

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Progeny LMS, LLC)	
)	WT Docket No. 11-49
Petition for Waiver of the Rules)	
And Request for Expedited Treatment)	

COMMENTS OF THE PART 15 COALITION

The Part 15 Coalition, through counsel, hereby responds to the Public Notice issued in the above-captioned matter, which seeks comment on three reports of field testing conducted between Progeny LMS, LLC (“Progeny”) and each of Itron, Inc. (“Itron”), the Wireless Internet Service Providers Association (“WISPA”), and Landis+Gyr Company (“Landis+Gyr”).¹

The 902-928 MHz band is an essential spectrum resource for a myriad of unlicensed users and devices. The test results conclusively show that Progeny’s transmissions will degrade the operations of unlicensed users to levels that are unacceptable to the tested parties and the Coalition. Progeny has not shown that its system will not cause unacceptable interference to unlicensed users and, therefore, has not met its burden. Accordingly, the Federal Communications Commission (“FCC” or “Commission”) should not permit Progeny to commence operations unless and until the Commission is firmly convinced that its system will not cause unacceptable levels of interference to the users who, every day, rely heavily on having unlicensed access to the 902-928 MHz band.

¹ Public Notice, *The Wireless Telecommunications Bureau and the Office of Engineering and Technology Seek Comment on Progeny’s Joint M-LMS Field Testing Reports*, WT Docket No. 11-49 (rel. Nov. 20, 2012) (“Public Notice”).

BACKGROUND

The Part 15 Coalition (“Coalition”) is composed of entities that manufacture, use, and/or represent users of unlicensed devices that operate in the 902-928 MHz band.² These devices are used in numerous critical infrastructure operations on which the safety of the public depends, such as energy production and delivery, industrial and home security systems, and water, gas and electric utility systems, and RFID tags. They also include technologies that better the daily lives of many Americans, such as broadband access, wireless headphones, devices for the hearing impaired, emergency alert devices for people at risk, and medical devices.

On December 20, 2011, the FCC granted Progeny waivers of the Multilateration Location and Monitoring Service (“M-LMS”) rules to allow Progeny to deploy an M-LMS system without meeting all of the M-LMS construction requirements and without having to provide primarily vehicle location services.³ The Progeny Waiver, as well as the Part 90 rules, require Progeny to engage in field testing of its system with Part 15 devices prior to commencing operations, through which Progeny must demonstrate that its system “will not cause unacceptable levels of interference to Part 15 devices that operate in the 902-928 MHz band.”⁴

Upon the request of Commission staff, Itron, WISPA, and Landis+Gyr each conducted separate testing with Progeny to determine the effects of the Progeny system on certain devices. Results of this testing were filed with the Commission on October 31, 2012,⁵ and the Commission subsequently issued the Public Notice seeking comment on the test reports.⁶

² See Attachment A for a list of Part 15 Coalition members.

³ *In the Matter of Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, Order, 26 FCC Rcd 16878 (2011) (“Progeny Waiver”).

⁴ *Progeny Waiver* at ¶ 35; see also 47 C.F.R. § 90.353(d).

⁵ *In the Matter of Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, Joint Itron-Progeny Testing, WT Docket No. 11-49 (filed Oct. 31, 2012) (“Itron Test Report”); *In the Matter of Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, Joint Landis+Gyr-Progeny Testing, WT Docket No. 11-49 (filed Oct. 31, 2012) (“L+G Test Report”); *In the Matter of Request by Progeny*

DISCUSSION

The Commission and Congress recently have reiterated the importance of unlicensed spectrum to the American people. Just last week, Chairman Genachowski testified that “[u]nlicensed spectrum has a powerful record of driving innovation, investment, and economic growth — hundreds of billions of dollars of value creation for our economy and consumers.”⁷ Congress specifically set aside spectrum for unlicensed use in the Middle Class Tax Relief and Job Creation Act of 2012,⁸ and members of Congress have since urged the Commission to “protect public access to unlicensed spectrum.”⁹

The 902-928 MHz band is particularly important to consumers because of its excellent propagation characteristics and because it was the first of the ISM bands to be used intensively for unlicensed applications. Use of the band has grown tremendously during the past 25 years, as indicated in part by the increasing number of equipment certification grants for unlicensed devices using this band.¹⁰ Moreover, an analysis of recent equipment grants issued during the summer identifies at least four categories of devices used in critical applications: medical devices; power meters and smart grid

LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules, Joint WISPA-Progeny Testing, WT Docket No. 11-49 (filed Oct. 31, 2012) (“*WISPA Test Report*”).

⁶ Public Notice; see also *In the Matter of Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, Order, WT Docket No. 11-49 (rel. Nov. 30, 2012) (extending comment deadlines).

⁷ Keeping the New Broadband Spectrum Law on Track, Hearing before the House Committee on Energy and Commerce, Subcommittee on Communications and Technology, 112th Cong. (Dec. 12, 2012) (Testimony of Julius Genachowski, Chairman, Federal Communications Commission).

⁸ Middle Class Tax Relief and Job Creation Act of 2012, Pub.L. 12-96, H.R. 3630, 126 Stat. 156 (enacted Feb. 22, 2012).

⁹ See Letter from Anna G. Eshoo, Member of Congress, and Darrell Issa, Member of Congress, to The Honorable Julius Genachowski, Chairman, Federal Communications Commission (Dec. 11, 2012), available at http://eshoo.house.gov/images/stories/12.11.12_Eshoo-Issa_Letter_on_Unlicensed_Spectrum.pdf.

¹⁰ See Attachment B, “FCC Equipment Grant Trends.”

home monitors; RFID; and public safety devices, such as parole location devices and security systems.¹¹

The FCC has recognized time and time again, including in the Progeny Waiver, the importance of this band: “[w]e recognize the importance of maintaining the existing accessibility of the band for unlicensed devices, which has led to a proliferation of important public, private, and consumer applications, and for amateur operators.”¹² For this reason, the Commission established the M-LMS field testing requirement as well as the “safe harbor” rule, seeking to ensure that a new high-powered licensed service would not interfere with existing unlicensed operations.¹³ These rule provisions make the band unique for unlicensed use, as the FCC’s stated goal was to “avoid any significant increase in interference to unlicensed users” from M-LMS licensees.¹⁴ This is sound policy and, here, Progeny has not met that burden.

Progeny was granted its waivers based on the principle that the Progeny system would be built to minimize the potential for interference to unlicensed users “so as to maintain the coexistence of the many varied users in the band.”¹⁵ Testing has shown that Progeny’s system does not meet this standard, as it not only fails to facilitate band sharing but in fact could effectively remove up to 20 MHz of spectrum from some present unlicensed users in this band.¹⁶

Specifically, due to Progeny’s deterministic, synchronized duty cycle, Progeny’s system can have an effective duty cycle of 80-100% when Progeny uses multiple beacons, as is the case in the San Jose testing area and must be the case in any Progeny market. Field testing showed that beacons occupy the spectrum to be used by

¹¹ See Attachment C, Recent 900 MHz Wireless Grants, Categorized.

¹² *In the Matter of Amendment of the Commission’s Part 90 Rules in the 904-909.75 and 919.75-928 MHz Bands*, Notice of Proposed Rulemaking, 21 FCC Rcd 2809, 2810 (2006) (“M-LMS NPRM”; see also Progeny Waiver at ¶29 (noting that “Part 15 devices are used for a variety of important public, private, and consumer applications.”))

¹³ See M-LMS NPRM at ¶¶ 3 and 9.

¹⁴ Progeny Waiver at ¶6.

¹⁵ Progeny Waiver at ¶ 26.

¹⁶ For example, for the WISP devices tested, Progeny leaves only two 8 MHz Cambium channels and one 10 MHz Ubiquiti channel.

Progeny in the M-LMS B and C blocks 80% of the time, and there are no limits to Progeny using all ten of its time slots rather than the eight observed in use this summer. Moreover, Progeny operates at high power (30 W ERP), versus 1-4 W EIRP for unlicensed devices.¹⁷ As a result, the measured throughput reduction for the two WISP manufacturers tested, as an example, was 40-50%, a demonstrably significant degradation.¹⁸

As WISPA, Itron and L+G pointed out in their joint *ex parte* letter, Progeny mischaracterizes the test results by calculating an “average” data throughput loss across the band rather than admitting that the test results clearly demonstrate that operation of its network severely reduces the throughput of real-world duplex broadband data networks by blocking 50% or more of the 900 MHz band.¹⁹ Considering the unequivocal test results, Progeny has failed to show that operation of its transmitters does not cause unacceptable levels of interference. Because of its much higher power and virtually continuous duty cycle, Progeny is unable to meet this burden.

Moreover, as many members of the Coalition have not had their devices tested, it is important for the FCC to consider the potential impact of the Progeny system on the wide array of unlicensed devices that may be affected and may be less tolerant to interference than the devices tested. While unlicensed users are accustomed to working within the present environment, and are generally successful in co-existing with other unlicensed users, the huge power and duty cycle differential of the Progeny system may well make co-existence impossible even considering Part 15 interference avoidance techniques.

¹⁷ See Itron Test Report at p. 15 and throughout (Progeny System Beacon Timing waterfall spectrum analyzer screen shots).

¹⁸ See WISPA Test Report, Section 6, figures 12-17.

¹⁹ See Letter from Stephen E. Coran, Attorney for WISPA, to Marlene H. Dortch, Secretary, Federal Communications Commission, Ex Parte Notice at Attachment, WT Docket No. 11-49 (filed Nov. 8, 2012) (“*Part 15 Parties Ex Parte*”).

In this regard, it is important to note that a substantial number of unlicensed devices that cannot hop use DTS (“Digital Modulation”) or DSSS (“Direct Sequence Spread Spectrum”) systems. Many of these devices are used for voice communications where any “retry” algorithms are not acceptable due to latency or loss of voice communication. Loss of voice communication temporarily may be considered a nuisance in some uses but in others, such as emergency voice pendants, retry may not be practical or possible. For many of these systems, when a wide band interferer is encountered, the interference cannot be eliminated and these systems cannot move to other parts of the band to avoid Progeny, which counters Progeny’s argument that Part 15 users can hop or move out of their way.²⁰ The testing of the WISPA devices clearly shows this unavoidable degradation. In another example, in battery assisted RFID applications, tags are much more sensitive than the more common passive UHF RFID tags, having sensitivities down to -40 dBm. These are used to monitor temperature and other sensor information in products such as food and pharmaceuticals to help achieve compliance with food safety rules and pharmaceutical traceability. Some tags must be embedded inside products, and thus require significant link margins and corresponding reverse link sensitivity on the reader side as low as -120 dBm. Passive tags, on the other hand, must be produced at very low cost to scale to very high volumes, and do not provide the capability to avoid interference by frequency hopping or otherwise.

In sum, allowing Progeny to begin operations would nullify the rich ecosystem that has developed in the unlicensed 902-928 MHz band that has allowed both innovative and low-cost consumer and enterprise devices to thrive. The testing shows that Progeny’s operations will not allow unlicensed devices to operate in or around its frequency ranges. Inevitably, whether by smart radio features or over time by re-engineering, many unlicensed devices will cluster around the remaining frequencies, increasing the noise level through which these devices will need to push to continue

²⁰ See Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, Demonstration of Compliance with Section 90.353(d) of the Commission’s Rules, WT Docket No. 11-49 (filed Oct. 31, 2012) (arguing that certain Part 15 devices can withstand interference from Progeny).

to operate, assuming they can even continue to operate. This will create more crowded conditions in the remaining unlicensed spectrum. It also will increase the cost of devices for consumers, commercial users and public safety entities as manufacturers attempt to redesign their systems.

If approved and deployed, Progeny would have no incentive to cooperate with unlicensed users. As a licensee with primary status, it could simply ignore claims of unacceptable interference from unlicensed users, many of which provide mission-critical communications services, unless the Commission intervenes to resolve complaints.²¹ Given the primary status of the licenses, the Commission must act here with certainty and deliberate caution – there will be no second chances to undo the damage if, as the Coalition members fear with good reason, unacceptable levels of interference are experienced by incumbent devices, systems and networks.

In addition, the Commission's approval of the Progeny system could lead to copy-cat waiver requests by the other M-LMS licensees. If Progeny deprives unlicensed users of large sections of the 902-928 MHz band, operation by the other M-LMS licensees could similarly render unusable the remainder of the band for unlicensed users. This also would negate the Commission's many recent efforts to identify and open additional spectrum for unlicensed use, uses that the Commission and the Congress have recognized time and time again are integral to our economy.

Finally, the Commission need not risk disruption of the millions of installed unlicensed devices simply upon the hope that Progeny's technology may be useful for indoor position location. There are other technologies being contemplated for such purposes that are fully compatible with the intensive unlicensed use of the 902-928 MHz band.²²

²¹ See 47 C.F.R. § 90.205(a). A complaint process is an inadequate and uncertain remedy when debilitating interference is involved.

²² See *Indoor Positioning, Finding the Way Inside. Navigation Technology: Using Satellites to Determine Your Position Only Works Outside. A New Approach Is Needed Indoors*, The Economist (Dec. 1, 2012) (noting that "[a] more promising approach [to location finding] may be to use signals from mobile-phone networks and Wi-Fi hotspots"); see also Comments of Inovonics.

Attachment A
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Attachment B

900 MHz ISM Band FCC Grants

A survey was made of the FCC grants issued for the 902-928 MHz frequency band. Figure 1 presents the total grants issued each year and the major categories of devices using this band.

FCC Equipment Grants - 900 MHz ISM Band

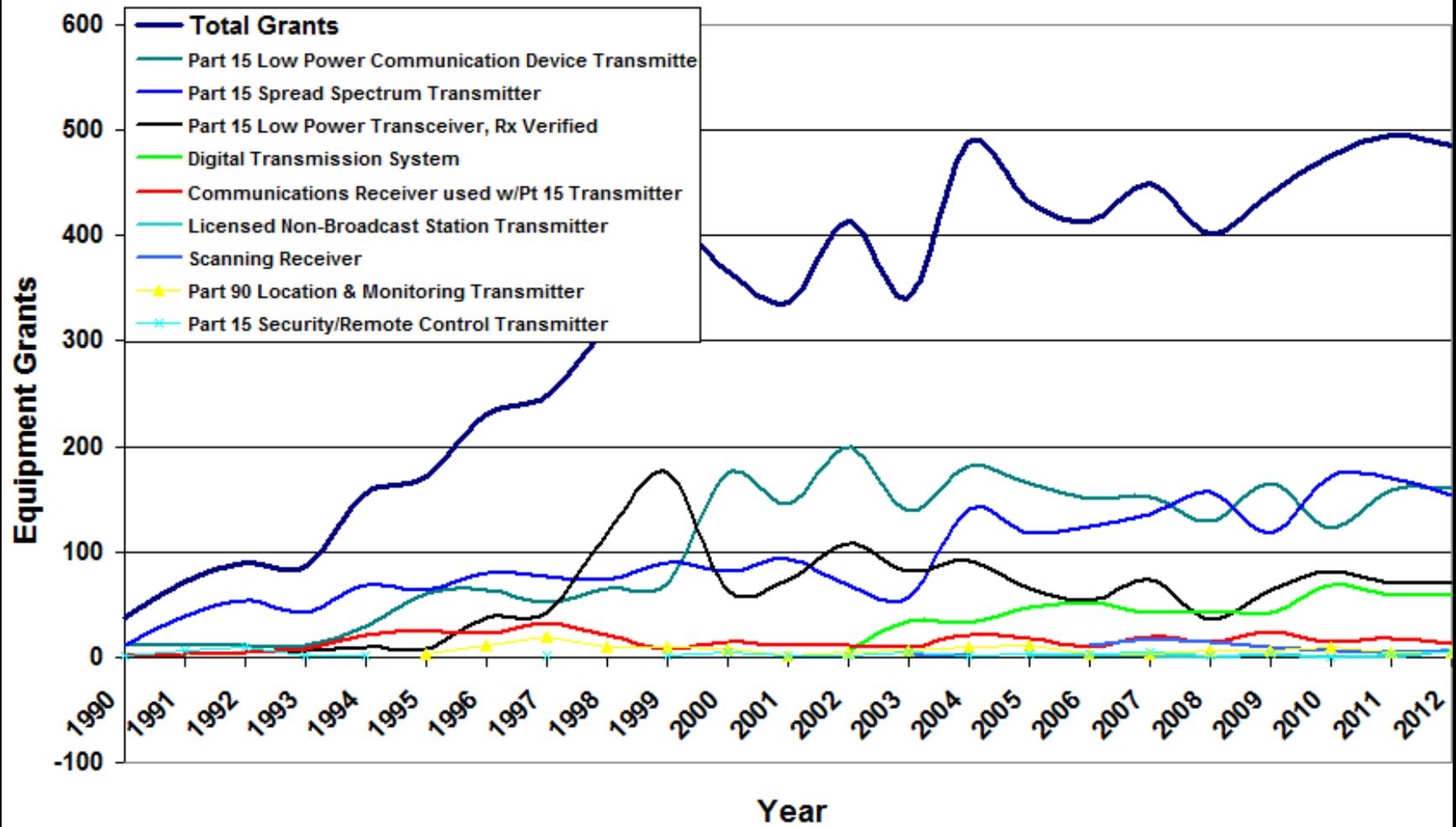
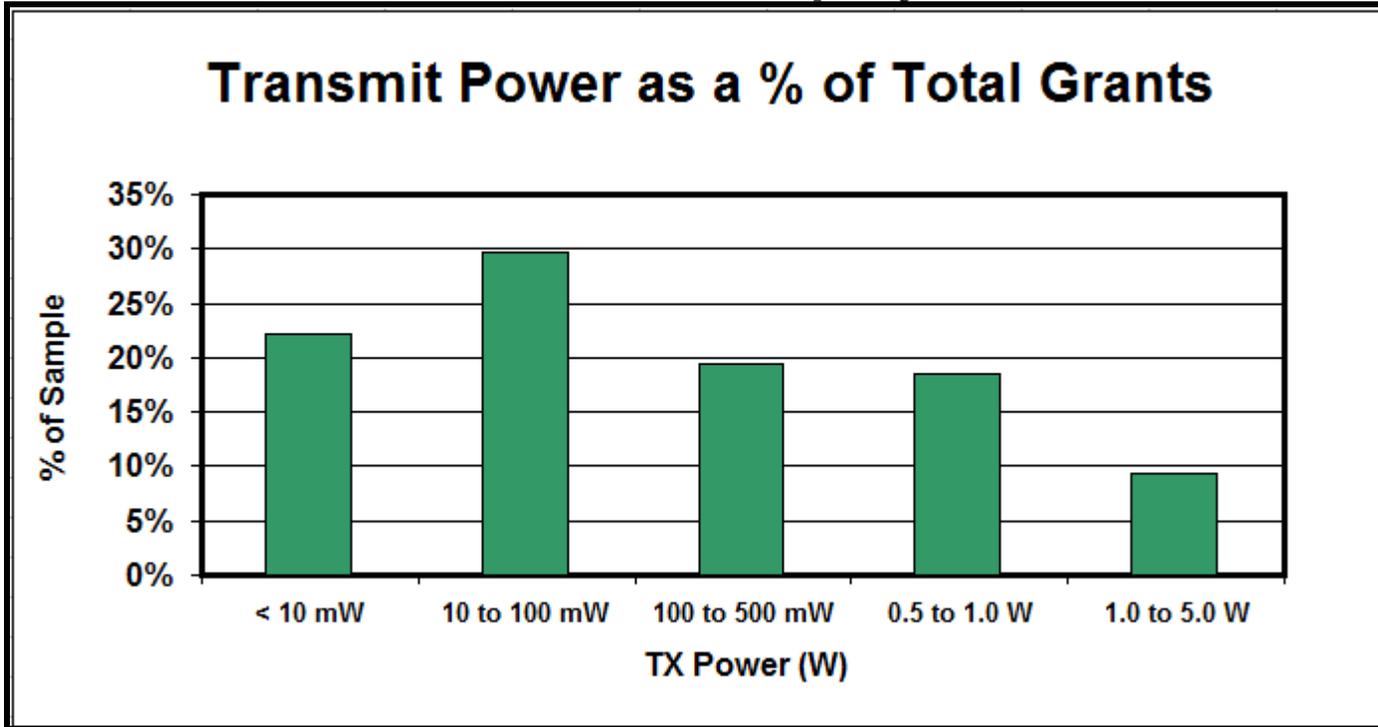


Figure 1 - 900 MHz ISM Band Equipment Grants - 1990 to 2012

To explore the transmit power of the devices using the band, a sample of 108 grants issued since May of 2012 were randomly selected. Table 1 gives the distribution of the transmit power listed on their FCC grants. As can be seen, most devices in the band are relatively low power. More than 20% use less than 10 mW. More than 50% use less than 100 mW. Approximately 40% of the devices in this sample use between 100 mW and 1 W. Less than 10% use more than 1 W of transmit power.

Table 1 - Distribution of Transmit Power of Devices Operating in the 900 MHz ISM Band



ATTACHMENT C: 900 MHz Sites

Applicant Name	City	State	Country	Zip Code	FCC ID	Application Purpose	Final Action Date	Equipment Description							Other Bands		
															Medical Devices	Meters and Monitors	RFID Readers
Total Grants			% US Grants					237		5	34	13	12	0	Average Power	0.6	
237			51.9%						2.1%	14.3%	5.5%	5.1%	0.0%	Min / Max	0.00034 / 28.05		
Kilchherr	Muensing	N/A	Switzerland	3110	GVOK-TERM70	Original	10/25/2012	Beacon transmitter							916.5	916.5	
Itron Inc	Waseca	MN	United States	56093	EWQ100GDLAS	Original	8/23/2012	Gas utility meter		X					908	908	
Acoustic Arc	Hong	N/A	China	N/A	VHC-AAI-AS1210-00	Original	10/15/2012	Wireless speaker							912.5	913.5	
SISTEMATICA	Manta	N/A	Italy	12030	O8IRTXTRENDLCD	Original	9/17/2012	Remote control							915	918	
Elster Solutions,	Raleigh	NC	United States	27610	QZC-REXU	Original	8/21/2012	REX meter		X					902.3	927.9 0.986	
Itron Inc	Waseca	MN	United States	56093	EWQ100GDLBS	Original	8/23/2012	Utility meter		X					903	926.85 0.328	
Aeon Labs LLC.	Santa	CA	United States	95051	XBADSA22	Original	7/7/2012	Remote control							908.4	908.42	
Telematics	Holon	N/A	Israel	N/A	NTA3GINTRP1	Original	8/13/2012	Water meter		X					902.3	927.9 0.26	
Johnson	Holland	MI	United States	49423	CB2SAHL5B	Original	9/28/2012	Universal remote							902.25	926.75 0.021	
SISTEMATICA	Manta	N/A	Italy	12030	O8IRTXTREND	Original	9/17/2012	Remote control							915	918	
Uni-Art Precise	Kowloon	N/A	Hong Kong	N/A	MVASP4791A-001T	Original	10/23/2012	Wireless speaker							912	913	
Kar-Tech, Inc.	Delafield	WI	United States	53018	P4U-MCTA3	Original	11/12/2012	Remote control							902.2	927.8 0.01	
Cadi Scientific	Singapore	N/A	Singapore	408694	VPE-STG-836	Original	11/21/2012	Tollway SMART tag				X			919.8	919.8	
Intermec	Cedar	IA	United States	52401-	EHA-IM11	Original	10/10/2012	Singular transmitter							902.75	927.25 0.938	
ValidFill, LLC	Sarastoa	FL	United States	34240	ODB-VS011MS047	Change in	8/24/2012	RFID reader			X				902.75	927.25 0.933	
La Crosse	La Crosse	WI	United States	54601	OMO-M-17	Original	10/3/2012	Remote control for toy helicopter							911.7	919.3	
BRK Brands Inc	Aurora	IL	United States	60504-	M7U-FAL-WAT	Original	8/27/2012	Wireless water sensor							908	919	
Gryphex LLC	Alpharetta	GA	United States	30005	OWX-L1000	Original	8/2/2012	Ankle bracelet for offender management system				X			903.2	927 0.0036	
Netgear	San Jose	CA	United States	95134	PY312100192	Original	7/5/2012	Home security system				X			908.4	908.42	
Philips Lighting	Rosemont	IL	United States	60018-	VBO-LLC7310	Original	8/17/2012	Outdoor lighting control							906	924 0.004824	
SmartLabs, Inc.	Irvine	CA	United States	92606	SBP28522	Original	9/28/2012	Leak sensor		X					914.9	915.1	
Actiontec	Sunnyvale	CA	United States	94086	LNQSG250	Original	8/31/2012	Remote control with WiFi							908.4	908.4	
Autec s.r.l.	Caldogno	N/A	Italy	36030	OQA-RLBCA00M	Original	12/4/2012	Remote control							915	928	
SISTEMATICA	Manta	N/A	Italy	12030	O8ICONTROLLER20	Original	9/13/2012	Remote control							915	918	
SISTEMATICA	Manta	N/A	Italy	12030	O8ICONTROLLER4	Original	7/12/2012	Remote control							915	918	
Uni-Art Precise	Kowloon	N/A	Hong Kong	N/A	MVAHP4891A-001T	Original	10/26/2012	Wireless headphones							915.5	916.5	
ENPING SANGE	Enping,	N/A	China	N/A	XVJBM-8	Original	10/17/2012	Wireless microphones							902.2	927.8	
Texas	Dallas	TX	United States	75243	Z64EM4F6147RF9	Original	7/4/2012	Low power microcontroller							903.49	926.49	
LUMISOURCE,	ELK	IL	United States	60007	PZVWIWIRELESSKIT	Original	9/24/2012	Wireless kit							914	915	
Trimble	Sunnyvale	CA	United States	94088-	JUP-9090991	Original	7/26/2012	Gaming chair							902.621	927.5877	
Tele Radio AB	SE-436 32	N/A	Sweden	N/A	ONFC1108A	Original	8/7/2012	Single modular							903.0125	926.9875 0.000766	
Scanreco AB	Stockholm	N/A	Sweden	10074	N5ORC917FHHTRO2	Original	7/18/2012	Remote control							902.05	927.95 0.1086	
Arrayent Inc.	Redwood	CA	United States	94063	Y4B-MST-RFM	Original	7/26/2012	Wireless power monitor		X					908.56	919.8 0.0785	
Itron Inc	Waseca	MN	United States	56093	EWQ100GDLBS	Original	8/23/2012	Utility meter		X					908	908 0.328	
Precyse	Rosh	N/A	Israel	48092	WONSA91004000	Original	7/9/2012	Tollway SMART tag			X				905	917 0.031	
SmartLabs, Inc.	Irvine	CA	United States	92606	SBP2634222	Original	11/1/2012	On/Off outdoor power							914.9	915.1	
Cadi Scientific	Singapore	N/A	Singapore	408694	VPE-SMN890S	Original	11/12/2012	Wireless transmitter							919.8	925	
LS Research,	Cedarburg	WI	United States	53012	TFB-SISEN1	Original	11/13/2012	Transceiver radio							903	926.6 0.282	
Seba	Baunach	N/A	Germany	96148	OV8-LOGGSM3	Original	11/19/2012	Noise level monitor		X					913.02	913.02 0.01	
Pepperl + Fuchs	Twinsburg	OH	United States	44087	IREIUH-F117-V1	Original	10/12/2012	RFID reader			X				902.75	927.25 1	
Elster Solutions,	Raleigh	NC	United States	27614	G8JHHI05	Original	10/15/2012	EA inspector							902.8	927.6 0.235	
Newtrax	Montreal	N/A	Canada	H3C 1C7	OQ6-WN-200	Original	7/24/2012	Modem router							902.4	927.6 0.02254	
Nelson	Walla	WA	United States	99362	ZH6-VRCOMM-HP	Original	8/1/2012	Single modular							906	924 0.651	
Digi	Minneton	MN	United States	55343	MCQ-XB900HP	Original	9/14/2012	Single modular							902.4	907.6 0.298	
Itron Inc	Waseca	MN	United States	56093	EWQ100GDLCs	Original	8/23/2012	Utility meter							903	926.85 0.368	
RF-Embedded	Raubling	N/A	Germany	83064	PTSPUR500BETA	Original	12/5/2012	RFID reader			X				902.75	927.25 0.5	

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Xetawave LLC	Boulder	CO	United States	80301	PEJ-93829283-MSD9	Original	10/2/2012	Single modular										902.025	927.975	1	54	
Brooks	D-95490	N/A	Germany	N/A	NSGUF80	Original	7/2/2012	RFID UHF reader											902.75	927.25	0.1517	55
Aeon Labs LLC.	Santa	CA	United States	95051	XBADSD37	Original	10/17/2012	Network repeater											908.42	908.42		56
CipherLab Co.,	Taipei	N/A	Taiwan	N/A	Q3N-1861	Original	7/10/2012	RFID reader											902.75	927.25	0.101	57
BRK Brands Inc	Aurora	IL	United States	60504-	M7U-FAL-MOT	Original	8/28/2012	Motion sensor											908	919		59
Israel Wireless	Netanya	N/A	Israel	42405	PPRW-SC420	Original	10/15/2012	Wireless sensor											912.74	919.09	0.006	60
RF Controls, LLC	St Louis	MO	United States	63116	WFQIN610	Change in	11/21/2012	RFID reader											902.3	927.75	1	61
SmartLabs, Inc.	Irvine	CA	United States	92606	SBP22422	Original	9/28/2012	Wireless hub											914.9	915.1		62
Uni-Art Precise	Kowloon	N/A	Hong Kong	N/A	MVASP4792A-001R	Original	10/23/2012	Wireless speaker											912	913		65
Cooper Power	Gaithersb	MD	United States	20878	P9X-430ELA31W	Original	11/26/2012	Single modular											902.75	927.25	0.8995	66
Acoustic Arc	Hong	N/A	China	N/A	VHC-AAI-AS121R-00	Original	10/15/2012	Wireless speaker											912.5	913.5		67
Transparent	Boulder	CO	United States	80302	RXN1M2ESS	Original	11/12/2012	Electric meter											903	927	0.025	68
Green Badge	King of	PA	United States	19406	YVAUG1000R	Original	9/17/2012	ISM band repeater											903.053	927.5	0.005	69
Trimble	Cambridg	MA	United States	2142	QV5MERCURY6E-M	Original	11/30/2012	Single modular											902.75	927.25	1	70
ChronoTrack	Evansville	IN	United States	47711	XUX-CON-M200-USA1	Original	7/27/2012	RFID reader											902.75	927.25	1	71
Device	Hillsborou	NC	United States	27278	OXW-PA0002	Original	8/23/2012	Single modular											904.8	924.8	0.003	72
Honeywell	Golden	MN	United States	55422-	HS9-W8735ER01	Original	8/13/2012	Wireless temperature sensor											903	926.4	0.0112	73
Shenzhen CE	Shenzhen	N/A	China	518000	YG5-UC1	Original	8/31/2012	Remote control											915	915		74
Airline	CHAI	N/A	Hong Kong	N/A	ZGIDA065	Original	7/26/2012	Remote wall switch											908.42	908.42		75
Freshloc	Dallas	TX	United States	75248	VOU90-0143-001	Original	12/4/2012	Temperature sensor											916	916		76
Vision	Tainan	N/A	Taiwan	N/A	KFR-ZL7201US	Original	7/3/2012	Light dimmer											908.42	908.42		78
Spyder Controls	Lacombe	N/A	Canada	T4L2G6	OV9-WIRE1	Original	8/16/2012	Wireless repeater											903.4	923.8		79
MOJIX, Inc.	Los	CA	United States	90025	VEDCBLENODE	Original	7/17/2012	RFID reader											902.73	927.36	0.9541	80
Zentrum	Dresden	N/A	Germany	1109	COR-ZWIR4512AC1	Original	9/14/2012	Single modular											906	924	0.01	81
DAKANG	Huzhou,	N/A	China	313300	OVI--RF915	Original	8/23/2012	Wireless transmitter											914	915		82
Good Way	New	N/A	Taiwan	231	SW8TD1200	Original	11/26/2012	Power monitor switch											908.42	908.42		83
Mueller	Atlanta	GA	United States	30328	SM6-HUB15XR	Original	12/4/2012	Wireless hub											902.5	927.35	1	84
SmartLabs, Inc.	Irvine	CA	United States	92606	SBPDR01	Original	8/16/2012	Light dimmer											914.9	915.1		85
FLARM	Baar	N/A	Switzerland	N/A	ZKUGC625162	Original	7/27/2012	Flight GPS and radio											902.2	927.8	0.02	86
Nordic ID Oy	Salo	N/A	Finland	24100	SCC811-4A	Original	7/3/2012	Wireless data harddrive											902	928	0.036	87
SISTEMATICA	Manta	N/A	Italy	12030	O8IRTXEASY	Original	7/21/2012	Remote control											915	918		88
Raytech	Shenzhen	N/A	China	N/A	PWTRT-0210UR	Change in	9/14/2012	UHF reader											902.5	927.5		89
QUIETVOX AG	Glattbrugg	N/A	Switzerland	N/A	OFHQV-7T-TX	Original	7/30/2012	Tour guide system											925.025	926.975		90
Jakob Hatteland	Nedre	N/A	Norway	5578	Y62-ASAP-915-2	Original	7/3/2012	Autostore radio											906	927		91
Freescale	Austin	TX	United States	78735	RUN1231X-MRB	Original	8/3/2012	hardware board											915	915		92
HunterÅ	Cedar	IA	United States	52402	T35J5-1	Original	7/13/2012	Hunting game caller											915	915		93
Seba	Baunach	N/A	Germany	96148	OV8-LOGCDR3	Original	11/23/2012	Noise and frequency logger											913.02	913.02	0.0076	94
DEI	Vista	CA	United States	92081	EZSDEI7703	Original	8/13/2012	Radio transmitter											909.44	918.5	0.005	95
Itron Inc	Waseca	MN	United States	56093	EWQ100GDCLS	Original	8/23/2012	Utility meter											908	908	0.368	96
Vision	Tainan	N/A	Taiwan	N/A	KFR-ZL7101US	Original	7/3/2012	Light dimmer											908.42	908.42		97
Arcom Digital,	Syracuse	NY	United States	13217	POF209101QSNVAV	Original	10/30/2012	Leakage detector											903	927	0.05	98
Sostark Pte Ltd	Midview	N/A	Singapore	N/A	QLPCS1	Original	11/9/2012	Remote control											903.88	923.88		99
Good Way	New	N/A	Taiwan	231	SW8TD1120	Original	7/5/2012	Door detector											908.42	908.42		100
Alarm.com	Vienna	VI	United States	22182	YL6-143200H5V4	Original	12/4/2012	Transceiver											908.41	908.41		101
TandD	Nagano	N/A	Japan	390-0852	SRD50040	Original	10/30/2012	CO2 monitor											902	928	0.0026	104
RSI	STRASBO	N/A	France	67450	X46XM01	Original	8/29/2012	Alarm keypad											904.5	926.1	0.055	106
Climax	Taipei City	N/A	Taiwan	114	GX9LT	Original	11/2/2012	Wireless wifi locator											906.26	915.14		107
Mammut Sports	Seon	N/A	Switzerland	CH-5703	ARN-ELEMENT-B-211	Original	9/7/2012	Avalanche monitor											915.965	925.826		109
Nivis, LLC	Atlanta	GA	United States	30339	SQB-NIVISVN400	Original	12/5/2012	Radio module											902.4	927.6	0.0181	111
Zhongshan	Zhongsha	N/A	China	528441	O09LS802-E01	Original	11/16/2012	Blood pressure monitor											915.5	916.5		112
Tedd	Ashbourn	N/A	United Kingdom	DE61HA	L3U-TRACKHS914	Original	8/13/2012	Track handset											914.4	914.5		113
Green Badge	King of	PA	United States	19406	YVAUG1000C	Original	9/5/2012	Irrigation remote											903.053	927.5	0.005	114
HARTING	Espelkam	N/A	Germany	32339	Z4NRF-R500	Original	7/23/2012	RFID reader											902.75	927.25		115
Alarm.com	Vienna	VI	United States	22182	YL6-143IS205V4	Original	9/10/2012	Wireless radio											912	924	0.016	117
Toro Company	Manasqua	NJ	United States	8736	OF7CLR1	Original	10/5/2012	Remote transmitter											906	922		118
Zhongshan	Zhongsha	N/A	China	528441	O09LS206-E01	Original	11/16/2012	Body fat analyzer											915.5	916.5		120
MAS Zengrange	Wellington	N/A	New Zealand	5040	QVG173M1RX	Original	11/12/2012	Communications receiver											904.425	909.675		122
Unigen	Fremont	CA	United States	94539	R8KUGWSX931	Original	11/26/2012	Single modular											903	927	0.029	123
Panoramic	Kfar Saba	N/A	Israel	44643	Z9M-PAN-1-2	Original	8/1/2012	Current sensor											905	925		124

Legrand Home	Middleto	PA	United States	17057	YV8-ARPS15RF2	Original	12/7/2012	RF outlet										904.861	924.873	0.0023	125	
RB Concepts Ltd	Offwell	N/A	United Kingdom	EX14 9SA	JY7-RB4950	Original	11/29/2012	Wristband radio transmitter											909.2	917.4	0.0975	126
La Crosse	La Crosse	WI	United States	54601	OMO-M-11	Original	7/25/2012	Weather station											905	905		127
Legrand Home	Middleto	PA	United States	17057	YV8-202442A	Original	10/4/2012	Lighting control											904.86	924.87	0.0008	129
BRK Brands Inc	Aurora	IL	United States	60504-	M7U-FAL-CON	Original	8/27/2012	Door/window sensor					X						908	919		130
MOJIX, Inc.	Los	CA	United States	90025	VEDSTAR3000	Original	7/17/2012	RFID reader											904.44	927.36		134
Fairkeep	Kowloon	N/A	Hong Kong	N/A	QVVRH01716	Change in	11/29/2012	Remote motor											916.485	916.485		135
Seba	Baunach	N/A	Germany	96148	OV8-LOGREP3-1	Original	10/12/2012	Repeater for wireless modem											913.02	913.02	0.0056	136
Wingsafe	New	N/A	Taiwan	23580	PCAWBU-900A	Original	9/8/2012	Long range tollway reader											902.5	927.5	0.251	137
Cadi Scientific	Singapore	N/A	Singapore	408694	VPE-STG-856	Original	10/11/2012	Mother tag											919.8	925		142
Identec	6890	N/A	Austria	N/A	OO4-ILR-IB350LS	Original	10/31/2012	Wristband radio transmitter											919	919		144
Identec	6890	N/A	Austria	N/A	OO4-ILR-IB350LS	Original	10/31/2012	Wristband radio transmitter											920	920		145
Scanreco AB	Stockholm	N/A	Sweden	10074	NSORC917FHLTR02	Original	7/18/2012	Radio remote control											902.05	927.95	0.0181	146
Dae Myung	Seoul	N/A	South Korea	138-170	TRKHP-1500T	Original	11/28/2012	Digital guest pager											915	915		147
Digi	Minneton	MN	United States	55343	MCQ-9XTENDB	Original	9/19/2012	Limited Single Modular											902.9	927.1	1	148
Gryphex LLC	Alpharetta	GA	United States	30005	OWX-B1000	Original	7/26/2012	Base station for offender management system											903.2	927	1.84	149
Toro Company	Manasqua	NJ	United States	8736	OF7CLMR	Original	10/5/2012	Remote control remote for television receiver											906	922		150
Crimestopper	Simi	CA	United States	93063	CHXF599TX915	Original	11/1/2012	Touch remote											915	915		151
Zoom	Boston	MA	United States	2111	BDN0381WL	Original	12/7/2012	Sensor											908.4	919.65		152
Powertech	Taipei	N/A	Taiwan	235	NHS-R9P125A6	Original	8/30/2012	Surge protector											915	915		153
Holtzbrinck	New York	NY	United States	10010	T24-RLR15	Original	8/17/2012	Response device for students in classroom											905.5	923	0.043	154
Foxpro Inc	Lewistow	PA	United States	17044	C6M623	Original	9/14/2012	Single modular											904	904		155
DEI	Vista	CA	United States	92081	EZSDEI7645	Original	12/5/2012	Car unlock remote						X					909.44	918.5		156
La Crosse	La Crosse	WI	United States	54601	OMO-M-09	Original	7/26/2012	Temperature sensor					X						902	927		158
ELPRO-BUCHS	Buchs	N/A	Switzerland	9470	Z45-E11645398	Original	10/2/2012	Wireless sensor					X						903	927	0.02	159
Uni-Art Precise	Kowloon	N/A	Hong Kong	N/A	MVAHP4892A-002R	Original	10/30/2012	Headphones											915.5	916.5		161
Badger Meter	Milwaukee	WI	United States	53223	GIF2012WSE	Original	9/27/2012	Gas remote											904.85	923.75	0.537	162
Philips Lighting	Rosemont	IL	United States	60018-	VBO-LLC7315	Original	11/22/2012	Outdoor lighting control											906	924	0.004824	163
Itron Inc	Waseca	MN	United States	56093	EWQ100WD	Original	11/21/2012	Utility meter					X						903	926.85	0.111	164
Foxpro Inc	Lewistow	PA	United States	17044	C6M622	Original	9/14/2012	Frequency hopping transceiver											904	926	0.219	165
Seba	Baunach	N/A	Germany	96148	OV8-LOGRI	Original	11/7/2012	Interface for loggers and repeaters											913.02	913.02		168
Shenzhen	guangdon	N/A	China	N/A	OFK-AT-216F	Original	7/1/2012	Dog trainer											915	915		169
Climax	Taipei City	N/A	Taiwan	114	GX9RPN	Original	11/2/2012	Repeater											906.26	915.14		170
Hunter Fan	Memphis	TN	United States	38114	IN2TXICT	Original	8/15/2012	wireless thermostat					X						908	920	0.0105	171
Itron Inc	Waseca	MN	United States	56093	EWQ100WD	Original	11/21/2012	Utility meter					X						903	926.85	0.111	172
SignalFire	Hudson	MA	United States	1749	W8V-SENTINEL	Original	10/25/2012	Sentinel node											905	925	0.013	173
Tedd	Ashbourn	N/A	United Kingdom	DE61HA	L3U-FEEDHS914	Original	8/20/2012	Feeder handset											914.475	914.563		175
Clare	Tampa	FL	United States	33634	OYX-SS200R	Original	8/3/2012	Solar measurement					X						913	916		176
NextNav, LLC	Sunnyvale	CA	United States	94085	A4P-100-0007-01	Original	11/20/2012	Beacon LBS system											919.75	927.25	28.05	177
Centrak, Inc.	Newtown	PA	United States	18940	ST2-DM763	Original	9/26/2012	Multi-mode staff tag											904	926		179
Centrak, Inc.	Newtown	PA	United States	18940	ST2-DM762	Original	9/26/2012	Multi-mode patient tag											904	926		180
Vantage	Orem	UT	United States	84097	PIH-CCRL	Original	10/12/2012	Thermostat interface											907.3	916.9	0.039	181
Special	Kincardine	N/A	Canada	N2Z 2P3	QU6TT916TX	Original	10/30/2012	FM transmitter											916.5	916.5		183
Tantalus	Burnaby,	N/A	Canada	V5G 4Y1	OZFACXX10	Original	10/18/2012	Smart meter					X						902.23	927.84	0.706	184
MOJIX, Inc.	Los	CA	United States	90025	VEDCBLENODE3K	Original	11/20/2012	Star 3000 system											902.73	927.36	0.993116	185
Kamstrup A/S	Skanderup	N/A	Denmark	DK-8660	OUY-USBEXT	Original	11/1/2012	USB meter reader					X						916	916		186
Itron Inc	Waseca	MN	United States	56093	EWQ100GLAS	Original	8/23/2012	Utility meter					X						903	926.85		187
Quick S.p.A.	Pianguippan	N/A	Italy	48124	O2W-TXP	Original	11/28/2012	Pocket remote											913.7	913.7		189
Diehl AKO	Nuernber	N/A	Germany	90449	QR6-AI0055H	Original	11/13/2012	Radio module for refrigerators											908.4	916		190
SISTEMATICA	Manta	N/A	Italy	12030	O8IMULTIOUT12	Original	9/19/2012	Remote controlled outputs actuator											915	918		191
Evolve Guest	New Hyde	NY	United States	11040	Y3K-PIR-100	Original	8/16/2012	Passive infrared detector					X						908.39	908.39		192
Quick S.p.A.	Pianguippan	N/A	Italy	48124	O2W-TXH	Original	11/28/2012	Handheld transmitter											913.7	913.7		193
Jakob Hatteland	Nedre	N/A	Norway	5578	Y62-ROBR-915-2	Original	7/3/2012	Robot radio											903	927		194
Binsfeld	Maple City	MI	United States	49664	HWN-TX10K-LP	Original	10/25/2012	Low profile transmitter											902.58	925.09		195
Seba	Baunach	N/A	Germany	96148	OV8-LOGRB3-1	Original	11/23/2012	Wireless reader for loggers											913.02	913.02	0.0219	197
Legrand Home	Middleto	PA	United States	17057	YV8-202442B	Original	10/4/2012	Lighting control											904.86	924.87	0.00034	198
Itron Inc	Waseca	MN	United States	56093	EWQ100WD	Original	11/21/2012	Utility meter					X						908	908	0.111	199
Chamberlain	Elmhurst	IL	United States	60126	HBW7881	Original	8/15/2012	Garage door opener							X				902.25	926.75	0.02	200
MAS Zengrange	Wellington	N/A	New Zealand	5040	QVG173M1TX	Original	11/12/2012	Device transmitter											904.425	909.675		201

QUIETVOX AG	Glattbrugg	N/A	Switzerland	N/A	OFHQV-7T-RX	Original	7/30/2012	Tour guide system									925.025	926.975		202
Green Badge	King of	PA	United States	19406	YVAUG1000B	Original	9/11/2012	Dog fence									903.053	927.5	0.005	203
AJANTECH INC	SEOUL	N/A	South Korea	153-709	PLY-AB100	Original	10/24/2012	Smart controller									902.75	927.25	0.03062	204
Centrak, Inc.	Newtown	PA	United States	18940	ST2-DM34Y	Original	10/5/2012	Low frequency monitor									904	926	0.006	205
Mueller	Atlanta	GA	United States	30328	SM6-RMXR	Original	11/2/2012	Repeater radio module									902.5	927.35	0.933	206
Identec	6890	N/A	Austria	N/A	OO4-ILR-IB350LW	Original	10/31/2012	Active transponder tag									919	919		207
Toumaz US	San Diego	CA	United States	92130	AEJTZ202020R1	Original	7/21/2012	Patient monitoring device	X								903.2	927.8	0.099	208
BRK Brands Inc	Aurora	IL	United States	60504-	M7U-FAL-TEM	Original	8/19/2012	Temperature sensor		X							908	919		209
Huntwise Inc.	Monroe	LA	United States	71203	SHMHW2308	Original	11/28/2012	MOJO shake n jake									916.485	916.485		210
GREENBOARD	Shanghai	N/A	China	N/A	OH8-SS200R	Original	7/27/2012	Solar measurement			X						913	916		211
Telematics	Holon	N/A	Israel	N/A	NTA3GINTRP1	Original	8/13/2012	Water meter			X						905.43	923.546	0.26	212
Philips Lighting	Rosemont	IL	United States	60018-	VBO-LCN7330	Original	8/26/2012	Lighting control									906	924	0.003952	213
La Crosse	La Crosse	WI	United States	54601	OMO-M-16	Original	7/13/2012	Weather station									905	905		214
Arraynet Health	Stamford	CT	United States	6902	Q4O-1-30	Original	10/17/2012	Ambio health wireless	X								902	928		215
Tantalus	Burnaby,	N/A	Canada	V5G 4Y1	OZFACX20	Original	8/14/2012	Smart meter tag					X				902.17	927.83	0.828	216
Golden Power	Wanchai,	N/A	Hong Kong	N/A	QO8-CT101R1	Original	7/27/2012	Communication transmitter									908.4	908.4		217
Centrak, Inc.	Newtown	PA	United States	18940	ST2-DM76Y	Original	8/22/2012	Tollway SMART tag									904	926		218
Iron Mountain	LeCompto	KS	United States	66050	QXJHIDERIDE100	Original	11/16/2012	Low power transmitter									916	916		219
Ingersoll Rand	Carmel	IN	United States	46032	XPB-NGREHPPD	Original	9/20/2012	Door lock					X				908.42	908.42		222
Xetawave LLC	Boulder	CO	United States	80301	PEJ-93829283-MSD9	Original	10/2/2012	Limited Single Modular									903.5	926.5	1	223
On Track	Rosh -	N/A	Israel	12000	JNXOTI-EFPRFN900A	Original	7/24/2012	RFID reader				X					902.36	927.489		224
GIGA-TMS INC.	NEW	N/A	Taiwan	22180	WXAUFH860	Original	12/10/2012	RFID reader			X						902.75	927.75	0.3334	225
Golfzon Co.,	Daejeon	N/A	South Korea	N/A	NSY-IDRO900F2	Original	9/27/2012	RFID reader				X					902.75	927.25	0.525	226
Tantalus	Burnaby,	N/A	Canada	V5G 4Y1	OZFACX16	Original	10/17/2012	Tollway SMART tag									902.17	927.83	0.828	227
Seba	Baunach	N/A	Germany	96148	OV8-LOGN3	Original	11/2/2012	Noise monitor			X						913.02	913.02	0.009	228
Pentair Aquatic	Moorpark	CA	United States	93021	P4HEASYTOUCH2A	Original	7/17/2012	EasyTouch wireless 2 handheld									902.21	915.38	0.00871	230
Tecom Co Ltd	Hsin-Chu	N/A	Taiwan	N/A	D6XDLC100	Original	9/18/2012	Alarm system					X				908.4	908.4	0.6661	232
DAKANG	Huzhou,	N/A	China	313300	OVI-RF915	Original	8/13/2012	Device transmitter									914	915		233
Kamstrup A/S	Skanderbo	N/A	Denmark	DK-8660	OUY-FLOW2100	Original	11/1/2012	Water flow meter		X							915	915	0.01	234
La Crosse	La Crosse	WI	United States	54601	OMO-M-14	Original	7/16/2012	Weather station									905	905		236
Powertech	Taipei	N/A	Taiwan	235	NHS-R9P602NI	Original	8/30/2012	Surge protector					X				915	915		237
Data Sciences	St. Paul	MN	United States	55112	MHATRUTRX	Original	6/29/2012	animal wireless implants									909.009	920.841		238
Data Sciences	St. Paul	MN	United States	55112	MHATRUDSI	Original	6/27/2012	animal wireless implants									909.009	920.841		239
AlertMe.com	Cambridg	N/A	United Kingdom	CB1 2RE	WJHMH11	Original	6/4/2012	wireless hub alert system									908.42	908.42		240
Remotec	Kowloon	N/A	Hong Kong	N/A	M7N-BW8030US	Original	6/21/2012	remote control and z-thermostat									908.4	908.4		248
SmartLabs, Inc.	Irvine	CA	United States	92606	SBPMM01	Original	6/18/2012	remote light dimmer									914.9	915.1		249
Canton	Weilrod-	N/A	Germany	61276	WHZ-DM350	Original	6/27/2012	wireless tv remote									917	917		250
NantWorks	San Diego	CA	United States	92130	IFU380100	Original	6/8/2012	wireless glowcaps with reminder lights									902	928		252
Toumaz US	San Diego	CA	United States	92130	AEJTZ202055R1	Original	6/26/2012	monitoring system									903.2	927.8		253
Akerstroms	Bjorbo	N/A	Sweden	N/A	OG4-K3	Original	6/6/2012	radio remote control									926.5	926.5		254
Precyse	Petach	N/A	Israel	49130	WONBS91103000	Original	6/21/2012	radio base station									904.9	917.3	0.038	255
SmartLabs, Inc.	Irvine	CA	United States	92606	SBP26722	Original	6/18/2012	remote light dimmer									914.9	915.1		256
iControl	Redwood	CA	United States	94065	S23-IHUB3001B	Original	6/7/2012	internet hub									902	928		257
DigitalCom Co.,	Bucheon-	N/A	South Korea	421-741	ZMU-DMK940TF	Original	6/14/2012	microphones									903	927		258
New Bright	Kowloon	N/A	Hong Kong	N/A	G6DTH1	Original	6/4/2012	remote control car									909.06	921.06		262
Badger Meter	Milwaukee	WI	United States	53223	GIFRANG312	Original	6/19/2012	automated meter reading system									904.9	923.7	0.011	263
Telensa Ltd.	Essex	N/A	United Kingdom	CB10 1NY	XYD-TBSA1	Original	6/18/2012	remote light dimmer									910	920	0.324	264
Akerstroms	Bjorbo	N/A	Sweden	N/A	OG4-RXDIN	Original	6/5/2012	radio remote control									926.5	926.5		265
Aeon Labs LLC.	Santa	CA	United States	95051	XBADS805	Original	6/25/2012	motion and temperature sensor									908.4	908.42		266
Silver Spring	Redwood	CA	United States	94063	OWS-NIC711	Original	6/13/2012	meter labeling									902.3	926.9	0.904	267
4126254	St-Laurent	N/A	Canada	H4S 1W6	TSRTAGLR	Change in	6/27/2012	antenna transmitter									902.24	927.76	0.946	268
Tycos Safety	Boca	FL	United States	33487	BVCIDX8000NA	Original	6/7/2012	RFID reader									902.74	927.25	1	269
Siemens AG	Fuerth	N/A	Germany	90766	NXW-RF600R	Original	6/6/2012	RFID reader									902.25	927.75	0.9354	270
Intellex	Santa	CA	United States	95054	VBLCMR-6100	Original	6/2/2012	GPRS cellular module									902.75	927.25	0.92	280
Atlas Polar	Toronto	N/A	Canada	M4B 3E5	WB4-60068201	Original	6/7/2012	radio remote control									902.805	924.855	0.0078	281
Inovonics	Louisville	CO	United States	80027	HQC3B6IX9NCU	Original	6/8/2012	antenna transmitter									902.4	927.6	0.255	282
Chamberlain	Elmhurst	IL	United States	60126	HBW7675	Original	6/20/2012	garage door opener									902.25	927.75	0.037	283
Precyse	Petach	N/A	Israel	49130	WONBC91403000	Original	6/25/2012	radio device, PBC beacon									904.9	917.3	0.008	284
Tera Tron	Gummers	N/A	Germany	51647	QLXBS50134	Original	6/12/2012	antenna transmitter field system									916.6	916.6		285

Canton	Weilrod-	N/A	Germany	61276	WHZ-URC	Original	6/26/2012	universal remote control								917	917	
The Sapling	Huntingdo	PA	United States	19006	R73LPA1	Original	6/20/2012	hopping transceiver module								914	928	0.01
Satellite	Houston	TX	United States	77055	S5E1106MM1	Original	6/28/2012	GPS ankle tracker								915	915	0.91
PRÄTECHNIK	Ismaning	N/A	Germany	85737	CHO-VCRFSU	Original	6/6/2012	online radio communication								916	916	
Silver Spring	Redwood	CA	United States	94063	OWS-NIC714	Original	6/15/2012	radio electric meter								902.3	926.9	0.207
CNiguard, LLC	Ligonier	PA	United States	15658	ZRE3A001-0B1	Original	6/6/2012	RF antenna and sensor								902.0625	927.9375	
PRÄTECHNIK	Ismaning	N/A	Germany	85737	CHO-VCRFBR	Original	6/6/2012	RF antenna and sensor								916	916	
Residential	Rancho	CA	United States	95742	WIBTZW011	Original	6/5/2012	wireless thermostat								908.42	908.42	
Netatmo	Boulogne	N/A	France	N/A	N3A-NWS01IN	Original	6/29/2012	weather station								916	916	0.0017
Aeon Labs LLC.	Santa	CA	United States	95051	XBADSB28	Original	6/29/2012	home energy meter								908.4	908.42	
Uni-Art Precise	Kowloon	N/A	Hong Kong	N/A	MVASP1792A-001R	Original	6/21/2012	wireless speaker								912	913	
AlertMe.com	Cambridg	N/A	United Kingdom	CB1 2RE	WJHRP11	Original	6/4/2012	wireless hub								908.42	908.42	
Shenzhen	Shenzhen	N/A	China	518507	NND001	Original	6/26/2012	RFID reader								902.75	927.25	
The Genie	Mt. Hope	OH	United States	44660	B8Q-915AW	Original	6/28/2012	remote control								903.95	925.6	0.00003

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Category	FCC Equipment Category	Total	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	Total Grants	5919											445	372	415	426	513	493	414	455	405	440	590	474	477
	900 MHz ISM Band	5969	37	71	90	87	155	171	231	249	316	408	366	337	414	341	488	431	413	450	402	439	475	495	485
DXX	Part 15 Low Power Communication Device Transmitter	1995	13	12	11	11	29	60	64	52	65	70	175	145	200	138	181	165	151	152	129	165	122	159	160
DSS	Part 15 Spread Spectrum Transmitter	1772	12	39	53	43	68	63	80	76	74	89	81	93	69	57	141	117	124	135	156	118	171	170	153
DXT	Part 15 Low Power Transceiver, Rx Verified	1119	2		5	6	9	8	38	42	118	175	64	74	108	82	91	65	54	73	36	63	81	70	72
DTS	Digital Transmission System	315													6	34	32	47	52	42	44	43	69	58	60
CYY	Communications Receiver used w/Pt 15 Transmitter	295	2	3	4	8	21	25	23	32	21	8	14	12	11	9	21	17	9	19	14	24	14	18	13
TNB	Licensed Non-Broadcast Station Transmitter	9								1						3		2	2	2	0	2	0	0	8
CSR	Scanning Receiver	15									2					2	3		11	18	14	10	6	4	7
LMS	Part 90 Location & Monitoring Transmitter	126						3	12	20	10	10	8	1	4	7	10	12	3	3	6	6	9	4	5
DSC	Part 15 Security/Remote Control Transmitter	53	2	6	9	2	1			2		1	4	2	2	4	2	3	3	5	2	3	0	3	5
CXX	Communications Rcvr for use w/ licensed Tx and CBs	26		2	2	2	2	5	2	5	2	3							0	0	0	1	0	0	1
DSR	Part 15 Remote Control/Security Device Transceiver	23									1	3	8	7					3	1	0	0	2	0	1
ETS	Part 15 Cordless Telephone System	146		1	1	15	16	6	6	13	19	49	16		4								0	0	0
HID	Part 15 TV Interface Device	23	6	8	4		3	2															0	0	0
FDS	Part 15 Field Disturbance Sensor	22					3	1	3	1	1	1				4	4	1	1			1	1	0	0
CRR	Superregenerative Receiver	21					3	1	3	1	5	2			1	3	1	3	1	0	0	0	1	0	0
JBP	Part 15 Class B Computing Device Peripheral	4					3				2				1								2	1	9
TNF	Licensed Non-Broadcast Transmitter Held to Face	2									2												0	0	0
DCD	Part 15 Low Power Transmitter Below 1705 kHz	1											1					1	0	0	0	0	0	0	0
EAV	Part 15 Automatic Vehicle Identification System	1			1															0	0	0	0	0	0
PUF	Part 15 Unlicensed PCS portable Tx held to face	1										1											0	0	0