

## RF Exposure Compliance Report

Report No.: M2504018-3v2

### TESTED FOR:

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### ISSUED BY:

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**Product Name:** RedVision Display

**Model:** DISP4300

**FCC ID:** 2BAH6-DISP4300

**Assessment Date(s):** 19 June 2025

**Issue Date:** 29 July 2025

**Specification(s):** **447498 D01 General RF Exposure Guidance v06**  
*RF exposure procedures and equipment authorization policies for mobile and portable devices.*

**47 CFR § 2.1091**  
*Radiofrequency radiation exposure evaluation: mobile devices (Transmitter is more than 20 cm from human body).*

*Based on an assessment of the documentation provided, performed measurements and the declared separation distance from the human body under normal use, the RedVision Display, model: DISP4300 complies with the RF exposure requirements of the standard/s listed above.*

**Assessment Engineer(s):**



Ashish Nath

**Authorized Signatory:**



Razin Ahmed  
Test Engineer



NATA Accreditation No. 5292

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## Revision History

| Version | Issue Date   | Reason / Comments                    |
|---------|--------------|--------------------------------------|
| 1       | 26 June 2025 | Initial issue                        |
| 2       | 29 July 2025 | Page 1, Customer Details are updated |

## General Remarks

EMC Technologies Pty Ltd reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. EMC Technologies Pty Ltd shall have no liability for any deductions, inferences or generalisations drawn by the client or others from EMC Technologies Pty Ltd issued reports. This report shall not be used to claim, constitute or imply product endorsement by EMC Technologies Pty Ltd.

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## 1 Project Overview

### 1.1 Test Facility

Inspections were performed at the following location:

- ☒ Melbourne Laboratory 176 Harrick Road, Keilor Park, Vic 3042
- ☐ Sydney Laboratory Unit 3/87 Station Road, Seven Hills, NSW 2147

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| Country   | Assessment Body | Lab Code / Member No.                |
|-----------|-----------------|--------------------------------------|
| Australia | NATA            | Accreditation Number: 5292           |
| Europe    | European Union  | Notified Body Number: 0819           |
| USA       | FCC             | Designation Number: AU0001/AU0002    |
| Canada    | ISED Canada     | CAB Identifier Number: AU0001/AU0002 |
| Japan     | VCCI            | Company Number: 785                  |
| Taiwan    | BSMI            | Lab Code SL2-IN-E-5001R              |

### 1.2 Standards Applied

Unless otherwise noted, only the cited edition applies.

#### **KDB 447498 D01 General RF Exposure Guidance v06**

RF exposure procedures and equipment authorization policies for mobile and portable devices

#### **47 CFR § 2.1091**

Radiofrequency radiation exposure evaluation: mobile devices (Transmitter is more than 20 cm from human body)

\*Latest version of the standard applied.

### 1.3 Measurement Uncertainty

EMC Technologies has evaluated the tools and methods used to perform Radiated Electromagnetic Field predictions. The estimated measurement uncertainties shown within this report are as follows:

| EMC Testing                                      | Range             | Value   |
|--------------------------------------------------|-------------------|---------|
| <b>Broadband Radiated Electromagnetic Fields</b> | 9 kHz to 45.5 GHz | ±3.0 dB |
| <b>Electromagnetic Modelling</b>                 | 30 MHz to 100 GHz | ±2.8 dB |

The above expanded uncertainties are based on standard uncertainties multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

## 2 Device Details

### 2.1 Host Device Details

(Information supplied by the customer)

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Name:</b>                | RedVision Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Model:</b>                       | DISP4300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Manufacturer:</b>                | REDARC Technologies Pty Ltd                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Sample No / Identification::</b> | S01957                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>HW Version:</b>                  | RCU1-10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Description:</b>                 | The DISP4300 can be used as a replacement or secondary display for TVMS Rogue and TVMS Prime. The display uses a modern, user-friendly interface and features an easy-to-understand menu. The robust display has been built and tested to withstand tough and varied environmental conditions and allows you to control multiple on-board devices as well as have visibility of water tank levels and battery power when paired with a REDARC Manager battery management system. In-built Bluetooth Low Energy (BLE) provides a connection from your RedVision system to the RedVision app on a compatible mobile device. |

### 2.2 Radio Transmitter Details

(Information supplied by the customer)

| Transmitter #1 - BLE                           |                        |
|------------------------------------------------|------------------------|
| <b>Radio Chip Manufacturer:</b>                | Nordic Semiconductor   |
| <b>Module:</b>                                 | nRF52833               |
| <b>Operating Frequency:</b>                    | 2400 – 2483.5 MHz      |
| <b>Maximum RF Output Power:</b>                | 5.75 dBm               |
| <b>Antenna Type:</b>                           | PCB Inverted F antenna |
| <b>Maximum Antenna Gain:</b>                   | 1.1 dBi                |
| <b>Distance from human body in normal use:</b> | Greater than 20cm      |

### 2.3 Reference Document

| No. | Document Title                                                                                                      | Issue No.     |
|-----|---------------------------------------------------------------------------------------------------------------------|---------------|
| 1   | Radio Test Report No: M2504018-1<br>(FCC PART 15, SUBPART C, SECTION 15.247,<br>ISED RSS-247, Issue 3, SECTION 5.0) | Initial issue |

### 3 Evaluation of Radio Exposure Assessment

This assessment does not include accumulated RF fields from nearby sites/antennas or possible radio signal reflections or attenuation due to buildings or the general environment.

Antenna Parameters and power settings were supplied by the customer.

The following assumptions applied:

- A 100% duty cycle is assumed.
- The aperture of the radiating element assumed to be a point source in free space and far field conditions.

#### 3.1 FCC Requirement

##### 3.1.1 Applicable Limit

| Limits for maximum permissible exposure (MPE), §1.1310  |                               |                               |                                     |                          |
|---------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| 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                       |
| 1,500-100,000                                           |                               |                               | 1.0                                 | 30                       |

f = frequency in MHz \* = Plane-wave equivalent power density

## 3.2 Calculation

The following formula was used to calculate the power density at 20 cm:

$$S = \frac{P * G}{4\pi R^2}$$

$$S = \frac{EIRP}{4\pi R^2}$$

Where

(S): Power density (W/m<sup>2</sup>)

(P): Output power at antenna terminal (W)

(G): Gain (ratio)

(R): Minimum separation distance (20 cm)

| Technology                                                   | Frequency Band (MHz) | Power      | Gain       | Duty Cycle | EIRP       | EIRP      | Flux Density at 20 cm | Flux Density limit | Percentage of the GP limit |
|--------------------------------------------------------------|----------------------|------------|------------|------------|------------|-----------|-----------------------|--------------------|----------------------------|
|                                                              |                      | <i>dBm</i> | <i>dBi</i> | %          | <i>dBm</i> | <i>mW</i> | <i>mW/cm^2</i>        | <i>mW/cm^2</i>     | %                          |
| BLE                                                          | 2400                 | 5.75       | 1.1        | 100%       | 6.85       | 4.84172   | 0.00096               | 1                  | 0.10%                      |
| Worst Case Percentage of the limit for transmission at 20 cm |                      |            |            |            |            |           |                       |                    | 0.10%                      |

-- END OF REPORT --