Technical Information

	Applicant		Manufacturer
Name:	Bosch Security Systems	Name:	Bosch Security Systems Inc. China Factory
Address:	130 Perinton Parkway	Address:	Mei Chi Industrial Area, Blk B
City, State, Zip:	Fairport, New York 14450	City, State, 2	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 Glassb	reak Detector	
Brandname:	Bosch		
Model Number: ISW-BGB1-SAY		λΥ	
FCC ID:	T3XBGB1-SAY		
Type: Frequency Ho		ping Spread Spectrum Transceiver	
Power Requirements:		Two 1.5V AA Alkaline Batteries	
Frequency of Operation:		902 MHz to 928 MHz	

Tests Performed

FCC	Industry Canada	Test Method	
15.247(a)(1)	RSS-210 Annex 8 A8.1(2)	Carrier Frequency Separation / Number of 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, Restricted Bands / Band edge Measurements	
15.109(a)	RSS-Gen Paragraph 6	Receiver Spurious Radiated Emissions	

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 36.9 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 36.9 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 = { 2541763809 } Shuffled G1 = { 19181215141017161113 } Shuffled G2 = { 26212422292528232027 } Shuffled G3 = { 3833139323036343735 } Shuffled G4 = { 47454948424346414044 } Shuffled G5 = { 51585657525505354 }

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 = { 2 5 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:

Radio Frequency cans were added to the Radio Frequency portion of the PCB and a software change was utilized to lower the RF IC power output.

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

Uchofa)

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.

Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 6 of 47

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

FCC Part 15 Subpart C, Radiated Harmonic Emissions

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
032F	H.P. Filter	Microlab/FXR	2 GHz	HD-20N	9/22/2006	9/22/2007
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	9/22/2007
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
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	3/12/2007	3/12/2008
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	9/22/2007
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/9/2005	9/23/2007
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/12/2007

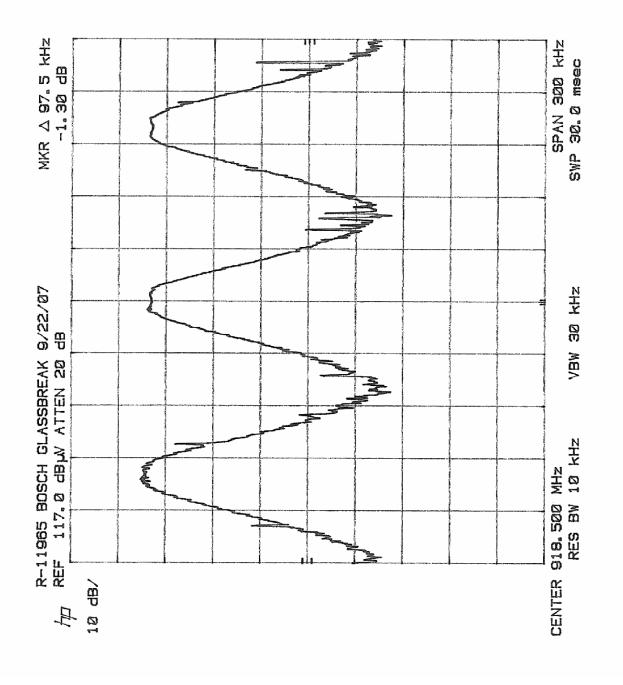
FCC Part 15 Subpart C, Transmitter Spurious Radiated Emissions

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
032F	H.P. Filter	Microlab/FXR	2 GHz	HD-20N	9/22/2006	9/22/2007
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	9/22/2007
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
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	3/12/2007	3/12/2008
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	9/22/2007
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/9/2005	9/23/2007
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/12/2007
826	10 DB Atten. (50 ohm)	Narda	DC - 10 GHz, 1W	774-10	5/21/2007	5/21/2008

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

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
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
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	3/12/2007	3/12/2008
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	9/23/2007
574	AM/FM Signal Generator	Marconi Instru.	9 kHz - 2.4 GHz	2024	7/25/2006	7/25/2007
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	6/13/2007	6/13/2008
1049	H.P. Filter	Microlab/FXR	1 GHz	HD-10N	9/22/2006	9/22/2007

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



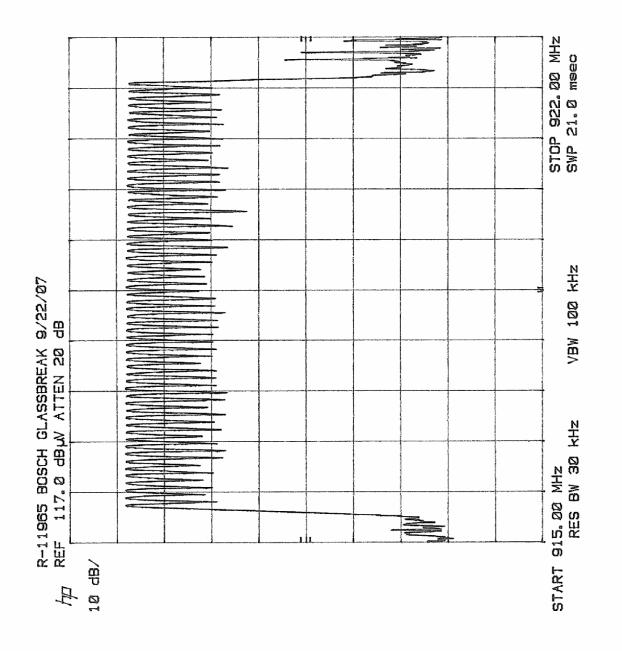
FCC Part 15, Subpart C, 15.247(a) (1)Hopping Channel Carrier Separation, 902 to 928 MHz Band

Note: Hopping channel carrier frequency meets the required minimum separation of 25 kHz (Measured carrier separation =97.5 kHz)

FCC ID: T3XBGB1-SAY

Customer	Bosch Security System.			
Test Sample	wLSN Glassbreak Detector			
Model Number	ISW- BGB1-SAY			
Date: 9-22-2007	Tech: R.S.	Sheet 1 of 2		

Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 10 of 47

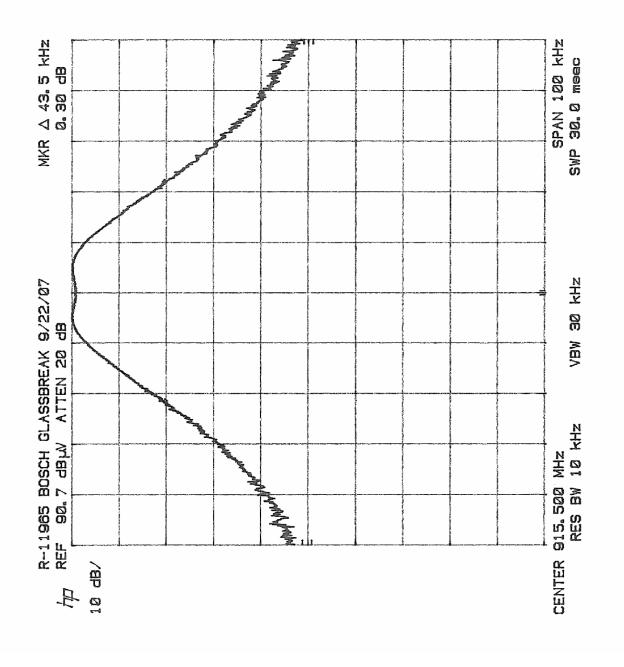


FCC Part 15, Subpart C, 15.247(a) (1) Number of Hopping Frequency, 902 to 928 MHz Band

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).

FCC ID: 13XE	FCC ID: 13XBGB1-SAY						
Customer	Bosch Security Syster	m.					
Test Sample	wLSN Glassbreak Detector						
Model Number	ISW- BGB1-SAY						
Date: 9-22-2007	Tech: R.S.	Sheet 2 of 2					

Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 11 of 47 FCC Part 15, Subpart C, 15.247 (a)(1) Occupied Bandwidth, 902 - 928 MHz Test Data



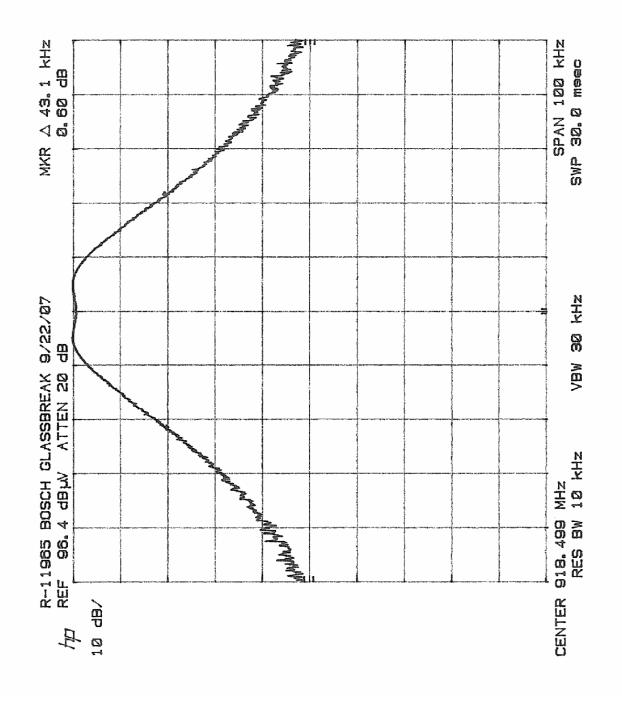
FCC Part 15, Subpart C, 15.247(a) (1) Occupied Bandwidth, 902 to 928 MHz Band

Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth measured at 43.5kHz

Note: EUT transmitting on channel 00 at 915.5 MHz.

FCC ID: T3XBGB1-SAY

Customer	Bos	Bosch Security System.				
Test Sample	wL	wLSN Glassbreak Detector				
Model Number	ISV	V- BGB1-SAY				
Date: 9-22-007		Tech: R.S.	Sheet 1 of 3			



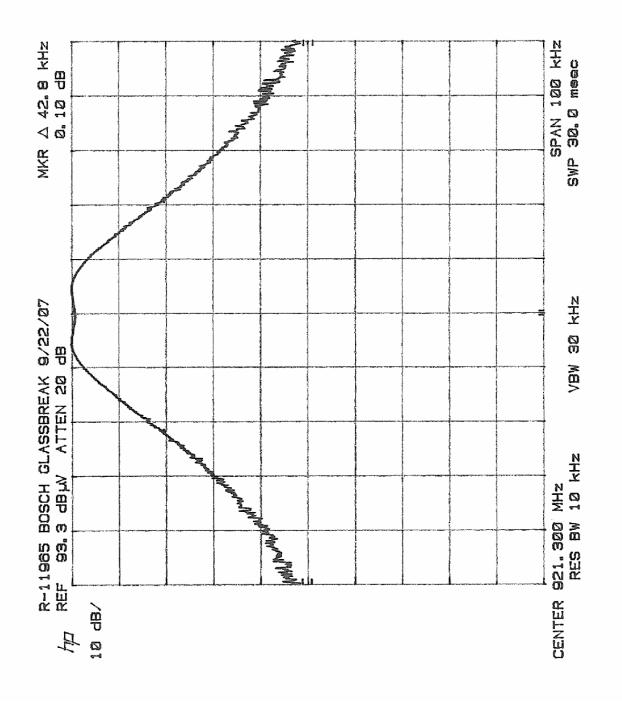
FCC Part 15, Subpart C, 15.247(a) (1) Occupied Bandwidth, 902 to 928 MHz Band

Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth measured at 43.1kHz

Note: EUT transmitting on channel 30 at 918.5 MHz.

FCC ID: T3XBGB1-SAY

Customer	Bosch Security System.				
Test Sample	wLSN Glassbreak	Detector			
Model Number	ISW- BGB1-SAY				
Date: 9-22-007	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 42.8 kHz

Note: EUT transmitting on channel 58 at 921.3 MHz.

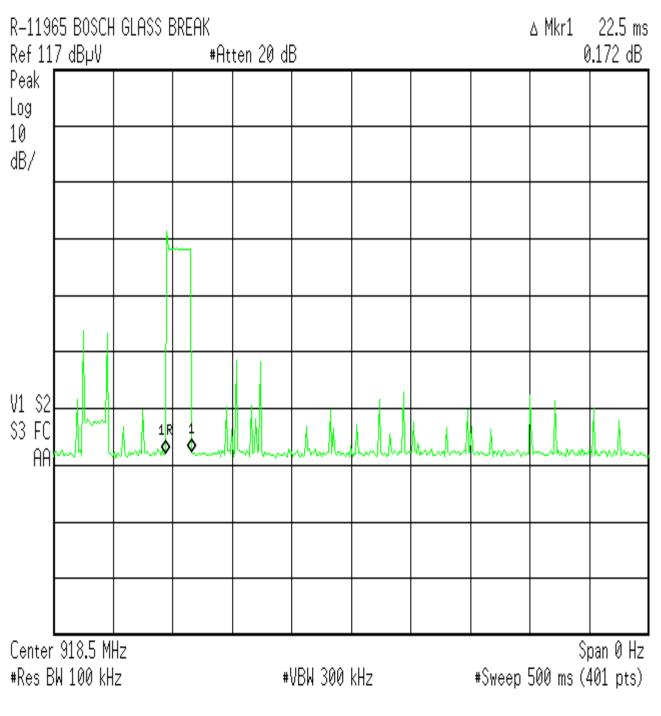
FCC ID: T3XBGB1-SAY

Customer	Bos	Bosch Security System.				
Test Sample	wLS	wLSN Glassbreak Detector				
Model Number	ISW	V- BGB1-SAY				
Date: 9-22-007		Tech: R.S.	Sheet 3 of 3			

Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 15 of 47

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

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FCC Part 15, Subpart C, 15.247(a)(1)(i) Occupancy Time, 902 to 928 MHz Band

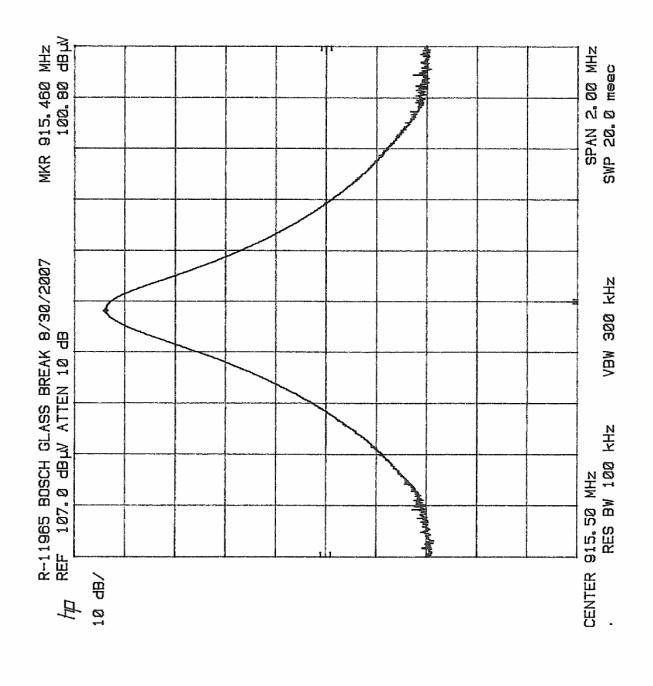
Note: The measured occupancy time does not exceed the 0.4 seconds (Measured time =22.5mSec.) **FCC ID:** T3XBGB1-SAY

Customer	Bo	Bosch Security System.				
Test Sample	wL	wLSN Glassbreak Detector				
Model Number	ISV	ISW- BGB1-SAY				
Date: 9-22-2007		Tech: R.S.	Sheet 1 of 1			

Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 17 of 47 FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output Paragraph 15.247(b) (2) Test Data

Test Meth	od:	FCC F	Part 15, Subpar	t C Radiated I	Emissions, Fu	ndamental Po	wer Output.		
Customer	:	Bosch	Security Syste	m.		Job No	b. R-11965	-1	
Test Samp	ole:	wLSN	Glassbreak De	tector		Paragrap	h 15.247(b)(2)	
Model No.		ISW-	BGB1-SAY			FCC II	: T3XBGB	1-SAY	
Operating	Mode:	Contir	nuously transmi	tting a 915.5 N	MHz, 918.4 MH	Iz and 921.3	MHz signal.		
Technicia		R. So	odoo			Date	e: August 3	0, 2007.	
Notes:	Test Dist	ance: 3	B Meters	Temp :22	°C Humidity	:66%	U		
	Detector	: Peak							
Test	Anter	na	EUT	Meter	Correction	Corrected	Converted	Converted	Peak
Freq.	Pol./He		Orientation	Reading	Factor	Reading	Reading	Reading	Limit
MHz	(V/H) / N	leters	X/Y/Z	dBuV	dB	dBuV/m	V/m	milliWatts	Watts
915.5	V / 1	.4	Х	98.0	9.6	107.6	0.24	17.3	1.0
	V / 1	.0	Y	100.0	9.6	109.6	0.30	27.4	
	V / 1	.0	Z	98.7	9.6	108.3	0.26	20.3	
	H/1	.2	Х	94.7	9.6	104.3	0.16	8.1	
	H / 1	.0	Y	93.9	9.6	103.5	0.15	6.7	
915.5	H / 1	.0	Z	94.6	9.6	104.2	0.16	7.9	
					ļ			ļŢ	
918.5	V / 1		Х	96.6	9.6	106.2	0.20	12.5	
	V / 2		Y	98.7	9.6	108.3	0.26	20.3	
	V / 1		Z	101.3	9.6	110.9	0.35	36.9	
	H/2		Х	95.9	9.6	105.5	0.19	10.6	
	H/1		Y	96.1	9.6	105.7	0.19	11.1	
918.5	H / 1	.9	Z	93.3	9.6	102.9	0.14	5.8	<u> </u>
001.0	<u> </u>	1	v	05.0	0.6	105.2	0.10	0.0	
921.3	V / 1 V / 1		X Y	95.6 100.1	9.6 9.6	105.2 109.7	0.18	9.9 28.0	
	V / 1		Z	100.1	9.6	1109.7	0.31	33.7	<u> </u>
	H/1		X	97.2	9.6	106.8	0.33	14.4	
I	H/1		Y	96.4	9.6	106.0	0.22	11.9	
921.3	H/2		Z	95.0	9.6	104.6	0.17	8.7	1.0
02110	,								
	ļ								
	<u> </u>				 			<u> </u>	
								<u> </u>	
								├	
	The FUT	meets	the required lim	nit indicated a	L DOVE	<u> </u>		<u> </u>	
			ormulae were us			ath in dBuV ir	to V/m and V	//m to Watts	
	-		uV/m-120) / 20)						
	Power =								
	1 of 1	, X	-,						

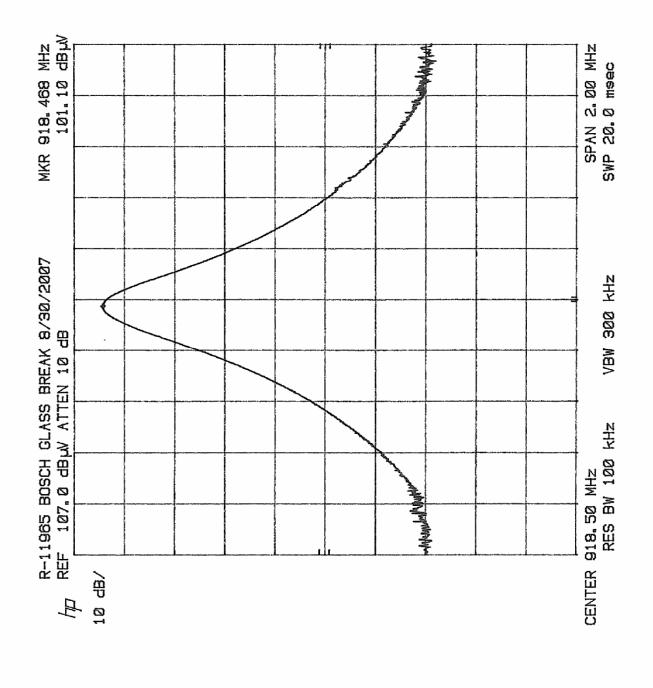
Page 1 of 1



FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output, Para.15.247(b)(2) Note: EUT transmitting on channel 00 at 915.5 MHz. FCC ID: T3XBGB1-SAY

Customer	Bo	Bosch Security System.				
Test Sample	wL	wLSN Glassbreak Detector				
Model Number	IS\	ISW- BGB1-SAY				
Date: 8-30-2007		Tech: R.S.	Sheet 1 of 3			

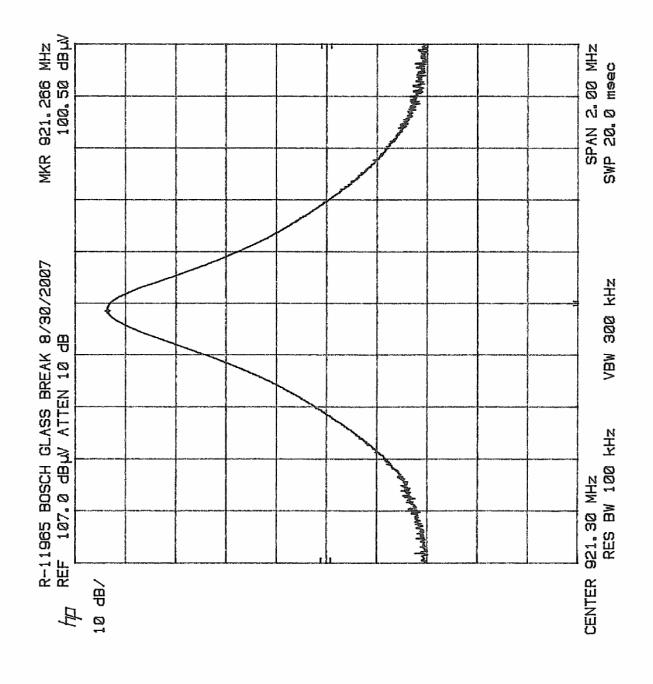
Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 20 of 47



FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output, Para.15.247(b)(2) Note: EUT transmitting on channel 30 at 918.4 MHz. FCC ID: T3XBGB1-SAY

Customer	Bosch	Bosch Security System.				
Test Sample	wLSN	wLSN Glassbreak Detector				
Model Number	ISW- E	BGB1-SAY				
Date: 8-30-2007		ech: R.S.	Sheet 2 of 3			

Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 21 of 47

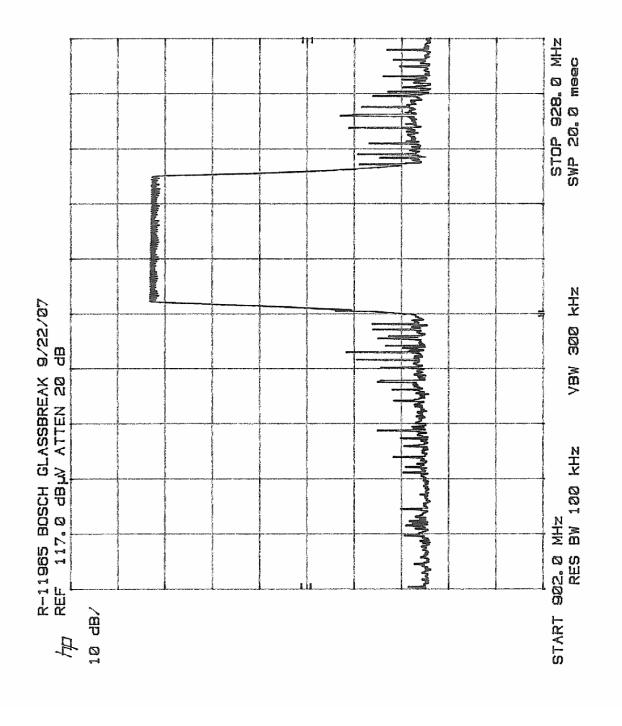


FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output, Para.15.247(b)(2) Note: EUT transmitting on channel 58 at 921.3 MHz. FCC ID: T3XBGB1-SAY

Customer	Bo	Bosch Security System.				
Test Sample	wL	wLSN Glassbreak Detector				
Model Number	IS\	N- BGB1-SAY				
Date: 8-30-2007		Tech: R.S.	Sheet 3 of 3			

Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 22 of 47

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. FCC ID: T3XBGB1-SAY

Customer	Bosch Security System.				
Test Sample	wLSN Glassbreak Detector				
Model Number	ISW- BGB1-SAY				
Date: 9-22-007	Tech: R.S.	Sheet 1 of 1			

Retlif Testing Laboratories, Report R-11965-1, Bosch Security Systems, FCC ID: T3XBGB1-SAY Page 24 of 47 FCC Part 15 Subpart C, Radiated Emissions, Harmonics Paragraphs 15.247(d) EUT transmitting at the Fundamental signal of 915.5 MHz

Test Method	d: F(CC Part 15 Sul	bpart C,	Radiated Em	issions, Harm	nonics Emissio	ins.		
Customer:	Bo	osch Security S	System.			Job No.	R-11965-1		
Test Sample	e: wl	LSN Glassbrea	ak Detec	tor			•		
Model No.:		W-BGB1-SAY	,			FCC ID:	T3XBGB1-SAY		
Operating N	lode: Co	ontinuously tra	nsmittin	a 915.5 MH	z signal.		•		
Technician:		Soodoo				Date:	September 14,	2007.	
	Test Distand						,		
		eak, Unless oth	herwise	specified					
	Antenna			Meter	Correction	Corrected	Converted	Pea	
Test Freq.	Pol./Heig			Reading	Factor	Reading	Reading	Lim	
MHz	(V/H)/Met			dBµV	dB	dBµV/m	uV/m	uV/r	
1831.0	V / 1.0			60.2	2.3	62.5	1333.5	5011	
	V / 1.0			62.9	2.3	65.2	1819.7		0.0
	V / 1.1			61.9	2.3	64.2	1621.8		
	H / 1.0			61.6	2.3	63.9	1566.8		
	H / 1.9			61.2	2.3	63.5	1496.2		
1831.0	H / 1.0			59.2	2.3	61.5	1188.5	50118	8.0
			†						
2746.5	V / 1.3	Х		51.4	5.2	56.6	676.1	5000).0
	V / 1.9			48.0	5.2	53.2	457.1		
	V / 1.2	Z		50.6	5.2	55.8	616.6		
	H / 2.4			48.5	5.2	53.7	484.2		
	H / 1.9			51.2	5.2	56.4	660.7		
2746.5	H / 1.5	Z		48.1	5.2	53.3	462.4	5000).0
3662.0	V / 1.0			45.3	10.0	55.3	582.1	5000).0
	V / 1.0			45.6	10.0	55.6	602.6		
	V / 1.0			45.2	10.0	55.2	575.4		
	H / 1.0			45.3	10.0	55.3	582.1		
	H / 1.7			46.6	10.0	56.6	676.1	5000	
3662.0	H/1.6	Z		45.7	10.0	55.7	609.5	5000).0
4577.5	V / 1.0	Х	,	48.9	13.6	62.5	1333.5	5000	0
	V / 1.0			51.9	13.6	65.5	1883.6		
	V / 1.7			49.7	13.6	63.3	1462.2		
	H / 2.0			48.2	13.6	61.8	1230.3		
	H / 1.0			49.4	13.6	63.0	1412.5		
4577.5	Η/	Z		51.4	13.6	65.0	1778.3	5000).0
5493.0	V / 1.8			45.7	17.1	62.8	1380.4	5011	8.0
	V / 1.0			45.3	17.1	62.4	1318.3		
	V / 1.0			45.5	17.1	62.6	1349.0		
	H / 1.6			45.1	17.1	62.2	1288.2		
	H / 1.0			46.1	17.1	63.2	1445.4		
5493.0	H / 1.0			46.0	17.1	63.1	1428.9	5011	
							s not recorded w)
						T do not exce	ed the specified I	imits.	
	*= Noise Fl	oor Measurem	ients (mi	nimum sensi	tivity).				

Test Metho	d:	FCC Pa	rt 15 Subpart C	, Radiated Em	issions, Harmo	nics Emission	S.		
Customer:		Bosch S	Security System			Job No.	R-11965-1		
Test Sampl	e:	wLSN G	Blassbreak Dete	ctor		·			
Model No.:		ISW-BG	B1-SAY			FCC ID:	T3XBGB1-SAY		
Operating I	Node:	Continu	ously transmittir	ng a 915.5 MH	z signal.	•			
Technician		R. Sood		0	<u> </u>	Date:	September 14, 2	2007.	
Notes:	Test Dist								
			nless otherwise	specified					
	Ante		EUT	Meter	Correction	Corrected	Converted	Pea	ak
Test Freq.			Orientation	Reading	Factor	Reading	Reading	Lim	
MHz	Pol./Height (V/H)-Meters		X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/	m
6408.5	V /		X	46.6	19.9	66.5	*2113.5	5011	
	V / 1		Y	46.6	19.9	66.5	*2113.5	0011	0.0
i	V / *		Z	46.6	19.9	66.5	*2113.5	i	
	Η/		X	46.6	19.9	66.5	*2113.5		
	Η/		Y	46.6	19.9	66.5	*2113.5	† i	
6408.5	Η/		Z	46.6	19.9	66.5	*2113.5	5011	8.0
7324.0	V / 1	1.0	Х	43.0	21.3	64.3	*1640.6	5000	0.0
	V / 1	1.0	Y	43.0	21.3	64.3	*1640.6		
	V / 1	1.0	Z	43.0	21.3	64.3	*1640.6		
	Η/	1.0	Х	43.0	21.3	64.3	*1640.6		
	Η/	1.0	Y	43.0	21.3	64.3	*1640.6		
7324.0	Η/	1.0	Z	43.0	21.3	64.3	*1640.6	5000).0
			X				****		
8239.5	V / *		X	42.5	23.6	66.1	*2018.4	5000).0
	V / *		Y	42.5	23.6	66.1	*2018.4		
I	V / *		Z X	42.5 42.7	23.6 23.6	66.1	*2018.4		
I	H/		X Y	42.7	23.6	63.6 63.6	*2065.4 *2065.4		
8239.5	H/		Z	42.7	23.6	63.6	*2065.4	5000	10
0200.0	117	1.0	۷.	72.7	20.0	00.0	2003.4	0000	
9155.0	V / *	1.0	Х	42.1	25.5	67.6	*2398.8	5000	0.0
	V / *		Y	42.1	25.5	67.6	*2398.8	1	
	V / 1		Z	42.1	25.5	67.6	*2398.8	İ	
	Η/	1.0	Х	42.0	25.5	67.5	*2371.4	İ	
	Η/	1.0	Y	42.0	25.5	67.5	*2371.4	İ	
9155.0	Η/	1.0	Z	42.0	25.5	67.5	*2371.4	5000	0.0
								<u> </u>	
	The free			d from 20 M			hot rocorded		
			v				not recorded we		;
							d the specified lin	nits.	
	=INOISE	LIOOL INE	easurements (M	minum syste	m sensitivity)				

Test Metho	d:	FCC	Part 15 Subpa	art C, Radiat	ed Emissions	, Harmonics	Emissio	ns.			
Customer:			h Security Sys				ob No.	R-119	965-1		
Test Sample	e:	wLSI	N Glassbreak [Detector			I				
Model No.:		ISW-	BGB1-SAY			F	CC ID:	T3XB	GB1-SAY		
Operating N	/lode:	Cont	inuously transr	nitting a 915	.5 MHz signa						
Technician:			ooboo	0	U		Date:	Septe	mber 14, 200	7.	
Notes:	Test Dist	ance:	3 Meters			Duty C	/cle: 22.		•		
	Detector	: Avera	age, unless oth	nerwise spec	ified				: -13.0dB		
						Duty cycle				۸.	
Test Freq.	Anten Pol./He		EUT Orientation	Average Reading	Correction Factor	Correction Factor	Corre Read		Converted Reading		/g. mit
MHz	(V/H)-	X/Y/Z	dBµV	dB	dB	dBµ'	V/m	uV/m	u∖	//m
1831.0	V / 1	.0	Х	57.9	2.3	-13.0	47	.2	229.1	501	1.8
	V / 1		Y	61.2	2.3	-13.0	50	.5	335.0		
	V / 1		Z	57.1	2.3	-13.0	46	.4	208.9		
	H/1		Х	59.2	2.3	-13.0	48		266.1		
	H/1		Y	61.2	2.3	-13.0	50		335.0		
1831.0	H/1	.0	Z	55.9	2.3	-13.0	45	.2	182.0	501	1.8
2746.5	V / 1	3	Х	45.4	5.2	-13.0	37	6	75.9	FO	0.0
2740.5	V/1		X Y	40.6	5.2	-13.0	32		43.7	50	0.0 I
I	V/1		Z	45.6	5.2	-13.0	37		77.6		
I	H/2		X	42.1	5.2	-13.0	34		51.9		
I	H/1		Y	45.3	5.2	-13.0	37		75.0		<u> </u>
2746.5	H/1		Z	40.5	5.2	-13.0	32		43.2	50	0.0
3662.0	V / 1		Х	31.1	10.0	-13.0	28	.1	25.4	50	0.0
	V / 1		Y	31.9	10.0	-13.0	28	.9	27.9		
	V / 1		Z	31.5	10.0	-13.0	28	.5	26.6		
	H/1		Х	31.1	10.0	-13.0	28		25.4		
	H/1		Y	35.7	10.0	-13.0	32		43.2		
3662.0	H / 1	.6	Z	33.2	10.0	-13.0	30	.2	32.4	50	0.0
4577.5	V / 1	0	Х	41.2	13.6	-13.0	41	8	123.0	50	0.0
	V/1		Y	47.4	13.6	-13.0	48		251.2		
I	V/1		Z	43.8	13.6	-13.0	44		166.0		
I	H/2		X	40.0	13.6	-13.0	40		107.2		<u> </u>
<u> </u>	H/1		Ý	42.6	13.6	-13.0	43		144.5		
4577.5	H/1		Z	48.0	13.6	-13.0	48		269.2	50	0.0
E400.0	1//4	0	v	07 4	474	40.0			440.0	F 01	1 0
5493.0	V / 1		X Y	37.4	17.1	-13.0	41		118.9	50'	1.8
	V / 1			34.2	17.1	-13.0	38		82.2		
	V/1		Z	34.4	17.1	-13.0	38		84.1		
	H/1		X Y	33.3	17.1	-13.0	37		74.1		
5493.0	H/1 H/1		Y Z	35.6 36.2	17.1 17.1	-13.0 -13.0	39		96.6	504	 1.8
0493.0							40 missions		103.5		11.0
			range was sc elow the specif								
							IUL EXCE	eu ine	specified limit	ເວ.	
	=INOISE		Measurements	s(iviiniinium	system sens	uvity)					

Test Metho	d:	FCC	Part 15 Subpa	art C, Radiate	d Emissions,	Harmonics E	missions.		
Customer:			h Security Sys				No. R-119	965-1	
Test Samp	e:	wLSI	N Glassbreak	Detector		- I	•		
Model No.:			BGB1-SAY			FC	CID: T3XB	GB1-SAY	
Operating	Mode [.]		inuously transr	mitting a 915	5 MHz signal	1			
Technician			odoo	intering a o ro.			Date: Septe	ember 14, 200	7
Notes:			3 Meters				le: 22.5%		
Notes.			age, unless oth	erwise sneci	fied		le Correction	-13 0dB	
	Detector			•		Duty cycle		. 10.000	
Test Freq.	Anten Pol./He		EUT Orientation	Average Reading	Correction Factor	Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-	X/Y/Z	dBµV	dB	dB	dBµV/m	uV/m	uV/m
6408.5	V / 1	·	Х	32.4	19.9	-13.0	39.3	*92.3	5011.8
	V / 1		Y	32.4	19.9	-13.0	39.3	*92.3	
<u> </u>	V / 1		Z	32.4	19.9	-13.0	39.3	*92.3	
	H/1		X	32.4	19.9	-13.0	39.3	*92.3	
	H/1		Y	32.4	19.9	-13.0	39.3	*92.3	
6408.5	H/1		Z	32.4	19.9	-13.0	39.3	*92.3	5011.8
		-						02.0	
7324.0	V / 1	.0	Х	32.4	21.3	-13.0	40.7	*108.4	500.0
	V / 1		Y	32.4	21.3	-13.0	40.7	*108.4	
I	V / 1		Z	32.4	21.3	-13.0	40.7	*108.4	
I	H/1		Х	32.4	21.3	-13.0	40.7	*108.4	
	H/1		Y	32.4	21.3	-13.0	40.7	*108.4	I
7324.0	H/1		Z	32.4	21.3	-13.0	40.7	*108.4	500.0
8239.5	V / 1	.0	Х	33.2	23.6	-13.0	42.6	*151.4	500.0
	V / 1	.0	Y	33.2	23.6	-13.0	42.6	*151.4	
	V / 1	.0	Z	33.2	23.6	-13.0	42.6	*151.4	
	H/1	.0	Х	32.8	23.6	-13.0	43.2	*144.5	
	H/1	.0	Y	32.8	23.6	-13.0	43.2	*144.5	
8239.5	H / 1	.0	Z	32.8	23.6	-13.0	43.2	*144.5	500.0
0455.0		0	X	00.4	0F F	10.0	45.4	*186.2	500.0
9155.0	V / 1		X	33.1	25.5	-13.0			500.0
I	V / 1		Y Z	33.1	25.5	-13.0	45.4	*186.2	<u> </u>
I	V / 1			33.1	25.5	-13.0	45.4	*186.2	
	H/1		X	33.2	25.5	-13.0	45.5	*188.4	
	H/1		Y	33.2	25.5	-13.0	45.5	*188.4	
9155.0	H / 1	.0	Z	33.2	25.5	-13.0	45.5	*188.4	500.0
				oppod from 2			ingione pet re	a a contract ware to	moro
			range was scale elow the specif						
								specified limit	ა.
	=inoise		Measurements	s (iviiriirrium :	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 Method	d:	FCC Pa	rt 15 Subpart C	, Radiated Em	issions, Harmo	nics Emissior	IS.		
Customer:			Security System			Job No.	R-11965-1		
Test Sample	e:		Blassbreak Dete						
Model No.:		ISW-BG	B1-SAY			FCC ID:	T3XBGB1-SAY		
Operating N	lode:		ously transmittir	ng a 918.4 MH	z signal.				
Technician:		R. Sood		.9		Date:	September 18, 2	2007.	
	Test Dista					24401			
			nless otherwise	specified					
	Ante		EUT	Meter	Correction	Corrected	Converted	Pea	ak
Test Freq.	Pol./H		Orientation	Reading	Factor	Reading	Reading	Lim	
MHz	(V/H)/N	-	X/Y/Z	dBµV	dB	dBµV/m	uV/m	uV/r	
1836.8	V / 1		X X	53.8	2.3	56.1	638.3	5011	
1050.0	V / 2		Y	62.4	2.3	64.7	1717.9	0011	0.0
	V / *		Z	60.9	2.3	63.2	1445.4		
	H//		X	63.0	2.3	65.3	1840.8		
	H/*		Y	63.3	2.3	65.6	1905.5		
1836.8	H/		Z	62.0	2.3	64.3	1640.6	5011	8.0
1000.0				02.0	2.0	0 1.0	1010.0	0011	0.0
2755.2	V / ?	1.0	Х	53.1	5.2	58.3	822.2	5000).0
	V / *		Ý	51.3	5.2	56.5	668.3		
	V / *		Z	53.6	5.2	58.8	871.0		
	H/ <i>*</i>		X	52.6	5.2	57.8	776.2		
	H/ <i>*</i>		Ý	52.4	5.2	57.6	758.6		
2755.2	H/2		Z	52.4	5.2	57.6	758.6	5000	0.0
3673.6	V / 2	1.0	Х	46.6	10.0	56.6	676.1	5000).0
	V / ′		Y	46.4	10.0	56.4	660.7		
	V / ′		Z	46.6	10.0	56.6	676.1	1	
	H/ <i>*</i>		Х	46.5	10.0	56.5	668.3	1	
	H/ <i>*</i>		Y	46.6	10.0	56.6	676.1		
3673.6	H/2	2.0	Z	46.7	10.0	56.7	683.9	5000).0
4592.0	V / 2	2 1	v	47.6	12.6	61.0	1140.0	5000	0
4392.0	V / 2		X Y	47.6 49.2	13.6	61.2 62.8	1148.2 1380.4	5000	J.U
	V/		ř Z	49.2	13.6 13.6	62.8	1380.4		
	H/ '		X		13.6	61.6	1202.3		
	H/ '		X Y	<u>47.8</u> 47.8	13.6	61.4	1174.9		
4592.0	H/'		Z	48.7	13.6	62.3	1303.2	5000).0
	,			1011	10.0	02.0	1000.2		
5510.4	V / Ý	1.8	Х	46.2	17.1	63.3	1462.2	5011	8.0
	V / ′	1.0	Y	43.4	17.1	60.5	*1059.3		
	V / ′	1.0	Z	45.6	17.1	62.7	1364.6	İ	
	H/ <i>'</i>	1.0	Х	43.1	17.1	60.2	*1023.3		
	H/ <i>'</i>	1.0	Y	46.2	17.1	63.3	1462.2		
5510.4	H/ <i>'</i>	1.0	Z	46.2	17.1	63.3	1462.2	5011	8.0
	The freq	uency ra	nge was scanne	ed from 30 MH	Iz to 10.0 GHz.	All emissions	not recorded we	re more	<u>;</u>
						do not excee	d the specified lin	mits.	
	*= Noise	Floor M	easurements (m	ninimum sensi	tivity).				

Test Metho	d:	FCC Pa	rt 15 Subpart C	, Radiated Em	issions, Harmo	nics Emission	S.	
Customer:			Security System				R-11965-1	
Test Sampl	e:	wLSN G	Blassbreak Dete	ctor				
Model No.:		ISW-BG	B1-SAY			FCC ID:	T3XBGB1-SAY	
Operating N	Node:	Continu	ously transmittir	ng a 918.4 MH	lz signal.			
Technician		R. Sood		5	<u> </u>	Date:	September 18, 2	2007.
Notes:	Test Dist					I		
	Detector:	Peak. u	nless otherwise	specified				
	Ante	,	EUT	Meter	Correction	Corrected	Converted	Peak
Test Freq.	Pol./H		Orientation	Reading	Factor	Reading	Reading	Limit
MHz	(V/H)-N	Veters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
6428.8	V /		X	42.2	19.9	62.1	*1273.5	50118.0
	V /		Y	42.2	19.9	62.1	*1273.5	
i	V /		Z	42.2	19.9	62.1	*1273.5	
 	Η/		Х	41.3	19.9	61.2	*1148.2	İ
İ	Η/	1.0	Y	41.3	19.9	61.2	*1148.2	İ
6428.8	Η/		Z	41.3	19.9	61.2	*1148.2	50118.0
7347.2	V /	1.0	Х	43.0	21.3	64.3	*1640.6	5000.0
	V /	1.0	Y	43.0	21.3	64.3	*1640.6	
	V /		Z	43.0	21.3	64.3	*1640.6	
	Η/		Х	43.0	21.3	64.3	*1640.6	
	Η/		Y	43.0	21.3	64.3	*1640.6	
7347.2	Η/	1.0	Z	43.0	21.3	64.3	*1640.6	5000.0
0005.0		4.0	X	10 5	00.0	00.4	*0040.4	5000.0
8265.6	V /		X	42.5	23.6	66.1	*2018.4	5000.0
	V /		Y Z	42.5	23.6	66.1	*2018.4	
I	V / H /		X	42.5 42.7	23.6 23.6	66.1 63.6	*2018.4 *2065.4	
I	H/		A Y	42.7	23.6	63.6	*2065.4	
8265.6	H/		Z	42.7	23.6	63.6	*2065.4	5000.0
0203.0	117	1.0	۷.	42.1	23.0	05.0	2003.4	5000.0
9184.0	V /	1.0	Х	42.1	25.5	67.6	*2398.8	5000.0
	V /		Y	42.1	25.5	67.6	*2398.8	
	V /		Z	42.1	25.5	67.6	*2398.8	
	Η/		X	42.0	25.5	67.5	*2371.4	
	Η/	1.0	Y	42.0	25.5	67.5	*2371.4	İ
9184.0	Η/	1.0	Z	42.0	25.5	67.5	*2371.4	5000.0
			v				not recorded we	
							the specified lin	nits.
	"=INOISE		easurements (M	iinimum syste	m sensitivity)			

Customer: Bosch Security System. Job No. R-11965-1 Test Sample: wLSN Glassbreak Detector MCBE State Technican: TSXBGB1-SAY Date: September 18, 2007. Notes: Test Distance: 3 Medet No:: 2 September 18, 2007. Date: September 18, 2007. Notes: Test Distance: 3 Metra Correction Reading Correction Factor Correction Factor Correction Factor Correction Reading Correction Factor Correction Reading Correction Factor Correction Factor Correction Reading Correction Factor Correction Reading Corection Reading Correction Reading <th>Test Method</th> <th>d:</th> <th>FCC</th> <th>Part 15 Subpa</th> <th>art C, Radiat</th> <th>ed Emissions</th> <th>, Harm</th> <th>nonics E</th> <th>missio</th> <th>ns.</th> <th></th> <th></th> <th></th>	Test Method	d:	FCC	Part 15 Subpa	art C, Radiat	ed Emissions	, Harm	nonics E	missio	ns.			
Test Sample: wLSN Glassbreak Detector Model No.: ISW-BGB1-SAY FCC ID: T3XBGB1-SAY Operating Mode: Continuously transmitting a 918.4 MHz signal. TestInation: R Socido Notes: Test Distance: 3 Meters Duty Cycle: 22.5% Detector: Average Duty Cycle Correction Converted Average MHz (V/H) X/Y/Z dBuy dB dB dB dB Correction											965-1		
Model No.: ISW-BGB1-SAY FCC ID: T3XBGB1-SAY Operating Mode: Continuously transmitting a 918.4 MHz signal. Image: Continuously transmitting a 918.4 MHz signal. Technician: R. Soodo Date: September 18, 2007. Notes: Test Distance: 3 Meters Duty Cycle: 22.5% Duty Cycle: Correction. Correction. Correction. Correction. Correction. Reading Lin MHz (V/H) X / Y / Z BBµV dB dB dBµV/m UV/m uV 1836.8 V/1.0 X 50.7 2.3 -13.0 40.0 100.0 501 1 V/1.0 X 60.0 2.3 -13.0 49.3 281.7 1 1 H/1.0 X 60.0 2.3 -13.0 48.4 263.0 501 1836.8 H/1.0 Z 59.1 2.3 -13.0 48.4 263.0 501 2755.2 V/1.0 X 48.5 2 -13.0 39.7 96.6 1<	Test Sample	e:											
Technician: R. Soodo Date: September 18, 2007. Notes: Test Distance: 3 Meters Duty Cycle: 22:8 Duty Cycle: 20:8 Use Correction Reading Duty Cycle: 20:8 Corrected Corrected Corrected Reading Correction Fact of Corrected			ISW-I	BGB1-SAY				FC	C ID:	T3XB	GB1-SAY		
Technician: R. Soodo Date: September 18, 2007. Notes: Test Distance: 3 Meters: Duty Cycle: 22:8 Unty Cycle: 20:8 Unty Cycle: 20:8 Unty Cycle: 20:8 Unty Cycle: 20:8 Soodo Average Correction Reading Correction Corrected Corrected Corrected Corrected Reading Corrected Corrected Corrected Reading VI 101 V/1.0 X 50.7 2.3 -13.0 40.0 100.0 501 1 V/1.0 X 50.7 2.3 -13.0 49.3 291.7 1 1 V/1.0 X 60.0 2.3 -13.0 49.3 291.7 1 1 H/1.0 X 60.0 2.3 -13.0 49.3 291.7 1 1836.8 H/1.0 X 40.0 2.3 -13.0 49.3 291.7 1 1836.8 H/1.0 X 49.5 2 -13.0 40.3 118.9 500	Operating M	lode:			nitting a 918	3.4 MHz signa	ıl.						
Notes: Test Distance: 3 Meters Detector: Average, unless otherwise specified Duty Cycle: 22.5% Duty Cycle: Correction: -13.0dB Test Freq. Antenna Pol/Height EUT Orientation Average Reading Correction Factor Duty Cycle: Correction: -13.0dB MHz (V/H) X // /Z dBµ dB dB Converted Reading Average Correction: -13.0d Converted Reading Average Reading MHz (V/H) X // /Z dBµ dB dB dB dB Duty Cycle: 22.5% Converted Reading Average Reading MHz (V/H) X // /Z dBµ dB dB dB dB dB Duty Cycle: 22.5% Average I V/1.0 X 50.7 2.3 -13.0 40.0 100.0 501 I V/1.0 X 60.0 2.3 -13.0 49.5 298.5 1 I383.8 H /1.0 X 49.3 5.2 -13.0 41.5 118.9 500 I V/1.0 Z 50.6 5.2					U	0			Date:	Septe	mber 18, 2007	7.	
Detector: Average, unless otherwise specified Duty Cycle Correction Correction Corrected Converted Reading L/L Test Freq. Pol./Height Orientation Reading Correction Factor Correction Correction Reading L/L Average MHz (V/H) X/Y/Z dBµ/V dB dB dBµ/m UV/m UV 1836.8 V/1.0 X 50.7 2.3 -13.0 49.3 260.0 11 I V/1.0 X 60.0 2.3 -13.0 49.3 269.7 1 I H/1.0 X 60.2 2.3 -13.0 49.3 298.5 1 1836.8 H/1.0 Z 59.1 2.3 -13.0 41.5 118.9 500 2755.2 V/1.0 X 49.3 5.2 -13.0 41.5 118.9 500 I H/1.6 Y 48.8 5.2 -13.0 40.3 103.5							C				,		
Test Freq. Antenna Pol./Height EUT Orientation Average Reading Correction Factor Duty cycle Correction Factor Converted Reading Average Reading MHz (V/H)- X/Y/Z dBµV dB dB dBµV/m UV/m uV/ lux 1306.8 V/1.0 X 50.7 2.3 -13.0 dBµV/m UV/m uV/ lux 1 V/1.12 Z 59.0 2.3 -13.0 48.3 260.0 1 1 H/1.0 X 60.0 2.3 -13.0 49.3 291.7 1 1 H/1.0 X 60.2 2.3 -13.0 49.5 298.5 1 1336.8 H/1.0 Z 59.1 2.3 -13.0 49.5 298.5 1 1336.8 H/1.0 Z 59.1 2.3 -13.0 41.5 118.9 500 1 V/1.0 Z 50.6 5.2 -13.0 40.0 100.2.5 1 1					nerwise spec	cified					: -13.0dB		
Test Freq. Pol./Height Orientation Reading Factor Correction Factor Connected Correction Connected Reading Connetit Reading							1						
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$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	MHz	(V/H)	-	X / Y / Z	dBµV	dB	C	зB	dBµ	V/m	UV/m	uV/m	
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2755.2 V/1.0 X 49.3 5.2 -13.0 41.5 118.9 500 V/1.3 Y 47.5 5.2 -13.0 39.7 96.6 1 V/1.0 Z 50.6 5.2 -13.0 42.8 138.0 1 H/1.2 X 48.8 5.2 -13.0 41.0 112.2 1 H/1.6 Y 48.1 5.2 -13.0 40.3 103.5 1 2755.2 H/2.0 Z 48.4 5.2 -13.0 40.6 107.2 500													
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1836.8	H/1.	0	Z	59.1	2.3	-1	3.0	48	8.4	263.0	5011.8	}
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V/1.0 Z 32.5 17.1 -13.0 36.6 67.6 H/1.0 X 31.4 17.1 -13.0 35.5 *59.6 H/1.0 Y 33.5 17.1 -13.0 37.6 75.9													
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	5510.4	<u>H</u> /1.	0	Z	32.3	17.1	-1	3.0			66.1	5011.8	3
The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more		The freq	uency	range was sc	anned from	30 MHz to 10	.0 GH	z. All en	nission	s not re	corded were n		
Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.		Than 20	dB be	low the specif	ied limit. En	nissions from	the El	JT do n	ot exce	ed the	specified limits	S.	
*=Noise Floor Measurements (Minimum system sensitivity)		*=Noise	Floor	Measurements	s (Minimum	system sens	itivity)						

D Test Freq. MHz 6428.8	wLS ISW- ode: Cont R. S cest Distance: Detector: Aver Antenna Pol./Height (V/H)- V / 1.0 V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	EUT Orientation X / Y / Z X Y Z	Detector nitting a 918.	fied Correction Factor dB	FC Duty Cyc Duty Cyc Duty cycle Correction Factor	Date: Septe	GB1-SAY ember 18, 200	7. Avg. Limit
Model No.: Operating Mo Technician: Notes: To D Test Freq. MHz 6428.8 1 1 1 1 1 1 1 1 1 1 1 1 1	wLS ISW- ode: Cont R. S cest Distance: Detector: Aver Antenna Pol./Height (V/H)- V / 1.0 V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	N Glassbreak I -BGB1-SAY tinuously transr oodoo 3 Meters age, unless oth EUT Orientation X / Y / Z X Y Z	Detector nitting a 918. nerwise speci Average Reading dBµV 31.6	fied Correction Factor dB	Duty Cyc Duty Cyc Duty cycle Correction Factor	Date: Septe le: 22.5% le Correction Corrected	ember 18, 200 : -13.0dB Converted	Avg.
Model No.: Operating Mo Technician: Notes: To D Test Freq. MHz 6428.8 1 1 1 1 1 1 1 1 1 1 1 1 1	ISWode:ContR. STest Distance:Detector:AntennaPol./Height(V/H)-V / 1.0V / 1.0V / 1.0V / 1.0H / 1.0H / 1.0	-BGB1-SAY tinuously transr oodoo 3 Meters age, unless oth EUT Orientation X / Y / Z X Y Z	nitting a 918. herwise speci Average Reading dBµV 31.6	fied Correction Factor dB	Duty Cyc Duty Cyc Duty cycle Correction Factor	Date: Septe le: 22.5% le Correction Corrected	ember 18, 200 : -13.0dB Converted	Avg.
Operating Mo Technician: Notes: Televite D Test Freq. MHz 6428.8 I I I I I I I I I	ode: Cont R. S Test Distance: Detector: Antenna Pol./Height (V/H)- V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	tinuously transr oodoo 3 Meters age, unless oth EUT Orientation X / Y / Z X Y Z	Average Reading dBµV 31.6	fied Correction Factor dB	Duty Cyc Duty Cyc Duty cycle Correction Factor	Date: Septe le: 22.5% le Correction Corrected	ember 18, 200 : -13.0dB Converted	Avg.
Technician: Notes: D D D Test Freq. D MHz 0 6428.8 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	R. S Test Distance: Detector: Aver Antenna Pol./Height (V/H)- V / 1.0 V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	oodoo 3 Meters age, unless oth EUT Orientation X/Y/Z X Y Z	Average Reading dBµV 31.6	fied Correction Factor dB	Duty Cyc Duty Cyc Duty cycle Correction Factor	le: 22.5% le Correction Corrected	: -13.0dB Converted	Avg.
Notes: T D D Test Freq. D MHz D 6428.8 D D D D D D D D D D D D	est Distance: Detector: Aver Antenna Pol./Height (V/H)- V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	3 Meters age, unless oth EUT Orientation X / Y / Z X Y Z	Average Reading dBµV 31.6	Correction Factor dB	Duty Cyc Duty Cyc Duty cycle Correction Factor	le: 22.5% le Correction Corrected	: -13.0dB Converted	Avg.
D Test Freq. MHz 6428.8	Detector: Aver Antenna Pol./Height (V/H)- V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	EUT Orientation X / Y / Z X Y Z	Average Reading dBµV 31.6	Correction Factor dB	Duty Cyc Duty cycle Correction Factor	le Correction Corrected	Converted	
Test Freq. MHz 6428.8 	Antenna Pol./Height (V/H)- V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	EUT Orientation X/Y/Z X Y Z	Average Reading dBµV 31.6	Correction Factor dB	Duty cycle Correction Factor	Corrected	Converted	
MHz 6428.8 	Pol./Height (V/H)- V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	Orientation X/Y/Z X Y Z	Reading dBµV 31.6	Factor dB	Correction Factor			
MHz 6428.8 	(V/H)- V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	X/Y/Z X Y Z	dBµV 31.6	dB		Reading	Reading	
6428.8 	V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0	X Y Z	31.6					-
	V / 1.0 V / 1.0 H / 1.0 H / 1.0	Y Z			dB	dBµV/m	uV/m	uV/m
	V / 1.0 H / 1.0 H / 1.0	Z	21 6	19.9	-130	38.3	*82.2	5011.8
	H / 1.0 H / 1.0			19.9	-13.0	38.3	*82.2	
	H/1.0		31.6	19.9	-13.0	38.3	*82.2	
		Х	32.2	19.9	-13.0	38.9	*88.1	
a 1 a a a	11/4.0	Y	32.2	19.9	-13.0	38.9	*88.1	
6428.8	H / 1.0	Z	32.2	19.9	-13.0	38.9	*88.1	5011.8
7347.2	V / 1.0	X	31.9	21.3	-130	40.0	*100.0	500.0
	V / 1.0	Y	31.9	21.3	-13.0	40.0	*100.0	
	V / 1.0	Z	31.9	21.3	-13.0	40.0	*100.0	<u> </u>
	H / 1.0	X	31.9	21.3	-13.0	40.0	*100.0	<u> </u>
	H / 1.0	Y	31.9	21.3	-13.0	40.0	*100.0	
7347.2	H / 1.0	Z	31.9	21.3	-13.0	40.0	*100.0	500.0
8265.6	V / 1.0	Х	33.2	23.6	-130	42.6	*151.4	500.0
1	V / 1.0	Y	33.2	23.6	-13.0	42.6	*151.4	1
	V / 1.0	Z	33.2	23.6	-13.0	42.6	*151.4	I
	H / 1.0	X	32.8	23.6	-13.0	43.2	*144.5	I
I	H / 1.0	Y	32.8	23.6	-13.0	43.2	*144.5	I
8265.6	H / 1.0	Z	32.8	23.6	-13.0	43.2	*144.5	500.0
9184.0	V / 1.0	Х	33.1	25.5	-130	45.4	*186.2	500.0
	V / 1.0	Y	33.1	25.5	-13.0	45.4	*186.2	
	V / 1.0	Z	33.1	25.5	-13.0	45.4	*186.2	
	H / 1.0	Х	33.2	25.5	-13.0	45.5	*188.4	
	H / 1.0	Y	33.2	25.5	-13.0	45.5	*188.4	
9184.0	H / 1.0	Z	33.2	25.5	-13.0	45.5	*188.4	500.0
	The frequency	y range was sc	anned from 3	0 MHz to 10.0) GHz. All em	issions not re	ecorded were	more
		elow the specif						
		Measurements						

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

Test Metho	od:	FCC Pa	art 15 Subpart C	, Radiated Err	nissions, Harmo	nics Emissions	6.		
Customer:			Security System				R-11965-1		
Test Samp	ole:		Blassbreak Dete						
Model No.	:	ISW-BO	B1-SAY			FCC ID:	T3XBGB1-SAY		
Operating	Mode:	Continu	ously transmittir	ng a 921.3 MH	Iz signal.				
Techniciar		R. Sood		5	- J	Date:	September 18, 2	2007.	
Notes:	Test Dist	ance: 3 M	Veters		I.		· · · · ·		
			Inless otherwise	specified					
	Ante		EUT	Meter	Correction	Corrected	Converted	Pe	ak
Test Freq.		leight	Orientation	Reading	Factor	Reading	Reading		nit
MHz		Veters	X / Y / Z	dBµV	dB	dBµV/m	uV/m		'/m
1842.6	. ,	1.0	X	55.5	2.3	57.8	776.2	501	
		2.7	Y	58.9	2.3	61.2	1148.2	001	
	V /	1.0	Z	56.9	2.3	59.2	912.0		
		1.0	X	58.0	2.3	60.3	1035.1	1	
	Η/	1.0	Y	57.6	2.3	59.9	988.6		
1842.6	Η/	1.0	Z	59.4	2.3	61.7	1216.2	501	18.0
2763.9		1.0	Х	53.6	5.2	58.8	871.0	500	0.0
		1.4	Y	50.1	5.2	55.3	582.1		
		1.5	Z	52.7	5.2	57.9	785.2		
		2.9	Х	49.6	5.2	54.8	549.5		
		1.0	Y	54.5	5.2	59.7	966.1		
2763.9	H/	2.0	Z	53.2	5.2	58.4	831.8	500	0.0
0005.0		4.0	X	10 -	10.0				
3685.2		1.0	X	46.7	10.0	56.7	683.9	500	0.0
		1.0	Y	46.9	10.0	56.9	699.8		
	H/	1.0	Z X	46.3 46.2	10.0 10.0	56.3 56.2	653.1		
I		1.0	A Y	46.2	10.0	56.7	645.7 683.9	-	
3685.2		1.8	Z	40.7	10.0	57.7	767.4	500	0.0
0000.2	117	1.0	۷	47.7	10.0	51.1	707.4	500	0.0
4606.5	V /	1.0	Х	48.4	13.6	62.0	1258.9	500	0.0
-		1.0	Y	50.7	13.6	64.3	1640.6		
I		1.8	Z	49.4	13.6	63.0	1412.5	1	
		1.7	X	48.9	13.6	62.5	1333.5	1	
	Η/	1.0	Y	48.5	13.6	62.1	1273.5		
4606.5	Η/	1.4	Z	51.0	13.6	64.6	1698.2	500	0.0
5527.8		1.0	Х	45.5	17.1	62.6	1349.0	501	18.0
		1.0	Y	45.6	17.1	62.7	1364.6	-	
		1.0	Z	45.6	17.1	62.7	1364.6		
		1.0	X	42.9	17.1	60.0	*1000.0		
		1.0	Y	45.9	17.1	63.0	1412.5	_ ·	
5527.8		1.0	Z	46.4	17.1	63.5	1496.2	501	
			inge was scanne						е
			the specified li			ao not exceed	i the specified li	mits.	
	"= INOISE	e Floor M	easurements (m	iinimum sensi	tivity).				

Test Metho	d:	FCC Pa	rt 15 Subpart C	, Radiated Em	issions, Harmo	nics Emission	S.	
Customer:		Bosch S	Security System			Job No.	R-11965-1	
Test Sample	e:		assbreak Dete					
Model No.:		ISW-BG	B1-SAY			FCC ID:	T3XBGB1-SAY	
Operating N	/lode:	Continu	ously transmittir	ng a 921.3 MH	z signal.			
Technician:		R. Sooc		5		Date:	September 18, 2	2007.
Notes:	Test Dist							
			nless otherwise	specified				
	Ante		EUT	Meter	Correction	Corrected	Converted	Peak
Test Freq.	Pol./H		Orientation	Reading	Factor	Reading	Reading	Limit
MHz	(V/H)-N		X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
6449.1	V / 1		X	42.2	19.9	62.1	*1273.5	50118.0
	V / 1		Y	42.2	19.9	62.1	*1273.5	00110.0
I	V / 1		Z	42.2	19.9	62.1	*1273.5	
<u>_</u>	H/		X	41.3	19.9	61.2	*1148.2	
 	Η/		Y	41.3	19.9	61.2	*1148.2	
6449.1	H/		Z	41.3	19.9	61.2	*1148.2	50118.0
7370.4	V / 1	1.0	Х	43.0	21.3	64.3	*1640.6	5000.0
	V / 1	1.0	Y	43.0	21.3	64.3	*1640.6	
	V / 1	1.0	Z	43.0	21.3	64.3	*1640.6	
	Η/	1.0	Х	43.0	21.3	64.3	*1640.6	
	Η/	1.0	Y	43.0	21.3	64.3	*1640.6	
7370.4	Η/	1.0	Z	43.0	21.3	64.3	*1640.6	5000.0
0004 7		4.0	X	40.5		00.4	*0040.4	5000.0
8291.7	V / 1		X	42.5	23.6	66.1	*2018.4	5000.0
	V / 1		Y Z	42.5	23.6	66.1	*2018.4	
	V / · H /		X	42.5 42.7	23.6 23.6	66.1 63.6	*2018.4 *2065.4	
I	H/		A Y	42.7	23.6	63.6	*2065.4	
8291.7	H/		Z	42.7	23.6	63.6	*2065.4	5000.0
020111	,	110			2010	0010	200011	000010
9213.0	V / 1	1.0	Х	42.1	25.5	67.6	*2398.8	5000.0
	V / 1	1.0	Y	42.1	25.5	67.6	*2398.8	
	V / 1	1.0	Z	42.1	25.5	67.6	*2398.8	
	Η/		Х	42.0	25.5	67.5	*2371.4	
	Η/		Y	42.0	25.5	67.5	*2371.4	
9213.0	Η/	1.0	Z	42.0	25.5	67.5	*2371.4	5000.0
	The free							
			v				not recorded we	
			asurements (N				the specified lin	11115.
			ะสอนเซเทยกเร (พ	minum syste	ni sensitivity)			

Test Metho	d:	FCC	Part 15 Subpa	rt C, Radiat	ed Emissions	, Harmonics	Emission	s.			
Customer:			h Security Sys					R-119	65-1		
Test Sample	e:	wLSI	N Glassbreak [Detector			·				
Model No.:		ISW-	BGB1-SAY			F	CC ID:	ТЗХВ	GB1-SAY		
Operating N	Node:	Cont	inuously transr	nitting a 921	.3 MHz signa		I				
Technician:		R. So	ooboc	0	U		Date:	Septe	mber 18, 200	7.	
Notes:	Test Dist	ance:	3 Meters			Duty Cv	ycle: 22.5		,		
	Detector	: Avera	age, unless oth	erwise spec	ified		, ycle Corre		-13.0dB		
						Duty cycle				۸.	
Test Freq.	Anten Pol./He		EUT Orientation	Average Reading	Correction Factor	Correction Factor	Correc Readi		Converted Reading		/g. mit
MHz	(V/H)-	X / Y / Z	dBµV	dB	dB	dBµV	/m	uV/m	u∖	//m
1842.6	V / 1	.0	Х	53.7	2.3	-13.0	43.0)	141.3	50´	1.8
	V / 2	.7	Y	56.1	2.3	-13.0	45.4	4	186.2		
	V / 1		Z	53.1	2.3	-13.0	42.4		131.8		
	H / 1		Х	54.1	2.3	-13.0	43.4		147.9		
	H / 1		Y	53.6	2.3	-13.0	42.9		139.6		
1842.6	H / 1	.0	Z	56.2	2.3	-13.0	45.5	5	188.4	501	1.8
2763.9	V / 1	0	Х	51.1	5.2	-13.0	43.3	2	146.2	FO	0.0
2703.9	V/1		X Y	45.0	5.2	-13.0	43.3		72.4	50	0.0 I
I	V/1		Z	48.9	5.2	-13.0	41.1		113.5		I
I	H/2		X	42.4	5.2	-13.0	34.6		53.7		
I	H/1		Y	51.6	5.2	-13.0	43.8		154.9		
2763.9	H/2		Z	49.7	5.2	-13.0	41.9		124.5	50	0.0
3685.2	V / 1		Х	36.2	10.0	-13.0	33.2	2	45.7	50	0.0
	V / 1		Y	36.3	10.0	-13.0	33.3	3	46.2		
	V / 1		Z	33.7	10.0	-13.0	30.7	7	34.3		
	H/2		Х	34.8	10.0	-13.0	31.8		38.9		
	H/1		Y	35.6	10.0	-13.0	32.6		42.7		
3685.2	H / 1	.8	Z	40.5	10.0	-13.0	37.5	5	75.0	50	0.0
4606.5	V / 1	0	Х	39.2	13.6	-13.0	39.8	2	97.7	50	0.0
	V / 1		X Y	46.0	13.6	-13.0	46.6		213.8	- 50	0.0 I
I	V/1		Z	42.6	13.6	-13.0	43.2		144.5		I
I	H/1		X	41.2	13.6	-13.0	41.8		123.0		ı
	H/1		Y	38.6	13.6	-13.0	39.2		91.2		ı
4606.5	H/1		Z	47.0	13.6	-13.0	47.6		239.9	50	0.0
5527.8	V / 1		X	31.3	17.1	-13.0	35.4		58.9	501	1.8
	V / 1		Y 7	32.1	17.1	-13.0	36.2		64.6		<u> </u>
	V/1		Z	33.2	17.1	-13.0	37.3		73.3		
	H/1		X	31.0	17.1	-13.0	35.1		56.9		
5507.0	H/1		Y Z	35.4	17.1	-13.0	39.5		94.4	F 0 4	
5527.8	H/1			34.2	17.1		38.3		82.2		1.8
			range was sc								
			elow the specif				not excee	u me	specified limit	ເຮ.	
	=INOISE		Measurements	s (iviinimum	system sens	uvity)					

Test Metho	od:	FCC	Part 15 Subpa	rt C, Radiate	d Emissions,	Harmonics I	Emissio	ns.			
Customer:			h Security Sys		·		b No.	R-119	965-1		
Test Samp	le:		N Glassbreak								
Model No.:			BGB1-SAY			F	CC ID:	T3XB	GB1-SAY		
Operating			inuously transr	nitting a 921	3 MHz signal			10/12	0010/11		
Technician			podoo				Date:	Sonto	mber 18, 200	7	
Notes:			3 Meters			Duty Cy			inder 10, 200	1.	
Notes.				onviao anadi	fied				12 040		
	Delector	. Aver	age, unless oth	ierwise speci		Duty cycle		rection.	: -13.0dB		
Test Freq.	Anten		EUT	Average	Correction	Correction	Corr	ected	Converted	Av	
10011104.	Pol./He	eight	Orientation	Reading	Factor	Factor	Rea	ding	Reading	Lir	∩it
MHz	(V/H)-	X/Y/Z	dBµV	dB	dB	dBµ	ıV/m	uV/m	uV	/m
6449.1	V/1	.0	Х	31.6	19.9	-130	38	3.3	*82.2	501	1.8
	V / 1		Y	31.6	19.9	-13.0		3.3	*82.2		
	V / 1		Z	31.6	19.9	-13.0	38	3.3	*82.2		
	H/1	.0	Х	32.2	19.9	-13.0	38	3.9	*88.1	l	
	H/1	.0	Y	32.2	19.9	-13.0	38	3.9	*88.1		
6449.1	H/1	.0	Z	32.2	19.9	-13.0	38	3.9	*88.1	501	1.8
7370.4	V / 1	.0	Х	31.9	21.3	-130	40	0.0	*100.0	500).0
	V / 1	.0	Y	31.9	21.3	-13.0	40	0.0	*100.0		
	V / 1	.0	Z	31.9	21.3	-13.0	40	0.0	*100.0		
	H/1	.0	Х	31.9	21.3	-13.0	40	0.0	*100.0		
	H/1	.0	Y	31.9	21.3	-13.0	40	0.0	*100.0		
7370.4	H / 1	.0	Z	31.9	21.3	-13.0	40	0.0	*100.0	500).0
0004 7			X		00.0	40.0			+454.4	50/	
8291.7	V / 1		X Y	33.2	23.6	-130 -13.0		2.6	*151.4	500).0
	V / 1		Y Z	33.2	23.6	-13.0		2.6	*151.4		
	V/1			33.2	23.6			2.6 3.2	*151.4		
	H/1 H/1		X Y	32.8	23.6 23.6	-13.0 -13.0	-	-	*144.5 *144.5		
8291.7	H/1		ř Z	32.8 32.8	23.6	-13.0		3.2 3.2	*144.5	500	0
0291.7		.0	۷	32.0	23.0	-13.0	43	5.Z	144.5	500).0
9213.0	V / 1	.0	Х	33.1	25.5	-130	45	5.4	*186.2	500).0
	V / 1		Y	33.1	25.5	-13.0		5.4	*186.2		
	V / 1		Z	33.1	25.5	-13.0		5.4	*186.2		
	H/1		X	33.2	25.5	-13.0		5.5	*188.4		
	H/1		Y	33.2	25.5	-13.0		5.5	*188.4		
9213.0	H/1		Z	33.2	25.5	-13.0		5.5	*188.4	500).0
	T						<u> </u>				
			range was sc								
			elow the specif				ot exce	ed the	specified limit	IS.	
	=inoise	F100ľ	Measurements	s (iviinimum :	system sensit	ivity)					

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

Test	Metho	d:	FCC P	art 15 Subpar	t C, Spuriou	us Case Radi	ated Emi	ssions, Par	ragr	raph 15.247(d)	
Cust	omer:			Security Syste				Job N		R-11965-1		
Test	Sampl	e:		Glassbreak De								
	el No.:			GB1-SAY				FCC I	D:	T3XBGB1-	SAY	
Oper	ating M	Node:	Continu	uously Transm	itting on cha	nnel 00, a 91	5.5 MHz s					
-	nician		R. Soo		U	,		Dat	e:	September	14, 200)7.
Notes	s:	Test [Distance	: 3 Meters			Ten	пр: 22°С		Humidity: 61	%	
		Detec	tor:Peak									
		Ant	enna	EUT	Meter	Correction	Corr	ected	(Converted	Pe	ak
Frequ	uency	Pos	sition	Orientation	Readings	Factor	Rea	ading		Reading	Lir	nit
M	Hz	(V/H) /	Meters	Degrees	dBuV	dB	dB	uV/m		uV/m	u۷	//m
30	.00										393	55.0
											İ	
												
			_ No (emissions	observed	at the spe	cified te	est distan	се		_	
					1	[
	1										1 i	
	İ										i	
											i	
100	00.0										393	55.0
		The f			from 00 Miller							
				nge was scanned served from the E			limits					
				corded were more								
		The lim	it used is 2	20dB less than the				fied in paragra	ph 1	5.247(d). No em	nission we	ere
		observe	ed in the re	estricted band.								
		6.0										

Page 1 of 3

Test Metho	d:	FCC P	art 15 Subpar	t C, Spuriou	us Case Radi	ated Emi	issions, Parag	raph 15.247	(d)
Customer:			Security Syste				Job No.		
Test Sampl	e:	wLSN	Glassbreak De	etector					
Model No.:			GB1-SAY				FCC ID:	T3XBGB1-	SAY
Operating I	Mode:	Continu	uously Transm	itting on cha	nnel 30, a 91	8.4 MHz			
Technician		R. Soo		<u> </u>	,		Date:	September	14, 2007.
Notes:	Test I	Distance	3 Meters			Ter	np: 22°C	Humidity: 6'	1%
	Detec	tor:Peak							
	Ant	enna	EUT	Meter	Correction	Corr	ected	Converted	Peak
Frequency	Pos	sition	Orientation	Readings	Factor	Rea	ading	Reading	Limit
MHz	(V/H) /	Meters	Degrees	dBuV	dB	dB	uV/m	uV/m	uV/m
30.00									39355.0
00:00									00000.0
<u> </u>									
I									
I									
		No on	nissions ob	sorvod at	the specif	ind tost	distance	}	
			113310113 00		the speci	ieu ies	ustance		
								_	
I									
<u> </u>									
[
10000.0									39355.0
	1								
			nge was scanned						·
			served from the E						
			orded were more 20dB less than the				ified in paragraph	15.247(d). No en	nission were
			estricted band.						

Page 2 of 3

Test Method:		FCC Part 15 Subpart C, Spurious Case Radiated Emissions, Paragraph 15.247(d)									
Customer:		Bosch	Security Syste	Job No	b. R-11965-1						
Test Sample:		wLSN	wLSN Glassbreak Detector								
Model No.:		ISW-B	ISW-BGB1-SAY FCC ID: T3XBGB1-SAY								
Operating I	Mode:	Continu	Continuously Transmitting on channel 58, a 921.3 MHz signal.								
Technician	:		R. Soodoo Date: September 14, 20								
Notes:	Test I	Distance	: 3 Meters			Ter	np: 22°C	Humidity: 61	%		
	Detector: Peak										
	Ant	enna	na EUT Meter Correction Correct					Converted	Pe	eak	
		sition	Orientation	Readings	Factor	Reading		Reading	Reading Lir		
MHz	(V/H) /	/ Meters	Degrees	dBuV	dB	dBuV/m		uV/m	uV/m uV		
30.00									393	55.0	
									_		
									-		
								_			
		No emissions observed at the specified test distance									
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									-		
									-		
										ĺ	
									<u> </u>		
									_		
10000.0									393	55.0	
			nge was scanned				•				
			served from the E corded were more								
							ified in paragrap	h 15.247(d). No emi	ssion w	ere	
		The limit used is 20dB less than the measured fundamental frequency as specified in paragraph 15.247(d). No emission were observed in the restricted band.									

Page 3 of 3

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

Test Method:		FCC Part 15, Subpart B, Class B, Radiated Emissions, 30 MHz to 5.0 GHz, Para:15.109(a)									
Customer:		Bosch Security System. Job No.: R-11965-1									
Test Sample:		wLSN Glassbreak Detector									
Model No.:		ISW-BGB1-SAY Serial No.: N/A									
Operating Mode:		EUT operating on channel 00(915.5MHz), continuously receiving a CW signal.									
Technician:									September 1	4, 200	7
Notes: Test D		Distance: 3 Meters Temp: 22°C Humidity:								61%	
	Detec	tor: Qua	asi-Peak Belov	v 1 GHz, Pea	ak above 1 G	Hz					
	Ant	enna	EUT	Meter	Correction	Corr	ected	(Converted	1.1.1	
		sition	Orientation	Readings	Factor	Reading			Reading	Lin	nit
MHz	(V/H) /	Meters	Degrees	dBuV	dB	dBuV/m			uV/m	uV	/m
30.0										10	0
88.0										10	0
88.0										15	0
216.0										15	0
216.0			o omiocion	ahaamiaa	l of the one		hast dist			20	
			o emission	observed	at the spe	ecinea	lest dist	ance	•		
I											
I											
960.0										20	0
960.0										50	
										i	
5000.0										50	0
3000.0	The fre	quency rar	nge was scanned	I from 30 MHz to	5.0 GHz.			I		50	0
	The em	issions ob	served from the E	UT do not exce	ed the specified						
	Emissio	ons not rec	orded were more	than 20dB und	er the specified li	imit.					

Test Meth	od:	FCC P	art 15, Subpa	rt B, Class I	B, Radiated E	Emission	s, 30 MHz	to 5.0	GHz, Para:	15.109	(a)
Customer:									R-11965-1		. ,
Test Sample:		wLSN	Glassbreak De	etector				•			
Model No.:		ISW-B	GB1-SAY				Serial	No.: N	I/A		
Operating	Mode:	EUT of	perating on cha	annel 30(918	3.5MHz), cont	inuously i	receiving a	a CW sig	gnal.		
Technicia		R.Soodoo							September 1	4, 200	7.
Notes:			: 3 Meters si-Peak Below		ak above 1 G	Hz	Temp: 22	2°C	Humidity	: 61%	
Ant				Corr	Corrected Reading		nverted eading	Lim	nit		
MHz		/ Meters			dB	dBµV/m		uV/m		uV/m	
			-								
30.0										10	0
<u> </u>											
											_
88.0										10	
88.0	_									15	0
										+ +	
216.0		^{−−} No	emission o	observed	at the spec	cified te	st dista	nce		15	0
216.0			L	1	•	1		1		20	
960.0										20	
960.0										50	0
<u> </u>											
<u> </u>											
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<u> </u>											
— <u>і</u>								1			
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	_										
5000.0			· · · · · · · · · · · ·	(5.0.011					50	0
			nge was scanned served from the E			limits					
			corded were more								
						-					

Test Method:		FCC Part 15, Subpart B, Class B, Radiated Emissions, 30 MHz to 5.0 GHz, Para:15.109(a)									
Customer:		Bosch Security System. Job No.: R-11965-1									
Test Sample:		wLSN Glassbreak Detector									
Model No.:		ISW-BGB1-SAY Serial No.: N/A									
Operating N	/lode:	EUT operating on channel 58(921.3MHz), continuously receiving a CW signal.									
Technician:		R.Soodoo Date:							September 1	4, 200)7
Notes: Test D		Distance	: 3 Meters				Temp: 22	°C	Humidity:	61%	
	Detec	tor: Qua	asi-Peak Belov	v 1 GHz, Pea	ak above 1 G	Hz					
	Ant	enna	nna EUT Meter Correction Corrected Convert				Converted				
		sition	Orientation	Readings	Factor	Reading			Reading Lin		nit
MHz	(V/H) /	Meters	Degrees	dBµV	dB	dBµV/m			uV/m	uV	′/m
30.0										10	00
88.0	8.0									10	00
88.0	88.0									15	50
216.0										15	50
216.0		No No	o emission	observed	at the spe	cified to	est dista	ince		20	
I											
I											
960.0										20	00
960.0										50	
5000.0										50	0
3000.0	The fre	quency rar	nge was scanned	I from 30 MHz to	5.0 GHz.			I		50	.0
	The em	issions ob	served from the E	UT do not exce	ed the specified						
	Emissio	ons not rec	orded were more	than 20dB und	er the specified li	imit.					