

# FCC 47 CFR PART 15 SUBPART E

# DFS TEST REPORT

For

**OTT Dongle** 

MODEL No.: D2000

# FCC ID: 2AO2A-S905X216

Trade Mark: inspur

# REPORT NO.: ES180131012W05

ISSUE DATE: March 06, 2018

Prepared for

# Inspur Software Group Ltd. No. 2877 Kehang Rd., Jinan, Shandong, 250104 China

Prepared by

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## 1. TEST RESULT CERTIFICATION

Applicant:	Inspur Software Group Ltd. No. 2877 Kehang Rd., Jinan, Shandong, 250104 China
Manufacturer:	Inspur Software Group Ltd. No. 2877 Kehang Rd., Jinan, Shandong, 250104 China
Product Description:	OTT Dongle
Model Number:	D2000
Trade Mark:	inspur
File Number:	ES180131012W05

#### Measurement Procedure Used:

APPLICABLE STANDARDS				
STANDARD TEST RESULT				
FCC 06-96 FCC 47 CFR Part 15, Subpart E	PASS			

The above equipment was tested by EMTEK(SHENZHEN) CO., LTD.. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 2 and Part 15.407.

The test results of this report relate only to the tested sample identified in this report.

 Date of Test :
 January 31, 2018 to March 06, 2018

 Prepared by:
 Yaping Shen/Editor

 Reviewer:
 Sevin Li /Supervisor

Approve & Authorized Signer :

Lisa Wang/Manager



# 2. EUT DESCRIPTION

Characteristics	Description						
IEEE 802.11 WLAN Mode Supported	<ul> <li>≈802.11a(20MHz channel bandwidth)</li> <li>≈802.11n(20MHz channel bandwidth)</li> <li>≈802.11n(40MHz channel bandwidth)</li> <li>≈802.11ac(20MHz channel bandwidth)</li> <li>≈802.11ac(40MHz channel bandwidth)</li> <li>≈802.11ac(80MHz channel bandwidth)</li> </ul>						
Data Rate	802.11a:6,9,12,18,24,36,48,54Mbps; 802.11n(HT20)/ac(HT20): MCS0-MCS7; 802.11n(HT40): MCS0-MCS7; 802.11ac(HT40):MCS0-MCS9; 802.11ac(VHT80):MCS0-MCS9;						
Modulation	OFDM with BPSK/QPSK/16QAM/64QAM for 802.11a/n; OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11ac;						
	WIFI 5G Band	Mode	Frequency Range(MHz)	Number of channels			
	UNII Band I	802.11a/n(HT20)/ac(VHT20)	5180-5240	4			
		802.11n(HT40)/ac(VHT40)	5190-5230	2			
		802.11 ac(VHT80)	5210	1			
		802.11a/n(HT20)/ac(VHT20)	5260-5320	4			
Operating Frequency	UNII Band II-A	802.11n(HT40)/ac(VHT40)	5270-5310	2			
Range	Dana n / (	802.11 ac(VHT80)	5290	1			
	UNII Band II-C	802.11a/n(HT20)/ac(VHT20)	5500-5700	11			
		802.11n(HT40)/ac(VHT40)	5510-5670	5			
		802.11 ac(VHT80)	5530-5610	2			
		802.11a/n(HT20)/ac(VHT20)	5745-5825	5			
	UNII Band III	802.11n(HT40)/ac(VHT40)	5755-5795	2			
		802.11 ac(VHT80)	5775	1			
Transmit Power Max	19.24 dBm f 18.99 dBm f	or UNII Band I or UNII Band II-A or UNII Band II-C or UNII Band III					
Antenna Type		Metal antenna letal antenna					
Smart system	art system 🛛 SISO 🖾 MIMO						
Antenna Gain	4.5 dBi						
Direction Gain	7.51 dBi						
Power supply	DC 3.7V i	nternal rechargeable lithium ba	ittery				



DC 5V from Adapter
⊠Adapter: Model: EJVD+100050-2000 Input: AC 100-240V 50/60Hz 0.3A Output: DC 5V 2A

Note: for more details, please refer to the User's manual of the EUT.



# 3. SUMMARY OF TEST RESULT

FCC Part Clause	Test Parameter	Verdict	Remark		
15.407 (h) (i) (j)	Dynamic Frequency Selection	PASS			
NOTE1: N/A (Not	Applicable)				
NOTE1: N/A (Not Applicable) NOTE2: According to FCC OET KDB 905462 D02 UNII DFS Compliance Procedures New Rules addition, the radiated test is also performed to ensure the emissions emanating from the device also comply with the applicable limits.					



#### 4. TEST METHODOLOGY

#### 4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards: FCC 06-96

FCC 47 CFR Part 15, Subpart E

FCC KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

#### 4.2 MEASUREMENT EQUIPMENT USED

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	Due Cal.
Vector Signal Generater	Agilent	N5182B	My53050553	05/20/2017	05/19/2018
Analog Signal Generator	Agilent	N5171B	My53050878	05/20/2017	05/19/2018
Signal Analyzer	Agilent	N9010A	My53470879	05/20/2017	05/19/2018
Power Analyzer	Agilent	PS-X10-100	N/A	05/20/2017	05/19/2018
Test Accessories	Agilent	PS-X10-100	N/A	05/20/2017	05/19/2018

Remark: Each piece of equipment is scheduled for calibration once a year.

#### 4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (🛛 802.11a: 6 Mbps; 🖾 802.11n (HT20): MCS0; 🖾 802.11n (HT20): MCS7; 🖾 802.11n (HT40): MCS0; 🖾 802.11a (HT40): MCS7; 🖾 802.11ac (HT20): MCS0; 🖾 802.11ac (HT20): MCS7; 🖾 802.11ac (HT40): MCS0; 🖾 802.11ac (HT40): MCS7; 🖾 802.11ac (HT80): MCS0; 🖾 802.11ac (HT80): MCS7;) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.



# Wifi 5G with UNII Band II-A

Frequency and Channel list for 802.11a/n(HT20)/ac(VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300		
56	5280	64	5320		

#### Frequency and Channel list for 802.11n(VHT40)/ac(VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270				
62	5310				

## Frequency and Channel list for 802.11ac(VHT80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
58	5290				

### Test Frequency and Channel for 802.11a/n(HT20)/ac(VHT20):

Lowest F	Lowest Frequency		Lowest Frequency Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
52	5260	56	5280	64	5320	

## Test Frequency and channel for 802.11n(HT40)/ac(VHT40):

Lowest F	Lowest Frequency		owest Frequency Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
54	5270	N/A	N/A	62	5310	

## Test Frequency and channel for 802.11ac(VHT80):

Lowest Frequency		Middle F	requency	Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
58	()		N/A	N/A	N/A



# Wifi 5G with UNII Band II-C Frequency and Channel list for 802.11a/n(HT20)/ac(VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	116	5580	132	5660
104	5520	120	5600	136	5680
108	5540	124	5620	140	5700
112	5560	128	5640		

# Frequency and Channel list for 802.11n(VHT40)/ac(VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	126	5630		
110	5550	134	5670		
118	5590				

## Frequency and Channel list for 802.11ac(VHT80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530				
122	5610				

# Test Frequency and Channel for 802.11a/n(HT20)/ac(VHT20):

Lowest Frequency		Middle Frequency Highest Frequency		st Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	120	5600	140	5700

# Test Frequency and channel for 802.11n(VHT40)/ac(VHT40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
102			5590	134	5670

# Test Frequency and channel for 802.11ac(VHT80):

Lowest Frequency		Middle Frequency Highest Frequency		st Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	· · · · · ·		N/A	122	5610



#### 5. FACILITIES AND ACCREDITATIONS

#### 5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

Bldg 69, Majialong Industry Zone District, Nanshan District, Shenzhen, China The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

#### 5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with preselectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

#### 5.3 LABORATORY ACCREDITATIONS AND LISTINGS

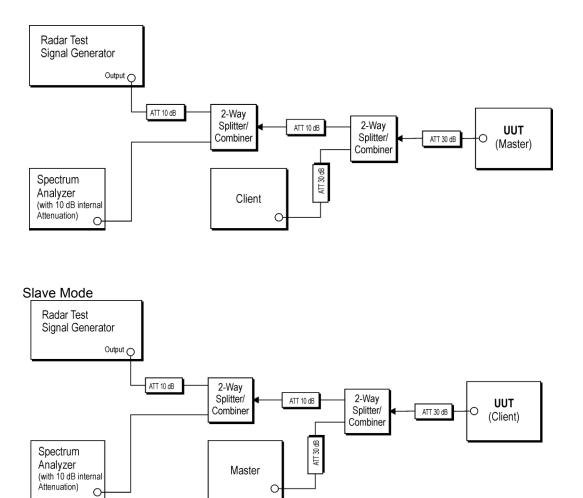
Site Description		
EMC Lab.	:	Accredited by CNAS, 2016.10.24 The certificate is valid until 2022.10.28 The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005) The Certificate Registration Number is L2291.
		Accredited by TUV Rheinland Shenzhen 2015.4 The Laboratory has been assessed according to the requirements ISO/IEC 17025.
		Accredited by FCC, August 03, 2017 Designation Number: CN1204 Test Firm Registration Number: 882943 Accredited by A2LA, July 31, 2017 The Certificate Registration Number is 4321.01.
		Accredited by Industry Canada, November 29, 2012 The Certificate Registration Number is 4480A.
Name of Firm Site Location	:	EMTEK(SHENZHEN) CO., LTD Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China



#### 6. SETUP OF EQUIPMENT UNDER TEST

#### 6.1 SETUP CONFIGURATION OF EUT

Master Modes



#### 6.2 CALIBRATION OF DFS DETECTION THRESHOLD LEVEL:

A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected in place of the master device and the signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –62 dBm as measured on the spectrum analyzer. Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. Measure the amplitude and calculate the difference from –62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.



#### 6.3 SUPPORT EQUIPMENT

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1.	Wireless Access Point	Cisco	AIR-CAP3702E-A-K9	FTX182276QD	N/A

#### Notes:

<sup>1.</sup> All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

<sup>2.</sup> Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



#### 7. DYNAMIC FREQUENCY SELECTION REQUIREMENTS

#### 7.1 APPLICABLE STANDARD

According to 15.407

#### 7.2 CONFORMANCE LIMIT

#### The dynamic frequency selection requirement

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
	See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.

**Note 1:** Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

**Note 2:** The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

**Note 3:** During the *U-NII Detection Bandwidth* detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

#### The following table lists the DFS The detection threshold values

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and	-62 dBm
power spectral density < 10 dBm/MHz	
EIRP < 200 milliwatt that do not meet the power	-64 dBm
spectral density requirement	
Note 1: This is the level at the input of the receiver assum	ing a 0 dBi receive antenna

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.

**Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.

#### 7.3 TEST CONFIGURATION

Conducted measurements shall be used for DFS test



## 7.4 TEST PARAMETERS OF DFS TEST SIGNAL

The following table lists the parameters of radar test signals Short Pulse Radar Test Waveforms

Radar	Pulse Width	PRI	Number of Pulses	Minimum	Minimum
Туре	(µsec)	(µsec)		Percentage of	Number of
				Successful	Trials
				Detection	
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A	$\operatorname{Roundup} \left\{ \begin{pmatrix} \frac{1}{360} \end{pmatrix} \cdot \\ \begin{pmatrix} \frac{19 \cdot 10^{6}}{\operatorname{PRI}_{\mu \operatorname{sec}}} \end{pmatrix} \right\}$	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (F	Radar Types 1-	4)		80%	120
			used for the detection ba	ndwidth test, ch	annel move

**Note 1:** Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.

Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per <i>Burst</i>	Number of <i>Burst</i> s	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30



### 7.5 TRANSMITTER OUTPUT POWER

Temperature:	25°C	C Test Date:	February 06, 2018	
Humidity:	55 % F	RH		
	<b>_</b>	Max	Power	
Mode	Band	Conducted Outpot Power	E.I.R.P	
802.11ac(VHT20)	5250MHz-5350MHz	19.24dBm(82.79mW)	26.75dBm(473.15mW)	
	5470MHz-5725MHz	18.99dBm (79.25mW)	26.50dBm(446.68mW)	



### 7.6 OPERATION MODES AND REQUIREMENT TEST ITEMS

The manufacture shall state whether the EUT is capable of operating as a Master or a Slave modes, if the EUT is capable of operating in more than one operational mode then every operating mode shall be assessed separately.

Applicability of DFS Requirements Prior to Use of a Channel

	Operational Mode		
Requirement	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

# Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

#### 7.7 TEST PROCEDURE

According to KDB 905462 D02v02 Section 7.



# 8. TEST RESULT

# 8.1 DETAILED TEST RESULTS

Clause	MODES	Test Parameter	Remark	Verdict
15.407		DFS Detection Threshold	N/A	N/A
15.407		Channel Availability Check Time	N/A	N/A
15.407		Channel Move Time	N/A	N/A
15.407	Master	Channel Closing Transmission Time	N/A	N/A
15.407		Non-Occupancy Period	N/A	N/A
15.407		Uniform Spreading	N/A	N/A
15.407		U-NII Detection Bandwidth	N/A	N/A
15.407		Radar Detection Threshold	N/A	N/A
15.407		Channel Move Time	Applicable	PASS
15.407	⊠Slave	Channel Closing Transmission Time	Applicable	PASS
15.407		Non-Occupancy Period	N/A	N/A
15.407		U-NII Detection Bandwidth	N/A	N/A



### 8.2 RADAR WAVEFORM

Calibration:

Note: Maximum Transmit Power is more than 200 milliwatt, so detection threshold level is -64dBm.

The 801.11a/n/ac have been tested, and the worst result have been recorded in the below page.



	Slave Mode					
🎉 Agilent Spectrum Analyzer - Swept S	۵					
	AC SENSE:INT	Avg Type: RMS TRAC	Mar 06, 2018 E 1 2 3 4 5 6 Peak Search			
	PNO: Fast ↔ Trig: Free Run IFGain:High #Atten: 0 dB	TY D				
			4.81 ms Next Peak 15 dBm			
10 dB/div Ref -20.00 dl	Bm	-04.				
-30.0			Next Pk Right			
-40.0						
-40.0			Next Pk Lef			
-50.0						
+60.0	<b>1</b>		Markar Data			
-70.0			Marker Delta			
-80.0 <mark>Uptana jeranska Matelina</mark>	1941 on July and a character of addition and a to add the director	a da india da ang katang katang kata	Mkr→CF			
-90.0	and the second	The transmission of the				
-100 aligitation in a statistic is a statistic	al dan da da da kadar da	u da bala, a da la da da cala da dalar a basal da	Mkr→RefLv			
-110						
			More			
Center 5.260000000 GH Res BW 1.0 MHz	Iz #VBW 3.0 MHz*	Sweep 50.67 ms (4	pan 0 Hz			
MSG	#VBW 5.0 WH2	STATUS	lood hts)			
Majient Spectrum Analyzer - Swept S M RF 50 Ω Marker 1 Δ 1.80000 ks	AC SENSE:INT	ALIGN AUTO 01:34:50 P Avg Type: Log-Pwr TRA TY D	MMar 07, 2018 22 1 2 2 7 3 5 6 24 1 2 2 7 3 5 7 5 1 2 2 1 2 2 1 2 2 7 3 5 7 5 1 2 2 1 2 2 1 2 2 1 2 2 1 2 1 2 1 2 1			
₩ 50 Ω Marker 1 Δ 1.80000 ks	AC SENSE:INT S PNO: Fast ↔→ IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr TRA TY D AMkr1 1	MMar07,2018         Marker           E         12.3456         Marker           FT         NNNNN         Select Marker           I.800 ks         1			
№         №         50 Ω           Marker 1 Δ 1.80000 ks         1.80000 ks           10 dB/div         Ref -20.00 dl	AC SENSE:INT S PNO: Fast ↔→ IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr TRA TY D AMkr1 1	MMar 07, 2018 E 2 3 4 5 6 Marker NNNNN Select Marker			
10 dB/div Ref -20.00 df	AC SENSE:INT S PNO: Fast ↔→ IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr TRA TY D AMkr1 1	MMar07,2018         Marker           E         12.3456         Marker           FT         NNNNN         Select Marker           I.800 ks         1			
Marker 1 ∆ 1.80000 ks Marker 1 ∆ 1.80000 ks 10 dB/div Ref -20.00 di -30.0 -40.0 -50.0	AC SENSE:INT S PNO: Fast ↔→ IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr TRA TY D AMkr1 1	MMar 07, 2018 E 1 2 3 4 5 C E 1 2			
Marker 1 △ 1.80000 ks           10 dB/div         Ref -20.00 dl           -30.0         -40.0	AC SENSE:INT S PNO: Fast ↔→ IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr TRA TY D AMkr1 1	MMar 07, 2018 E 1 2 3 4 5 C E 1 2			
Marker 1 △ 1.80000 ks           10 dB/div         Ref -20.00 dl           -30.0         -40.0           -40.0         -40.0           -50.0         -40.0           -60.0         -40.0           -60.0         -40.0           -60.0         -40.0           -60.0         -40.0           -60.0         -40.0           -60.0         -40.0	AC SENSE:INT S PNO: Fast ↔→ IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr TRA TY D AMkr1 1	Mar 07, 2018 E 2 2 3 4 5 6 FE 2 2 3 4 5 6 Select Marker 1 Select Marker 1 Norma			
Marker 1 △ 1.80000 ks           10 dB/div         Ref -20.00 dl           -30.0         -40.0           -50.0         -22           -60.0         -22           -70.0         -40.0	AC SENSE:INT S PNO: Fast ↔→ IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr TRA TY D AMkr1 1	Mar 07, 2018 E 2 2 3 4 5 6 FE 2 2 3 4 5 6 Select Marker 1 Select Marker 1 Norma			
Marker 1 △ 1.80000 ks           10 dB/div         Ref -20.00 dl           -30.0         -40.0           -40.0         -40.0           -50.0         -40.0           -60.0         -40.0           -60.0         -40.0           -60.0         -40.0           -60.0         -40.0           -60.0         -40.0           -70.0         -40.0           -80.0         -40.0	AC SENSE:INT S PNO: Fast ↔→ IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr TRA TY D AMkr1 1	Mar 07,2018 E 2 2 3 4 5 6 E 2 3			
marker 1 △ 1.80000 ks           10 dB/div         Ref -20.00 dl           -30.0         -40.0           -40.0         -40.0           -50.0         -40.0           -70.0         -40.0           -100         -40.0           -70.0         -40.0           -100         -40.0           -100         -40.0           -100         -40.0           -100         -40.0           -100         -40.0           -100         -40.0           -100         -40.0	AC SENSE:INT S PNO: Fast ↔ Trig: Free Run #Atten: 0 dB Bm	Avg Type: Log-Pwr TRAK TY CMKr1 ' -3	Mar 07, 2018 E 2 2 3 4 5 6 E 2 3 4 5 6 Select Marker 1 Select Marker 1 Norma Delta Fixed!			
Marker 1 △ 1.80000 ks           10 dE/div         Ref -20.00 dl	AC SENSE:INT S PNO: Fast ↔ Trig: Free Run #Atten: 0 dB Bm 42 #VBW 3.0 MHz X Y FUR	Avg Type: Log-Pwr         TRANSPORT           ΔΜkr1 '         -3           Δ         -3	Mar 07, 2018 E 2 2 3 4 5 6 E 2 3 4 5 6 Select Marker 1 Select Marker 1 Norma Delta Fixed!			
Marker 1 Δ 1.80000 ks           In dB/div         Ref -20.00 dl           10 dB/div         Ref -20.00 dl           -30.0         -40.0           -40.0         -40.0           -50.0         -40.0           -60.0         -40.0           -60.0         -40.0           -60.0         -40.0           -70.0         -40.0           -100         -40.0           -100         -40.0           -100         -40.0           -100         -40.0           -100         -40.0           -100         -40.0           -110         -40.0           Center 5.2600000000 GF           Res BW 1.0 MHz           MKP MODE TRC  SCL            1         -42           2         1           2         1           2         1	AC SENSE:INT S PNO: Fast ↔ Trig: Free Run #Atten: 0 dB Bm IFGain:High	Avg Type: Log-Pwr         TRANSPORT           ΔΜkr1 '         -3           Δ         -3	Mar 07,2018         Marker           E 12.34 5.00         Select Marker, 1           Select Marker, 1         Norma           1.00 cl3         Delta           1/02         Delta           pan 0 Hz         Of           0001 pts)         Of			
Marker 1 △ 1.80000 ks           Marker 1 △ 1.80000 ks           Io dE/div         Ref -20.00 dl           Log	AC SENSE:INT S PNO: Fast ↔ Trig: Free Run #Atten: 0 dB Bm 42 #VBW 3.0 MHz X Y FU 1.800 ks[(Δ) -31.08 dB	Avg Type: Log-Pwr         TRANSPORT           ΔΜkr1 '         -3           Δ         -3	Mar 07, 2018 E 12 34 5 6 E 12 34 5 6 Select Marker 1 Select Marker 1 Norma Delta Fixed: Span 0 Hz 0001 pts)			
Marker 1 Δ 1.80000 ks           10 dE/div         Ref -20.00 dl	AC SENSE:INT S PNO: Fast ↔ Trig: Free Run #Atten: 0 dB Bm 42 #VBW 3.0 MHz X Y FU 1.800 ks[(Δ) -31.08 dB	Avg Type: Log-Pwr         TRANSPORT           ΔΜkr1 '         -3           Δ         -3	Marker E 2 3 4 5 6 6 E 2 3 4 5 6 E			
Marker 1 △ 1.80000 ks           Marker 1 △ 1.80000 ks           Io dE/div         Ref -20.00 dl           Log         Anno 1           -30.0         Anno 1           -40.0         Anno 1           -60.0         Anno 1           -90.0         Anno 1           -100         Anno 1           -2         F         1         t           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0           -30.0         -30.0         -30.0         -30.0	AC SENSE:INT S PNO: Fast ↔ Trig: Free Run #Atten: 0 dB Bm 42 #VBW 3.0 MHz X Y FU 1.800 ks[(Δ) -31.08 dB	Avg Type: Log-Pwr         TRANSPORT           ΔΜkr1 '         -3           Δ         -3	Mar 07,2018         Marker           E 12.34 5.00         Select Marker, 1           Select Marker, 1         Norma           1.00 cl3         Delta           1/02         Delta           pan 0 Hz         Of           0001 pts)         Of			
Marker 1 Δ 1.80000 ks           10 dE/div         Ref -20.00 dl	AC SENSE:INT S PNO: Fast ↔ Trig: Free Run #Atten: 0 dB Bm 42 #VBW 3.0 MHz X Y FU 1.800 ks[(Δ) -31.08 dB	Avg Type: Log-Pwr         TRANSPORT           ΔΜkr1 '         -3           Δ         -3	Mar 07, 2018 E 12, 24, 55, 65 E 12, 24, 55 E 12,			

EM	TEK
Access to	the World

⊠ RF 50 Ω AC Marker 1 25.1623 ms	PNO: Fast ↔ Trig: Free Run	ALIGN AUTO Avg Type: RMS	02:25:03 PM Mar 07, 2018 TRACE 1 2 3 4 5 6 TYPE WWWWW DET A N N N N N	Peak Search
10 dB/div Ref -20.00 dBn	IFGain:High #Atten: 0 dB	Ν	Ikr1 25.16 ms -65.07 dBm	NextPeal
-30.0				Next Pk Righ
-40.0				Next Pk Lef
-60.0	1			Marker Delta
-70.0 -80.0			and done for the	Mkr→CF
-30.0 Talif, till Minski fanss i teknistet film. De	na n	y standistický král je nevez se nevezyjev man Le bladala je králodní tradi králodní stalodní se	nelene for de la serie de l Serie de la serie de la ser	Mire Defla
-100 1 avri 1, 14 1 14 1 1 11 1				Mkr→RefLv More
Center 5.500000000 GHz Res BW 1.0 MHz	#VBW 3.0 MHz*	Sweep 50.6	Span 0 Hz 7 ms (40001 pts)	1 of 2
MSG		STATUS		
		514105		
· · · · · · · · · · · · · · · · · · ·		314103		
Milent Spectrum Analyzer - Swept SA CA L RF 50 Ω AC Marker 1 Δ 1.80000 ks			08:26:35 AM Mar 07, 2018 TRACE 2 3 4 5 6	Marker
Jeff Agilent Spectrum Analyzer - Swept SA	PNC: Fast +++ IFGain:High Trig: Free Run #Atten: 0 dB	ALIGN AUTO Avg Type: Log-Pwr	TRACE <b>1 2 3 4 5 6</b> TYPE WWWWWW DET N N N N N N	Marker Select Marker
Agilent Spectrum Analyzer - Swept SA           Δ         RE         50.0         AC           Marker 1 Δ         1.800000         Ks           10 dB/div         Ref20.00         dB/div	PNO: Fast Trig: Free Run IFGain:High #Atten: 0 dB	ALIGN AUTO Avg Type: Log-Pwr	08:26:35 AM Mar07, 2018 TRACE 1 2 3 4 5 6 TYPE WARAWAY DET NNNNN OKT 1.800 ks -16.48 dB	Marker
Agilent Spectrum Analyzer - Swept SA           O         L         RF         50 Ω         AC           Marker 1 Δ 1.80000 ks           10 dB/dlv         Ref -20.00 dBm           -30.0         -40.0         -40.0	PNO: Fast Trig: Free Run IFGain:High #Atten: 0 dB	ALIGN AUTO Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE WWWWW DET NNNNN Mkr1 1.800 ks	Marker Select Marker 1
Agilent Spectrum Analyzer - Swept SA           Δ         RF         [50 Ω         AC           Marker 1 Δ 1.80000 ks         Ref -20.00 dBn         -30.0         -40.0<	PNO: Fast Trig: Free Run IFGain:High #Atten: 0 dB	ALIGN AUTO Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE WWWWW DET NNNNN Mkr1 1.800 ks	Marker Select Marker
Δ         Agilent Spectrum Analyzer - Swept SA           Δ         RF         [50 Ω         AC           Marker 1 Δ 1.80000 ks         AC         AC         AC           10 dB/div         Ref -20.00 dBn         AC         AC         AC           -40.0 <td>PNO: Fast Trig: Free Run IFGain:High #Atten: 0 dB</td> <td>ALIGN AUTO Avg Type: Log-Pwr</td> <td>Thece         12:3:4:5:6           Type         0:1:1:0:0:0:0:0           VBR         -16:48 dB</td> <td>Marker Select Marker 1 Normal</td>	PNO: Fast Trig: Free Run IFGain:High #Atten: 0 dB	ALIGN AUTO Avg Type: Log-Pwr	Thece         12:3:4:5:6           Type         0:1:1:0:0:0:0:0           VBR         -16:48 dB	Marker Select Marker 1 Normal
Agilent Spectrum Analyzer - Swept SA           C         L         RF         [50 Ω         AC           Marker 1 Δ 1.80000 ks	PNO: Fast + Trig: Free Run IFGain:High #Atten: 0 dB	ALIGN AUTO Avg Type: Log-Pwr	Thece         12.9.4 5.6           Type         22.4 5.6           OPT         NNNNN           Mkr1 1.800 ks         -16.48 dB          1Δ2        1Δ2           Span 0 Hz        1Δ2	Marker Select Marker 1 Normal Delta Fixed
Agilent Spectrum Analyzer - Swept SA           C         RF         S0 Ω         AC           Marker 1 Δ 1.80000 ks         Ref -20.00 dBn         AC         AC           10 dB/div         Ref -20.00 dBn         AC         AC         AC           200         AC         AC         AC         AC         AC           40.0         AC         AC         AC         AC         AC         AC           40.0         AC         AC <t< td=""><td>PNO: Fast + Trig: Free Run IFGain:High #Atten: 0 dB</td><td>ALIGN AUTO Avg Type: Log-Pwr</td><td>Thace         12.8.4.5.6           Type         true           Det         NNNNNN           Mkr1         1.800 ks           -16.48         dB          </td><td>Marker Select Marker 1 Normal Delta</td></t<>	PNO: Fast + Trig: Free Run IFGain:High #Atten: 0 dB	ALIGN AUTO Avg Type: Log-Pwr	Thace         12.8.4.5.6           Type         true           Det         NNNNNN           Mkr1         1.800 ks           -16.48         dB	Marker Select Marker 1 Normal Delta
Agilent Spectrum Analyzer - Swept SA           C         RF         S0 Ω         Ac           Marker 1 Δ 1.80000 ks         Ref -20.00 dBr         Ac         Ac           10 dB/div         Ref -20.00 dBr         Ac         Ac         Ac           -30.0         -40.0         -50.0         -60.0         -70.0	PNO: Fast + Trig: Free Run IFGain:High #Atten: 0 dB	ALIGN AUTO Avg Type: Log-Pwr	Theorem         22 a 4 5 c           Type         22 a 4 5 c           Type         0 c           NKN1         1.800 ks           -16.48 dB         1.42           1/22         1.42           Span 0 Hz         10 ks (40001 pts)	Marker Select Marker 1 Norma Delta Fixed
Image: Section Analyzer - Swept SA           02         RF         50 Ω         Ac           03         L         RF         50 Ω         Ac           04         L         RF         50 Ω         Ac           05         L         RF         -20.00 dBn           -00         -         -         -         -           -00         -         -         -         -         -           -00         -         <	PNO: Fast → Trig: Free Run IFGain:High #Atten: 0 dB 1 #VBW 3.0 MHz Y FU 1.800 ks (Δ) - 16.48 dB	ALIGN AUTO Avg Type: Log-Pwr	Theorem         22 a 4 5 c           Type         22 a 4 5 c           Type         0 c           NKN1         1.800 ks           -16.48 dB         1.42           1/22         1.42           Span 0 Hz         10 ks (40001 pts)	Marker Select Marker 1 Normal Delta Fixed



## 8.3 IN-SERVICE MONITORING

# UNII Band II-A

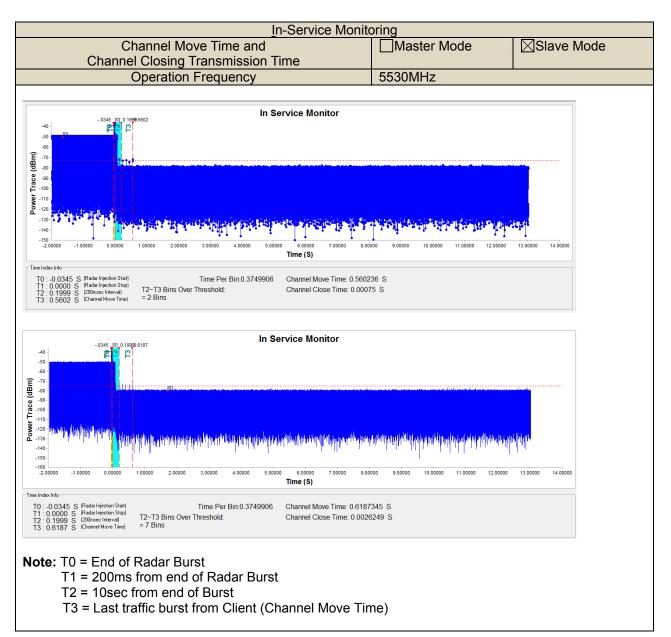
TriaLID	Pulse		Number of	Waveform	Detection(Y/N)
Trial ID	Width(us)	PRI(us)	Pulses	Length(us)	
0	1.0	1428.0	18	25704.0	Y
1	1.0	1428.0	18	25704.0	Y
2	1.0	1428.0	18	25704.0	Y
3	1.0	1428.0	18	25704.0	N
4	1.0	1428.0	18	25704.0	Y
5	1.0	1428.0	18	25704.0	Y
6	1.0	1428.0	18	25704.0	Y
7	1.0	1428.0	18	25704.0	Y
8	1.0	1428.0	18	25704.0	N
9	1.0	1428.0	18	25704.0	Y
10	1.0	1428.0	18	25704.0	Y
11	1.0	1428.0	18	25704.0	Y
12	1.0	1428.0	18	25704.0	Y
13	1.0	1428.0	18	25704.0	Y
14	1.0	1428.0	18	25704.0	Y
15	1.0	1428.0	18	25704.0	Y
16	1.0	1428.0	18	25704.0	Y
17	1.0	1428.0	18	25704.0	Y
18	1.0	1428.0	18	25704.0	Y
19	1.0	1428.0	18	25704.0	Y
20	1.0	1428.0	18	25704.0	Y
21	1.0	1428.0	18	25704.0	Y
22	1.0	1428.0	18	25704.0	Y
23	1.0	1428.0	18	25704.0	Y
24	1.0	1428.0	18	25704.0	Y
25	1.0	1428.0	18	25704.0	Y
26	1.0	1428.0	18	25704.0	N
27	1.0	1428.0	18	25704.0	Y
28	1.0	1428.0	18	25704.0	Y
29	1.0	1428.0	18	25704.0	Y
		<b>Detection Rat</b>	e		90.0%



UNII Band II-C

TriaLID	Pulse		Number of	Waveform	Detection(Y/N)
Trial ID	Width(us)	PRI(us)	Pulses	Length(us)	
0	1.0	1428.0	18	25704.0	Y
1	1.0	1428.0	18	25704.0	Y
2	1.0	1428.0	18	25704.0	Y
3	1.0	1428.0	18	25704.0	Y
4	1.0	1428.0	18	25704.0	N
5	1.0	1428.0	18	25704.0	Y
6	1.0	1428.0	18	25704.0	Y
7	1.0	1428.0	18	25704.0	Y
8	1.0	1428.0	18	25704.0	Y
9	1.0	1428.0	18	25704.0	Y
10	1.0	1428.0	18	25704.0	N
11	1.0	1428.0	18	25704.0	Y
12	1.0	1428.0	18	25704.0	Y
13	1.0	1428.0	18	25704.0	Y
14	1.0	1428.0	18	25704.0	Y
15	1.0	1428.0	18	25704.0	Y
16	1.0	1428.0	18	25704.0	N
17	1.0	1428.0	18	25704.0	Y
18	1.0	1428.0	18	25704.0	Y
19	1.0	1428.0	18	25704.0	Y
20	1.0	1428.0	18	25704.0	Y
21	1.0	1428.0	18	25704.0	Y
22	1.0	1428.0	18	25704.0	Y
23	1.0	1428.0	18	25704.0	Y
24	1.0	1428.0	18	25704.0	Y
25	1.0	1428.0	18	25704.0	Y
26	1.0	1428.0	18	25704.0	Y
27	1.0	1428.0	18	25704.0	N
28	1.0	1428.0	18	25704.0	Y
29	1.0	1428.0	18	25704.0	Y
		<b>Detection Rat</b>	e		86.5%





End of Report