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RF Radiation Exposure Evaluation

In accordance with:

FCC KDB 447498 D01 v06

Automatic Technology Australia Pty. Ltd.

WC-100v1

DAVE (Industrial/commercial doors/gates operator) – Wall Console

FCC ID: X4K-CCW03103

REPORT: E2506-1852-3

DATE: September, 2025



RF Radiation Exposure Evaluation Report

EMC Bayswater Test Report: E2506-1852-3
Issue Date: September, 2025

Product: DAVE (Industrial/commercial doors/gates operator) – Wall Console
Model No: WC-100v1
Serial No: Not stated
FCC ID: X4K-CCW03103

Customer Details: Mr. Nikolai Klepikov
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Standard(s): FCC KDB 447498 D01 v06
RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES
FOR MOBILE AND PORTABLE DEVICES
CFR47 FCC Part 2, Subpart J, 2.1091
Radiofrequency radiation exposure evaluation: mobile devices.
CFR47 FCC Part 2, Subpart J, 2.1093
Radiofrequency radiation exposure evaluation: portable devices.

Results Summary: RF Radiation exposure requirements **Complied**

Test Date(s): 21st August, 2025

Test House (Issued By): EMC Bayswater Pty Ltd
18/88 Merrindale Drive
Croydon South, Victoria, 3136, Australia
FCC Accredited Test Firm Registration number: 527798
FCC Accredited Test Firm Designation number: AU0004

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The Automatic Technology Australia Pty. Ltd., WC-100v1, DAVE (Industrial/commercial doors/gates operator) – Wall Console, measured EIRP is below the SAR exception threshold (5mm distance) and the calculated power density level at a distance of 20cm are below the maximum levels allowed by regulations therefore complied with the requirements of CFR47 FCC Part 2, Subpart J, 2.1091.

This is to certify that the necessary evaluations were made by EMC Bayswater Pty Ltd, and that the Automatic Technology Australia Pty. Ltd., WC-100v1, DAVE (Industrial/commercial doors/gates operator) – Wall Console, has been tested in accordance with requirements contained in the appropriate commission regulations.

Prepared by:

Approved by:



Adnan Zaman
(EMC Test Engineer)



Neville Liyanapatabendige
(Manager)

11/09/2025 14:17

Date

RF Radiation Exposure Evaluation *for* Automatic Technology Australia Pty. Ltd.

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1. Introduction

RF Radiation Exposure evaluation was performed on a Automatic Technology Australia Pty. Ltd., WC-100v1, DAVE (Industrial/commercial doors/gates operator) – Wall Console in accordance with CFR47 FCC Part 2, Subpart J, 2.1091.

2. Test Report Revision History

None

3. Report Information

EMC Bayswater Pty Ltd reports apply only to the specific samples tested under the stated test conditions. All samples tested were in good operating condition throughout the entire test program unless otherwise stated. EMC Bayswater Pty Ltd does not in any way guarantees the later performance of the product/equipment. It is the manufacturer's responsibility to ensure that additional production units of the tested model are manufactured with identical electrical and mechanical components. EMC Bayswater Pty Ltd shall have no liability for any deductions, inference or generalisations drawn by the clients or others from EMC Bayswater Pty Ltd issued reports. This report shall not be used to claim, constitute or imply product endorsement by EMC Bayswater Pty Ltd. This report shall not be reproduced except in full, without the written approval of EMC Bayswater Pty Ltd. This document may be altered or revised by EMC Bayswater Pty Ltd personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by EMC Bayswater Pty Ltd will nullify the document.

4. Product Details

4.1. Product Sample Details

The device, as supplied by the client, is described as follows:

Product:	DAVE (Industrial/commercial doors/gates operator) – Wall Console			
Model No:	WC-100v1			
Serial No:	Not stated			
Firmware:	Not stated			
Software:	Not stated			
Power Specifications:	3.6VDC battery			
Dimensions:	135x82x115 mm		(Length x Width x Height)	
Weight:	< 1kg			
EUT Type:	Wall mounted, tested as table-top			
Transmitter 1 details:	Description:	Wall console WC-100V1		
	Type:	Remote control		
	Modulation:	FSK-OOK		
	Channels:	433.47MHz, 433.92MHz and 434.37MHz		
	Max power:	-2.0dBm measured EIRP		
	Antenna:	PCB loop antenna		
Transmitter 2 details:	Description:	Wall console WC-100V1 BLE transceiver module		
	Type:	BLE	FCC ID:	2ABU6-MS88SF2
	Frequency range:	2402-2480 MHz	IC:	20896-MS88SF2
	Max power:	3 dBm	CE mark:	Yes
	Antenna:	PCB antenna	RCM Logo:	No

(Customer supplied product information)

4.2. Product description

The device has been described by the customer as follows:

“DAVE is a door/gate operator that delivers extraordinary power and reliability in industrial and commercial applications. DAVE has the capacity to lift very large roller shutter doors as well as high friction wind rated doors. The slim fit chassis fits in tight spaces in garages and sheds and features a range of options and accessories to suit your unique needs.

The DAVE operator is an electro-mechanical device for opening and closing industrial and commercial doors automatically. This operator is a self-contained unit comprising a motor and control electronics. The DAVE contains internal microprocessor technology, clocks, memory and digital electronics. The DAVE operator is controlled by the WC-100V1 wall-mounted wireless transmitter (wall console).”

(Customer supplied product description information)

5. SAR and RF Exposure exception evaluation

5.1. SAR exception evaluation

As per Appendix A of KDB 447498 D01 General RF Exposure Guidance v06

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

SAR test exclusion threshold for 433.4MHz to 434.4MHz transmitter is 22.5mW for 5mm distance.

- The Measured maximum EIRP is 0.627mW (Worst-case, Without Duty Cycle correction factor).

(The measurement uncertainty was calculated at ± 4.65 dB. The reported uncertainty is an expanded uncertainty calculated using a coverage factor of approximately $k=2$ which gives a level of confidence of approximately 95%).

The measured EIRP is below the SAR exception threshold for 5mm distance.

5.2. RF Exposure Evaluation (MPE)

As per section 1.1310 of CFR 47 following Maximum Permissible Exposure (MPE) limits are applicable.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	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 ²	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 ²	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

Limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields for 433.9MHz as per Table 1 of Section 15.1310 is 0.289 mW/cm² (General Population/Un-controlled).

Prediction Worst case:

Using equation

$$S = PG / 4\pi R^2$$

where: S = Power density

P = Power input to the antenna

G = Antenna gain

R = Distance to the center of radiation of the antenna

Band	Maximum EIRP (dBm)	Maximum EIRP (mW)	Distance (cm)	Calculated Power Density at 20cm (mW/cm ²)	Power Density Limit** (mW/cm ²)	Percentage of Limit %
434.442MHz	-2.029	0.627	20	0.000124	0.289	0.043
2.4GHz BLE	+3.0 [#]	2.0	20	0.000397	1.0	0.039
The total percentage of the limits at 20 cm for simultaneous transmission:						0.082

*Worst-case, Without Duty Cycle correction factor

[#]Customer declared maximum power

** MPE limit for General Population/Un-controlled exposure

Table 1: Results for MPE Evaluation

6. Conclusion

The measured EIRP is below the SAR exception threshold (5mm distance) and the calculated power density level at a distance of 20cm are below the maximum levels allowed by regulations.