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FCC Part 15, Subpart C, Section 15.247
Test Report

On

iSecure Keyboard
FCC ID: AD8ISECKEYP

Customer Name:	Napco Security Technologies, Inc.
Customer P.O:	PR57115-00
Date of Report:	July 16, 2020
Test Report No:	R-17172-2, Rev. A
Test Start Date:	November 26, 2019
Test Finish Date:	December 13, 2019
Test Technicians:	K. Luning, M. Griffiths
Test Engineer:	R. Soodoo
Approved By:	R. Hull
Report Rev. Prepared By:	D. Hull

Technical Information

Report Number:	R-17172-2, Rev. A
Customer:	Napco Security Technologies, Inc.
Address:	333 Bayview Avenue
	Amityville, NY 11701
Manufacturer:	Napco Security Technologies, Inc.
Manufacturer Address:	333 Bayview Avenue
	Amityville, NY 11701
Test Sample:	iSecure Keyboard
Model Number:	ISEC-WL-KEYPAD
FCC ID:	AD8ISECKEYP
Type:	Digital Transmission - Direct Sequence Spread Spectrum Transmitter
Power Requirements:	3.0 VDC via Internal Lithium Battery
Frequency of Operation:	906 - 925.5 MHz
Equipment Class:	DTS
Equipment Use	Fixed
Antenna Type:	900 MHz ¼ Wave Internal PCB Antenna
Equipment Use:	Security Alarm System

Test Specification:
FCC Rules and Regulations Part 15, Subpart C, Section 15.247

Test Procedure:
ANSI C63.4:2014
ANSI C63.10:2013
FCC 558074 D01 15.247 Meas Guidance V05r02 April 2, 2019

Test Facility:
Retlif Testing Laboratories
795 Marconi Avenue
Ronkonkoma, NY 11779

FCC Accreditation Designation Number: US2322

Tests Performed

FCC Part 15, Subpart C	Test Method
15.247(a)(2)	Occupied Bandwidth
15.247(b)(3)	Power Output
15.247(d)	Antenna Port, Conducted Emissions
15.247(e)	Antenna Port, Power Density
15.247(d) and 15.205	Spurious Radiated Emissions, 1 GHz to 10 GHz

EUT Operation:
The keypad is used as a remote-control device to arm, disarm and display system readiness. It provides a bi-directional 900 MHz link to the Go-Anywhere-Hub.

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.

Rennie Soodoo
EMI Test Engineer

Michael Griffiths
EMI 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.

Revision History

Revisions to this document are listed below; the latest revised document supersedes all previous issues of this document:

Revision	Date	Pages Affected
-	February 11, 2020	Original Release
A	July 16, 2020	Global Changes: • Test Report No. R-17172-2 to R-17172-2, Rev. A 9: • Update RF Exposure Calculations

Requirements and Test Results

Requirement:
FCC Section 15.247(a)(2)
Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz
Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands. The minimum 6 dB bandwidths shall be at least 500 kHz.

- Results:
  The minimum 6 dB bandwidth measured 530 kHz which complies with the requirement that the Bandwidth be no less than 500 kHz.

Requirement:
FCC Sections 15.247(b)(3)
Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz
The maximum peak conducted output power of the intentional radiator shall not exceed the following:

For systems using digital modulation in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antenna and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antenna and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

- Results:
  The device operates in the 902 - 928 MHz band. The maximum peak conducted output power was measured and was found to be 8.9 mWatts, in compliance with the specified limit of 1 watt.

Requirements and Test Results (con't)

Requirement:
FCC Section 15.247(d):
Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) must also comply with the radiated emissions limits specified in Section 15.209(a) (see Section 15.205(c)).

- Results:
  In any 100 kHz bandwidth outside the frequency band in which the Spread spectrum intentional radiator was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below that in the 100 kHz bandwidth within the band that contained 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).

Requirement:
FCC Section 15.247(e):
Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

- Results:
  The power spectral density conducted from the intentional radiator to the antenna was not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density was determined in accordance with Section 15.247(b)(3), herein. The same method of determining the conducted output power was used to determine the power spectral density.

Requirement:
FCC Section 15.209(a) - Radiated Emission Limits, General Requirements
Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in Table 1.

Table 1 - Radiated Emission Limits

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 to 88	100	3
88 to 216	150	3
216 to 960	200	3
Above 960	500	3

- Results:
  The field strength of spurious radiated emissions did not exceed the limits specified in Table 1.

Requirements and Test Results (con't)

Field Strength Calculation/Conversion:

The maximized field strength of the emission was obtained as follows:

$C_R = M_R + C_F$

Where:
C_R = Corrected Reading in dBµV/m
M_R = Uncorrected Meter Reading in dBµV
C_F = Correction Factor in dB (Antenna Factor, Pre-amp + Cable Loss)

Example:

M_R = 15.35 dBµV
C_F = 16.85 dB
C_R = 15.35 dBuV + 16.85 = 32.2 dBµV/m

dBµV/M is converted to uV/M for comparison to the specified limit using the formula:

invLog dBµV/M/20

32.2 dBuV/m = 40.74 uV/m

RF Power Conversion:

Power readings in dBm may be converted to mW using the formula:

InvLog dBm/10

Example: 20dBm = 100mW

Requirements and Test Results (con't)

FCC Section 15.247 (i)
RF Exposure Limits

Spread Spectrum Transmitters operating under 15.247 must be operated in a manner that ensures the public is not exposed to RF energy levels in access of the commission's guidelines. Based on the transmitter power and maximum antenna gain (see calculation below) the minimum separation distance was calculated to determine the distance for acceptable MPE power density levels to meet both the Occupational/Controlled Exposure and the General Population/Uncontrolled Exposure requirements of FCC Part 1.1310. The calculation below uses the more stringent General Population MPE Limits.

$$S = \frac{PG}{4 \prod Dsq}$$

D = Minimum Separation Distance in cm

S = Max allowed Power Density in 1mW/cmsq

Per 1.1310 for the Frequency of 902 MHz S = 0.6 mW/cmsq

Power = Max Power Input to Antenna = 8.9 mW

Gain = Max Power Gain of Antenna = -2.5 dBi = 0.56 numeric

$$S = \frac{8.9 \times 0.56}{4 \times (3.14) \times (20)^2} = \frac{4.984}{12.56 \times 400}$$

S= 0.99 mW/cmsq

The test sample has an internal antenna and the minimum separation distance will always be maintained.

Equipment List

FCC Section 15.247(a)(2)
Occupied Bandwidth

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
1616	OMEGA	HYGROMETER	-20 to 70 deg. C, 0-99% RH	OM-73	9/24/2019	3/31/2020
763	AGILENT / HP	ANALYZER, SPECTRUM	30 Hz - 13.2 GHz	E4405B	3/28/2019	3/31/2020

FCC Section 15.247(b)(3)
Power Output

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
1616	OMEGA	HYGROMETER	-20 to 70 deg. C, 0-99% RH	OM-73	9/24/2019	3/31/2020
763	AGILENT / HP	ANALYZER, SPECTRUM	30 Hz - 13.2 GHz	E4405B	3/28/2019	3/31/2020

FCC Section 15.247(d)
Antenna Port, Conducted Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
1616	OMEGA	HYGROMETER	-20 to 70 deg. C, 0-99% RH	OM-73	9/24/2019	3/31/2020
763	AGILENT / HP	ANALYZER, SPECTRUM	30 Hz - 13.2 GHz	E4405B	3/28/2019	3/31/2020

FCC Section 15.247(e)
Antenna Port, Power Density

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
1616	OMEGA	HYGROMETER	-20 to 70 deg. C, 0-99% RH	OM-73	9/24/2019	3/31/2020
763	AGILENT / HP	ANALYZER, SPECTRUM	30 Hz - 13.2 GHz	E4405B	3/28/2019	3/31/2020

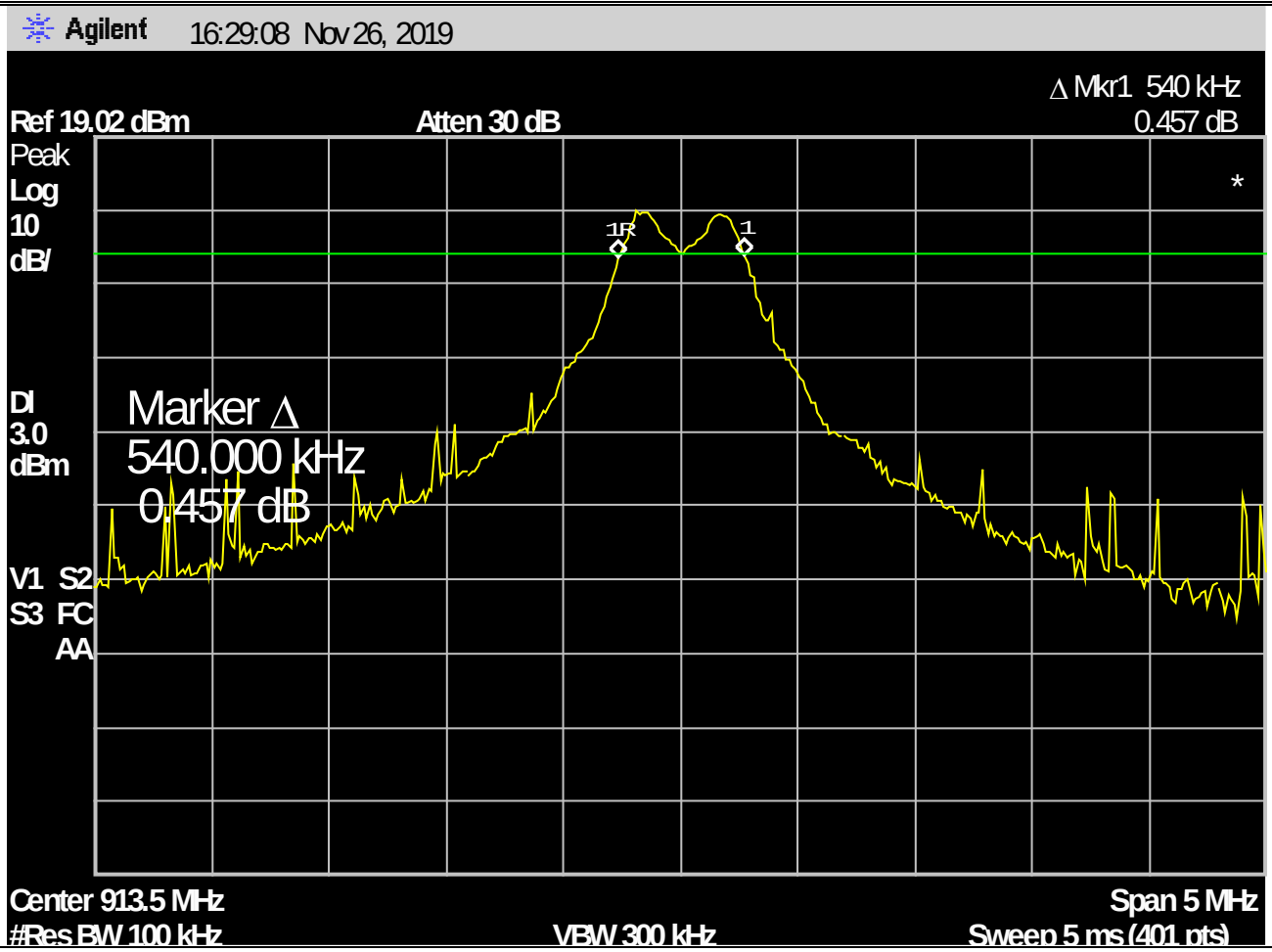
FCC Section 15.247(d) and 15.205
Spurious Radiated Emissions, 30 MHz to 10 GHz

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
067C	RETLIF	OPEN AREA TEST SITE, ATTENUATION	3 Meter, 30 MHz - 1 GHz	RNY	5/15/2019	5/31/2021
067E	RETLIF	OPEN AREA TEST SITE, SVSWR	3 Meter, 1 - 18 GHz	RNY	6/14/2019	6/30/2021
10028	AGILENT / HP	ANALYZER, SPECTRUM	9 kHz - 22 GHz	8592L	11/7/2019	11/30/2020
1356	ETS / EMCO	ANTENNA, DOUBLE RIDGED GUIDE	1 - 18 GHz	3117	10/23/2018	4/30/2020
543	AGILENT / HP	PRE-AMPLIFIER	1 - 26.5 GHz	8449B	6/5/2019	6/30/2020
544	AGILENT / HP	ANALYZER, SPECTRUM	9.0 KHz - 1.8 GHz	8591EM	6/4/2019	6/30/2020
7033	ETS / EMCO	ANTENNA, BICONICAL	20 - 200 MHz	3110	2/19/2019	8/31/2020
7034	ETS / EMCO	ANTENNA, LOG PERIODIC	200 MHz - 1 GHz	3146	6/15/2018	12/31/2019
712A	MICRO-COAX	CABLE, COAXIAL	10 KHz - 18 GHz	UFB311A-1-240050U50U	11/11/2019	11/30/2020
712B	MICRO-COAX	CABLE, COAXIAL	10 KHz - 18 GHz	UFB311A-1-072050U50U	11/11/2019	11/30/2020

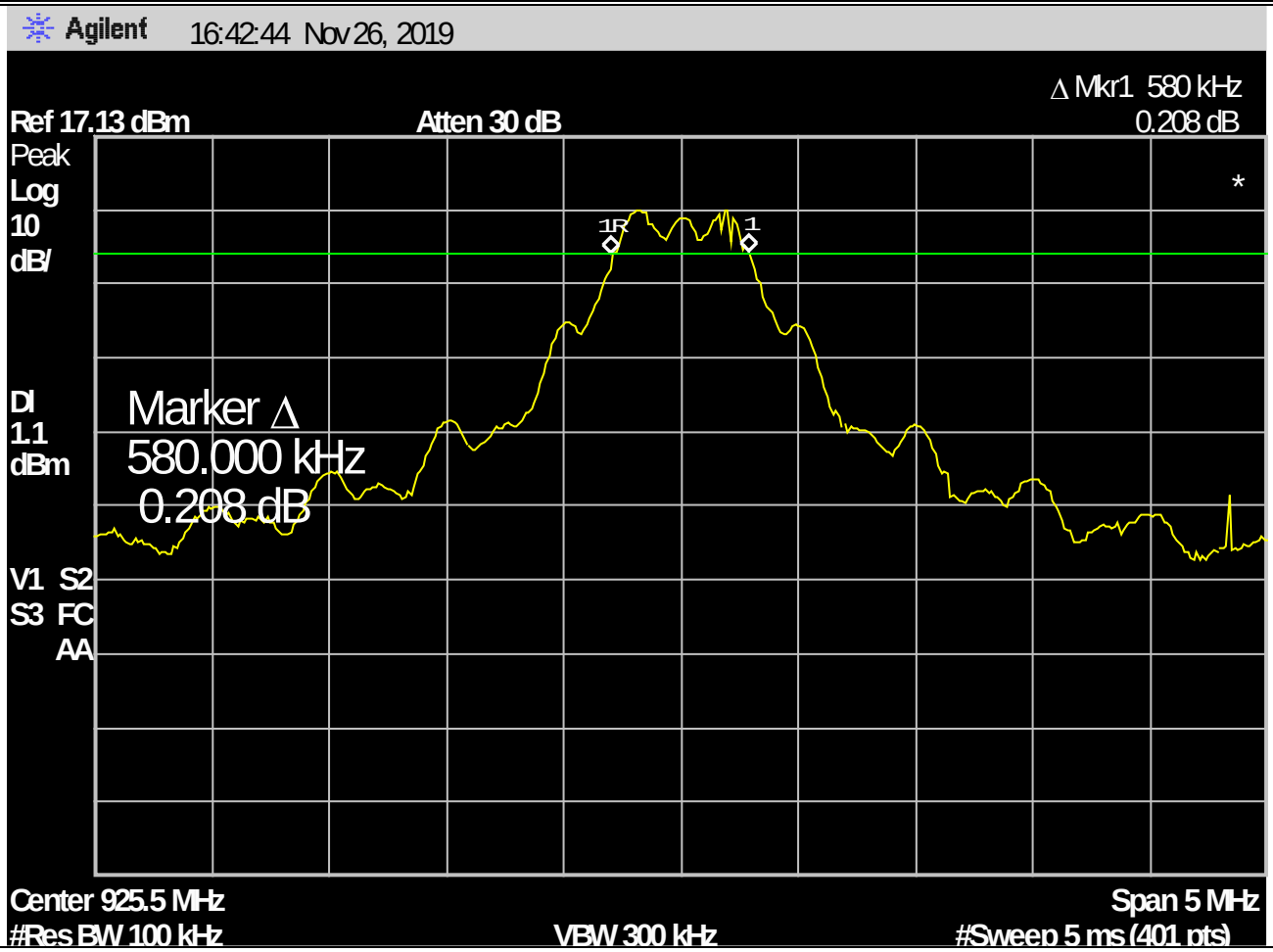
FCC Part 15, Subpart C, Section 15.247(a)(2)
Occupied Bandwidth
Test Data

EMISSIONS TEST DATA SHEET	
Test Method:	Occupied Bandwidth
Test Specification:	FCC Part 15, Subpart C, Paragraph 15.247 (a)(2)
Job Number/ Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 906.0 MHz on channel 5
Technician:	K. Luning
Date(s):	November 26, 2019
Temperature:	22.4°C
Relative Humidity:	38.6%
Notes:	Minimum 6dB Bandwidth Limit: 500 kHz , Measured 6dB Bandwidth: 530 kHz

EMISSIONS TEST DATA SHEET	
Test Method:	Occupied Bandwidth
Test Specification:	FCC Part 15, Subpart C, Paragraph 15.247 (a)(2)
Job Number/ Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 913.5 MHz on channel 15
Technician:	K. Luning
Date(s):	November 26, 2019
Temperature:	22.4°C
Relative Humidity:	38.6%
Notes:	Minimum 6dB Bandwidth Limit: 500 kHz , Measured 6dB Bandwidth: 540 kHz

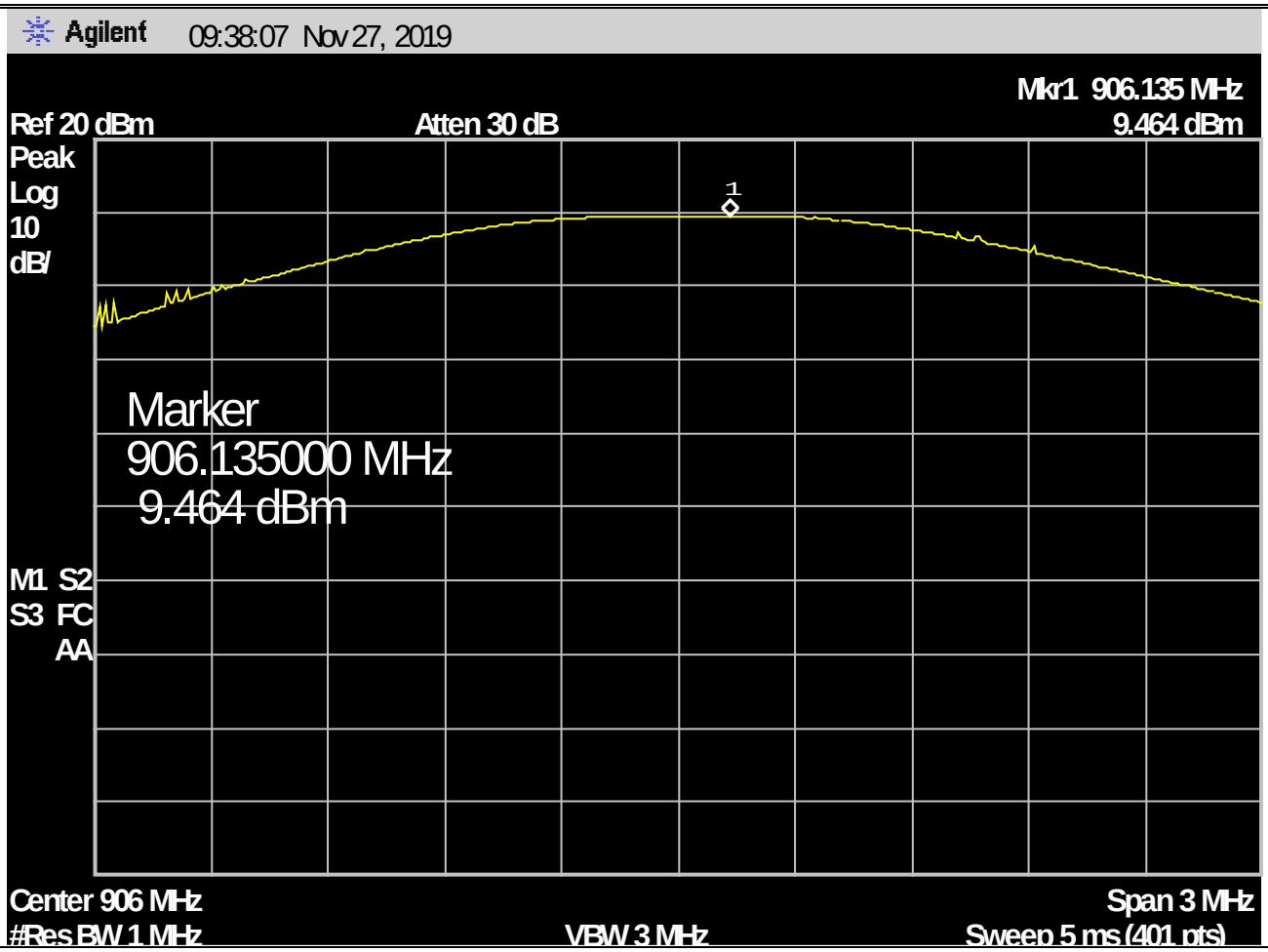


EMISSIONS TEST DATA SHEET	
Test Method:	Occupied Bandwidth
Test Specification:	FCC Part 15, Subpart C, Paragraph 15.247 (a)(2)
Job Number/ Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 925.5 MHz on channel 31
Technician:	K. Luning
Date(s):	November 26, 2019
Temperature:	22.4°C
Relative Humidity:	38.6%
Notes:	Minimum 6dB Bandwidth Limit: 500 kHz , Measured 6dB Bandwidth: 580 kHz

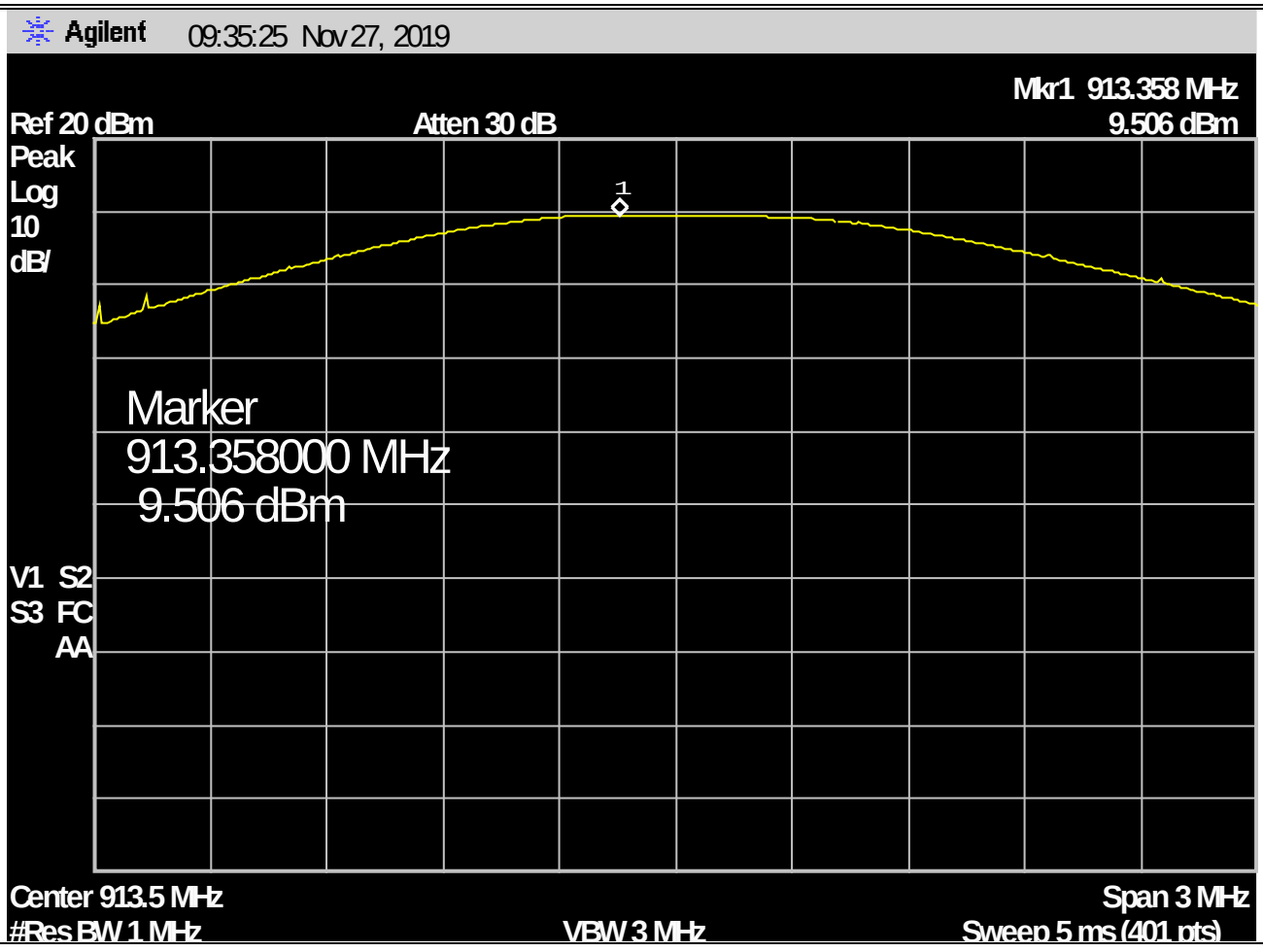


FCC Part 15, Subpart C, Section 15.247(b)(3)
Conducted Emissions, Power Output
Test Data

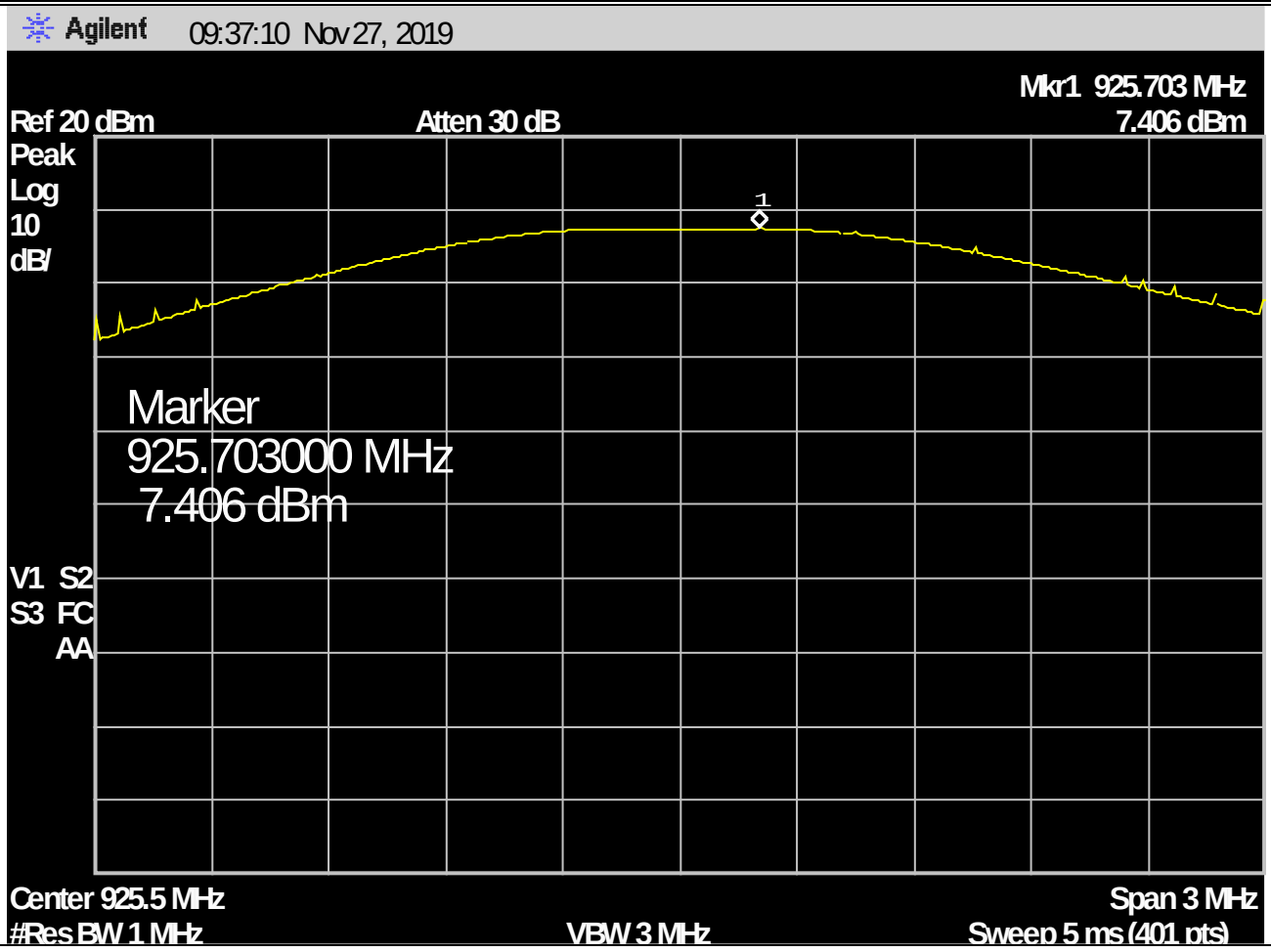
EMISSIONS TEST DATA SHEET	
Test Method:	Power Output
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (b)(3)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 906.0 MHz on channel 5
Technician:	K. Luning
Date(s):	November 27, 2019
Temperature:	20.6°C
Relative Humidity:	40.5%
Notes:	Method: ANSI C63.10, 11.9.1.1 RBW≥DTS Bandwidth Maximum Power Output: 1.0W, Measured Power Output: 8.8mW



EMISSIONS TEST DATA SHEET	
Test Method:	Power Output
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (b)(3)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 913.5 MHz on channel 15
Technician:	K. Luning
Date(s):	November 27, 2019
Temperature:	20.6°C
Relative Humidity:	40.5%
Notes:	Method: ANSI C63.10, 11.9.1.1 RBW≥DTS Bandwidth Maximum Power Output: 1.0W, Measured Power Output: 8.9mW

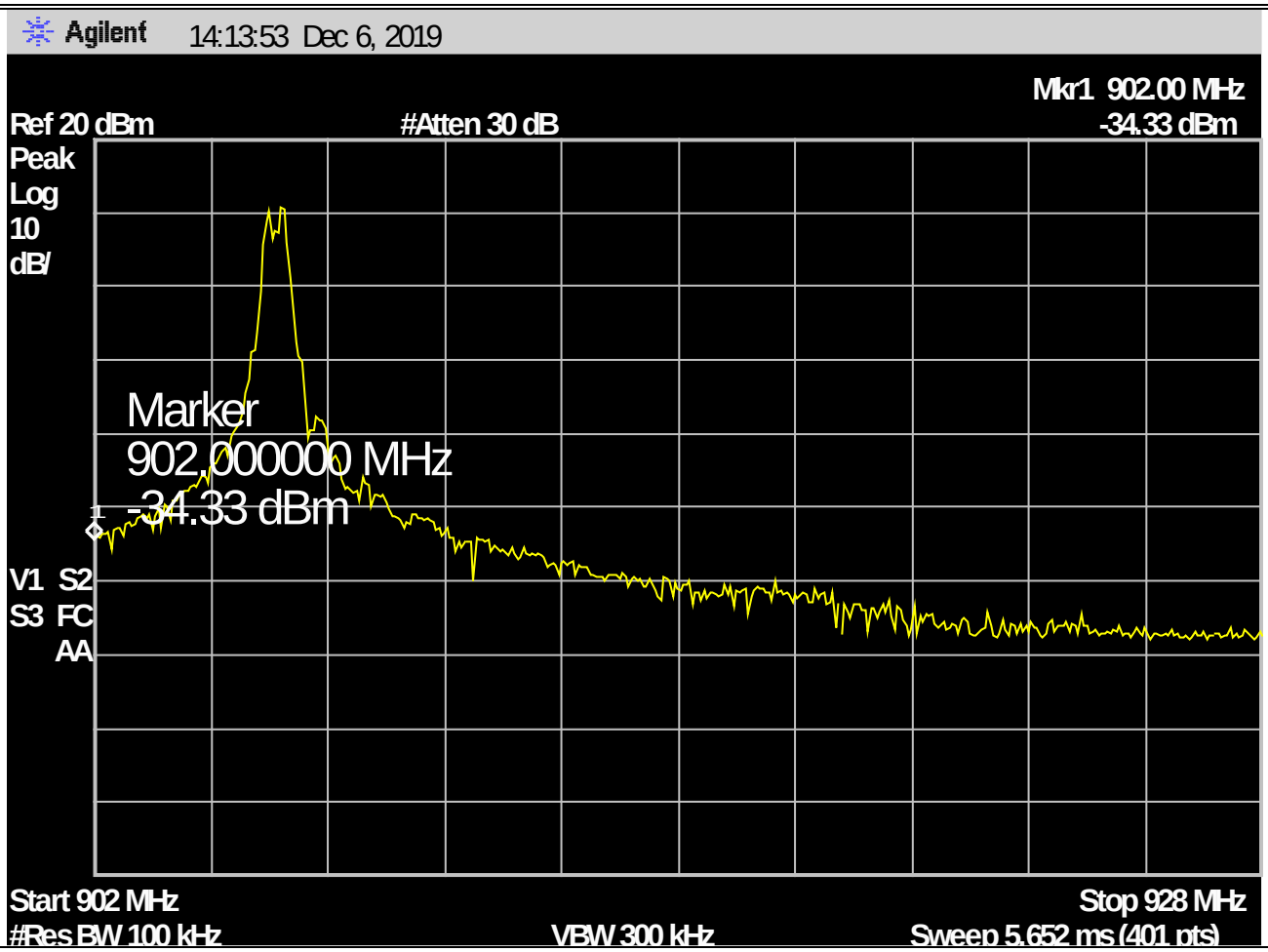


EMISSIONS TEST DATA SHEET	
Test Method:	Power Output
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (b)(3)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 925.5 MHz on channel 31
Technician:	K. Luning
Date(s):	November 27, 2019
Temperature:	20.6°C
Relative Humidity:	40.5%
Notes:	Method: ANSI C63.10, 11.9.1.1 RBW≥DTS Bandwidth Maximum Power Output: 1.0W, Measured Power Output: 5.5mW



FCC Part 15, Subpart C, Section 15.247(d)
Antenna Port, Conducted Emissions
Test Data

EMISSIONS TEST DATA SHEET	
Test Method:	Band Edge Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 906.0 MHz on channel 5
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -11.2 dBm

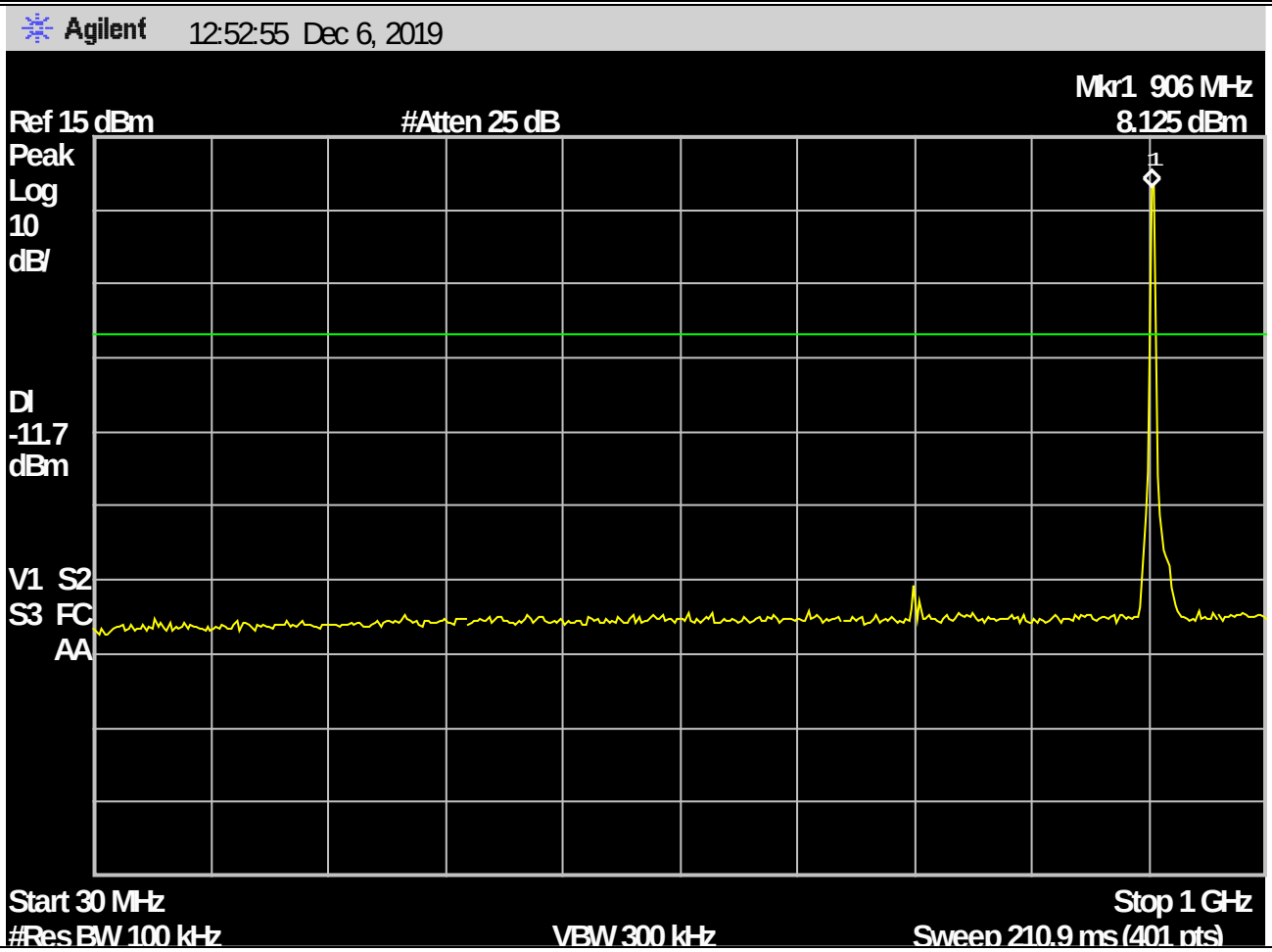


Lower Band Edge

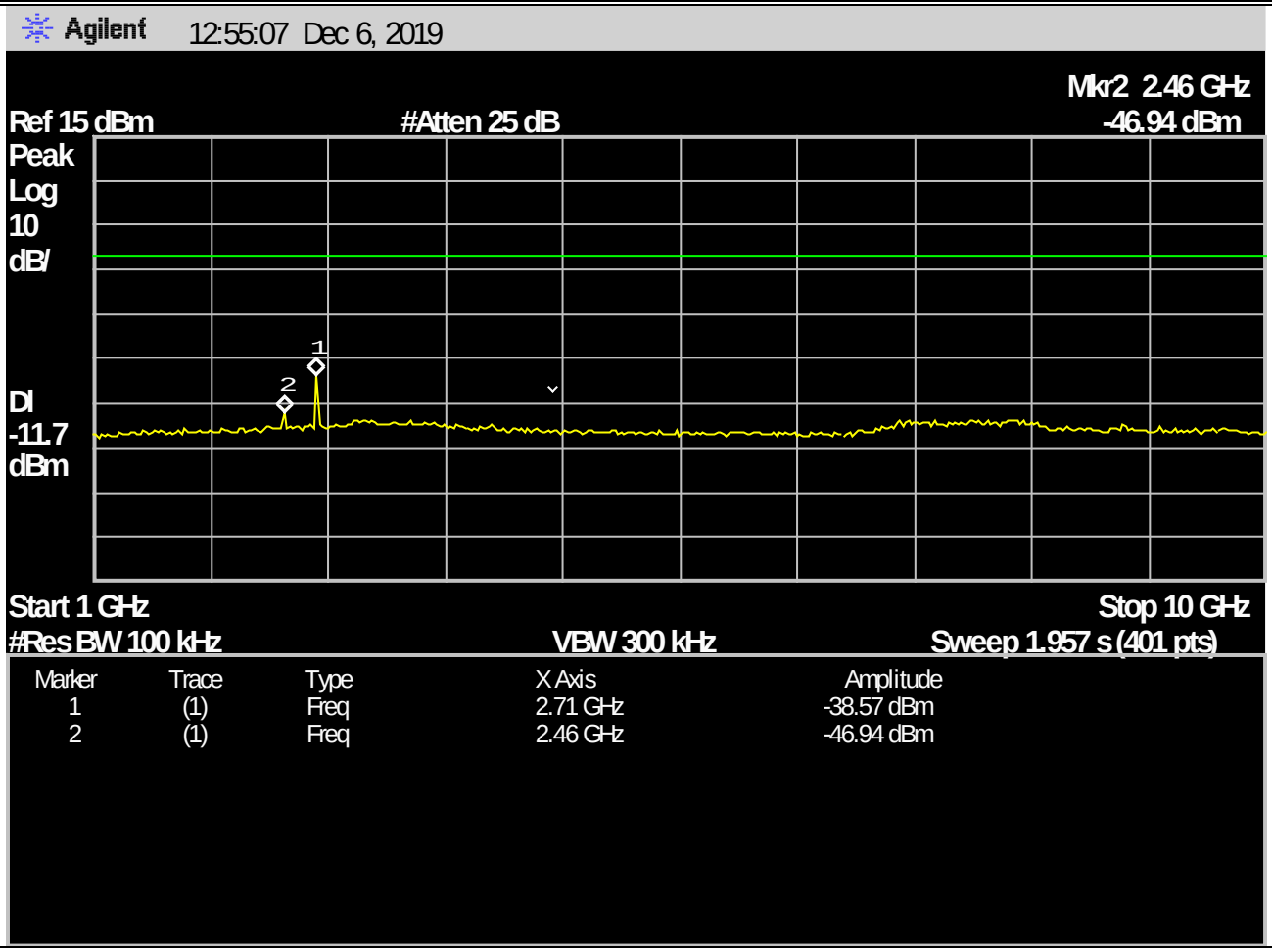
EMISSIONS TEST DATA SHEET	
Test Method:	Band Edge Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 906.0 MHz on channel 5
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -11.2 dBm

Lower Band Edge

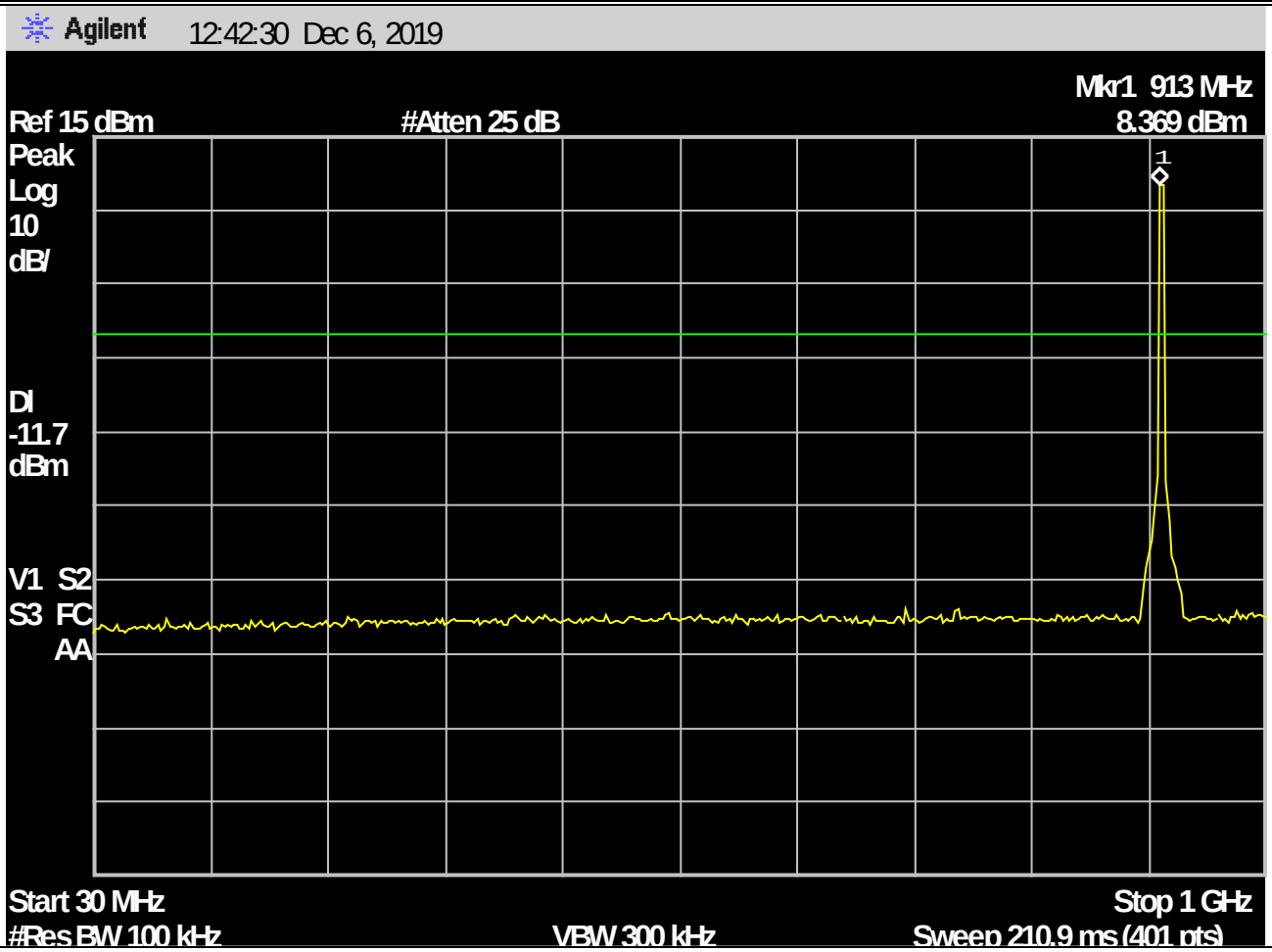
EMISSIONS TEST DATA SHEET	
Test Method:	Out of Band Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 906.0 MHz on channel 5
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -11.7 dBm



EMISSIONS TEST DATA SHEET	
Test Method:	Out of Band Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 906.0 MHz on channel 5
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -11.7 dBm

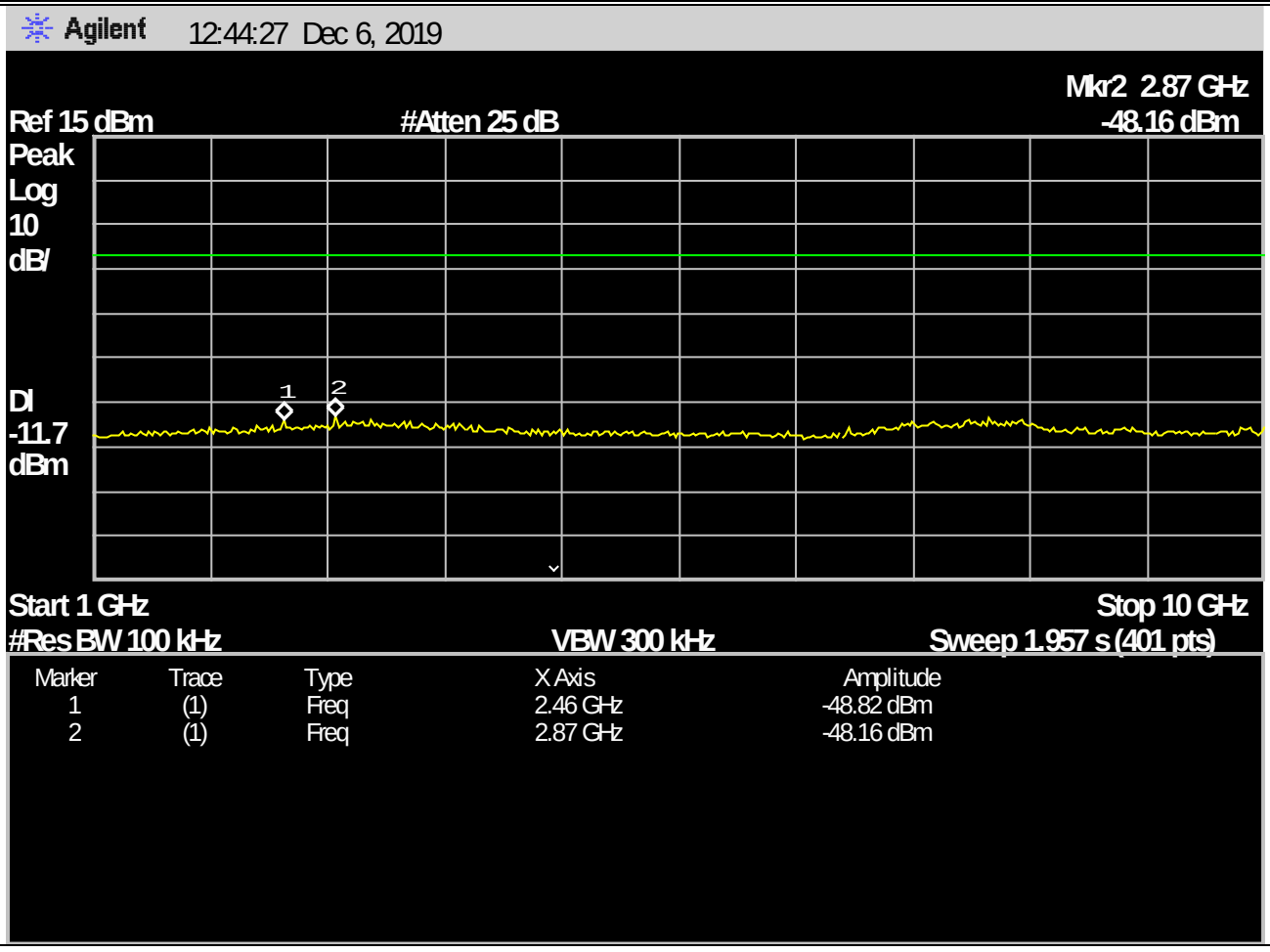


EMISSIONS TEST DATA SHEET	
Test Method:	Out of Band Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 913.5 MHz on channel 15
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -11.7 dBm



EMISSIONS TEST DATA SHEET

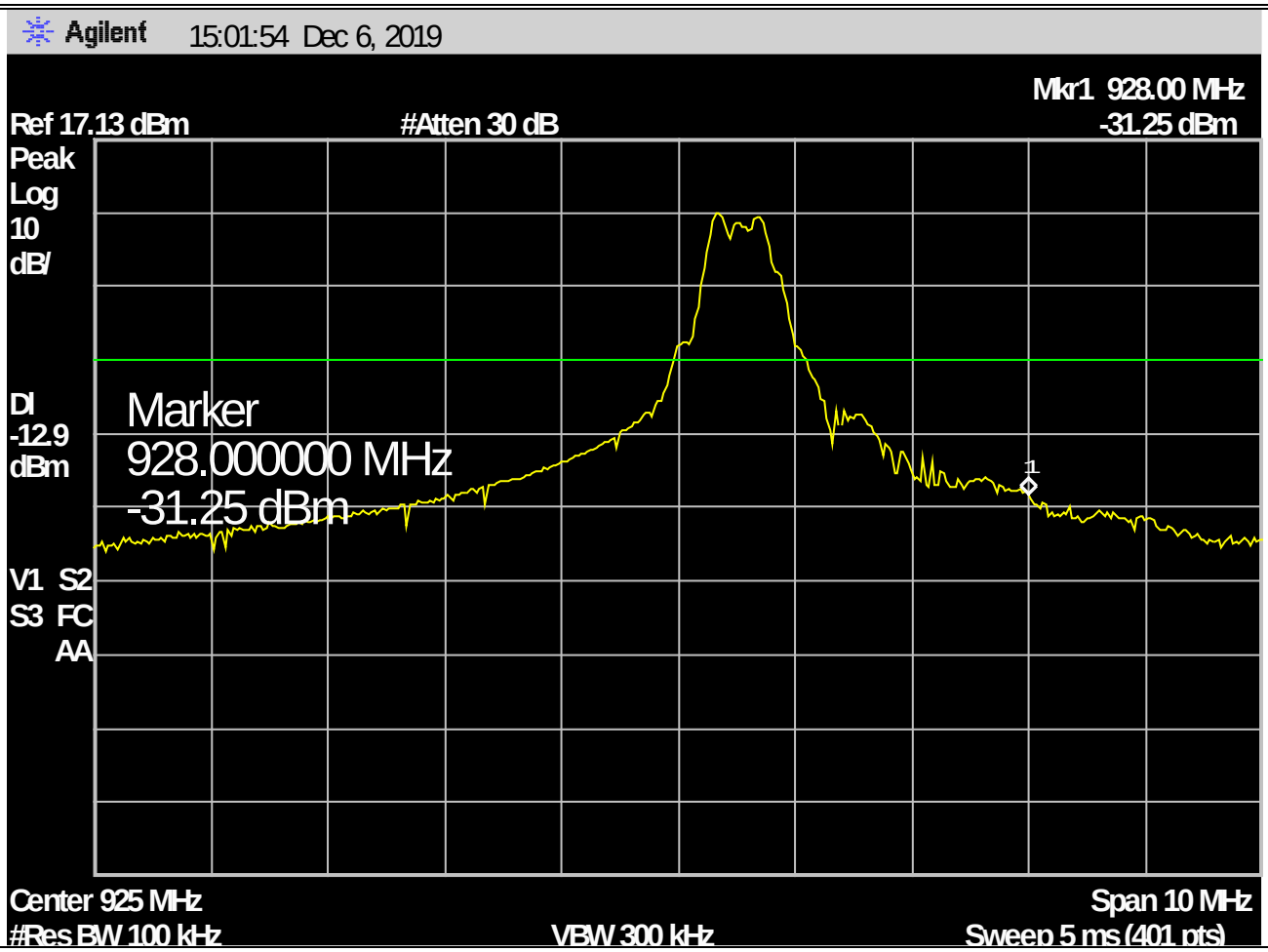
Test Method:	Out of Band Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 913.5 MHz on channel 15
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -11.7 dBm



EMISSIONS TEST DATA SHEET	
Test Method:	Band Edge Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 925.5 MHz on channel 31
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -12.9 dBm

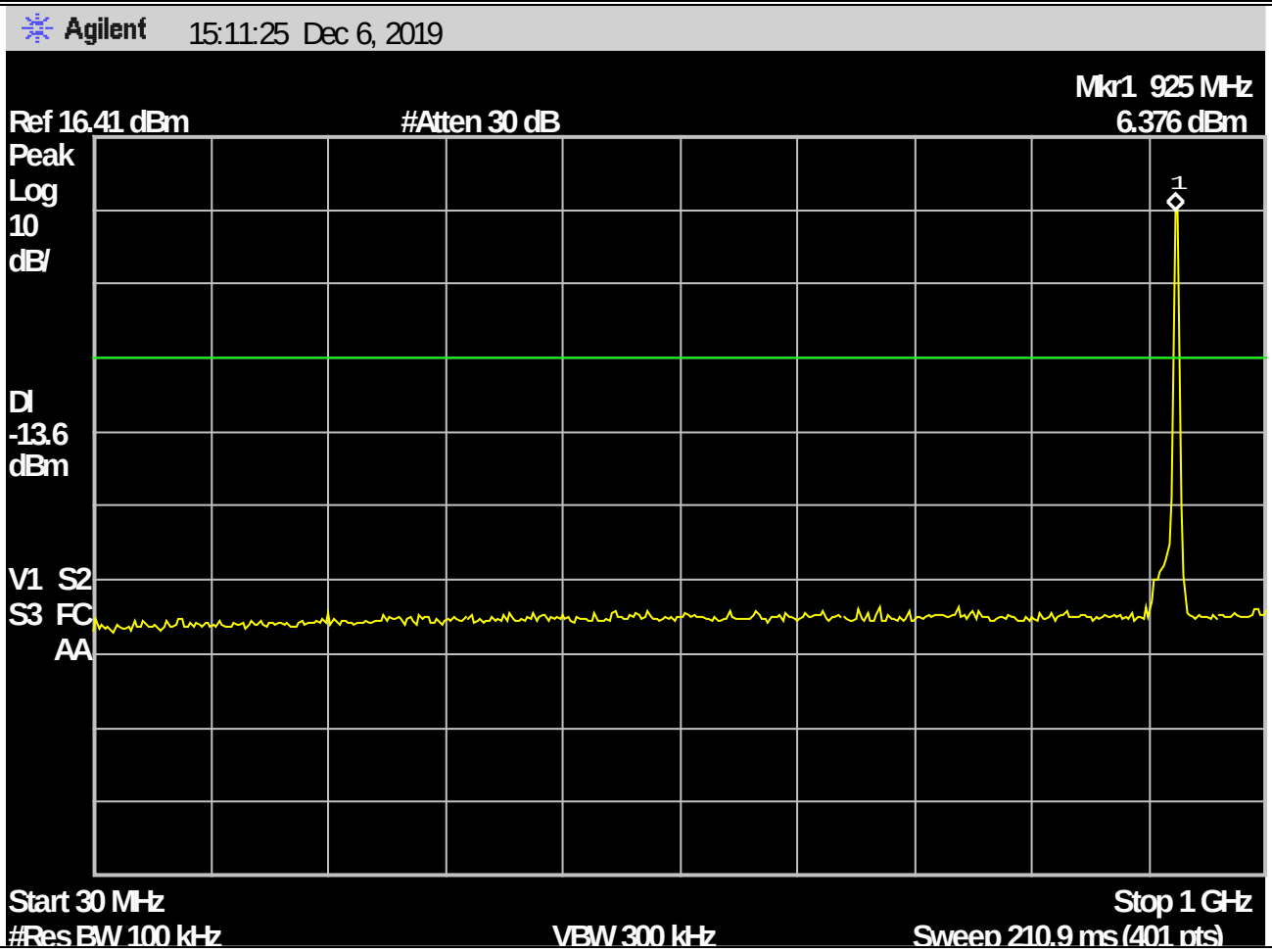
Upper Band Edge

EMISSIONS TEST DATA SHEET	
Test Method:	Band Edge Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 925.5 MHz on channel 31
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -12.9 dBm

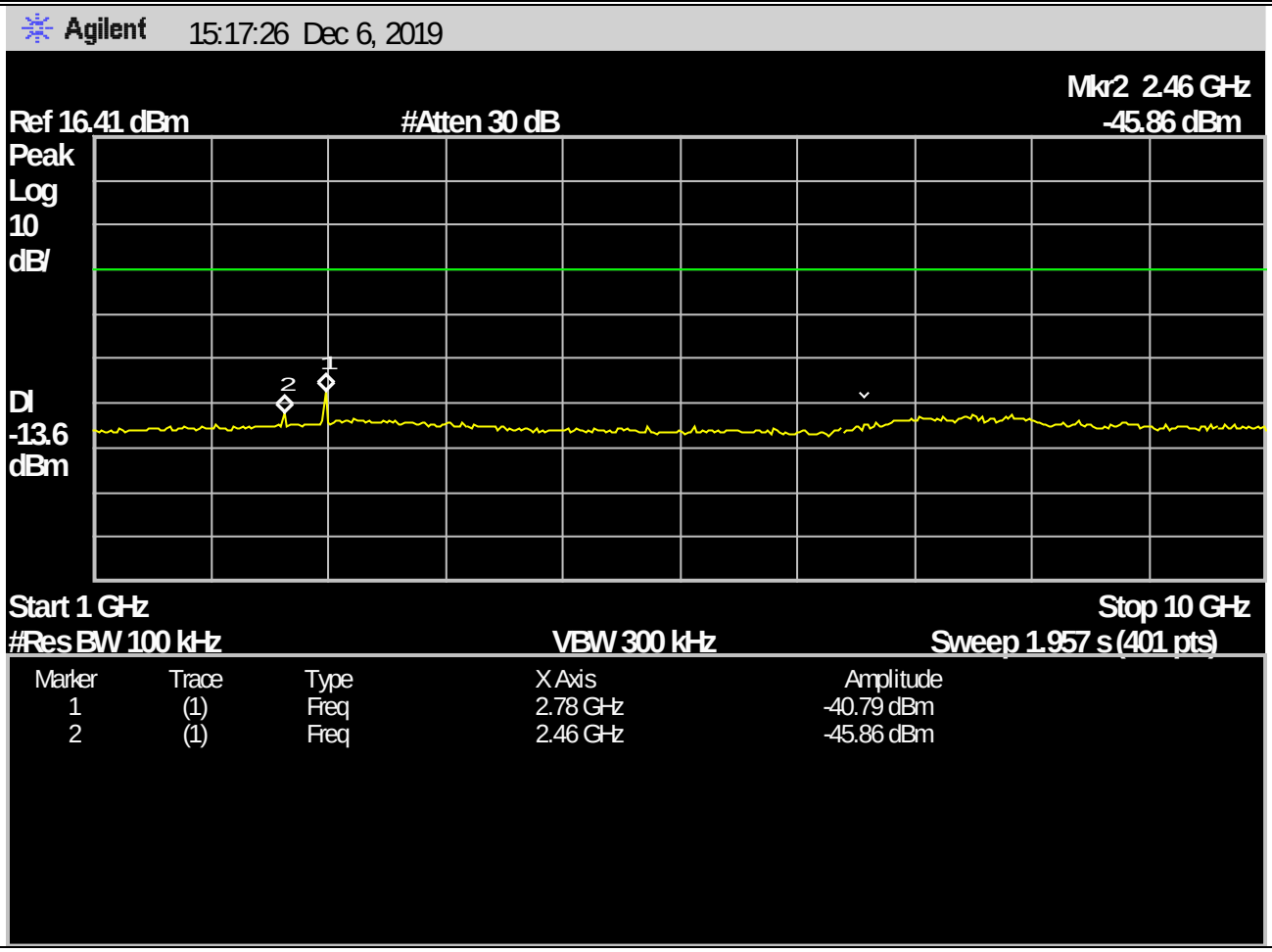


Upper Band Edge

EMISSIONS TEST DATA SHEET	
Test Method:	Out of Band Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 925.5 MHz on channel 31
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -13.6 dBm

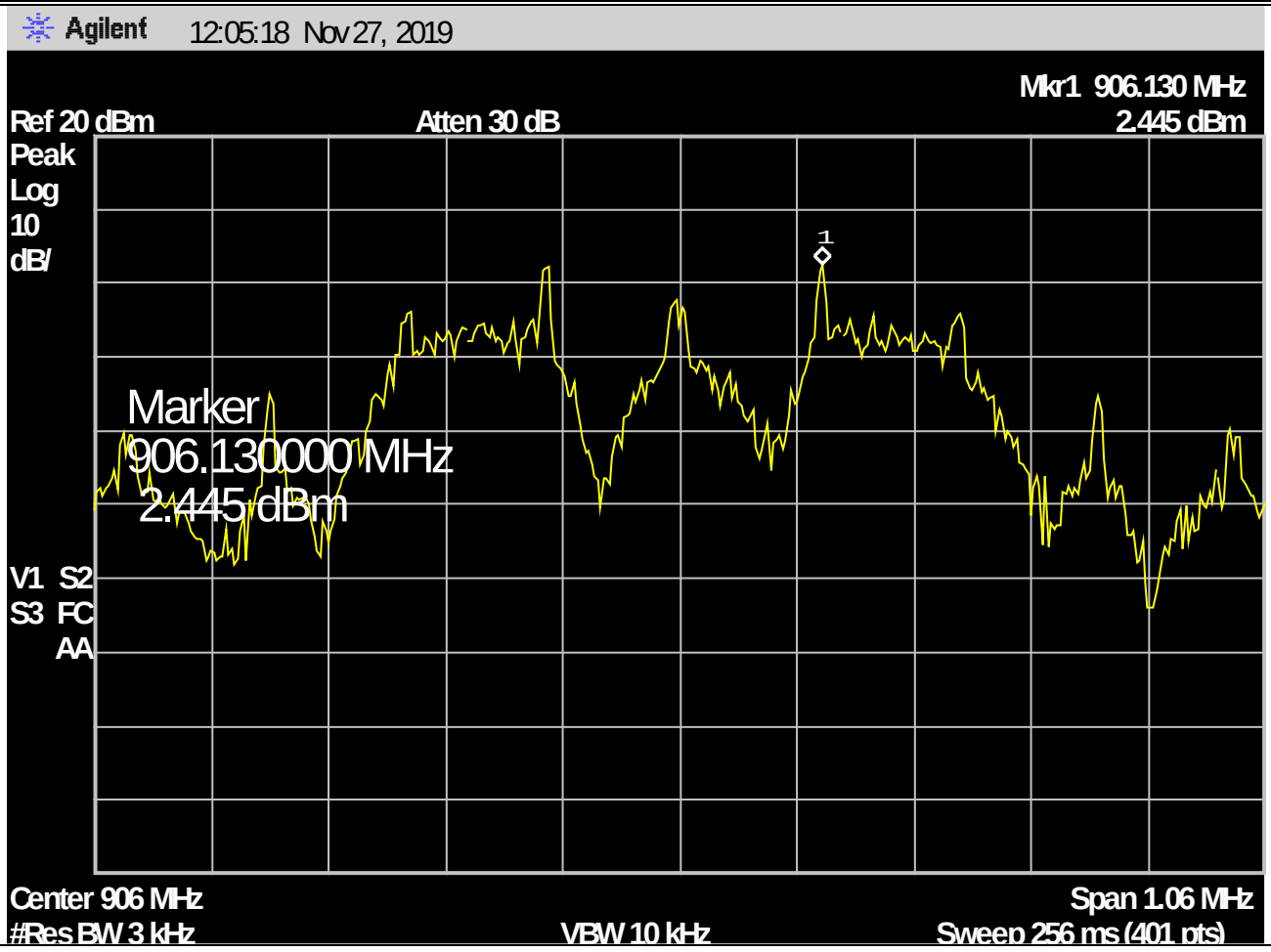


EMISSIONS TEST DATA SHEET	
Test Method:	Out of Band Conducted Emissions
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 925.5 MHz on channel 31
Technician:	R. Soodoo
Date(s):	December 6, 2019
Temperature:	21.5°C
Relative Humidity:	30.2%
Notes:	20dBc Limit: -13.6 dBm

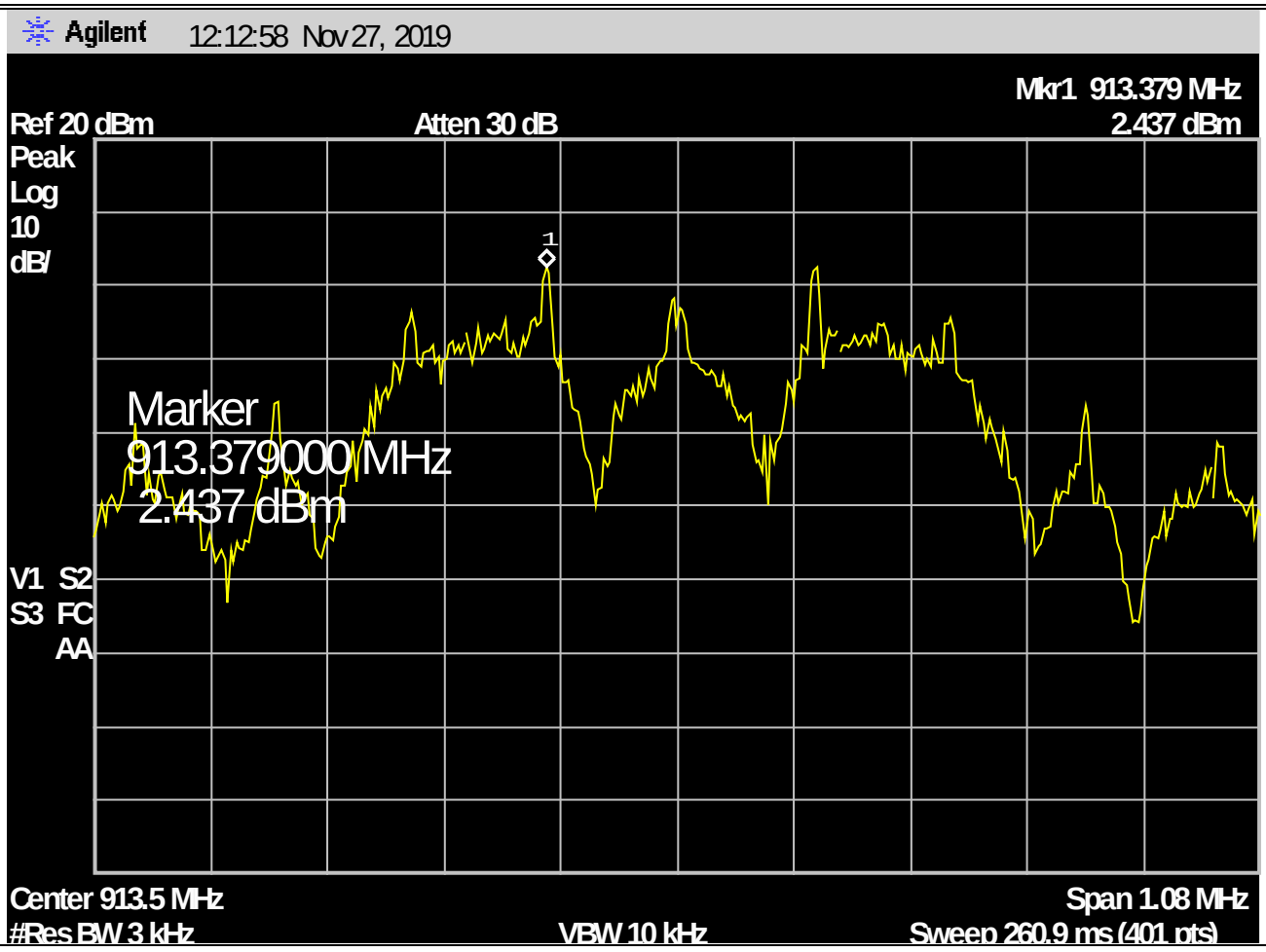


FCC Part 15, Subpart C, Section 15.247(e)
Antenna Port, Power Density
Test Data

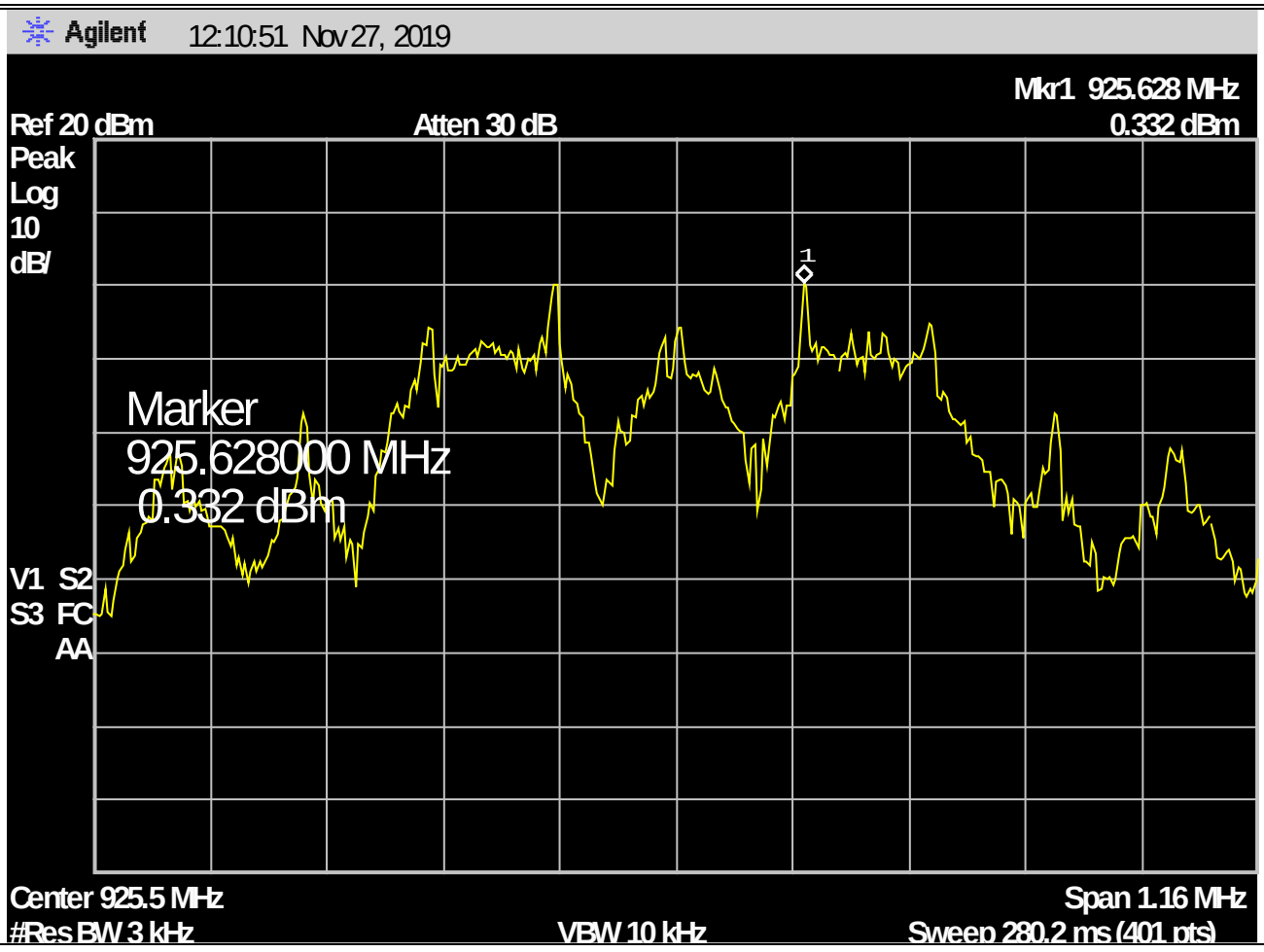
EMISSIONS TEST DATA SHEET	
Test Method:	Power Density
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (e)
Job Number/ Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 906.0 MHz on channel 5
Technician:	K. Luning
Date(s):	November 27, 2019
Temperature:	21.8°C
Relative Humidity:	42.7%
Notes:	Method: ANSI C63.10, 11.10.2 PKPSD Power Density Limit: 8.0dBm, Measured Power Density: 2.445dBm



EMISSIONS TEST DATA SHEET	
Method:	Power Spectral Density
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (e)
Job Number/ Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 913.5 MHz on channel 15
Technician:	K. Luning
Date(s):	November 27, 2019
Temperature:	21.8°C
Relative Humidity:	42.7%
Notes:	Method: ANSI C63.10, 11.10.2 PKPSD Power Density Limit: 8.0dBm, Measured Power Density: 2.437dBm



EMISSIONS TEST DATA SHEET	
Test Method:	Power Spectral Density
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (e)
Job Number/ Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK) at 925.5 MHz on channel 31
Technician:	K. Luning
Date(s):	November 27, 2019
Temperature:	21.8°C
Relative Humidity:	42.7%
Notes:	Method: ANSI C63.10, 11.10.2 PKPSD Power Density Limit: 8.0dBm, Measured Power Density: 0.332dBm



FCC Part 15, Subpart B, Section 15.247 (d)
Spurious Radiated Emissions, 30 MHz to 10 GHz
Test Data

EMISSIONS TEST DATA SHEET	
Method:	Restricted Band Emissions 30 MHz to 10 GHz
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK)
Technician:	M. Griffiths
Date(s):	December 13, 2019
Temperature:	10.6ºC
Relative Humidity:	54.2%
Detector:	Quasi-Peak <1GHz, Average >1GHz
Test Distance:	3m

Notes:
No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit at 3m
MHz	MHz	dBuV	dB	dBuV/m	uV/m	uV/m
37.50						100.00
|	38.00*	31.9	-3.1	28.8	27.5	|
38.25						100.00
73.00						100.00
|	74.00*	26.5	-12.1	14.4	5.2	|
75.20						100.00
108.00						150.00
|	115.00*	30.7	-5.6	25.1	18.0	|
121.94						150.00
123.00						150.00
|	130.00*	31.2	-3.9	27.3	23.2	|
138.00						150.00
149.90						150.00
|	150.00*	25.4	-2.2	23.2	14.5	|
150.05						150.00
156.52475						150.00
|	156.52500*	24.3	-2.2	22.1	12.7	|
156.52525						150.00

EMISSIONS TEST DATA SHEET

Method:	Restricted Band Emissions 30 MHz to 10 GHz
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK)
Technician:	M. Griffiths
Date(s):	December 13, 2019
Temperature:	10.6ºC
Relative Humidity:	54.2%
Detector:	Quasi-Peak <1GHz, Average >1GHz
Test Distance:	3m

Notes:
No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit at 3m
MHz	MHz	dBuV	dB	dBuV/m	uV/m	uV/m
156.70						150.00
|	156.80*	25.3	-2.2	23.1	14.3	|
156.90						150.00
162.0125						150.00
|	165.00*	29.1	-1.6	27.5	23.7	|
167.1700						150.00
167.72						150.00
|	170.00*	28.2	-1.4	26.8	21.9	|
173.20						150.00
240.00						200.00
|	260.00*	24.6	-4.8	19.8	9.8	|
285.00						200.00
322.00						200.00
|	330.00*	24.4	-2.2	22.2	12.9	|
335.40						200.00
399.90	-	-	-	-		200.00
|	405.00*	20.9	-0.8	20.1	10.1	|
410.00						200.00

EMISSIONS TEST DATA SHEET

Method:	Restricted Band Emissions 30 MHz to 10 GHz
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK)
Technician:	M. Griffiths
Date(s):	December 13, 2019
Temperature:	10.6ºC
Relative Humidity:	54.2%
Detector:	Quasi-Peak <1GHz, Average >1GHz
Test Distance:	3m

Notes:
No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit at 3m
MHz	MHz	dBuV	dB	dBuV/m	uV/m	uV/m
608.00						200.00
|	611.00*	25.1	4.3	29.4	29.5	|
614.00	-					200.00
960.00						500.00
|	975.00*	20.5	11.7	32.2	40.7	|
1240.00						500.00
1300.00						500.00
|	1350.00*	33.5	1.4	34.9	55.6	|
1427.00						500.00
1435.00						500.00
|	1500.00*	34.8	1.7	36.5	66.8	|
1646.50						500.00
1660.00						500.00
|	1680.00*	31.2	1.7	32.9	44.2	|
1710.00						500.00
1718.80						500.00
|	1720.00*	33.8	2.1	35.9	62.4	|
1722.20						500.00

EMISSIONS TEST DATA SHEET	
Method:	Restricted Band Emissions 30 MHz to 10 GHz
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK)
Technician:	M. Griffiths
Date(s):	December 13, 2019
Temperature:	10.6ºC
Relative Humidity:	54.2%
Detector:	Quasi-Peak <1GHz, Average >1GHz
Test Distance:	3m

Notes:
No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit at 3m
MHz	MHz	dBuV	dB	dBuV/m	uV/m	uV/m
2200.00						500.00
|	2250.00	47.1	4.8	51.9	393.6	|
2300.00						500.00
2310.00						500.00
|	2360.00	37.1	5.2	42.3	130.3	|
2390.00						500.00
2483.50						500.00
|	2490.00*	34.1	5.5	39.6	95.5	|
2500.00						500.00
2690.00						500.00
|	2750.00*	35.6	5.9	41.5	118.9	|
2900.00						500.00
3260.00						500.00
|	3263.00*	26.4	6.6	33.0	44.7	|
3267.00						500.00
3332.00						500.00
|	3336.00*	29.8	6.8	36.6	67.6	|
3339.00						500.00

EMISSIONS TEST DATA SHEET

Method:	Restricted Band Emissions 30 MHz to 10 GHz
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK)
Technician:	M. Griffiths
Date(s):	December 13, 2019
Temperature:	10.6ºC
Relative Humidity:	54.2%
Detector:	Quasi-Peak <1GHz, Average >1GHz
Test Distance:	3m

Notes:
No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit at 3m
MHz	MHz	dBuV	dB	dBuV/m	uV/m	uV/m
3345.80						500.00
|	3350.00*	28.4	6.9	35.3	58.2	|
3358.00						500.00
3600.00						500.00
|	4000.00*	24.7	7.0	31.7	38.5	|
4400.00						500.00
4500.00						500.00
|	4825.00*	27.5	10.8	38.3	82.2	|
5150.00						500.00
5350.00						500.00
|	5413.80*	24.9	10.3	35.2	57.5	|
5460.00						500.00
7250.00						500.00
|	7268.00*	27.1	12.7	39.8	97.7	|
7750.00						500.00
8025.00						500.00
|	8234.10*	28.6	12.7	41.3	116.1	|
8500.00						500.00

EMISSIONS TEST DATA SHEET

Method:	Restricted Band Emissions 30 MHz to 10 GHz
Test Specification:	FCC Part 15, Subpart C, Paragraph: 15.247 (d)
Job Number / Customer:	R-17172-2 / Napco Security Technologies, Inc.
Test Sample:	iSecure Keypad
Model Number:	ISEC-WL-KEYPAD
FCC ID Number:	AD8ISECKEYP
Operating Mode:	Transmitting modulated signal (2-GFSK)
Technician:	M. Griffiths
Date(s):	December 13, 2019
Temperature:	10.6ºC
Relative Humidity:	54.2%
Detector:	Quasi-Peak <1GHz, Average >1GHz
Test Distance:	3m

Notes:
No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum.
*This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor)

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit at 3m
MHz	MHz	dBuV	dB	dBuV/m	uV/m	uV/m
9000.00						500.00
|	9023.00*	28.1	12.9	41.0	112.2	|
9200.00						500.00
9300.00						500.00
|	9650.00*	29.6	12.9	42.5	133.4	|
10000.00						500.00