Technical Information

	Applicant	Manufacturer		
Name: Bosch Security Systems		Name: Bosch Security Systems Inc. China Fact		
Address:	130 Perinton Parkway	Address:	Mei Chi Industrial Area, Blk B	
City, State, Zip:	Fairport, New York 14450	City, State, Zip	: Qian Shan Zhuhai, Guangdong 51907,	
			China	

Test Specifications: FCC Part 15, Subpart C Paragraph 15.247, FCC Part 15, Subpart B

Paragraph 15

Industry Canada RSS-210 Issue 7 Annex 8, and RSS-Gen Issue 2

Test Procedure: ANSI C63.4: 2003

Test Sample Description

Test Sample: wLSN Installation Tool

Brandname: Bosch

Model Number: ISW-BIT1-HCY

FCC ID: T3XBIT1-HCY

Type: Frequency Hopping Spread Spectrum Transceiver

Three AAA 1.2V Rechargable Batteries and an external 9 VDC, derived

Power Requirements: from an AC adapter

Frequency of Operation: 902 MHz to 928 MHz

Tests Performed

FCC	Industry Canada	Test Method	
15 247(2)(1)	RSS-210 Annex 8 A8.1(2)	Carrier Frequency Separation / Number of	
15.247(a)(1)	N33-210 Allilex 6 A6.1(2)	hopping frequencies	
15.247(a)(1)	RSS-210 Annex 8 A8.1(2)	20 dB Bandwidth	
15.247(a)(1)(i) RSS-210 Annex 8 A8.1(3)		Occupancy Time	
15.247(b)(2)	RSS-210 Annex 8 A8.4(1)	Output Power	
15 247 (d)	RSS-210 Annex 8 A8.5	Transmitter Spurious Radiated Emissions,	
15.247 (d)	RSS-210 Affilex 6 A6.5	Restricted Bands / Band edge Measurements	
15.207(a)	RSS-Gen Paragraph 7.2.2	Conducted Emissions	
15.109(a)	RSS-Gen Paragraph 6	Receiver Spurious Radiated Emissions	
15.35	RSS-Gen Paragraph 4.5	Duty Cycle Determination	

TESTS RESULTS

DETERMINATION OF FIELD STRENGTH LIMITS

- 15.203: The intentional radiator is designed to ensure that no antenna other than that furnished by the applicant can be used with the device. The antenna is permanently soldered in place to the PCB.
- 15.204: The antenna used is not commercially available. It is a custom designed circularly polarized Omni-directional antenna with 1dBi gain.
- 15.247(a)(1): The frequency hopping system has hopping channel carrier frequencies separated by 100 kHz, which is less than the 20 dB bandwidth of the hopping channel.
- 15.247(a)(1)(i):The frequency hopping system operated in the 902-928 MHz band and uses 59 frequencies. The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz, Measured 43.5 kHz. The average time of occupancy on any frequency is 0.022 seconds within a 20 second period.
- 15.247(b)(3): The device operates in the 902-928 MHz band. The maximum peak output power measured to be 21.7 mWatts and did not exceed 1 watt.
- 15.247(b)(3): The system operating under the provisions of this section is operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. The maximum Output Power was measured to be 21.7 mWatts.
- 15.247 (d): In any 100 kHz bandwidth outside the frequency band in which the Spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator is at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. All emissions, which fell within the restricted bands specified in 15.205(a), were measured and found to be in compliance with the limits specified in 15.209(a).
- 15.109 (a): The field strength of spurious radiated emissions generated by the receiver did not exceed the class B limits specified.

15.247(a): Description of pseudorandom hopping sequence -

The following describes the hopping sequence used by the "Hub" or central point in the network for Beacon announcements as well as the hopping sequence used by the individual points for sending status updates to the Hub.

Frequency Announcements (Beacon) Hopping

- Using 59 frequencies channels (all system frequencies)
- Frequency channels are numbered from 0 to 58 (for 59 overall channels)
- Frequency 0 and 1 are adjacent, etc.

The Beacon hop pattern is generated uniquely for each system as follows:

```
We start with a set of groups

Group 0 = \{0,1,2,3,...,9\}

Group 1 = \{10,11,..., 19\}

Group 2 = \{20,21,..., 29\}

Group 3 = \{30,31,..., 39\}

Group 4 = \{40,41,..., 49\}

Group 5 = \{50,..., 58\} Note one less than others!
```

We randomly shuffle the elements within each group

Example:

```
Shuffled G0 = { 2 5 4 1 7 6 3 8 0 9 }

Shuffled G1 = { 19 18 12 15 14 10 17 16 11 13 }

Shuffled G2 = { 26 21 24 22 29 25 28 23 20 27 }

Shuffled G3 = { 38 33 31 39 32 30 36 34 37 35 }

Shuffled G4 = { 47 45 49 48 42 43 46 41 40 44 }

Shuffled G5 = { 51 58 56 57 52 55 50 53 54 }
```

Then we pick from one of 60 group permutations that keep the groups as least 2 apart so the frequencies in the hop pattern will be as least 5 channels apart (this translates into 500 KHz apart with our system):

```
Example: using the following group order: \{G1, G5, G3, G0, G2, G4\}
Shuffled G1 = \{19 18 12 15 14 10 17 16 11 13\}
Shuffled G5 = \{51 58 56 57 52 55 50 53 54 XX\}
Shuffled G3 = \{38 33 31 39 32 30 36 34 37 35\}
Shuffled G0 = \{25 4 1 7 6 3 8 0 9\}
Shuffled G2 = \{26 21 24 22 29 25 28 23 20 27\}
Shuffled G4 = \{47 45 49 48 42 43 46 41 40 44\}
```

We read the elements by columns to form the overall hop pattern {19,51,38,2,26,47, 18,58,33,5,21,45, 12,56,31,4,24,49, ...

Each base station uses a value generated from its unique serial number to seed the random number generator used in the above operations.

A Node wishing to join a network will pick one of the original groups at random and sample frequencies until it hears a Beacon. The Beacon will contain timing information and the seed so the Node can also calculate the hopping pattern being used and synchronize in time with the Base Station.

Network Operations Application Slot hopping

- Using 59 frequencies channels (all system frequencies)
- Frequency channels are numbered from 0 to 58 (for 59 overall channels)
- Frequency 0 and 1 are adjacent, etc.

The App Slot hop pattern is generated uniquely for each system as follows:

We use 8 groups of size 7 and keep 00, 22, 44 on the side:

```
Group 0 = \{01,02,03,04,05,06,07\} 7 elements
```

Group $1 = \{08,09,10,11,12,13,14\}$ 7 elements

Group $2 = \{ 15,16,17,18,19,20,21 \} 7$ elements

Group $3 = \{ 23,24,25,26,27,28,29 \} 7$ elements

Group $4 = \{30,31,32,33,34,35,36\}$ 7 elements

Group 5 = { 37,38,39,40,41,42,43 } 7 elements

Group $6 = \{45,46,47,48,49,50,51\}$ 7 elements

Group 7 = { 52,53,54,55,56,57,58 } 7 elements

We randomly shuffle the elements within each group.

Example:

- Group $0 = \{ 03, 05, 02, 04, 07, 01, 06 \} 00$
- Group 3 = { 29, 25, 27, 24, 26, 28, 23 } 22
- Group 6 = { 50, 46, 48, 51, 49, 45, 48 } 44
- Group 1 = { 11, 14, 10, 08, 13, 09, 12 }
- Group 4 = { 30, 33, 35, 31, 34, 36, 32 }
- Group 7 = { 58, 52, 55, 54, 53, 57, 56 }
- Group 2 = { 20, 16, 17, 21, 19, 18, 22 }
- Group $5 = \{40, 43, 39, 42, 41, 37, 38\}$

Now we read the pattern column by column and add the extras at the end:

• 03,29,50,11,30,58,20,40,05,25,46,14,33,52,16,42,02,...,22,38,00,22,44

The app slot hop pattern uses all system 59 frequencies:

- Every frame (every second) we move in the pattern a total of 12 hops
- We finish the whole pattern in almost 5 seconds (5x12=60)
- Every 5 seconds the pattern shifts by one to the left!

This approach ensures that more than one application slot (of the same type) is used in a second or from second to second, the frequencies used are at least 500 KHz apart. As well, all frequencies are utilized equally when the network is very busy.

15.247(a): Equal hopping Frequency Use

A beacon is transmitted only once on each frequency, every 20 seconds Beacon is transmitted for 118.3 ms under maximum communication load in the Security system, each frequency is used by a maximum of 4 application slots in every 20 second interval.

The duration of different application slots are:

Alarm = 31.1 ms

Back channel = 155.4 ms

Supervision = 28.6 ms

Maximum usage occurs when alarm, back channel and 2 supervision slots are used (243.7 ms) each frequency is used for a maximum of 362 ms (including Beacon)

15.247(a): Receiver Input Bandwidth

The receiver deviation is controlled by a register setting in the RFIC, the deviation setting is 30 KHz and the Tx deviation is ±4.95 KHz.

15.247(a): System Receiver Hopping Capability

Upon power up the nodes will listen for beacons from the base station device. Once a beacon is heard the device uses information in the beacon message to compute the base stations hopping pattern and current system time. The nodes will then hop in synchronization with the base station, periodically receiving beacon messages in order to maintain synchronization.

15.247(g): Frequency Hopping Description

The system consisting of the base station and the nodes meets the requirements of a true frequency hopping system in the following ways:

- 1. At power up the nodes synchronize to the base station hop pattern and continually hop in sync with the base station at the system hopping rate.
- 2. All devices in the system are changing frequency at the system hopping rate even when there is no data being transmitted, this allows all devices to distribute there transmissions equally over all of the frequencies whether the data is short period bursts or continuous.
- 15.247(h): Frequency Coordination

All nodes in a system synchronize to and follow the same hopping pattern as the base station that they are synchronized to. Base stations from different systems independently generate their hopping pattern using only a random generator that uses that base stations serial number as the initial seed value. There is no coordination of hopping between nodes in the same system or base stations in different systems for the purpose of unfairly occupying the available spectrum.

Spectrum Analyzer Desensitization Considerations

Due to the nature of the emissions being measured, care was taken to ensure that the resolution bandwidth of the spectrum analyzer was adequate to provide accurate measurements. FCC specified bandwidths of 100 kHz and 1 MHz were utilized below and above 1 GHz, respectively.

General Notes

- 1. All readings were taken utilizing a peak and/or Average detector function at a test distance of 3 meters.
- 2. All measurements were made with fully charged batteries installed in the unit.
- 3. The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not reported were more than 20dB below the specified limit.
- 4. The device has no provisions for external accessories.
- 5. The unit tunes over the frequency range of: 915.5 to 921.5 MHz
 The unit was tested at the following frequencies: 915.5 MHz, 918.5 MHz & 921.3 MHz.
- 6. The Receiver was tested per "ANSI STANDARD C63.4-2003 12.1.1.2. The receiver was programmed for normal receiver mode. A CW signal was transmitted to stabilize the local oscillator.

Modifications:

No Modifications required.

Certification and Signatures

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

Donald C. Lerner EMC Test Engineer

Nicholas Dragotta

EMC Laboratory Supervisor

Non-Warranty Provision

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

Non-Endorsement

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

Equipment List

FCC Part 15, Subpart C, 15.247 (a)(1) Number of Hopping Frequency and Carrier Separation

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/18/2006	10/18/2007

FCC Part 15, Subpart C, Paragraph 15.247.(a)(1) Occupied Bandwidth

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/18/2006	10/18/2007

FCC Part 15, Subpart C, 15.247(a)(1)(i), Occupancy Time

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/18/2006	10/18/2007

FCC Part 15, Subpart C, Radiated Emissions, Fundamental Power Output

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/27/2007	6/27/2008
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/27/2007	6/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/18/2006	10/18/2007
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	3/30/2007	3/30/2008
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/12/2007

FCC Part 15, Subpart C, 15.247(d) Band Edge Measurements, 902 to 928 MHz Band

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/18/2006	10/18/2007

Conducted Emissions

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
078	LISN	Solar Electronics	10 kHz - 30 MHz	8028-50-TS24BNC	7/5/2007	7/5/2008
079	LISN	Solar Electronics	10 kHz - 30 MHz	8028-50-TS24BNC	7/5/2007	7/5/2008
333	Attenuator	Narda	DC - 11 GHz	768-10	8/10/2007	8/10/2008
574	AM/FM Signal Generator	Marconi Instru.	9 kHz - 2.4 GHz	2024	7/24/2007	7/24/2008
712	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESIB26	9/11/2007	9/11/2008

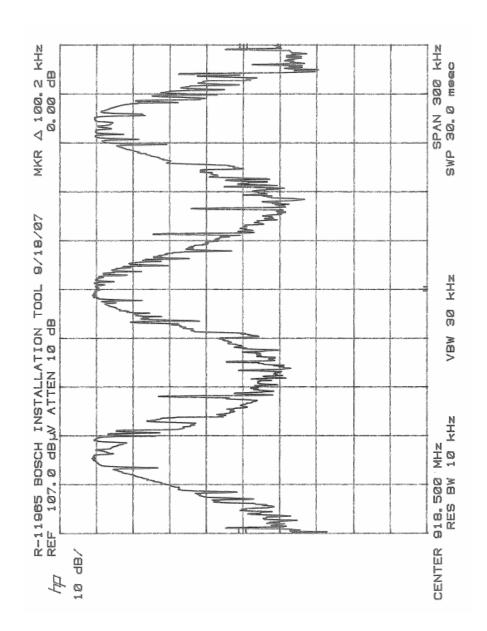
FCC Part 15 Subpart C, Transmitter Spurious Radiated Emissions

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due
032F	H.P. Filter	Microlab/FXR	2 GHz	HD-20N	9/22/2006	10/1/2007
032H	H.P. Filter	Microlab/FXR	4 GHz	HD-40N	2/20/2007	2/20/2008
032J	H.P. Filter	Microlab/FXR	6 GHz	HD-60N	3/13/2007	3/13/2008
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
1049	H.P. Filter	Microlab/FXR	1 GHz	HD-10N	9/22/2006	10/1/2007
128	Double Ridged Guide	Electro-Mechanics	1 GHz - 18 GHz	3105	3/27/2007	3/27/2008
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/27/2007	6/27/2008
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/27/2007	6/27/2008
379F	H.P. Filter	Microlab/FXR	500 MHz	HA-05N	9/22/2006	10/1/2007
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/18/2006	10/18/2007
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/9/2005	10/9/2007
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/12/2007

FCC Part 15 Subpart B, Class B, Radiated Emissions, 30 MHz to 5 GHz

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
128	Double Ridged Guide	Electro-Mechanics	1 GHz - 18 GHz	3105	3/27/2007	3/27/2008
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/27/2007	6/27/2008
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/27/2007	6/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/18/2006	10/18/2007
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	11/10/2006	11/10/2007
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/9/2005	10/9/2007
574	AM/FM Signal Generator	Marconi Instru.	9 kHz - 2.4 GHz	2024	7/24/2007	7/24/2008
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	6/13/2007	6/13/2008
723	H.P. Filter	Mini-Circuits	1 GHz	BHP-1000	8/13/2007	8/13/2008

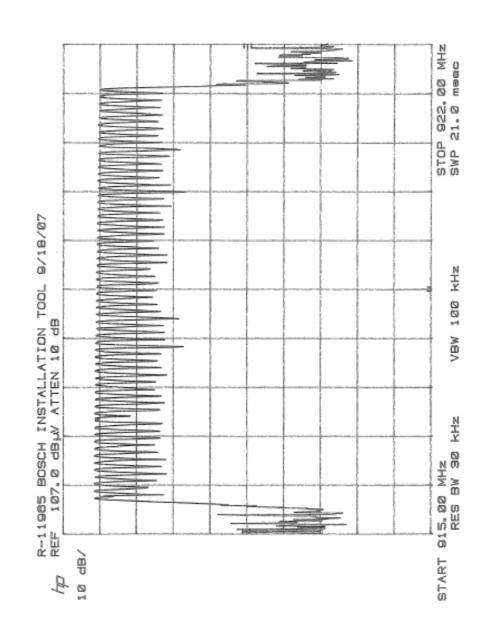
FCC Part 15, Subpart C, 15.247 (a)(1) Carrier Frequency Separation and Number of Hopping Frequency
902 – 928 MHz Band Test Data



FCC Part 15, Subpart C, 15.247(a) (1)Hopping Channel Carrier Separation, 902 to 928 MHz Band

Note: Hopping channel carrier frequency meets the required minimum separation of 25 kHz (Measured carrier separation =100.2kHz)

Customer	Bosch Security System.			
Test Sample	wLSN Installation Tool			
Model Number	ISW-BIT1-HCY			
Date: 9-18-2007		Tech: R.S.	Sheet 1 of 2	

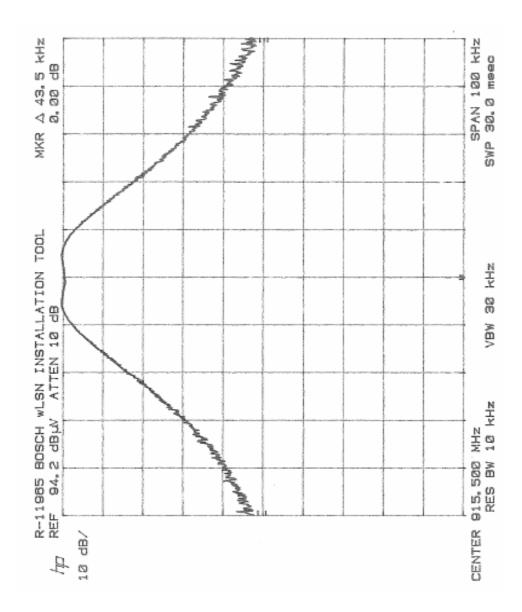


FCC Part 15, Subpart C, 15.247(a) (1) Number of Hopping Frequency, 902 to 928 MHz Band

Note: EUT uses 59 hopping frequencies which meets the 50 minimum hopping frequencies required by the 20dB bandwidth if less than 250 kHz(measured BW = 43.5 kHz).

TO BIT OF BITTER					
Customer	Bosch Security System.				
Test Sample	wLSN Installation Tool				
Model Number	ISW-BIT1-HCY				
Date: 9-18-2007		Tech: R.S.	Sheet 2 of 2		

FCC Part 15, Subpart C, 15.247 (a)(1) Occupied Bandwidth, 902 - 928 MHz
Test Data



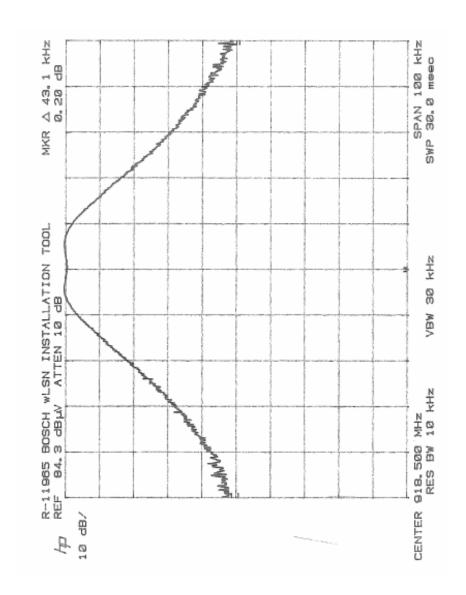
FCC Part 15, Subpart C, 15.247(a) (1) Occupied Bandwidth, 902 to 928 MHz Band

Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth

measured at 43.5 kHz

Note: EUT transmitting on channel 00 at 915.5 MHz.

Customer	Bosch Security System.			
Test Sample	wLSN Installation Tool			
Model Number	ISW- BIT1-HCY			
Date: 9-18-2007		Tech: R.S.	Sheet 1 of 3	



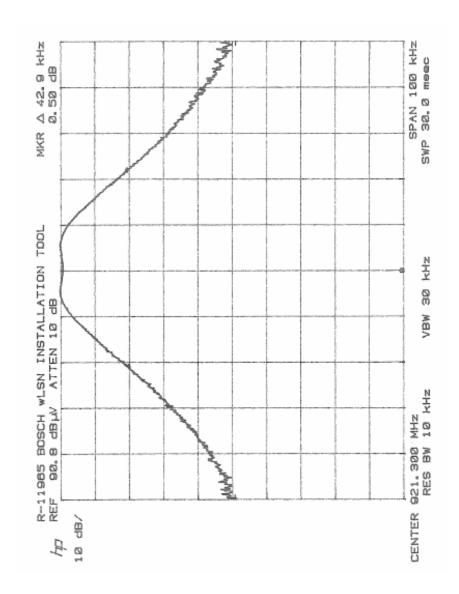
FCC Part 15, Subpart C, 15.247(a) (1) Occupied Bandwidth, 902 to 928 MHz Band

Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth

measured at 43.1 kHz

Note: EUT transmitting on channel 30 at 918.5 MHz.

Customer	Bosch Security System.				
Test Sample	wLSN Installation Tool				
Model Number	ISW- BIT1-HCY				
Date: 9-18-2007	Tech: R.S.	Sheet 2 of 3			



FCC Part 15, Subpart C, 15.247(a) (1) Occupied Bandwidth, 902 to 928 MHz Band

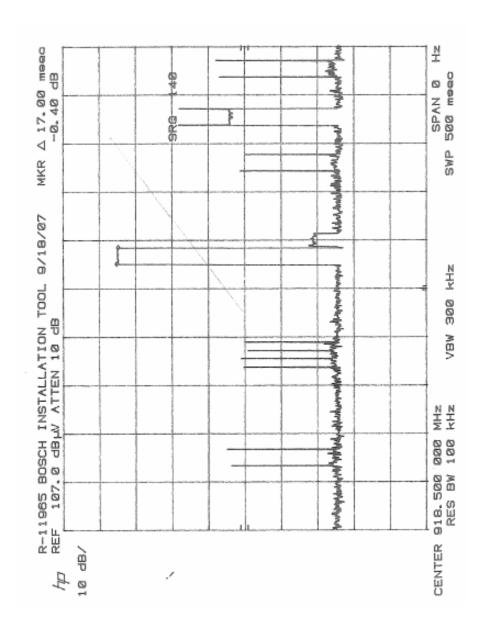
Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth

measured at 42.9 kHz

Note: EUT transmitting on channel 58 at 921.3 MHz.

Customer	Bosch Security System.			
Test Sample	wLSN Installation Tool			
Model Number	ISW- BIT1-HCY			
Date: 9-20-2007		Tech: R.S.	Sheet 3 of 3	

FCC Part 15, Subpart C, 15.247 (a)(1)(i) Occupancy Time 902 - 928 MHz Test Data



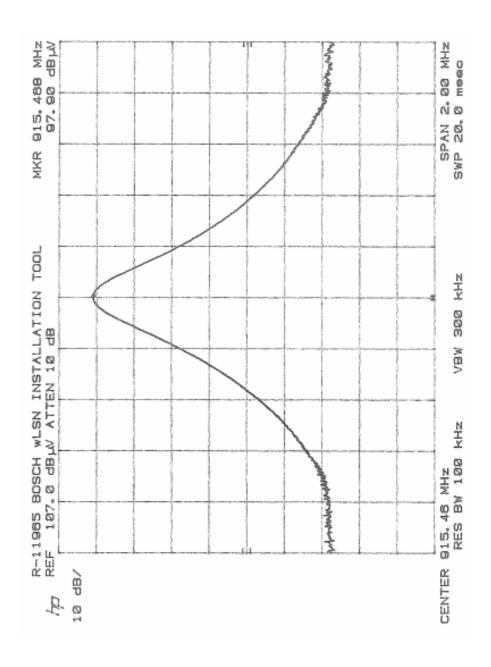
FCC Part 15, Subpart C, 15.247(a)(1)(i) Occupancy Time, 902 to 928 MHz Band Note: The measured occupancy time does not exceed the 0.4 seconds (Measured time =17.0mSec.) FCC ID:T3XBIT1-HCY

Customer	Bosch Security System.			
Test Sample	wLSN Installation Tool			
Model Number	ISW- BIT1-HCY			
Date: 9-18-2007		Tech: R.S.	Sheet 1 of 1	

FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output Paragraph 15.247(b) (2) Test Data

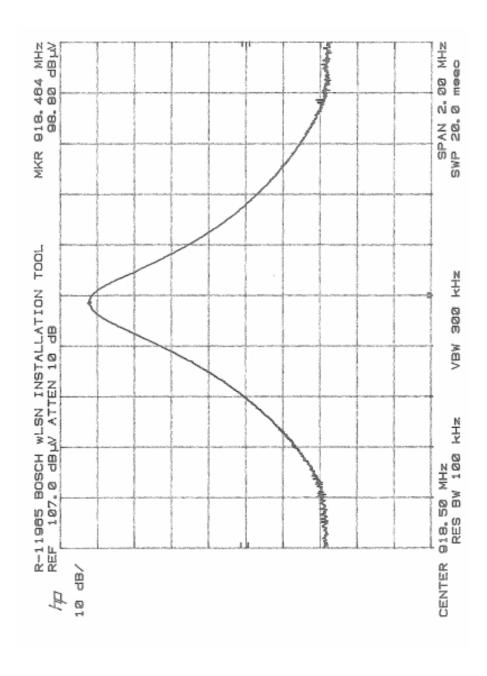
Test Method: FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output.									
Customer	:	Bosch Security System. Job No. R-11965-3							
Test Samp	ole:	wLSN	Installation Too	ol		Paragraph 15.247(b)(2)			
Model No.	:	ISW-I	BIT1-HCY				FCC ID: T3XBIT1-HCY		
Operating	Mode:	Continuously transmitting a 915.5 MHz, 918.4 MHz and 921.3 MHz signal.							
Technicia	n:	R. Soodoo Date: September 19, 2007.							
Notes:	Test Dista	Distance: 3 Meters Temp: 25°C Humidity: 44%							
	Detector:	Peak							
Test	Antenr	na	EUT	Meter	Correction	Corrected	Converted	Converted	Peak
Freq.	Pol./Hei		Orientation	Reading	Factor	Reading	Reading	Reading	Limit
MHz	(V/H) / M	eters	X/Y/Z	dBuV	dB	dBuV/m	V/m	milliWatts	Watts
915.5	V / 1.0	0	Х	91.2	9.6	100.8	0.11	3.61	1.0
1	V / 1.0	0	Υ	96.0	9.6	105.6	0.19	10.89	1
I	V / 1.	4	Z	97.8	9.6	107.4	0.23	16.48	I
<u> </u>	H / 2.	0	X	92.7	9.6	102.3	0.13	5.09	l
	H / 1.		Υ	93.2	9.6	102.8	0.14	5.88	
915.5	H / 1.	0	Z	97.9	9.6	107.5	0.25	18.07	
918.4	V / 2.0		X	96.7	9.6	106.3	0.21	12.79	
1	V / 1.0		Υ	95.6	9.6	105.2	0.18	9.93	1
1	V / 1.0		Z	99.0	9.6	108.6	0.27	21.73	
	H / 1.:		X	98.1	9.6	107.7	0.24	17.66	
	H / 1.		Y	92.8	9.6	102.4	0.13	5.21	
918.4	H / 3.	5	Z	95.4	9.6	105.0	0.18	9.49	<u> </u>
004.0	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	•	V	00.0	0.0	00.0	0.40	0.74	
921.3	V / 1.:		X Y	90.0	9.6	99.6	0.10	2.74	
	V / 1.0 V / 1.0		Z	94.9 96.4	9.6 9.6	104.5 106.0	0.17 0.20	8.46 11.94	
	H / 1.		X	96.4	9.6	105.6	0.20	10.89	
	H / 1.		Y	89.3	9.6	98.9	0.19	2.33	
921.3	H / 1.		Z	97.7	9.6	107.4	0.03	16.49	1.0
021.0	117 1.			37.1	3.0	107.4	0.20	10.43	1.0
			the required lim			ade to 15 MM	-4- \ // · · · · · · · · · · · · · · · · ·	Uma to NAL **	
<u> </u>			ormulae were us		the field stren	gtn in dBµV ir	nto v/m and \	v/m to watts	
			uV/m-120) / 20)						
Power = $(V/m \times 3)^2 / 30$									

Page 1 of 1



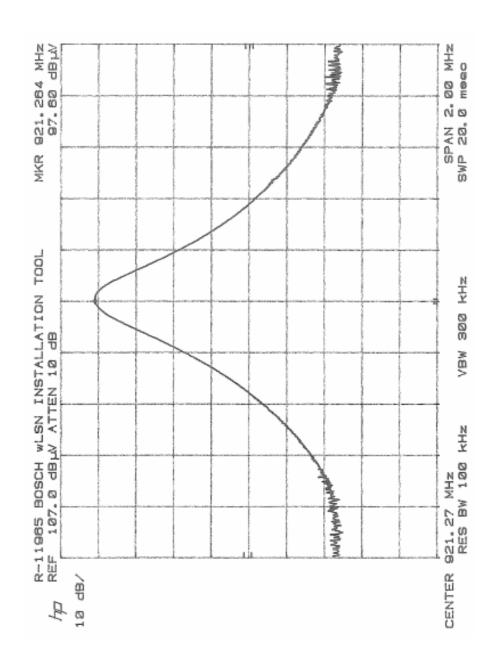
FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output, Para.15.247(b)(2) Note: EUT transmitting on channel 00 at 915.468 MHz.

Customer	Bosch Security System.			
Test Sample	wLSN Installation Tool			
Model Number	ISW- BIT1-HCY			
Date: 9-19-2007		Tech: R.S.	Sheet 1 of 3	



FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output, Para.15.247(b)(2) Note: EUT transmitting on channel 30 at 918.464 MHz.

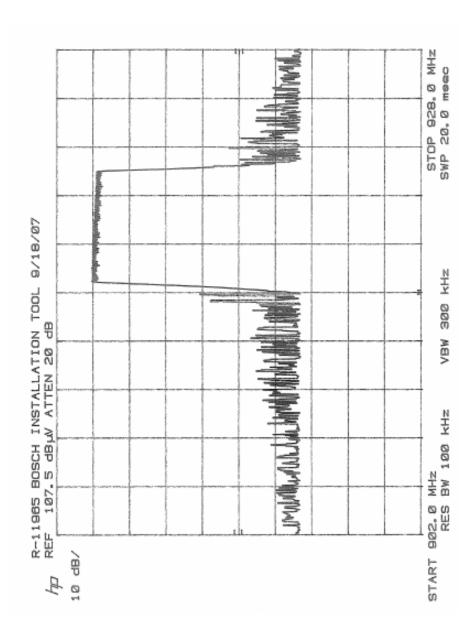
Customer	Bosch Security System.			
Test Sample	wLSN Installation Tool			
Model Number	ISW- BIT1-HCY			
Date: 9-19-2007		Tech: R.S.	Sheet 2 of 3	



FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output, Para.15.247(b)(2) Note: EUT transmitting on channel 58 at 921.264 MHz.

Customer	Bosch Security System.			
Test Sample	wLSN Installation Tool			
Model Number	ISW- BIT1-HCY			
Date: 9-19-2007		Tech: R.S.	Sheet 3 of 3	

FCC Part 15, Subpart C, 15.247(d) Band Edge Measurements 902 - 928 MHz Range Test Data



FCC Part 15, Subpart C,15.247(d) Band Edge Measurements, 902 to 928 MHz Band Note: The EUT complies with the Band Edge Measurements.

Customer	Bosch Security System.			
Test Sample	wLSN Installation Tool			
Model Number	ISW- BIT1-HCY			
Date: 9-19-2007		Tech: R.S.	Sheet 1 of 1	

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

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

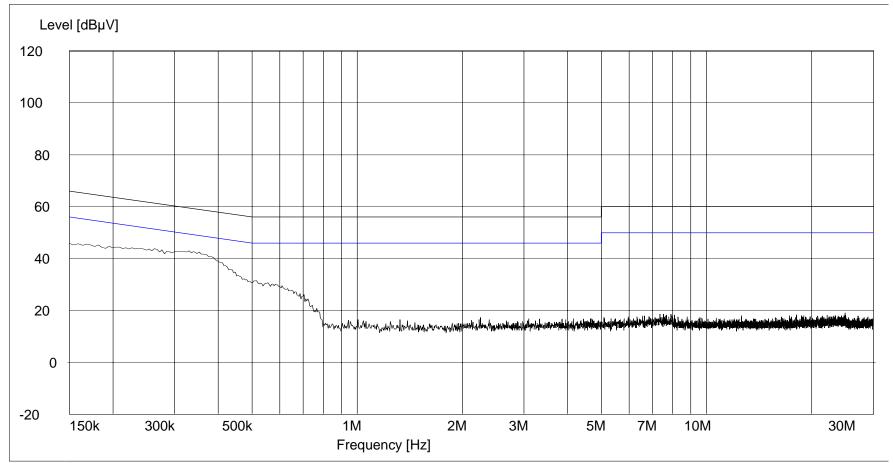
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15, Subpart C, Section 15.207(a)

Mode of Operation: Continuously transmitting on channel 00, a 915.5 MHz signal.

Lead Tested: 120 VAC/60 Hz hot input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 1 of 2

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

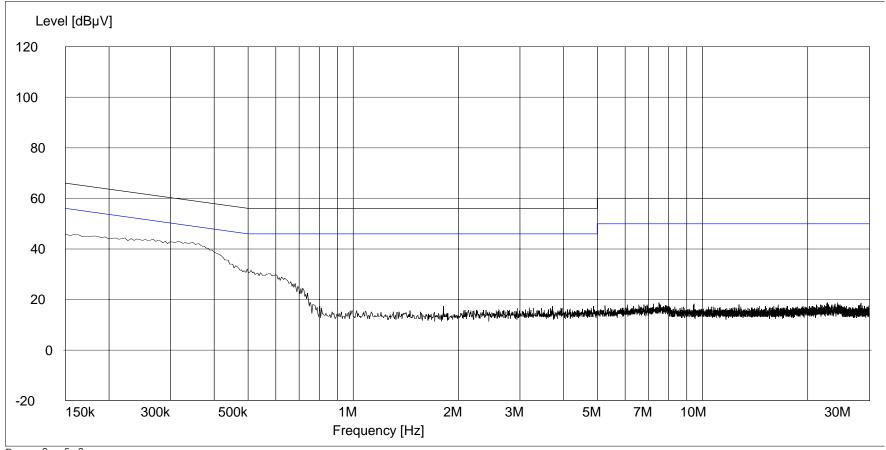
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15 Subpart C, Section 15.207(a)

Mode of Operation: Continuously transmitting on channel 00, a 915.5 MHz signal.

Lead Tested: 120 VAC/60 Hz neutral input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 2 of 2

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

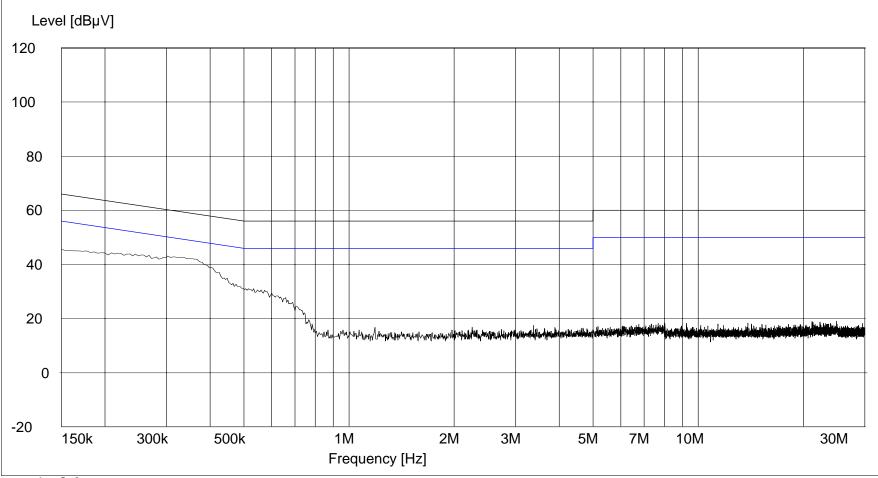
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15 Subpart C, Section 15.207(a)

Mode of Operation: Continuously transmitting on channel 30, a 918.5 MHz signal.

Lead Tested: 120 VAC/60 Hz hot input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 1 of 2

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

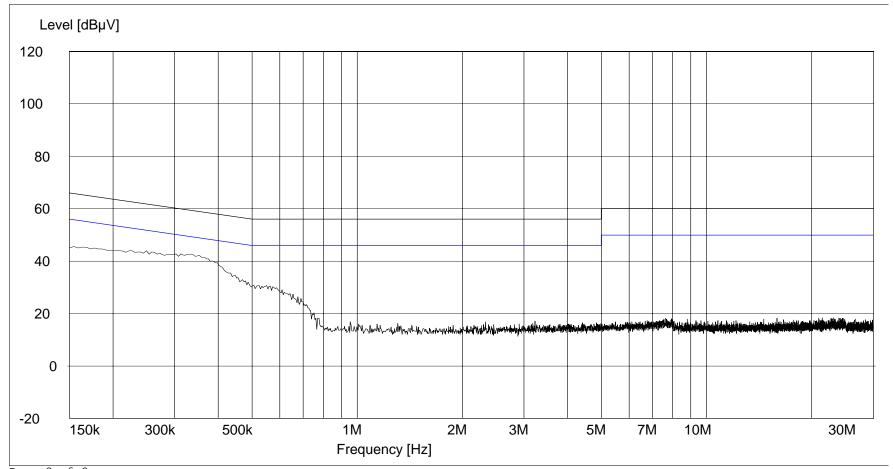
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15 Subpart C, Section 15.207(a)

Mode of Operation: Continuously transmitting on channel 30, a 918.5 MHz signal.

Lead Tested: 120 VAC/60 Hz neutral input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 2 of 2

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

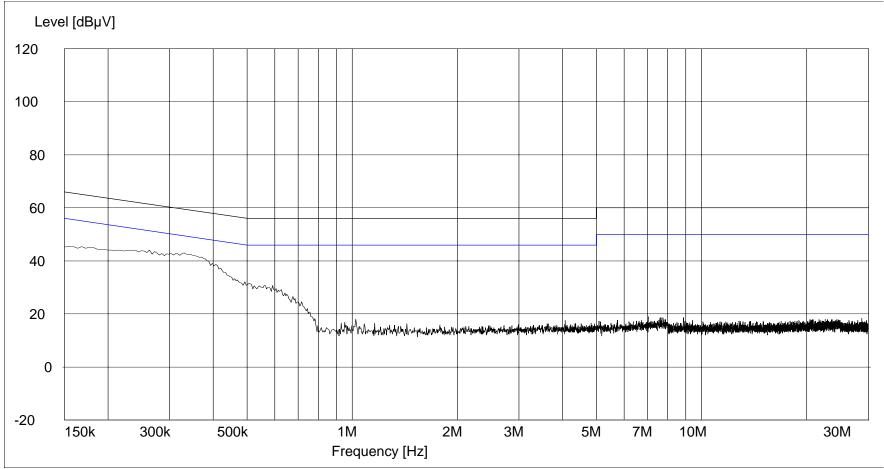
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15 Subpart C, Section 15.207(a)

Mode of Operation: Continuously transmitting on channel 58, a 921.3 MHz signal.

Lead Tested: 120 VAC/60 Hz hot input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 1 of 2

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

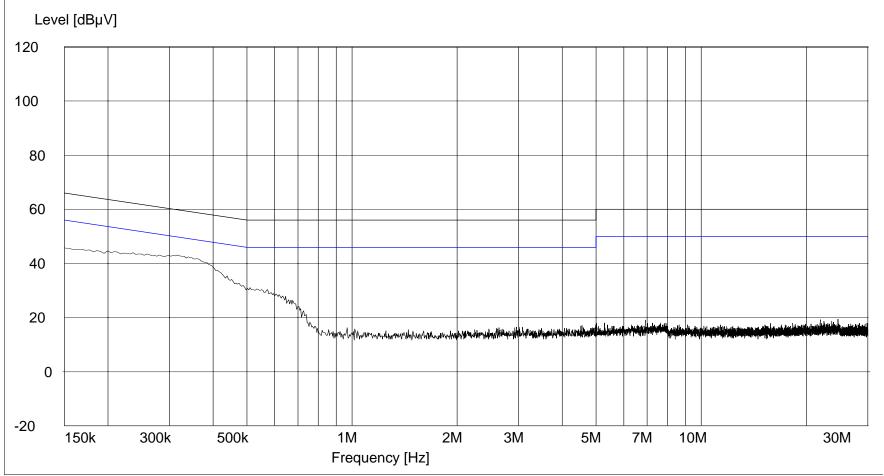
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15, Subpart C, Section 15.207(a)

Mode of Operation: Continuously transmitting on channel 58, a 921.3 MHz signal.

Lead Tested: 120 VAC/60 Hz neutral input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 2 of 2

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

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

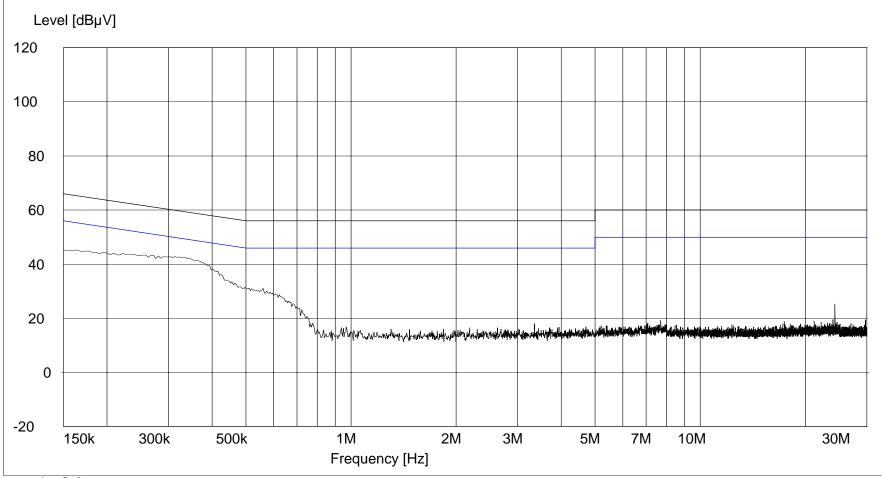
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15, Subpart C, Section 15.207(a)

Mode of Operation: EUT operating on channel 00 (915.5 MHz), continuously receiving a CW signal.

Lead Tested: 120 VAC/60 Hz hot input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 1 of 2

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

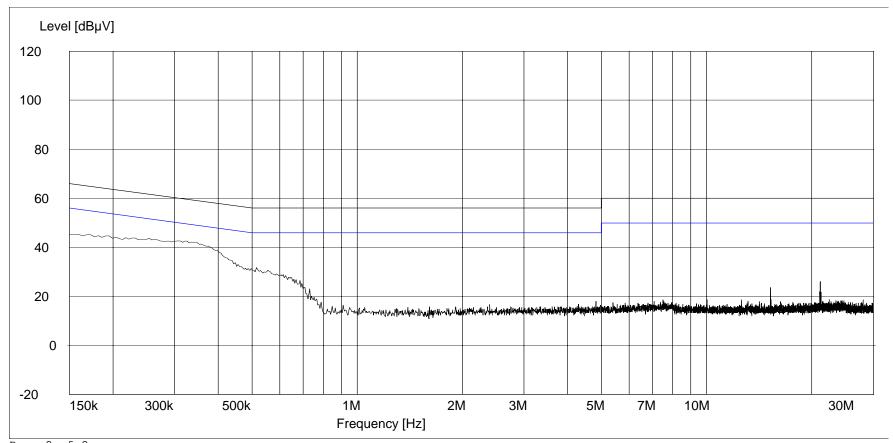
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15, Subpart C, Section 15.207(a)

Mode of Operation: EUT operating on channel 00 (915.5 MHz), continuously receiving a CW signal.

Lead Tested: 120 VAC/60 Hz neutral input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 2 of 2

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

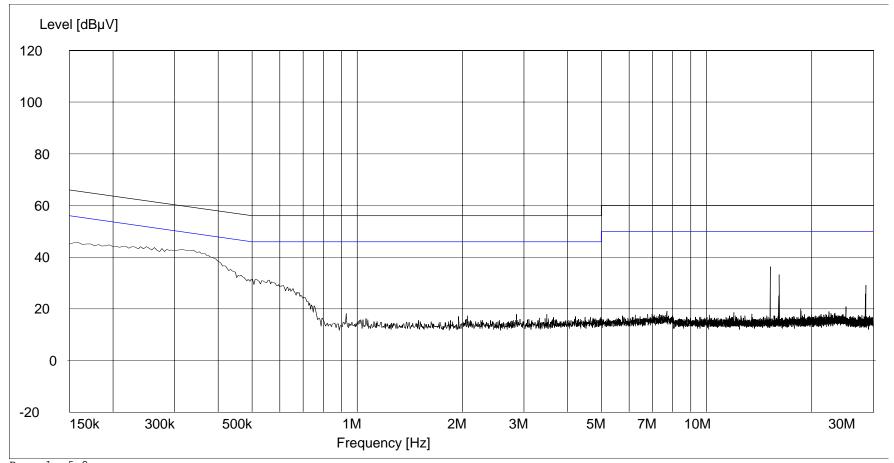
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15, Subpart C, Section 15.207(a)

Mode of Operation: EUT operating on channel 30 (918.5 MHz), continuously receiving a CW signal.

Lead Tested: 120 VAC/60 Hz hot input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 1 of 2

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

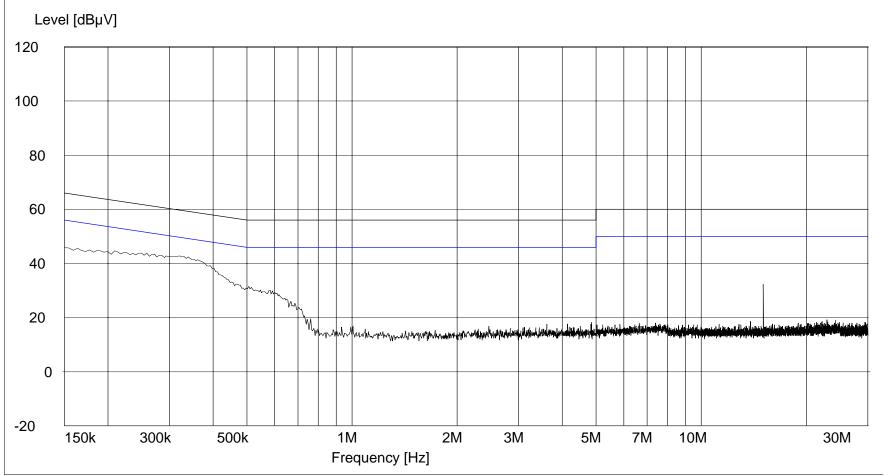
Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

Test Specification: FCC Part 15, Subpart C, Section 15.207(a)

Mode of Operation: EUT operating on channel 30 (918.5 MHz), continuously receiving a CW signal.

Lead Tested: 120 VAC/60 Hz neutral input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.



Page 2 of 2

RETLIF Testing Laboratories, Job Number R-11965-3

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

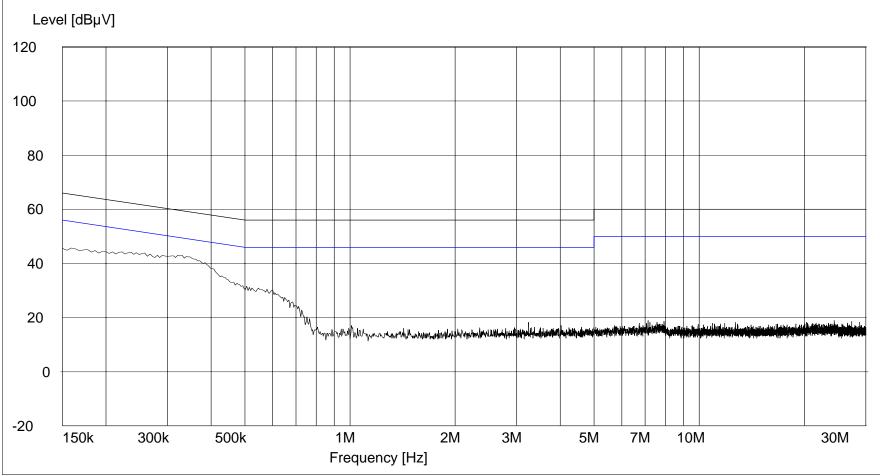
Test Specification: FCC Part 15, Subpart C, Section 15.207(a)

Mode of Operation: EUT operating on channel 58 (921.3 MHz), continuously receiving a CW signal.

Lead Tested: 120 VAC/60 Hz hot input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.

Detector / Note: Peak / Peak emissions passed average limit.



Page 1 of 2

RETLIF Testing Laboratories, Job Number R-11965-3

FCC Part 15, Subpart C, Conducted Emissions, 150 kHz to 30 MHz

Customer: Bosch Security System.
Test Sample: wLSN Installation Tool.

Model Number: ISW-BIT1-HCY FCC ID.: T3XBIT1-HCY

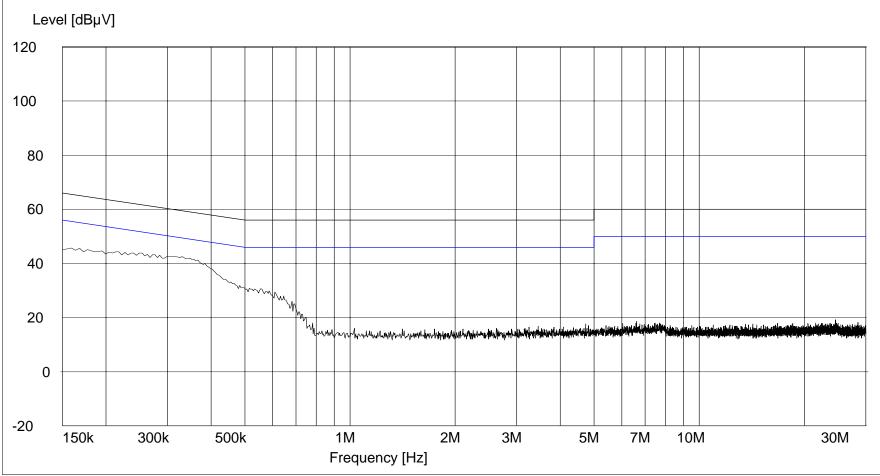
Test Specification: FCC Part 15, Subpart C, Section 15.207(a)

Mode of Operation: EUT operating on channel 58 (921.3 MHz), continuously receiving a CW signal.

Lead Tested: 120 VAC/60 Hz neutral input to AC adapter.

Technician / Date: R. Soodoo / September 22, 2007.

Detector / Note: Peak / Peak emissions passed average limit.



Page 2 of 2

FCC Part 15 Subpart C, Transmitter Spurious Radiated Emissions,
Paragraph 15.247(d)
Test Data

Test Metho	d:	FCC P	art 15 Subpar	t C, Transm	nitter Spuriou	s Radiate	ed Emission	s, Paragraph	15.247(d).
Customer:			Security Syste	•	•		Job No.		
Test Sampl	e:		Installation To				FCC ID	_	CY
Model No.:			IT1-HCY	<u> </u>			Serial No.		
Operating N	Node.		uously transmi	tting on char	nnel 00 a 015	5 MHz e		,,, .	
Technician		R.Sood	•	ttirig on criai	11161 00, a 310	7.5 IVII IZ 3	Date	September	19 2007
Notes:						Ton			
Notes.			: 3 Meters	00 MILL 1 - 4	OII Deal a		np: 25.0°C	Humidity: 4	4%
			asi-Peak from		ī				
· -		enna	EUT	Meter	Correction		ected	Converted	Limit
Frequency		sition	Orientation	Readings	Factor		ading	Reading	
MHz	(V/H) /	Meters	Degrees	dBuV	dB	dB	uV/m	uV/m	uV/m
									2001-0
30.0									26915.3
									<u> </u>
	-								
<u> </u>	 						-		1
<u>I</u>	 								1
<u> </u>									
<u> </u>									
<u> </u>									
i									1
<u> </u>									1
İ									i
		No em	ission obse	erved at th	he specifie	d test d	istance		į
				I	• 1				
<u> </u>									
<u> </u>									
<u> </u>									+ +
<u> </u>									
<u> </u>	 								
							+		+ +
- 	<u> </u>						+		+ +
<u> </u>									1
									<u> </u>
i									i
İ									i
10000.0									26915.3
			nge was scanned						
			served from the E		•				
			corded were more 20dB less than the				fied in paragraph	15 247(d) No or	niesion word
			estricted band.	, ilicasuleu lull	uamentai nequer	ioy as speci	nou in paragrapi	1 13.247 (u). NO EI	IIISSIUII WEIE
	55551 V	uio 10	oc. rotou buriu.						
	-								

Page 1 of 3

Test Metho	d:	FCC P	art 15 Subpar	t C, Transm	nitter Spuriou	s Radiate	ed Emissi	ons,	Paragraph 1	5.247(d).	
Customer:			Security Syste	•	•		Job N		R-11965-3	` '	
Test Sample	e:		Installation Too				FCC		T3XBIT1-H	CY	
Model No.:			IT1-HCY	<u>. </u>			Serial N		N/A		
Operating N	Mode:		uously transmi	tting on char	nnel 30. a 918	.5 MHz s					
Technician		R.Sood	•	ung on ona				ate:	September	19. 2007.	
Notes:			: 3 Meters			Ten	np: 25.0°C		Humidity: 4		
			asi-Peak from :	30 MHz to 1	GHz Poak al		•		riaimaity.	T 70	
			EUT	Meter	Correction		ected	,	Converted		
Frequency		enna sition	Orientation	Readings	Factor		ading	,	Reading	Limit	
MHz	(V/H) /	Meters	Degrees	dΒμV	dB	ав	μV/m		uV/m	uV/m	
30.0										26915.	2
										20913.	S
<u> </u>											
										 	
i										 	
i										i	
İ										i	
İ										İ	
ĺ											
			• •		-4.41	· · · · · · · · · · · · · · · ·	-4 11-4-				
		NO	emission	observed	at the spec	cified te	est dista	nce			
<u> </u>	-										
<u> </u>	 										
<u> </u>	 										
<u> </u>	-										
<u> </u> 											
- 										+ +	
10000.0										26915.	3
										123.31	
	The fre	quency rar	nge was scanned	from 30 MHz to	10 GHz.					ı	
	The em	issions ob	served from the E	UT do not exce	eed the specified						
			corded were more				C - d :		E 0.477 11 11		
			20dB less than the	e measured fun	damental frequer	icy as speci	tied in paragi	raph 1	5.247(d). No em	ission were	
	observe	eu in ine re	estricted band.								
	l										

Page 2 of 3

Test Metho	d:	FCC P	art 15 Subpar	t C, Transm	itter Spuriou	s Radiate	ed Emissic	ons,	Paragraph 1	5.247(d).
Customer:			Security Syste				Job N		R-11965-3	(/-
Test Sampl	e:		Installation To				FCC		T3XBIT1-H	CY
Model No.:			IT1-HCY	<u> </u>			Serial N		N/A	
Operating N	Node.		uously transmi	tting on char	nel 58, a 021	3 MHz e			1471	
Technician		R.Soo	•	tillig on chai	inei 30, a 32 i	.5 1111 12 5	-	ite:	September	10 2007
Notes:						T		ite.	•	
notes:			3 Meters		0 5		np: 25.0°C		Humidity: 4	4%
			asi-Peak from		1					1
_		enna	EUT	Meter	Correction		ected		Converted	Limit
Frequency	Pos	sition	Orientation	Readings	Factor		ading		Reading	
MHz	(V/H) /	Meters	Degrees	dΒμV	dB	dB	μV/m		uV/m	uV/m
30.0										26915.3
	-									
<u> </u>										
<u> </u>										
I										
<u> </u> 										
<u> </u>										
1										
İ										
		☐ No	emission o	bserved a	at the spec	ified tes	st distan	се		
				T	•					<u> </u>
										
	-									
I	 									
<u>I</u>	 									
<u> </u>	 									+ +
1	<u> </u>									
1										+ +
1										+ +
10000.0										26915.3
	1									
	The fre	quency rar	nge was scanned	from 30 MHz to	10 GHz.					
			served from the E							
			corded were more				fi a al lia co		F 0 47/-1\	
			20dB less than the estricted band.	e measured tun	uamental frequer	icy as speci	nea in paragra	apn 1	5.∠41 (a). No em	iission were
	ODSEIVE	.u	ostricted parid.							
	<u> </u>									

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FCC Part 15 Subpart C, Radiated Emissions, Harmonics
Paragraphs 15.247(d)
EUT transmitting at the Fundamental signal of 915.5 MHz

Test Metho	d:	FCC Pa	C Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.										
Customer:		Bosch S	Security System			Job No.	R-11965-3						
Test Sampl	e:	wLSN Ir	stallation Tool										
Model No.:		ISW-BIT	T1-HCY			FCC ID:	T3XBIT1-HCY						
Operating N	Mode:	Continu	ously transmittir	ng a 915.5 MH	lz signal.	<u>.</u>							
Technician		R. Sood	•			Date:	September 19, 2	2007.					
Notes:		tance: 3 N	/leters			<u>'</u>	,						
			nless otherwise	specified									
	1	enna	EUT	Meter	Correction	Corrected	Converted	Pe	eak				
Test Freq.		Height	Orientation	Reading	Factor	Reading	Reading		mit				
MHz		Meters	X/Y/Z	dBµV	dB	dBµV/m	uV/m	u\	//m				
1831.0	` ,	1.2	Х	65.1	2.3	67.4	2344.2		18.0				
		1.0	Y	61.2	2.3	63.5	1496.2						
İ	V /	1.0	Z	60.5	2.3	62.8	1380.4		İ				
ĺ	H /	1.0	X	59.8	2.3	62.1	1273.5						
ĺ	H/	1.0	Υ	63.7	2.3	66.0	1995.3						
1831.0	H /	1.6	Z	61.3	2.3	63.6	1513.6	501	18.0				
2746.5		1.0	X	51.7	5.2	56.9	699.8	500	0.00				
		1.3	Υ	50.2	5.2	55.4	588.8						
		1.0	Z	53.3	5.2	58.5	841.4						
		1.0	X	50.4	5.2	55.6	602.6						
	H/		Υ	54.4	5.2	59.6	955.0						
2746.5	H/	1.0	Z	49.6	5.2	54.8	549.5	500	0.00				
3662.0		1.0	X	45.5	10.0	55.5	595.7	500	0.00				
	1	1.0	Y	46.7	10.0	56.7	683.9		<u> </u>				
<u> </u>		1.0	Z X	46.7	10.0	56.7	683.9		<u> </u>				
l I		1.0	Y	45.7 46.7	10.0	55.7 56.7	609.5		<u> </u>				
3662.0		1.4	Z	46.7	10.0 10.0		683.9	500	<u> </u> 0.00				
3002.0	117	1.0	۷	40.4	10.0	56.4	660.7	300	0.0				
4577.5	V/	1.0	Х	47.4	13.6	61.0	1122.0	500	0.00				
1		1.0	Y	47.2	13.6	60.8	1096.5	55	 				
İ		1.0	Z	48.2	13.6	61.8	1230.3						
İ		1.0	X	43.5	13.6	57.1	*716.1		<u> </u>				
İ		1.0	Υ	47.9	13.6	61.5	1188.5		İ				
4577.5		1.0	Z	46.5	13.6	60.1	1011.6	500	0.00				
5493.0		1.0	Х	43.5	17.1	60.6	*1071.5	501	18.0				
		1.0	Υ	43.5	17.1	60.6	*1071.5						
		1.0	Z	43.5	17.1	60.6	*1071.5						
		1.0	X	43.5	17.1	60.6	*1071.5						
		1.0	Υ	45.5	17.1	62.6	1349.0						
5493.0		1.0	Z	43.5	17.1	60.6	*1071.5		18.0				
							not recorded we		re				
						T do not excee	d the specified li	mits.					
	*= Noise	e Floor M	easurements (m	ninimum sensi	tivity).								

Test Metho	d:	FCC Pa	rt 15 Subpart C	, Radiated Em	issions, Harm	onics Emissio	ns.		
Customer:			Security System		,	Job No.	R-11965-3		
Test Sampl	e:		nstallation Tool		<u> </u>				
Model No.:		ISW-BI				FCC ID:	T3XBIT1-HCY		
Operating I	Mode:		ously transmittir	ng a 915.5 MH	lz signal.				
Technician		R. Sood		.g		Date:	September 19, 2	2007	
Notes:	Test Dist					24.0.	Coptonicon 10, 2		
Notes.			nless otherwise	specified					
	Ante		EUT	Meter	Correction	Corrected	Converted	Pea	===== ak
Test Freq.	Pol./F		Orientation	Reading	Factor	Reading	Reading	Lim	
MHz		Meters	X/Y/Z	dBµV	dB	dBµV/m	uV/m	uV/	
6408.5	V /		X	42.2	19.9	62.1	*1273.5	5011	
	V /		Y	42.2	19.9	62.1	*1273.5	1	0.0
i	V /		Z	42.2	19.9	62.1	*1273.5		
i	H/		Х	41.3	19.9	61.2	*1148.2		
i	H/		Y	41.3	19.9	61.2	*1148.2	i	
6408.5	H/	1.0	Z	41.3	19.9	61.2	*1148.2	5011	8.0
7324.0	V /	1.0	Х	43.0	21.3	64.3	*1640.6	5000	0.0
	V /	1.0	Y	43.0	21.3	64.3	*1640.6		
	V /	1.0	Z	43.0	21.3	64.3	*1640.6		
	H/	1.0	Х	43.0	21.3	64.3	*1640.6		
	H/	1.0	Y	43.0	21.3	64.3	*1640.6		
7324.0	H/	1.0	Z	43.0	21.3	64.3	*1640.6	5000	0.0
8239.5	V /		X	42.5	23.6	66.1	*2018.4	5000	0.0
	V /		Y	42.5	23.6	66.1	*2018.4		
	V /		Z	42.5	23.6	66.1	*2018.4		
<u> </u>	H/		X	42.7	23.6	63.6	*2065.4	1	
0000.5	H /		Y	42.7	23.6	63.6	*2065.4		
8239.5	H/	1.0	Z	42.7	23.6	63.6	*2065.4	5000	0.0
9155.0	V /	1.0	X	42.1	25.5	67.6	*2398.8	5000	0.0
1	V /		Y	42.1	25.5	67.6	*2398.8	300	0.0
	V /		Z	42.1	25.5	67.6	*2398.8		
i	H /		X	42.0	25.5	67.5	*2371.4	i i	
i	H /		Y	42.0	25.5	67.5	*2371.4	i i	
9155.0	H/		Z	42.0	25.5	67.5	*2371.4	5000	0.0
							not recorded we		9
						T do not excee	ed the specified lin	mits.	
	*=Noise	Floor Me	easurements (M	linimum syste	m sensitivity)				

Test Method	d:	FCC	Part 15 Subpa	art C, Radiat	ed Emissions	, Harmonics	Emissions.			
Customer:			h Security Sys			1	i i	965-3		
Test Sample	е:		N Installation T							
Model No.:	<u>. </u>		BIT1-HCY	001		F	CC ID: T3X	BIT1-HCY		
Operating N	lode.		inuously transr	mitting a 915	5.5 MHz signa	ı	50 15. 10%	511 1 110 1		
Technician:			odoo	mung a ore	7.0 1VII 12 01911a		Date: Sept	ember 19, 200	7	
Notes:	Test Dist					Duty C	/cle: 17%	ember 19, 200	1.	
Notes.				omuioo onoo	ified		cle. 17 %	o. 15 1dD		
	Detector.	Avera	age, unless oth	ierwise spec	Пеа			115.40b		
Test Freq.	Anten Pol./He		EUT Orientation	Average Reading	Correction Factor	Duty cycle Correction Factor	Corrected Reading	Converted Reading		/g. mit
MHz	(V/H))-	X/Y/Z	dΒμV	dB	dB	dBµV/m	uV/m	u∖	//m
1831.0	V / 1.	.2	Х	63.5	2.3	-15.4	50.4	331.1	501	11.8
	V / 1.	.0	Y	59.6	2.3	-15.4	46.5	211.3		
	V / 1.		Z	58.5	2.3	-15.4	45.4	186.2		
	H/1.		Х	58.7	2.3	-15.4	45.6	190.5		
	H/1.	.0	Y	63.1	2.3	-15.4	50.0	316.2		
1831.0	H/1.	.6	Z	59.5	2.3	-15.4	46.4	208.9	501	1.8
2746.5	V / 1.	0	X	47.1	5.2	-15.4	36.9	70.0	50	0.0
1	V / 1.		Y	44.4	5.2	-15.4	34.2	51.3	30	U.U I
I	V / 1.		Z	48.8	5.2	-15.4	38.6	85.1		<u> </u>
l I	H / 1.		X	45.0	5.2	-15.4	34.8	55.0		<u> </u>
<u> </u>	H / 1.		Y	52.0	5.2	-15.4	41.8	123.0		<u> </u>
2746.5	H / 1.		Z	41.7	5.2	-15.4	31.5	37.6	50	0.0
2140.5	11/ 1.	.0		41.7	5.2	-10.4	31.5	37.0	30	0.0
3662.0	V / 1.	.0	Х	32.1	10.0	-15.4	26.7	21.6	50	0.0
I	V / 1.	.0	Υ	37.2	10.0	-15.4	31.8	38.9		
İ	V / 1.	.0	Z	35.1	10.0	-15.4	29.7	30.5		
İ	H/1.	.0	Х	32.7	10.0	-15.4	27.3	23.2		
i	H/1.	.4	Υ	37.6	10.0	-15.4	32.2	40.7		<u>. </u>
3662.0	H/1.	.0	Z	36.7	10.0	-15.4	31.3	36.7	50	0.0
4577.5	V / 1.		Х	34.8	13.6	-15.4	33.0	44.7	50	0.0
<u> </u>	V / 1.		Y	35.8	13.6	-15.4	34.0	50.1		<u> </u>
	V / 1.		Z	38.9	13.6	-15.4	37.1	71.6		<u> </u>
	H / 1.		X	33.0	13.6	-15.4	31.2	*36.3		<u> </u>
1575 -	H / 1.		Y	39.3	13.6	-15.4	37.5	75.0		
4577.5	H/1.	.U	Z	33.2	13.6	-15.4	31.4	37.2	50	0.0
5493.0	V / 1.	.0	Х	30.9	17.1	-15.4	32.6	*42.7	501	11.8
	V / 1.		Y	30.9	17.1	-15.4	32.6	*42.7		
	V / 1.		Z	30.9	17.1	-15.4	32.6	*42.7		
	H / 1.		X	30.9	17.1	-15.4	32.6	*42.7		<u>. </u>
	H / 1.		Y	33.0	17.1	-15.4	34.7	54.3		
5493.0	H / 1.		Z	30.9	17.1	-15.4	32.6	*42.7	501	1.8
			range was sc				1			
			elow the specif							
			Measurements					1	-	
				,	,	,				

Test Freq. Ar Pol MHz (6408.5	wLSI ISW- Cont R. So Distance:	ch Security Sys N Installation T BIT1-HCY inuously transr codoo 3 Meters age, unless oth EUT Orientation	ool nitting a 915.		FC	Date: Septe	965-3 IT1-HCY ember 19, 200	7.							
Model No.: Operating Mode: Technician: Notes: Test Deter Test Freq. Ar Pol MHz (6408.5	ISW-Cont R. So Distance: ctor: Avera ntenna ./Height	BIT1-HCY inuously transr bodoo 3 Meters age, unless oth	nitting a 915. nerwise speci			Date: Septe		7.							
Model No.: Operating Mode: Technician: Notes: Test Deter Test Freq. Ar Pol MHz (6408.5	ISW-Cont R. So Distance: ctor: Avera ntenna ./Height	BIT1-HCY inuously transr bodoo 3 Meters age, unless oth	nitting a 915. nerwise speci			Date: Septe		7.							
Operating Mode: Technician: Notes: Test Determine Test Freq. Ar Pol MHz (6408.5 V	Cont R. So Distance: ctor: Avera ntenna ./Height	inuously transr codoo 3 Meters age, unless oth EUT	erwise speci			Date: Septe		7.							
Technician: Notes: Test Determine Test Freq. An Pol MHz (6408.5	R. So Distance: ctor: Avera ntenna ./Height	oodoo 3 Meters age, unless oth EUT	erwise speci		Ţ.		ember 19, 200	7.							
Notes: Test Determine Dete	Distance: ctor: Avera ntenna ./Height	3 Meters age, unless oth EUT	•	fied		nce: 3 Meters Duty Cycle: 17%									
Test Freq. Ar Pol MHz (6408.5	ctor: Averantenna ./Height	age, unless oth EUT	•	fied	Duty Cyc	ID: 1 / %									
Test Freq. Ar Pol MHz (6408.5	ntenna ./Height	EUT	•	iica	Duty Cyc	le Correction	· -15 4dB								
MHz (6408.5 V	./Height		Average		Duty cycle										
MHz (6408.5 V		Orientation		Correction	Correction	Corrected	Converted	Av							
6408.5 V	\//H\-		Reading	Factor	Factor	Reading	Reading	Lin	nit						
6408.5 V	V/II/-	X/Y/Z	dBµV	dB	dB	dBµV/m	uV/m	uV.	/m						
	/ / 1.0	Х	31.6	19.9	-15.4	36.1	*63.8	501	1.8						
V	/ / 1.0	Y	31.6	19.9	-15.4	36.1	*63.8								
<u> </u>	//1.0	Z	31.6	19.9	-15.4	36.1	*63.8	i							
	1/1.0	Х	32.2	19.9	-15.4	36.7	*68.4								
	1/1.0	Y	32.2	19.9	-15.4	36.7	*68.4								
6408.5 H	1/1.0	Z	32.2	19.9	-15.4	36.7	*68.4	501	1.8						
	/ / 1.0	X	31.9	21.3	-15.4	37.8	*77.6	500	0.0						
	//1.0	Υ	31.9	21.3	-15.4	37.8	*77.6								
	/ / 1.0	Z	31.9	21.3	-15.4	37.8	*77.6								
	1/1.0	X	31.9	21.3	-15.4	37.8	*77.6								
	1/1.0	Υ	31.9	21.3	-15.4	37.8	*77.6								
7324.0 F	1/1.0	Z	31.9	21.3	-15.4	37.8	*77.6	500).0						
8239.5 V	/ / 1.0	Х	33.2	23.6	-15.4	41.4	*117.5	500).0						
ΙV	/ / 1.0	Y	33.2	23.6	-15.4	41.4	*117.5								
i V	//1.0	Z	33.2	23.6	-15.4	41.4	*117.5	i							
H	1/1.0	Х	32.8	23.6	-15.4	41.0	*112.2	ĺ							
F	1/1.0	Y	32.8	23.6	-15.4	41.0	*112.2								
8239.5 H	1/1.0	Z	32.8	23.6	-15.4	41.0	*112.2	500).0						
9155.0 V	/ / 1.0	X	33.1	25.5	-15.4	43.2	*144.5	500) ()						
	//1.0	Y	33.1	25.5	-15.4	43.2	*144.5	1							
	//1.0	Z	33.1	25.5	-15.4	43.2	*144.5	<u> </u>							
· · · · · · · · · · · · · · · · · · ·	1/1.0	X	33.2	25.5	-15.4	43.3	*146.2								
	1/1.0	Y	33.2	25.5	-15.4	43.3	*146.2								
	1/1.0	Z	33.2	25.5	-15.4	43.3	*146.2	500	0.0						
The	frequency	range was sc	anned from 3	0 MHz to 10.0) GHz. All em	issions not re	ecorded were	more							
Thai	n 20 dB be	elow the specif	ied limit. Em	issions from t	he EUT do no	ot exceed the	specified limit	s.							
*=No	oise Floor	Measurements	s (Minimum :	system sensit	ivity)										

FCC Part 15 Subpart C, Radiated Emissions, Harmonics
Paragraphs 15.247(d)
EUT transmitting at the Fundamental signal of 918.4 MHz

Test Metho	d:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.									
Customer:		Bosch S	Security System	•		Job No.	R-11965-3				
Test Sampl	e:	wLSN Ir	nstallation Tool								
Model No.:		ISW-BI	Г1-НСҮ			FCC ID:	T3XBIT1-HCY				
Operating N	Mode:	Continu	ously transmittir	ng a 918.4 MH	lz signal.						
Technician		R. Sood			J	Date:	September 19, 2	2007.			
Notes:		tance: 3 N			1						
			nless otherwise	specified							
		enna	EUT	Meter	Correction	Corrected	Converted	Pe	eak		
Test Freq.		Height	Orientation	Reading	Factor	Reading	Reading		mit		
MHz	(V/H)/I	Meters	X/Y/Z	dΒμV	dB	dBµV/m	uV/m	u√	//m		
1836.8	` '	1.0	Х	59.3	2.3	61.6	1202.3		18.0		
		1.0	Υ	61.0	2.3	63.3	1462.2				
İ	V /	1.0	Z	54.9	2.3	57.2	724.4		İ		
	H/	1.0	Х	58.2	2.3	60.5	1059.3				
	H/	1.5	Y	58.5	2.3	60.8	1096.5				
1836.8	H/	1.0	Z	60.3	2.3	62.6	1349.0	501	18.0		
2755.2		1.0	X	49.3	5.2	54.5	530.9	500	0.00		
		1.0	Y	46.8	5.2	52.0	398.1				
		1.0	Z	49.0	5.2	54.2	512.9				
		1.4	X	47.7	5.2	52.9	441.6				
		1.5	Υ	51.6	5.2	56.8	691.8				
2755.2	H /	1.3	Z	47.6	5.2	52.8	436.5	500	0.00		
	V / 1 0		V / 1.0								
3673.6			X	45.6	10.0	55.6	602.6	500	0.0		
		1.0	Y	45.4	10.0	55.4	588.8				
		1.0	Z	45.7	10.0	55.7	609.5		<u> </u>		
		1.0	X	46.3	10.0	56.3	653.1		<u> </u>		
3673.6		1.0	Y Z	46.1	10.0	56.1	638.3	500	<u> </u>		
3073.0	П/	1.0		46.0	10.0	56.0	631.0	500	0.0		
4592.0	V /	1.0	Х	43.5	13.6	57.1	*716.1	500	0.0		
1		1.0	Y	43.5	13.6	57.1	*716.1	330	, <u>, , , , , , , , , , , , , , , , , , </u>		
l		1.0	Z	43.5	13.6	57.1	*716.1		<u> </u>		
		1.0	X	43.5	13.6	57.1	*716.1		 		
		1.0	Y	43.5	13.6	57.1	*716.1				
4592.0		1.0	Z	43.5	13.6	57.1	*716.1	500	0.0		
5510.4		1.0	X	43.5	17.1	60.6	*1071.5	501	18.0		
		1.0	Υ	43.5	17.1	60.6	*1071.5				
		1.0	Z	43.5	17.1	60.6	*1071.5				
		1.0	X	43.5	17.1	60.6	*1071.5		<u> </u>		
5540.4		1.0	Y	43.5	17.1	60.6	*1071.5	<u> </u>	<u> </u>		
5510.4		1.0	Z	43.5	17.1	60.6	*1071.5		18.0		
							s not recorded we		re		
						do not excee	ed the specified lir	nits.			
	^= Noise	e Floor M	easurements (m	nınımum sensi	tivity).						

Test Metho	rod: FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.							
Customer:		Bosch S	Security System			Job No.	R-11965-3	
Test Sampl	e:	wLSN Ir	nstallation Tool		<u>.</u>			
Model No.:		ISW-BIT	T1-HCY			FCC ID:	T3XBIT1-HCY	
Operating N	/lode:	Continue	ously transmittir	ng a 918.4 MH	lz signal.			
Technician		R. Sood				Date:	September 19, 2	2007.
Notes:	Test Dist	ance: 3 N	/leters					
	Detector	: Peak, ur	nless otherwise	specified				
T . F	Ante	·	EUT	Meter	Correction	Corrected	Converted	Peak
Test Freq.		leight	Orientation	Reading	Factor	Reading	Reading	Limit
MHz	(V/H)-I	Meters	X/Y/Z	dΒμV	dB	dBµV/m	uV/m	uV/m
6428.8	V/	1.0	Х	42.2	19.9	62.1	*1273.5	50118.0
	V /	1.0	Υ	42.2	19.9	62.1	*1273.5	
	V /	1.0	Z	42.2	19.9	62.1	*1273.5	
	H/	1.0	X	41.3	19.9	61.2	*1148.2	
	H/	1.0	Υ	41.3	19.9	61.2	*1148.2	
6428.8	H/	1.0	Z	41.3	19.9	61.2	*1148.2	50118.0
7347.2		1.0	Х	43.0	21.3	64.3	*1640.6	5000.0
	V /		Y	43.0	21.3	64.3	*1640.6	
	V /		Z	43.0	21.3	64.3	*1640.6	
	H /		X	43.0	21.3	64.3	*1640.6	
70.47.0		1.0	Y	43.0	21.3	64.3	*1640.6	5000.0
7347.2	H/	1.0	Z	43.0	21.3	64.3	*1640.6	5000.0
8265.6	V /	1.0	Х	42.5	23.6	66.1	*2018.4	5000.0
0203.0	V /		Y	42.5	23.6	66.1	*2018.4	1
	V /		Z	42.5	23.6	66.1	*2018.4	
l		1.0	X	42.7	23.6	63.6	*2065.4	
İ	H /		Y	42.7	23.6	63.6	*2065.4	i
8265.6	H/		Z	42.7	23.6	63.6	*2065.4	5000.0
9184.0	V /	1.0	Х	42.1	25.5	67.6	*2398.8	5000.0
	V /	1.0	Υ	42.1	25.5	67.6	*2398.8	
	V /	1.0	Z	42.1	25.5	67.6	*2398.8	
		1.0	Χ	42.0	25.5	67.5	*2371.4	
		1.0	Υ	42.0	25.5	67.5	*2371.4	
9184.0	H /	1.0	Z	42.0	25.5	67.5	*2371.4	5000.0
	The free	uency ra	nge was scanne	ed from 30 ME	lz to 10 0 GHz	All emissions	not recorded we	re more
							d the specified lir	
			easurements (M				op somes m	
	. 10.00				55514.714.7			

Test Metho	d:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.									
Customer:		Boso	h Security Sys	tem.		Je	ob No.	R-119	65-3		
Test Samp	le:	wLSI	N Installation T	ool							
Model No.:		ISW-	·BIT1-HCY			F	CC ID:	T3XB	IT1-HCY		
Operating	Mode:	Cont	inuously transr	mitting a 918	8.4 MHz signa	l.					
Technician			oodoo	-			Date:	Septe	mber 19, 2007		
Notes:	Test Dist	ance:	3 Meters			Duty Cy	/cle: 17%	6			
	Detector	: Avera	age, unless oth	nerwise spec	cified	Duty Cy	cle Corr	ection:	-15.4dB		
Test Freq.	Anter Pol./He		EUT Orientation	Average Reading	Correction Factor	Duty cycle Correction Factor	Corre Read		Converted Reading		/g. nit
MHz	(V/H)-	X/Y/Z	dΒμV	dB	dB	dBµ\	V/m	UV/m	uV	'/m
1836.8	V / 1	.0	Х	57.8	2.3	-15.4	44.	.7	171.8	501	1.8
	V / 1	.0	Y	59.4	2.3	-15.4	46	.3	206.5		
	V / 1	.0	Z	52.2	2.3	-15.4	39.	.1	90.2		
İ	H/1	.0	Х	53.3	2.3	-15.4	40.	.2	102.3		
i	H/1	.5	Υ	55.8	2.3	-15.4	42.	.7	136.5		
1836.8	H/1	.0	Z	46.3	2.3	-15.4	33.		45.7	<u>5</u> 01	1.8
2755.2	V / 1	.0	Х	43.6	5.2	-15.4	33.	.4	46.8	50	0.0
	V / 1	.0	Υ	36.3	5.2	-15.4	26	.1	20.2		
	V / 1	.0	Z	42.9	5.2	-15.4	32.	.7	43.2		
	H/1	.4	X	39.4	5.2	-15.4	29	.2	28.8		
	H/1	.5	Υ	47.2	5.2	-15.4	37.	.0	70.8		
2755.2	H/1	.3	Z	38.6	5.2	-15.4	28	.4	26.3	50	0.0
3673.6	V / 1	.0	X	32.9	10.0	-15.4	27.	.5	23.7	50	0.0
	V / 1	.0	Υ	32.5	10.0	-15.4	27.	.1	22.6		
	V / 1	.0	Z	31.7	10.0	-15.4	26	.3	20.7		
	H/1	.0	Х	34.0	10.0	-15.4	28	.6	26.9		
	H/1	.0	Υ	32.8	10.0	-15.4	27.	.4	23.4		
3673.6	H/1	.6	Z	33.6	10.0	-15.4	28	.2	25.7	50	0.0
4592.0	V / 1	.0	X	33.0	13.6	-15.4	31.	.2	*36.3	50	0.0
	V / 1	.0	Y	33.0	13.6	-15.4	31.	.2	*36.3		
	V / 1	.0	Z	33.0	13.6	-15.4	31.	.2	*36.3		
	H/1	.0	X	33.0	13.6	-15.4	31.	.2	*36.3		
	H/1		Y	33.0	13.6	-15.4	31.	.2	*36.3		
4592.0	H/1	.0	Z	33.0	13.6	-15.4	31.	.2	*36.3	50	0.0
5510.4	V / 1		X	30.9	17.1	-15.4	32.		*42.7	501	1.8
	V / 1		Y	30.9	17.1	-15.4	32.		*42.7		
	V / 1		Z	30.9	17.1	-15.4	32.		*42.7		
	H/1		X	30.9	17.1	-15.4	32.		*42.7		
	H/1		Υ	30.9	17.1	-15.4	32.		*42.7		
5510.4	H/1		Z	30.9	17.1	-15.4	32.		*42.7		1.8
			range was sc								
			elow the specif				not exce	ed the	specified limits	5.	
	*=Noise	Floor	Measurement	s (Minimum	system sensi	itivity)					
·		Noise Floor Measurements (Minimum system sensitivity)									

Test Method	d:	FCC	Part 15 Subpa	rt C, Radiate	d Emissions,	Harmonics E	missions.		
Customer:		Boso	h Security Sys	tem.		Jok	No. R-119	965-3	
Test Sample	e:	wLSI	N Installation T	ool					
Model No.:		ISW-	BIT1-HCY			FC	C ID: T3XB	IT1-HCY	
Operating N	lode:	Cont	inuously transr	nitting a 918.	4 MHz signal				
Technician:		R. So	oodoo		-	[Date: Septe	mber 19, 200	7.
Notes:	Test Dist	ance:	3 Meters			Duty Cyc	le: 17%		
	Detector	: Avera	age, unless oth	erwise speci	fied	Duty Cyc	le Correction	: -15.4dB	
	Anten	na	EUT	Average	Correction	Duty cycle	Corrected	Converted	Avg.
Test Freq.	Pol./He		Orientation	Reading	Factor	Correction	Reading	Reading	Limit
						Factor			
MHz	(V/H	•	X/Y/Z	dΒμV	dB	dB	dBμV/m	uV/m	uV/m
6428.8	V / 1		X	31.6	19.9	-15.4	36.1	*63.8	5011.8
	V / 1		Y Z	31.6	19.9	-15.4	36.1	*63.8	
	V / 1			31.6	19.9	-15.4	36.1	*63.8	
l I	H/1 H/1		X	32.2 32.2	19.9 19.9	-15.4 -15.4	36.7 36.7	*68.4 *68.4	
6428.8	H/1		Z	32.2	19.9	-15.4	36.7	*68.4	5011.8
0420.0	11/1	.0		32.2	19.9	-13.4	30.7	00.4	3011.0
7347.2	V / 1	0	Х	31.9	21.3	-15.4	37.8	*77.6	500.0
1017.2	V / 1		Y	31.9	21.3	-15.4	37.8	*77.6	1
	V / 1		Z	31.9	21.3	-15.4	37.8	*77.6	
i	H/1		Х	31.9	21.3	-15.4	37.8	*77.6	i
i	H/1		Y	31.9	21.3	-15.4	37.8	*77.6	i
7347.2	H/1	.0	Z	31.9	21.3	-15.4	37.8	*77.6	500.0
8265.6	V / 1	.0	X	33.2	23.6	-15.4	41.4	*117.5	500.0
	V / 1	.0	Υ	33.2	23.6	-15.4	41.4	*117.5	
	V / 1		Z	33.2	23.6	-15.4	41.4	*117.5	
	H/1		X	32.8	23.6	-15.4	41.0	*112.2	
	H/1		Y	32.8	23.6	-15.4	41.0	*112.2	
8265.6	H / 1	.0	Z	32.8	23.6	-15.4	41.0	*112.2	500.0
04040	37.74			00.4	05.5	45.4	40.0	*4445	500.0
9184.0	V / 1		X	33.1	25.5	-15.4	43.2	*144.5	500.0
	V / 1		Y Z	33.1 33.1	25.5 25.5	-15.4 -15.4	43.2 43.2	*144.5 *144.5	l
	H / 1		X	33.2	25.5	-15.4	43.2	*146.2	
	H/1		Y	33.2	25.5	-15.4	43.3	*146.2	
9184.0	H/1		Z	33.2	25.5	-15.4	43.3	*146.2	500.0
0.10.110	,			00.2	20.0		10.0	110.2	000.0
	The free	uency	range was sc	anned from 3	0 MHz to 10.0	0 GHz. All em	issions not re	corded were	more
			elow the specif				t exceed the	specified limit	ts.
	*=Noise	Floor	Measurements	s (Minimum s	system sensit	ivity)			

FCC Part 15 Subpart C, Radiated Emissions, Harmonics
Paragraphs 15.247(d)
EUT transmitting at the Fundamental signal of 921.3 MHz

Test Metho	d:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.										
Customer:		Bosch S	Security System			Job No.	R-11965-3					
Test Sampl	le:	wLSN Ir	nstallation Tool									
Model No.:		ISW-BI	Γ1-HCY			FCC ID:	T3XBIT1-HCY					
Operating I	Mode:	Continu	ously transmittir	ng a 921.3 MH	Iz signal.							
Technician		R. Sood		J • • • •		Date:	September 20, 2	2007.				
Notes:		tance: 3 N										
			nless otherwise	specified				_				
Test Freq.		enna	EUT	Meter	Correction	Corrected	Converted		ak			
,		Height	Orientation	Reading	Factor	Reading	Reading	Lir				
MHz	<u> </u>	Meters	X/Y/Z	dΒμV	dB	dBµV/m	uV/m	uV	/m			
1842.6	_	1.0	X	59.6	2.3	61.9	1244.5	501	18.0			
		1.5	Y	55.9	2.3	58.2	812.8					
		1.1	Z	58.0	2.3	60.3	1035.1					
		1.0	X	62.1	2.3	64.4	1659.6					
		1.0	Y	59.2	2.3	61.5	1188.5	1				
1842.6	H /	1.2	Z	56.6	2.3	58.9	881.0	501	18.0			
2763.9	V /	1.0	Х	53.1	5.2	58.3	822.2	500	0.0			
1		1.0	Y	51.6	5.2	56.8	691.8	000	1			
		1.0	Z	53.3	5.2	58.5	841.4					
İ		1.0	X	51.6	5.2	56.8	691.8					
i		1.3	Y	55.3	5.2	60.5	1059.3					
2763.9		1.0	Z	51.5	5.2	56.7	683.9	500	0.0			
3685.2	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1.0	X	46.9	10.0	56.9	699.8	500	η η			
1		1.0	Y	47.4	10.0	57.4	741.3	300	0.0			
		1.0	Z	46.8	10.0	56.8	691.8					
		1.0	X	46.9	10.0	56.9	699.8					
i		1.3	Y	48.0	10.0	58.0	794.3					
3685.2		1.1	Z	46.7	10.0	56.7	683.9	500	0.0			
4606.5		1.0	X	48.7	13.6	62.3	1303.2	500	0.0			
<u> </u>		1.0	Y	47.6	13.6	61.2	1148.2					
<u> </u>		1.0	Z	47.8	13.6	61.4	1174.9					
<u> </u>		1.0	X	47.0	13.6	60.6	1071.5					
4000.5		1.0	Y	48.3	13.6	61.9	1244.5					
4606.5	H /	1.6	Z	47.0	13.6	60.6	1071.5	500	0.0			
5527.8	V /	1.0	Х	43.5	17.1	60.6	*1071.5	501	18.0			
		1.0	Y	43.5	17.1	60.6	*1071.5					
		1.0	Z	43.5	17.1	60.6	*1071.5					
		1.0	X	43.5	17.1	60.6	*1071.5					
		1.0	Y	46.2	17.1	63.3	1462.2					
5527.8		1.0	Z	43.5	17.1	60.6	*1071.5	501				
	The free	quency ra	nge was scanne	ed from 30 MH	Iz to 10.0 GHz	. All emissions	not recorded we	re mor	е			
	_					do not excee	ed the specified lin	nits.				
	*= Noise	e Floor M	easurements (m	ninimum sensi	tivity).							

Test Metho	d:	FCC Pa	ırt 15 Subpart C	, Radiated Em	issions, Harm	onics Emissio	ns.				
Customer:		Bosch S	Security System	R-11965-3							
Test Sampl	e:	wLSN Ir	nstallation Tool								
Model No.:		ISW-BI	Г1-НСҮ	T3XBIT1-HCY							
Operating N	Mode:	Continu	ISW-BIT1-HCY FCC ID: T3XBIT1-HCY Continuously transmitting a 921.3 MHz signal.								
Technician		R. Sood	loo	September 20, 2	2007.						
Notes:	Test Dist	tance: 3 N	Meters		<u> </u>						
	Detector	: Peak, u	nless otherwise	specified							
Та а4 Гиа а	Ante	enna	EUT	Meter	Correction	Corrected	Converted	Peal	k		
Test Freq.	Pol./F	Height	Orientation	Reading	Factor	Reading	Reading	Limit			
MHz	(V/H)-l	Meters	X/Y/Z	dΒμV	dB	dBµV/m	uV/m	uV/n	n		
6449.1	V /	1.0	Х	42.2	19.9	62.1	*1273.5	50118	3.0		
	V /	1.0	Y	42.2	19.9	62.1	*1273.5				
		1.0	Z	42.2	19.9	62.1	*1273.5				
		1.0	X	41.3	19.9	61.2	*1148.2				
		1.0	Y	41.3	19.9	61.2	*1148.2				
6449.1	H /	1.0	Z	41.3	19.9	61.2	*1148.2	50118	3.0		
7370.4	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1.0	X	43.0	21.3	64.3	*1640.6	5000			
1370.4		1.0	Y	43.0	21.3	64.3	*1640.6	3000	.0		
<u>l</u>		1.0	Z	43.0	21.3	64.3	*1640.6				
l		1.0	X	43.0	21.3	64.3	*1640.6				
		1.0	Y	43.0	21.3	64.3	*1640.6				
7370.4		1.0	Z	43.0	21.3	64.3	*1640.6	5000	.0		
					=	0.110			-		
8291.7	V /	1.0	Х	42.5	23.6	66.1	*2018.4	5000	.0		
	V /	1.0	Y	42.5	23.6	66.1	*2018.4				
		1.0	Z	42.5	23.6	66.1	*2018.4				
		1.0	X	42.7	23.6	63.6	*2065.4				
		1.0	Y	42.7	23.6	63.6	*2065.4				
8291.7	H /	1.0	Z	42.7	23.6	63.6	*2065.4	5000	.0		
9213.0	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1.0	X	42.1	25.5	67.6	*2398.8	5000	0		
9213.0 I		1.0	Y	42.1	25.5	67.6	*2398.8	3000	.0		
		1.0	Z	42.1	25.5	67.6	*2398.8				
		1.0	X	42.0	25.5	67.5	*2371.4				
İ		1.0	Y	42.0	25.5	67.5	*2371.4	<u> </u>			
9213.0		1.0	Z	42.0	25.5	67.5	*2371.4	5000	.0		
	The free	allonov ro	ngo was seems	ad from 20 ML	 	All omission	 s not recorded we	ro moro			
							s not recorded we ed the specified li				
			easurements (N			1 do not excer	od tile specilied III	iiio.			
	-140196	I IOOI IVIE	asurements (IV	iii iii iiu iii syste	ııı ə c iiəilivily)						

Test Method	d:	FCC	Part 15 Subpa	art C, Radiat	ed Emissions	, Harmonics	Emissions	S.			
Customer: E			h Security Sys			1	R-119	65-3			
Test Sample	ь.		N Installation T								
Model No.:	<u>. </u>		SW-BIT1-HCY FCC ID: T3XBIT1-HCY								
Operating N	lode.			mitting a 921	3 MHz signa		1 00 ID. I	IOADI	111101		
Technician:			Continuously transmitting a 921.3 MHz signal. R. Soodoo Date: September 20, 2007.								
Notes:			. Soodoo Date: September 20, 2007 ce: 3 Meters Duty Cycle: 17%							<i>i</i> .	
Notes.				omuioo onoo	ified	•	Cycle. 17 % Cycle Corre	otioni	1 <i>E</i> 1dD		
	Detector.	Avera	age, unless oth	ierwise spec		Duty cycle	, T		-15.4ub		
Test Freq.	Antenna Pol./Height		EUT Orientation	Average Reading	Correction Factor	Correction Factor			Converted Reading		vg. mit
MHz	(V/H)-	X/Y/Z	dΒμV	dB	dB	dBµV/	/m	uV/m	u∖	//m
1842.6	V / 1	.0	Х	57.9	2.3	-15.4	44.8	}	173.8	50´	11.8
	V / 1.	.5	Y	54.9	2.3	-15.4	41.8	3	123.0		
	V / 1		Z	56.9	2.3	-15.4	43.8	3	154.9		
	H/1		X	60.0	2.3	-15.4	46.9)	221.3		
	H / 1		Y	58.4	2.3	-15.4	45.3	3	184.1		
1842.6	H / 1	.2	Z	55.7	2.3	-15.4	42.6	6	134.9	501	11.8
2763.9	V / 1.0		X	49.6	5.2	-15.4	39.4	L	93.3	50	0.0
1	V / 1.		Y	47.6	5.2	-15.4	37.4		74.1	30	0.0 I
<u> </u>	V / 1.		Z	50.4	5.2	-15.4	40.2		102.3		<u>l </u>
<u> </u>	H / 1		X	45.8	5.2	-15.4	35.6		60.3		<u> </u>
<u> </u>	H/1		Y	53.3	5.2	-15.4	43.1		142.9		<u> </u>
2763.9	H/1		Z	45.9	5.2			61.0	50	0.0	
				10.0	0.2				01.0	- 00	0.0
3685.2	V / 1.	.0	Х	34.6	10.0	-15.4	29.2	<u> </u>	28.8	50	0.0
	V / 1.	.0	Y	35.5	10.0	-15.4	30.1		32.0		
	V / 1	.0	Z	35.2	10.0	-15.4	29.8	3	30.9		
	H / 1	.0	X	36.6	10.0	-15.4	31.2	2	36.3		
	H / 1		Y	40.2	10.0	-15.4	34.8	3	55.0		
3685.2	H / 1	.1	Z	37.0	10.0	-15.4	31.6	6	38.0	50	0.0
4606.5	V / 1.	0	X	39.7	13.6	-15.4	37.9)	78.5	50	0.0
1	V / 1.		Y	36.1	13.6	-15.4	34.3		51.9	30	0.0 I
	V / 1.		Z	38.1	13.6	-15.4	36.3		65.3		<u> </u>
	H / 1		X	34.0	13.6	-15.4	32.2		40.7		
	H/1		Y	37.6	13.6	-15.4	35.8		61.7		<u> </u>
4606.5	H/1		Z	36.2	13.6	-15.4	34.4		52.5	50	0.0
5527.8	V / 1.	.0	X	31.5	17.1	-15.4	33.2	2	*45.7	501	11.8
	V / 1.		Y	31.5	17.1	-15.4	33.2	2	*45.7		
	V / 1.		Z	31.5	17.1	-15.4	33.2	2	*45.7		
	H / 1		X	31.5	17.1	-15.4	33.2	2	*45.7		
	H / 1		Y	34.1	17.1	-15.4	35.8		61.7		
5527.8	H / 1		Z	31.5	17.1	-15.4	33.2		*45.7		11.8
			range was sc								
			elow the specif				not exceed	d the	specified limit	s.	
	*=Noise	Floor	Measurements	s (Minimum	system sens	itivity)					

Test Method: Customer:		FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.											
		Bosc	h Security Sys	tem.		Jok	Job No. R-11965-3						
Test Sample	e:	wLSI	wLSN Installation Tool										
Model No.:		ISW-	ISW-BIT1-HCY FCC ID: T3XBIT1-HCY										
Operating N	/lode:	Cont	inuously transr	nitting a 921.	3 MHz signal								
Technician:		R. Soodoo Date: September 20, 2007.											
Notes:	Test Dist	ance:	ince: 3 Meters Duty Cycle: 17%										
	Detector:	Avera	age, unless oth	erwise speci	fied	Duty Cyc	le Correction	: -15.4dB					
	Anten	no	EUT	Average	Correction	Duty cycle	Corrected	Converted	Δνα				
Test Freq.	Pol./He		Orientation	Reading	Factor	Correction	Reading	Reading	Avg. Limit				
						Factor							
MHz	(V/H)		X/Y/Z	dΒμV	dB	dB	dBµV/m	uV/m	uV/m				
6449.1	V / 1.		X	31.6	19.9	-15.4	36.1	*63.8	5011.8				
	V / 1.		Y	31.6	19.9	-15.4	36.1	*63.8					
	V / 1.		Z	31.6	19.9	-15.4	36.1	*63.8					
	H/1.		X	32.2	19.9	-15.4	36.7	*68.4					
C440.4	H/1.		Y Z	32.2	19.9	-15.4 -15.4	36.7	*68.4	5011.0				
6449.1	H / 1.	.0	۷	32.2	19.9	-15.4	36.7	*68.4	5011.8				
7370.4	V / 1.	Λ	Х	31.9	21.3	-15.4	37.8	*77.6	500.0				
1370.4	V / 1.		Y	31.9	21.3	-15.4	37.8	*77.6	J00.0				
	V / 1.		Z	31.9	21.3	-15.4	37.8	*77.6					
1	H / 1.		X	31.9	21.3	-15.4	37.8	*77.6					
1	H / 1.		Y	31.9	21.3	-15.4	37.8	*77.6					
7370.4	H / 1.		Z	31.9	21.3	-15.4	37.8	*77.6	500.0				
8291.7	V / 1.	0	Х	33.2	23.6	-15.4	41.4	*117.5	500.0				
	V / 1.	.0	Υ	33.2	23.6	-15.4	41.4	*117.5					
	V / 1.	.0	Z	33.2	23.6	-15.4	41.4	*117.5					
1	H/1.	.0	X	32.8	23.6	-15.4	41.0	*112.2					
	H/1.	.0	Υ	32.8	23.6	-15.4	41.0	*112.2					
8291.7	H / 1.	.0	Z	32.8	23.6	-15.4	41.0	*112.2	500.0				
9213.0	V / 1.		X	33.1	25.5	-15.4	43.2	*144.5	500.0				
	V / 1.		Y	33.1	25.5	-15.4	43.2	*144.5					
1	V / 1.		Z	33.1	25.5	-15.4	43.2	*144.5					
	H/1.		X	33.2	25.5	-15.4	43.3	*146.2					
9213.0	H / 1. H / 1.		Y Z	33.2 33.2	25.5 25.5	-15.4 -15.4	43.3 43.3	*146.2 *146.2	500.0				
9213.0	П/ І.	.0	۷	33.2	25.5	-15.4	43.3	146.2	500.0				
	The frea	uencv	range was sc	anned from 3	0 MHz to 10.0	O GHz. All em	issions not re	corded were	more				
			elow the specif										
			Measurements										
				`	•	• /							

FCC Part 15, Subpart B, Class B, Radiated Emissions, 30 MHz to 5.0 GHz,
Paragraph 15.109(a)
Receiver Test Data

Test Metho	d:	FCC P	art 15, Subpa	rt B, Class I	3, Radiated E	mission	s, 30 MHz to 5	.0 GHz, Para:	15.109(a)		
Customer:		Bosch	R-11965-3								
Test Sample	e:	wLSN I									
Model No.:		ISW- BIT1-HCY Serial No.: N/A									
Operating Mode: EUT operating on channel 00(915.5MHz), continuously receiving a CW signal.											
Technician		R.Sood		,	, .		Date:	September	19, 2007		
Notes:	Test D	Distance:	3 Meters				Temp: 25.0°C				
	Detec	tor: Qua	asi-Peak Belov	v 1 GHz, Pea	ak above 1 Gl	Ηz	<u>'</u>				
Frequency		enna sition	EUT Orientation	Meter Readings	Correction Factor		rected ading	Converted Reading	Limit		
MHz	(V/H) /	Meters	Degrees	dBuV	dB	dB	suV/m	uV/m	uV/m		
30.0									100		
<u> </u> 											
88.0									100		
88.0									150		
<u> </u> 	1										
216.0					_				150		
216.0		No	emission	observed	at the spec	cified t	est distance		200		
									<u> </u>		
<u> </u>											
960.0									200		
960.0									500		
									I		
5000.0									500		
5000.0	The fre	guency rar	nge was scanned	l from 30 MHz to	5.0 GHz				500		
		quency range was scanned from 30 MHz to 5.0 GHz. issions observed from the EUT do not exceed the specified limits.									
		Emissions not recorded were more than 20dB under the specified limit.									

Test l	Metho	d:	FCC P	art 15, Subpa	rt B, Class I	3, Radiated E	mission	s, 30 MHz	to 5.	0 GHz, Para	:15.109(a)	
Custo	mer:		Bosch Security System. Job No.							R-11965-3		
Test	Sample	e:		wLSN Installation Tool								
Mode	l No.:		ISW- B	SW- BIT1-HCY Serial No.: N/A								
Operating Mode: EUT operating on channel 30(918.5MHz), continuously receiving a CW signal.									signal.			
									September	19. 2007		
Notes				3 Meters				Temp: 25		Humidi		
	•			asi-Peak Below	v 1 GHz, Pea	ak above 1 Gl	Hz	10.mp. 20		Trainia	., , ,	
		Ante	enna	EUT	Meter	Correction	Corr	ected	(Converted	Lingit	
Frequ	iency	Pos	ition	Orientation	Readings	Factor	Rea	ading		Reading	Limit	
Mł	Ηz	(V/H) /	Meters	Degrees	dΒμV	dB	dB	μV/m		uV/m	uV/m	
30	.0										100	
											1 !	
 88	0										100	
88											150	
	.0										130	
											1 1	
İ											i	
216	6.0		No	emission of	bserved	at the spec	ified te	st distar	nce		150	
216	6.6		L								200	
											<u> </u>	
l 960	2.0										200	
960											500	
ا	J.U										1	
<u> </u>											 	
				_							<u> </u>	
								<u> </u>				
l 500	0.0										500	
500	0.0	The free	quency rar	nge was scanned	l from 30 MHz to	5.0 GHz.	<u> </u>				1 300	
				served from the E			limits.					
				orded were more								

Test l	Metho	d:	FCC P	art 15, Subpa	rt B, Class I	3, Radiated E	mission	s, 30 MHz	to 5.	0 GHz,	Para:15	5.109(a)
Custo	mer:		Bosch								65-3	
Test 9	Sample	e:	wLSN Installation Tool									
Mode	l No.:		ISW- BIT1-HCY Serial No.: N/A									
Opera	ating N	lode:		perating on cha	annel 58(921	I.3MHz), cont	inuously i	receiving a	CW	signal.		
									ate:		mber 19	. 2007
Notes				3 Meters				Temp: 25			umidity:	
				asi-Peak Below	v 1 GHz, Pea	ak above 1 Gl	Ηz					, .
		Ante	enna	EUT	Meter	Correction	Corr	ected	(Convert	ed	Limit
Frequ	iency	Pos	ition	Orientation	Readings	Factor	Rea	ading		Readin	g	LIMIL
Mł	Ηz	(V/H) /	Meters	Degrees	dΒμV	dB	dB	μV/m		uV/m	1	uV/m
30	.0											100
												<u> </u>
												<u> </u>
88	.0											100
88	.0											150
l	3.0											<u> </u> 150
216			─ No	emission	observed	at the spe	cified to	est dista	nce	F		200
	3.0					- I						
												į
960												200
960).0											500
												<u> </u>
					_							j
												1
												1
 												<u> </u>
500	0.0											500
				nge was scanned					1		l .	
			nissions observed from the EUT do not exceed the specified limits.									
		Emissic	ns not rec	orded were more	than 20dB und	er the specified li	mit.					