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, Zip:	Qian Shan Zhuhai, Guangdong 51907, China

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

Brandname: Bosch

Model Number: ISW-BKF1-H5Y

FCC ID: T3XBKF1-H5Y

Type: Frequency Hopping Spread Spectrum Transceiver

Power Requirements: Four AA Alkaline Batteries

Frequency of Operation: 920 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
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 46.0 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 10.4 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 10.4 mWatts.

15.247 (d): In any 100 kHz bandwidth outside the frequency band in which the Spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator is at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. All emissions, which fell within the restricted bands specified in 15.205(a), were measured and found to be in compliance with the limits specified in 15.209(a).

15.109 (a): The field strength of spurious radiated emissions generated by the receiver did not exceed the class B limits specified.

15.247(a): Description of pseudorandom hopping sequence -
The following describes the hopping sequence used by the “Hub” or central point in the network for Beacon announcements as well as the hopping sequence used by the individual points for sending status updates to the Hub.

Frequency Announcements (Beacon) Hopping
• Using 59 frequencies channels (all system frequencies)
• Frequency channels are numbered from 0 to 58 (for 59 overall channels)
• Frequency 0 and 1 are adjacent, etc.
The Beacon hop pattern is generated uniquely for each system as follows:

We start with a set of groups
Group 0 = {0,1,2,3,…,9}
Group 1 = {10,11,…, 19}
Group 2 = {20,21,…, 29}
Group 3 = {30,31,…, 39}
Group 4 = {40,41,…, 49}
Group 5 = {50, …, 58} Note one less than others!

We randomly shuffle the elements within each group
Example:
Shuffled G0 = { 2 5 4 1 7 6 3 8 0 9 }
Shuffled G1 = { 19 18 12 15 14 10 17 16 11 13 }
Shuffled G2 = { 26 21 24 22 29 25 28 23 20 27 }
Shuffled G3 = { 38 33 31 39 32 30 36 34 37 35 }
Shuffled G4 = { 47 45 49 48 42 43 46 41 40 44 }
Shuffled G5 = { 51 58 56 57 52 55 50 53 54 }

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

Example: using the following group order:
{ G1, G5, G3, G0, G2, G4 }
Shuffled G1 = { 19 18 12 15 14 10 17 16 11 13 }
Shuffled G5 = { 51 58 56 57 52 55 50 53 54 XX }
Shuffled G3 = { 38 33 31 39 32 30 36 34 37 35 }
Shuffled G0 = { 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 921.3 MHz
The unit was tested at the following frequencies: 915.5 MHz, 918.5 MHz, & 921.3 MHz.

6. The Receiver was tested per “ANSI STANDARD C63.4-2003 12.1.1.2. The receiver was programmed for normal receiver mode. A CW signal was transmitted to stabilize the local oscillator.

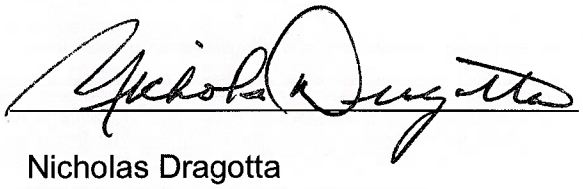
Modifications:

No modifications were made to the test sample in order to demonstrate compliance.

Certification and Signatures

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

Donald C. Lerner
EMC Test Engineer



Nicholas Dragotta
EMC Laboratory Supervisor

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

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

Equipment List

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

EN	Type	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	10/19/2007	10/19/2008

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

EN	Type	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	10/19/2007	10/19/2008

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

EN	Type	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	10/19/2007	10/19/2008

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

EN	Type	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	10/19/2007	10/19/2008
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/31/2007

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

EN	Type	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	10/19/2007	10/19/2008

FCC Part 15 Subpart C, Radiated Harmonic Emissions

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
032F	H.P. Filter	Microlab/FXR	2 GHz	HD-20N	10/5/2007	10/5/2008
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	10/5/2007	10/5/2008
128	Double Ridged Guide	Electro-Mechanics	1 GHz - 18 GHz	3105	3/27/2007	3/27/2008
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/27/2007	6/27/2008
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/27/2007	6/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/19/2007	10/19/2008
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/26/2007	9/26/2008
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/31/2007

FCC Part 15 Subpart C, Transmitter Spurious Radiated Emissions

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
032F	H.P. Filter	Microlab/FXR	2 GHz	HD-20N	10/5/2007	10/5/2008
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	10/5/2007	10/5/2008
128	Double Ridged Guide	Electro-Mechanics	1 GHz - 18 GHz	3105	3/27/2007	3/27/2008
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/27/2007	6/27/2008
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/27/2007	6/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/19/2007	10/19/2008
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/26/2007	9/26/2008
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/31/2007

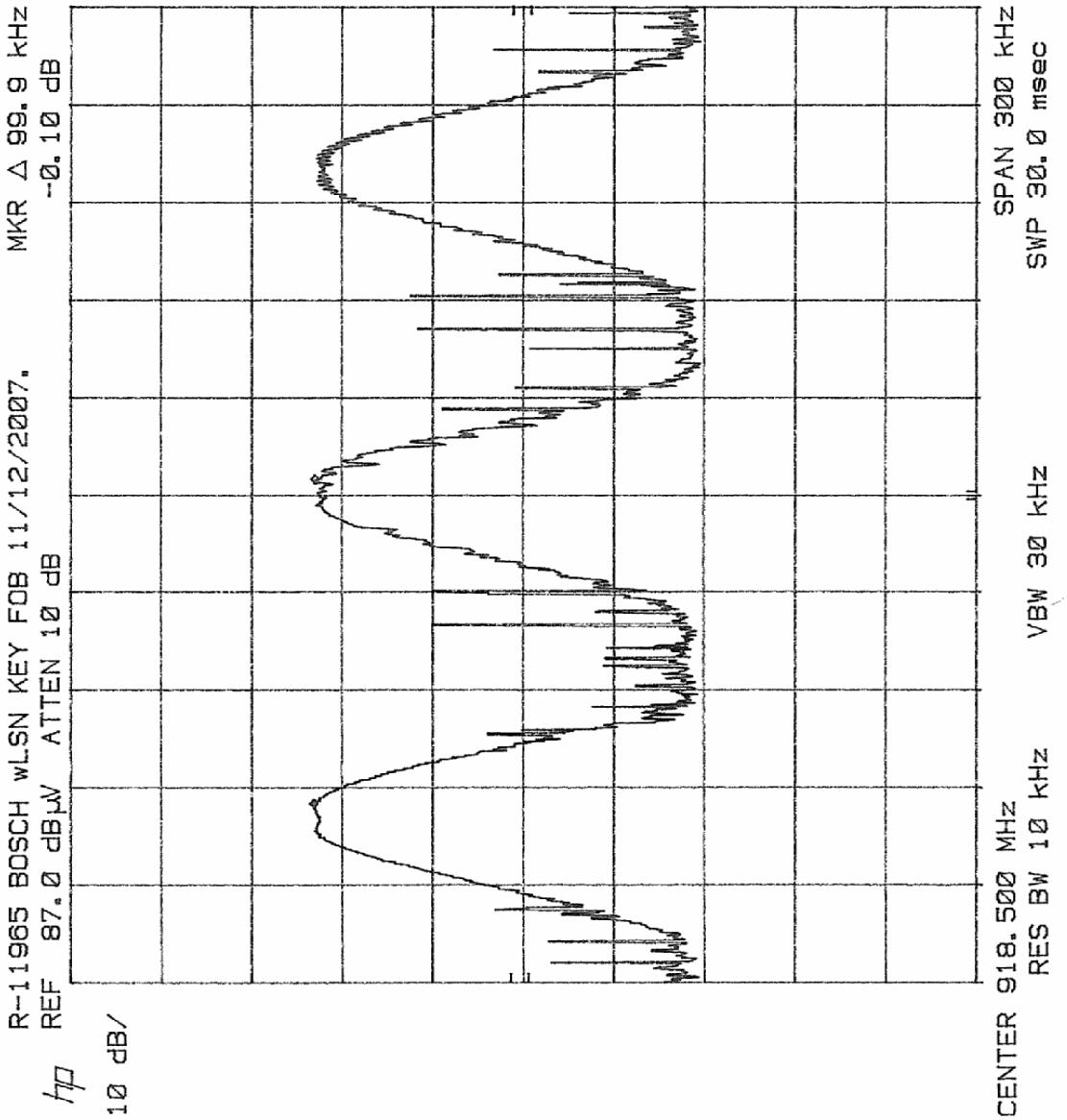
FCC Part 15 Subpart B, Class B, Radiated Emissions, 30 MHz to 5 GHz

EN	Type	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
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	10/19/2007	10/19/2008
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/26/2007	9/26/2008
574	AM/FM Signal Generator	Marconi Instru.	9 kHz - 2.4 GHz	2024	7/24/2007	7/24/2008
723	H.P. Filter	Mini-Circuits	1 GHz	BHP-1000	8/13/2007	8/13/2008
767	Biconilog	EMCO	26 - 2000 MHz	3142B	10/12/2006	10/31/2007

FCC Part 15.35, Duty Cycle Determination

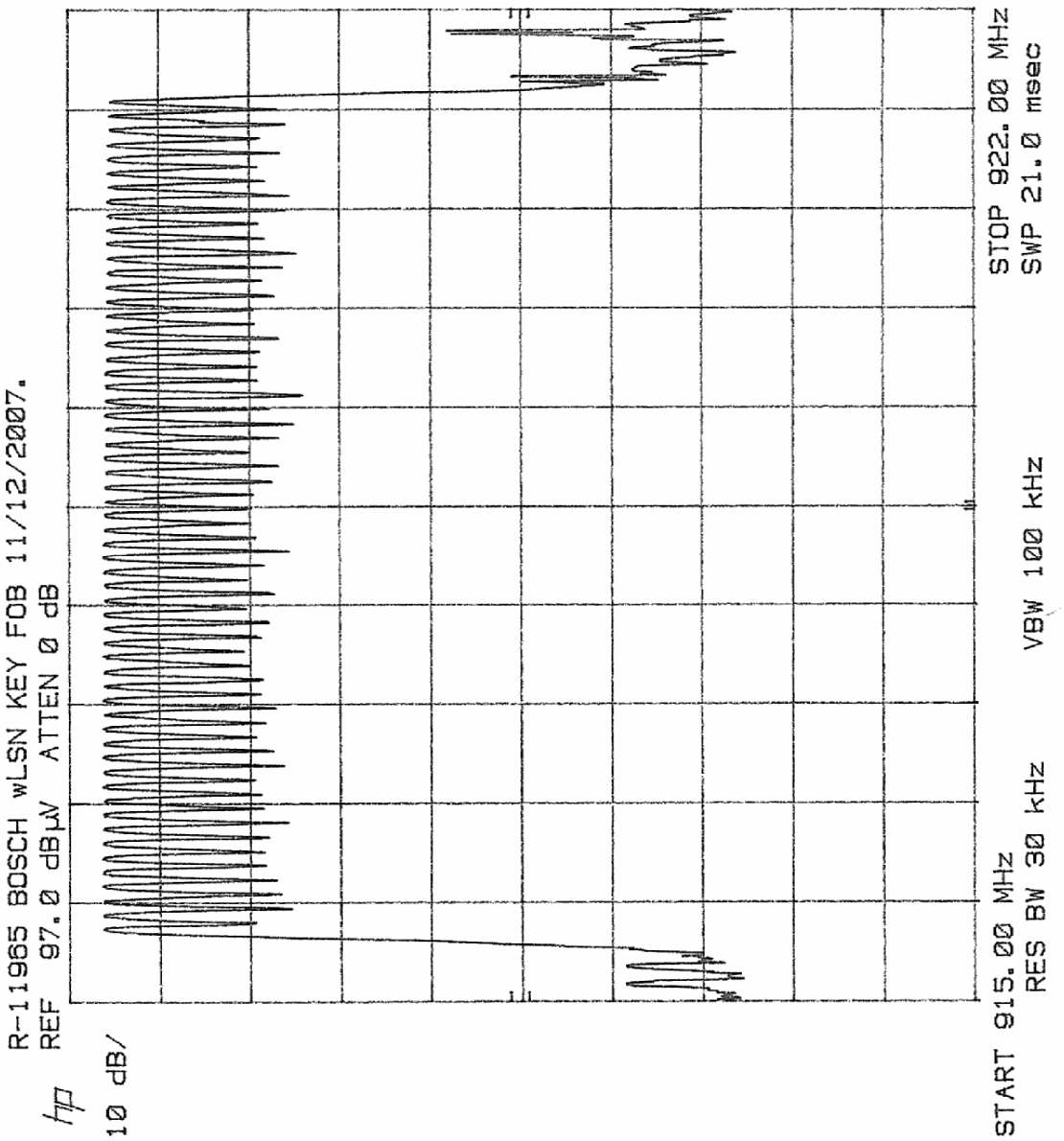
EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/19/2007	10/19/2008

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



FCC Part 15, Subpart C, 15.247(a) (1)Hopping Channel Carrier Separation, 902 to 928 MHz Band
Note: Hopping channel carrier frequency meets the required minimum separation of 25 kHz
(Measured carrier separation =99.9 kHz)
FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 11-12-2007.	Tech: R.S.	Sheet 1 of 2



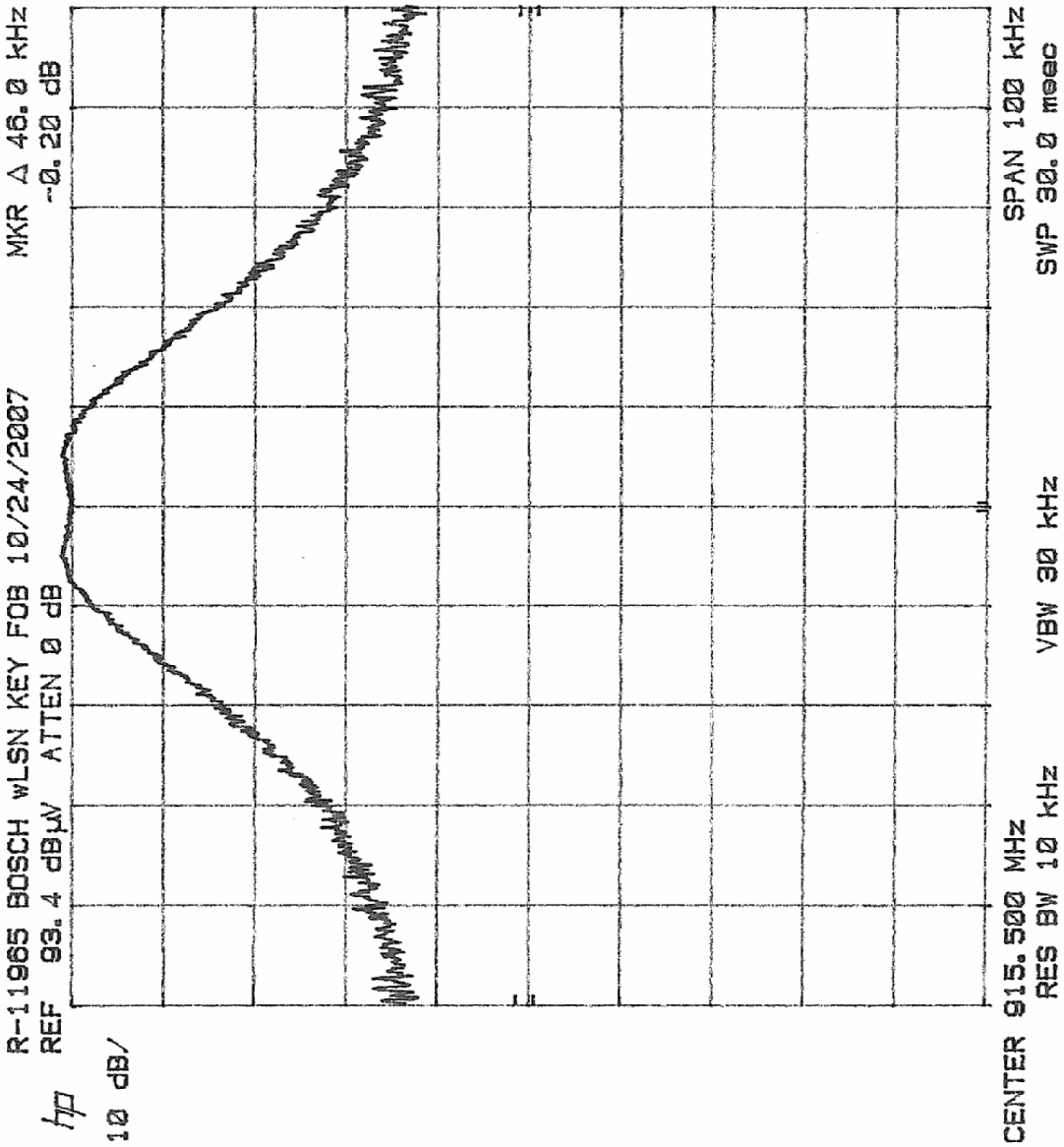
FCC Part 15, Subpart C, 15.247(a) (1) Number of Hopping Frequency, 902 to 928 MHz Band

Note: EUT uses 59 hopping frequencies which meets the 50 minimum hopping frequencies required by the 20dB bandwidth if less than 250 kHz(measured BW = 46.0 kHz).

FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 11-12-2007.	Tech: R.S.	Sheet 2 of 2

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



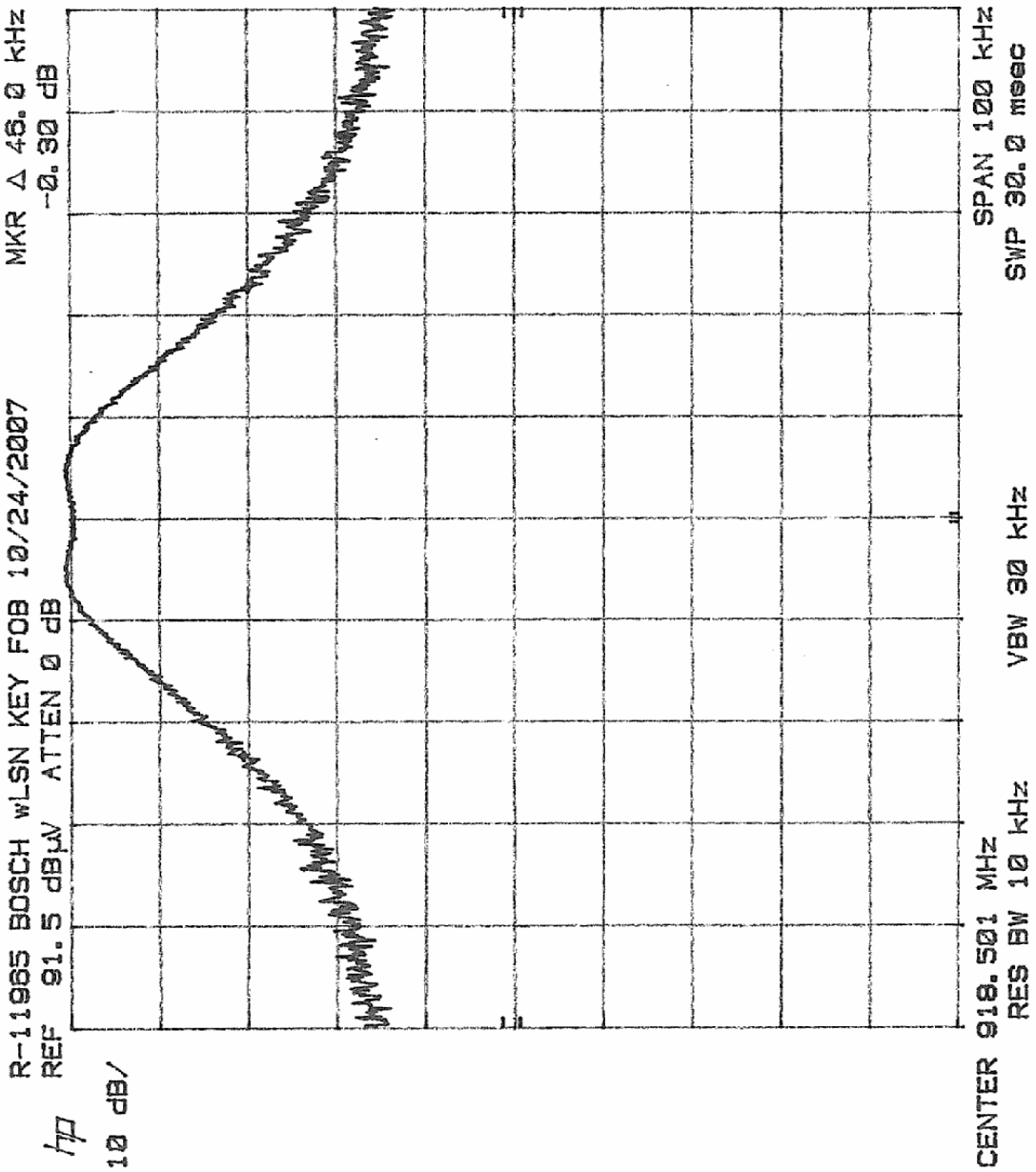
FCC Part 15, Subpart C, 15.247(a) (1) Occupied Bandwidth, 902 to 928 MHz Band

Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth measured at 46.0 kHz

Note: EUT transmitting on channel 00 at 915.5 MHz.

FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 10-24-2007	Tech: R.S.	Sheet 1 of 3



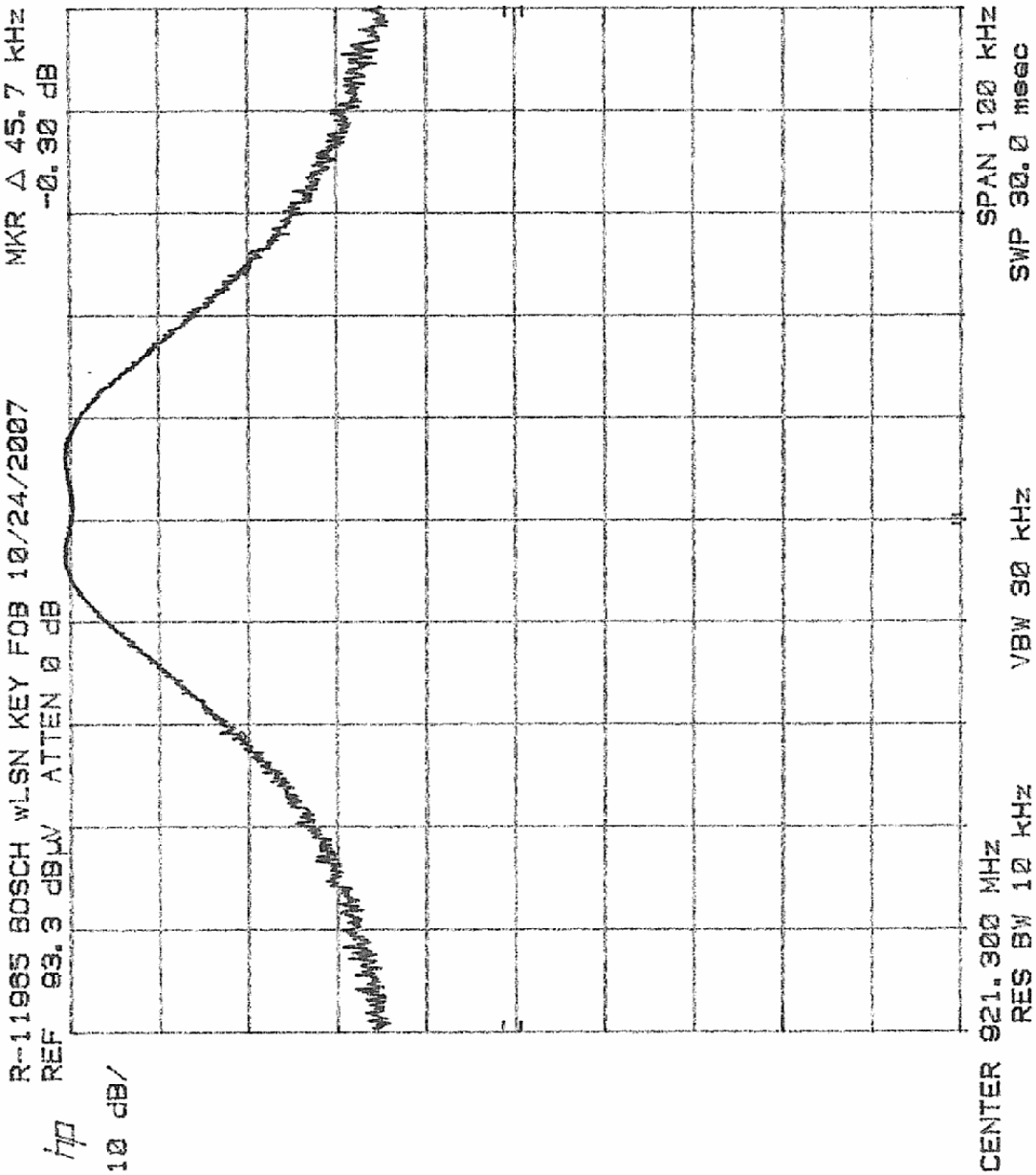
FCC Part 15, Subpart C, 15.247(a) (1) Occupied Bandwidth, 902 to 928 MHz Band

Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth measured at 46.0 kHz

Note: EUT transmitting on channel 30 at 918.5 MHz.

FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 10-24-2007	Tech: R.S.	Sheet 2 of 3



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

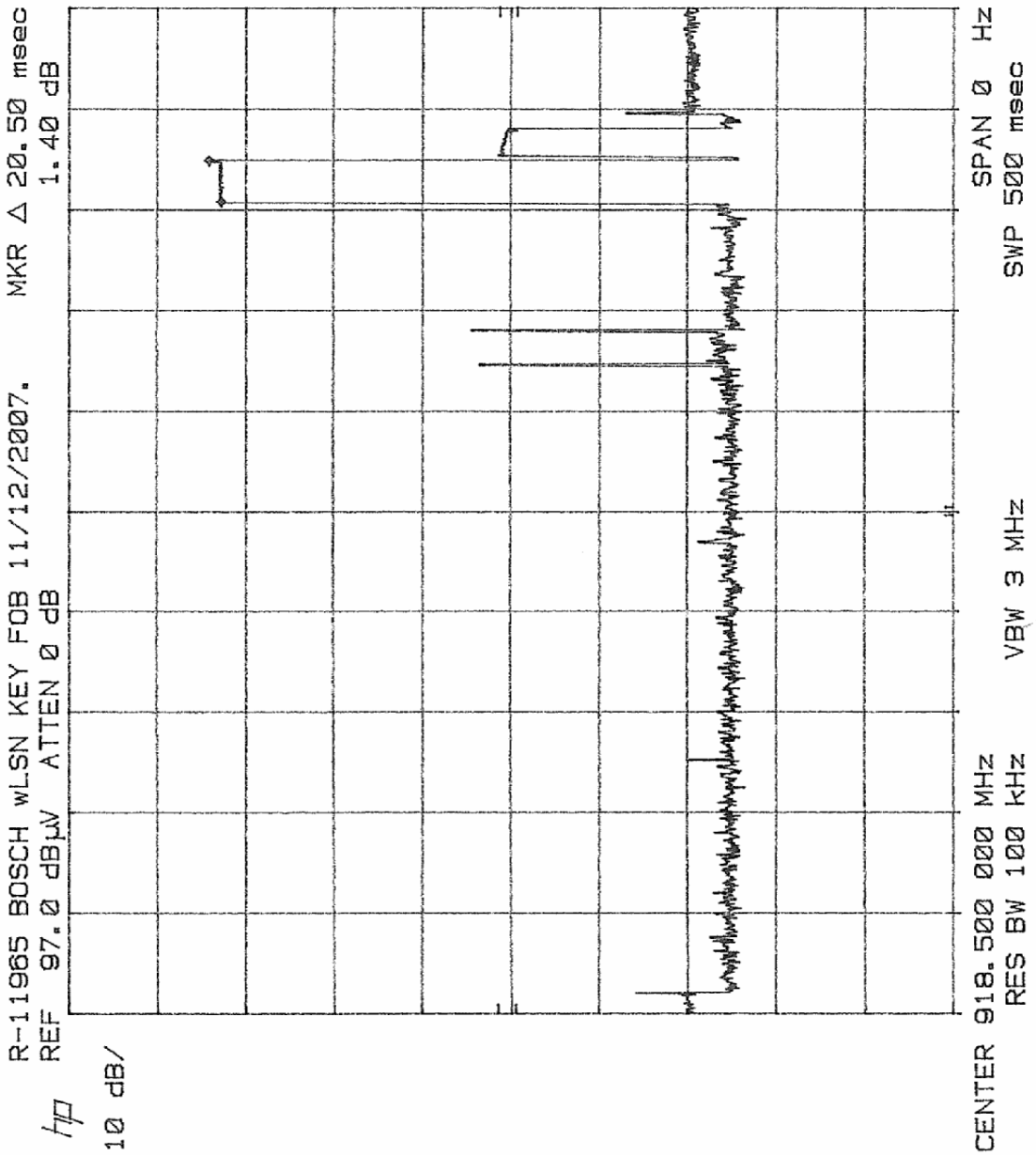
Note: The maximum 20 dB bandwidth of the hopping channel is less then 250 kHz. 20dB bandwidth measured at 45.7 kHz

Note: EUT transmitting on channel 58 at 921.3 MHz.

FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 10-24-2007	Tech: R.S.	Sheet 3 of 3

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



FCC Part 15, Subpart C, 15.247(a)(1)(i) Occupancy Time, 902 to 928 MHz Band
Note: The measured occupancy time does not exceed the 0.4 seconds (Measured time =20.5mSec.)
FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 11-12-2007.	Tech: R.S.	Sheet 1 of 1

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

Test Method:	FCC Part 15, Subpart C, Radiated Emissions, Fundamental Power Output.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob	**Paragraph**	15.247(b)(2)
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 915.5 MHz, 918.4 MHz and 921.3 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 19, 2007.

Notes: Test Distance: 3 Meters Temp: 21°C Humidity: 85%
Detector: Peak

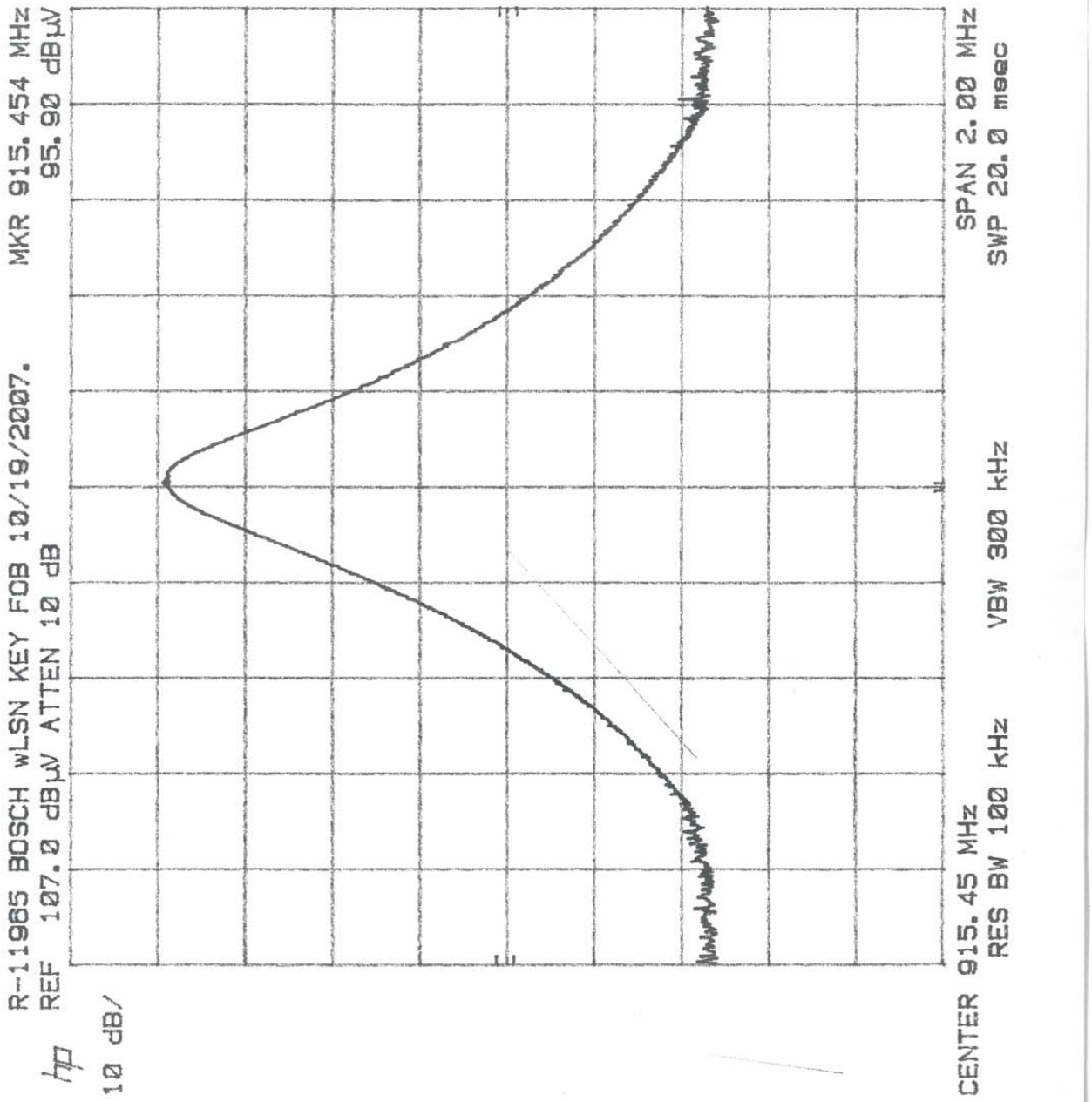
Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Converted Reading	Peak Limit
MHz	(V/H) / Meters	X / Y / Z	dBuV	dB	dBuV/m	V/m	milliWatts	Watts
915.5	V / 1.0	X	90.1	9.6	99.7	0.10	2.8	1.0
|	V / 1.3	Y	88.5	9.6	98.1	0.08	1.9	|
|	V / 1.0	Z	95.8	9.6	105.4	0.19	10.4	|
|	H / 2.0	X	85.5	9.6	95.1	0.06	1.0	|
|	H / 2.0	Y	87.2	9.6	96.8	0.07	1.4	|
915.5	H / 1.4	Z	83.5	9.6	93.1	0.05	0.6	|
								|
918.4	V / 1.0	X	88.4	9.6	98.0	0.08	1.9	|
|	V / 1.5	Y	88.5	9.6	98.1	0.08	1.9	|
|	V / 1.0	Z	95.3	9.6	104.9	0.18	9.3	|
|	H / 1.9	X	85.9	9.6	95.5	0.06	1.1	|
|	H / 1.0	Y	89.7	9.6	99.3	0.09	2.6	|
918.4	H / 2.1	Z	77.5	9.6	87.1	0.02	0.2	|
								|
921.3	V / 1.2	X	88.8	9.6	98.4	0.08	2.1	|
|	V / 1.3	Y	88.2	9.6	97.8	0.08	1.8	|
|	V / 1.0	Z	94.9	9.6	104.5	0.17	8.5	|
|	H / 2.0	X	85.0	9.6	94.6	0.05	0.9	|
|	H / 1.4	Y	87.6	9.6	97.2	0.07	1.6	|
921.3	H / 2.1	Z	79.7	9.6	89.3	0.03	0.3	1.0

The EUT meets the required limit indicated above.

The following Formulae were used to convert the field strength in dBµV into V/m and V/m to Watts

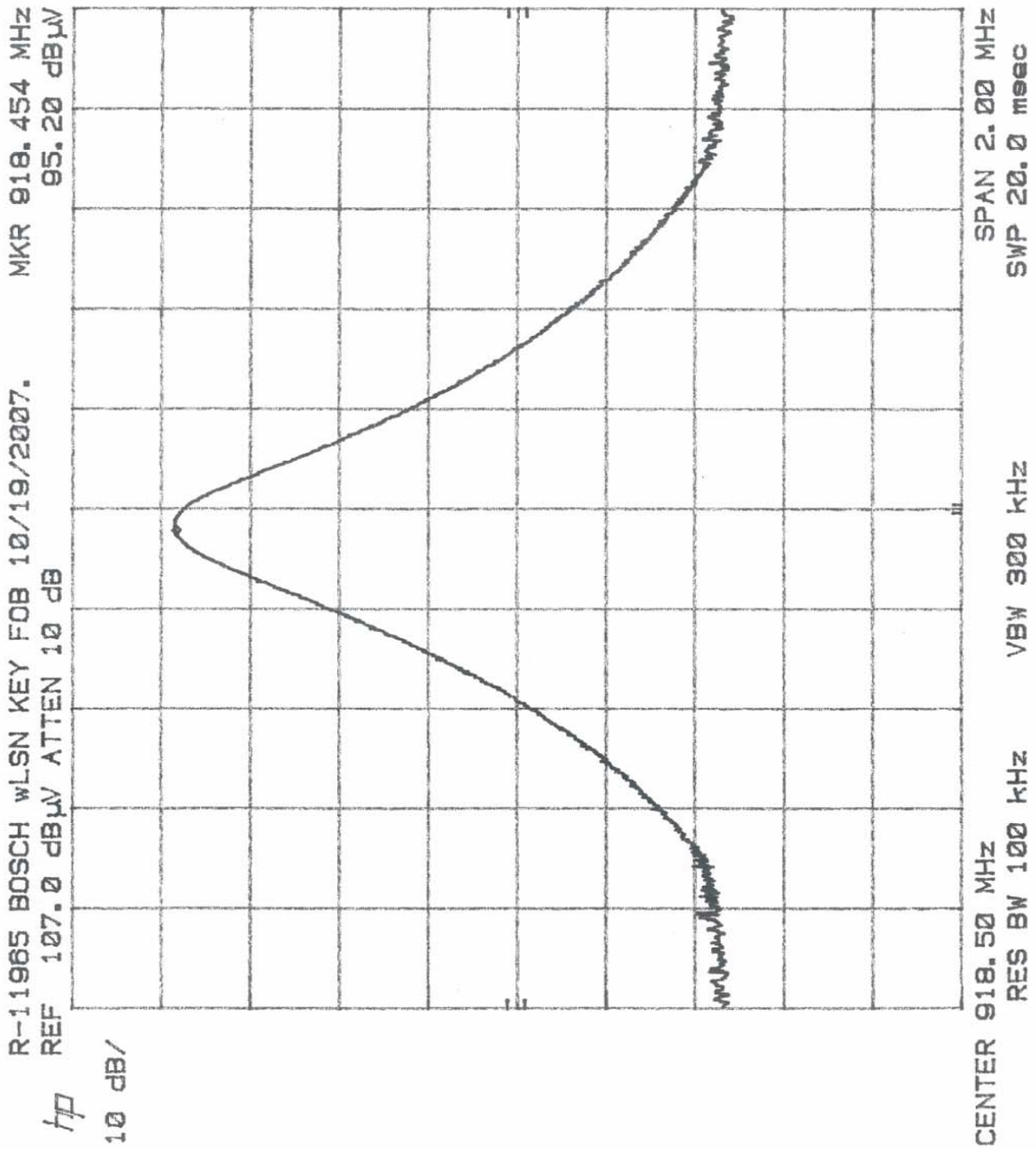
V/m = 10^((dBuV/m-120) / 20)

Power = $(V/m \times 3)^2 / 30$



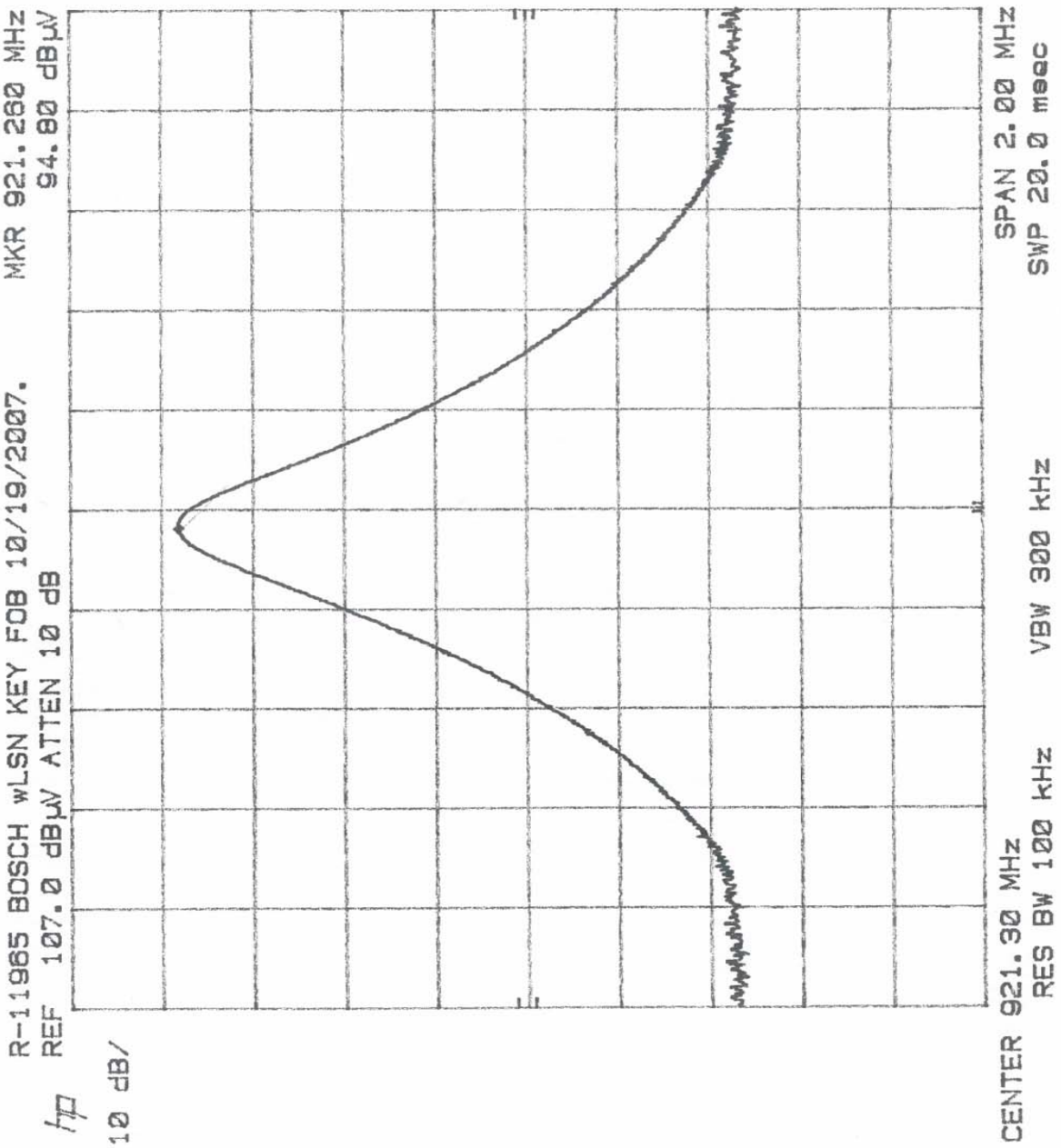
FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output,Para.15.247(b)(2)
Note: EUT transmitting on channel 00 at 915.5 MHz.
FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 10-19- 2007.	Tech: R.S.	Sheet 1 of 3



FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output,Para.15.247(b)(2)
Note: EUT transmitting on channel 30 at 918.4 MHz.
FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 10-19- 2007.	Tech: R.S.	Sheet 2 of 3



FCC Part 15, Subpart C Radiated Emissions, Fundamental Power Output,Para.15.247(b)(2)
Note: EUT transmitting on channel 58 at 921.3 MHz.
FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 10-19- 2007.	Tech: R.S.	Sheet 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:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 915.5 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters
Detector: Peak, Unless otherwise specified

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
1831.0	V / 1.2	X	59.8	2.3	62.1	1273.5	50118.0
|	V / 1.0	Y	59.7	2.3	62.0	1258.9	|
|	V / 1.8	Z	59.5	2.3	61.8	1230.3	|
|	H / 1.0	X	58.7	2.3	61.0	1122.0	|
|	H / 1.4	Y	61.7	2.3	64.0	1584.9	|
1831.0	H / 1.0	Z	57.5	2.3	59.8	977.2	50118.0
2746.5	V / 1.0	X	51.8	5.2	57.0	707.9	5000.0
|	V / 1.0	Y	48.9	5.2	54.1	507.0	|
|	V / 1.3	Z	54.4	5.2	59.6	955.0	|
|	H / 1.1	X	46.8	5.2	52.0	398.1	|
|	H / 1.1	Y	51.9	5.2	57.1	716.1	|
2746.5	H / 2.0	Z	49.4	5.2	54.6	537.0	5000.0
3662.0	V / 2.1	X	49.5	10.0	59.5	944.1	5000.0
|	V / 2.5	Y	48.1	10.0	58.1	803.5	|
|	V / 2.2	Z	50.5	10.0	60.5	1059.3	|
|	H / 1.0	X	48.6	10.0	58.6	851.1	|
|	H / 2.0	Y	52.0	10.0	62.0	1258.9	|
3662.0	H / 2.2	Z	51.5	10.0	61.5	1188.5	5000.0
4577.5	V / 2.1	X	45.7	13.6	59.3	922.6	5000.0
|	V / 1.0	Y	45.7	13.6	59.3	922.6	|
|	V / 1.0	Z	46.2	13.6	59.8	977.2	|
|	H / 2.1	X	45.8	13.6	59.4	933.3	|
|	H / 1.0	Y	46.1	13.6	59.7	966.1	|
4577.5	H / 1.7	Z	47.0	13.6	60.6	1071.5	5000.0
5493.0	V / 1.0	X	41.0	17.1	58.1	*803.5	50118.0
|	V / 1.0	Y	41.0	17.1	58.1	*803.5	|
|	V / 1.0	Z	41.0	17.1	58.1	*803.5	|
|	H / 1.0	X	41.0	17.1	58.1	*803.5	|
|	H / 1.0	Y	41.0	17.1	58.1	*803.5	|
5493.0	H / 1.0	Z	41.0	17.1	58.1	*803.5	50118.0

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*= Noise Floor Measurements (minimum sensitivity).

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 915.5 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters
Detector: Peak, unless otherwise specified

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
6408.5	V / 1.0	X	42.2	19.9	62.1	*1273.5	50118.0
|	V / 1.0	Y	42.2	19.9	62.1	*1273.5	|
|	V / 1.0	Z	42.2	19.9	62.1	*1273.5	|
|	H / 1.0	X	41.3	19.9	61.2	*1148.2	|
|	H / 1.0	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	X	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	|
|	H / 1.0	X	43.0	21.3	64.3	*1640.6	|
|	H / 1.0	Y	43.0	21.3	64.3	*1640.6	|
7324.0	H / 1.0	Z	43.0	21.3	64.3	*1640.6	5000.0
8239.5	V / 1.0	X	42.5	23.6	66.1	*2018.4	5000.0
|	V / 1.0	Y	42.5	23.6	66.1	*2018.4	|
|	V / 1.0	Z	42.5	23.6	66.1	*2018.4	|
|	H / 1.0	X	42.7	23.6	63.6	*2065.4	|
|	H / 1.0	Y	42.7	23.6	63.6	*2065.4	|
8239.5	H / 1.0	Z	42.7	23.6	63.6	*2065.4	5000.0
9155.0	V / 1.0	X	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	|
|	H / 1.0	X	42.0	25.5	67.5	*2371.4	|
|	H / 1.0	Y	42.0	25.5	67.5	*2371.4	|
9155.0	H / 1.0	Z	42.0	25.5	67.5	*2371.4	5000.0

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*=Noise Floor Measurements (Minimum system sensitivity)

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 915.5 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters — Duty Cycle: 20.5%
Detector: Average, unless otherwise specified — Duty Cycle Correction: -13.8dB

Test Freq.	Antenna Pol./Height	EUT Orientation	Average Reading	Correction Factor	Duty cycle Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-	X / Y / Z	dBµV	dB	dB	dBµV/m	uV/m	uV/m
1831.0	V / 1.2	X	58.8	2.3	-13.8	47.3	231.7	5011.8
|	V / 1.0	Y	58.5	2.3	-13.8	47.0	223.9	|
|	V / 1.8	Z	58.5	2.3	-13.8	47.0	223.9	|
|	H / 1.0	X	57.1	2.3	-13.8	45.6	190.5	|
|	H / 1.4	Y	60.8	2.3	-13.8	49.3	291.7	|
1831.0	H / 1.0	Z	45.9	2.3	-13.8	34.4	52.5	5011.8
2746.5	V / 1.0	X	51.0	5.2	-13.8	42.4	131.8	500.0
|	V / 1.0	Y	44.9	5.2	-13.8	36.3	65.3	|
|	V / 1.3	Z	53.4	5.2	-13.8	44.8	173.8	|
|	H / 1.1	X	42.1	5.2	-13.8	33.5	47.3	|
|	H / 1.1	Y	49.6	5.2	-13.8	41.0	112.2	|
2746.5	H / 2.0	Z	45.9	5.2	-13.8	37.3	73.3	500.0
3662.0	V / 2.1	X	45.8	10.0	-13.8	42.0	125.9	500.0
|	V / 2.5	Y	42.7	10.0	-13.8	38.9	88.1	|
|	V / 2.2	Z	46.7	10.0	-13.8	42.9	139.6	|
|	H / 1.0	X	42.6	10.0	-13.8	38.8	87.1	|
|	H / 2.0	Y	47.2	10.0	-13.8	43.4	147.9	|
3662.0	H / 2.2	Z	48.0	10.0	-13.8	44.2	162.2	500.0
4577.5	V / 2.1	X	35.8	13.6	-13.8	35.6	60.3	500.0
|	V / 1.0	Y	33.6	13.6	-13.8	33.4	46.8	|
|	V / 1.0	Z	35.1	13.6	-13.8	34.9	55.6	|
|	H / 2.1	X	33.7	13.6	-13.8	33.5	47.3	|
|	H / 1.0	Y	31.8	13.6	-13.8	31.6	38.0	|
4577.5	H / 1.7	Z	35.2	13.6	-13.8	35.0	56.2	500.0
5493.0	V / 1.0	X	29.7	17.1	-13.8	33.0	*44.7	5011.8
|	V / 1.0	Y	29.7	17.1	-13.8	33.0	*44.7	|
|	V / 1.0	Z	29.7	17.1	-13.8	33.0	*44.7	|
|	H / 1.0	X	29.7	17.1	-13.8	33.0	*44.7	|
|	H / 1.0	Y	29.7	17.1	-13.8	33.0	*44.7	|
5493.0	H / 1.0	Z	29.7	17.1	-13.8	33.0	*44.7	5011.8

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more
Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.
*=Noise Floor Measurements (Minimum system sensitivity)

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 915.5 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters — Duty Cycle: 20.5%
Detector: Average, unless otherwise specified — Duty Cycle Correction: -13.8dB

Test Freq.	Antenna Pol./Height	EUT Orientation	Average Reading	Correction Factor	Duty cycle 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 / 1.0	X	31.6	19.9	-13.8	37.7	*76.7	5011.8
|	V / 1.0	Y	31.6	19.9	-13.8	37.7	*76.7	|
|	V / 1.0	Z	31.6	19.9	-13.8	37.7	*76.7	|
|	H / 1.0	X	32.2	19.9	-13.8	38.3	*82.2	|
|	H / 1.0	Y	32.2	19.9	-13.8	38.3	*82.2	|
6408.5	H / 1.0	Z	32.2	19.9	-13.8	38.3	*82.2	5011.8
7324.0	V / 1.0	X	31.9	21.3	-13.8	39.4	*93.3	500.0
|	V / 1.0	Y	31.9	21.3	-13.8	39.4	*93.3	|
|	V / 1.0	Z	31.9	21.3	-13.8	39.4	*93.3	|
|	H / 1.0	X	31.9	21.3	-13.8	39.4	*93.3	|
|	H / 1.0	Y	31.9	21.3	-13.8	39.4	*93.3	|
7324.0	H / 1.0	Z	31.9	21.3	-13.8	39.4	*93.3	500.0
8239.5	V / 1.0	X	33.2	23.6	-13.8	43.0	*141.3	500.0
|	V / 1.0	Y	33.2	23.6	-13.8	43.0	*141.3	|
|	V / 1.0	Z	33.2	23.6	-13.8	43.0	*141.3	|
|	H / 1.0	X	32.8	23.6	-13.8	42.6	*134.9	|
|	H / 1.0	Y	32.8	23.6	-13.8	42.6	*134.9	|
8239.5	H / 1.0	Z	32.8	23.6	-13.8	42.6	*134.9	500.0
9155.0	V / 1.0	X	33.1	25.5	-13.8	44.8	*173.8	500.0
|	V / 1.0	Y	33.1	25.5	-13.8	44.8	*173.8	|
|	V / 1.0	Z	33.1	25.5	-13.8	44.8	*173.8	|
|	H / 1.0	X	33.2	25.5	-13.8	44.9	*175.8	|
|	H / 1.0	Y	33.2	25.5	-13.8	44.9	*175.8	|
9155.0	H / 1.0	Z	33.2	25.5	-13.8	44.9	*175.8	500.0

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*=Noise Floor Measurements (Minimum system sensitivity)

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

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 918.4 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters
Detector: Peak, Unless otherwise specified

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
1836.8	V / 1.2	X	60.8	2.3	63.1	1428.9	50118.0
|	V / 1.0	Y	58.0	2.3	60.3	1035.1	|
|	V / 2.2	Z	60.0	2.3	62.3	1303.2	|
|	H / 1.5	X	59.0	2.3	61.3	1161.4	|
|	H / 1.0	Y	61.7	2.3	64.0	1584.9	|
1836.8	H / 1.0	Z	55.3	2.3	57.6	758.6	50118.0
2755.2	V / 1.0	X	52.6	5.2	57.8	776.2	5000.0
|	V / 1.3	Y	51.4	5.2	56.6	676.1	|
|	V / 1.3	Z	53.9	5.2	59.1	901.6	|
|	H / 1.4	X	48.5	5.2	53.7	484.2	|
|	H / 1.5	Y	53.6	5.2	58.8	871.0	|
2755.2	H / 2.0	Z	50.0	5.2	55.2	575.4	5000.0
3673.6	V / 1.1	X	47.7	10.0	57.7	767.4	5000.0
|	V / 1.9	Y	47.7	10.0	57.7	767.4	|
|	V / 1.0	Z	48.2	10.0	58.2	812.8	|
|	H / 2.2	X	46.8	10.0	56.8	691.8	|
|	H / 1.0	Y	48.7	10.0	58.7	861.0	|
3673.6	H / 2.0	Z	48.7	10.0	58.7	861.0	5000.0
4592.0	V / 1.0	X	46.5	13.6	60.1	1011.6	5000.0
|	V / 1.8	Y	46.1	13.6	59.7	966.1	|
|	V / 2.2	Z	47.3	13.6	60.9	1109.2	|
|	H / 2.0	X	46.1	13.6	59.7	966.1	|
|	H / 1.9	Y	46.5	13.6	60.1	1011.6	|
4592.0	H / 1.0	Z	45.9	13.6	59.5	944.1	5000.0
5510.4	V / 1.0	X	41.0	17.1	58.1	*803.5	50118.0
|	V / 1.0	Y	41.0	17.1	58.1	*803.5	|
|	V / 1.0	Z	41.0	17.1	58.1	*803.5	|
|	H / 1.0	X	41.0	17.1	58.1	*803.5	|
|	H / 1.0	Y	41.0	17.1	58.1	*803.5	|
5510.4	H / 1.0	Z	41.0	17.1	58.1	*803.5	50118.0
	The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more						
	than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						
	*= Noise Floor Measurements (minimum sensitivity).						

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 918.4 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters
Detector: Peak, unless otherwise specified

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
6428.8	V / 1.0	X	42.2	19.9	62.1	*1273.5	50118.0
|	V / 1.0	Y	42.2	19.9	62.1	*1273.5	|
|	V / 1.0	Z	42.2	19.9	62.1	*1273.5	|
|	H / 1.0	X	41.3	19.9	61.2	*1148.2	|
|	H / 1.0	Y	41.3	19.9	61.2	*1148.2	|
6428.8	H / 1.0	Z	41.3	19.9	61.2	*1148.2	50118.0
7347.2	V / 1.0	X	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	|
|	H / 1.0	X	43.0	21.3	64.3	*1640.6	|
|	H / 1.0	Y	43.0	21.3	64.3	*1640.6	|
7347.2	H / 1.0	Z	43.0	21.3	64.3	*1640.6	5000.0
8265.6	V / 1.0	X	42.5	23.6	66.1	*2018.4	5000.0
|	V / 1.0	Y	42.5	23.6	66.1	*2018.4	|
|	V / 1.0	Z	42.5	23.6	66.1	*2018.4	|
|	H / 1.0	X	42.7	23.6	63.6	*2065.4	|
|	H / 1.0	Y	42.7	23.6	63.6	*2065.4	|
8265.6	H / 1.0	Z	42.7	23.6	63.6	*2065.4	5000.0
9184.0	V / 1.0	X	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	|
|	H / 1.0	X	42.0	25.5	67.5	*2371.4	|
|	H / 1.0	Y	42.0	25.5	67.5	*2371.4	|
9184.0	H / 1.0	Z	42.0	25.5	67.5	*2371.4	5000.0

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*=Noise Floor Measurements (Minimum system sensitivity)

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 918.4 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters — Duty Cycle: 20.5%

Detector: Average, unless otherwise specified — Duty Cycle Correction: -13.8dB

Test Freq.	Antenna Pol./Height	EUT Orientation	Average Reading	Correction Factor	Duty cycle Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-	X / Y / Z	dBµV	dB	dB	dBµV/m	UV/m	uV/m
1836.8	V / 1.2	X	61.0	2.3	-13.8	49.5	298.5	5011.8
|	V / 1.0	Y	56.8	2.3	-13.8	45.3	184.1	|
|	V / 2.2	Z	59.5	2.3	-13.8	48.0	251.2	|
|	H / 1.5	X	57.5	2.3	-13.8	46.0	199.5	|
|	H / 1.0	Y	61.1	2.3	-13.8	49.6	302.0	|
1836.8	H / 1.0	Z	54.5	2.3	-13.8	43.0	141.3	5011.8
2755.2	V / 1.0	X	49.9	5.2	-13.8	41.3	116.1	500.0
|	V / 1.3	Y	48.1	5.2	-13.8	39.5	94.4	|
|	V / 1.3	Z	52.1	5.2	-13.8	43.5	149.6	|
|	H / 1.4	X	43.4	5.2	-13.8	34.8	55.0	|
|	H / 1.5	Y	51.0	5.2	-13.8	42.4	131.8	|
2755.2	H / 2.0	Z	46.8	5.2	-13.8	38.2	81.3	500.0
3673.6	V / 1.1	X	42.4	10.0	-13.8	38.6	85.1	500.0
|	V / 1.9	Y	38.6	10.0	-13.8	34.8	55.0	|
|	V / 1.0	Z	43.7	10.0	-13.8	39.9	98.9	|
|	H / 2.2	X	39.3	10.0	-13.8	35.5	59.6	|
|	H / 1.0	Y	44.4	10.0	-13.8	40.6	107.2	|
3673.6	H / 2.0	Z	45.2	10.0	-13.8	41.4	117.5	500.0
4592.0	V / 1.0	X	37.3	13.6	-13.8	37.1	71.6	500.0
|	V / 1.8	Y	37.7	13.6	-13.8	37.5	75.0	|
|	V / 2.2	Z	39.9	13.6	-13.8	39.7	96.6	|
|	H / 2.0	X	36.4	13.6	-13.8	36.2	64.6	|
|	H / 1.9	Y	38.8	13.6	-13.8	38.6	85.1	|
4592.0	H / 1.0	Z	35.9	13.6	-13.8	35.7	61.0	500.0
5510.4	V / 1.0	X	29.7	17.1	-13.8	33.0	*44.7	5011.8
|	V / 1.0	Y	29.7	17.1	-13.8	33.0	*44.7	|
|	V / 1.0	Z	29.7	17.1	-13.8	33.0	*44.7	|
|	H / 1.0	X	29.7	17.1	-13.8	33.0	*44.7	|
|	H / 1.0	Y	29.7	17.1	-13.8	33.0	*44.7	|
5510.4	H / 1.0	Z	29.7	17.1	-13.8	33.0	*44.7	5011.8
	The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more							
	Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.							
	*=Noise Floor Measurements (Minimum system sensitivity)							

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 918.4 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters — Duty Cycle: 20.5%
Detector: Average, unless otherwise specified — Duty Cycle Correction: -13.8dB

Test Freq.	Antenna Pol./Height	EUT Orientation	Average Reading	Correction Factor	Duty cycle Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-	X / Y / Z	dBµV	dB	dB	dBµV/m	uV/m	uV/m
6428.8	V / 1.0	X	31.6	19.9	-13.8	37.7	*76.7	5011.8
|	V / 1.0	Y	31.6	19.9	-13.8	37.7	*76.7	|
|	V / 1.0	Z	31.6	19.9	-13.8	37.7	*76.7	|
|	H / 1.0	X	32.2	19.9	-13.8	38.3	*82.2	|
|	H / 1.0	Y	32.2	19.9	-13.8	38.3	*82.2	|
6428.8	H / 1.0	Z	32.2	19.9	-13.8	38.3	*82.2	5011.8
7347.2	V / 1.0	X	31.9	21.3	-13.8	39.4	*93.3	500.0
|	V / 1.0	Y	31.9	21.3	-13.8	39.4	*93.3	|
|	V / 1.0	Z	31.9	21.3	-13.8	39.4	*93.3	|
|	H / 1.0	X	31.9	21.3	-13.8	39.4	*93.3	|
|	H / 1.0	Y	31.9	21.3	-13.8	39.4	*93.3	|
7347.2	H / 1.0	Z	31.9	21.3	-13.8	39.4	*93.3	500.0
8265.6	V / 1.0	X	33.2	23.6	-13.8	43.0	*141.3	500.0
|	V / 1.0	Y	33.2	23.6	-13.8	43.0	*141.3	|
|	V / 1.0	Z	33.2	23.6	-13.8	43.0	*141.3	|
|	H / 1.0	X	32.8	23.6	-13.8	42.6	*134.9	|
|	H / 1.0	Y	32.8	23.6	-13.8	42.6	*134.9	|
8265.6	H / 1.0	Z	32.8	23.6	-13.8	42.6	*134.9	500.0
9184.0	V / 1.0	X	33.1	25.5	-13.8	44.8	*173.8	500.0
|	V / 1.0	Y	33.1	25.5	-13.8	44.8	*173.8	|
|	V / 1.0	Z	33.1	25.5	-13.8	44.8	*173.8	|
|	H / 1.0	X	33.2	25.5	-13.8	44.9	*175.8	|
|	H / 1.0	Y	33.2	25.5	-13.8	44.9	*175.8	|
9184.0	H / 1.0	Z	33.2	25.5	-13.8	44.9	*175.8	500.0

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*=Noise Floor Measurements (Minimum system sensitivity)

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

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 921.3 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23-24, 2007.

Notes: Test Distance: 3 Meters
Detector: Peak, Unless otherwise specified

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
1842.6	V / 1.0	X	60.5	2.3	62.8	1380.4	50118.0
|	V / 1.0	Y	58.8	2.3	61.1	1135.0	|
|	V / 1.5	Z	60.8	2.3	63.1	1428.9	|
|	H / 1.0	X	60.1	2.3	62.4	1318.3	|
|	H / 2.0	Y	61.8	2.3	64.1	1603.2	|
1842.6	H / 1.0	Z	56.1	2.3	58.4	831.8	50118.0
2763.9	V / 1.0	X	51.8	5.2	57.0	707.9	5000.0
|	V / 1.0	Y	50.8	5.2	56.0	631.0	|
|	V / 1.0	Z	53.0	5.2	58.2	812.8	|
|	H / 1.2	X	48.5	5.2	53.7	484.2	|
|	H / 1.7	Y	48.0	5.2	53.2	457.1	|
2763.9	H / 1.9	Z	48.1	5.2	53.3	462.4	5000.0
3685.2	V / 2.2	X	51.3	10.0	61.3	1161.4	5000.0
|	V / 2.5	Y	47.1	10.0	57.1	716.1	|
|	V / 1.0	Z	51.3	10.0	61.3	1161.4	|
|	H / 1.0	X	48.6	10.0	58.6	851.1	|
|	H / 2.5	Y	51.3	10.0	61.3	1161.4	|
3685.2	H / 1.0	Z	47.9	10.0	57.9	785.2	5000.0
4606.5	V / 1.0	X	46.2	13.6	59.8	977.2	5000.0
|	V / 1.9	Y	46.4	13.6	60.0	1000.0	|
|	V / 1.0	Z	46.6	13.6	60.2	1023.3	|
|	H / 2.2	X	46.1	13.6	59.7	966.1	|
|	H / 2.0	Y	46.3	13.6	59.9	988.6	|
4606.5	H / 1.0	Z	46.6	13.6	60.2	1023.3	5000.0
5527.8	V / 1.0	X	41.0	17.1	58.1	*803.5	50118.0
|	V / 1.0	Y	41.0	17.1	58.1	*803.5	|
|	V / 1.0	Z	41.0	17.1	58.1	*803.5	|
|	H / 1.0	X	41.0	17.1	58.1	*803.5	|
|	H / 1.0	Y	41.0	17.1	58.1	*803.5	|
5527.8	H / 1.0	Z	41.0	17.1	58.1	*803.5	50118.0

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*= Noise Floor Measurements (minimum sensitivity).

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 921.3 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23-24, 2007.

Notes: Test Distance: 3 Meters
Detector: Peak, unless otherwise specified

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
6449.1	V / 1.0	X	42.2	19.9	62.1	*1273.5	50118.0
|	V / 1.0	Y	42.2	19.9	62.1	*1273.5	|
|	V / 1.0	Z	42.2	19.9	62.1	*1273.5	|
|	H / 1.0	X	41.3	19.9	61.2	*1148.2	|
|	H / 1.0	Y	41.3	19.9	61.2	*1148.2	|
6449.1	H / 1.0	Z	41.3	19.9	61.2	*1148.2	50118.0
7370.4	V / 1.0	X	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	|
|	H / 1.0	X	43.0	21.3	64.3	*1640.6	|
|	H / 1.0	Y	43.0	21.3	64.3	*1640.6	|
7370.4	H / 1.0	Z	43.0	21.3	64.3	*1640.6	5000.0
8291.7	V / 1.0	X	42.5	23.6	66.1	*2018.4	5000.0
|	V / 1.0	Y	42.5	23.6	66.1	*2018.4	|
|	V / 1.0	Z	42.5	23.6	66.1	*2018.4	|
|	H / 1.0	X	42.7	23.6	63.6	*2065.4	|
|	H / 1.0	Y	42.7	23.6	63.6	*2065.4	|
8291.7	H / 1.0	Z	42.7	23.6	63.6	*2065.4	5000.0
9213.0	V / 1.0	X	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	|
|	H / 1.0	X	42.0	25.5	67.5	*2371.4	|
|	H / 1.0	Y	42.0	25.5	67.5	*2371.4	|
9213.0	H / 1.0	Z	42.0	25.5	67.5	*2371.4	5000.0

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*=Noise Floor Measurements (Minimum system sensitivity)

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 921.3 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23-24, 2007.

Notes: Test Distance: 3 Meters — Duty Cycle: %

Detector: Average, unless otherwise specified — Duty Cycle Correction: dB

Test Freq.	Antenna Pol./Height	EUT Orientation	Average Reading	Correction Factor	Duty cycle Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-	X / Y / Z	dBµV	dB	dB	dBµV/m	uV/m	uV/m
1842.6	V / 1.0	X	60.1	2.3	-13.8	48.6	269.2	5011.8
|	V / 1.0	Y	57.8	2.3	-13.8	46.3	206.5	|
|	V / 1.5	Z	59.6	2.3	-13.8	48.1	254.1	|
|	H / 1.0	X	58.4	2.3	-13.8	46.9	221.3	|
|	H / 2.0	Y	60.7	2.3	-13.8	49.2	288.4	|
1842.6	H / 1.0	Z	54.8	2.3	-13.8	43.3	146.2	5011.8
2763.9	V / 1.0	X	48.0	5.2	-13.8	39.4	93.3	500.0
|	V / 1.0	Y	45.7	5.2	-13.8	37.1	71.6	|
|	V / 1.0	Z	50.6	5.2	-13.8	42.0	125.9	|
|	H / 1.2	X	42.4	5.2	-13.8	33.8	49.0	|
|	H / 1.7	Y	42.1	5.2	-13.8	33.5	47.3	|
2763.9	H / 1.9	Z	41.6	5.2	-13.8	33.0	44.7	500.0
3685.2	V / 2.2	X	48.0	10.0	-13.8	44.2	162.2	500.0
|	V / 2.5	Y	41.3	10.0	-13.8	37.5	75.0	|
|	V / 1.0	Z	48.7	10.0	-13.8	44.9	175.8	|
|	H / 1.0	X	43.1	10.0	-13.8	39.3	92.3	|
|	H / 2.5	Y	47.8	10.0	-13.8	44.0	158.5	|
3685.2	H / 1.0	Z	42.6	10.0	-13.8	38.8	87.1	500.0
4606.5	V / 1.0	X	34.5	13.6	-13.8	34.3	51.9	500.0
|	V / 1.9	Y	37.4	13.6	-13.8	37.2	72.4	|
|	V / 1.0	Z	37.6	13.6	-13.8	37.4	74.1	|
|	H / 2.2	X	36.1	13.6	-13.8	35.9	62.4	|
|	H / 2.0	Y	37.8	13.6	-13.8	37.6	75.9	|
4606.5	H / 1.0	Z	35.1	13.6	-13.8	34.9	55.6	500.0
5527.8	V / 1.0	X	29.7	17.1	-13.8	33.0	*44.7	5011.8
|	V / 1.0	Y	29.7	17.1	-13.8	33.0	*44.7	|
|	V / 1.0	Z	29.7	17.1	-13.8	33.0	*44.7	|
|	H / 1.0	X	29.7	17.1	-13.8	33.0	*44.7	|
|	H / 1.0	Y	29.7	17.1	-13.8	33.0	*44.7	|
5527.8	H / 1.0	Z	29.7	17.1	-13.8	33.0	*44.7	5011.8
	The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more							
	Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.							
	*=Noise Floor Measurements (Minimum system sensitivity)							

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Harmonics Emissions.		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously transmitting a 921.3 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23-24, 2007.

Notes: Test Distance: 3 Meters — Duty Cycle: %

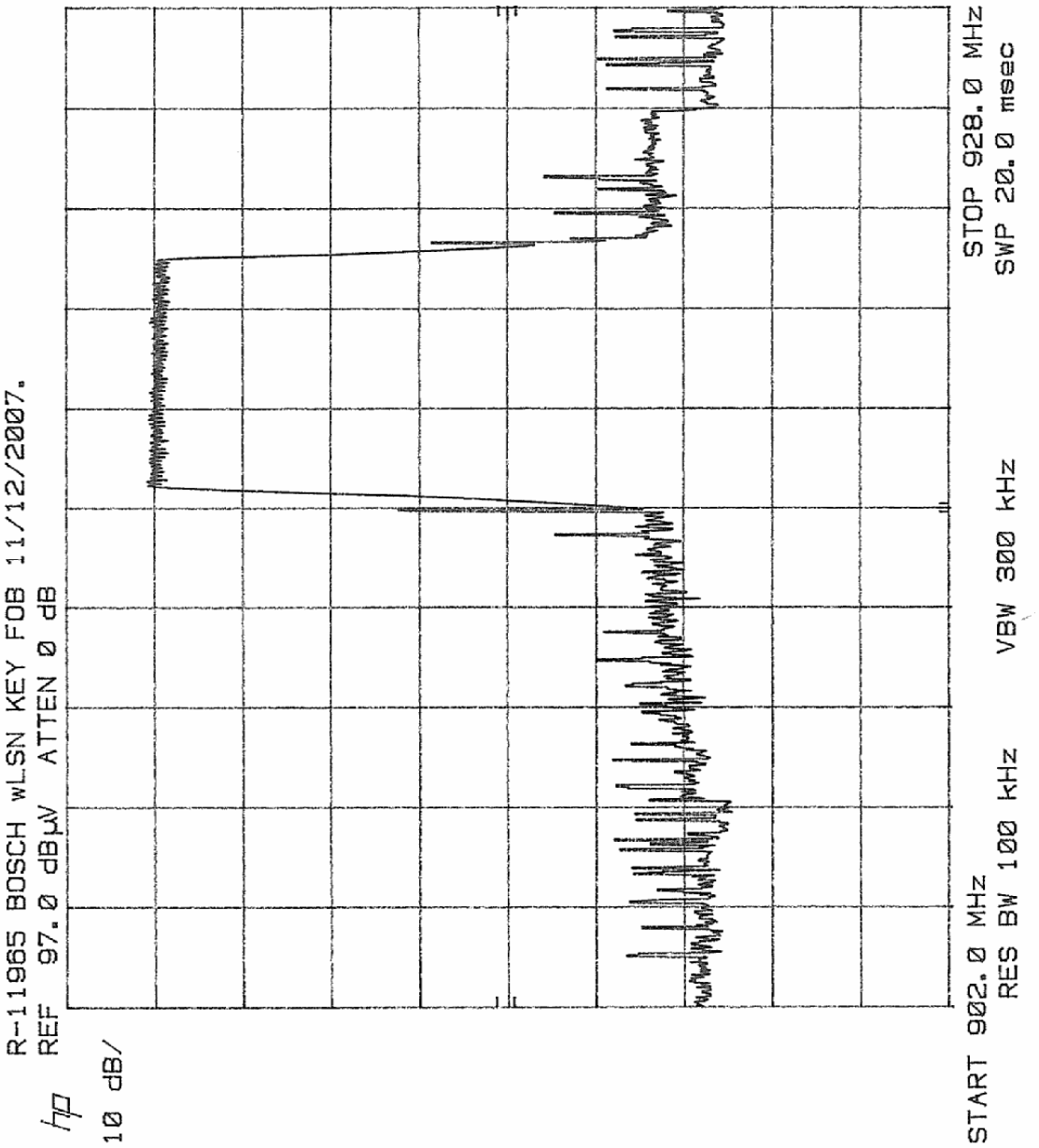
Detector: Average, unless otherwise specified — Duty Cycle Correction: dB

Test Freq.	Antenna Pol./Height	EUT Orientation	Average Reading	Correction Factor	Duty cycle Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-	X / Y / Z	dBµV	dB	dB	dBµV/m	uV/m	uV/m
6449.1	V / 1.0	X	31.6	19.9	-13.8	37.7	*76.7	5011.8
|	V / 1.0	Y	31.6	19.9	-13.8	37.7	*76.7	|
|	V / 1.0	Z	31.6	19.9	-13.8	37.7	*76.7	|
|	H / 1.0	X	32.2	19.9	-13.8	38.3	*82.2	|
|	H / 1.0	Y	32.2	19.9	-13.8	38.3	*82.2	|
6449.1	H / 1.0	Z	32.2	19.9	-13.8	38.3	*82.2	5011.8
7370.4	V / 1.0	X	31.9	21.3	-13.8	39.4	*93.3	500.0
|	V / 1.0	Y	31.9	21.3	-13.8	39.4	*93.3	|
|	V / 1.0	Z	31.9	21.3	-13.8	39.4	*93.3	|
|	H / 1.0	X	31.9	21.3	-13.8	39.4	*93.3	|
|	H / 1.0	Y	31.9	21.3	-13.8	39.4	*93.3	|
7370.4	H / 1.0	Z	31.9	21.3	-13.8	39.4	*93.3	500.0
8291.7	V / 1.0	X	33.2	23.6	-13.8	43.0	*141.3	500.0
|	V / 1.0	Y	33.2	23.6	-13.8	43.0	*141.3	|
|	V / 1.0	Z	33.2	23.6	-13.8	43.0	*141.3	|
|	H / 1.0	X	32.8	23.6	-13.8	42.6	*134.9	|
|	H / 1.0	Y	32.8	23.6	-13.8	42.6	*134.9	|
8291.7	H / 1.0	Z	32.8	23.6	-13.8	42.6	*134.9	500.0
9213.0	V / 1.0	X	33.1	25.5	-13.8	44.8	*173.8	500.0
|	V / 1.0	Y	33.1	25.5	-13.8	44.8	*173.8	|
|	V / 1.0	Z	33.1	25.5	-13.8	44.8	*173.8	|
|	H / 1.0	X	33.2	25.5	-13.8	44.9	*175.8	|
|	H / 1.0	Y	33.2	25.5	-13.8	44.9	*175.8	|
9213.0	H / 1.0	Z	33.2	25.5	-13.8	44.9	*175.8	500.0

The frequency range was scanned from 30 MHz to 10.0 GHz. All emissions not recorded were more Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*=Noise Floor Measurements (Minimum system sensitivity)

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:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 11-12-2007.	Tech: R.S.	Sheet 1 of 1

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

Test Method:	**FCC Part 15, Subpart C, Spurious Case Radiated Emissions, Paragraph 15.247(d)**		
Customer:	Bosch Security System.	**Job No.:**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously Transmitting on channel 00, a 915.5 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters Temp:22.0°C Humidity:87.0%
Detector: Peak

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H) / Meters	Degrees	dBµV	dB	dBµV/m	uV/m	uV/m
30.00							42658.0
*35.00	V / 1.0	0.0	22.0	-3.0	19.0	8.9	
*110.0	V / 1.0	0.0	20.3	-10.7	9.6	3.0	
*195.0	V / 1.0	0.0	18.8	-7.7	11.1	3.6	
*205.0	V / 1.0	0.0	18.6	-7.7	10.9	3.5	
*600.0	V / 1.0	0.0	19.1	5.2	24.3	16.4	
*995.0	V / 1.0	0.0	17.7	10.7	28.4	26.3	
*1050.0	V / 1.0	0.0	28.9	2.0	30.9	35.1	
*5000.0	V / 1.0	0.0	31.2	16.1	47.3	231.7	
*9950.0	V / 1.0	0.0	21.4	17.0	38.4	83.2	
10000.0							42658.0

The frequency range was scanned from 30 MHz to 10 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
The limit used is 20dB less than the measured fundamental frequency as specified in paragraph 15.247(d).
No emissions were observed in the restricted band.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity(Noise Floor)

Test Method:	**FCC Part 15, Subpart C, Spurious Case Radiated Emissions, Paragraph 15.247(d)**		
Customer:	Bosch Security System.	**Job No.:**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously Transmitting on channel 30, a 918.4 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters Temp:22.0°C Humidity:87.0%
Detector: Peak

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H) / Meters	Degrees	dBµV	dB	dBµV/m	uV/m	uV/m
30.00							42658.0
*35.00	V / 1.0	0.0	22.0	-3.0	19.0	8.9	
*110.0	V / 1.0	0.0	20.3	-10.7	9.6	3.0	
*195.0	V / 1.0	0.0	18.8	-7.7	11.1	3.6	
*205.0	V / 1.0	0.0	18.6	-7.7	10.9	3.5	
*600.0	V / 1.0	0.0	19.1	5.2	24.3	16.4	
*995.0	V / 1.0	0.0	17.7	10.7	28.4	26.3	
*1050.0	V / 1.0	0.0	28.9	2.0	30.9	35.1	
*5000.0	V / 1.0	0.0	31.2	16.1	47.3	231.7	
*9950.0	V / 1.0	0.0	21.4	17.0	38.4	83.2	
10000.0							42658.0

The frequency range was scanned from 30 MHz to 10 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
The limit used is 20dB less than the measured fundamental frequency as specified in paragraph 15.247(d).
No emissions were observed in the restricted band.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity(Noise Floor)

Test Method:	**FCC Part 15, Subpart C, Spurious Case Radiated Emissions, Paragraph 15.247(d)**		
Customer:	Bosch Security System.	**Job No.:**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**FCC ID:**	T3XBKF1-H5Y
Operating Mode:	Continuously Transmitting on channel 58, a 921.3 MHz signal.		
Technician:	R. Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters Temp:22.0°C Humidity:87.0%
Detector: Peak

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H) / Meters	Degrees	dBµV	dB	dBµV/m	uV/m	uV/m
30.00							42658.0
*35.00	V / 1.0	0.0	22.0	-3.0	19.0	8.9	
*110.0	V / 1.0	0.0	20.3	-10.7	9.6	3.0	
*195.0	V / 1.0	0.0	18.8	-7.7	11.1	3.6	
*205.0	V / 1.0	0.0	18.6	-7.7	10.9	3.5	
*600.0	V / 1.0	0.0	19.1	5.2	24.3	16.4	
*995.0	V / 1.0	0.0	17.7	10.7	28.4	26.3	
*1050.0	V / 1.0	0.0	28.9	2.0	30.9	35.1	
*5000.0	V / 1.0	0.0	31.2	16.1	47.3	231.7	
*9950.0	V / 1.0	0.0	21.4	17.0	38.4	83.2	
10000.0							42658.0

The frequency range was scanned from 30 MHz to 10 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.
The limit used is 20dB less than the measured fundamental frequency as specified in paragraph 15.247(d).
No emissions were observed in the restricted band.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity(Noise Floor)

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-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**Serial No.:**	N/A
Operating Mode:	EUT operating on channel 00(915.5MHz), continuously receiving a CW signal.		
Technician:	R.Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters Temp:22.0°C Humidity:87.0%
Detector: Quasi-Peak Below 1 GHz, Average above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.0							100
|							|
*35.00	V / 1.0	0.0	22.0	-3.0	19.0	8.9	|
|							|
|							|
88.0							100
88.0							150
|							|
|							|
*110.0	V / 1.0	0.0	20.3	-10.7	9.6	3.0	|
*195.0	V / 1.0	0.0	18.8	-7.7	11.1	3.6	|
*205.0	V / 1.0	0.0	18.6	-7.7	10.9	3.5	|
|							|
|							|
216.0							150
216.0							200
|							|
|							|
*600.0	V / 1.0	0.0	19.1	5.2	24.3	16.4	|
|							|
|							|
960.0							200
960.0							500
|							|
*995.0	V / 1.0	0.0	17.7	10.7	28.4	26.3	|
*1050.0	V / 1.0	0.0	28.9	2.0	30.9	35.1	|
*3000.0	V / 1.0	0.0	31.5	7.1	38.6	85.1	|
*4950.0	V / 1.0	0.0	31.2	16.1	47.3	231.7	|
|							|
|							|
5000.0							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.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity(Noise Floor)

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-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**Serial No.:**	N/A
Operating Mode:	EUT operating on channel 30(918.5MHz), continuously receiving a CW signal.		
Technician:	R.Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters Temp:22.0°C Humidity:87.0%
Detector: Quasi-Peak Below 1 GHz, Average above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBµV	dB	dBµV/m	uV/m	uV/m
30.0							100
|							|
*35.00	V / 1.0	0.0	22.0	-3.0	19.0	8.9	|
|							|
|							|
88.0							100
88.0							150
|							|
|							|
*110.0	V / 1.0	0.0	20.3	-10.7	9.6	3.0	|
*195.0	V / 1.0	0.0	18.8	-7.7	11.1	3.6	|
*205.0	V / 1.0	0.0	18.6	-7.7	10.9	3.5	|
|							|
|							|
216.0							150
216.0							200
|							|
|							|
*600.0	V / 1.0	0.0	19.1	5.2	24.3	16.4	|
|							|
|							|
960.0							200
960.0							500
|							|
*995.0	V / 1.0	0.0	17.7	10.7	28.4	26.3	|
*1050.0	V / 1.0	0.0	28.9	2.0	30.9	35.1	|
*3000.0	V / 1.0	0.0	31.5	7.1	38.6	85.1	|
*4950.0	V / 1.0	0.0	31.2	16.1	47.3	231.7	|
|							|
|							|
5000.0							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.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity(Noise Floor)

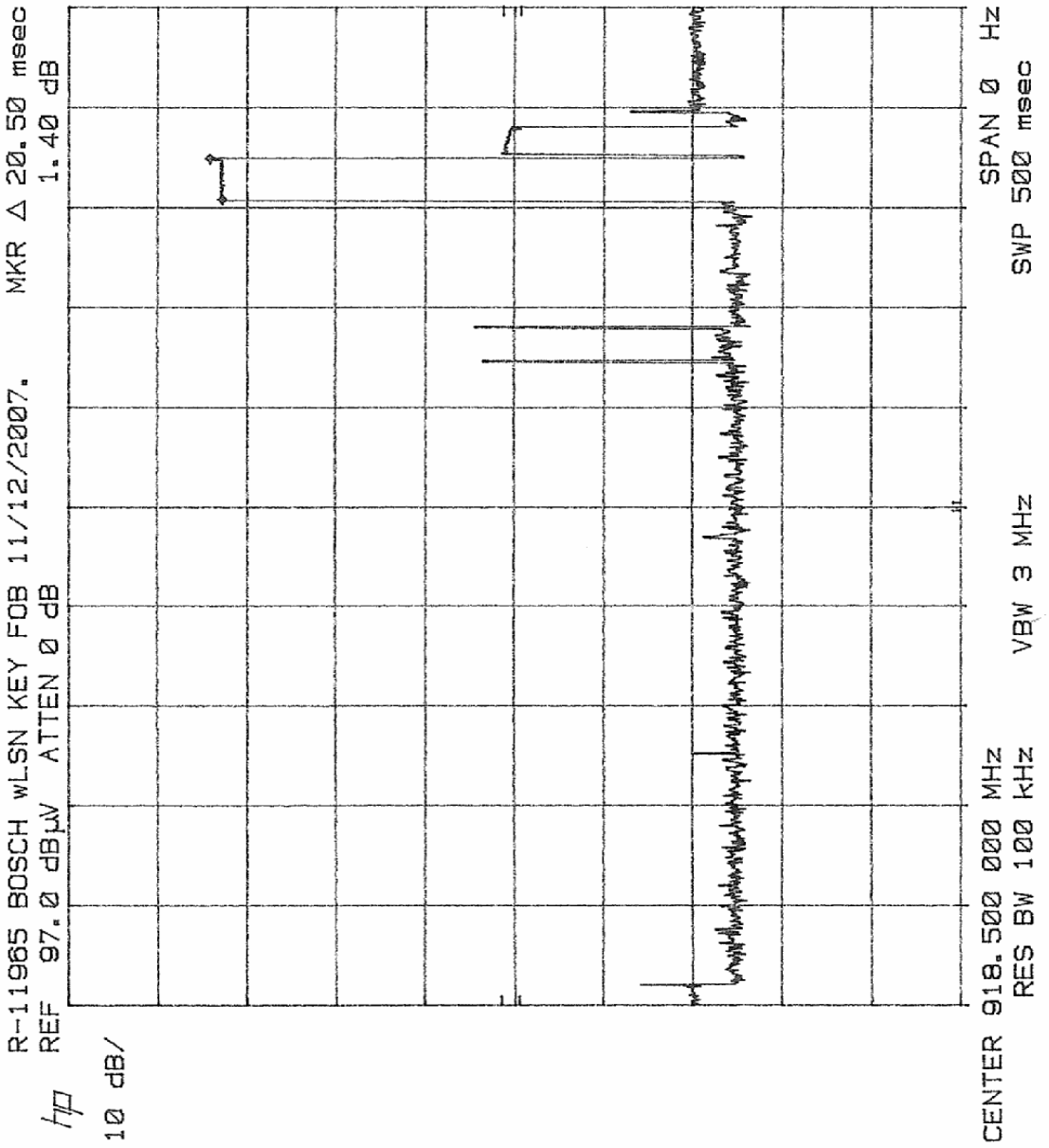
Test Method:	**FCC Part 15, Subpart B, Class B, Radiated Emissions, 30 MHz to 5.0 GHz, Para:15.109(a)**		
Customer:	Bosch Security System.	**Job No.**	R-11965-4
Test Sample:	wLSN Key Fob		
Model No.:	ISW-BKF1-H5Y	**Serial No.:**	N/A
Operating Mode:	EUT operating on channel 58(921.3MHz), continuously receiving a CW signal.		
Technician:	R.Soodoo	**Date:**	October 23, 2007.

Notes: Test Distance: 3 Meters Temp:22.0°C Humidity:87.0%
Detector: Quasi-Peak Below 1 GHz, Average above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBµV	dB	dBµV/m	uV/m	uV/m
30.0							100
|							|
*35.00	V / 1.0	0.0	22.0	-3.0	19.0	8.9	|
|							|
|							|
88.0							100
88.0							150
|							|
|							|
*110.0	V / 1.0	0.0	20.3	-10.7	9.6	3.0	|
*195.0	V / 1.0	0.0	18.8	-7.7	11.1	3.6	|
*205.0	V / 1.0	0.0	18.6	-7.7	10.9	3.5	|
|							|
|							|
216.0							150
216.0							200
|							|
|							|
*600.0	V / 1.0	0.0	19.1	5.2	24.3	16.4	|
|							|
|							|
960.0							200
960.0							500
|							|
*995.0	V / 1.0	0.0	17.7	10.7	28.4	26.3	|
*1050.0	V / 1.0	0.0	28.9	2.0	30.9	35.1	|
*3000.0	V / 1.0	0.0	31.5	7.1	38.6	85.1	|
*4950.0	V / 1.0	0.0	31.2	16.1	47.3	231.7	|
|							|
|							|
5000.0							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.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity(Noise Floor)

FCC Part 15.35, Duty Cycle Determination
Test Data



Test Method: **FCC Part 15.35, Duty Cycle Determination**.
Notes: Duty cycle = (20.5mSec / 100) = 0.205 = 20.5%
= 20 log 0.205 = -13.8 dB

FCC ID:T3XBKF1-H5Y

Customer	Bosch Security System.	
Test Sample	wLSN Key Fob	
Model Number	ISW-BKF1-H5Y	
Date: 11-12-2007.	Tech: R.S.	Sheet 1 of 1