



FCC ID: 2A3MR-OSA-79G-AL  
Report No.: TMWK2111001190KR

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Rev.: 00

**KDB 447498 D03**  
**47 C.F.R. Part 1, Subpart I, Section 1.1310**  
**47 C.F.R. Part 2, Subpart J, Section 2.1091**

## **RF EXPOSURE REPORT**

**For**

**79G RADAR**

**Model: OSA-79G-AL**

**Trade Name: AKT**

Issued to  
**AKASAKATEC INC.**  
**3F, Marina Plaza, 4-2 Shiraho, Kanazawa-ku, Yokohama-shi, Kanagawa, Japan**

Issued by  
**Compliance Certification Services Inc.**  
**Wugu Laboratory**  
**No.11, Wugong 6th Rd., Wugu Dist.,**  
**New Taipei City, Taiwan. (R.O.C.)**  
**Issued Date: November 29, 2021**

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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## Revision History

| Rev. | Issue Date        | Revisions     | Effect Page | Revised By |
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| 00   | November 29, 2021 | Initial Issue | ALL         | Doris Chu  |



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## 1. TEST RESULT CERTIFICATION

### We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. 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, ANSI C63.26, FCC 95.3385 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

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

| APPLICABLE STANDARDS                                                                                                                                |                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| STANDARD                                                                                                                                            | TEST RESULT             |
| KDB 447498 D03<br>47 C.F.R. Part 1, Subpart I, Section 1.1310<br>47 C.F.R. Part 2, Subpart J, Section 2.1091                                        | No non-compliance noted |
| Statements of Conformity                                                                                                                            |                         |
| Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty. |                         |

Approved by:




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Kevin Tsai  
Deputy Manager  
Compliance Certification Services Inc.

## 2. LIMIT

According to §95.3385, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of the chapter.

**TABLE 1 - LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

| Frequency range (MHz)                                   | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|---------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational/Controlled Exposure         |                               |                               |                                     |                          |
| 0.3-3.0                                                 | 614                           | 1.63                          | * 100                               | 6                        |
| 3.0-30                                                  | 1842/f                        | 4.89/f                        | * 900/f <sup>2</sup>                | 6                        |
| 30-300                                                  | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1,500                                               |                               |                               | f/300                               | 6                        |
| 1,500-100,000                                           |                               |                               | 5                                   | 6                        |
| (B) Limits for General Population/Uncontrolled Exposure |                               |                               |                                     |                          |
| 0.3-1.34                                                | 614                           | 1.63                          | * 100                               | 30                       |
| 1.34-30                                                 | 824/f                         | 2.19/f                        | * 180/f <sup>2</sup>                | 30                       |
| 30-300                                                  | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300-1,500                                               |                               |                               | f/1500                              | 30                       |
| <b><u>1,500-100,000</u></b>                             |                               |                               | 1.0                                 | 30                       |

f = frequency in MHz

\* = Plane-wave equivalent power density

Note 1 to Table 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Note 2 to Table 2: General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.



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### 3. EUT SPECIFICATION

|                                       |                                                                                                                                                                                               |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT</b>                            | 79G RADAR                                                                                                                                                                                     |
| <b>Model</b>                          | OSA-79G-AL                                                                                                                                                                                    |
| <b>Model Discrepancy</b>              | N/A                                                                                                                                                                                           |
| <b>Frequency band (Operating)</b>     | <input checked="" type="checkbox"/> 78.1GHz ~ 79.78GHz<br><input type="checkbox"/> Others                                                                                                     |
| <b>Device category</b>                | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)<br><input type="checkbox"/> Others                                      |
| <b>Exposure classification</b>        | <input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> )<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> ) |
| <b>Antenna Specification</b>          | Patch antenna / Gain: 12.01dBi<br>79G Radar Gain : 12.01 dBi (Numeric gain: 15.89) Worst                                                                                                      |
| <b>Maximum Measurement EIRP Power</b> | 79G Radar 19.25 dBm (84.140 mW)                                                                                                                                                               |
| <b>Evaluation applied</b>             | <input checked="" type="checkbox"/> MPE Evaluation*<br><input type="checkbox"/> SAR Evaluation<br><input type="checkbox"/> N/A                                                                |
| <b>Received Date</b>                  | November 10, 2020                                                                                                                                                                             |

**Remark:**

1. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
2. The E.I.R.P power referred the test report TMWK2111001137KR for RF Exposure assessment purpose.

## 4. TEST RESULTS

**No non-compliance noted.**

### Calculation

Given  $E = \frac{\sqrt{30 \times P \times G}}{d}$  &  $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm<sup>2</sup>

## 5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using  $d = 20$  cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where  $P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>

### 79G Radar

| Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----------|--------|-------------|--------|---------------------------------------|----------------|
| 78465.8   | 84.14  | 15.89       | 20     | 0.0167                                | 1              |

--End of Report--