RFI sleuthing

Signal Hound®

Abbreviated Specifications

Frequency

Frequency Range: 1Hz to 4.4GHz (RF Preamp Off); 500KHz to 4.4GHz (RF Preamp On)
Internal Frequency Reference Accuracy: ±1 ppm
Counter Accuracy: 1Hz + timebase error
Resolution Bandwidth: 0.1Hz to 250KHz and 5MHz

Amplitude (RBW ≤100KHz)

Range: +10dBm to Displayed Average Noise Level (DANL)
Absolute Accuracy: ±1.5dB (0dBm to DANL); ±2.0dB (+10dBm to >0dBm)
Displayed Average Noise Level: (dBm/Hz with 0dB input attenuation)

Frequency	RF Preamp Off	RF Preamp On
10Hz	-124 dBm	NA
100Hz to 10KHz	-130 dBm	NA
10KHz to 500KHz	-142 dBm	NA
500KHz to 10MHz	-142 dBm	-153 dBm
10MHz to 100MHz	-148 dBm	-161 dBm
100MHz to 1GHz	-144 dBm	-158 dBm
1GHz to 2.6GHz	-139 dBm	-151 dBm
2.6GHz to 3.3GHz	-135 dBm	-151 dBm
3.3GHz to 4.4GHz	-128 dBm	-134 dBm

Measuring Receiver

Operating Frequency 150KHz to 4.4GHz
FM Accuracy ±1% typical
AM Accuracy ±1% typical
Synchronous Level Detector ±0.25dBc ([+0dBm to –125dBm, 150KHz to 1GHz] and [+0dBm to – 115dBm, 1GHz to 4.4GHz])

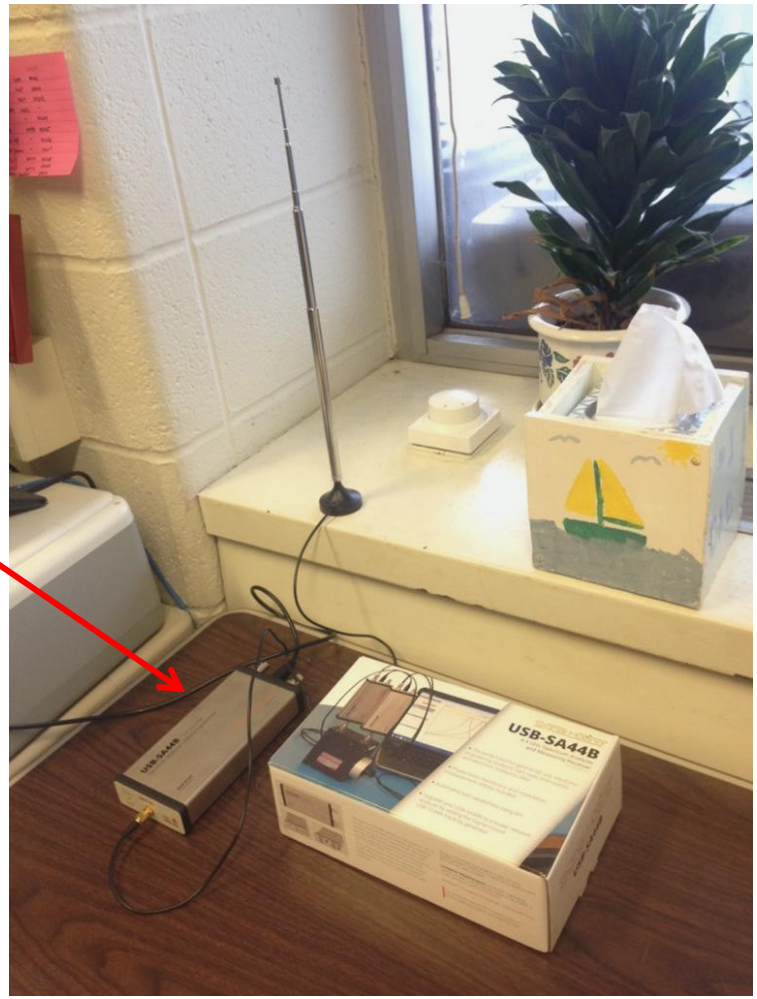
Calibration Interval: 1-year

Operating Temperature

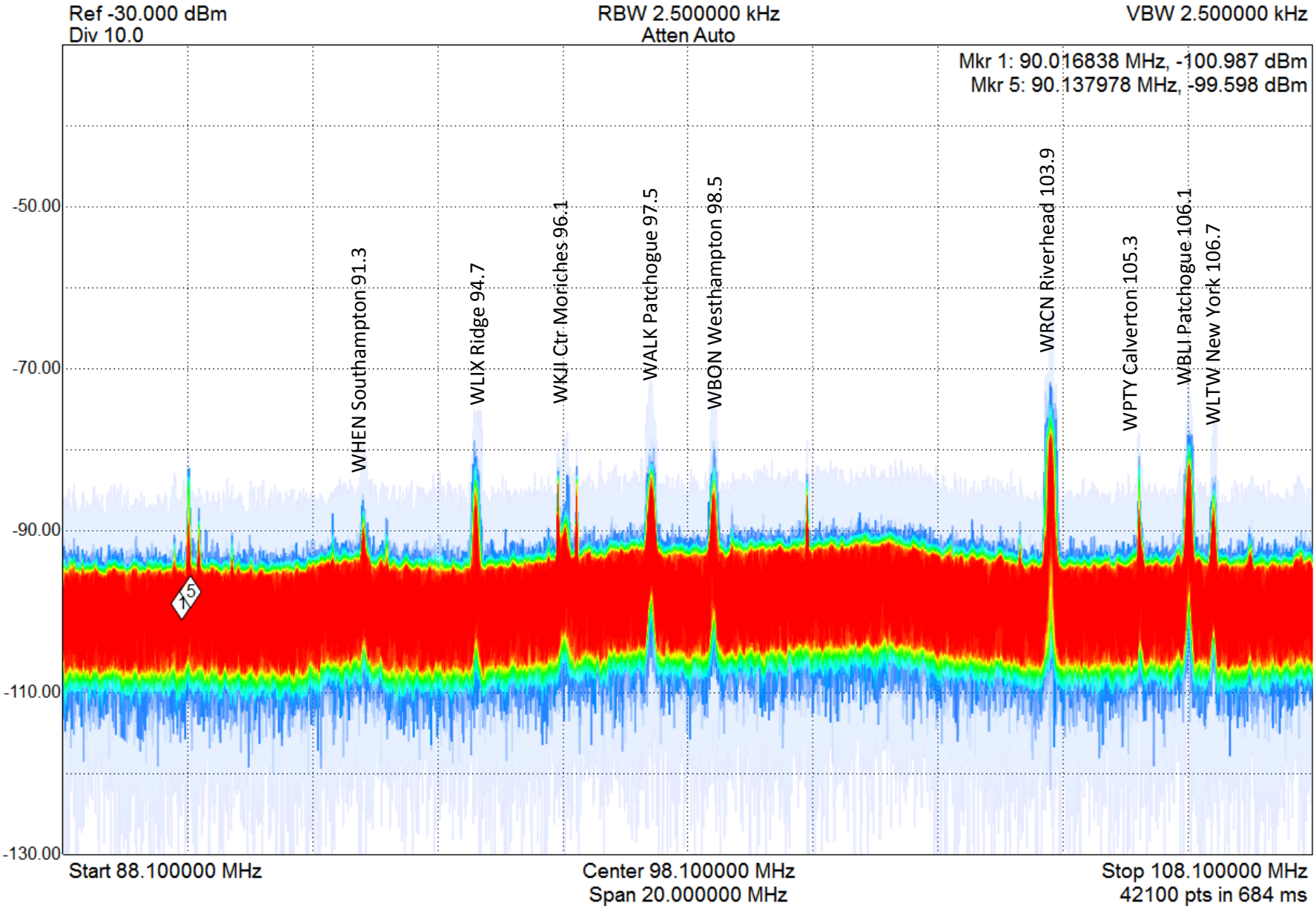
0°C to +70°C (Standard); -40°C to +85°C (Option-1)

Optional Accessories (not included)

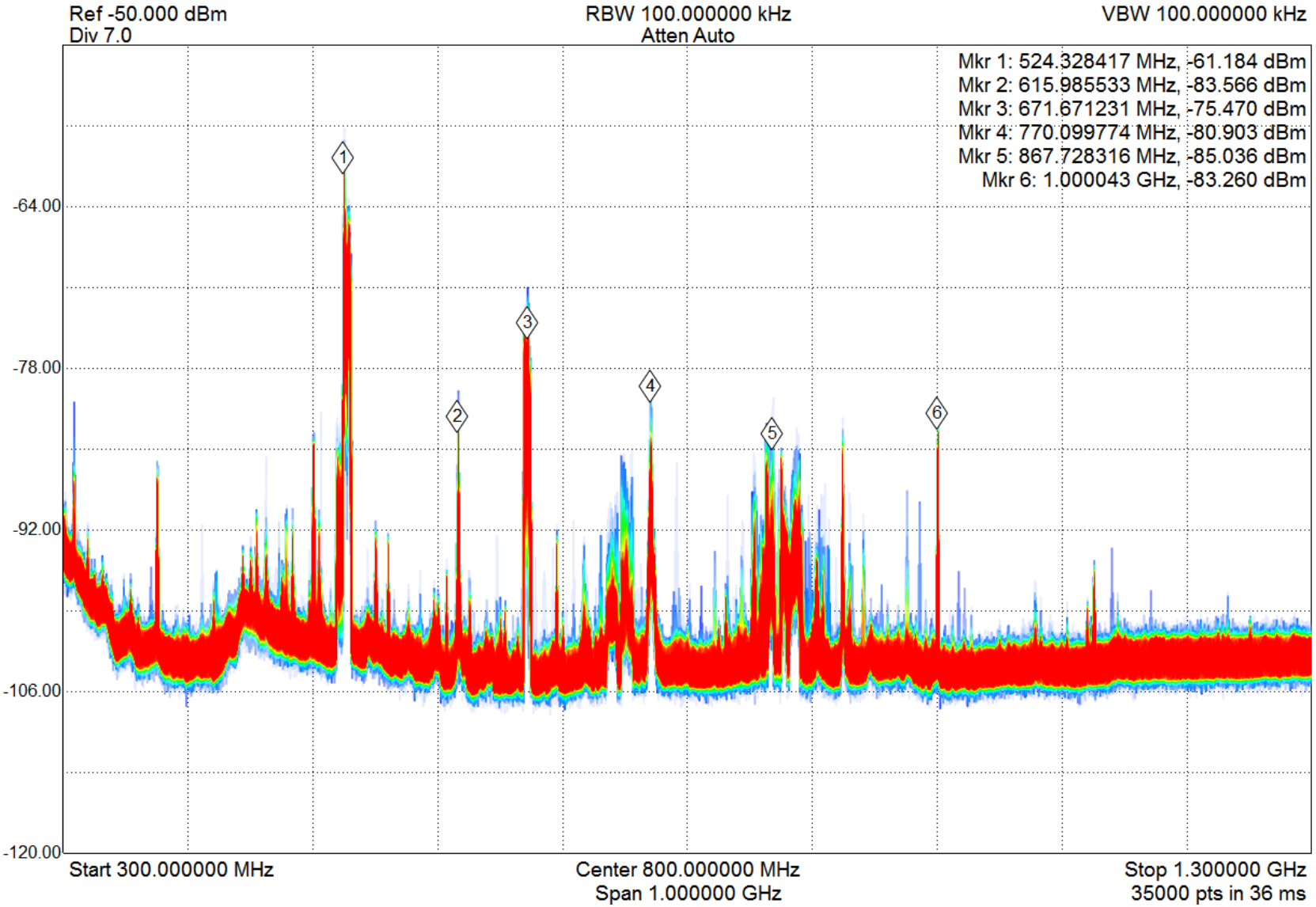
1) 20dB Fixed Attenuator, Mini Circuits Part # VAT-20+
2) DC Block, Mini Circuits Part # BLK-89+
3) SMA(m) to BNC(f) Adapter, Mini Circuits part# SM-BF50+
4) 3GHz RF Probe, p/n P-20A (made by Auburn Technology, www.auburntec.com, phone 316-529-4520)



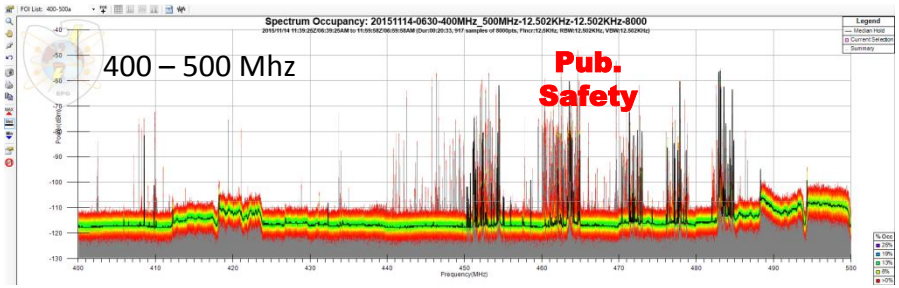
FM Radio spectrum

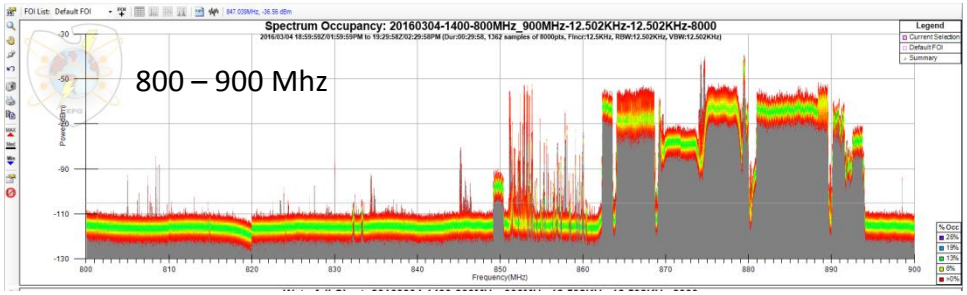


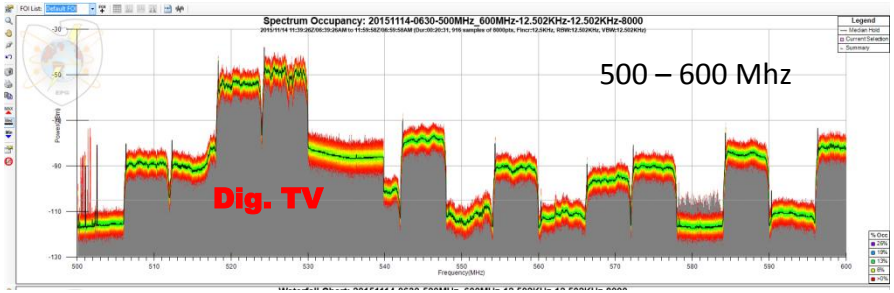
300 – 1300MHz spectrum

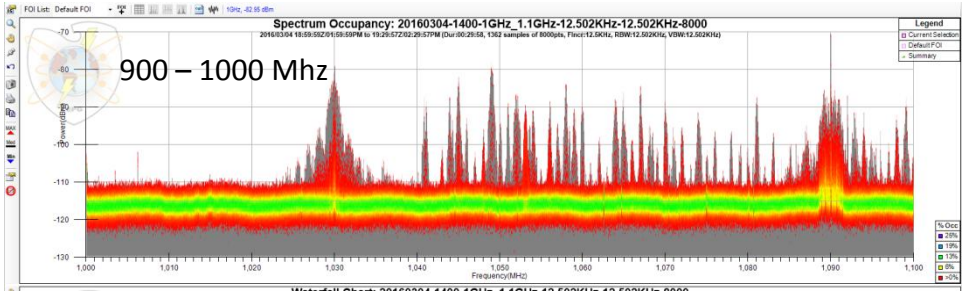


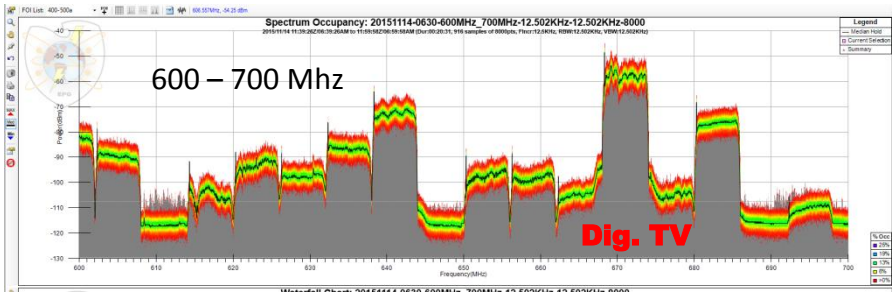
Sitewide monitoring (from Anand Kandasamy, BNL Spectrum manager)

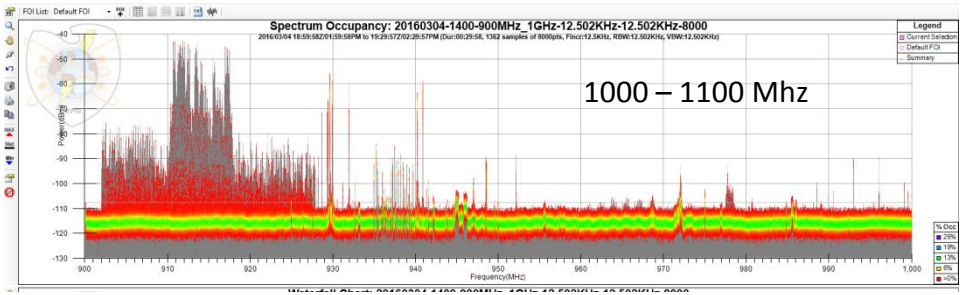


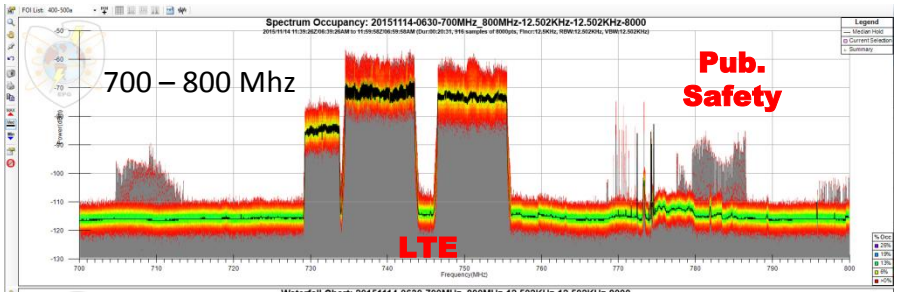


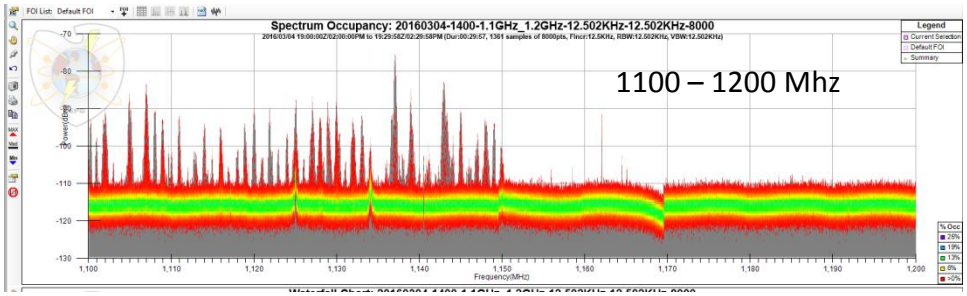




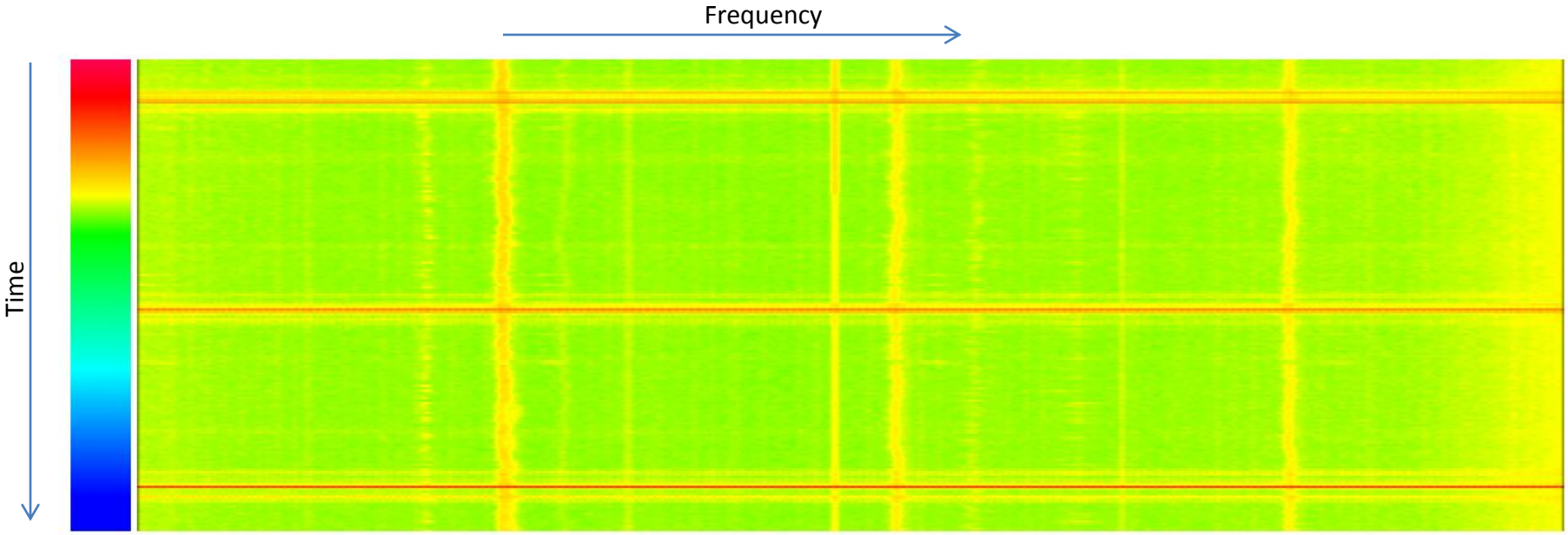


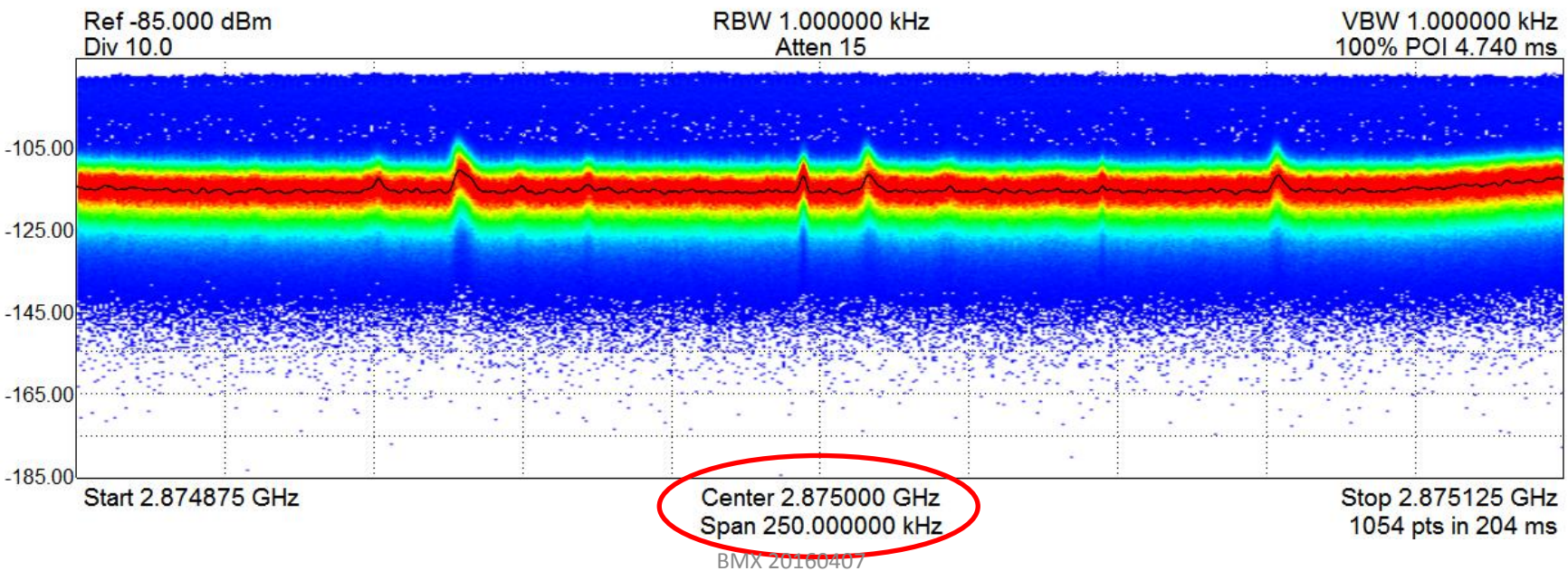




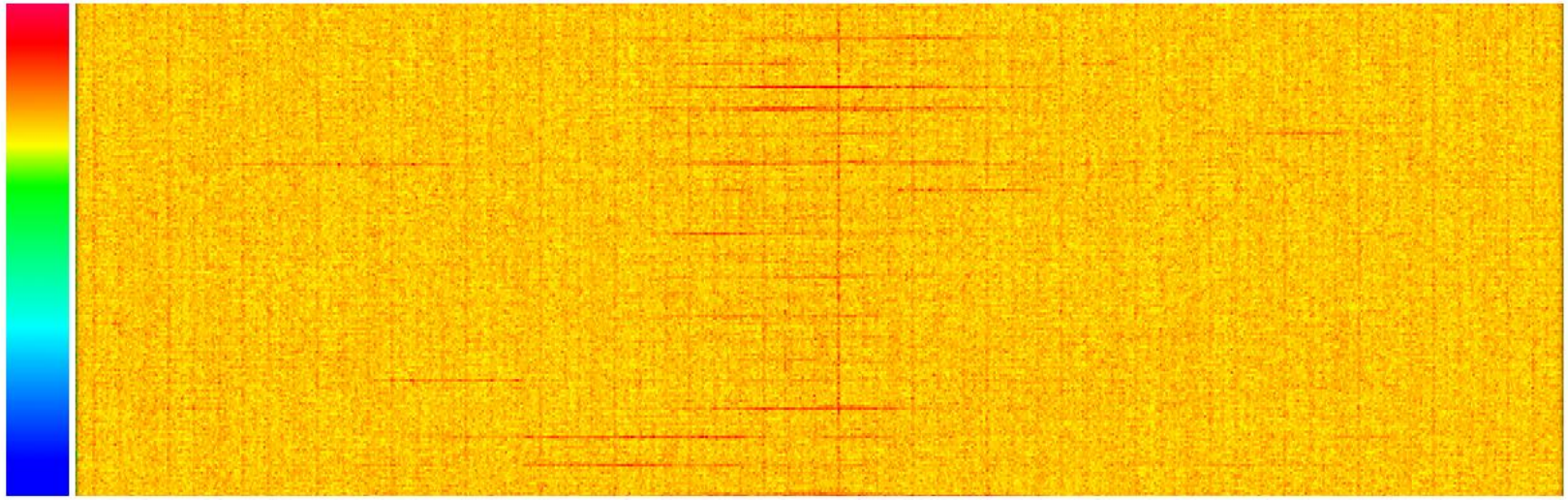


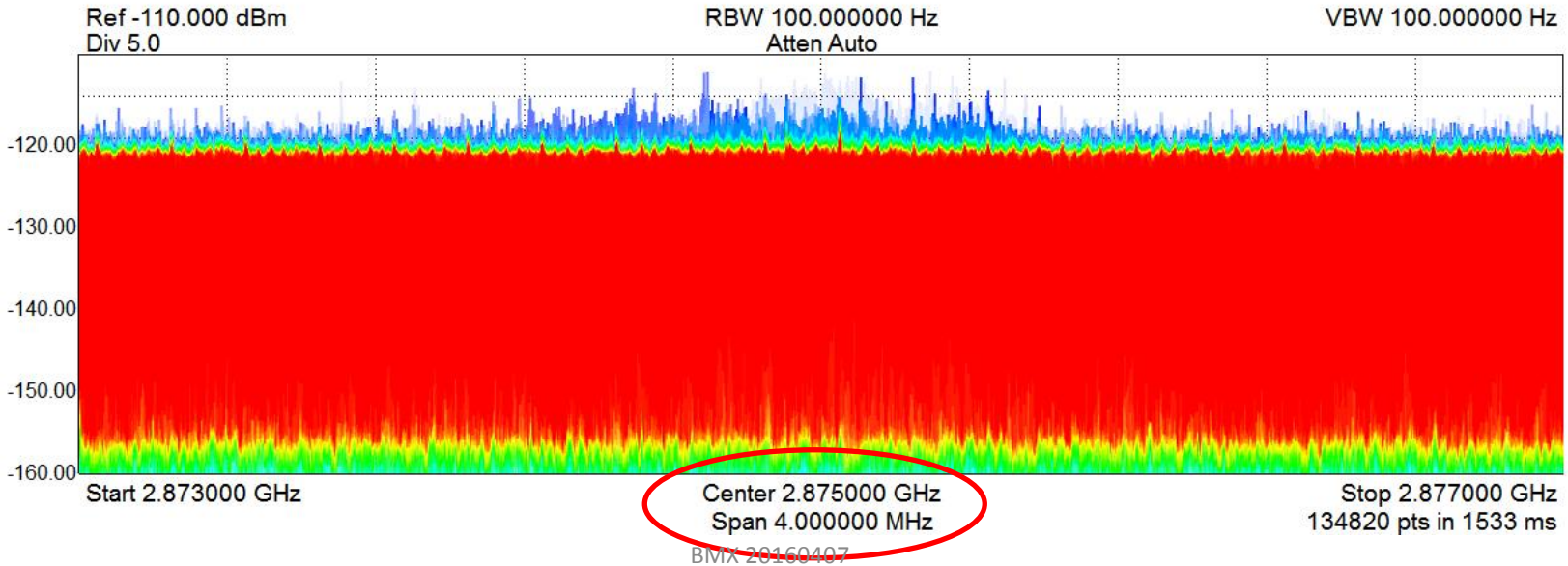
NEXRAD (?)


Frequency
Time


Ref -85.000 dBm
Div 10.0
RBW 1.000000 kHz
Atten 15
VBW 1.000000 kHz
100% POI 4.740 ms
-105.00
-125.00
-145.00
-165.00
-185.00
Start 2.874875 GHz
Center 2.875000 GHz
Span 250.000000 kHz
Stop 2.875125 GHz
1054 pts in 204 ms

NEXRAD




Ref -110.000 dBm
Div 5.0
RBW 100.000000 Hz
Atten Auto
VBW 100.000000 Hz
-120.00
-130.00
-140.00
-150.00
-160.00
Start 2.873000 GHz
Center 2.875000 GHz
Span 4.000000 MHz
Stop 2.877000 GHz
134820 pts in 1533 ms

Antenna

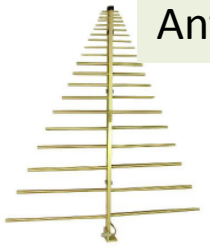
A.H. Systems, Inc.
9710 Cozycroft Ave.
Chatsworth, CA 91311

Tel: (818) 998-0223 ◆ sales@AHSystems.com
Fax: (818) 998-6892 ◆ www.AHSystems.com

SAS-512-2

Log Periodic Antenna
190 MHz – 2 GHz

Constructed of lightweight aluminum, this Log Periodic Antenna has been manufactured to ensure maximum gain, low VSWR and high power handling capabilities.



Antenna $2170

Frequency Range: 190 MHz - 2000 MHz
Maximum Continuous Power: 1000 Watts
Max Radiated Field: 200 V/m
Pattern Type: directional
Impedance: 50 Ω
Connector: N-Type, female
Mounting Base: ¼ - 20 Thread, female

PAM-0204

Preamplifier
20 MHz – 4 GHz

With at least 22dB of gain, this preamplifier will improve overall system sensitivity. Designed to meet the needs of your various testing requirements.

Frequency Range: 20 MHz – 4 GHz
Gain (typical): 26 dB
Gain (minimum): 22 dB
Flatness: +/- 5 dB
Noise Figure: 4.5 dB
Output Power @ 1 dB compression + 15 dBm
Input VSWR (typical): Less than 1.7:1
Output VSWR (typical): Less than 2.0:1
Connector: N-Type, female

Preamp $2120

Physical Dimensions
Height: 2.5 in. *(63 mm)*
Width: 3.75 in. *(95 mm)*
Length: 6.25 in. *(158 mm)*
Weight: 1.1 lb.'s *(0.5 kg)*

Antenna Specifications

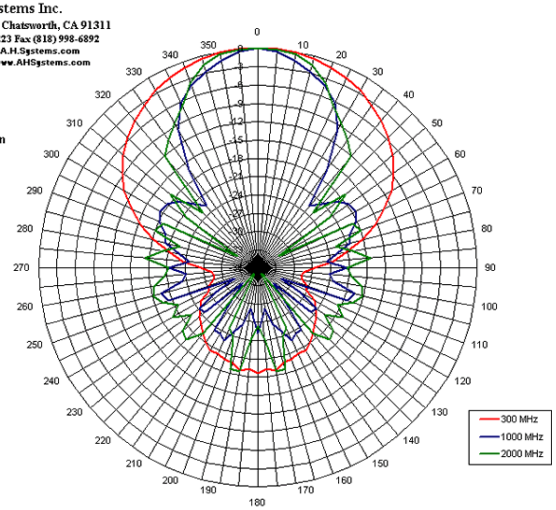
SAS-512-2 Log Periodic Antenna

Frequency Range:	190 MHz - 2000 MHz
Antenna Factor:	11 to 30 dB/m
Average Gain:	6.7 dBi
Maximum Continuous Power:	1000 Watts
Max Radiated Field:	200 V/m
Pattern Type:	directional
Impedance:	50 ohm
Connector:	N-Type, female
Mounting Base:	¼ - 20 Thread, female
Physical Dimensions:	
Length:	33.2 in. *(84.4 cm)*
Width:	29.5 in. *(74.9 cm)*
Weight:	2.2 lb.'s *(1 kg)*

Radiation Patterns

A.H. Systems Inc.
9710 Cozycroft Ave. Chatsworth, CA 91311
Phone (818) 998-0223 Fax (818) 998-6892
E-mail: sales@A.H.Systems.com
Web site: http://www.AHSystems.com

Beamwidth Pattern
Horizontal Polarization
Model: SAS-512-2



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Fax: (818) 998-6892 ◆ www.AHSystems.com

ATU-510

Antenna Tripod, Wood
Sturdy rugged design

The ATU-510 Tripod is used to position, support, and stabilize most compliance test antennas.

Tripod $740

Features
- Rugged Maple wood construction
- Standard 1/4-20 mounting thread
- Reversible legs: Rubber feet for lab u
- Lightweight and durable wooden legs

A.H. Systems, Inc.
9710 Cozycroft Ave.
Chatsworth, CA 91311

Tel: (818) 998-0223 ◆ sales@AHSystems.com
Fax: (818) 998-6892 ◆ www.AHSystems.com

AEH-510

Azimuth and Elevation Head
Point, adjust and orientate test antennas

The AEH-510 Azimuth and Elevation head assists test engineers in orientating the compliance antenna towards the EUT.

Features

The AE
antenna
with a C
measurement antennas.

Mounting Surface: 4" (10.1 cm)
Weight: 0.7 lbs (317g)

Alt-az head $240

RFI references

A&A 378, 327–344 (2001)
DOI: 10.1051/0004-6361:20011166
© ESO 2001

Astronomy & Astrophysics

RFI mitigation methods in radio astronomy

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ASTRON, Netherlands Foundation for Research in Astronomy, and Westerbork Observatory, Postbus 2, 7990AA Dwingeloo, The Netherlands

Received 8 June 2001 / Accepted 20 August 2001

RFI Mitigation in Radio Astronomy

Nicholas Christopher Thompson

Thesis presented in fulfilment of the requirements for the degree Master of Engineering in the Faculty of Engineering at Stellenbosch University

The Astronomical Journal, 128:933–949, 2004 August
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RADIO FREQUENCY INTERFERENCE MITIGATION AT THE WESTERBORK SYNTHESIS RADIO TELESCOPE: ALGORITHMS, TEST OBSERVATIONS, AND SYSTEM IMPLEMENTATION

W. A. Baan, P. A. Fridman, and R. P. Millenaar
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Received 2004 March 15; accepted 2004 April 30

A&A 585, A41 (2016)
DOI: 10.1051/0004-6361/201527007
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Astronomy & Astrophysics

The Effelsberg-Bonn H I Survey: Milky Way gas★

First data release

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The Astrophysical Journal Supplement Series, 131:355–373, 2000 November
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MULTICHANNEL INTERFERENCE MITIGATION TECHNIQUES IN RADIO ASTRONOMY

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Received 1999 October 27; accepted 2000 May 16

Draft version January 15, 2013
Preprint typeset using LaTeX style emulateapj v. 5/2/11

Vol 466|22 July 2010|doi:10.1038/nature09187 nature

LETTERS

K. W. M.

An intensity map of hydrogen 21-cm emission at redshift $z \approx 0.8$

Tzu-Ching Chang[1,2], Ue-Li Pen[2], Kevin Bandura[3] & Jeffrey B. Peterson[3]