00/00	A a m Alan	Ann	~ ^ ^ ^ · · ·	7 . ()	
	√ <mark>H1 -5.110 dB</mark> m		W YWY M	$\sqrt{\sqrt{2}}$	$\frac{1}{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{$			$\sqrt{\sqrt{\sqrt{2}}}$	VM p1
-10 dBm]				
-10 ubiii-									
									Υ
-20 dBm									Y_
									۳M
$\sim N^{\vee}$									۳MV
-30 dBm									•
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
00 d0m									
CE 2 437 CH-			1001 pt		n				Spap 20.0 MHz
	1		1001 pt	3				021 Pofts	
	Л				Measuring		02:20		KDW

02:20:52 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 54Mbps					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.46MHz					

Multi¥iew 88 Receiver	r 🕅 S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	s 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● R 2 ms ● VI On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ер		Fre	equency 2	.4370000 GHz
1 Frequency Swe	eep		ocon on						⊙1Pk Max
								D1[1]	-0.33 dB
									16,4640 MHz
10 dBm								M1[1]	-9.24 dBm
									2.4287680 GHz
									11207000 0112
0 dBm									
M1	A. AI			a A a m		$\Lambda_{\alpha} = \alpha \Lambda_{\alpha}$	h. A		η
10 10 10	√H1 -8.560 dBm		V V V V V	ma Mart	$\int \nabla V \nabla $	$\sim \sim $	WWW WWW	$\sim h \sqrt{-1} \sqrt{2}$	In A1
-10 UBM					1				
					<i>,</i>				
-20 dBm									h
N									λ
ΛN^{V}									M_{0}
-30 dBm									<u> </u>
									. V.
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-70 uBm									
-80 dBm									
CE 2.437 GHz			1001 pt	s	2	0 MHz /			Span 20.0 MHz
			1001 pt	3	2		110 02 06 2	021 Refl	
	Л				Measuring		02:25		

02:25:14 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 6Mbps					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.36MHz					

MultiView 88 Received	r X	spectrum 🔆	Spectrum 2	Spectrum 3	Spectrum ·	4 🔆 🕅 Spe	ctrum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offs 10 dB ● SWT 1 AC PS	et 40.60 dB • 2 ms • On	 RBW 100 VBW 300 Notch 	KHZ KHZ Mode Auto Swe Off	eep		Free	quency 2.4	620000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-0.42 dB
									16,3640 MHz
10 dBm								M1[1]	-5.53 dBm
									2.4538080 GHz
0 dBm	Λ. Λ	a a A a		Non a man		A Cara A		Λ	
	H1 -5.100 dBr	and he	v v v v v v	a not a north	mon	******	mnahmad	1 may m	<u>β</u> 1
10.10									
-10 uBm					v.				
Å									<u>h</u>
-20 d8m									<u>N</u>
									m.
\mathcal{M}^{\sim}									Sec. 1
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
0.0 40 40									
			10	D1 ptp					Spap 20.0 MHz
	1		10	ur his				21 Doft-	
	Л				Measuring	J	4) (1:54:		KBW

01:54:55 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 9Mbps					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.46MHz					

MultiView 88 Receiver	r X	Spectrum 🔆	Spec	rtrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spe	ctrum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offs 10 dB • SW1 1 AC PS	et 40.60 dB 2 ms On	 RBW VBW Notch 	100 kHz 300 kHz Off	Mode Auto Swee	≥p		Fre	equency	2.4620000 GHz
1 Frequency Sw	еер									⊙1Pk Max
									D1[1]	-0.43 dB
										16,4040 MHz
10 dBm									M1[1]	-5.65 dBm
										2.4537880 GHz
										211007000 0112
0 dBm	$\Lambda = \Lambda$	Λ	. o A .	A		A	· A. · · · A	A	Λ	Δ
 ~		hom in	NW W	~~~ U.	and rand	men -M			<u>um</u>	
10.10.1		Т				1				1
-10 dBm					l l					
~~~~										Υ.
-20 dpm										μ μ
~20 (80)										·Maa
J										
-30 dBm										
00 45.0										
-40 dBm										
-50 dBm										
-60 dBm										
-70 dBm		1								
-80 dBm				1001	-					
UF 2,462 GHZ				1001 pt	S	2	.u MHZ/			span 20.0 MHz
	Л					Measuring		U2.06.2	021 Ref	Level RBW

01:59:46 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 12Mbps					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.44MHz					

MultiView 88 Receiver	r 🕅 sı	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
RefLevel 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● I 2 ms ● ' On I	RBW 100 kHz VBW 300 kHz Notch Off	Mode Auto Swee	ep		Fre	equency 2.	4620000 GHz
1 Frequency Sw	еер								⊙1Pk Max
í í								D1[1]	-0,15 dB
									16,4440 MHz
10 dBm								M1[1]	-5.15 dBm
									2 4537680 GHz
									214007000 0112
0 dBm M1	Λ. Λ	A A A	A a million			Ann A	0.0.00.00	Λ	
<u>γ</u> Δ	H1 -5.070 dBm		N M M M M M	mon	MAAM	wwww	~~~~~~~~~~	<u>v mnvi</u>	m P1
10.10									1
-10 UBM				(					
$\sim$									5
-20 dBm									ha
20 0011 0									· Mr.
19 T									×24
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-90 dBm									
CE 2 462 CH-			1001 pt						Spap 20.0 MHz
			1001 pt	3					
	Л				Measuring		02:04	:13	

02:04:14 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 18Mbps					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.42MHz					

MultiView 88 Receiver	r 🕅 🕅 SI	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	Spec	:trum 5 🛛 🔆 🔀		
RefLevel 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz lotch Off	Mode Auto Swee	ep		Fre	equency 2.4	4620000 GHz
1 Frequency Swo	еер								⊙1Pk Max
								D1[1]	-0.21 dB
									16.4240 MHz
10 dBm								M1[1]	-5.31 dBm
								(inter)	2 4527990 GHz
									214007000 0112
0 dBm	<u>Λ Λ</u>	· ^	A A	Λ	<u>Λ</u>	Λ Λ	Λ.	<u>Λ Λ</u>	
M1 7	H1 -4.910 dBm	wwww	$\mu$ $\mu$ $\gamma$ $\gamma$ $\gamma$	many	$\mathcal{M}\mathcal{M}\mathcal{M}$	M march (	mu vini	UMMML.	A. R1
				\	1				1
-10 dBm				1	1				
N									h
N									N N
-20 dBm									W.
N/V V									~h~h
V OD JDW									
-30 aBm									
-40 dBm									
-40 UBM									
-50 dBm									
30 dbiii									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.462 GHz			1001 pt	S	2	.0 MHz/			Span 20.0 MHz
					Measuring	<b>.</b>	100 02.06.20	021 Ref Lev	el RBW
					measuring		02:08	:08	

02:08:08 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 24Mbps					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.50MHz					

MultiView 88 Receive	ar 🕅 Si	pectrum 🔆 🔀	Spectrum 2 🛛 🐥	Spectrum 3	Spectrum ·	4 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.0 Att Input	0 dBm Offse 10 dB • SWT 1 AC PS	et 40.60 dB ● F 2 ms ● \ On N	<b>XBW</b> 100 kHz / <b>BW</b> 300 kHz Notch Off	Mode Auto Swee	ep		Fre	equency	2.4620000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-1.75 dB
									16.5030 MHz
10 dBm								M1[1]	-5 99 dBm
								with	-5.88 dBm
									2,4537680 GHZ
0 dBm	<u> </u>	0.0	0.0.0	Λ		A A	h h = h	75	//
MI		$\sim \sim $	$\mu$ www $N$	$\sim \sim $	~~~~ \^~\	$\sim \sim \sim \sim \sim \sim$	$\vee$	$\sim \sim $	Mon
7					(				
-10 dBm				1	+				1
									6
o. /									
-20 dBm									- 4
MW									5
V ~									5
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm			1001						
CF 2.462 GHz	N		1001 pt	S	2	.u MHz/		_	Span 20.0 MHz
					Measuring		02.06.2	021 Ref	Level RBW

02:13:40 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 36Mbps					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.48MHz					

MultiView 88 Receiver	r 🕅 sı	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	i 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	t 40.60 dB ● I 2 ms ● ' 0n I	RBW 100 kHz /BW 300 kHz Notch Off	Mode Auto Swee	ep		Fre	quency 2	.4620000 GHz
1 Frequency Swo	еер								⊙1Pk Max
								D1[1]	-0.75 dB
									16,4840 MHz
10 dBm								M1[1]	-5.67 dBm
									2,4537680 GHz
0 dBm M1 o	$\Lambda = \Lambda$	- alla a	March.	And ma	~~ A~A	$-\Lambda_{mn} \circ \Lambda_{mn}$	$\lambda = \lambda = \lambda$	$\sqrt{1-\alpha}$	
<b></b>	H1 -5.080 dBm	$m \vee V m \vee V$	<u> </u>	LAD CALL		M	$\nabla \nabla \gamma \nabla \nabla \gamma$	2 mil	What
-10 dBm				$\langle \rangle$	/				1
10 0000				1					
									Ŋ
-20 dBm									- M
									No.
~~~~									Ň
-30 dBm									
-40 dBm									
-50 dBm									
60 d0m									
-00 uBm									
-70 dBm									
10 45.									
-80 dBm									
CF 2.462 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
· · · · ·			· · · ·		Measuring		100 02.06.20	D21 Ref L	evel (RBW)
					measuring		02:18	:04 🛛 🔍	

02:18:04 02.06.2021


Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 48Mbps					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.50MHz					

MultiView 88 Receiver	Spe	ectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att :: Input	dBm Offset 10 dB ● SWT 1 AC PS	t 40.60 dB ● F 2 ms ● V On N	BW 100 kHz BW 300 kHz Jotch Off	Mode Auto Swee	ер		Fre	equency 2	2.4620000 GHz
1 Frequency Swe	ер								⊙1Pk Max
								D1[1]	-0.41 dB
									16,5030 MHz
10 dBm								M1[1]	-5 57 dBm
								witti	2 4527200 CH-
									214337200 002
0 dBm	0 0 N	0.0	Δ Δ.	0.00.00	A	A A	• A	575	7
	/ 1/ 1 A _ / 1/19 4H1 -4,990 dBm	$\mathcal{V} \mathcal{M} \mathcal{V} \mathcal{M} \mathcal{M}$	<u>v mvv v</u> v	VVWV	NWW	h h γ	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	VMM	
Ι Ι Υ		v v							4
-10 dBm									
N									L L
-20 dBm									M
\mathcal{M}^{v}									Μ.
- 20. d0m									~~~
-30 ubiii									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm			L						
CF 2.462 GHz	-		1001 pt	s	2	2.0 MHz/			Span 20.0 MHz
					Measuring	g 	02.06.2	021 Ref I	evel RBW

02:22:09 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11g – 54Mbps					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 16.38MHz					

Multi¥iew 88 Receiver	r 🕅 s	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input) dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ep		Fre	equency 2	.4620000 GHz
1 Frequency Swe	еер								⊙1Pk Max
								D1[1]	-0,53 dB
									16.3840 MHz
10 dBm								M1[1]	-8.59 dBm
									2,4537880 GHz
									211007000 0112
0 dBm									
M1	ΔΔ. Δ	0.00000	An on A	AAA AA	Long	Anna	ha al un	A And	}
10 dbm	√H1 -8.430 dBm		VVVV			$\sim \sim \sim \sim \sim v v$	www.www	$\sim \sim $	
-10 UBIII-					(
				(/				
-20 dBm									6
and the second s									ΓN ₀
~30 dBm									V MA
,									· v
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
00.40.0									
-80 aBm			1001 = t						Cran DO O Milia
UF 2,462 GHZ			1001 pt	5	2	.u MHZ/	00.05.0		span 20.0 MHz
	Л				Measuring		U2.06.2	:59 Ref L	ever RBW

02:26:59 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n					
Parameters	6dB BW					
Notes	N/A					

Protocol	Freq (MHz)	Data Rate (Mbps)	6dB BW (MHZ)
	2412		17.6
	2437	MCS0	17.58
	2462		17.6
	2412		17.36
	2437	MCS1	17.52
	2462		17.56
	2412		17.5
	2437	MCS2	17.28
	2462		17.56
	2412		17.72
	2437	MCS3	17.66
802.11n	2462		17.68
	2412		17.6
	2437	MCS4	17.68
	2462		17.68
	2412		17.34
	2437	MCS5	17.56
	2462		17.58
	2412		17.58
	2437	MCS6	17.66
	2462		17.2
	2412		17.42
	2437	MCS7	17.5
	2462		17.54



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS0					
Carrier Frequency	2412MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.52MHz					

MultiView 88 Receive	er 🕅 S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	s 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
 Ref Level 18.00 Att Input 	0 dBm Offse 10 dB • SWT 1 AC PS	et 40.60 dB ● R 2 ms ● VI On N	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swee	ep		Fre	quency 2	2.4120000 GHz
1 Frequency Sw	еер								o1Pk Max
								D1[1]	0.29 dB
									17.5220 MHz
10 dBm								M1[1]	-7.60 dBm
								WILII	-7.00 dBm
									2.4031890 GHZ
0 dBm									
M1	Λ Λ	mm	mm	mm	mon	mm	mm	Annal	Du DI
-10 dBm-	H1 -7.160 dBm								
TO ODIN				۱	/				
-20 dBm									Υ
-20 ubiii									No.
N .									۳۲~
-30 dBm									
SO GBII									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2,412 GHz		1	1001 pt	s	2	.0 MHz/	II		Span 20.0 MHz
	Υ				Manaria	discussion in the second second	177 02.06.21	D21 Ref L	evel RBW
L					measuring		02:28	:22	

02:28:23 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS1					
Carrier Frequency	2412MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.36MHz					

MultiView 🛞 Receiver	XX S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🔀 Spec	trum 5 🛛 🐳 🔀		
Ref Level 18.00 Att 1 Input	∣dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● F 2 ms ● V On N	BW 100 kHz BW 300 kHz Jotch Off	Mode Auto Swee	ер		Fre	equency 2.4	120000 GHz
1 Frequency Swe	eep								⊙1Pk Max
								D1[1]	-0.33 dB
									17.3630 MHz
10 dBm								M1[1]	-7.71 dBm
								marta)	2 4024690 GHz
									2,4034090 0112
0 dBm					0				
M1 .	Λ Λ			Λ	Lonlon	Maga A	Lia Maria	Δ Δ.	
	H1 -7.270 dBm	<u>~~~~~~~</u>	0 00 0 0 0 0 0	www	MUN V ~ 1	ru			VA PI
-10 dBm									
					Į –				
\wedge									N
-20 dBm									1
$^{\circ}$									· Μ.
J									× \
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm			1001						
CF 2.412 GHz	6		1001 pt	S	2	.0 MHz/			Span 20.0 MHz
[]					Measuring	()	02.06.2 02:33	021 (Ref Lev	

02:33:02 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS2					
Carrier Frequency	2412MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.50MHz					

MultiView 88 Receiver	r 🕅 S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	s 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● R 2 ms ● VI On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ep		Fre	equency 2.4	120000 GHz
1 Frequency Swe	eep								o1Pk Max
	1-							D1[1]	-0.06 dB
								01[1]	17 5020 MHz
10 dBm								N41513	17,3020 ₩112
								MILI	-7.40 dBm
									2.4032090 GHz
0 dBm									
M1	ΛΛ	man	man	mm	m	mm	mari	Aman	0 O D1
-10 dBm	✓ H1 -7.250 dBm			1 X X V (/			<u> </u>	
-20 dBm									h
~ ^{**}									Ś
-30 dBm									
-40 dBm									
-F0 dBm									
-50 080									
-60 dBm									
-70 dBm									
10 dbm									
-80 dBm									
CF 2.412 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
	J				Measuring		02.06.2 02:37	021 Ref Leve	RBW

02:37:30 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS3					
Carrier Frequency	2412MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.72MHz					

Multi¥iew 🔠 Receiver	r 🖾 st	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	s 💥 🗶 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att :: Input) dBm Offse 10 dB ● SWT 1 AC PS	t 40.60 dB ● R: 2 ms ● VI On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ep		Fre	equency 2	.4120000 GHz
1 Frequency Swe	eep	011 11	00011 011						o1Pk Max
	50p							D1[1]	-0.53 dB
10 dBm								N41517	0.00 dBm
								MILI	-8.23 dBm 2.4031290 GHz
0 dBm									
M. M		man	Mmm	mm	produce		mm	And	VmA1
-10 dBm									
									Jun Jun
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.412 GHz			1001 pt	S	2	.0 MHz/			Span 20.0 MHz
	J				Measuring		02.06.2 02:40	021 Ref L 1:37	evel RBW

02:40:37 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS4					
Carrier Frequency	2412MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.52MHz					

Multi¥iew 🔠 Receiver	s 🕅 s	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	s 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att :: Input) dBm Offse 10 dB = SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ep		Fre	equency 2.4	120000 GHz
1 Frequency Swe	eep	0.1 1.							o1Pk Max
								D1[1]	-0.37 dB
								01[1]	17 6020 MHz
10 dBm								M1E11	7.40 dBm
								MILI	-7,49 UBIT
									2,4032290 GHz
0 dBm									
M1		$ \Delta \Delta \Delta a $	Λ Λ.	. Λ		$A \rightarrow A$	λ	ΛοΛ	
- MAA	H1 -7.280 dBm	$V \sim V \sim V$	$\sqrt{\sqrt{2}}$	mun	MAKA	NUMMU	MMMM	MANN	R1
-10 dBm		· · · · · · · · · · · · · · · · · · ·		<u> </u>	1.4				
				l (V				
-20 dBm									h
<i></i> /′′									N _A
$\mathcal{N}^{\mathcal{N}}$									v ۸
-30 dBm									`
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.412 GHz			1001 pt	S	2	.0 MHz/			Span 20.0 MHz
					Measuring		02.06.2	021 Ref Leve	RBW
	1						02:44	1:13	

02:44:13 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS5					
Carrier Frequency	2412MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.32MHz					

Multi¥iew 🔠 Receiver	r 🕅 s	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input) dBm Offse 10 dB = SWT 1 AC PS	et 40.60 dB ● P 2 ms ● V On N	BW 100 kHz BW 300 kHz Jotch Off	Mode Auto Swee	ер		Fre	equency 2.4	120000 GHz
1 Frequency Swe	еер								⊙1Pk Max
								D1[1]	0.52 dB
									17.3230 MHz
10 dBm								M1[1]	-7.05 dBm
								milling.	2 4021600 CH-
									2,4031090 GHZ
0 dBm					0	A A	0		
M1 0 0 0	$\Lambda_{\alpha} = \Lambda_{\alpha}$	$\Delta \Delta A = 1$	$A_{m} \wedge A_{m}$	La Aama		$A \cdot M$		Λ_{n}	01
	√H1 -7.000 dBm	$\checkmark \lor \lor \lor \lor \lor \lor$				w vv w v	V. AAA KA K		
-10 dBm				1	/				
				Ľ	/				
, <i>J</i>									
-20 dBm									7
N									5
									m,
-30 dBm									
40 d0m									
-40 ubm									
-50 dBm									
So abiii									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.412 GHz		1	1001 pt	s	2	.0 MHz/	1	1	Span 20.0 MHz
Ì			•		Measuring		110 02.06.2	021 Ref Leve	
	Л				measuring		02:49	9:16	

02:49:16 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS6					
Carrier Frequency	2412MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.58MHz					

MultiView 88 Receiver	r 🕅 🕅	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	I 🔆 🕅 Spe	:trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input) dBm Offse 10 dB = SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swe	ер		Fre	equency	2.4124000 GHz
1 Frequency Swe	еер								⊙1Pk Max
								D1[1]	-0.68 dB
									17.5820 MHz
10 dBm								M1[1]	-9.83 dBm
									2.4032690 GHz
0 dBm									
					0	A A	0		
M1	20 A A-	$\neg \neg \neg \neg \neg \neg \neg$	MARAN		Amlana	Norala	MMMM	A A	a a ch. A 1
	₩ <mark>H1 -9.450 dB</mark> m		<u> </u>		<u>, , , , , , , , , , , , , , , , , , , </u>			can fi n A	
				\cup					
-20 dBm									
20 0011									
N									v∖∧
-30 dBm									· Who
									× 1
10.10									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
10 dbiii									
-80 dBm									
CF 2.4124 GHz			1001 pt	S	2	.0 MHz/			Span 20.0 MHz
[Л				Measuring		02.06.2 02:52	021 Ref	RBW

02:52:52 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS7					
Carrier Frequency	2412MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.42MHz					

Multi¥iew 🛞 Receiv	ver 🐹 S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.0 Att Input	0 dBm Offse 10 dB • SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ер		Fre	equency 2.4	120000 GHz
1 Frequency Sw	veep	0.1 1.	ocon on						o1Pk Max
								D1[1]	-0.77 dB
10 dBm									17,4230 MHz
								MILI	-10.39 dBm 2.4034290 GHz
0 dBm									
MA		mmo	AmAM	m	mm	mm	m	Am	200 A1
-10 dBm		· · · ·				· · · · ·	*	· · · · · ·	
-20 dBm									h.
√F30 dBm									^
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.412 GHz		1	1001 pt	S	2	.0 MHz/			Span 20.0 MHz
][•		Measuring		02.06.2 02:56	021 Ref Lev :09	el RBW

02:56:09 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS0					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.58MHz					

MultiView 88 Receive	er 🖾 S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	s 🔆 🗶 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB • SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz Jotch Off	Mode Auto Swe	ер		Fre	quency 2.4	370000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-0,67 dB
									17.5820 MHz
10 dBm								M1[1]	-7.10 dBm
								mit[1]	2 4292090 GHz
									214202090 0112
0 dBm		0	A A	<u>^</u>	Δ.	0 0	0		
M1	$\Delta = \Delta $	Samtimore	Ann	mon	anth	March	handrara		
<u> </u>	₩H1 -6.880 dBm	<u> </u>					0 · 0 0 0 W		may 1
-10 dBm					/				
				``````````````````````````````````````					
/									Ν.
-20 dBm-									M ⁰
r ^{1°}									Ň
20 d0m									
-30 UBM									
-40 dBm									
40 dbm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.437 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
	Υ				Measuring		02.06.20	021 Ref Level	RBW
L							02:29	:36	

02:29:36 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS1					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.52MHz					

MultiView 88 Receive	r 🕅 s	ipectrum 🔆 🕱	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	1 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ep		Fre	equency 2.4	4370000 GHz
1 Frequency Sw	eep	011 1.	ocar on						o1Pk View
1100000,0	006							D1[1]	-0.09 dB
								DILI	17 5220 MHz
10 dBm								M1E11	7.41 dBm
								MILI	-7,41 UBIII
									2.4282690 GHz
0 dBm									
M1		mm	Am	mm	mm	mm	mm	Anna	
-10 dBm								v	
10 0000				)	J				
-20 dBm									7
20 0011									5
A COLORING COLORING									i h
~ -30 dBm									v v
30 dbill									
-40 dBm									
TO GDIT									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CE 2.437 GHz			1001 nt	S	2	.0 MHz/			Span 20.0 MHz
	Y		1001 pt	-			<b>110</b> 02.06.2	021 Reflev	
	Л				Measuring		02:34	:42	

02:34:43 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS2					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.28MHz					

Ref Level 18.00 dm         Offset 40.60 db * 8.8W         100 kHz         Frequency         2.4370000 GHz           Inreductory Sweep         0         01[1]         -0.48 db         17.2830 MHz           10 dsm         0         01[1]         -0.48 db         17.2830 MHz           10 dsm         0         01[1]         -0.48 db         17.2830 MHz           0 dsm         0         01[1]         -6.94 dB         2.4224890 GHz           -0 dsm         0         0         0         0         0           -10 dsm         0         0         0         0         0         0           -20 dsm         0         0         0         0         0         0         0           -30 dsm         0         0         0         0         0         0         0         0         0           -50 dsm         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	MultiView 88 Receiver	r 🕅 S	pectrum 🔆 🔀	Spectrum 2 🛛 👹	Spectrum 3	Spectrum 4	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
11 TEQUENCY Sweep       11/2 Max         10 dbm       D1[1]       -0.48 dbm         10 dbm       M1[1]       -6.94 dbm         0 dbm       2.428 4890 GHz       2.428 4890 GHz         -10 dbm       M1[1]       -6.94 dbm         -20 dbm       2.428 4890 GHz       01         -30 dbm       -0.48 dbm       01         -30 dbm       -0.48 dbm       -0.48 dbm         -00 dbm       -0.47 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -70 dbm       -0.48 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -70 dbm       -0.48 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -70 dbm       -0.48 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -70 dbm       -0.48 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -60 dbm       -0.48 dbm       -0.48 dbm         -70 dbm <td< th=""><th>Ref Level 18.00 Att Input</th><th>0 dBm Offse 10 dB ● SWT 1 AC PS</th><th>et 40.60 dB ● R 2 ms ● V On N</th><th>BW 100 kHz BW 300 kHz otch Off</th><th>Mode Auto Swee</th><th>ep</th><th></th><th>Fre</th><th>equency 2.4</th><th>1370000 GHz</th></td<>	Ref Level 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swee	ep		Fre	equency 2.4	1370000 GHz
10 dBm       D1[1]       -0.48 dB         10 dBm       M1[1]       -6.94 dBm         -0 dBm       M1[1]       -6.94 dBm         -20 dBm       M1       -2.4284890 GHz         -30 dBm       -10 dBm       -10 dBm         -20 dBm       -10 dBm       -10 dBm         -30 dBm       -10 dBm       -10 dBm         -40 dBm       -10 dBm       -10 dBm         -50 dBm       -10 dBm       -10 dBm         -60 dBm       -10 dBm       -10 dBm         -60 dBm       -10 dBm       -10 dBm         -60 dBm       -10 dBm       -10 dBm         -70 dBm       -10 dBm       -10 dBm         -60 dBm       -10 dBm       -10 dBm         -70 dBm       -10 dBm       -10 dBm         -80 dBm       -10 dBm       -10 dBm         -90 dBm       -10 dBm       -10 dBm         -90 dBm       -10 dBm       -10 dBm         -90 dBm       -10 dBm       -10 dBm	1 Frequency Sw	еер								⊙1Pk Max
10 dBm 17.2830 MHz 0 dBm 2.4284890 GHz 0 dBm 2.4284890 GHz 2.4284890 GHz 2.4284890 GHz 2.4284890 GHz 0 dBm 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									D1[1]	-0.48 dB
10 dBm M1[1] -6-94 dBm 2,4284890 GHz 0 dBm M1 -10 dBm M1 -20 dBm										17.2830 MHz
0 d8m -10 d8m -20 d8m -20 d8m -20 d8m -30 d8m -30 d8m -40 d8m -40 d8m -50 d8m -50 d8m -50 d8m -60 d8m -60 d8m -60 d8m -10 d	10 dBm								M1[1]	-6.94 dBm
0 dem									MILLI	2 429 4900 CH-
0 dBm										2.4204090 GHZ
10 dBm	0 dBm		•			0	0.0	0		
-10 dBm -20 dBm -30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70	M1		mon	Shanston	mm	mh	mm	$\sim$	Ama	
-20 dBm -20 dBm -30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -80 dBm -101 pts 2.0 MHz/ Span 20.0 MHz -80 dBm -80	-10 dBm	111 0.070 001								· · · · · ·
-20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10 0.011					/				
-20 dBm -30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80										
-30 dBm -30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80	-20 dBm									
-30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -60 dBm -60 dBm -60 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -80 dBm -70 dBm -80 dBm -80 dBm -80 dBm -80 dBm -80 dBm -80 dBm -80 dBm -90	$\sim$									h
-30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -70 dBm -70 dBm -80	$\sim$									r h
-40 dBm -50 dBm -60 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -70 dBm -70 dBm -70 dBm -80 dBm -70 dBm -80	-30 dBm									
-40 dBm -50 dBm -60 dBm -70 dBm -70 dBm -80 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -80 dBm -80 dBm -80 dBm -80 dBm -80 dBm -80 dBm -80 dBm -80 dBm -90										
-40 dBm -50 dBm -60 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80 dBm -70 dBm -80 dBm -80 dBm -70 dBm -70 dBm -80										
-50 dBm -60 dBm -70 dBm -70 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz Measuring 100 pts 2.0 MHz/ RBW	-40 dBm									
-50 dBm -60 dBm -70 dBm -80 dBm -70 dBm -70 dBm -80										
-50 dBm -60 dBm -70 dBm -70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz RBW 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:02:1 02:62:1 02:62:02:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:62:1 02:										
-60 dBm -70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz Measuring 1001 pts 2.0 MHz/ RBW	-50 dBm									
-60 dBm -70 dBm -80										
-60 dBm -70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz Measuring 100.05.2021 Ref Level RBW										
-70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz Measuring 1000 Pts 200 MHz RBW	-60 dBm									
-70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz Measuring 1000 02:06:2021 Ref Level RBW										
-70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz Measuring 1 M 02.06.2021 Ref Level RBW										
-80 dBm         Image: CF 2.437 GHz         1001 pts         2.0 MHz/         Span 20.0 MHz           Measuring         02.06.2021 02:20:2027         Ref Level         RBW	-70 dBm									
-80 dBm         -80 dBm         2.0 MHz/         Span 20.0 MHz           CF 2.437 GHz         1001 pts         2.0 MHz/         Span 20.0 MHz           Measuring         02.06.2021 02:202 02         Ref Level         RBW										
BBM         CF 2.437 GHz         1001 pts         2.0 MHz/         Span 20.0 MHz           Measuring         02.06.2021         Ref Level         RBW										
CF 2.437 GHz         1001 pts         2.0 MHz/         Span 20.0 MHz           Measuring         Measuring         02.06.2021         Ref Level         RBW	-80 dBm						l			
Measuring 02.06.2021 Ref Level RBW	CF 2.437 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
						Measuring		<b>1/1</b> 02.06.2	021 Ref Lev	el RBW

02:38:37 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS3					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.66MHz					

Multi¥iew 🔠 Receiver	s 🕅	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	spe	ctrum 5 🛛 🔆 🔀		
Ref Level 18.00 Att :: Input	) dBm Offse 10 dB = SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ер		Fre	equency 2	2.4370000 GHz
1 Frequency Swe	eep								o1Pk Max
								D1[1]	-0.04 dB 17.6620 MHz
10 dBm								M1[1]	-7.36 dBm 2,4281690 GHz
0 dBm	0 0	0	0 - 0	0	Δ	Δ Δ	Δ.	٥	0
	H1 -6.910 dBm	www	J WWW	www	mm	mm	$\sim\sim\sim\sim\sim\sim$	Mm	Mar
				l	J				
-20 dBm									- my
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
00.40.0									
-80 aBm			1001 = t						Cran DO O Milia
UF 2,437 GHZ			1001 pt	5	2	.u MHZ/		004 <u>(                                  </u>	Span 20.0 MHz
	Л				Measuring		02.06.2 02:41	1:53 Ref L	RBW

02:41:54 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS4					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.68MHz					

Multi¥iew 🔠 Receiver	st 🕅	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	s 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att :: Input	) dBm Offse 10 dB • SWT 1 AC PS	t 40.60 dB ● R 2 ms ● VI On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ep		Fre	equency 2.	4370000 GHz
1 Frequency Swe	eep								o1Pk Max
								D1[1]	-0.82 dB
								0.1(1)	17 6820 MHz
10 dBm								M1E17	7.41 dBm
								MILI	-7.41 dBm
									2.4281690 GHz
0 dBm									
Mann	A. A. A.	m	mm	mmm	mont	m	mm	$\Lambda_{\Lambda}$	Ame
-10 dBm									· V
									h
-20 dBm									h.
~√ [−]									V~
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
70 dbm									
-80 dBm									
CE 2 437 GHz			1001 pt	<u> </u>	2		1		Spap 20.0 MHz
			1001 pt				1111 02.06.2	021 Refle	
	١				Measuring		02:46	5:28 <b>•</b>	

02:46:29 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS5					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.56MHz					

Ref Level 18.00 dim       Offset 40.60 di       RBW       100 kHz       Mode Auto Sweep       Frequency       2.4370000 GHz         I Frequency       0 dim       0       0 dim       0111       -0.29 dim       0.20 MHz         10 dim       0       0       0       0.00 kHz       0       0111       -0.29 dim         10 dim       0       0       0       0.00 kHz       0       0111       -0.29 dim         0 dim       0       0       0       0       0       0.24 dim       0.24 dim         0 dim       0       0       0       0       0       0.29 dim       0       0.24 dim	MultiView 88 Receive	er 🖾 s	ipectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🕅 Spe	:trum 5 🛛 🔆 🔀		
1 Prequency Sweep       011 Mutrice of the second sec	Ref Level 18.00 Att Input	0 dBm Offse 10 dB • SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ep		Fre	equency 2.4	4370000 GHz
10 dBm	1 Frequency Sw	eep								o1Pk Max
10 dBm       17.5620 MHz         0 dBm       17.5620 MHz         10 dBm       17.5620 MHz         0 dBm       17.5620 MHz         10 dBm       17.5620 MHz         100 lpts       20 MHz/	111040010701	006							D1[1]	-0.29 dB
10 dbm       10 dbm       11.00000000000000000000000000000000000									DILI	17 5620 MHz
0 dbm     2,4282290 GHz       -10 dbm     -10 dbm       -20 dbm     -10 dbm       -30 dbm     -10 dbm       -40 dbm     -10 dbm       -50 dbm     -10 dbm       -50 dbm     -10 dbm       -50 dbm     -10 dbm       -50 dbm     -10 dbm       -70 dbm     -10 dbm </td <td>10 dBm</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>17.3020 MHz</td>	10 dBm									17.3020 MHz
0 dbm       1       2.4282290 GHz         0 dbm       1       1       1         -10 dbm       1       1       1         -20 dbm       1       1       1         -20 dbm       1       1       1         -20 dbm       1       1       1         -30 dbm       1       1       1         -40 dbm       1       1       1       1         -60 dbm       1       1       1       1       1         -70 dbm       1       1       1       1       1       1         -70 dbm       1       1       1       1       1       1       1         -80 dbm       1       1       1       1       1       1       1       1         -70 dbm       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1									MILI	-7.21 dBm
0 dem       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.4282290 GHz</td>										2.4282290 GHz
M1       M1 <th< td=""><td>0 dBm</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	0 dBm									
-10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -80	M1 o O	$\Delta_{mm}$		AnnAn	N.M.	annan	Amar	MAAA	And	
-10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -50 dBm -60 dBm -60 dBm -70 dBm -70 dBm -80		₩H1 -7.010 dBm		V Y Y V V	0. 1	7 4 6 4 4 1	V V V V V V	1 - V - V - V - V	- m - 1	
-20 dbm -30 dbm -40 dbm -50 dbm -50 dbm -50 dbm -60 dbm -70 dbm -70 dbm -70 dbm -80 dbm -80 dbm -80 dbm -101 pts 2.0 MHz/ -80 dbm -80 dbm -	-10 dBm				1	1				
-20 dBM					\ \					
-20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -80	1									
-30 dBm -30 dBm -40 dBm -50 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -80 dBm -80 dBm -80 dBm -10 1 101 pts 2.0 MHz/ -80 dBm -80 d	-20 dBm									
-30 dBm										- Th
-40 dBm	-30 dBm									
-40 dBm										
-40 dBm										
-50 dBm	-40 dBm									
-50 dBm										
-50 dBm -60 dBm -70 dBm -70 dBm -80										
-60 dBm	-50 dBm									
-60 dBm	SO UBIN									
-60 dBm										
-70 dBm -70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz (F 2.437 GHz Part 1001 pts 2.0 MHz/ Span 20.0 MHz)	-60 d9m									
-70 dBm -80 dBm CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz (Page 1001 pts 2.0 MHz/ Span 20.0 MHz)	-00 ubiii									
-70 dBm										
-80 dBm- CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz CF 2.437 GHz 1001 pts 2.0 MHz/ Span 20.0 MHz	70 d0m									
-80 dBm         Image: CF 2.437 GHz         Image: CF 2.437 GHz         Span 20.0 MHz           CF 2.437 GHz         1001 pts         2.0 MHz/         Span 20.0 MHz	-70 ubm									
-80 dBm         Image: CF 2.437 GHz         Image: CF 2.437 GHz         Span 20.0 MHz           CF 2.437 GHz         1001 pts         2.0 MHz/         Span 20.0 MHz										
-su dam										
CF 2.437 GHZ 1001 pts 2.0 MHz/ Span 20.0 MHz	-80 dBm			1001						
	CF 2.437 GHz	2.6		1001 pt	S	2	.u MHz/			Span 20.0 MHz
Measuring More a construction of the constr						Measuring		02.06.2	021 Ref Lev	RBW

02:50:35 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS6					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.66MHz					

MultiView 🔠 Receive	er 🕅 S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🔀 Spec	:trum 5 🛛 🔆 🔀		
Ref Level 18.0 Att Input	0 dBm Offse 10 dB • SWT 1 AC PS	et 40.60 dB ● R 2 ms ● VI On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ep		Fre	quency 2.4	370000 GHz
1 Frequency Sw	/eep								o1Pk Max
								D1[1]	-0.59 dB
10 dBm									17,6620 MHz
								м1[1]	-9.79 dBm 2.4281490 GHz
0 dBm									
M1		ann	h	$\sim \Lambda \sim \Lambda$	h	m	m	And	M p1
-10 dBm	<u>. 11 9.330 abii</u>	0 14 1			J				
-20 dBm									J. J
-40 dBm									
-50 dBm									
-60 dBm									
70 10.0									
-70 dBm									
-80 dBm									
CF 2.437 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
					Measuring		02.06.20 02:53	D21 Ref Leve	RBW

02:53:53 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS7					
Carrier Frequency	2437MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.50MHz					

MultiView 88 Receive	er 🕅 S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	s 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	0 dBm Offse 10 dB • SWT 1 AC PS	et 40.60 dB ● R 2 ms ● V On N	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swee	ep		Fre	equency 2.4	4370000 GHz
1 Frequency Sw	еер								o1Pk Max
								D1[1]	-0.43 dB
									17.5020 MHz
10 dBm								M1[1]	-9.55 dBm
								milil	2.00 dbm
									2,4282490 GHZ
0 dBm									
M1 - 0		man	Ann	mm		Mm	hormon	$\Lambda  \Lambda = \Lambda$	A . D1
-10 dBm	✓H1 -9.280 dBm	<del>V V V V</del>	• - <b>v</b> - v	<u>, v. p</u>			$\gamma \gamma \rightarrow \gamma \gamma$	<del>V VACY V</del>	
				L L	/				
-20 dBm									
An dam									- m
30 ubiii									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
-80 dBm									
CF 2.437 GHz		•	1001 pt	S	2	.0 MHz/	•		Span 20.0 MHz
					Measuring		<b>102.06.2</b> 02:57	021 Ref Lev 7:32	el RBW

02:57:32 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS0					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.60MHz					

MultiView 🔠 Receive	er 🛛 🕅 S	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	I 🔆 🕅 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.0 Att Input	0 dBm Offse 10 dB = SWT 1 AC PS	et 40.60 dB ● R 2 ms ● VI On N	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swee	ер		Fre	equency 2.4	4620000 GHz
1 Frequency Sw	/eep								⊙1Pk Max
	•							D1[1]	-0.75 dB
									17.6020 MHz
10 dBm								M1[1]	-7.18 dBm
								mitted.	2 4521900 GHz
									2,4031090 012
0 dBm	0 0	٨	0 0	0	Δ	Δ Δ	0	0	
M1	$\sim \Delta \sim \sim \Lambda$	andura	Iman	mahan	marken	mont	montion	$M_{\alpha \alpha \alpha} A_{i}$	
Junt	✓ H1 -6.690 dBm	V							- Arrie
-10 dBm				V V	/				
					U				
$\sim$									5
-20 dBm									- \v
N									2
-30 dBm									
40 d0m									
-40 dBm									
FO dBm									
-50 uBm									
-60 dpm									
-00 0811									
-70 dBm									
-80 dBm									
CE 2.462 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
0. 2. 102 OFI2	Υ		1001 pt	-			<b>110</b> 02.06.2	021 Reflev	
L	Л				Measuring		02:31	1:23	

02:31:23 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS1					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.56MHz					

Multi¥iew 🔠 Receiver	s 🕅 s	pectrum 🔆 🔀	Spectrum 2 🛛 🕌	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att Input	)dBm Offse 10dB • SWT 1AC PS	et 40.60 dB ● 2 ms ● On	RBW 100 kHz VBW 300 kHz Notch Off	Mode Auto Swee	ер		Fre	equency 2.4	620000 GHz
1 Frequency Swe	еер								⊙1Pk Max
	•							D1[1]	-0.37 dB
									17.5620 MHz
10 dBm								M1[1]	-6.85 dBm
								martal.	0100 dbm
									214032290 0112
0 dBm	•	0	0.0		Δ	A 0	0		
M1	$\Lambda_{\alpha\alpha} = \Lambda_{\alpha}$		$d\Lambda a a A\Lambda a$	nahma	amalaa	la An and	non Marina		D1
	<mark>√</mark> H1 -6.780 dBm	<u> </u>			<u> </u>	0 7 1 - 1 7 7 ~			h l
-10 dBm				1	1				
				<u> </u>	4				
									<u> </u>
-20 dBm									M
J									V1A
·									
-30 dBm									
40 d0m									
-40 ubm									
-50 dBm									
30 dbm									
-60 dBm									
00 00.00									
-70 dBm									
-80 dBm									
CF 2,462 GHz			1001 pt	s	2	.0 MHz/			Span 20.0 MHz
			pt		Mangunin		<b>177</b> 02.06.2	021 Ref Leve	RBW
	Л				Measuring		02:36	i:08	

02:36:09 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS2					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.56MHz					

MultiView 88 Receiver	r 🕅 s	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	l 🔆 🕅 Spe	ctrum 5 🛛 🔆 🔀		
Ref Level 18.00 Att	) dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● P 2 ms ● V On N	BW 100 kHz BW 300 kHz lotch Off	Mode Auto Swee	ep		Fre	equency 2	2.4620000 GHz
1 Frequency Sw	еер								⊙1Pk Max
								D1[1]	-0,55 dB
									17.5620 MHz
10 dBm								M1[1]	-6.73 dBm
									2.4532290 GHz
0 dBm	Δ Δ	۸	Δ Δ	٨	Δ	Δ Δ	٨	0	٨
		moun	Munh	m	www	mmul	how	Maga	DI DI
-10 d8m	HI -0.000 UBM						, , , , , , , , , , , , , , , , , , ,	~ ~ ~ ~ ~ ~ ~	
-10 UBIII-									
-20 dBm									h
20 0011									М
Ma									The second se
-30 dBm									V
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
00 d0m									
			1001 pt	 	<b></b>				Spap 20.0 MHz
			1001 pt	3				001 Dofi	
	Л				Measuring		02:39	0:31 Rer l	RBW

02:39:31 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS3					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.68MHz					

Multi¥iew 🔠 Receiver	SI SI	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum 4	4 🔆 🔀 Spec	trum 5 🛛 🔆 🔀		
Ref Level 18.00 Att : Input	) dBm Offse 10 dB ● SWT 1 AC PS	et 40.60 dB ● P 2 ms ● V On N	BW 100 kHz BW 300 kHz	Mode Auto Swee	ер		Fre	equency 2	.4620000 GHz
1 Frequency Swe	eep		or out						●1Pk Max
								D1[1]	-0.60 dB
								0.1(1)	17 6820 MHz
10 dBm								M1[1]	-6.02 dBm
								WILII	-0.93 dBin
									2,4531690 GHZ
0 dBm					0	A			
M1	$\Lambda_{\alpha}$ , $\Lambda_{\alpha}$	Log Ang	$\Lambda \Lambda \sim \Lambda \sim$	man	La a a Mar	anton and	~ MA ~	$\Lambda \Lambda \Lambda$	
	H1 -6.670 dBm	$\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{$			19 VI VI I V	140 - 10 44 V V	·~ · U V V	<u>, M M</u>	~ WWg1
-10 dBm					1				1
									ή ή
-20 dBm									- 1.0
and a second sec									"H
~									v
-30 dBm									
-40 dBm									
-50 dBm									
50 JB									
-60 dBm-									
70 d0m									
-70 ubm									
-90 dBm									
			1001 pt		ົ ົ				Spap 20.0 MHz
			1001 pt	3			02.06.2	001 ( 065)	
					Measuring		02:43		ever RBW

02:43:02 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS4					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.68MHz					

Multi¥iew 88 R	eceiver	Spectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🕅 Spe	ctrum 5 🛛 🔆 🔀		▽
Ref Level 1 Att Input	8.00 dBm Offs. 10 dB = SW1 1 AC PS	et 40.60 dB ● R Γ 2 ms ● V On N	BW 100 kHz BW 300 kHz otch Off	Mode Auto Swee	эр		Fre	equency 2.4	4620000 GHz
1 Frequency	Sweep								o1Pk Max
								D1[1]	-0.71 dB 17.6820 MHz
10 dBm								M1[1]	-7.85 dBm 2.4531490 GHz
0 dBm	0 0	0	0 0	Δ.	Λ		0	0 0	
M1			Vmn/h	mm	p. M. hn	mm	prolong	Mant	migi
-10 dBm				ſ	/				l l
-20 aBm									<i>₩</i>
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
00.10									
	7		1001 pt		<u>ر</u>				Spap 20.0 MHz
	<u>~</u>		1001 pt	3	Measuring		02.06.2	021 Ref Lev	el RBW
					Measuring		02:47	7:56	

02:47:56 02.06.2021



Test Details						
Manufacturer	Astronics					
Model No.	Focus Pro					
Serial No.	1378290					
Mode	802.11n – MCS5					
Carrier Frequency	2462MHz					
Parameters	6dB BW					
Notes	6dB BW = 17.56MHz					

MultiView 88 Receiver	r 🕅 🕅 SI	pectrum 🔆 🔀	Spectrum 2 🛛 🔆	Spectrum 3	Spectrum ·	4 🔆 🔀 Spec	trum 5 🛛 🐳 🔀		
RefLevel 18.00 Att Input	0 dBm Offse 10 dB ● SWT 1 AC PS	t 40.60 dB ● I 2 ms ● ' 0n [	RBW 100 kHz VBW 300 kHz Notch Off	Mode Auto Swee	ep		Fre	equency 2	.4620000 GHz
1 Frequency Swe	еер								⊙1Pk Max
								D1[1]	1.36 dB
									17.5620 MHz
10 dBm								M1[1]	-7.31 dBm
									2.4532090 GHz
									211002050 0112
0 dBm	0 0	۸	0 0	۸	Δ	Δ Δ	٨	A 7	
M1 ANA	Man A	mm	$M \sim M$	$h_{n}/h_{n}$	man	hhmm	$h\Lambda\Lambda\Lambda\Lambda\Lambda$	M. and	$\Lambda \sim R^1$
10. 40 m	<mark>∼ H</mark> 1 -6.920 dBm	V V			1		* * * • V V		VY VV
-10 UBM					1				
				1	/				
-20 dBm									
Nr									have been a second
-30 dBm									۳۷
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
00 d0m									
			1001 pt	5					Spap 20.0 MHz
UF Z140Z GHZ			1001 pt	3					
	ЛЛ				Measuring	]	02:51		RBW

02:51:31 02.06.2021