

TEST REPORT



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-00806
Page (1) / (17) Pages

1. Applicant

- Name : SOLUM CO.,LTD.
- Address : 7F, 2354, Yonggu-daero, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
- Date of Receipt : 2024-10-16

2. Manufacturer

- Name : SOLUM CO.,LTD.

3. Use of Report : For FCC Certification & ISED Certification

4. Test sample / Model : Newtowne Eye / EC120THWXC/WWW

5. Date(s) of test : 2026-03-18

Test Standard (Method) used : FCC 47 CFR part 15 subpart C 15.247,

6. ANSI C63.10-2020, RSS-247, RSS-Gen

7. Testing Environment : refer to 7 page

8. Test Results : Compliance

9. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing (Address : 5, Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, 17141 Korea)

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
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Approval	Tested by:		
	Seong-uk Park	(Signature)	
		Technical Manager:	
		Bong-seok Kim	(Signature)

2026-03-24

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REPORT No.:
CTK-2026-00806
Page (2) / (17) Pages

REPORT REVISION HISTORY

Date	Revision	Page No
2026-03-24	Issued (CTK-2026-00806)	all

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REPORT No.:
CTK-2026-00806
Page (3) / (17) Pages

CONTENTS

1. General Product Description	4
1.1 Applicant Information	4
1.2 Manufacturer Information	4
1.3 Product Information	4
1.4 Peripheral Devices	5
2. Accreditations	6
2.1 Laboratory Accreditations and Listings	6
2.2 Calibration Details of Equipment used for Measurement	6
3. Test Specifications	7
3.1 Standards	7
3.2 Testing Environment	7
3.3 Mode of Operation during the Test	7
3.4 Measurement Uncertainty	8
3.5 Test Software	8
4. Technical Characteristic Test	9
4.1 Technical requirements for DFS(5250-5350 MHz and 5470-5725 MHz bands)	9
APPENDIX A – Test Equipment Used For Tests	17

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REPORT No.:
CTK-2026-00806
Page (4) / (17) Pages

1. General Product Description

1.1 Applicant Information

Company	SOLUM CO.,LTD.
Contact Point	7F, 2354, Yonggu-daero, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
Contact Person	Name : Ki Dong Lee E-mail : kdlee007@solu-m.com Tel : +82-31-8006-7677

1.2 Manufacturer Information

Manufacturer	SOLUM CO.,LTD.
Address	7F, 2354, Yonggu-daero, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
Factory #1	SOLUM VINA CO., LTD
Factory #1 Address	Plot B3, Ba Thien II Industrial Park, Thien Ke Ward, Binh Xuyen District, Vinh Phuc Province, VIETNAM

1.3 Product Information

FCC ID	2AFWN-EC120THWXC	
IC	22800-EC120THWXC	
Product Description	Newton Eye	
Model name	EC120THWXC/WWW	
Variant Model name	-	
Operating Frequency	UNII 1	5 180 MHz – 5 240 MHz(20 MHz_BW)
	UNII 2A	5 260 MHz – 5 320 MHz(20 MHz_BW)
	UNII 2C	5 500 MHz – 5 720 MHz(20 MHz_BW)
	UNII 3	5 745 MHz – 5 825 MHz(20 MHz_BW)
RF Output Power	802.11a : 16.80 dBm(47.863 mW)	
	802.11n HT20 : 16.74 dBm(47.206 mW)	
Antenna Specification	Antenna type : Chip Antenna	
	UNII 1	Peak Gain : 4.24 dBi
	UNII 2A	Peak Gain : 4.24 dBi
	UNII 2C	Peak Gain : 2.93 dBi
	UNII 3	Peak Gain : 2.93 dBi
Antenna Configurations	802.11a : SISO 802.11n HT20 : SISO	
Type of Modulation	802.11a/n/ac : OFDM	
Data Rate	802.11a : 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps 802.11n : up to 300 Mbps 802.11ac : up to 867 Mbps	
Power Source	DC 5.0 V	
Software Rev	V36	
Dynamic Frequency Selection	Slave without radar detection	

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REPORT No.:
CTK-2026-00806
Page (5) / (17) Pages

1.4 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	HP	15-bs563TU	CND7253R6N
AC/DC Adapter	HP	HSTNN-LA40	-

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REPORT No.:
CTK-2026-00806
Page (6) / (17) Pages

2. Accreditations

2.1 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	CN : 8737A CAB ID : KR0025
KOREA	NRRA	KR0025

2.2 Calibration Details of Equipment used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

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REPORT No.:
CTK-2026-00806
Page (7) / (17) Pages

3. Test Specifications

3.1 Standards

FCC Part Section(s)	ISED Part Section(s)	Requirement(s)	Limit	Status (Note 1)	Test Condition
15.407 (h)	RSS-247	Dynamic Frequency Selection (DFS)	e.i.r.p < 200 mW) : -62 dBm e.i.r.p (200 mW ~ 1 W) : -64 dBm	C	Conducted
<u>Note 1:</u> C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable					
<u>Note 2:</u> The data in this test report are traceable to the national or international standards.					
<u>Note 3:</u> The sample was tested according to the following specification: FCC Part 15.407, RSS-247 Issue 4, RSS-GEN Issue 5					
<u>Note 4:</u> The tests were performed according to the method of measurements prescribed in KDB No. 905462, ANSI C63.10-2020					

3.2 Testing Environment

Test Item	Test Date	Temperature (°C)	Relative Humidity (%)
Dynamic Frequency Selection (DFS)	2026-03-18	20 ±1	34 ±3

3.3 Mode of Operation during the Test

The EUT is operated in a manner representative of the typical of the equipments.

Test Frequency & Bandwidth

All test were performed at a channel center frequency of 5500 MHz for 20 MHz Bandwidth.

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REPORT No.:
CTK-2026-00806
Page (8) / (17) Pages

3.4 Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.

Coverage factor $k = 2$, Confidence levels of 95 %

Description	Uncertainty
Conducted RF Output Power	1.50 dB (C.L.: Approx. 95 %, $k = 2$)
Time	10.00 % (C.L.: Approx. 95 %, $k = 2$)

3.5 Test Software

Conducted Test	NA
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REPORT No.:
CTK-2026-00806
Page (9) / (17) Pages

4. Technical Characteristic Test

4.1 Technical requirements for DFS(5250-5350 MHz and 5470-5725 MHz bands)

Test Procedures

KDB 905462

**Table 3: DFS Detection Thresholds for Master Devices
and Client Devices with Radar Detection**

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP $\geq$ 200 milliwatt	-64 dBm
EIRP $<$ 200 milliwatt and power spectral density $<$ 10 dBm/MHz	-62 dBm
EIRP $<$ 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
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.	

Table 4: DFS Response Requirement Values

Parameter	Value
<i>Non-occupancy period</i>	Minimum 30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds See Note 1.
<i>Channel Closing Transmission Time</i>	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
<i>U-NII Detection Bandwidth</i>	Minimum 100% of the U- NII 99% transmission power bandwidth. See Note 3.
Note 1: <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel move</i> (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 <i>U-NII Detection Bandwidth</i> 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.	

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REPORT No.:
CTK-2026-00806
Page (10) / (17) Pages

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
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	$\text{Roundup} \left\{ \left(\frac{1}{360} \right), \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\}$	60%	30
		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			
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 (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

Table 5a - Pulse Repetition Intervals Values for Test A

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658
9	1474.9	678
10	1432.7	698
11	1392.8	718
12	1355	738
13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

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REPORT No.:
CTK-2026-00806
Page (11) / (17) Pages

Table 6 – Long Pulse Radar Test Waveform

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

Table 7 – 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

Description

Overview Of EUT With Respect To §15.407 (H) Requirements

The EUT operates over the 5250-5350 MHz and 5470-5725 MHz range.

The EUT is a Client Device that does not have radar detection capability.

The Slave device associated with the EUT during these tests does not have radar detection capability.

All tests are conducted with Pulse Type 0.

A sample with temporary antenna connector was provided to perform the measurements in a conducted way. Iperf was used to generate the required channel load (duty cycle greater than 17%).

The EUT utilizes the 802.11a/n architecture, with a nominal channel bandwidth of 20 MHz.

The Master Device is a **ASUS RT-AX88U** 802.11a/b/g/n/ac/ax WLAN Access Point,
FCC ID: **MSQ-RTAXHP00**

Threshold level is lower than the required level hence it provides margin to the limit.



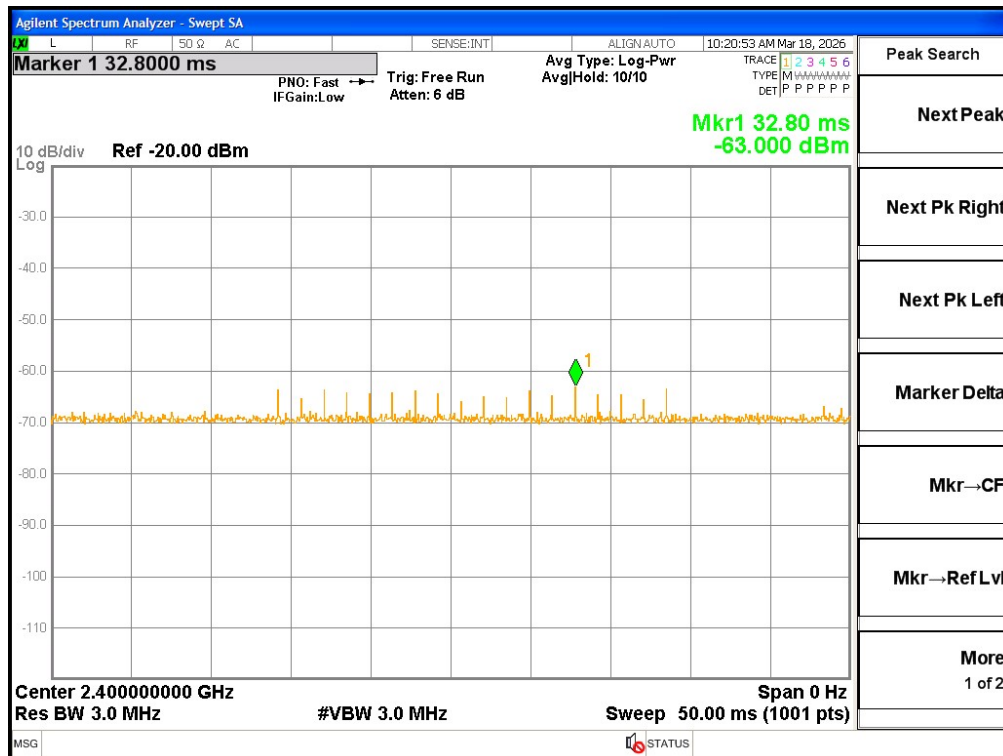
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REPORT No.:
CTK-2026-00806
Page (12) / (17) Pages

Test Results :

Radar waveform, Traffic and Dwell time per bin

Radar Waveform





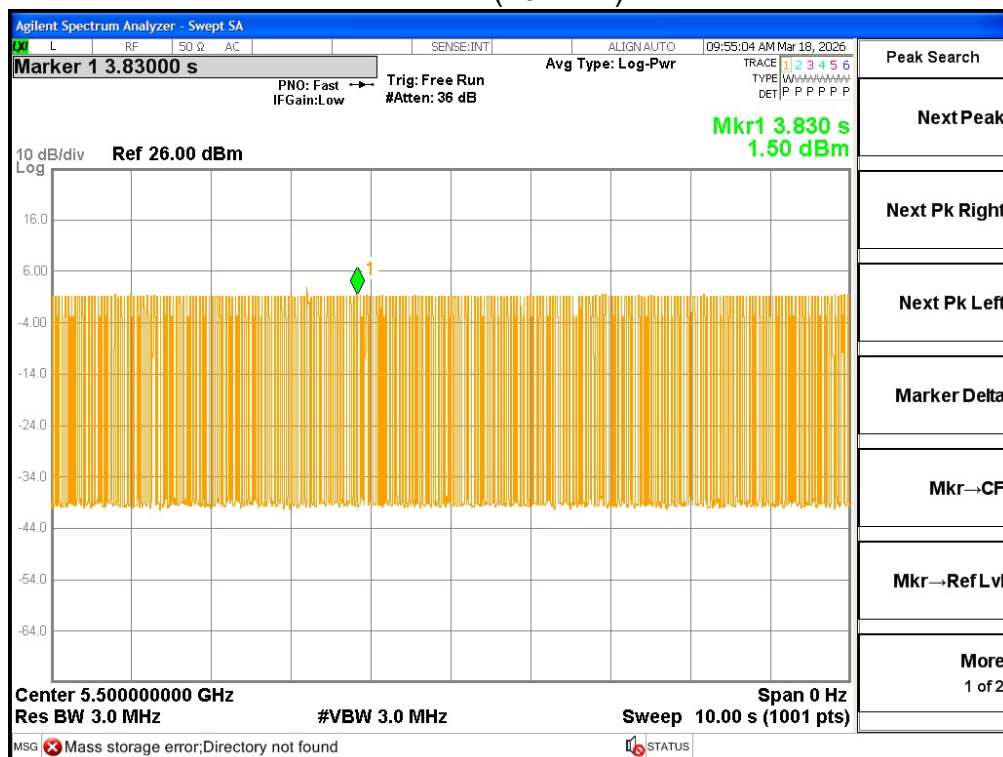
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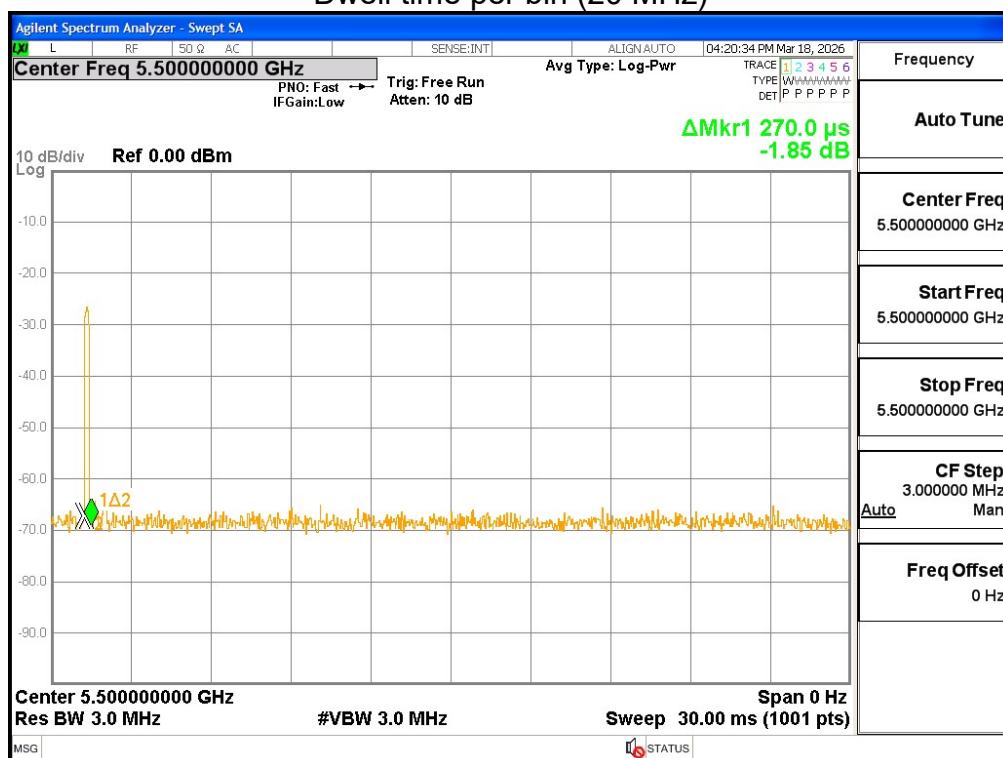
REPORT No.:
CTK-2026-00806
Page (13) / (17) Pages

Traffic and Dwell time per bin

Traffic (20 MHz)



Dwell time per bin (20 MHz)





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REPORT No.:
CTK-2026-00806
Page (14) / (17) Pages

Channel move time and Channel closing Transmission time

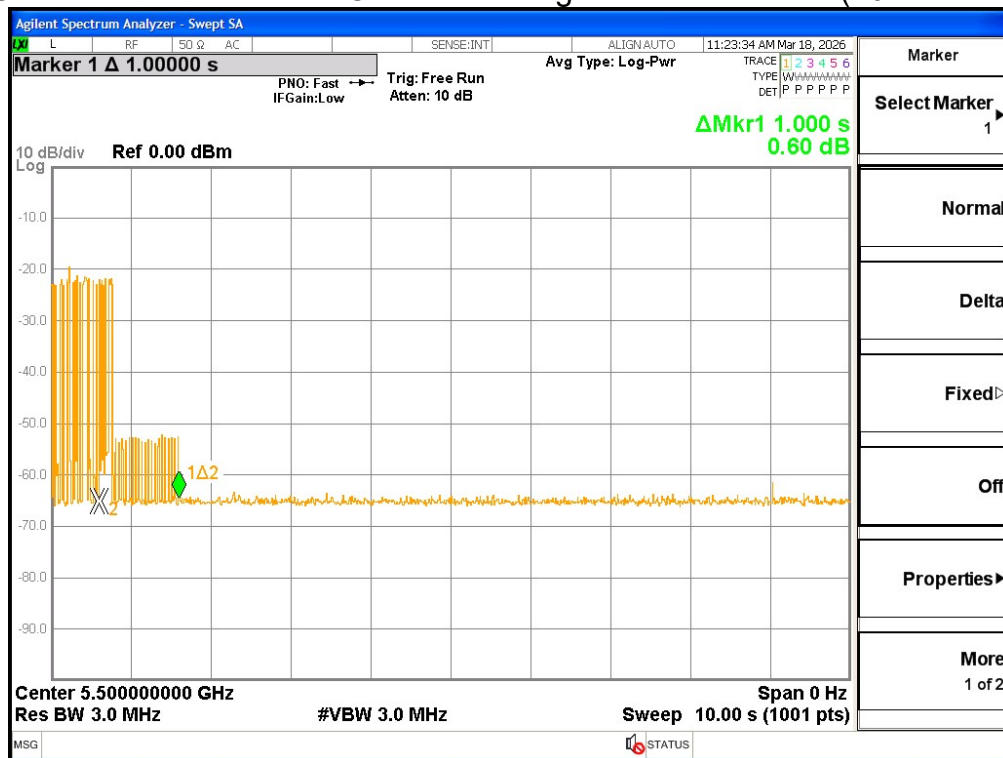
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Channel Move Time (sec)	Limit (sec)
1.000	10

Channel Closing Transmission Time calculated	Test results
Sampling bins	24
Dwell time per bin (msec)	0.27
Closing Transmission Time (msec)	6.48

Channel Closing Transmission Time (msec)	Limit (msec)
6.48	260

Channel Move Time and Channel closing Transmission time(20 MHz BW)



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REPORT No.:
CTK-2026-00806
Page (15) / (17) Pages

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated Begins at

(Reference Marker + 200 msec) and Ends no earlier than (Reference Marker + 10 sec).



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CTK-2026-00806
Page (16) / (17) Pages

Client beacon test

Monitoring live spectrum – Elapse time 10 minutes (20 MHz BW)



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REPORT No.:
CTK-2026-00806
Page (17) / (17) Pages

APPENDIX A – Test Equipment Used For Tests

No	Name of Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Signal Analyzer	Agilent	N9020A	MY50510324	2025-11-25	2026-11-25
2	DUAL DIRECTIONAL COUPLER	HP	11692D	1212A03629	2025-09-18	2026-09-18
3	Vector Signal Generator	Rohde & Schwarz	SMW200A	112267	2025-07-02	2026-07-02

No	Cable	Manufacturer	Model No.	Serial No.	Check Date
1	RF Cable	Junkosha Inc.	MWX221	2008S249	2026-03-18
2	RF Cable	Junkosha Inc.	MWX221	1802S129	2026-03-18
3	RF Cable	Junkosha Inc.	MWX221	1802S137	2026-03-18
4	RF Cable	Junkosha Inc.	MWX221	1802S138	2026-03-18

-END-