

TEST REPORT

Product : Automatic ADAS Calibration
System with Alignment
Trade mark : SmartSafe
Model/Type reference : WAA939
Serial Number : N/A
Report Number : EED32S80694202
FCC ID : 2AYANWAA939
Date of Issue : Sept. 01, 2026
Test Standards : 47 CFR Part 15 Subpart E
Test result : PASS

Prepared for:

SHENZHEN SMARTSAFE TECH CO., LTD.
3F, Building B, Qiao'an Technology Industrial Park, Guanlan, Longhua
New District shenzhen China

Prepared by:

Centre Testing International Group Co., Ltd.
Building C, Hongwei Industrial Park Block 70, Bao'an District,
Shenzhen, China
TEL: +86-755-3368 3668F
AX: +86-755-3368 3385



Compiled by:

Frazer Li

Frazer Li

Approved by:

Aaron Ma

Aaron Ma

Reviewed by:

Keven Tan

Keven Tan

Date:

Sept. 01, 2026

Check No.: 9613020426

1 Test Summary

Test Item	Clause in FCC rules	Result
DFS Detection Threshold	15.407/KDB 905462 5.2	PASS
U-NII Detection Bandwidth	15.407/KDB 905462 7.8.1	N/A
Channel Availability Check Time	15.407/KDB 905462 7.8.2	N/A
Channel Move Time	15.407/KDB 905462 7.8.3	PASS
Channel Closing Transmission Time	15.407/KDB 905462 7.8.3	PASS
Non-Occupancy Period	15.407/KDB 905462 7.8.3	PASS
Statistical Performance Check	15.407/KDB 905462 7.8.4	N/A

Remark:

N/A: In this whole report not application

2 Content

1 TEST SUMMARY	2
2 CONTENT	3
3 GENERAL INFORMATION	4
3.1 CLIENT INFORMATION	4
3.2 GENERAL DESCRIPTION OF EUT	4
3.3 DESCRIPTION OF SUPPORT UNITS	6
3.4 TEST LOCATION	6
3.5 APPLIED STANDARDS	6
4 EQUIPMENT LIST	7
5 DFS TECHNICAL REQUIREMENTS AND RADAR TEST WAVEFORMS	8
5.1 DFS OVERVIEW	8
5.2 DFS DETECTION THRESHOLDS	8
5.3 RADAR TEST WAVEFORMS	9
5.3.1 Short Pulse Radar Test Waveforms	9
5.3.2 Long Pulse Radar Test Waveforms	11
6 TEST REQUIREMENT TEST SETUP	11
7 RADIO TECHNICAL REQUIREMENTS SPECIFICATION	13
8 PHOTOGRAPHS	14

3 General Information

3.1 Client Information

Applicant:	SHENZHEN SMARTSAFE TECH CO., LTD.
Address of Applicant:	3F, Building B, Qiao'an Technology Industrial Park, Guanlan, Longhua New District shenzhen China
Manufacturer:	SHENZHEN SMARTSAFE TECH CO., LTD.
Address of Manufacturer:	3F, Building B, Qiao'an Technology Industrial Park, Guanlan, Longhua New District shenzhen China
Factory:	SHENZHEN SMARTSAFE TECH CO., LTD.
Address of Factory:	3F, Building B, Qiao'an Technology Industrial Park, Guanlan, Longhua New District shenzhen China

3.2 General Description of EUT

Product Name:	Automatic ADAS Calibration System with Alignment
Model No.:	WAA939
Test Model No.:	WAA939
Trade Mark:	SmartSafe
EUT Function:	☐ Outdoor AP ☒ Indoor AP ☐ Fixed P2P AP ☐ Indoor
Operation Frequency:	U-NII-1 & U-NII-2A: 5150-5350MHz U-NII-2C:5500-5700MHz U-NII-3:5745-5825MHz
TPC Function	☒ With TPC Function ☐ Without TPC Function
Weather Band	☐ With 5600-5650MHz ☒ Without 5600-5650MHz
Type of Modulation:	☐ Master ☒ Slaver without radar detection ☐ Slaver with radar detection
Test Power Grade:	Default
Test Software of EUT:	Putty
DFS (Dynamic Frequency Selection) Operational mode:	☐ Master ☒ Slaver without radar detection ☐ Slaver with radar detection
Antenna Configuration:	☒ Single Transmitting; ☒ MIMO (☒ 2T2R, ☐ 3T3R, ☐ 4T4R, ☐ Other);
Antenna Type:	FPC antenna
Antenna Gain:	Ant 1: 3.27dBi Ant 2: 3.53dBi
Power Supply:	DC 12V
Test voltage:	DC 12V
Sample Received Date:	May 11, 2026
Sample tested Date:	May 11, 2026 to Jun. 17, 2026

Operation Frequency each of channel

802.11a/802.11n/802.11ac(20MHz)/802.11ax(20MHz) Frequency/Channel Operations:

U-NII-1		U-NII-2A		U-NII-2C		U-NII-3	
Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	52	5260	100	5500	149	5745
40	5200	56	5280	104	5520	153	5765
44	5220	60	5300	108	5540	157	5785
48	5240	64	5320	112	5560	161	5805
-	-	-	-	116	5580	165	5825
-	-	-	-	120	5600	-	-
-	-	-	-	124	5620	-	-
-	-	-	-	128	5640	-	-
				132	5660		
				136	5680		
				140	5700		

802.11n/802.11ac(40MHz)/802.11ax(40MHz)/ Frequency/Channel Operations:

U-NII-1		U-NII-2A		U-NII-2C		U-NII-3	
Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)
38	5190	54	5270	102	5510	151	5755
46	5230	62	5310	110	5550	159	5795
-	-	-	-	118	5590	-	-
-	-	-	-	126	5630	-	-
				134	5670		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test.

3.3 Description of Support Units

The EUT has been tested with associated equipment below.

3.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164, Test Firm Registration No.: 260439

3.5 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR47 Part 15E Unlicensed National Information Infrastructure Devices

FCC KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

FCC KDB 905462 D03 Client Without DFS New Rules v01r02.

4 Equipment List

RF test system					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Communication test set	R&S	CMW500	107929	06-16-2025 06-15-2026	06-15-2026 06-14-2027
Signal Generator	R&S	SMBV100A	262454	08-11-2025	08-10-2026
Spectrum Analyzer	R&S	FSV40	101200	08-11-2025	08-10-2026
RF control unit(power unit)	MWRF-test	MW100-RFCB	MW220620CTI-42	06-16-2025 05-29-2026	06-15-2026 05-28-2027
high-low temperature test chamber	Dong Guang Qin Zhuo	LK-80GA	QZ20150611879	11-13-2025	11-12-2026
Temperature/Humidity Indicator	biaozhi	HM10	1804186	05-26-2025 05-22-2026	05-15-2026 05-21-2027
BT&WI-FI Automatic test software	MWRF-test	MTS 8310	2.0.0.0	---	---
Digital multimeter	FLUKE	17B MAX	59545050WS	10-15-2025	10-14-2026

5 DFS Technical Requirements and Radar Test Waveforms

5.1 DFS Overview

Table 1 Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	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
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2 Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client without Radar Detection
DFS Detection Threshold	Yes	Not require
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

Note: Frequencies selected for statistical performance check should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.

5.2 DFS Detection Thresholds

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
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 60milliseconds over remaining 10 second period. See Notes 1 and 2
U-NII Detection Bandwidth	Minimum 100% of the UNII99% 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.	

5.3 Radar Test Waveforms

5.3.1 Short Pulse Radar Test Waveforms

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 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	$\text{Roundup} \left\{ \begin{array}{l} \left(\frac{1}{360} \right) \cdot \\ \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \end{array} \right\}$	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 (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.					

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If

more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B.

For example if in Short Pulse Radar Type 1 Test B a PRI of 3066 μ sec is selected, the number of pulses

would be $\text{Roundup} \left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{3066} \right) \right\} = \text{Round up } \{17.2\} = 18$.

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

The aggregate is the average of the percentage of successful detections of Short Pulse Radar Types 1-4. For example, the following table indicates how to compute the aggregate of percentage of successful detections.

Radar Type	Number of Trials	Number of Successful Detections	Minimum Percentage of Successful Detection
1	35	29	82.9%
2	30	18	60%
3	30	27	90%
4	50	44	88%
Aggregate $(82.9\% + 60\% + 90\% + 88\%)/4 = 80.2\%$			

5.3.2 Long Pulse Radar Test Waveforms

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

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type waveforms, then each additional waveform must also be unique and not repeated from the previous waveforms.

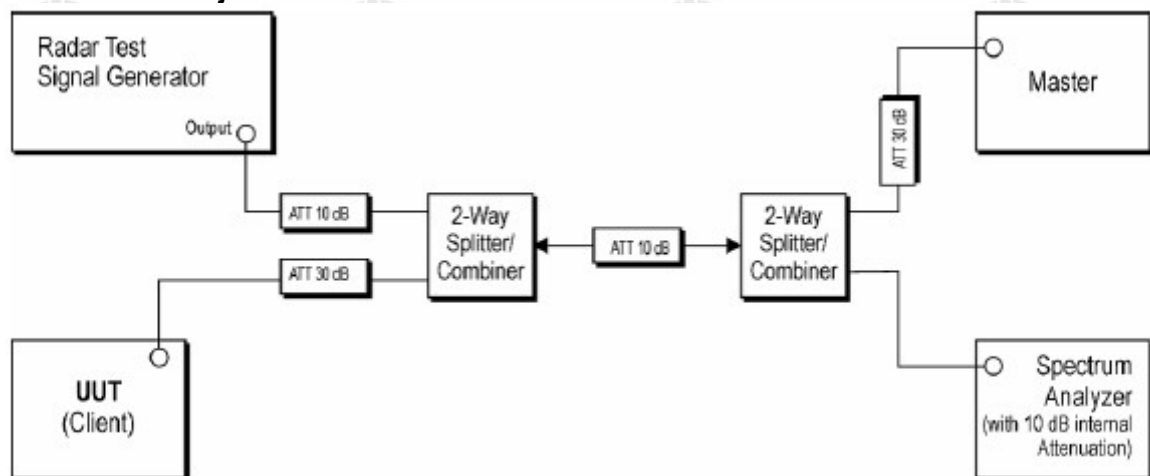
Table 7 – Frequency Hopping Radar Test Waveform

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

For the Frequency Hopping Radar Type, the same Burst parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm: The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

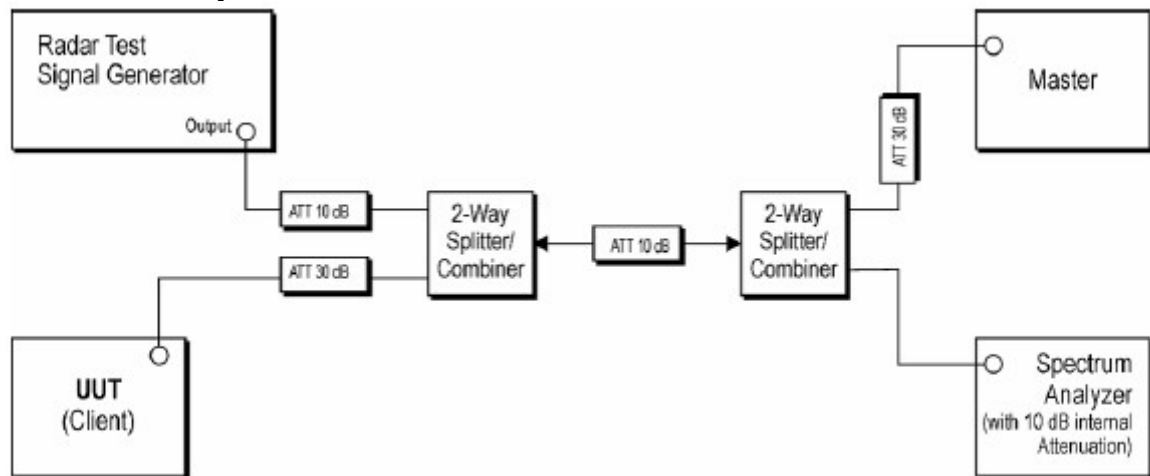
6 Test Requirement Test setup

Setup for Client with injection at the Master



Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Master

Setup for Client with injection at the Client



Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Client.

7 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15E	Subpart C-Intentional Radiators
2	FCC Order, ET Docket No.03-122 (FCC 06-96)	Compliance Measurement Procedures for Unlicensed-National Information Infrastructure Devices Operating in the 5.25-5.35 GHz and 5.47-5.725 GHz Bands Incorporating Dynamic Frequency Selection

Test Results List:

FCC Part15E	Test method	Test item	Operation Mode verdict	Note
			Master	
47 CFR Part 15 Subpart E Section 15.407 (h)(2)(iv)	FCC 06-96	Non-Occupancy Period	PASS	Note 1
47 CFR Part 15 Subpart E Section 15.407 (h)(2)	FCC 06-96	DFS Detection Threshold	PASS	Note 1
47 CFR Part 15 Subpart E Section 15.407 (h)(2)(iii)	FCC 06-96	Channel Closing Transmission Time	PASS	Note 1
47 CFR Part 15 Subpart E Section 15.407 (h)(2)(iii)	FCC 06-96	Channel Move Time	PASS	Note 1

Note 1: Refer to EED32S80694202 Appendix DFS

8 PHOTOGRAPHS

Refer to Appendix Photographs of Report No. EED32S80694101.

Statement

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule stated in ILAC-G8:09/2019/CNAS-GL015:2022;
5. Without written approval of CTI, this report can't be reproduced except in full;

*** End of Report ***