# **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 15.109 (a) 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 Door/Window Contact		
Brandname:	Bosch		
Model Number:	ISW-BMC1-S135Y		
FCC ID:	T3XBMC1-S135Y		
Туре:	Frequency Hopping Spread Spectrum Transceiver		
Power Requireme	ents:Two 1.5V AA Alkaline Batteries		
Frequency of Op	eration:902 MHz to 928 MHz		

# **Tests Performed**

FCC	Industry Canada	Test Method
15.247(a)(1)	5.247(a)(1) RSS-210 Annex 8 A8.1(2) Carrier Frequency Separation / Nu 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
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 43.9 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 55.9 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 55.9 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  $\pm 4.95$  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 provisions for 2 18 AWG single conductor unterminated wires.
- 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

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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.

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# **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 and Duty Cycle

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	6/27/2006	6/27/2007
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	6/27/2006	6/27/2007
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
032G	H.P. Filter	Microlab/FXR	3 GHz	HA-30N	5/29/2007	5/29/2008
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
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	9/22/2007
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	9/9/2007
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	6/13/2007	6/13/2008
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/12/2007

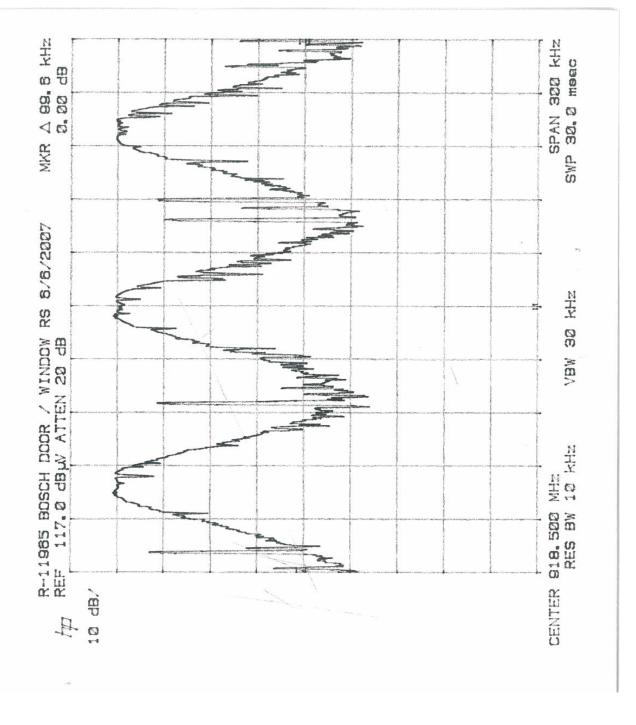
# FCC Part 15 Subpart C, Transmitter Spurious Radiated Emissions

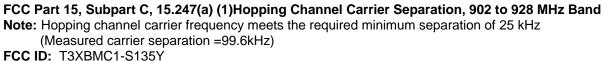
EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
032F	H.P. Filter	Microlab/FXR	2 GHz	HD-20N	9/22/2006	9/22/2007
032G	H.P. Filter	Microlab/FXR	3 GHz	HA-30N	5/29/2007	5/29/2008
032J	H.P. Filter	Microlab/FXR	6 GHz	HD-60N	3/13/2007	3/13/2008
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	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
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	9/22/2007
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	9/9/2007
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	6/13/2007	6/13/2008
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 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	9/9/2007
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

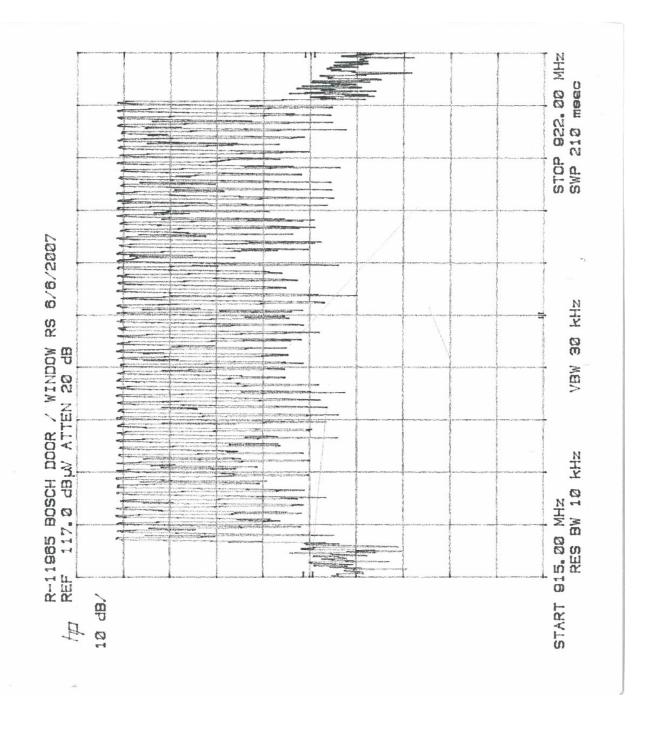
FCC Part 15, Subpart C, 15.247 (a)(1) Carrier Frequency Separation and Number of Hopping Frequency 902 – 928 MHz Band Test Data





Customer	Bosch Security System.			
Test Sample	Door / Window Contact			
Model Number	ISW- BMC1-S135Y			
Date: 6-8-2007	Tech: R.S.	Sheet 1 of 2		

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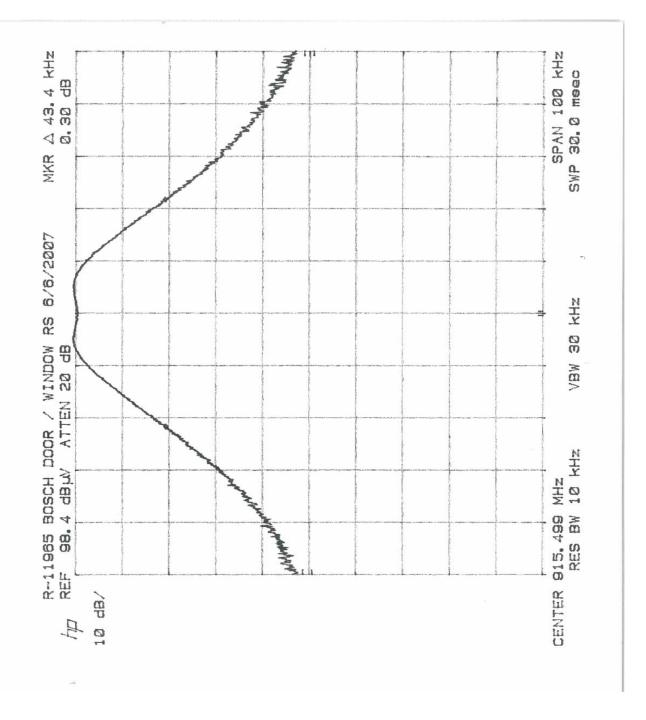
#### FCC Part 15, Subpart C, 15.247(a) (1) Number of Hopping Frequency, 902 to 928 MHz Band

**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 = 43.9 kHz).

FCC ID:	T3XBMC1-S135Y

Customer	Bo	sch Security Syster	n.
Test Sample	Do	or / Window Contac	ct
Model Number	ISV	V- BMC1-S135Y	_
Date: 6-8-2007		Tech: R.S.	Sheet 2 of 2

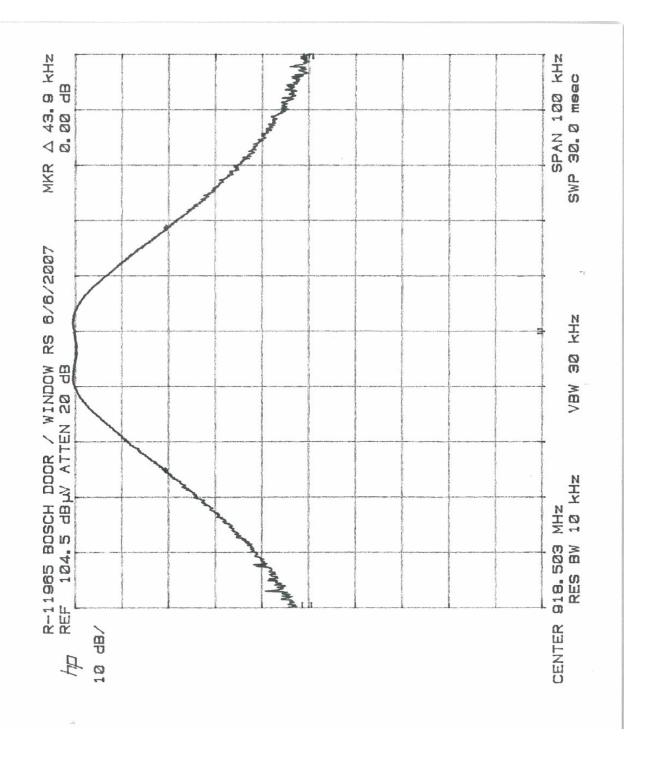
Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 11 of 49 FCC Part 15, Subpart C, 15.247 (a)(1) Occupied Bandwidth, 902 - 928 MHz Test Data



# 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 43.4 kHz Note: EUT transmitting on channel 00 at 915.5 MHz. FCC ID: T3XBMC1-S135Y

	Customer	Bo	sch Security Syster	n.
	Test Sample	Do	or / Window Contac	ct
	Model Number	ISV	V- BMC1-S135Y	
	Date: 6-7-2007		Tech: R.S.	Sheet 1 of 3
1				

Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 13 of 49



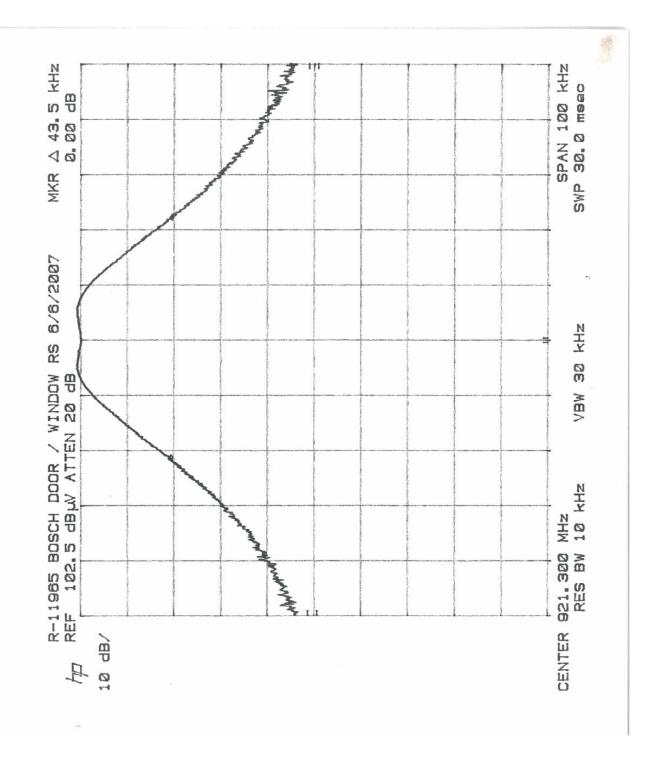
# FCC Part 15, Subpart C, 15.247(a) (1) Occupied Bandwidth, 902 to 928 MHz Band

Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth measured at 43.9 kHz

**Note:** EUT transmitting on channel 30 at 918.5 MHz. **FCC ID:** T3XBMC1-S135Y

Customer	Bos	sch Security Syster	n.
Test Sample	Do	or / Window Contac	ct
Model Number	ISV	V- BMC1-S135Y	_
Date: 6-7-2007		Tech: R.S.	Sheet 2 of 3

Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 14 of 49



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

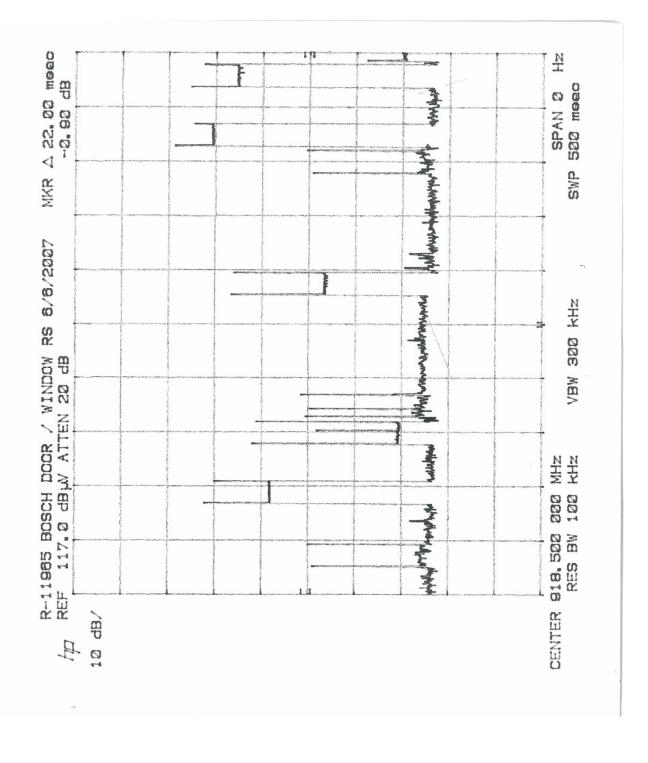
Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth measured at 43.5 kHz

**Note:** EUT transmitting on channel 58 at 921.3 MHz. **FCC ID:** T3XBMC1-S135Y

Customer	Bos	sch Security Syster	n.
Test Sample	Do	or / Window Contac	ct
Model Number	ISV	V- BMC1-S135Y	
Date: 6-7-2007		Tech: R.S.	Sheet 3 of 3

Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 15 of 49

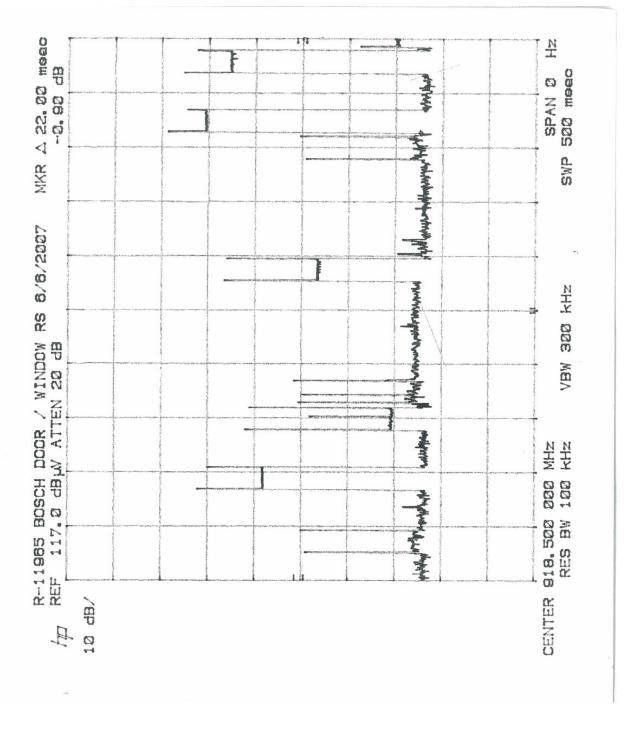
# FCC Part 15, Subpart C, 15.247 (a)(1)(i) Occupancy Time 902 - 928 MHz Test Data



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 =22.0mSec.) FCC ID: T3XBMC1-S135Y

Customer	Bo	sch Security Syster	n.
Test Sample	Do	or / Window Contac	ct
Model Number	ISV	V- BMC1-S135Y	_
Date: 5-22-2007		Tech: R.S.	Sheet 1 of 1

Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 17 of 49 FCC Part 15.35, Duty Cycle Determination



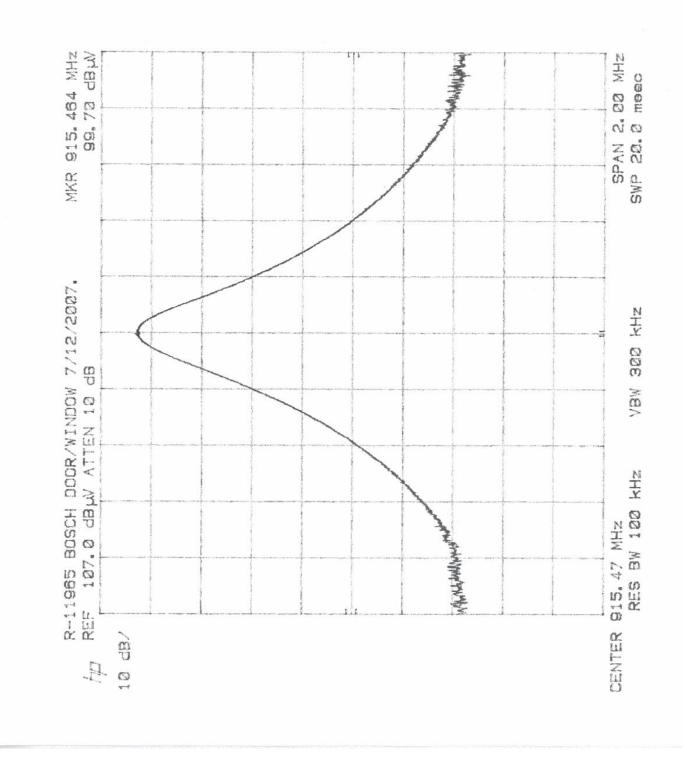
**Test Method: FCC Part 15.35, Duty Cycle Determination.** Notes: Duty cycle = (22mSec / 100) = 0.22 = 22% = 20 log 0.22 = -13.2 dB **FCC ID:** T3XBMC1-S135Y

Customer	Bos	sch Security System.	
Test Sample	Do	or / Window Contact	
Model Number	ISV	V-BMC1-S135Y	_
Date: 5-22-2007		Tech: R.S.	Sheet 1 of 1

Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 19 of 49 FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output Paragraph 15.247(b) (2) Test Data

Test Metho	od: FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output.										
Customer:		Bosch	Security Syste	m.		Job No	<b>b.</b> R-11965	-7			
Test Samp	ole:	Door /	Window Conta	ct		Paragrap	<b>h</b> 15.247(b	)(2)			
Model No.:		ISW-	BMC1-S135Y			FCC ID	: T3XBMC	1-S135Y			
Operating	Mode:	Contir	nuously transmit	tting a 915.5 N	MHz, 918.4 MH	Iz and 921.3 I	MHz signal.				
Techniciar	າ:	R. So	odoo	-		Date	e: July 12, 2	2007.			
Notes:	Test Dist	tance: 3	Meters	Temp :23	.4°C Humid	ity :59%					
	Detector	: Peak									
Test	Anten	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	.5	Х	97.6	9.6	107.2	0.23	15.7	1.0		
	V / 1	.3	Y	94.2	9.6	103.8	0.15	7.2			
	V / 1	.0	Z	99.7	9.6	109.3	0.29	25.5			
	H / 1	.0	Х	98.6	9.6	108.2	0.26	19.8			
	H / 2	.3	Y	98.6	9.6	108.2	0.26	19.8			
915.5	H / 1	.0	Z	88.9	9.6	98.5	0.08	2.1			
918.4	V / 1		Х	97.4	9.6	107.0	0.22	15.0			
	V / 1		Y	95.0	9.6	104.6	0.17	8.7			
	V / 1		Z	103.1	9.6	112.7	0.43	55.9			
	H/2		Х	97.2	9.6	106.8	0.22	14.4			
	H/2		Y	98.7	9.6	108.3	0.26	20.3			
918.4	H/2	.1	Z	86.3	9.6	95.9	0.06	1.2			
004.0			X			405.4	0.40	0.7			
921.3	V / 1 V / 1		X Y	95.5	9.6	105.1	0.18	9.7			
<u> </u>				92.9	9.6	102.5	0.13	5.3	I		
I	V / 1 H / 2		Z X	<u>100.7</u> 98.5	9.6 9.6	110.3 108.1	0.33	32.1			
<u> </u>	H/2		X Y	98.5	9.6	108.1	0.25	19.4 21.7			
921.3	H/1		Z	<u> </u>	9.6	98.8	0.27	21.7	1.0		
921.5	11/1	.1	۷.	09.2	3.0	90.0	0.09	2.5	1.0		
					1						
					ļ						
			the required lim								
			ormulae were us		the field stren	gth in dBµV ir	nto V/m and V	//m to Watts			
			uV/m-120) / 20)								
	<b>Power =</b> 1 of 1	(V/m x	3)² / 30								

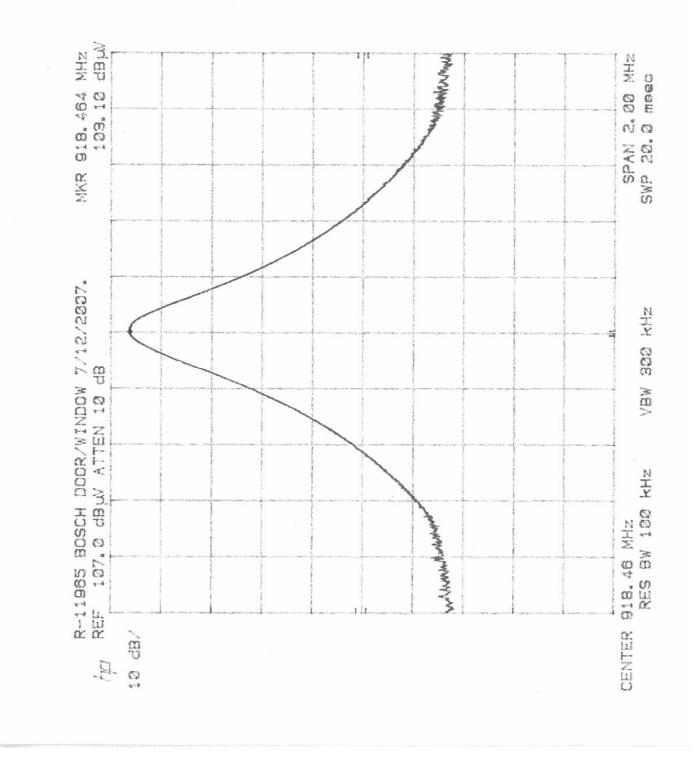
Page 1 of 1



#### FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output,Para.15.247(b)(2) Note: EUT transmitting on channel 00 at 915.5 MHz. FCC ID:T3XBMC1-S135Y

Customer	Bosch	Security Syster	n.
Test Sample	Door /	Window Contac	xt
Model Number	ISW-	BMC1-S135Y	_
Date: July 12, 20	07.	Tech: R.S.	Sheet 1 of 3

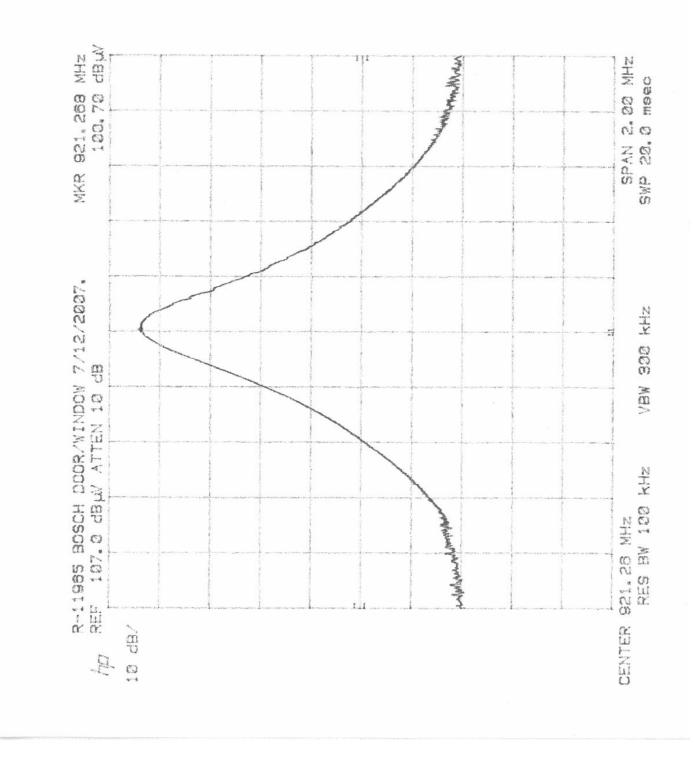
Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 22 of 49



#### 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:T3XBMC1-S135Y

Customer	Bosch	Security System	•
Test Sample	Door /	Window Contact	
Model Number	ISW- B	MC1-S135Y	
Date: July 12, 20	07.	Tech: R.S.	Sheet 2 of 3

Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 23 of 49



#### 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:T3XBMC1-S135Y

Customer	Bosch	Security Syster	n.
Test Sample	Door /	Window Contac	xt
Model Number	ISW-	BMC1-S135Y	_
Date: July 12, 20	07.	Tech: R.S.	Sheet 3 of 3

Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 24 of 49 FCC Part 15 Subpart C, Transmitter Spurious Radiated Emissions, Paragraph 15.247(d) Test Data

Test Me	thod:		FCC Pa	art 15 Subpar	t C, Spuriou	us Case Radi	ated Emi	ssions, Parag	raph 15.247(	d)	
Custom	er:			Security Syste				Job No.:			
Test Sa	mple:		Door /	Window Conta	act						
Model N	lo.:		ISW- B	MC1-S135Y				FCC ID:	T3XBMC1-	S135Y	
Operati	ng Mo	de:	Continu	uously Transm	itting on cha	nnel 00, a 91	5.5 MHz :				
Technic	ian:		R. Soo	doo	-			Date:	August 8, 2	007.	
Notes:	Т	Fest D	Distance:	3 Meters			Ter	np: 40°C	Humidity: 41	%	
	C	Detec	tor:Peak								
		Ante	enna	EUT	Meter	Correction	Corr	ected	Converted	Pe	ak
Frequer	псу	Pos	ition	Orientation	Readings	Factor	Rea	ading	Reading	Lin	nit
MHz	(	V/H) /	Meters	Degrees	dBuV	dB	dB	uV/m	uV/m	uV	//m
20.00										404/	-4 0
30.00	)									4315	51.9
I											
											1
											1
I											
											1
689.9	)	V /	1.0	26.0	48.8	6.1	54	4.9	555.9		
804.8	}	V /	1.2	27.0	41.2	7.3	48	3.5	266.1		
										!	
I											
I											
İ										Í	
<u> </u>											
I											
10000.	.0									4315	51.9
				nge was scanned			limito				
				served from the E orded were more							
							-				

Page 1 of 3

Test I	Metho	d:	FCC P	art 15 Subpar	t C, Spuriou	us Case Radia	ated Emi	ssions, Para	graph 15.247(	(d)		
Custo	omer:			Security Syste				Job No.:				
Test \$	Sampl	e:	Door /	Window Cont	act				·			
Mode	l No.:		ISW- B	MC1-S135Y				FCC ID:	T3XBMC1-	S135Y		
Opera	ating N	Mode:	Contin	uously Transm	itting on cha	nnel 30, a 91	8.4 MHz	signal.				
Techi	nician	:	R. Soo		0			Date: August 8, 2007.				
Notes	S:	Test [	Distance	: 3 Meters			Ter	np: 40°C	Humidity: 4	1%		
		Detec	tor:Peak	ζ.					-			
		Ant	enna	EUT	Meter	Correction	Corr	ected	Converted	Pe	ak	
Frequ	lency	Pos	sition	Orientation	Readings	Factor	Rea	ading	Reading	Lir	nit	
M	Ηz	(V/H) /	/ Meters	Degrees	dBuV	dB	dB	uV/m	uV/m	u∨	//m	
30.	.00	ļ								4315	<u>51.9</u>	
										Í		
											1	
				400.0	40.0							
689	9.9	V /	1.7	106.0	49.9	6.1	50	5.0	631.0		1	
اــــــــــــــــــــــــــــــــــــ												
		ļ								!		
1000	0.00									431	51.9	
				nge was scanned			limito					
				eserved from the E corded were more								

Page 2 of 3

Test Me	ethor	d:	FCC P	art 15 Subpar	t C, Spuriou	us Case Radi	ated Emi	ssions, P	arag	raph 15.247(	d)					
Custon	ner:			Security Syste				Job I		R-11965-7	-					
Test Sa	ample	<b>:</b>	Door /	Window Conta	act					•						
Model I	No.:		ISW- B	MC1-S135Y				FCC	D:	T3XBMC1-	S135Y					
Operati	ing N	lode:	Continu	uously Transm	itting on cha	nnel 58, a 92	1.3 MHz s			I						
Technie	cian:		R. Soo	doo				D	ate:	August 8, 2	007.					
Notes:		Test D	Distance	: 3 Meters			Ten	np: 40°C		Humidity: 41	Humidity: 41%					
		Detec	tor: Peal	k				-		-						
		Ant	enna	EUT	Meter	Correction	Corr	ected	(	Converted	Pe	ak				
Freque	ncy	Pos	sition	Orientation	Readings	Factor	Rea	ading		Reading	Lir	nit				
MHz	<u> </u>	(V/H) /	Meters	Degrees	dBuV	dB	dB	uV/m		uV/m	u∖	//m				
30.00	30.00										431	51.9				
											-	1				
	$ \rightarrow $															
	$\neg \uparrow$															
ĺ																
												1				
l l																
493.0			1.0	104.0	52.9	1.6		4.5		530.9						
692.0	0	V /	1.5	32.0	49.7	6.1	55	5.8		616.6		1				
												·				
	$\square$															
	+															
							ļ									
10000	).0										431	51.9				
	$\square$			nge was scanned												
		The em	issions ob	served from the E corded were more	UT do not exce	ed the specified	limits.									
					unan 2000 unu	er me specified li										
Dege	ł															

Page 3 of 3

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:	FCC Pa	rt 15 Subpart C	, Radiated Em	issions, Harmo	onics Emission	IS.		
Customer:			Security System				R-11965-7	-	
Test Sample	e:	Door / V	Vindow Contact						
Model No.:		ISW-BM	IC1-S135Y			FCC ID:	T3XBMC1-S135	δY	
Operating N	lode:	Continu	ously transmittir	ng a 915.5 MH	z signal.				
Technician:		R. Sood		0		Date:	August 8-9, 200	7.	
Notes:	Test Dista					I	<u> </u>		
			nless otherwise	specified					
	Ante		EUT	Meter	Correction	Corrected	Converted	Pe	ak
Test Freq.	Pol./H		Orientation	Reading	Factor	Reading	Reading		
MHz	(V/H)/N	-	X / Y / Z	dBµV	dB	dBµV/m	uV/m		
1831.0	V / 1		X	64.3	2.3	66.6	2138.0		
1031.0	V/2		Y	64.7	2.3	67.0	2238.7	301	10.0
	V / 2		Z	66.6	2.3	68.9	2786.1		
	H//		X	64.9	2.3	67.2	2290.9	00.9   08.8	
	H/*		Y	65.3	2.3	67.6	2398.8		
1831.0	H/2		Z	56.4	2.3	58.7	861.0	501	18.0
						00.1	00110		
2746.5	V / ?	1.0	Х	47.8	5.2	53.0	446.7	500	0.0
	V / *		Ý	48.6	5.2	53.8	489.8	D7. Peak Limit UV/m 50118.0 1 50118.0 5000.0 1 5000.0 1 5000.0 1 5000.0 1 5000.0 1 5000.0 1 5000.0 1 5000.0 1 5000.0 1 1 5000.0 1 1 5000.0 1 1 5000.0 1 1 5000.0 1 1 5000.0 1 1 1 5000.0 1 1 5000.0 1 1 5000.0 1 1 5000.0 1 1 5000.0 1 1 1 1 5000.0 1 1 1 1 1 1 1 1 1 1 1 1 1	
	V / *		Z	47.7	5.2	52.9	441.6		
	H / 1.2 H / 1.8		Х	46.3	5.2	51.5	375.8		
			Y	47.1	5.2	52.3	412.1		
2746.5	H/ <i>*</i>		Z 47.1 5.2 52.3 412.1		5000.0				
3662.0	V / ′	1.0	Х	46.0	10.0	56.0	631.0	500	0.0
	V / ′		Y	45.7	10.0	55.7	609.5		
	V / ′		Z	47.4	10.0	57.4	741.3		
	H / ′		Х	46.3	10.0	56.3	653.1		
	H/2		Y	46.1	10.0	56.1	638.3		
3662.0	Η/΄	1.6	Z	46.2	10.0	56.2	645.7	500	0.0
4577.5	V / Y	1.0	Х	48.6	13.6	62.2	1288.2	500	0.0
	V / *		Y	47.6	13.6	61.2	1148.2	000	0.0
1	V / *		Z	51.3	13.6	64.9	1757.9		
	H//		X	47.9	13.6	61.5	1188.5		
	H/*		Y	49.1	13.6	62.7	1364.6		
4577.5	H/*		Z	51.1	13.6	64.7	1717.9	500	0.0
5493.0	V / ′		Х	44.8	17.1	61.9	1244.5	501	18.0
	V / ′		Y	44.1	17.1	61.2	1148.2		
	V / *		Z	45.0	17.1	62.1	1273.5		
	Η/΄		Х	44.8	17.1	61.9	1244.5		
	H/*		Y	44.2	17.1	61.3	1161.4		<u> </u>
5493.0	Η/΄		Z	44.4	17.1	61.5	1188.5		
							not recorded we		e
						do not excee	d the specified li	mits.	
	*= Noise	Floor M	easurements (m	ninimum sensi	tivity).				

Test Metho	d:	FCC Pa	rt 15 Subpart C	, Radiated Em	nissions, Harmo	nics Emissions	5.	
Customer:		Bosch S	Security System	•		Job No.	R-11965-7	
Test Sample	e:	Door / V	Vindow Contact		L. L			
Model No.:		ISW-BM	IC1-S135Y			FCC ID:	T3XBMC1-S135	Y
Operating N	/lode:		ously transmittir	ng a 915.5 MH	Iz signal.			
Technician		R. Sood	•	0		Date:	August 8-9, 200	7.
Notes:	Test Dist							
			nless otherwise	specified				
	Ante		EUT	Meter	Correction	Corrected	Converted	Peak
Test Freq.	Pol./F		Orientation	Reading	Factor	Reading	Reading	Limit
MHz		Veters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
6408.5	V /		X	42.2	19.9	62.1	*1273.5	50118.0
	V /		Y	42.2	19.9	62.1	*1273.5	
i	V /	1.0	Z	42.2	19.9	62.1	*1273.5	
i	Η/		Х	41.3	19.9	61.2	*1148.2	
i	Η/	1.0	Y	41.3	19.9	61.2	*1148.2	
6408.5 H /		1.0	Z	41.3	19.9	61.2	*1148.2	50118.0
7324.0	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	
		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	Η/	1.0	Z	43.0	21.3	64.3	*1640.6	5000.0
			X	10 -			*****	
8239.5	V /		X Y	42.5	23.6	66.1	*2018.4	5000.0
I	V /		Y Z	42.5	23.6	66.1	*2018.4 *2018.4	
I	V / H /		X	42.5 42.7	23.6 23.6	66.1 63.6	*2018.4	
I	<u>н/</u> Н/		A Y	42.7	23.6	63.6	*2065.4	
8239.5	H/		Z	42.7	23.6	63.6	*2065.4	5000.0
0200.0	11/	1.0	۷.	72.1	20.0	00.0	2003.4	0000.0
9155.0	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/		Х	42.0	25.5	67.5	*2371.4	
 	Η/		Y	42.0	25.5	67.5	*2371.4	
9155.0	Η/		Z	42.0	25.5	67.5	*2371.4	5000.0
								<u> </u>
		. ,	nge was scanne					
			the specified line			uo not exceed	i the specified lif	nits.
	"=INOISE		easurements (N	iinimum syste	m sensitivity)			

Test Metho	d:	FCC	Part 15 Subpa	rt C, Radiat	ed Emissions	, Harmonics E	Emissions.			
Customer:		Bosc	h Security Sys	tem.		Jo	b No. R	-11965-7		
Test Sample	e:	Door	/ Window Con	tact						
Model No.:		ISW-	BMC1-S135Y			FC	CC ID: T	3XBMC1-S135Y		
Operating N	lode:	Cont	inuously transr	nitting a 915	5.5 MHz signa	l.				
Technician:			ooboc				Date: A	ugust 8-9, 2007.		
Notes:	Test Dist	ance:	3 Meters			Duty Cy	cle: 22%			
	Detector	: Avera	age, unless oth	erwise spec	ified	Duty Cy	cle Correc	tion: -13.2dB		
						Duty cycle			۸,	<i>.</i>
Test Freq.	Anten Pol./He		EUT Orientation	Average Reading	Correction Factor	Correction Factor	Correcte Readin		Avg. Limit UV/m 5011.8 5011.8 5011.8 5011.8 500.0 1 500.0 500.0 1 500.0 1 500.0 500.0 1 1 500.0	
MHz	(V/H	)-	X / Y / Z	dBµV	dB	dB	dBµV/r	n uV/m	d Avg. Limit 5011.8 1 5011.8 5011.8 500.0 1 1 1 500.0 500.0 1 1 1 1 1 500.0	′/m
1831.0	V / 1		Х	63.5	2.3	-13.2	52.6	426.6	501	1.8
	V / 2		Y	60.6	2.3	-13.2	49.7	305.5		
	V / 1		Z	61.6	2.3	-13.2	50.7	342.8		
	H/1		Х	60.8	2.3	-13.2	49.9	312.6		
	H/1		Y	59.1	2.3	-13.2	48.2	257.0		
1831.0	H/2	.9	Z	54.9	2.3	-13.2	44.0	158.5	501	1.8
2746.5	V / 1	0	Х	41.3	5.2	-13.2	33.3	46.2	50	0.0
2740.5	V/1		X Y	41.8	5.2	-13.2	33.8	49.0	50	0.0 I
	V/1		Z	38.5	5.2	-13.2	30.5	33.5		 
	H/1		X	36.9	5.2	-13.2	28.9	27.9		 
	H/1		Y	33.1	5.2	-13.2	25.1	18.0		<u>                                     </u>
2746.5	H/1		Z	37.1	5.2	-13.2	29.1	28.5	50	0.0
3662.0	V / 1		Х	32.6	10.0	-13.2	29.4	29.5	50	0.0
	V / 1		Y	34.3	10.0	-13.2	31.1	35.9		
	V / 1		Z	36.0	10.0	-13.2	32.8	43.7		
	H/1		Х	33.8	10.0	-13.2	30.6	33.9		
	H/2		Y	33.5	10.0	-13.2	30.3	32.7		
3662.0	H/1	.0	Z	35.8	10.0	-13.2	32.6	42.7	50	0.0
4577.5	V / 1	.0	Х	44.0	13.6	-13.2	44.4	166.0	50	0.0
	V/1		Y	41.7	13.6	-13.2	42.1	127.4		
	V / 1	.4	Z	48.4	13.6	-13.2	48.8	275.4		
	H/1	.2	Х	40.9	13.6	-13.2	41.3	116.1		
	H/1	.2	Y	44.6	13.6	-13.2	45.0	177.8		
4577.5	H/1	.3	Z	49.3	13.6	-13.2	49.7	305.5	50	0.0
5493.0	V / 1	0	Х	33.2	17.1	-13.2	37.1	71.6	501	1.8
	V/1		Y	35.5	17.1	-13.2	39.4	93.3	001	
	V / 1		Z	34.2	17.1	-13.2	38.1	80.4	-	
	H/1		 X	35.6	17.1	-13.2	39.5	94.4		 
	H/1		Ý	33.5	17.1	-13.2	37.4	74.1		
5493.0	H/1		Z	32.2	17.1	-13.2	36.1	63.8	501	1.8
			range was sc	anned from	30 MHz to 10			ot recorded were		
							ot exceed	the specified limit	ts.	
	*=Noise	Floor	Measurements	s ( Minimum	system sensi	itivity)				

Test Method	d:	FCC	Part 15 Subpa	rt C, Radiate	d Emissions,	Harmoni	cs Emissio	ons.					
Customer:			h Security Sys				Job No.		R-11965-7				
Test Sample	e:	Door	/ Window Con	tact		•							
Model No.:			BMC1-S135Y				FCC ID:	ТЗХВ	MC1-S135Y				
	erating Mode: Continuously transmitting a 915.5 MHz signal.												
Technician:			,	intenig a oro.			Date:	Augus	st 8-9 2007				
		R. SoodooDate:August 8-9, 2007.tance: 3 MetersDuty Cycle: 22%											
			age, unless oth	erwise sneci	fied	•	Cycle Co		· -13 2dB				
T	Detector.	AVCIE				Duty cy	,	rection	. 15.200				
Test Freq.	Antenr		EUT	Average	Correction	Correct	ion COI	rected	Converted				
	Pol./Hei	ight	Orientation	Reading	Factor	Facto		ading	Reading	Limit			
MHz	(V/H)	-	X/Y/Z	dBµV	dB	dB	dB	µV/m	uV/m	uV/m			
6408.5	V / 1.	0	Х	31.6	19.9	-13.2	2 3	8.3	*82.2	5011.8			
	V / 1.		Y	31.6	19.9	-13.2		8.3	*82.2	-			
i	V / 1.		Z	31.6	19.9	-13.2		8.3	*82.2				
i	H/1.	0	Х	32.2	19.9	-13.2		8.9	*88.1				
	H/1.		Y	32.2	19.9	-13.2		8.9	*88.1				
6408.5	H/1.		Z	32.2	19.9	-13.2		8.9	*88.1	5011.8			
7324.0	V / 1.	0	Х	31.9	21.3	-13.2	2 4	0.0	*100.0	500.0			
	V / 1.		Y	31.9	21.3	-13.2		0.0	*100.0				
I	V / 1.		Z	31.9	21.3	-13.2		0.0	*100.0	Avg. Limit UV/m 5011.8   1 5011.8 500.0   1 500.0 1 1 1 500.0 1 1 500.0 1 1 1 500.0 1 1 1 500.0 1 1 1 1 500.0 1 1 1 1 1 500.0 1 1 1 1 1 1 1 1 1 1 1 1 1			
I	H/1.		Х	31.9	21.3	-13.2		0.0	*100.0				
I	H/1.		Y	31.9	21.3	-13.2		0.0	*100.0				
7324.0	H/1.		Z	31.9	21.3	-13.2		0.0	*100.0	500.0			
8239.5	V / 1.	0	Х	33.2	23.6	-13.2	2 4	2.6	*151.4	500.0			
	V / 1.	0	Y	33.2	23.6	-13.2	2 4	2.6	*151.4				
i	V / 1.	0	Z	33.2	23.6	-13.2	2 4	2.6	*151.4				
i	H/1.	0	Х	32.8	23.6	-13.2	2 4	3.2	*144.5	ĺ			
i	H/1.	0	Y	32.8	23.6	-13.2	2 4	3.2	*144.5	ĺ			
8239.5	H/1.	0	Z	32.8	23.6	-13.2	2 4	3.2	*144.5	500.0			
9155.0	V / 1.	0	Х	33.1	25.5	-13.2	2 4	5.4	*186.2	500.0			
	V / 1.	0	Y	33.1	25.5	-13.2	2 4	5.4	*186.2				
	V / 1.	0	Z	33.1	25.5	-13.2	2 4	5.4	*186.2				
	H/1.	0	Х	33.2	25.5	-13.2	2 4	5.5	*188.4				
	H/1.	0	Y	33.2	25.5	-13.2	2 4	5.5	*188.4				
9155.0	H/1.	0	Z	33.2	25.5	-13.2	2 4	5.5	*188.4	500.0			
	The freq	uency	range was sc	anned from 3	0 MHz to 10.0	) GHz. A	ll emissior	is not re	ecorded were	more			
	Than 20	dB be	elow the specif	ied limit. Em	issions from t	he EUT o	do not exc	ed the	specified limit	s.			
	*=Noise	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 Pa	rt 15 Subpart C	, Radiated Em	issions, Harmo	nics Emissior	ıs.		
Customer:		Bosch S	Security System			Job No.	R-11965-7		
Test Sample	e:	Door / V	Vindow Contact		·	·			
Model No.:		ISW-BM	IC1-S135Y			FCC ID:	T3XBMC1-S135	jγ	
Operating N	lode:		ously transmittir	ng a 918.4 MH	z signal.				
Technician:		R. Sooc				Date:	August 8-9, 200	7.	
	Test Dist					24101		<u></u>	
10000			nless otherwise	specified					
	Ante		EUT	Meter	Correction	Corrected	Converted	Do	). July
Test Freq.	Pol./F		Orientation	Reading	Factor	Reading	Reading		
MHz	(V/H)/N	-	X/Y/Z	dBµV	dB	dBµV/m			
	(v/i)/i V /			<u>авру</u> 64.3	2.3				
1836.8	V /		X Y	66.2	2.3	66.6 68.5		501	10.0 1
I	V /		Z	71.4	2.3	73.7		B-9, 2007.         verted ading       Peak Limit         V/m       UV/m         38.0       50118.         60.7                 41.7                 62.7                 18.4                 76.2       50118.         57.1       5000.0         07.4                 07.4                 18.3       5000.0         38.3       5000.0         38.3       5000.0         38.3       10         52.3                 24.4       5000.0         56.1       5000.0         56.1       5000.0         56.1       5000.0         56.1       5000.0         66.1       5000.0         57.1                 96.5       5000.0         88.5       50118.	
I	H/		X	64.4	2.3	66.7			I
	H/		X Y	66.7	2.3	69.0			I
1836.8	H/		r Z	55.5	2.3	57.8	776.2	504	100
1030.0	Π/	1.0	۷	55.5	2.3	57.0	110.2	501	10.0
2755.2	V /	15	Х	48.0	5.2	53.2	457.1	500	0.00
1	V /		Y	47.0	5.2	52.2	407.4	50118.0     50118.0 5000.0   5000.0 1 5000.0 1 5000.0 1 1 1 5000.0	
	V /		Z	47.0	5.2	52.2	407.4		 
1	H / 2.3		X	48.4	5.2	53.6	478.6		
			Y	46.1	5.2	51.3	367.3		 
2755.2	H/		Z	45.5	5.2	50.7	342.8	5000.0	
	,			10.0	0.2	00.1	012.0		
3673.6	V /	1.0	Х	46.1	10.0	56.1	638.3	500	0.0
	V /	1.0	Y	45.9	10.0	55.9	623.7		
İ	V /	1.0	Z	46.1	10.0	56.1	638.3		
	Η/	1.0	Х	46.0	10.0	56.0	631.0		
	Η/	1.5	Y	45.0	10.0	55.0	562.3		
3673.6	Η/	1.5	Z	47.2	10.0	57.2	724.4	500	0.0
4592.0	V /		Х	46.1	13.6	59.7	966.1	500	0.0
	V /		Y	45.9	13.6	59.5	944.1	<u> </u>	
	V /		Z	46.1	13.6	59.7	966.1	-	
		1.0	Х	46.0	13.6	59.6	955.0	<u> </u>	
		1.2	Y	45.0	13.6	58.6	851.1		
4592.0	Η/	1.0	Z	47.2	13.6	60.8	1096.5	500	0.0
5510.4	V /	10	X	44.4	17.1	61.5	1188 5	501	18 0
	V /		X Y	44.4	17.1	61.0	1188.5	501	10.0
	V /		Z	43.9	17.1	60.8	1096.5		 
	H/		X	43.7	17.1	61.2	1148.2		 
	H/		A Y	44.1	17.1	58.2	812.8	+	I
5510.4	H/		Z	41.1	17.1	61.1	1135.0	501	<u> </u> 18.0
0010.4							not recorded we		
							d the specified li		C
			easurements (n				a me specified li	11115.	
	- 110156		ะสอนเอเทยแร (แ		uvity).				

<b>Test Method</b>	d:	FCC Pa	rt 15 Subpart C	, Radiated Em	issions, Harmo	nics Emissior	IS.	
Customer:		Bosch S	Security System			Job No.	R-11965-7	
Test Sample	e:	Door / V	Vindow Contact			·		
Model No.:		ISW-BM	IC1-S135Y			FCC ID:	T3XBMC1-S135	Y
Operating N	lode:		ously transmittir	ng a 918.4 MH	z signal.	I		
Technician:		R. Sood		0		Date:	August 8-9, 200	7.
Notes:	Test Dista	ance: 3 N	leters			ł	<b>.</b>	
			nless otherwise	specified				
	Ante		EUT	Meter	Correction	Corrected	Converted	Peak
Test Freq.	Pol./H		Orientation	Reading	Factor	Reading	Reading	Limit
MHz	(V/H)-N	/leters	X/Y/Z	dBµV	dB	dBµV/m	uV/m	uV/m
6408.5	V / 1		X	42.2	19.9	62.1	*1273.5	50118.0
	V / *		Ŷ	42.2	19.9	62.1	*1273.5	
İ	V / *		Z	42.2	19.9	62.1	*1273.5	
	Η/		Х	41.3	19.9	61.2	*1148.2	
	H / <sup>,</sup>		Y	41.3	19.9	61.2	*1148.2	
6408.5			Z	41.3	19.9	61.2	*1148.2	50118.0
7324.0	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	
	H / 1.0		Х	43.0	21.3	64.3	*1640.6	
	Η/					*1640.6		
7324.0	Η/΄	1.0	Z	43.0	21.3	64.3	*1640.6	5000.0
8239.5	V / /	1.0	Х	42.5	23.6	66.1	*2018.4	5000.0
6239.5	V / ·		X Y	42.5	23.6	66.1	*2018.4	5000.0
	V / ·		Z	42.5	23.6	66.1	*2018.4	
I	/ 		X	42.5	23.6	63.6	*2065.4	
	H/*		Y	42.7	23.6	63.6	*2065.4	
8239.5	H/*		Z	42.7	23.6	63.6	*2065.4	5000.0
010010	,							
9155.0	V / ′	1.0	Х	42.1	25.5	67.6	*2398.8	5000.0
	V / ′	1.0	Y	42.1	25.5	67.6	*2398.8	
	V / ′	1.0	Z	42.1	25.5	67.6	*2398.8	
	Η/	1.0	Х	42.0	25.5	67.5	*2371.4	
	Η/		Y	42.0	25.5	67.5	*2371.4	
9155.0	Η/	1.0	Z	42.0	25.5	67.5	*2371.4	5000.0
	The freq	uency ra	nge was scanne	ed from 30 MH	z to 10.0 GHz.	All emissions	not recorded we	re more
			•				d the specified lir	
	*=Noise	Floor Me	asurements ( N	linimum 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	965-7	
Test Sampl	e:	Door	/ Window Con	tact						
Model No.:		ISW-	BMC1-S135Y			F	CC ID:	T3XB	MC1-S135Y	
Operating N	/lode:		inuously transr	nitting a 918	3.4 MHz signa					
Technician			ooboc				Date:	Augus	st 8-9, 2007.	
Notes:	Test Dist					Dutv C	ycle: 22			
			age, unless oth	erwise spec	cified	•	•		: -13.2dB	
						Duty cycle				
Test Freq.	Anten Pol./He		EUT Orientation	Average Reading	Correction Factor	Correction Factor	Cone	ected ding	Converted Reading	Avg. Limit
MHz	(V/H)	)-	X/Y/Z	dBµV	dB	dB	dBµ	V/m	UV/m	uV/m
1836.8	V / 1.	.4	Х	63.6	2.3	-13.2	52	2.7	431.5	5011.8
	V / 2.		Y	63.4	2.3	-13.2	52	2.5	421.7	
	V / 1.	.0	Z	60.6	2.3	-13.2	49	9.7	305.5	
	H / 1.		Х	60.2	2.3	-13.2	49	9.3	291.7	
	H / 1.		Y	58.9	2.3	-13.2	48	3.0	251.2	
1836.8	H / 1.	.3	Z	53.6	2.3	-13.2	42	2.7	136.5	5011.8
2755.2	V / 1.	5	Х	40.0	<b>F</b> 0	40.0			F0.4	F00.0
2700.2	V / 1.		X Y	42.0	5.2 5.2	-13.2 -13.2	34	1.0	50.1	500.0
I	V / 1.		ř Z	<u>39.1</u> 40.0	5.2	-13.2		2.0	35.9	
	H/2.		<u> </u>	38.3	5.2	-13.2		2.0 ).3	39.8 32.7	
	H/1.		X Y	37.6	5.2	-13.2		).5 ).6	32.7	
2755.2	H/1.		Z	37.0	5.2	-13.2		7.9	24.8	500.0
2100.2	11/ 1.	.0	۷.	55.9	5.2	10.2	21	.9	24.0	500.0
3673.6	V / 1.	0	Х	33.5	10.0	-13.2	30	).3	32.7	500.0
	V / 1.		Y	32.6	10.0	-13.2		).4	29.5	
	V / 1.		Z	34.8	10.0	-13.2		.6	38.0	
	H/1.		X	32.7	10.0	-13.2		9.5	29.9	
	H/1.		Y	32.6	10.0	-13.2		).4	29.5	
3673.6	H/1.		Z	35.9	10.0	-13.2		2.7	43.2	500.0
4592.0	V / 1.	.0	Х	44.5	13.6	-13.2	44	1.9	175.8	500.0
	V / 1.	.0	Y	42.8	13.6	-13.2	43	3.2	144.5	
	V / 1.	.3	Z	40.8	13.6	-13.2	41	.2	114.8	
	H / 1.		Х	38.6	13.6	-13.2	39	9.0	89.1	
	H / 1.		Y	43.1	13.6	-13.2	43	3.5	149.6	
4592.0	H / 1.	.0	Z	44.0	13.6	-13.2	44	1.4	166.0	500.0
5510.4	V / 1.	0	v	20.0	474	10.0	2/	1.0	EE O	E014 0
1	V / 1.		X Y	<u>30.9</u> 30.5	17.1 17.1	-13.2 -13.2		1.8 1.4	55.0 52.5	5011.8
I	V / 1.		ř Z	30.5	17.1	-13.2		1.4 1.2	52.5 51.3	
	H/1.		<u> </u>	30.3	17.1	-13.2		⊧.∠ δ.0	63.1	
I	H/1.		X Y	32.1	17.1	-13.2		1.9	55.6	
5510.4	H/1.		Z	30.1	17.1	-13.2		1.9 1.0	50.0 50.1	5011.8
0010.4									corded were n	
									specified limits	
			Measurements					eu ine		
	=110150	FIUUſ	พ่อสุริณาอีกเอิ	s ( iviii iii iii iii iii)	system sens	nivity)				

Test Meth	nod:	FCC	Part 15 Subpa	rt C, Radiate	d Emissions,	Harmonics E	missions.				
Custome	r:		h Security Sys		·			1965-7			
Test Sam	ple:		· / Window Con			1					
Model No			BMC1-S135Y			FC	C ID: T3>	(BMC1-S135Y			
Operating			inuously transr	nitting a 918	4 MHz signal		• • • • • • • •				
Technicia	-		oodoo	intering a 510.			Date: Aud	gust 8-9, 2007.			
Notes:			3 Meters				Duty Cycle: 22%				
NOLES.				onvice check	fied			on: -13.2dB			
	Delector	. Aver	age, unless oth	ierwise speci		, , ,		DII 13.20D	1		
Test Fred	Anter		EUT	Average	Correction	Duty cycle Correction	Corrected		Avg.		
100(1100	Pol./He	eight	Orientation	Reading	Factor	Factor	Reading	Reading	Limit		
MHz	(V/H	)-	X/Y/Z	dBµV	dB	dB	dBµV/m	uV/m	uV/m		
6408.5	V / 1	/	X	31.6	19.9	-13.2	38.3	*82.2	5011.8	3	
	V / 1		Y	31.6	19.9	-13.2	38.3	*82.2		-	
	V / 1		Z	31.6	19.9	-13.2	38.3	*82.2			
	H/1		X	32.2	19.9	-13.2	38.9	*88.1			
	H/1		Y	32.2	19.9	-13.2	38.9	*88.1	l i		
6408.5	H/1		Z	32.2	19.9	-13.2	38.9	*88.1	5011.8	3	
7324.0	V / 1	.0	Х	31.9	21.3	-13.2	40.0	*100.0	500.0		
	V / 1	.0	Y	31.9	21.3	-13.2	40.0	*100.0			
	V / 1	.0	Z	31.9	21.3	-13.2	40.0	*100.0			
	H/1	.0	Х	31.9	21.3	-13.2	40.0	*100.0	İ		
	H/1	.0	Y	31.9	21.3	-13.2	40.0	*100.0			
7324.0	H/1	.0	Z	31.9	21.3	-13.2	40.0	*100.0	500.0		
8239.5	V / 1	.0	Х	33.2	23.6	-13.2	42.6	*151.4	500.0		
	V / 1	.0	Y	33.2	23.6	-13.2	42.6	*151.4			
	V / 1	.0	Z	33.2	23.6	-13.2	42.6	*151.4			
	H/1		Х	32.8	23.6	-13.2	43.2	*144.5			
	H/1		Y	32.8	23.6	-13.2	43.2	*144.5			
8239.5	H/1	.0	Z	32.8	23.6	-13.2	43.2	*144.5	500.0		
<b>•</b> • <b>-</b> = •											
9155.0	V / 1		X	33.1	25.5	-13.2	45.4	*186.2	500.0		
<u> </u>	V / 1		Y	33.1	25.5	-13.2	45.4	*186.2			
	V / 1		Z	33.1	25.5	-13.2	45.4	*186.2			
	H/1		X	33.2	25.5	-13.2	45.5	*188.4			
0455.0	H/1		Y	33.2	25.5	-13.2	45.5	*188.4			
9155.0	H/1	.0	Z	33.2	25.5	-13.2	45.5	*188.4	500.0		
	The free	nuency	range was so	anned from a	0 MHz to 10 (	) GHz Allem	l hissions not	recorded were	more		
			-					ne specified limi			
			Measurements								
	110100	1.001			-, storn oonon	···· <b>y</b> /					

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

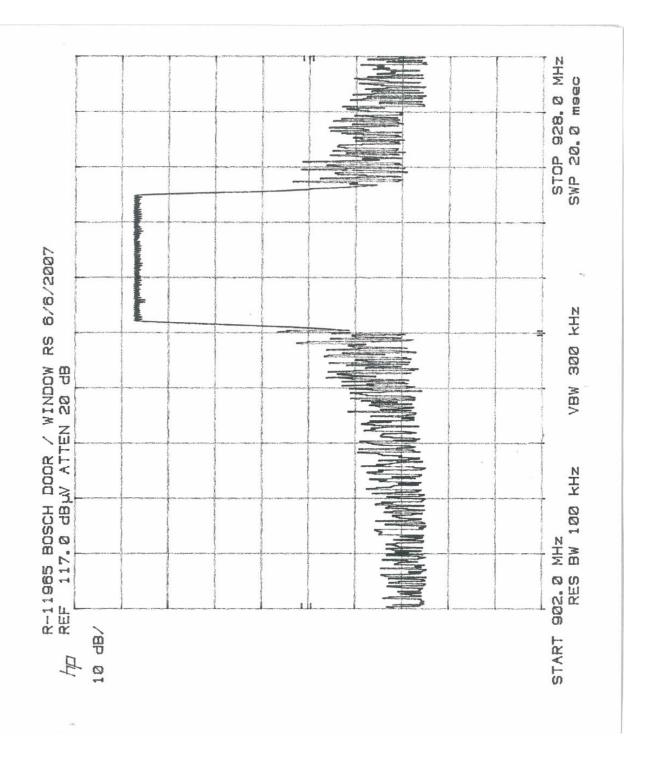
Test Method	d:	FCC Pa	rt 15 Subpart C	. Radiated Em	nissions. Harm	onics Emissio	ns.		
Customer:			Security System			Job No.	R-11965-7		
Test Sample	e:		Vindow Contact						
Model No.:			1C1-S135Y			FCC ID:	T3XBMC1-S13	5Y	
Operating N	lode.		ously transmittir	ng a 921 3 MH	lz signal		10,200101010		
Technician:		R. Sooc		ig a 02 1.0 Mil		Date:	August 8-9, 200	7	
	Test Dist					Dute.	7109031 0 0, 200		
			nless otherwise	specified					
	Ante		EUT	Meter	Correction	Corrected	Converted	D	eak
Test Freq.	Pol./H		Orientation	Reading	Factor	Reading	Reading		mit
MHz		-	X/Y/Z	dBµV	dB	dBµV/m	uV/m		//m
1842.6	· /	· · · ·		69.2	2.3	71.5	3758.4		18.0
1042.0	V /		A Y	<u> </u>	2.3	71.3	3890.5	501	10.0 1
	V /		Z	76.5	2.3	78.8	8709.6		I
<u> </u>	V/ H/		X	69.8	2.3	70.0	4027.2		
	<u>н/</u> Н/		X Y	69.8	2.3	72.1	4027.2		
1842.6	<u>н/</u> Н/		ř Z	48.5	2.3	50.8	346.7	E01	10 0
1042.0	п/	1.0	۷	40.0	2.3	0.UC	340.7	501	18.0
2763.9	V /	1.1	Х	47.5	5.2	52.7	431.5	50	0.00
	V /		Y	48.5	5.2	53.7	484.2		
	V /		Z	48.0	5.2	53.2	457.1		
	H/		X	45.3	5.2	50.5	335.0		
	Η/		Y	47.8	5.2	53.0	446.7		
2763.9	Η/		Z	46.7	5.2	51.9	393.6	50	0.0
		-			0.2	0.10			
3685.2	V /	1.0	Х	44.9	10.0	54.9	555.9	50	0.00
	V /	1.0	Y	45.0	10.0	55.0	562.3		
	V /	1.0	Z	44.8	10.0	54.8	549.5		İ
	Η/	1.0	Х	45.3	10.0	55.3	582.1		
	Η/	2.0	Y	45.8	10.0	55.8	616.6		
3685.2	Η/	1.0	Z	45.0	10.0	55.0	562.3	50	0.0
4606.5	V /	1.1	Х	47.4	13.6	61.0	1122.0	50	0.00
	V /		Y	49.7	13.6	63.3	1462.2		
	V /		Z	48.0	13.6	61.6	1202.3		
	Η/		Х	46.3	13.6	59.9	988.6		
	Η/		Y	47.9	13.6	61.5	1188.5		
4606.5	Η/	1.0	Z	48.4	13.6	62.0	1258.9	50	0.00
EE07 0		4 7		45.0	47.4		4070 -		40.0
5527.8	V /		X	45.0	17.1	62.1	1273.5	501	18.0
	V /		Y	44.2	17.1	61.3	1161.4		<u> </u>
	V /		Z	44.4	17.1	61.5	1188.5	-	<u> </u>
	<u>H/</u>		X	43.0	17.1	60.1	1011.6	-	
5507.0	<u>H/</u>		Y 7	44.5	17.1	61.6	1202.3		10.0
5527.8	H /		Z	43.8	17.1	60.9	1109.2		18.0
							s not recorded we		re
						I do not excee	ed the specified li	mits.	
	°= Noise	e ⊢ioor 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-11965-7	
Test Sampl	e:	Door / V	Vindow Contact					
Model No.:		ISW-BM	IC1-S135Y			FCC ID:	T3XBMC1-S135	Ϋ́
Operating I	Mode:	Continu	ously transmittir	ng a 921.3 MH	z signal.	I		
Technician		R. Sood	•	5		Date:	August 8-9, 200	7.
Notes:		tance: 3 M						
			nless otherwise	specified				
		enna	EUT	Converted	Peak			
Test Freq.		leight	Orientation	Meter Reading	Correction Factor	Corrected Reading	Reading	Limit
MHz		Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
6408.5	. ,	1.0	X	42.2	19.9	62.1	*1273.5	50118.0
<u> </u>		1.0	Y	42.2	19.9	62.1	*1273.5	
I		1.0	Z	42.2	19.9	62.1	*1273.5	
<u> </u>		1.0	 X	41.3	19.9	61.2	*1148.2	
		1.0	Y	41.3	19.9	61.2	*1148.2	
6408.5		1.0	Z	41.3	19.9	61.2	*1148.2	50118.0
7324.0	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 /	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		1.0	X	42.5	23.6	66.1	*2018.4	5000.0
		1.0	Y Z	42.5	23.6	66.1	*2018.4	
		1.0	X	42.5 42.7	23.6 23.6	66.1 63.6	*2018.4 *2065.4	
I		1.0	X Y	42.7	23.6	63.6	*2065.4	
8239.5		<u>1.0</u> 1.0	r Z	42.7	23.6	63.6	*2065.4	5000.0
0239.3	117	1.0	۷.	42.7	23.0	03.0	2003.4	5000.0
9155.0	V /	1.0	Х	42.1	25.5	67.6	*2398.8	5000.0
	V /	1.0	Y	42.1	25.5	67.6	*2398.8	
	V /	1.0	Z	42.1	25.5	67.6	*2398.8	
	Η/	1.0	Х	42.0	25.5	67.5	*2371.4	
	Η/	1.0	Y	42.0	25.5	67.5	*2371.4	
9155.0	Η/	1.0	Z	42.0	25.5	67.5	*2371.4	5000.0
			-				not recorded we	
						uo not exceed	the specified lin	nits.
	=INOISE		easurements (N	inimum syste	m sensitivity)			

Test Metho	d:	FCC	Part 15 Subpa	rt C, Radiat	ed Emissions	, Harmonics E	Emissions.			
Customer:			h Security Sys					-11965-7		
Test Sample	e:	Door	/ Window Con	tact						
Model No.:		ISW-	BMC1-S135Y			FC	CCID: T	3XBMC1-S135Y		
Operating N	/lode:	Cont	inuously transr	nitting a 921	.3 MHz signa	l.				
Technician:		R. So	podoo	0	U		Date: A	ugust 8-9, 2007.		
Notes:	Test Dist	ance:	3 Meters			Duty Cy	cle: 22%	0 /		
			age, unless oth	erwise spec	ified			tion: -13.2dB		
						Duty cycle				
Test Freq.	Anten Pol./He		EUT Orientation	Average Reading	Correction Factor	Correction Factor	Correcte Readin		Av Lir	′g. nit
MHz	Hz (V/H)-		X/Y/Z	dBµV	dB	dB	dBµV/r	n uV/m	uV	/m
1842.6	V / 1	.6	Х	67.9	2.3	-13.2	57.0	707.9	501	1.8
	V / 1		Y	68.5	2.3	-13.2	57.6	758.6		
	V / 1	.0	Z	67.4	2.3	-13.2	56.5	668.3		
	H / 1		Х	60.2	2.3	-13.2	49.3	291.7		
	H/1	.0	Y	60.6	2.3	-13.2	49.7	305.5		
1842.6	H/1	.0	Z	41.7	2.3	-13.2	30.8	34.7	501	1.8
2763.9	1//4	1	v	007	5.0	40.0	00 7	04.0	<b>F A</b>	0.0
2703.9	V / 1 V / 1		X Y	38.7	5.2	-13.2 -13.2	30.7	34.3	500	<u>J.U</u>
	V/1		Y Z	<u>41.4</u> 41.1	5.2 5.2	-13.2	33.4 33.1	46.8		
I	H/1		<u> </u>	35.4	5.2	-13.2	27.4	23.4		
I	H/1		Y Y	41.0	5.2	-13.2	33.0	44.7		
2763.9	H/1		Z	35.4	5.2	-13.2	27.4	23.4	500	20
210010	, 1	.0	۲	00.4	0.2	.012	27.4	23.4	- 500	<u></u>
3685.2	V / 1	.0	Х	31.7	10.0	-13.2	28.5	26.6	500	0.C
	V / 1		Y	31.2	10.0	-13.2	28.0	25.1		
	V / 1	.0	Z	31.0	10.0	-13.2	27.8	24.5		
	H / 1	.0	Х	31.4	10.0	-13.2	28.2	25.7		
	H/2	.0	Y	35.2	10.0	-13.2	32.0	39.8		
3685.2	H / 1	.0	Z	30.6	10.0	-13.2	27.4	23.4	500	0.0
4000 F		4	Y	44.0	40.0	40.0	40.0	400.0	50	
4606.5	V / 1		X	41.9	13.6	-13.2 -13.2	42.3	130.3	500	<u>J.U</u>
	V / 1		Y 7	46.2	13.6	-13.2	46.6	213.8		
	V / 1 H / 1		Z X	43.5 38.2	13.6 13.6	-13.2	43.9 38.6	<u>156.7</u> 85.1		
	H/1		X Y			-13.2	43.9	156.7		
4606.5	H/1		ř Z	<u>43.5</u> 42.2	13.6 13.6	-13.2	43.9	134.9	50	20
	, 1		<u>د</u>	T <b>L.L</b>	10.0		72.0	104.0	- 500	
5527.8	V / 1	.7	Х	35.4	17.1	-13.2	39.3	92.3	501	1.8
	V / 1	.0	Y	30.7	17.1	-13.2	34.6	53.7		
	V / 1	.0	Z	34.5	17.1	-13.2	38.4	83.2		
	H/1	.0	Х	30.6	17.1	-13.2	34.5	53.1		
	H/1		Y	33.8	17.1	-13.2	37.7	76.7		
5527.8	H/1	.0	Z	30.2	17.1	-13.2	34.1	50.7	501	1.8
			-					ot recorded were		
			· ·				ot exceed	the specified limit	ts.	
	*=Noise	Floor	Measurements	s ( Minimum	system sensi	itivity)				

Test Metho	od:	FCC	Part 15 Subpa	rt C, Radiate	d Emissions,	Harmonics E	missions.		
Customer:			h Security Sys					1965-7	
Test Samp	le:		· / Window Con			•			
Model No.:			BMC1-S135Y			FC	C ID: T3)	(BMC1-S135Y	
Operating			inuously transr	nitting a 921.	3 MHz signal				
Technician			oodoo		e milz eignan		Date: Aug	gust 8-9, 2007.	
Notes:			3 Meters			Duty Cyc		30010 0, 2007.	
10103.			age, unless oth	erwise sneci	fied			on: -13.2dB	
						Duty cycle			
Test Freq.	Anten		EUT	Average	Correction	Correction	Correcte		Avg.
	Pol./He	eight	Orientation	Reading	Factor	Factor	Reading	Reading	Limit
MHz	(V/H	)-	X/Y/Z	dBµV	dB	dB	dBµV/m	uV/m	uV/m
6408.5	V / 1	.0	Х	31.6	19.9	-13.2	38.3	*82.2	5011.8
	V / 1		Y	31.6	19.9	-13.2	38.3	*82.2	
	V / 1	.0	Z	31.6	19.9	-13.2	38.3	*82.2	
	H/1	.0	Х	32.2	19.9	-13.2	38.9	*88.1	
	H/1	.0	Y	32.2	19.9	-13.2	38.9	*88.1	
6408.5	H/1	.0	Z	32.2	19.9	-13.2	38.9	*88.1	5011.8
7324.0	V / 1		Х	31.9	21.3	-13.2	40.0	*100.0	500.0
	V / 1		Y	31.9	21.3	-13.2	40.0	*100.0	
	V / 1		Z	31.9	21.3	-13.2	40.0	*100.0	
	H/1		Х	31.9	21.3	-13.2	40.0	*100.0	
	H/1		Y	31.9	21.3	-13.2	40.0	*100.0	
7324.0	H/1	.0	Z	31.9	21.3	-13.2	40.0	*100.0	500.0
0000 5		0	×	22.0	22.0	40.0	40.0	*454 4	500.0
8239.5	V / 1		X	33.2	23.6	-13.2 -13.2	42.6	*151.4	500.0
I	V / 1		Y Z	<u>33.2</u> 33.2	23.6 23.6	-13.2	42.6 42.6	*151.4	
	H/1		X	32.8	23.6	-13.2	42.0	*144.5	
	H/1		Y	32.8	23.6	-13.2	43.2	*144.5	
8239.5	H/1		Z	32.8	23.6	-13.2	43.2	*144.5	500.0
0239.3	11/1	.0	۷.	52.0	23.0	10.2	43.2	144.5	500.0
9155.0	V / 1	.0	Х	33.1	25.5	-13.2	45.4	*186.2	500.0
	V / 1		Y	33.1	25.5	-13.2	45.4	*186.2	
I	V / 1		Z	33.1	25.5	-13.2	45.4	*186.2	
	H/1		X	33.2	25.5	-13.2	45.5	*188.4	
	H/1		Y	33.2	25.5	-13.2	45.5	*188.4	
9155.0	H/1		Z	33.2	25.5	-13.2	45.5	*188.4	500.0
							<u> </u>		
			-					recorded were	
							ot exceed th	ne specified limi	ts.
	"=INOISE	FIOOr	Measurements	s(IVIINIMUM:	system sensit	ivity)			

## 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: T3XBMC1-S135Y

Customer	Bos	Bosch Security System.					
Test Sample	Do	Door / Window Contact					
Model Number	ISV	ISW- BMC1-S135Y					
Date: 6-08-2007		Tech: R.S.	Sheet 1 of 1				

Retlif Testing Laboratories, Report R-11965-7, Bosch Security Systems, FCC ID: T3XBMC1-S135Y Page 45 of 49 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	B, Radiated E	Emission	s, 30 MHz	to 5.	0 GHz, Para:1	5.109	(a)
Customer:		Bosch	Security Syste	em.			Job I	No.:	R-11965-7		
Test Sampl	e:	Door /	Window Conta	act							
Model No.:		ISW- B	MC1-S135Y				Serial I	No.:	N/A		
Operating I	Node:	EUT op	perating on cha	annel 00( 91	5.5MHz), con	tinuously	receiving a	a CW	/ signal.		
Technician		R.Sood	doo				D	ate:	August 8, 20	07.	
Notes:	Test D	Distance	: 3 Meters				Temp:40.	.0°C	Humidity	41.0%	)
	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.	. !4
Frequency	Pos	sition	Orientation	Readings	Factor	Rea	ading		Reading	Lin	nit
MHz	(V/H) /	Meters	Degrees	dBuV	dB	dB	uV/m		uV/m	uV	/m
30.0										10	0
88.0										10	0
88.0										15	0
216.0										15	0
216.0			o emission	obsorvor	t at the end		lost dist	ance		20	0
			0 6111551011	Observed	at the spo	ecineu		ance			
960.0										20	0
960.0										50	
										L i	
										<u> </u>	
5000.0										50	0
0000.0	The fre	quency rar	nge was scanned	from 30 MHz to	5.0 GHz.	I		L		0	5
	The em	issions ob	served from the E	UT do not exce	ed the specified						
	Emissio	ons not rec	corded were more	than 20dB und	er the specified li	ımit.					

Customer:Bosch Security System.Job No.:R-11965-7Test Sample:Door / Window ContactSerial No.:N/AModel No.:ISW- BMC1-S135YSerial No.:N/AOperating Mode:EUT operating on channel 30( 918.5MHz), continuously receiving a CW signal.August 8, 2007.Technician:R.SoodooDate:August 8, 2007.Notes:Test Distance: 3 MetersTemp:40.0°CHumidity:41.0%	
Model No.:ISW- BMC1-S135YSerial No.:N/AOperating Mode:EUT operating on channel 30( 918.5MHz), continuously receiving a CW signal.Technician:R.SoodooDate:August 8, 2007.	
Operating Mode:EUT operating on channel 30( 918.5MHz), continuously receiving a CW signal.Technician:R.SoodooDate:August 8, 2007.	
Technician:   R.Soodoo     Date:   August 8, 2007.	
Notes: Test Distance: 3 Meters Temp:40.0°C Humidity:41.0%	
Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz	
Antenna EUT Meter Correction Corrected Converted	
Frequency Position Orientation Readings Factor Reading Reading	
MHz (V/H) / Meters Degrees dBµV dB dBµV/m uV/m uV/m	ו
30.0 100	
88.0 100	
88.0 150	
216.0 No emission observed at the specified test distance 150	
216.0 200	
960.0 200	
960.0 500	
500.0 500	
The frequency range was scanned from 30 MHz to 5.0 GHz.	
The emissions observed from the EUT do not exceed the specified limits.	
Emissions not recorded were more than 20dB under the specified limit.	

Test Metho	d:	FCC P	art 15, Subpa	rt B, Class I	B, Radiated E	mission	s, 30 MHz	to 5.	0 GHz, Para:1	5.109(a)
Customer:		Bosch	Security Syste	em.			Job I	No.:	R-11965-7	
Test Sampl	e:	Door /	Window Conta	act					•	
Model No.:		ISW- B	MC1-S135Y				Serial I	No.:	N/A	
Operating I	/lode:	EUT op	perating on cha	annel 58( 92	1.3MHz), con	tinuously	receiving a	a CW	/ signal.	
Technician		R.Sood	-	, ,			-	ate:	August 8, 20	07.
Notes:	Test D	Distance	: 3 Meters				Temp:40.	0°C	Humidity:	41.0%
	Detec	tor: Qua	asi-Peak Belov	v 1 GHz, Pea	ak above 1 Gl	Hz				
	Ant	enna	EUT	Meter	Correction	Corr	ected	(	Converted	
Frequency	Pos	sition	Orientation	Readings	Factor		ading		Reading	Limit
MHz	(V/H) /	Meters	Degrees	dBµV	dB	dB	µV/m		uV/m	uV/m
30.0										100
I										
88.0										100
88.0										150
216.0			<b>C</b>							150
216.0		No	o emission	observed	at the spe	cified te	est dista	nce	•	200
960.0										200
960.0										500
1										1
5000.0	The for			from 20 Mile (-						500
			nge was scanned served from the E			limits.				
			corded were more							