



Certificate # 3331.02



Test Report – Products
Prüfbericht - Produkte

Test Report No.: Prüfbericht-Nr.:	US23B20D.001 Rev1.0	Order No.: Auftrags-Nr.:	P00979800 234051140	Page 1 of 28 Seite 1 von 28
Client Reference No.: Kunden-Referenz-Nr.:	2218280	Order date: Auftragsdatum:	2/10/2023	
Client: Auftraggeber:	Hunter Douglas Window Fashions, Inc 1 Duette Way Broomfield, CO 80020, U.S.A.			
Test item: Prüfgegenstand:	Powerview Gen3 Motor Control Board			
Identification/ Type No.: Bezeichnung / Typ-Nr.	1016000017			
Order content: Auftrags-Inhalt:	Electromagnetic Compatibility (EMC) Test Report			
Test specification: Prüfgrundlage:	FCC 47 CFR Part 15 Subpart B: 2023, ICES-003: 2020			
Date of sample receipt: Wareneingangsdatum:	11/7/2023			
Test sample No.: Prüfmuster-Nr.:	1012000421			
Testing period: Prüfzeitraum:	3/30/2023- 4/5/2023			
Testing laboratory: Prüflaboratorium:	TUV Rheinland of North America 5015 Brandin Ct. Fremont, CA 94538			
Test result*: Prüfergebnis*:	Pass			
tested by: Osvaldo Casorla geprüft von:	authorized by: Rachana Khanduri genehmigt von:			
Date: 4/18/2023 Datum:	Issue Date: 4/18/2023 Ausstellungsdatum:			
Position / Stellung: Expert	Position / Stellung: Expert			
Others / Sonstiges:				
Condition of the test item at delivery: Zustand des Prüfgegenstandes bei Anlieferung: Test sample complete and undamaged				
* Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested * Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet				
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark. Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.				

TÜV Rheinland of North America, Inc., 5015 Brandin Ct., Fremont, CA 94538, USA
Mail: info@us.tuv.com · Web: www.tuv.com

FCC ID: UXUMOTG3

IC ID: 7316A-MOTG3

Prüfbericht-Nr. US23B20D.001 Rev1.0 Test report no.:			Seite 2 von 28 Page 2 of 28
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen / Measuring results - Remarks	Ergebnis Result
1	The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request. <i>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.</i> <i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i>		
2	As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. <i>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</i>		
3	Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report. <i>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.</i> <i>Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</i>		
4	The test results contained in this report refer exclusively to the product(s) presented for testing. No liability may be assumed for models or products not referred to herein. This test report may not be published or duplicated in part without permission of the testing body. This test report by itself does not constitute authorization for the use of any TÜV Rheinland test mark. The report must not be used by the client to claim product certification, approval, or endorsement by A2LA.		
5	TÜV Rheinland testing laboratories apply the Zero Guard Band rule unless otherwise required by the accreditation, standard, or requested by the customer as part of the quotation. For the Zero Guard Band rule, the measurement uncertainty is not considered and will also not be declared in the test report. Should the measurement uncertainty be used to provide guard band, these values will be declared in the test report.		
6	Electromagnetic Compatibility Test Report. The above product was found to be Compliant to the above test standard(s).		

Test report no. US23B20D.001 Rev1.0

Page 3 of 28
Seite 3 von 28

Prüfbericht-Nr.:

Product description
Produktbeschreibung

1	Product details: <i>Produktdetails:</i>	BLE 1Mbps, 2Mbps
2	Dimensions / Weight: <i>Maße / Gewicht:</i>	5 cm x 5 cm x 1 cm / 1g
3	Operating elements: <i>Bedienelemente:</i>	3.3 VDC, 1.5 A
4	Equipment / Accessories: <i>Ausstattung / Zubehör:</i>	None
5	Used materials: <i>Verwendete Materialien:</i>	Two other PCBAs attached. These boards are not transmitters but should stay attached to represent worst-case-scenario.
6	Other: <i>Sonstiges:</i>	Test sample(s), as well sample information, description, product details and intended usage was provided by customer.
7	Test sample obtaining: <i>Prüfmusterbereitstellung:</i>	☒ Sending by customer ☐ Sampling by TÜV Rheinland Group ☐ others:

Test report no. US23B20D.001 Rev1.0

Page 4 of 28
Seite 4 von 28

Prüfbericht-Nr.:

Revisions

Date mm/dd/yy	Name	Page Number of Change	Describe Change
1.0	4/18/2023	Original Report	OC

Test report no. US23B20D.001 Rev1.0

Page 5 of 28
Seite 5 von 28

Prüfbericht-Nr.:

TABLE OF CONTENTS

1	General Information	6
1.1	Scope	6
1.2	Purpose.....	6
1.3	Summary of Test Results	7
1.4	Special Accessories	7
1.5	Equipment Modifications	7
2	Laboratory Information	8
2.1	Accreditations & Endorsements	8
2.2	Test Software	9
2.3	Measurement Uncertainty	9
2.4	Calibration Traceability	10
2.5	Measurement Equipment Identification	11
3	Product Information	12
3.1	Test Plan	12
4	Emissions.....	15
4.1	Radiated Emissions.....	15
4.2	Conducted Emissions	20
	Appendix A.....	24
5	Test Plan.....	24
5.1	General Information.....	24
5.2	Model(s) Name	24
5.3	Type of Product	24
5.4	Equipment Under Test (EUT) Description	25
5.5	Wireless	25
5.6	Testing Preparation	25
5.7	General Product Information.....	25
5.8	Modifications	25
5.9	EUT Electrical Power Information	26
5.10	EUT Modes of Operation during Testing	26
5.11	EUT Clock/Oscillator Frequencies	27
5.12	Electrical Support Equipment	27
5.13	Non - Electrical Support Equipment	27
5.14	EUT Equipment/Cabling Information	27
5.15	EUT Configuration	27
5.16	Block Diagram	Error! Bookmark not defined.

Test report no. US23B20D.001 Rev1.0

Page 6 of 28
Seite 6 von 28

Prüfbericht-Nr.:

1 General Information

1.1 Scope

This report is intended to document the status of conformance with the requirements of the FCC 47 CFR Part 15 Subpart B: 2023, ICES-003: 2020 based on the results of testing performed on the Powerview Gen3 Motor Control Board, Model Number: 1016000017, manufactured by Hunter Douglas Window Fashions, Inc. This report only applies to the specific samples tested under the stated test conditions. It is the responsibility of the manufacturer to assure that additional production units of this model are manufactured with identical or EMI equivalent electrical and mechanical components.

1.2 Purpose

Testing was performed to evaluate the EMC performance of the EUT (Equipment Under Test) in accordance with the applicable requirements, procedures, and criteria defined in the application of regulations and application of standards listed in this report.

Test report no. US23B20D.001 Rev1.0

Page 7 of 28
Seite 7 von 28

Prüfbericht-Nr.:

1.3 Summary of Test Results

Applicant:	Hunter Douglas Window Fashions, Inc 1 Duette Way Broomfield, CO 80020, U.S.A.	Tel:	720-778-0205	Contact:	Mike Rockwood		
		Fax:	N/A	e-mail:	mike.rockwood@hunterdouglas.com		
Description:	Powerview Gen3 Motor Control Board	Test Voltage/Freq.:		3.3 VDC			
Model Number:	1016000017						
Serial Number:	1012000421	Test Engineer:		Osvaldo Casorla			
Standards		Description		Severity Level or Limit		Criteria	Test Result
FCC 47 CFR Part 15 Subpart B: 2023, ICES-003: 2020		Radiated Emissions		Class B, 30 - 1000 MHz		Limit	Complies
FCC 47 CFR Part 15 Subpart B: 2023, ICES-003: 2020		Conducted Emissions		Class B, 150 kHz - 30 MHz		Limit	Complies

1.4 Special Accessories

The 2.4 GHz notch filter was used to protect the front end of the pre-amp.

1.5 Equipment Modifications

None

2 Laboratory Information

2.1 Accreditations & Endorsements

2.1.1 US Federal Communications Commission

TUV Rheinland of North America EMC test facilities located at 1279 Quarry Lane, Ste. A, Pleasanton, CA, 94566, and 5015 Brandin Ct, Fremont Ca., 94538, are recognized by the Commission for performing testing services for the general public on a fee basis. These laboratory test facilities have been fully described in reports submitted to and accepted by the FCC (Pleasanton Registration No. US1131, Fremont Registration No. US1131). The laboratory Scopes of Accreditation include Title 47 CFR Parts 15, 18 and 90. The accreditations are updated every three years.

2.1.2 A2LA

TUV Rheinland of North America EMC test facilities are accredited by the American Association for Laboratory Accreditation (A2LA). The laboratories have been assessed and accredited by A2LA in accordance with ISO Standard 17025:2017 (Testing Certificate #3331.02). The Scope of Laboratory Accreditation includes emission and immunity testing. The accreditations are updated annually.

2.1.3 Industry Canada

The Pleasanton 5-meter Semi-Anechoic Chamber, Registration No. 2932M, has been accepted by Industry Canada to perform testing to 3 and 5 meters based on the test procedures described in ANSI C63.4-2014. The Fremont 10-meter Semi-Anechoic Chamber, Registration No. 2932D, has been accepted by Industry Canada to perform testing to 3 and 10 meters based on the test procedures described in ANSI C63.4-2014.

2.1.4 Japan – VCCI

The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) is a group that consists of Information Technology Equipment (ITE) manufacturers and EMC test laboratories. The purpose of the Council is to take voluntary control measures against electromagnetic interference from Information Technology Equipment, and thereby contribute to the development of a socially beneficial and responsible state of affairs in the realm of Information Technology Equipment in Japan. TUV Rheinland of North America EMC test facilities located at 1279 Quarry Lane, Ste. A, Pleasanton, CA, 94566, and 5015 Brandin Ct, Fremont Ca., 94538, have been assessed and approved in accordance with the Regulations for Voluntary Control Measures.

VCCI Registration No. for Pleasanton: A-0399

VCCI Registration No. for Fremont: A-0398

2.1.5 BSMI

Registration No.: SL2-IN-E-1150R. The BSMI accreditation was obtained by NIST MRA with the BSMI

2.1.6 Korea

(Designation No.: US0185). Recognized by National Radio Research Agency (RRA) as an accredited Conformity Assessment Body (CAB) under the terms for Korea Phase I of the APEC TEL.

2.2 Test Software

Manufacturer	Name	Version	Test
Rohde & Schwarz	EMC32	10.50.00	Radiated & Conducted Emissions
Voltech	IEC61000-3	1.26.13	Harmonic and Flicker Emissions
CEWare	CEWare32	4	Surge, EFT, and VDI
ETS-Lindgren	Tile	V 7.1.4.10	Radiated Immunity

2.3 Measurement Uncertainty

Two types of measurement uncertainty are expressed in this report, per *ISO Guide To The Expression Of Uncertainty In Measurement*, 1st Edition, 1995.

The Combined Standard Uncertainty is the standard uncertainty of the result of a measurement when that result is obtained from the values of a number of other quantities, equal to the positive square root of a sum of terms, the terms being the variances or co-variances of these other quantities weighted according to how the measurement result varies with changes in these quantities. The term standard uncertainty is the result of a measurement expressed as a standard deviation.

The Expanded Uncertainty defines an interval about the result of a measurement that may be expected to encompass a large fraction of the distribution of values that could reasonably be attributed to the measurand. The fraction may be viewed as the coverage probability or level of confidence of the interval.

2.3.1 Sample Calculation – radiated & conducted emissions

The field strength is calculated by subtracting the Amplifier Gain and adding the Cable Loss and Antenna Correction Factor to the measured reading. The basic equation is as follows:

$$\text{Field Strength (dB}\mu\text{V/m)} = \text{RAW} - \text{AMP} + \text{CBL} + \text{ACF}$$

Where: RAW = Measured level before correction (dB μ V)

AMP = Amplifier Gain (dB)

CBL = Cable Loss (dB)

ACF = Antenna Correction Factor (dB/m)

$$\mu\text{V/m} = 10^{\frac{\text{dB}\mu\text{V} / \text{m}}{20}}$$

Sample radiated emissions calculation @ 30 MHz

Measurement +Antenna Factor–Amplifier Gain+Cable loss=Radiated Emissions (dBuV/m)

$$25 \text{ dBuV/m} + 17.5 \text{ dB} - 20 \text{ dB} + 1.0 \text{ dB} = 23.5 \text{ dBuV/m}$$

Test report no. US23B20D.001 Rev1.0

Page 10 of 28
Seite 10 von 28

Prüfbericht-Nr.:

2.3.2 Measurement Uncertainty Emissions

Per CISPR 16-4-2	U_{lab}	U_{cisp}
Radiated Disturbance @ 10 meters		
30 – 1,000 MHz	2.25 dB	4.51 dB
Radiated Disturbance @ 3 meters		
30 – 1,000 MHz	2.26 dB	4.52 dB
1 – 6 GHz	2.12 dB	4.25 dB
6 – 18 GHz	2.47 dB	4.93 dB
Conducted Disturbance @ Mains Terminals		
150 kHz – 30 MHz	1.09 dB	2.18 dB
Disturbance Power		

Voltech PM6000A

The estimated combined standard uncertainty for harmonic current and flicker measurements is $\pm 5.0\%$.

Per CISPR 16-4-2

2.3.3 Measurement Uncertainty Immunity

The estimated expanded uncertainty for ESD immunity measurements is $\pm 8.2\%$.	Per IEC 61000-4-2
The estimated expanded uncertainty for radiated immunity measurements is ± 4.10 dB.	Per IEC 61000-4-3
The estimated expanded uncertainty for EFT fast transient immunity measurements is $\pm 5.84\%$.	Per IEC 61000-4-4
The estimated expanded uncertainty for surge immunity measurements is $\pm 5.84\%$.	Per IEC 61000-4-4
The estimated expanded uncertainty for conducted immunity measurements with CDN is ± 3.66 dB	Per IEC 61000-4-6
The estimated expanded uncertainty for power frequency magnetic field immunity is $\pm 11.6\%$.	Per IEC 61000-4-8
The estimated expanded uncertainty for voltage variation and interruption measurements is $\pm 3.48\%$.	Per IEC 61000-4-11

The expanded uncertainty at a level of 95% confidence is obtained by multiplying the combined standard uncertainty by a coverage factor of 2. Compliance criteria are not based on measurement uncertainty.

2.4 Calibration Traceability

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Measurement method complies with ANSI/NCSL Z540-1-1994 and ISO Standard ISO IEC 17025:2017. Equipment calibration records are kept on file at the test facility.

Test report no. US23B20D.001 Rev1.0

Page 11 of 28
Seite 11 von 28

Prüfbericht-Nr.:

2.5 Measurement Equipment Identification

Equipment used					
RE					
Equipment	Type	Inventory number	Manufacturer	Last calibration	Calibration due date
Antenna, Horn, 1 - 18 GHz	3115	9038283	EMCO	07/29/23	07/29/24
Preamplifier, 18 - 40 GHz	TS-PR1840	9018046	Rohde & Schwarz	04/04/23	04/04/24
Small Horn Antenna, 18 - 40 GHz	180-442-KF	9024554	ATM	06/20/22	06/20/24
Antenna, Bilog	JB3	G1700574	Sunol Sciences	06/07/22	06/07/24
Preamplifier, 30 MHz - 8 GHz	TS-PR8	9017639	Rohde & Schwarz	03/14/23	03/14/24
2.4GHz Band Pass Filter	Micro-Tronics	BRM50702	009	N/A (See Note)	
Note: Equipment is characterized before use.					
CE					
Receiver, EMI, 20 Hz - 40 GHz	ESIB40	G1700882	Rohde & Schwarz	02/22/2023	02/22/2024
Limiter, Transient, 9 kHz - 30 MHz	LIT-930	G1700144	Com-Power	02/22/2023	02/22/2024
LISN, 150 kHz - 30 MHz	FCC-LISN-50-200-4-02	G1700912	FCC	02/21/2023	02/21/2024

3 Product Information

3.1 Test Plan

The EUT product information, test configuration, mode of operation, test types, test procedures, test levels, pass/failure criteria, in this report were carried out per the product test plan located in appendix A of this report.

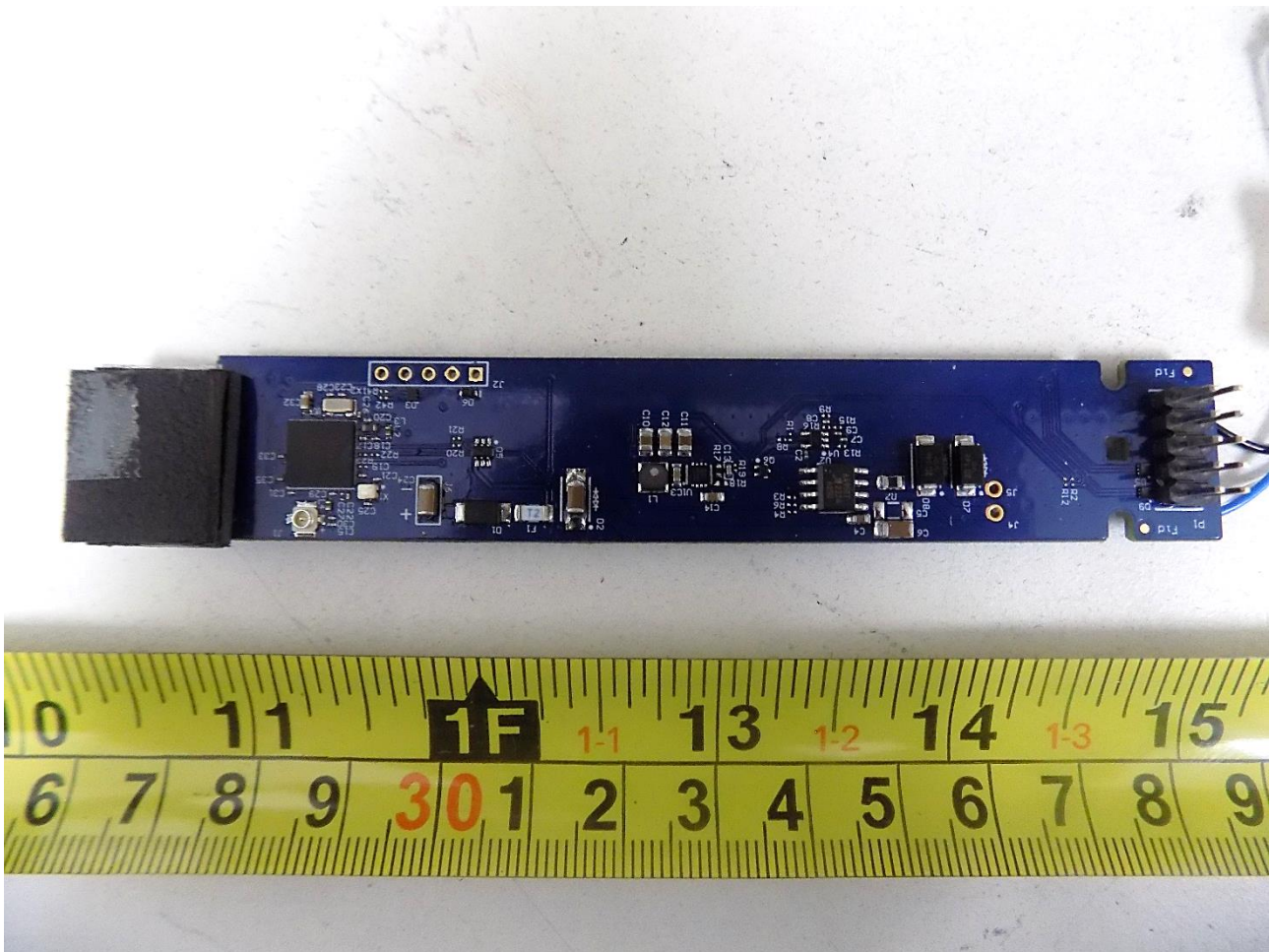


Figure 1 – External Photo of EUT

Test report no. US23B20D.001 Rev1.0

Page 13 of 28
Seite 13 von 28

Prüfbericht-Nr.:



Figure 2 – External Photo of EUT

Test report no. US23B20D.001 Rev1.0

Page 14 of 28
Seite 14 von 28

Prüfbericht-Nr.:

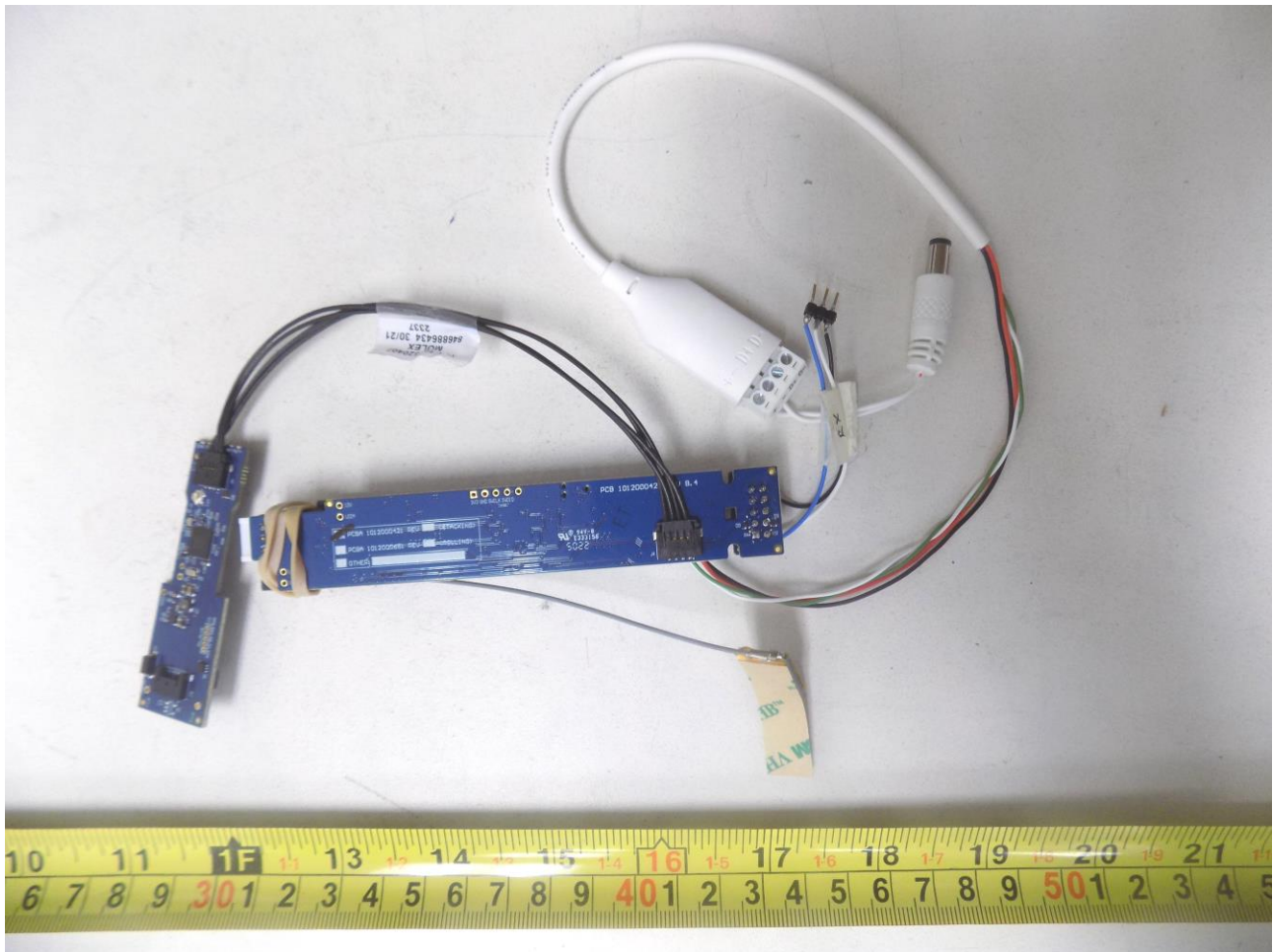


Figure 3 – External Photo of EUT

Test report no. US23B20D.001 Rev1.0

Page 15 of 28
Seite 15 von 28

Prüfbericht-Nr.:

4 Emissions

4.1 Radiated Emissions

This test measures the electromagnetic levels of spurious signals generated by the EUT that radiated from the EUT and may affect the performance of other nearby electronic equipment.

4.1.1 Over View of Test

Results	Complies (as tested per this report)					Date	4/4/23
Standard	FCC 47 CFR Part 15 Subpart B: 2023, ICES-003: 2020						
Product Model	1016000017			Serial#	1012000421		
Configuration	See test plan for details.						
Test Set-up	Tested 3 meters semi- anechoic chamber placed on turn-table, see test plans for details.						
EUT Powered By	3.3 VDC	Temp	22 C	Humidity	47%	Pressure	1012 mbar
Frequency Range	30 - 1000 MHz @ 3 meters 1000 MHz – 18000 @ 3 meters						
Perf. Criteria	Class B (Below Limit)		Perf. Verification		Readings Under Limit		
Mod. to EUT	None		Test Performed By		Osvaldo Casorla		

4.1.2 Test Procedure

Radiated emissions tests were performed using the procedures of CISPR 16 and/or ANSI C63.4 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration. Further radiated emission tests were performed per the procedures stated in the other emissions standards listed in this report.

The maximum EUT clock frequency is 32 MHz and 2.4 GHz BLE, so the frequency range 30 – 1000 MHz was investigated for radiated emissions.

RBW is set to 200Hz and VBW is set to 1 KHz for 9 KHz-150 KHz.

RBW is set to 9 KHz and VBW is set to 30 KHz for 150 KHz-30 MHz

RBW is set to 120 KHz, VBW is set to 300 KHz for 30MHz-1GHz.

RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz.

4.1.3 Deviations

There were no deviations from the test methodology listed in the test plan for the radiated emission test.

4.1.4 Final Test

All final radiated emissions measurements were below (in compliance) the limits.

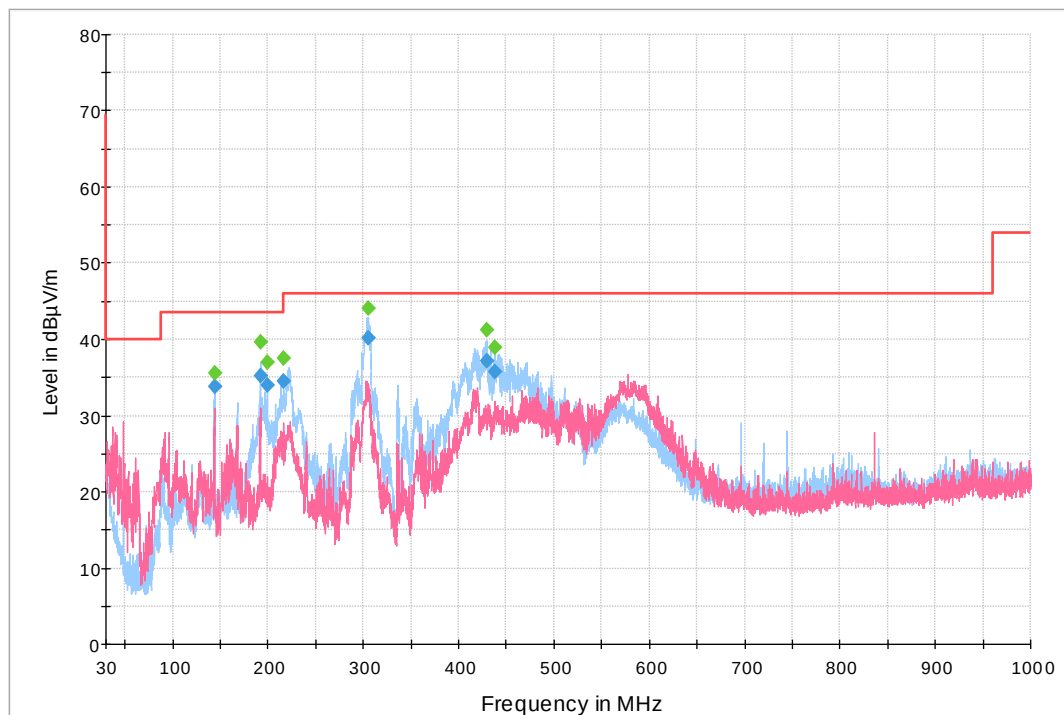
Test report no. US23B20D.001 Rev1.0

Page 16 of 28
Seite 16 von 28

Prüfbericht-Nr.:

4.1.5 Final Graphs

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
144.00	---	35.63	---	---	1000.00	120.00	212.00	H	179.00	-12.30
144.00	33.81	---	43.52	9.71	1000.00	120.00	212.00	H	179.00	-12.30
192.06	---	39.64	---	---	1000.00	120.00	103.00	H	108.00	-13.10
192.06	35.20	---	43.52	8.32	1000.00	120.00	103.00	H	108.00	-13.10
200.02	---	36.93	---	---	1000.00	120.00	153.00	H	95.00	-12.70
200.02	33.99	---	43.52	9.53	1000.00	120.00	153.00	H	95.00	-12.70
216.02	---	37.58	---	---	1000.00	120.00	125.00	H	274.00	-13.60
216.02	34.57	---	46.00	11.43	1000.00	120.00	125.00	H	274.00	-13.60
305.56	---	44.04	---	---	1000.00	120.00	100.00	H	-2.00	-10.70
305.56	40.17	---	46.00	5.83	1000.00	120.00	100.00	H	-2.00	-10.70
429.16	37.25	---	46.00	8.75	1000.00	120.00	103.00	H	206.00	-8.10
429.16	---	41.24	---	---	1000.00	120.00	103.00	H	206.00	-8.10
438.28	35.77	---	46.00	10.23	1000.00	120.00	103.00	H	207.00	-7.70
438.28	---	38.99	---	---	1000.00	120.00	103.00	H	207.00	-7.70



◆ Preview Result 1H-PK+ Final_Result QPK
 ◆ Preview Result 1V-PK+ Final_Result PK+
 — FCC 15_QP

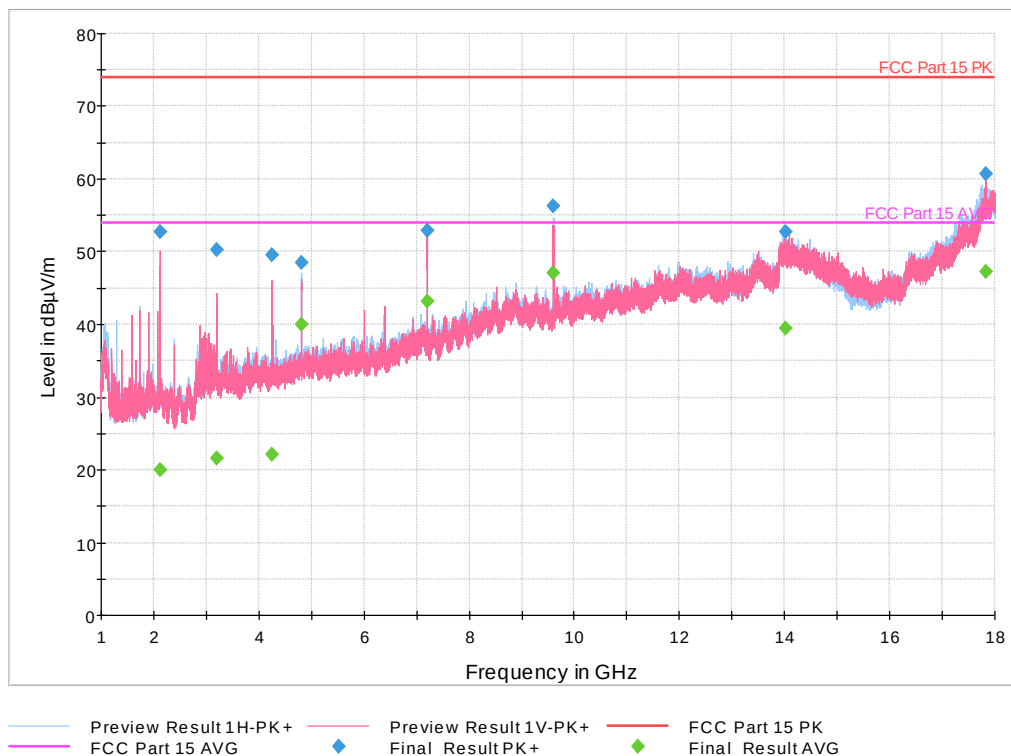
Figure 4 – Radiated Emissions 30 – 1000 MHz

Test report no. US23B20D.001 Rev1.0

Page 17 of 28
Seite 17 von 28

Prüfbericht-Nr.:

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2128.50	---	20.04	54.00	33.96	1000.00	235.00	V	203.00	-4.20
2128.50	52.78	---	74.00	21.22	1000.00	235.00	V	203.00	-4.20
3193.86	50.27	---	74.00	23.73	1000.00	250.00	V	185.00	-0.40
3193.86	---	21.53	54.00	32.47	1000.00	250.00	V	185.00	-0.40
4250.00	49.62	---	74.00	24.38	1000.00	105.00	V	235.00	1.60
4250.00	---	22.04	54.00	31.96	1000.00	105.00	V	235.00	1.60
4804.98	---	39.94	54.00	14.06	1000.00	153.00	H	59.00	3.60
4804.98	48.58	---	74.00	25.42	1000.00	153.00	H	59.00	3.60
7204.50	52.98	---	74.00	21.02	1000.00	155.00	H	140.00	8.40
7204.50	---	43.24	54.00	10.76	1000.00	155.00	H	140.00	8.40
9609.88	---	47.00	54.00	7.00	1000.00	253.00	H	222.00	12.40
9609.88	56.35	---	74.00	17.65	1000.00	253.00	H	222.00	12.40
14015.30	---	39.46	54.00	14.54	1000.00	100.00	V	209.00	19.00
14015.30	52.73	---	74.00	21.27	1000.00	100.00	V	209.00	19.00
17838.12	60.71	---	74.00	13.29	1000.00	150.00	H	151.00	26.80
17838.12	---	47.22	54.00	6.78	1000.00	150.00	H	151.00	26.80



Plot 5. 1-18 GHz, 2402 MHz, 2Mbps

4.1.6 Photos



Figure 6 – Radiated Emissions 30 – 1000 MHz, Rear View



Figure 7 – Radiated Emissions 30 – 1000 MHz, Front View

Test report no. US23B20D.001 Rev1.0

Page 19 of 28
Seite 19 von 28

Prüfbericht-Nr.:



Figure 8 – Radiated Emissions 1000 – 18000 MHz, Front View



Figure 9 – Radiated Emissions 1000 – 18000 MHz, Rear View

Test report no. US23B20D.001 Rev1.0

Page 20 of 28
Seite 20 von 28

Prüfbericht-Nr.:

4.2 Conducted Emissions

This test measures the electromagnetic levels of spurious signals generated by the EUT on the AC power line that may affect the performance of other nearby electronic equipment.

4.2.1 Over View of Test

Results	Complies (as tested per this report)					Date	4/5/23	
Standard	FCC 47 CFR Part 15 Subpart B: 2023, ICES-003: 2020							
Product Model	1016000017				Serial#	1012000421		
Configuration	See test plan for details.							
Test Set-up	Tested in shielded room, EUT placed on table. See test plans for details.							
EUT Powered By	3.3 VDC using AC/DC PS	Temp	22 C	Humidity	47%	Pressure	1012 mbar	
Frequency Range	150 kHz - 30 MHz							
Perf. Criteria	Class B (Below Limit)	Perf. Verification		Readings Under Limit for Neutral & Live				
Mod. to EUT	None	Test Performed By		Osvaldo Casorla				

4.2.2 Test Procedure

Conducted and emissions tests were performed using the procedures of FCC 47 CFR Part 15 Subpart B: 2023, ICES-003: 2020 and/or ANSI C63.4 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration. Further conducted emission tests were performed per the procedures stated in the other emissions standards listed in this report.

The frequency range from 150 kHz - 30 MHz was investigated for conducted emissions.

Conducted Emissions measurements were performed in the shielded room using procedures specified in the test plan and standard.

4.2.3 Deviations

There were no deviations from the test methodology listed in the test plan for the conducted emission test.

Test report no. US23B20D.001 Rev1.0

Page 21 of 28
Seite 21 von 28

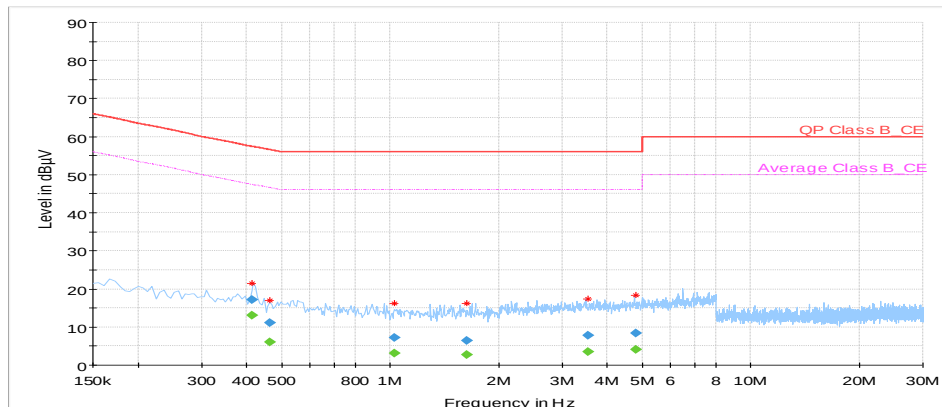
Prüfbericht-Nr.:

4.2.4 Final Test

All final conducted emissions measurements were below (in compliance) the limits.

Live Line

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Line	PE	Corr. (dB)
0.42	---	13.07	47.44	34.37	10000.00	L1	GND	9.90
0.42	17.23	---	57.44	40.21	10000.00	L1	GND	9.90
0.46	---	6.10	46.61	40.51	10000.00	L1	GND	9.90
0.46	11.20	---	56.61	45.41	10000.00	L1	GND	9.90
1.03	---	3.15	46.00	42.85	10000.00	L1	GND	9.80
1.03	7.20	---	56.00	48.80	10000.00	L1	GND	9.80
1.63	---	2.69	46.00	43.31	10000.00	L1	GND	9.80
1.63	6.53	---	56.00	49.47	10000.00	L1	GND	9.80
3.54	---	3.53	46.00	42.47	10000.00	L1	GND	9.80
3.54	7.75	---	56.00	48.25	10000.00	L1	GND	9.80
4.80	---	4.01	46.00	41.99	10000.00	L1	GND	9.80
4.80	8.32	---	56.00	47.68	10000.00	L1	GND	9.80



Plot 10. 0.15 - 30 MHz, Live Line

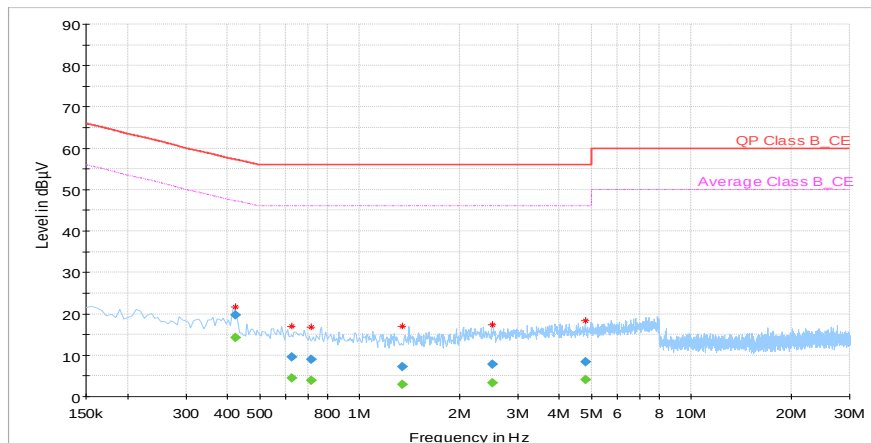
Test report no. US23B20D.001 Rev1.0

Page 22 of 28
Seite 22 von 28

Prüfbericht-Nr.:

Neutral Line

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Line	PE	Corr. (dB)
0.42	---	14.27	47.33	33.07	10000.00	N	GND	10.00
0.42	19.69	---	57.33	37.64	10000.00	N	GND	10.00
0.63	---	4.56	46.00	41.44	10000.00	N	GND	10.00
0.63	9.50	---	56.00	46.50	10000.00	N	GND	10.00
0.72	---	3.96	46.00	42.04	10000.00	N	GND	9.90
0.72	8.99	---	56.00	47.01	10000.00	N	GND	9.90
1.35	---	2.92	46.00	43.08	10000.00	N	GND	9.90
1.35	7.25	---	56.00	48.75	10000.00	N	GND	9.90
2.52	---	3.40	46.00	42.60	10000.00	N	GND	9.90
2.52	7.81	---	56.00	48.19	10000.00	N	GND	9.90
4.80	---	4.09	46.00	41.91	10000.00	N	GND	9.90
4.80	8.39	---	56.00	47.61	10000.00	N	GND	9.90



Plot 11. 0.15 - 30 MHz, Neutral Line

4.2.5 Photos

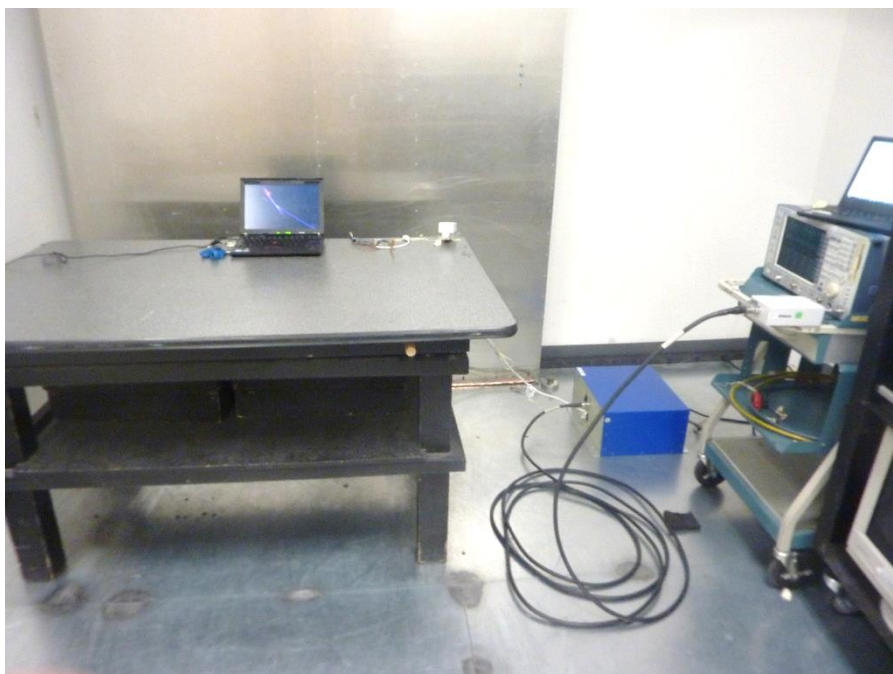


Figure 12 –Conducted Emissions Test Setup

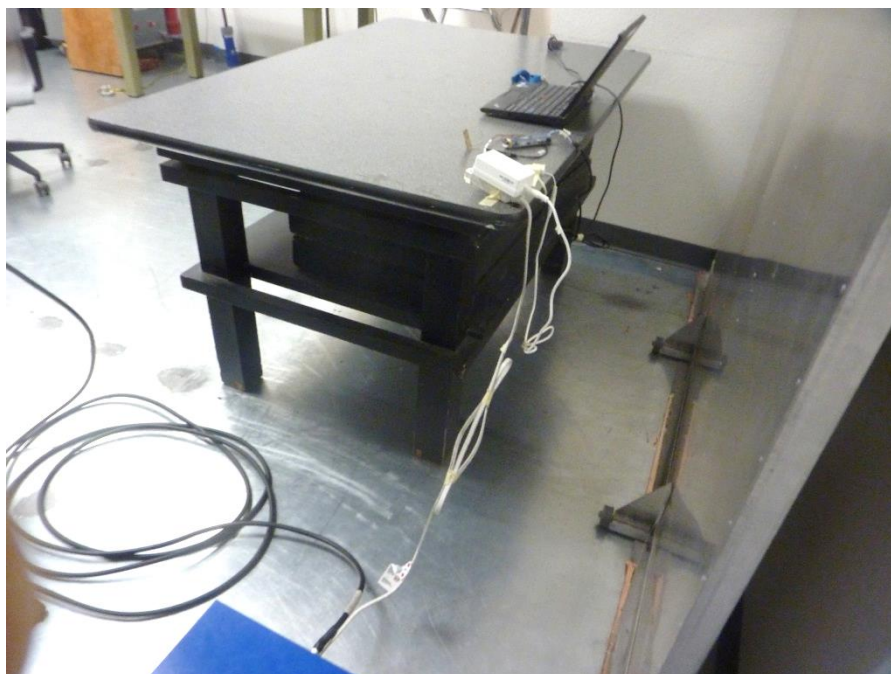


Figure 13 –Conducted Emissions Test Setup

Test report no. US23B20D.001 Rev1.0

Page 24 of 28
Seite 24 von 28

Prüfbericht-Nr.:

Appendix A

5 Test Plan

This test report is intended to follow the test plan outlined herein unless otherwise stated. The test plan provides product information, reference standards, and testing details. The product information below came via client, product manual, product itself and or the internet. Test procedure information will reference standards or internal TUV Rheinland NA procedures.

5.1 General Information

Client	Hunter Douglas Window Fashions, Inc
Address 1	1 Duette Way
Address 2	Broomfield, CO 80020, U.S.A.
Contact Person	Mike Rockwood
Telephone	720-778-0205
Fax	N/A
e-mail	mike.rockwood@hunterdouglas.com

5.2 Model(s) Name

1016000017

5.3 Type of Product

Powerview Gen3 Motor Control Board

Test report no. US23B20D.001 Rev1.0

Page 25 of 28
Seite 25 von 28

Prüfbericht-Nr.:

5.4 Equipment Under Test (EUT) Description

Image Computer Remote Cabinet/ External Storage Cabinet.

5.5 Wireless

☒	Yes	☐	No
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5.6 Testing Preparation

None.

5.7 General Product Information

General Product Information						
Size	H	5cm	W	5cm	L	1cm
Weight	1 g		Fork-Lift Needed		no	
Notes						

5.8 Modifications

None.

Test report no. US23B20D.001 Rev1.0

Page 26 of 28
Seite 26 von 28

Prüfbericht-Nr.:

5.9 EUT Electrical Power Information

5.9.1 Electrical Power Type

☐	AC	☒	DC	☐	Batteries	☐	Host -
Note: AC/DC power supply used to supply DC.							

5.9.2 Electrical Power Information

Name	Type	Voltage		Frequency	Current	Notes
		min	max			
AC/DC Power Live	-	-	3.3V DC	-	1.5 A	See Note 1
Notes	1. Power Option: AC/DC power Live was used as the worst case scenario. 18V AC/DC Power Live - Model: AMS165-1802000FU; P/N 7806000000 Input: 100-240VAC, 1.0A; Output: 18VDC, 2.0A					

5.10 EUT Modes of Operation during Testing

Bluetooth 2.4 GHz radio set to continuous transmission at 2402 MHz 2Mbps, which contains highest Output Power.

Test report no. US23B20D.001 Rev1.0

Page 27 of 28
Seite 27 von 28

Prüfbericht-Nr.:

5.11 EUT Clock/Oscillator Frequencies

Please specify the maximum clock frequency used in the product – 32 MHz

In the table below, please specify other clock frequencies and sensitive operating frequencies in the product.

Clock Frequencies & Sensitive Frequencies
Crystal = 32MHz

5.12 Electrical Support Equipment

Type	Manufacturer	Model	Connected To
Laptop	HP	17-bs011dx	EUT

5.13 Non - Electrical Support Equipment

Item	Notes
None.	

5.14 EUT Equipment/Cabling Information

EUT Port	Connected To	Location	Length	Shielded / Unshielded
Pins	Laptop	USB	< 3m	Unshielded

5.15 EUT Configuration

Configuration	Description
Config. 1	Bluetooth 2.4 GHz radio set to continuous transmission at 2402 MHz 2Mbps.
Notes	

Test report no. US23B20D.001 Rev1.0

Page 28 of 28
Seite 28 von 28

Prüfbericht-Nr.:

--- Ende des Prüfberichts / End of Test Report ---