



August 16, 2010

EX PARTE NOTICE

Electronic Filing

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW, Room TW-A325
Washington, D.C. 20554

Re: WT Docket Nos. 06-150, 04-356, 07-195; PS Docket No. 06-229; ET Docket No. 10-123; GN Docket Nos. 09-47, 09-51, 09-137.

Dear Ms. Dortch:

On August 13, 2010 Tom Sugrue, Steve Sharkey, and the undersigned, met with Rick Kaplan, Chief Counsel and Senior Legal Advisor to Chairman Genachowski, and Jennifer Flynn, Legal Advisor to Chairman Genachowski. Separately, Tom Sugrue, Steve Sharkey, Eric Hagerson, Chris Wiczorek, and the undersigned, met with Julie Knapp, Chief of the Office of Engineering and Technology, and his staff, Ron Repasi, Geraldine Matise, Mark Settle, and Walter Johnston.

During the meetings, the T-Mobile representatives shared the results of the attached spectrum scan conducted in the 1755-1850 MHz band at locations in eight markets, including four located near known government systems. Based on T-Mobile's experience relocating government users in 1710-1755 MHz band, the company found that the scan revealed that the 1755-1780 MHz band holds promise for reallocation to commercial use. To that effect, T-Mobile expressed interest in exploring methods to share the federal band and/or coordinate with government systems operating in the 1755-1780 MHz band. T-Mobile would like the FCC and NTIA to continue to investigate pairing 1755-1780 MHz with the AWS-3 band even if such review requires an additional six months beyond the October 1, 2010 deadline suggested in the National Broadband Plan. Additionally, while the 1755-1780 MHz pairing is optimal, T-Mobile would also be open to pairing AWS-3 with the 1675-1710 MHz band should the 1755-1780 MHz band not prove workable. T-Mobile representatives underscored, however, that in light of the fact the 1755-1780 MHz pairing is superior, it is appropriate and worthwhile for the government to take additional time for its analysis and review.

In addition, Tom Sugrue, Eric Hagerson, Chris Wiczorek, and the undersigned discussed the importance of the FCC promptly issuing its pending rulemakings in the 700 MHz D Block, including its licensing and auction proceeding. The representatives explained how these rulemakings are necessary for competitive commercial entities to have certainty and to engage with public safety on the development of interoperable broadband networks and devices that will support their operations. Steve Sharkey did not participate in the discussion on D block reallocation matters.

Ms. Marlene H. Dortch
Page 2 of 2

Pursuant to Section 1.1206 of the Commission's rules, an electronic copy of this letter is being filed for inclusion in the above-referenced docket.

Sincerely,

/s/ Kathleen O'Brien Ham

Kathleen O'Brien Ham
Vice President,
Federal Regulatory Affairs

Spectrum Scan

1755+ MHz

August 13, 2010

stick
together®

Market by Market Review

Seattle

- Seattle, WA
- Tacoma, WA

Bay Area California

- Santa Clara, WA
- Sunnyvale, CA

Boston

- Manchester, NH
- Nashua, NH

Colorado Springs

- Colorado Springs, CO

Chicago

- Rosemont, IL
- Chicago, IL

Houston

- Houston, TX
- Galveston, TX

Washington, DC

- Washington, DC
- Woodbridge, VA

Miami

- Miami, FL
- Margate, FL

Known System Types: 1755-1780 MHz

Current Dedicated to Federal Users

- Point to Point Microwave
 - Possessed by numerous agencies, e.g., Department of Interior.
 - Fixed locations, limited geographically.
- United States and Possessions
 - Possessed by several agencies, e.g., Department of Justice.
 - Generally used for short distance activities.
 - Can operate anywhere in the U.S. and its territories.
- Aeronautical
- DOD Satellite Uplinks
 - 22 known uplinks identified in DOD IMT 2000 report.
 - 20 channels available.
- Complementary Systems Relocating from 1755-1780 MHz Band
 - 201 identified for relocation as part of AWS-1 efforts.
 - 116 identified systems already relocated.

Relocation Options

- CSEA
 - Provides for funding for relocation.
 - Money should made available for upfront planning and preparation from existing funds once spectrum has been designated for reallocation.
 - Equitable interpretation of law suggests that reasonable upgrades associated with new equipment should be permitted.
- Relocate to new equipment and new frequencies
 - NTIA will need to assign new frequencies.
 - There are several other federal exclusive bands.
 - Move from analog to digital will create spectral efficiencies.
- Relocate to new transmissions media
 - Fiber based systems.
- CSEA Envisions Coordination
 - Allows for shared use between federal agencies and licensees as the former works to relocate out of the band.

Estimated Timeline For Reallocation of 1755-1780 MHz Band

■ October 1, 2010

- NTIA, in consultation with FCC, completes analysis of the possibility of reallocating a portion of the 1755–1850 MHz band to pair with the AWS-3 band.

■ December 2010 (est.)

- FCC notifies NTIA of the auction of 1755-1780 MHz.

■ December 2011 (est.)

- Agencies provide NTIA with a detailed spectrum transition plan.
- NTIA, on behalf of the federal entities and after review by OMB, notifies the Commission of estimated relocation costs and timelines for relocation.

Estimated Timeline For Reallocation of 1755-1780 MHz Band (cont.)

■ January 2012 (est.)

- Plans are evaluated by a standing 3-member technical panel appointed by the heads of OMB, the FCC, and NTIA.
- NTIA also submits its estimated relocation costs to the appropriate Congressional committees.

■ June 2012 (est.)

- Auction of 1755-1780 MHz

■ January 2013 (est.)

- Payments for relocation costs from the Spectrum Relocation Fund are made to an eligible federal entity (not later than 30 days after the grant of the first license following the close of the auction).

■ January 2015 (est.)

- Bulk of the relocation process completed

Conclusions From Scanning Project

- Majority of activity was above 1780 MHz.
- Failed to see the power levels for satellite uplinks as per DOD 2001 Report.
- Much of the activity in 1755-1780 MHz was bursty and intermittent.
- Frequency hopping observed.
 - Modern microwave hopper systems are sophisticated and controllable.
- Given new technologies, it appears relocation from the 1755-1780 MHz band should be feasible.
- 1755-1780 MHz does not appear to be anymore more challenging than clearing the AWS-1 block.
- NTIA and the FCC should continue efforts on reallocation of the 1755-1780 band.

1675-1710 MHz

- The 1675-1710 MHz band has not been internationally designated for mobile broadband services.
 - Lack of harmonization has the potential to eliminate economies of scale for handset manufacturers who will be faced with designing and producing U.S. specific devices.
 - Existing base station infrastructure may require costly modification to recognize the spectrum used in 1.6 GHz band-capable handsets.
- Limitations of this band could lead to diminished auction revenues
- If, but only if 1755-1780 MHz is not a viable option, this band could provide a second best solution.
- It is important to pair AWS-3 either with 1755 or 1675+.

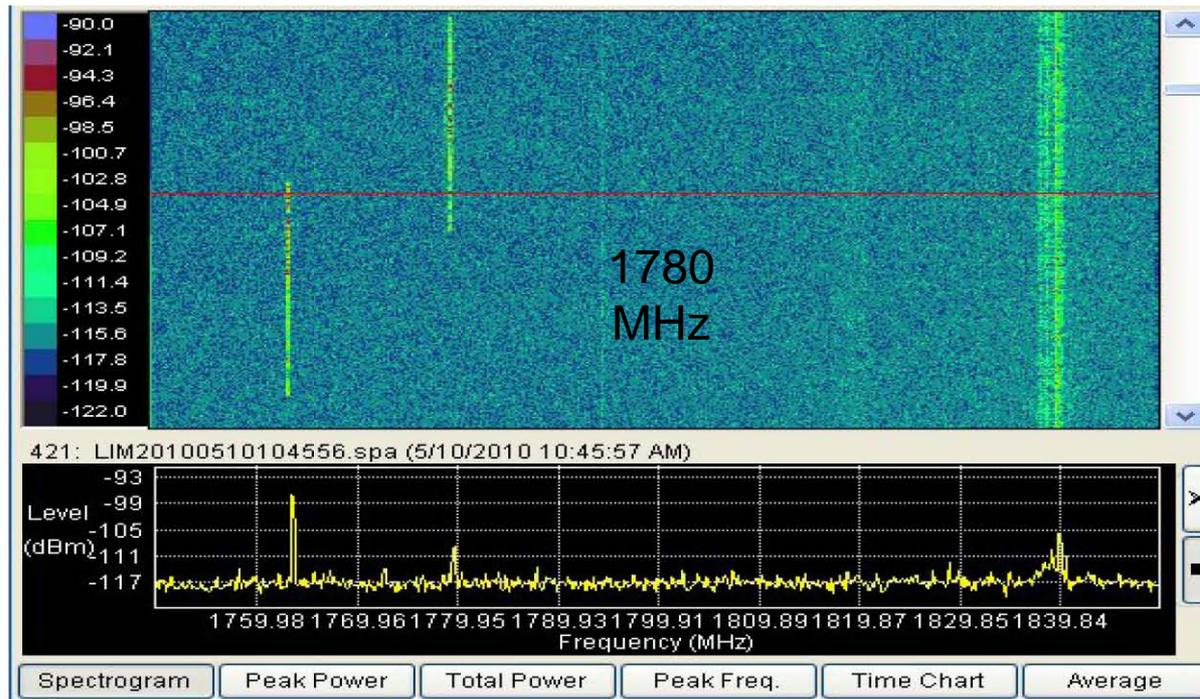
Appendix

Understanding the Data - Spectrogram

Intermittent Signal

Constant Signal

Time

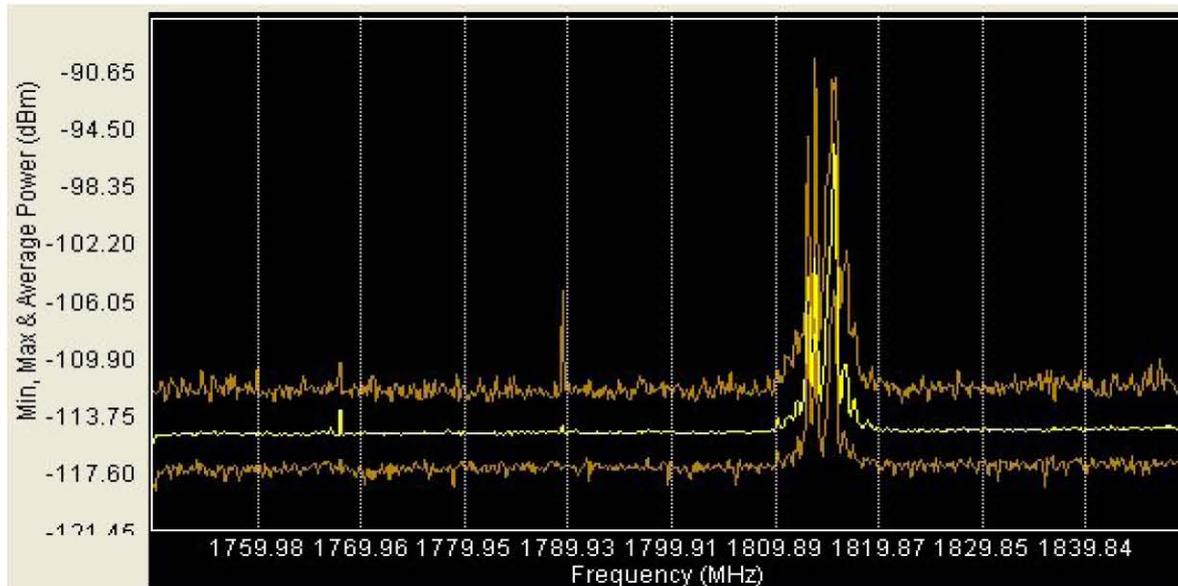


Snapshot

Frequency

Data: Manchester, NH/Boston, MA

Understanding the Data - Average Plot



Power Levels:

Maximum

Average

Minimum

First File	LIM20100511082853.spa	5/11/2010 8:28:54 AM
Last File	LIM20100511085034.spa	5/11/2010 8:50:35 AM
Elapsed Time	(234 files)	00:21:41
Maximum Peak Power	LIM20100511082853.spa	-89.952
Minimum Peak Power	LIM20100511084754.spa	-99.536
Average Peak Power		-94.304

Data: Chicago, IL; O'Hare Airport

Seattle, WA

Parameters

- 1501 17th AVE, Seattle, WA 98122 (12 story building)
- Collection period 5/4/201-5/10/2010 (58K files)

Findings

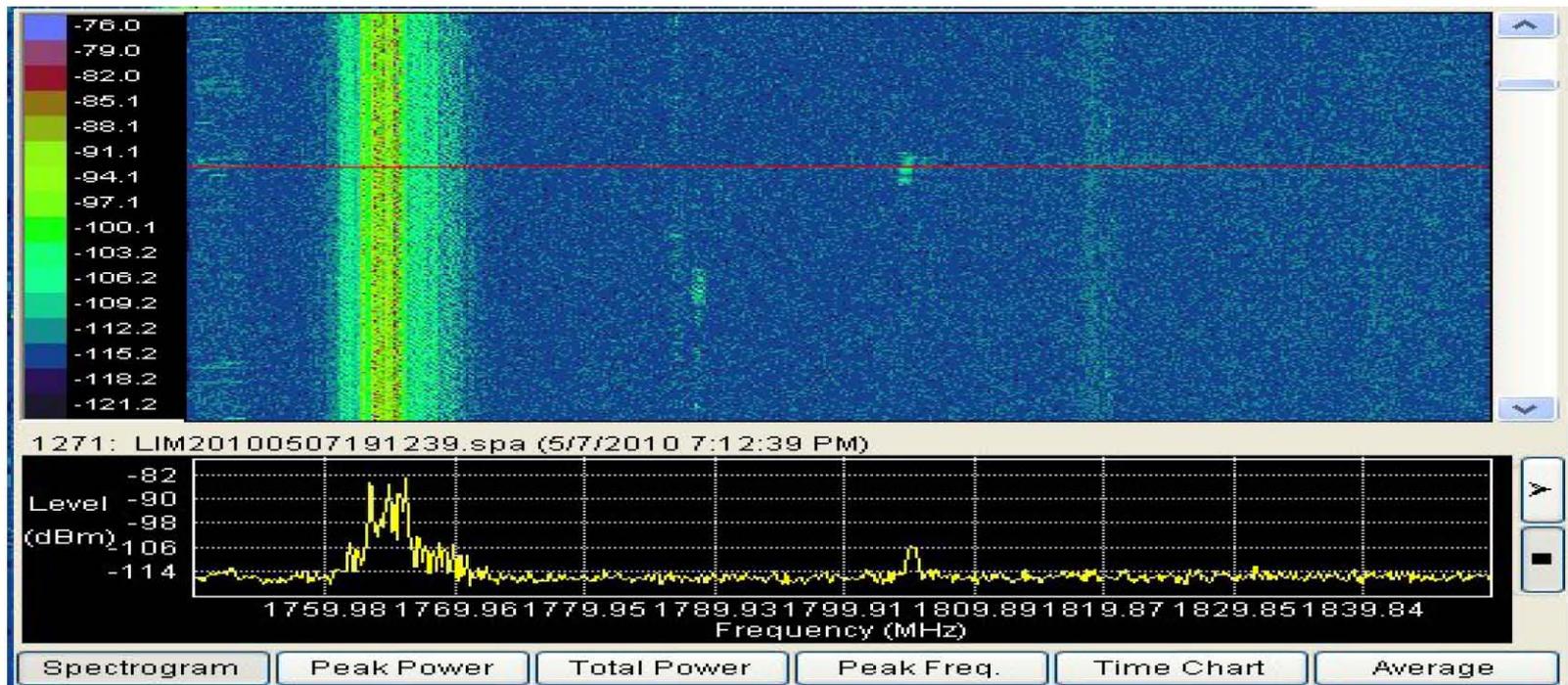
- Constant signal at 1764 MHz with 3-4 MHz bandwidth, source from the general direction of Queen Anne Hill (believed to be point to point microwave).
- Low level narrow band spikes around 1790 MHz, with less than 1 MHz bandwidth throughout the collection period, with periodic short duration transmissions at higher power.
- Intermittent signal at 1800 MHz during first day of testing then only sporadic after that.
- Relatively Constant signal at 1820 MHz, different signal levels (probably point to point).
- Other random spikes with no regular trends observed in band.

Seattle, WA

Queen Anne Hill
Point to Point MW

Intermittent Signals
and Spikes at 1790
and 1800 MHz

Constant Signal
at 1820 MHz



May 7, 2010 07:02 PM – 07:30 PM

Seattle (Tacoma, WA)

Parameters

- 4301 South Pine Street, Tacoma, WA 98409, (5 story building)
- Collection period 5/4/2010-5/10/2010 (21K files)
- Line of sight to McCord Air Force Base

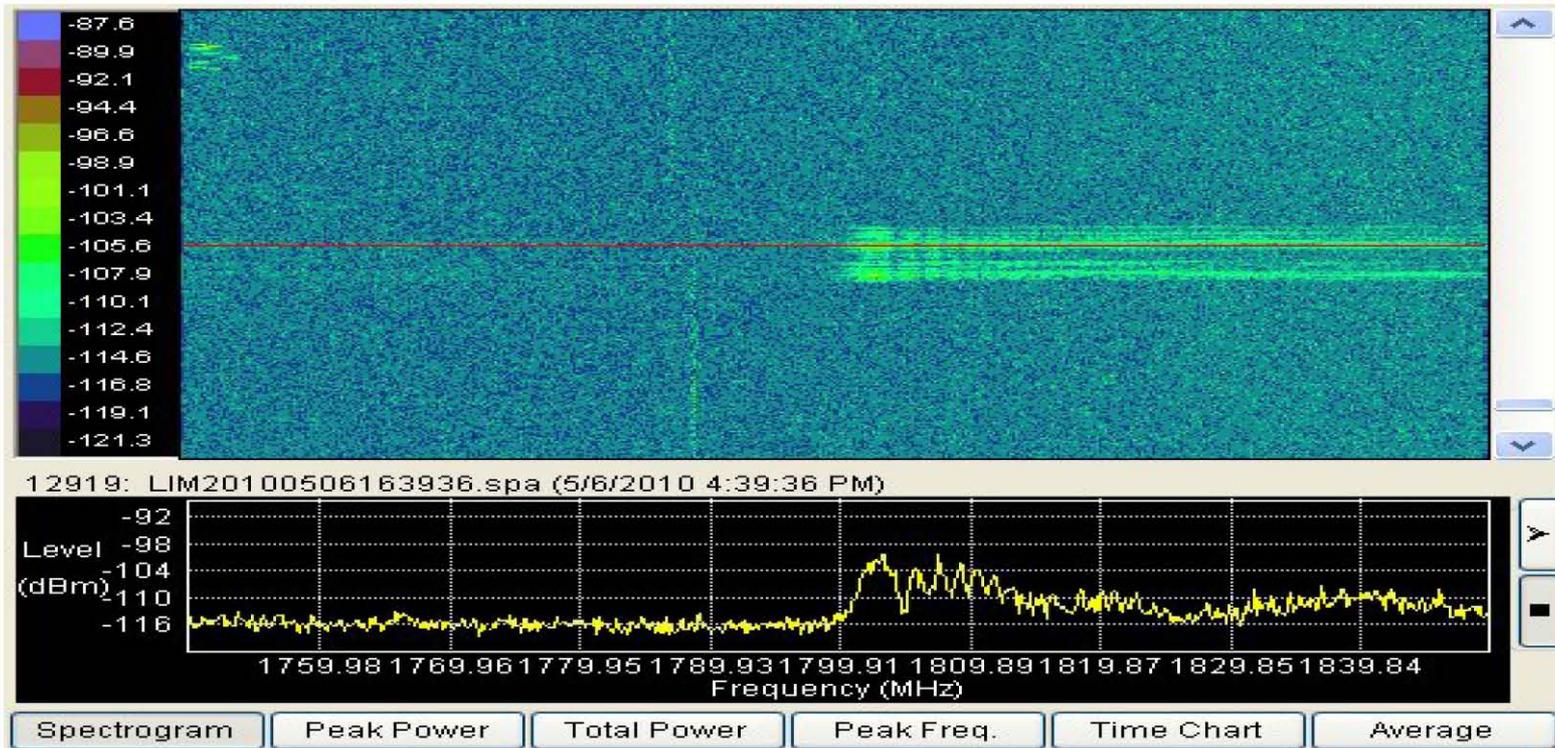
Findings

- Low level narrow band spikes around 1790 MHz throughout the collection period, appears to be same activity observed in Seattle.
- Intermittent wide band bursts above 1800 MHz.
- Short term transmissions around 1830 MHz.
- Very low level periodic threads at 1830 & 1842 MHz throughout the collection period.

Seattle (Tacoma, WA)

Low Level Spikes
at 1790 MHz

Intermittent Wide Band Bursts



May 6, 2010 04:18 PM – 04:58 PM

Bay Area California (Santa Clara, CA)

Parameters

- 2700 Mission College Blvd, Santa Clara, CA 95054 (13 story building)
- Collection periods 5/6/2010-5/12/2010 and 5/20/2010-5/24/2010 (64K files)
- 3.5 miles from Onizuka Air Station - Satellite Uplink

Findings

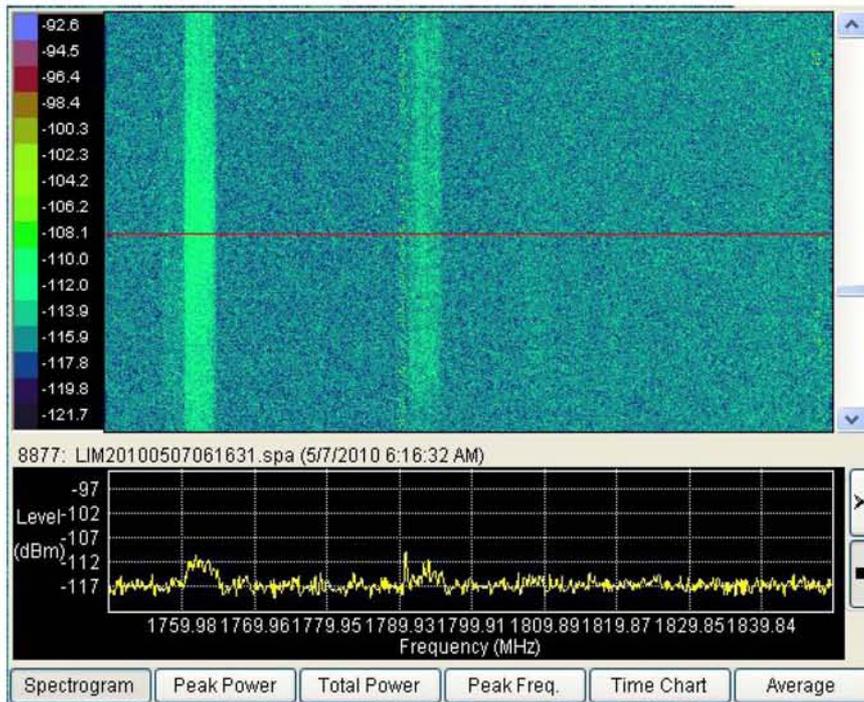
- Regular but not constant low level 4 MHz carriers at 1762-3 MHz (believed to be satellite uplink) and 1793 MHz.
- Intermittent transmissions at multiple points between 1787 and 1792 MHz during the collection period.
- Periodic transmission at 1800 and 1815 MHz with 2 MHz bandwidth.
- Relatively constant narrow band signal at 1848.5 MHz.

Bay Area California (Santa Clara, CA)

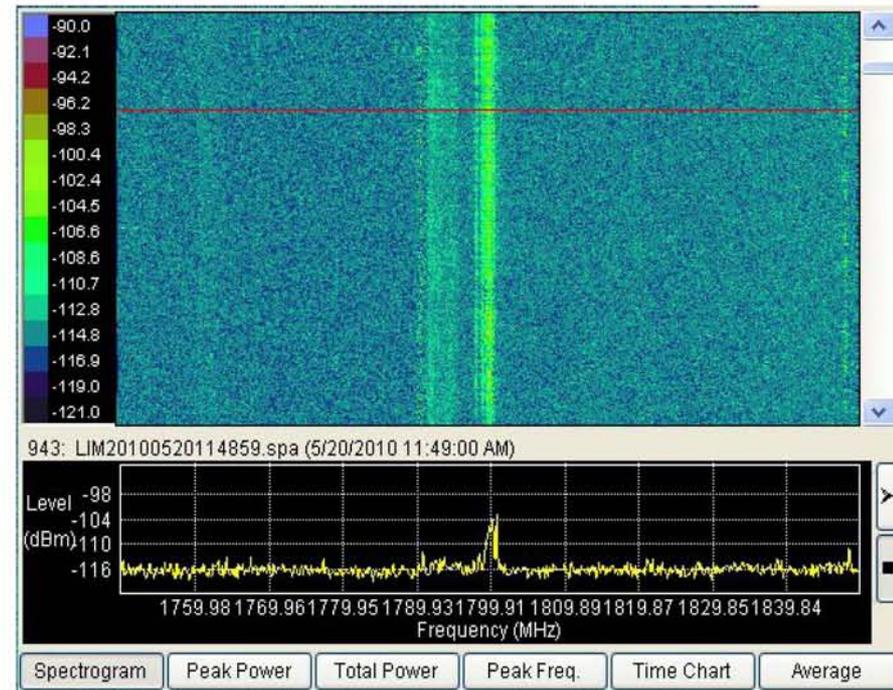
Regular 1762-3 MHz
Transmission

Regular 1793 MHz
Transmission

Periodic 1800 MHz
Transmission



May 7, 2010 06:05 AM – 06:26 AM



May 20, 2010 11:42 AM - 12:03 PM

Bay Area California (Sunnyvale, CA)

Parameters

- 625 Ellis Street, Mountain View, CA 94043 (3 story building)
- Collection periods 5/6/2010-5/12/2010 and 5/20/2010-5/24/2010 (64K files)
- Directly outside Onizuka Air Station - Satellite Uplink

Findings

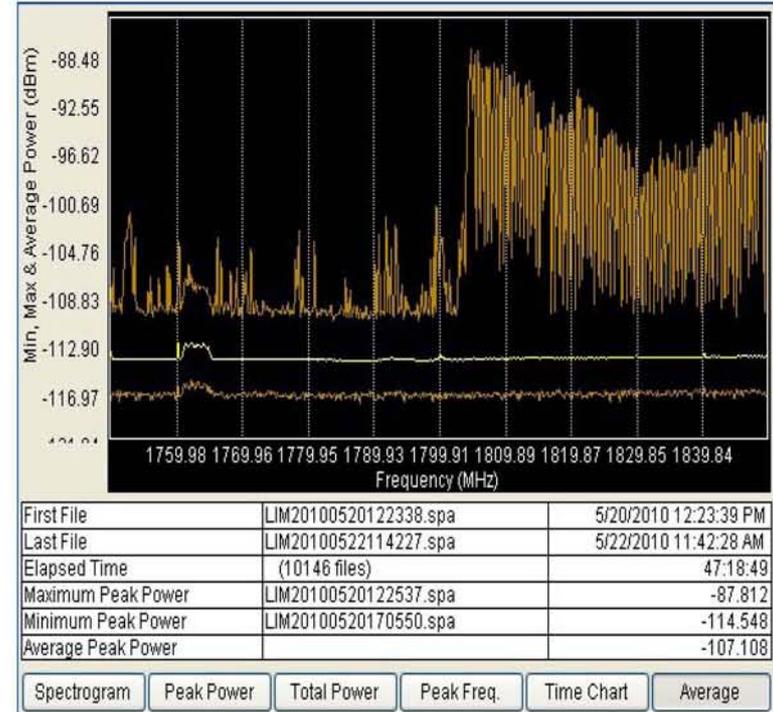
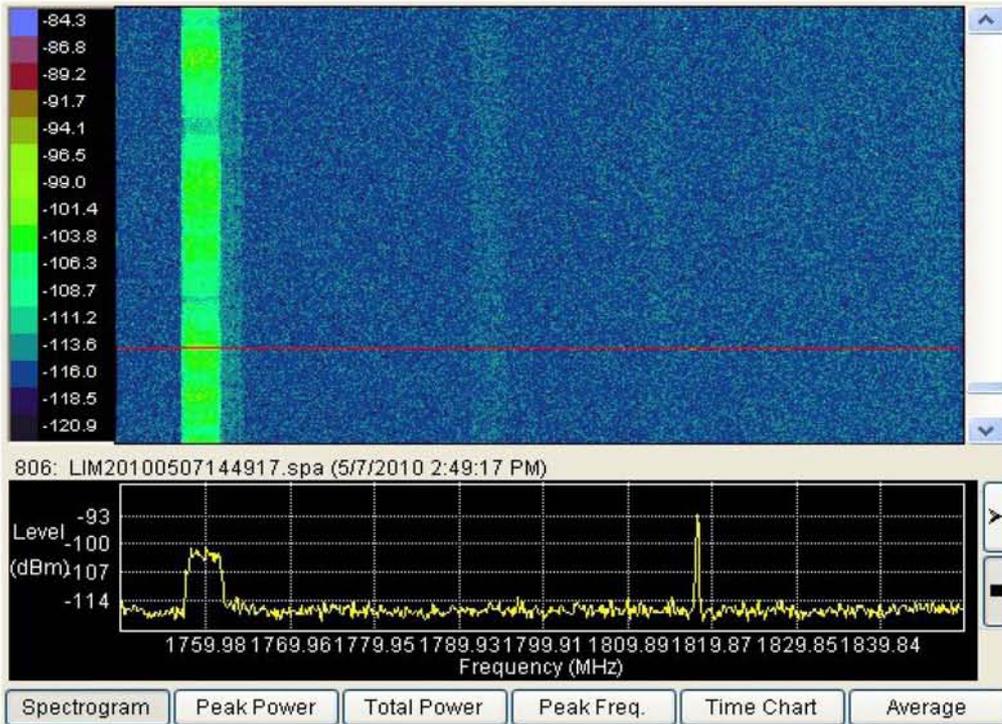
- Constant 4 MHz around 1762-3 MHz (probably same system seen at Santa Clara scan).
- Regular but not constant low level 4 MHz carrier of varying signal strength at 1793 MHz.
- Regular but varying amplitude and consistency narrow band signal at 1848.5 MHz.
- Possible hopping signal across 1805-1850 MHz band present during all collection data.
- Low level narrow band bursts between 1765 MHz and 1800 MHz.

Bay Area California (Sunnyvale, CA)

Regular 1762 MHz
Transmission

Regular 1793 MHz
Transmission

Constant Frequency
Hopping From
1805-1850 MHz



May 7, 2010 02:36 PM – 02:52 PM

Boston (Manchester, NH)

Parameters

- 1750 Elm Street, Manchester, NH 03104 (18 story building)
- Collection period 5/10/2010-5/17/2010 (27.5K files)
- 10 miles from New Boston Air Station - Satellite Uplink

Findings

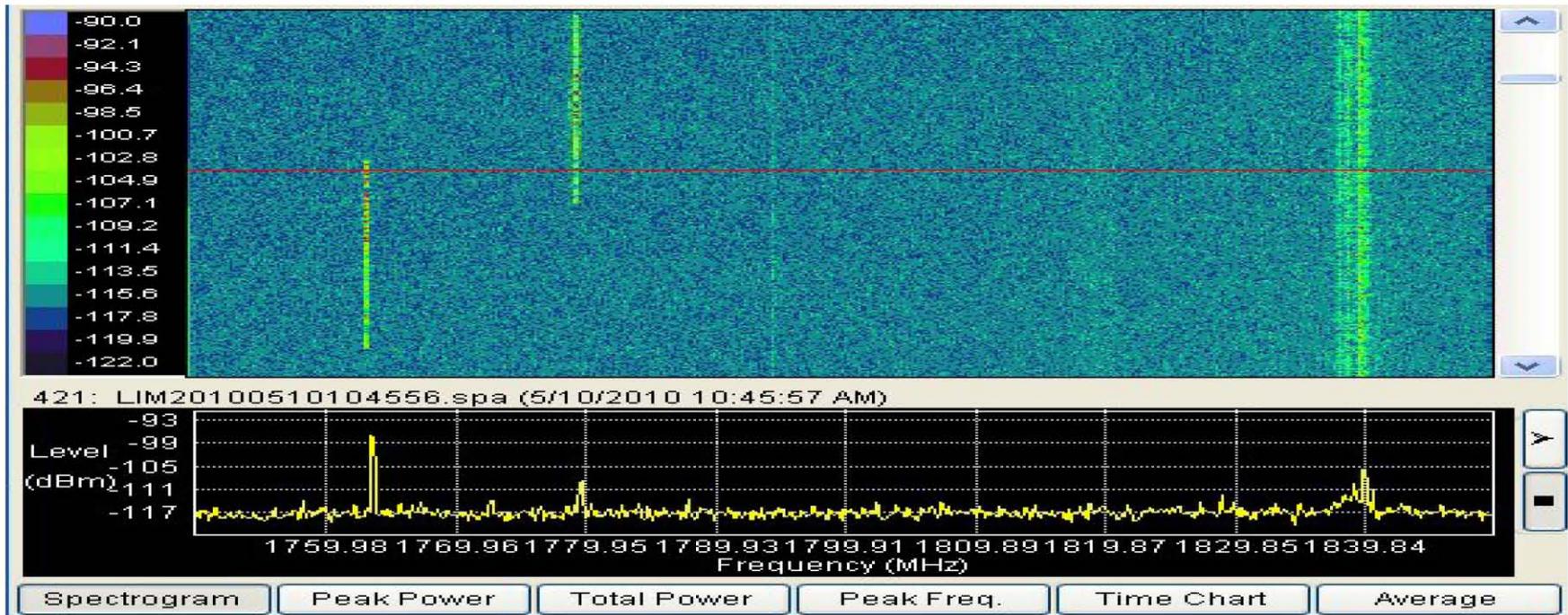
- Suspected satellite uplink at 1840 MHz coming from Boston Station (confirmed with drive by). Can be seen from Manchester and Nashua.
- Many narrow band threads present throughout the collection period across the full test span of 1750-1850 MHz. Strongest level and most consistent usage observed at following frequencies:
 - 1760.0, 1763.7, 1779.8, 1783.8, 1796, 1800, 1807.8, 1811.6 MHz
- Relatively constant low level signal at 1795 MHz (narrow band).
- Relatively constant low level signal at 1819 MHz (1-2 MHz).

Boston (Manchester, NH)

Narrow Band 1763 and
1780 MHz Signals

Constant Low Level
Signals 1795 and
1819 MHz

Satellite Uplink
at 1840 MHz



May 10, 2010 10:35 AM - 10:57 AM

Boston (Nashua, NH)

Parameters

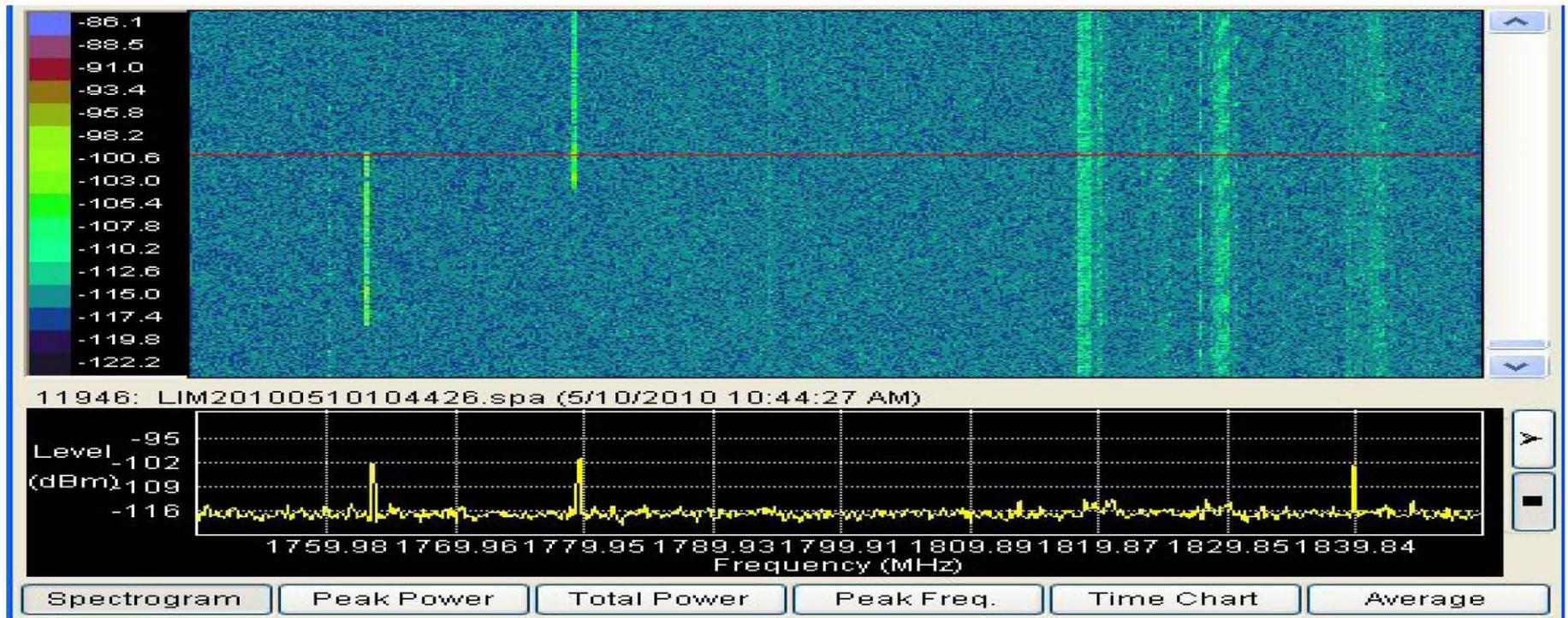
- Address: 172 Kinsley Street, Nashua, NH 03060 (12 Story building)
- Collection period 5/9/2010 – 5/15/2010 (50k files collected)
- 15 miles from New Boston Air Station - Satellite Uplink

Findings

- Suspected satellite uplink at 1840 MHz appears to be coming from New Boston Station but much at a lower level than observed in Manchester.
- Constant signal at 1819 MHz with 2 MHz bandwidth present throughout the collection period (probably point to point system).
- Constant signal at 1830 MHz with 1 MHz bandwidth present throughout the collection period (probably point to point system).
- Similar narrow band peaks to Manchester.

Boston (Nashua, NH)

Intermittent Signal 1764 MHz Intermittent Signal 1780 MHz Constant Signal 1819 MHz Constant Signal 1830 MHz Satellite Uplink at 1840 MHz



May 10, 2010 10:35 AM – 11:00 AM

Colorado Springs, CO

Parameters

- Address: 1719 E Bijou St, Colorado Springs, CO 80909 (11 story building)
- Collection period 5/11/2010 – 5/18/2010 (18.5K files)
- 15 miles from Schriever Air Force Base - Satellite Uplink

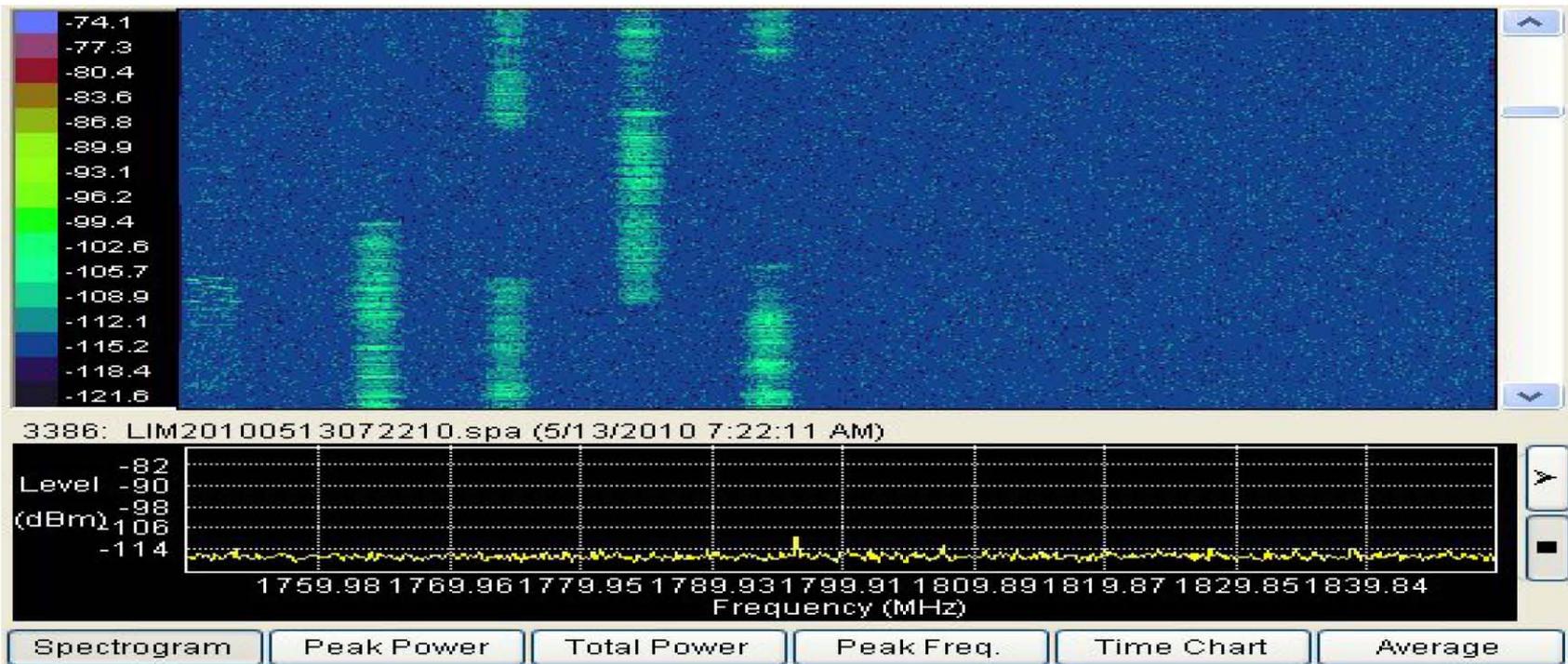
Findings

- Four separate 2 MHz carrier equally spaced 1765, 1775, 1785 and 1795 MHz present at various times throughout the collection period.
- 5th 2 MHz carrier seen briefly at end of collection period at 1815 MHz.
- Narrow band spike at 1791.8 MHz for short durations present periodically throughout collection period.
- Signals appear to originate from downtown Colorado Springs.

Colorado Springs, CO

AWS-I
F Block

Intermittent
Signals



May 13, 2010 07:05 AM – 07:37 AM

Chicago, IL (Rosemont, IL)

Parameters

- Address 6501 N Manheim Rd, Rosemont, IL 60018 (11 story building)
- Collection period 5/11/2010 – 5/12/2010 (14k files)

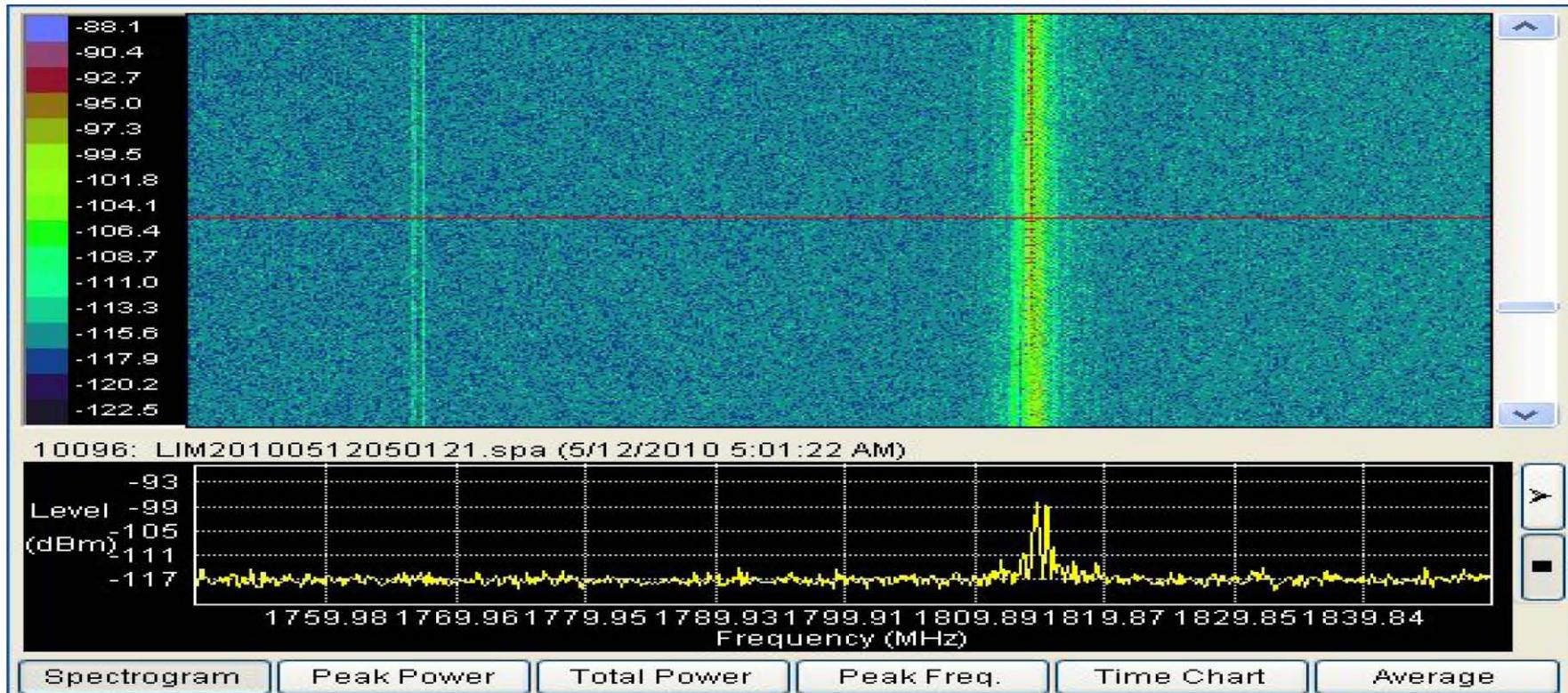
Findings

- Constant low level, narrow band signal at 1768 MHz is visible during the entire collection period
- Strong wide band signal at 1814 MHz coming from the direction of O'Hare airport. Suspected FAA activity.

Chicago, IL

Constant Low
Level 1768 MHz

Wide Band Signal
1814 MHz



May 12, 2010 04:47 AM - 05:13 AM

Chicago, IL

Parameters

- Address: 600 S Michigan, Chicago, IL (13 story building)
- Collection period 5/11/2010 – 5/18/2010 (70k files)

Findings

- Constant low level, narrow band signal at 1768 MHz is present during most of the collection period. Signal correlates to results from Rosemont scan.
- Regular signal at 1787 MHz (suspected point to point microwave).
- Constant signal at 1820 MHz, 2-3 MHz wide, for the entire collection period.
- Low level signal at 1842 MHz, 1 MHz wide, present through most of the collection period.

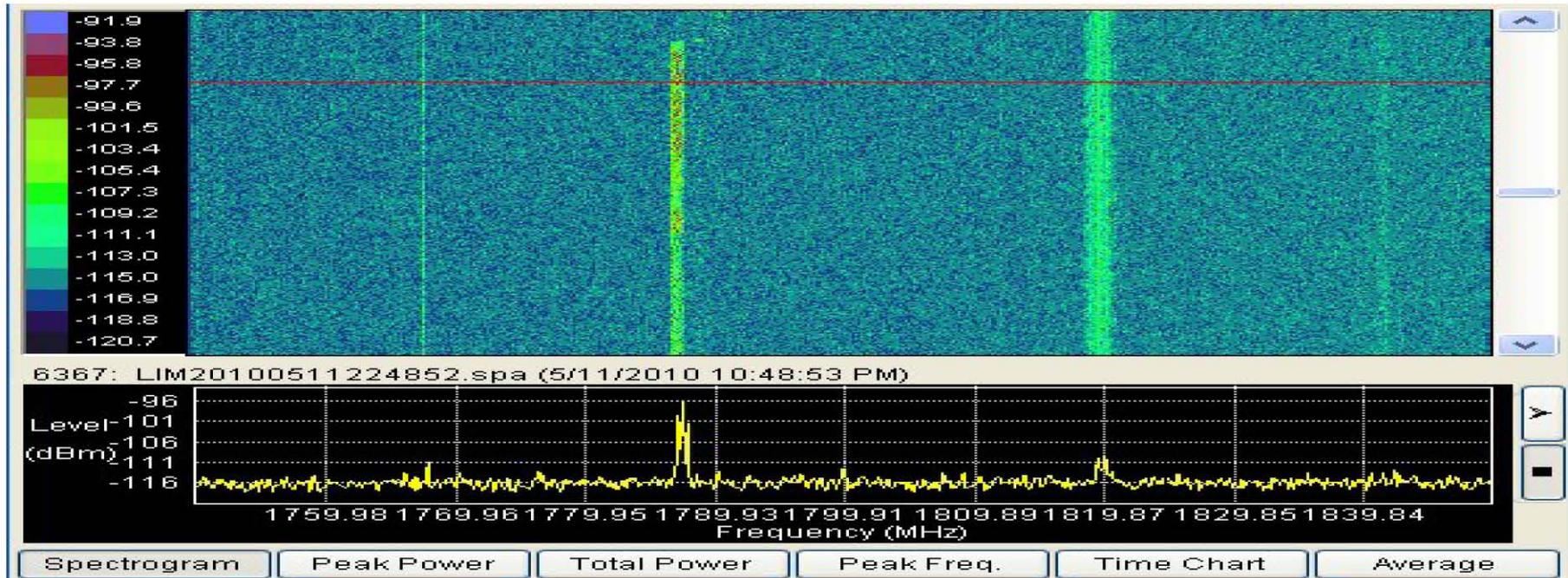
Chicago, IL

Low Level
Constant Signal
1768 MHz

Regular Signal
1787 MHz

Constant Signal
1820 MHz

Low Level
Regular Signal
1842 MHz



May 11, 2010 10:43 PM – 11:06 PM

Houston, TX

Parameters

- Address: 11490 Westheimer Rd, Houston, TX (15 story building)
- Collection period 5/14/2010 – 5/17/2010 (23k files)

Findings

- Constant high amplitude carrier at 1809 MHz with 3 MHz bandwidth.
- Low level signal constant at 1787.45 MHz throughout most of the collection period.
- Other constant signals present at 1820, 1833, 1842 MHz throughout the collection period.

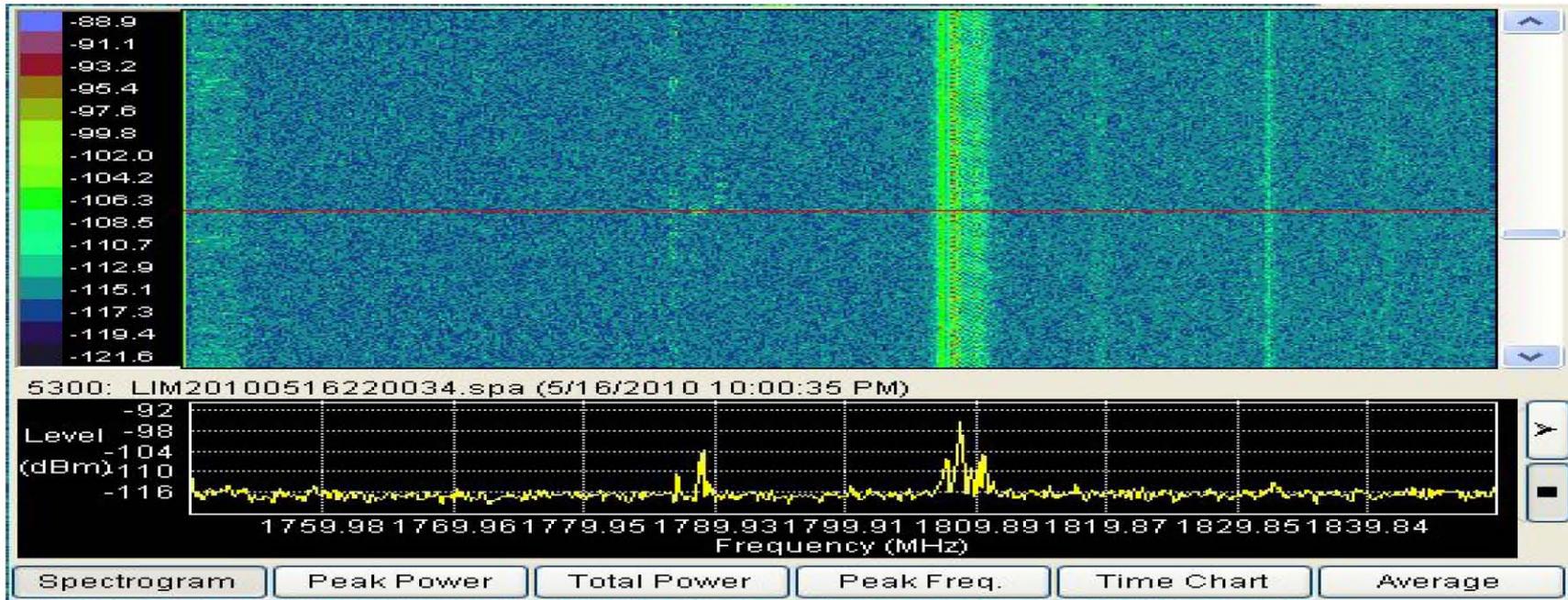
Houston, TX

AWS-I F Block

Low Level
Regular
1787 MHz

Constant
Signal
1809 MHz

Low Level Constant
Signals 1820, 1833
and 1842 MHz



May 16, 2010 09:48 PM – 10:12 PM

Houston (Galveston, TX)

Parameters

- Address: 7310 Seawall Blvd, Galveston, TX (12 story building)
- Collection period 5/13/2010 – 5/19/2010 (40k files)

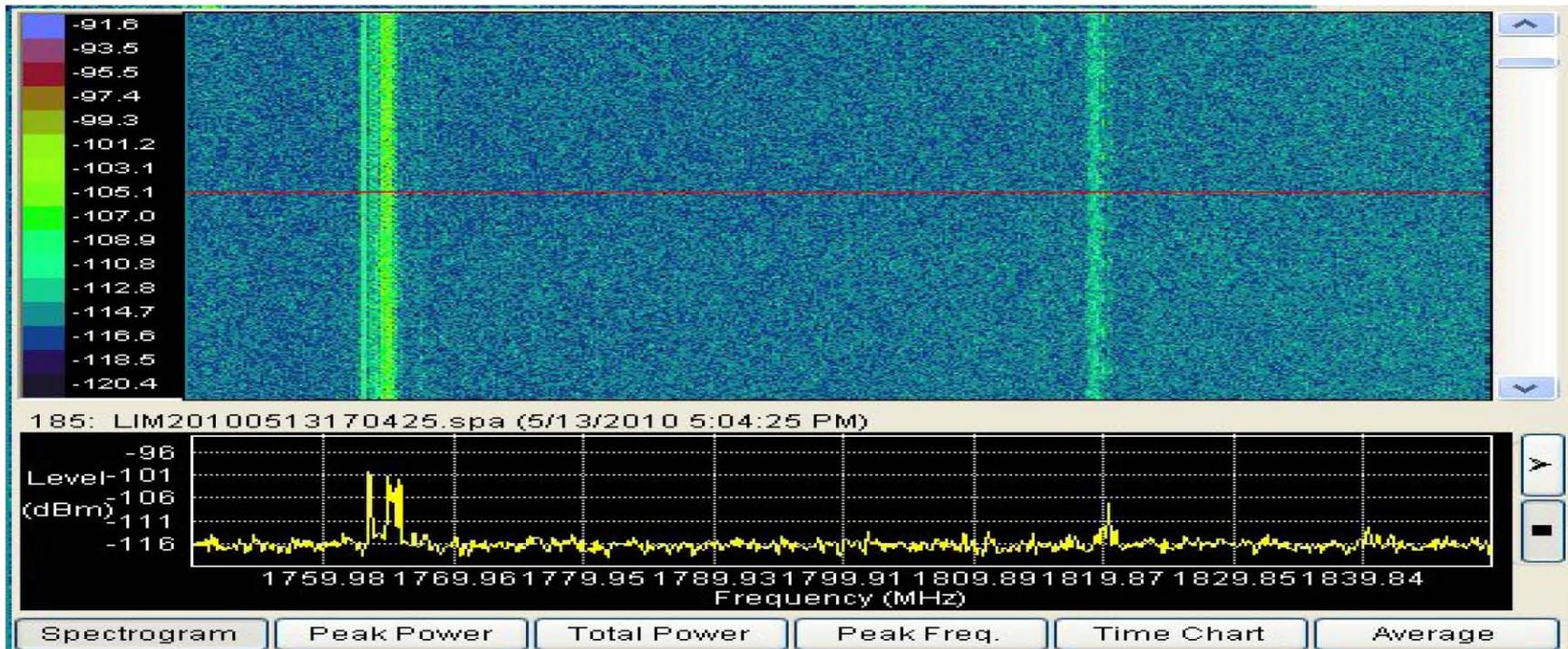
Findings

- Constant wide band signal at 1765 MHz coming from the northeast with 3 MHz bandwidth and 5-6 separate carriers or peaks.
- Constant signal at 1819.6 MHz with 1 MHz bandwidth.
- Other periodic transmissions at 1810-1830 MHz with 1 MHz bandwidth.

Houston (Galveston, TX)

Constant Signal
1765 MHz

Constant Signal
1820 MHz



May 13, 2010 04:55 PM – 05:15 PM

Washington DC

Parameters

- Address: 801 Rhode Island AVE, WA DC (12 story building)
- Collection period 5/17/2010 – 5/24/2010 (68k files)
- 35 miles from Blossom Point - Satellite Uplink

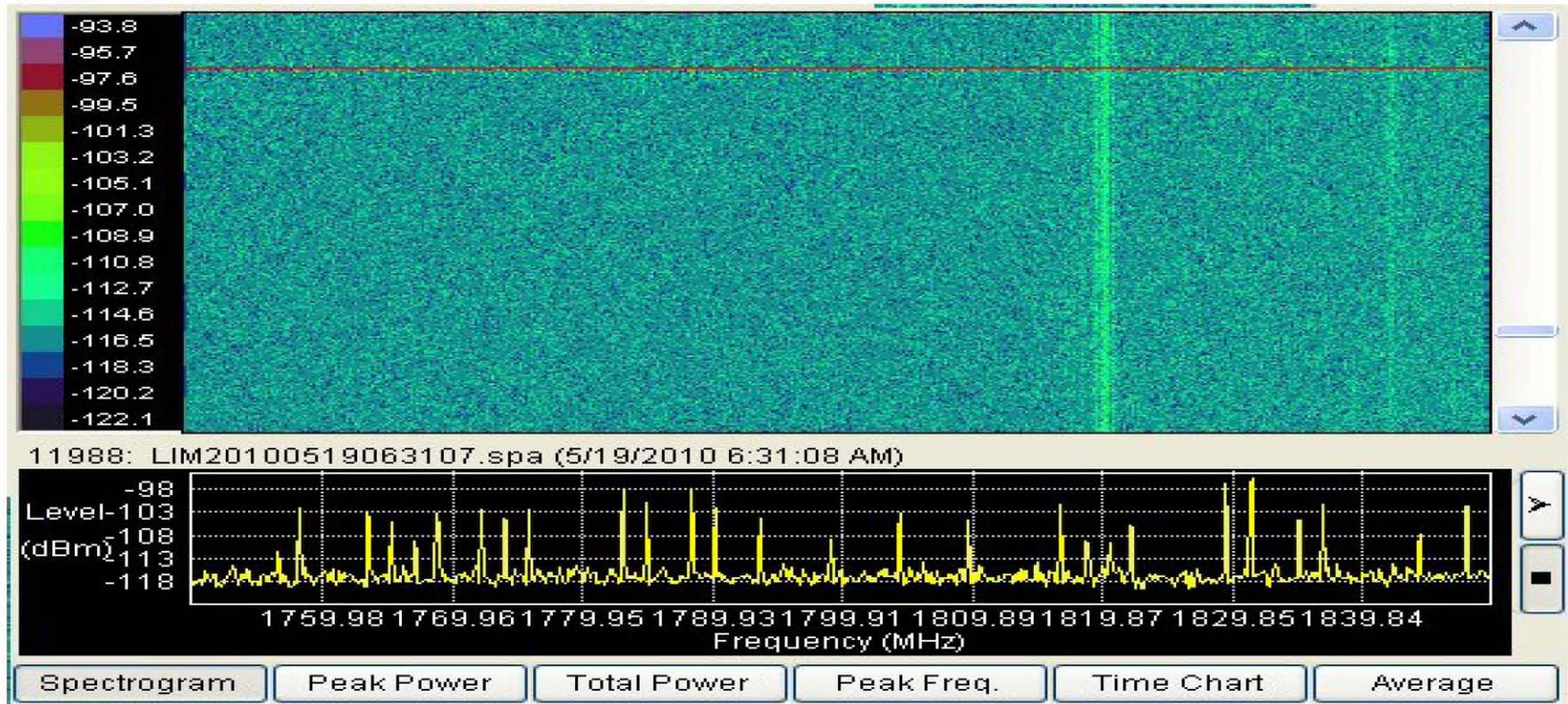
Findings

- Constant signal at 1820.3 MHz, 200-300 KHz wide carrier, present entire period at low level.
- Signal present at 1819.6 MHz throughout collection period with 1 MHz bandwidth.
- Narrow band spike at 1818.6 MHz visible throughout the period, regular but not constant.
- Narrow band spike at 1842 MHz visible during most of the period.

Washington DC

Constant Signal
1820 MHz

Intermittent Signal
1842 MHz



May 19, 2010 06:27 AM – 06:50 AM

Washington DC (Woodbridge, VA)

Parameters

- 14619 Potomac Mills RD, Woodbridge, VA (9 story building)
- Collection period 5/17/2010 – 5/24/2010 (39k files)
- 19 miles from Blossom Point - Satellite Uplink

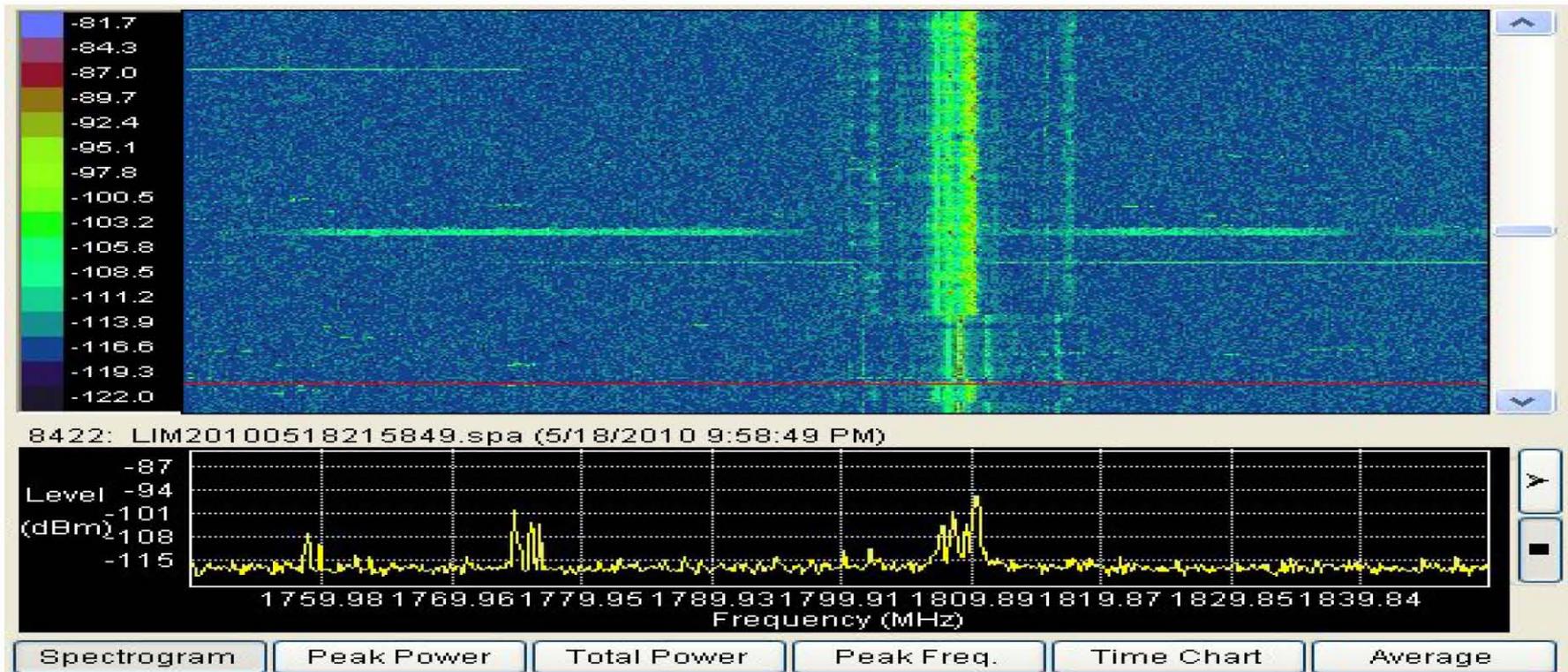
Findings

- Constant signals rarely appearing in consecutive sweeps but repeating throughout the entire collection period. Possibly some kind of random hopping signal transmission covering virtually the entire band.
- Very strong narrow band signal at 1782.2 MHz, 100-200 KHz wide, appears every 12 hours for approximately 1 hour with relatively constant presence.
- Very strong transmissions at 1808 MHz, 4-5 MHz wide, with several peaks during the collection period lasting for 40 and 70 minutes.

Washington DC (Woodbridge, VA)

Hopper
System

Strong Regular
Signal 1808 MHz



May 18, 2010 09:39 PM – 10:00 PM

Miami, FL

Parameters

- Address: 5617 NW 7th Street, Miami, FL 33126 (13 story building)
- Collection period 5/22/2010 – 5/25/2010 (15.5k files)

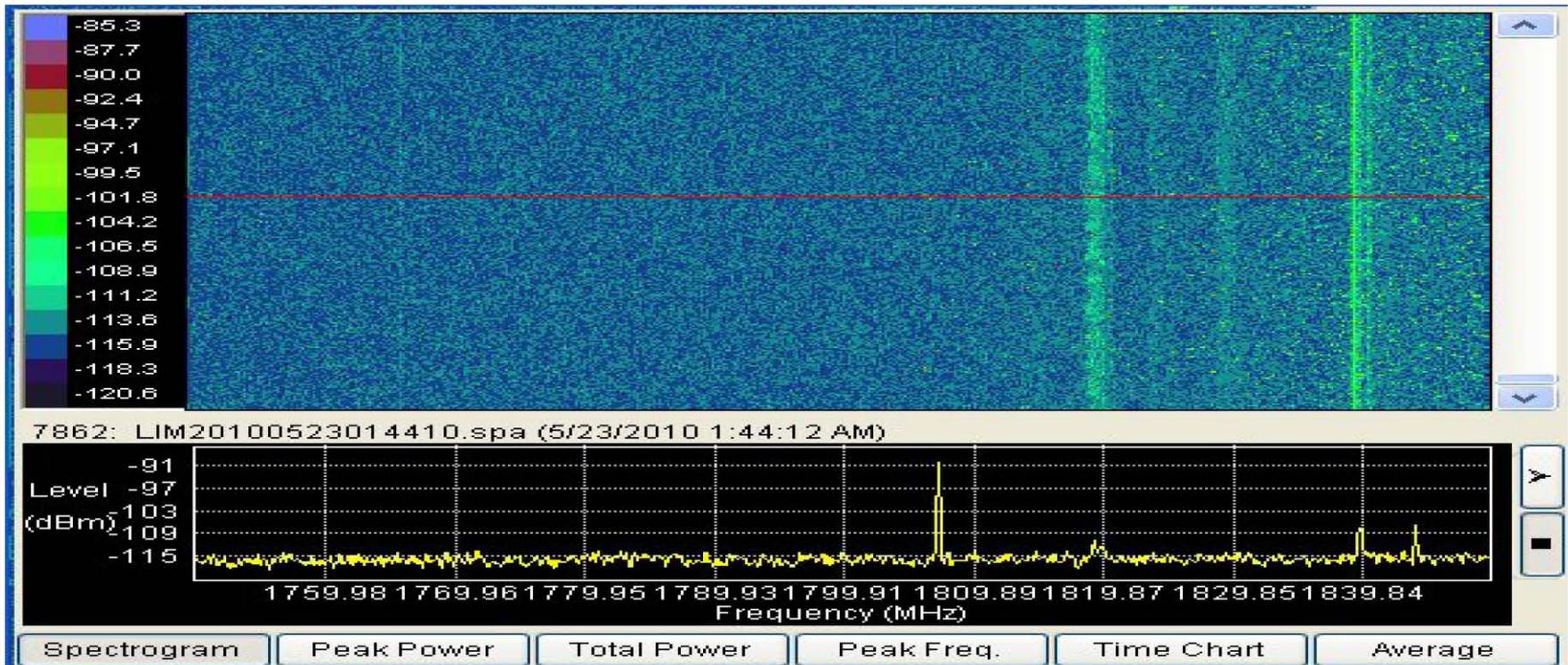
Findings

- Intermittent but regular signal at 1765.6 MHz
- Constant low level signal at 1766.3 MHz.
- Constant signal at 1820 MHz.
- Constant signal at 1825.2 MHz.
- Constant signal at 1840 MHz, 1 MHz wide.

Miami, FL

Constant Low Level
Signal 1766 MHz

Constant Signals 1820,
1825 and 1840 MHz



May 23, 2010 01:32 AM – 01:58 AM

Miami (Margate, FL)

Parameters

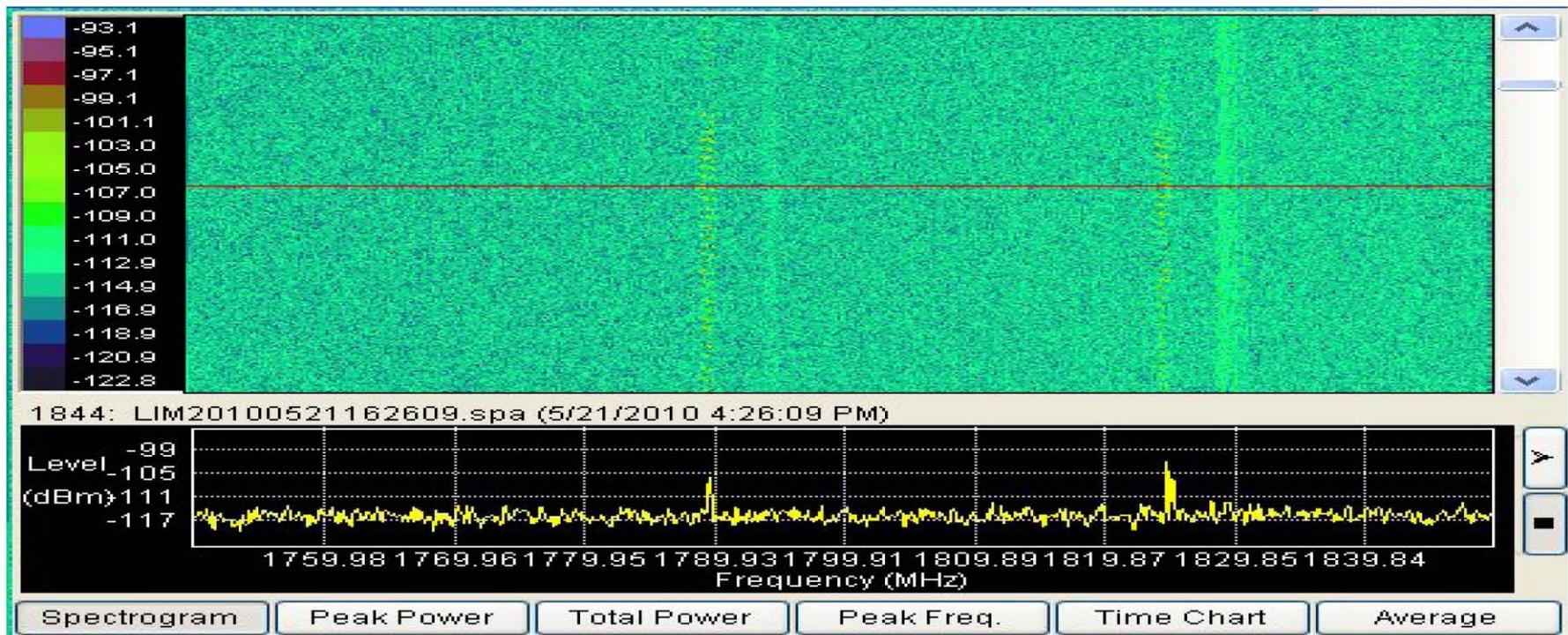
- Address: 3535 Brokenwood Dr, Coral Springs, FL 33065 (10 story building)
- Collection period 5/20/2010 – 5/25/2010 (89k files)

Findings

- Constant signal at 1830 MHz with 2 MHz bandwidth.
- Intermittent but regular signal at 1765.6 MHz (similar to Miami).
- Constant low level signal at 1766.3 MHz (similar to Miami).
- Constant signal at 1795 MHz.
- Constant signal at 1820 MHz (similar to Miami).
- Constant signal at 1840 MHz¹, MHz wide (similar to Miami).

Miami (Margate, FL)

Intermittent Signal 1790 MHz Constant Signal 1795 MHz Intermittent Signal 1825 MHz Constant Signal 1830 MHz



May 21, 2010 04:18 PM – 04:36 PM