

Eurofins E&E UK Grangemouth Laboratory

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Issued to: -	D-TACQ Solutions Ltd	Order No.		
	International House			
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	G72 0BN			

Electromagnetic Compatibility Test/s were performed on the apparatus as detailed: -							
Description	Data acquisition system comprising of a carrier with a number of peripheral DAC, ADC and i/o devices held in carrier slots within the system enclosure.						
Type number	ACQ2206						
Serial Number/s	1						
Configuration/ Mode of Operation	Loopback configuration tests DACs and ADCs for any degradation in the signal from input data (from Laptop PC to carrier) transmitted to the DAC outputs which are connected to the ADC inputs. ADC output data is subsequently transmitted via the carrier back to the laptop PC for display using CS-Studio.						
Date received	30 th June 2023	Date Tested	30 th June 2023 – 10 th July 2023				
Specification/s	47CFR Part 15	Sub Part B Unintentional Radiators					

The apparatus to which this certificate relates was tested against the above specifications. Full results are retained on file at Eurofins E&E UK Ltd, Grangemouth laboratory. The apparatus was found to be compliant to the above specifications subject to the following conditions:

UKAS Accreditation

Tests marked "Not UKAS Accredited" in this certificate are not included in the UKAS Accreditation Schedule for our laboratory. Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.

EUT Submitted

These results apply only to the particular EUT submitted, in the configuration used and in the mode of operation tested.

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Tested by: -

EEUKv1.1.23

P Rosa, Senior Test Engineer

Approved signatory: -

Dr D. Bozec, Laboratories Director

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EMC FORM 044 Issue 36





Abnormalities/Departures from Standard Conditions

The test standards used reference dated and undated basic standards. Where amendments to the standards have been used, these are indicated.

Tests Referenced

47CFR Part 15, Sub Part B Unintentional Radiators; Conducted and Radiated Emission Limits

Which references the following specification: -

ANSI C63-4: 2014 Methods of Measurements of Radio Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range 9kHz to 40GHz.

Test	Levels	Result						
Class B device								
Clause 15.107		0.15-0.5MHz	66-56dBμV QP	Pass				
Conducted Emissions		0.5-5MHz	56dBμV QP					
		5-30MHz	60dBμV QP					
		0.15-0.5MHz	56-46dBμV Ave					
		0.5-5MHz	46dBμV Ave					
		5-30MHz	50dBμV Ave					
Clause 15.109		30-88MHz	40.0dBμV/m QP	Pass				
Radiated Emissions		88-216MHz	$43.5 dB\mu V/m QP$					
		216-960MHz	46.0dBμV/m QP					
		>960MHz	54.0dBμV/m QP					
Clause 15.109		>1GHz	74dBμV/m Peak	Pass				
Radiated Emissions			54 dBμV/m Ave					
(1-5GHz)								
(see Note below)								
Note: Highest EUT operating frequency:	108 – 500MHz	X = 2000MHz						
	500 – 1000MHz	X = 5000MHz						
	>1000MHz	X = 5 x Highes	X = 5 x Highest frequency or 40GHz whichever is					

Maximum EUT clock speed of 533MHz, therefore highest frequency of measurement is: 5GHz

Eurofins E&E UK Ltd (Grangemouth Laboratory) is an accredited laboratory for measuring devices subject to Declaration of Conformity (DOC) and Certification under the FCC rules.

The laboratory designation number is UK2018 under the US-UK MRA.

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Note - The Decision Rule is applied on the basis of the following:

Opinions/Interpretations/Additional information

EMC testing - CISPR16-4-2 and/or EN61000-4-x (TR61000-1-6)

These standards provide guidance on how to calculate and apply measurement uncertainty whilst providing maximum uncertainties allowance. In all cases due consideration will be given to JCGM 106:2012, ILAC-G8:09/2019 and LAB 48.

This laboratory has demonstrated by calibrating its equipment and facilities, and calculating its own uncertainties, that it complies with the above requirements and therefore no allowance of uncertainties has been given to the tolerances.

Where a result is considered marginal in respect of its proximity to the limit line, for example, the customer would be made aware of situation so that they can make an informed decision on how to proceed.

None	
	End of Certificate

Appendix 1

Uncertainty of measurement

MEASUREMENT UNCERTAINTIES

Conducted emissions

Power ports

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 % is

+/- 3.44dB for the frequency range from 150kHz to 30MHz

Radiated emissions

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95% is

- +/- 4.9dB for the frequency range 30MHz to 1GHz
- +/- 5.22dB for the frequency range from 1GHz to 6GHz

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