

Produkte
Products

Prüfbericht - Nr.: 14039852 001			Seite 1 von 9		
<i>Test Report No.:</i>			<i>Page 1 of 9</i>		
Auftraggeber: <i>Client:</i>		ALDI Sourcing Asia Limited Suite 2506, 25/F., Tower 1 The Gateway, Harbour City Kowloon, Hong Kong			
Gegenstand der Prüfung: <i>Test Item:</i>		Short Range Device - 434MHz Receiver			
Bezeichnung: <i>Identification:</i>	92596	Serien-Nr.: <i>Serial No.:</i>	Engineering sample		
Wareneingangs-Nr.: <i>Receipt No.:</i>	A000213733-003 A000220196-014	Eingangsdatum: <i>Date of Receipt:</i>	15.06.2015 29.06.2015		
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i>		Test sample(s) is/are not damaged and suitable for testing.			
Prüfört: <i>Testing Location:</i>		TÜV Rheinland Hong Kong Ltd. 8/F, First Group Centre, 14 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong Hong Kong Productivity Council HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong			
Prüfgrundlage: <i>Test Specification:</i>		FCC Part 15 Subpart B ANSI C63.4-2003			
Prüfergebnis: <i>Test Results:</i>		Das vorstehend beschriebene Gerät wurde geprüft und entspricht oben genannter Prüfgrundlage. The above mentioned product was tested and passed .			
Prüflaboratorium: <i>Testing Laboratory:</i>		TÜV Rheinland Hong Kong Ltd. 8 - 10/F., Goldin Financial Global Square, 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong			
geprüft/ tested by:			kontrolliert/ reviewed by:		
07.08.2015 Benny Lau Senior Project Manager 			07.08.2015 Sharon Li Department Manager 		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges: Other Aspects		FCC ID: 2AEWF00092596V			
Abkürzungen: P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet			Abbreviations: P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested		
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. <i>This test report 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 safety mark on this or similar products.</i>					

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Test Summary

Conducted Emissions

Result: Pass

Radiated Emissions

Result: Pass

Product information

Manufacturers declarations

	Receiver
Operating frequency range	434 MHz
Number of channels	1
Type of antenna	Integral Antenna
Connection to public utility power line	Yes
Nominal voltage	V _{nom} : 3.0Vdc (2 x 1.5V "AA" battery) and/ or 100-240Vac

Product function and intended use

The equipment under test (EUT) is a receiver operating at 434MHz. And it is powered by 3.0Vdc (2 x 1.5V "AA" battery) and/ or 100-240Vac.

FCC ID: 2AEWF00092596V

Models	Product description
92596	Weather Station

Submitted documents

Circuit Diagram
Block Diagram
Bill of material
User manual
Rating Label

Independent Operation Modes

The basic operation modes are:

- Receiving mode .

For further information refer to User Manual

Related Submittal(s) Grants

This is a single application for certification of the receiver. The FCC ID of the corresponding transmitter is 2AEWF00092596S.

Remark

- None.

Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Test Operation and Test Software

Test operation should refer to test methodology.

- No testing software is provided by the applicant.

Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

- AC-DC adaptor, Model: 6301-US-A, Input: 100-240VAC 50/60Hz, Output 5.0VDC 1000mA.
- 5ohm resistive load.

Countermeasures to achieve EMC Compliance

- none

Test Methodology

Radiated Emission

The radiated emission measurements were performed according to the procedures in ANSI C63.4-2003.

The equipment under test (EUT) was placed at the middle of the 80 cm height turntable, and the turntable is 3 meters far from the measuring antenna. During the testing, the EUT was operated standalone and arranged for maximum emissions. The EUT was tested in three orthogonal planes.

The investigation is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.

All radiated tests were performed at an antenna to EUT with 3 meters distance, unless stated otherwise in particular parts of this test report.

Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

$$FS = R + AF + CF + FA - PA$$

Where FS= Field Strength in dBuV/m at 3 meters.

R = Reading of Spectrum Analyzer in dBuV.

AF = Antenna Factor in dB.

CF = Cable Attenuation Factor in dB.

FA = Filter Attenuation Factor in dB.

PA = Preamplifier Factor in dB.

FA and PA are only be used for the measuring frequency above 1 GHz.

List of Test and Measurement Instruments

Hong Kong Productivity Council (Registration number: 90656)

Radiated Emission

Equipment	Manufacturer	Type	Cal. date	Cal. Due date
Semi-anechoic Chamber	Frankonia	Nil	14-Apr-15	14-Apr-16
New Fully Anchoic Chamber	TDK	N/A	15-Apr-15	15-Apr-16
Cable	Hubersuhner	SUCOFLEX 104	31-Mar-14	31-Mar-16
Test Receiver	R & S	ESU26	12-Feb-15	12-Feb-16
Bi-conical Antenna	R & S	HK116	22-Aug-13	22-Aug-15
Log Periodic Antenna	R & S	HL223	16-Aug-13	16-Aug-15
Coaxial cable	Harbour	LL335	10-Jun-14	10-Jun-16
Microwave amplifier 0.5-26.5GHz, 25dB gain	HP	83017A	17-Jul-14	17-Jul-16
High Pass Filter (cutoff freq. =1000MHz)	Trilithic	23042	28-Oct-13	28-Oct-15
Horn Antenna	EMCO	3115	7-Aug-13	7-Aug-15
FSP 30 Spectrum Analyzer	Frankonia	FSP 30	12-Jan-16	12-Jan-17

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AC Mains Conducted Emission

Equipment	Manufacturer	Type	Cal. date	Cal. Due date
Test Receiver	R & S	ESR3	11-Sep-14	12-Sep-15
LISN	R & S	ENV216	04-Feb-15	05-Feb-16
EMC32	R & S	v9.12	N/A	N/A

Results FCC Part 15 – Subpart B

Subclause 15.107 – Conducted Emission on AC Mains						Pass
Test Specification : ANSI C63.4 – 2003 Mode of operation : Receiving mode Port of testing : AC Mains input port of power supply Detector : Quasi-peak and Average RBW : 9 kHz Supply voltage : 120Vac 60Hz Temperature : 23°C Humidity : 50%						
Requirement: The emissions from the unintentional radiators comply with the following limit.						
Results: Pass						
Live measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBμV	Average dBμV	Limit QP (dBμV)	Limit AV (dBμV)	Verdict
0,15 – 0,5	0.150	44.3	27.5	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass
Neutral measurement						
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBμV	Average dBμV	Limit QP (dBμV)	Limit AV (dBμV)	Verdict
0,15 – 0,5	0.150	40.3	27.5	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass
Results: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz does not exceed the limits. For test Results plots refer to Appendix 1, page 2.						

Subclause 15.109 – Radiated Emission		Pass
Test Specification : ANSI C63.4 – 2003 Mode of operation : Receiving mode Port of testing : Enclosure RBW/VBW : 120 kHz for f < 1 GHz 1 MHz / 3 MHz for f > 1 GHz Supply voltage : 3.0VDC Frequency range : 30MHz to 2GHz Temperature : 23°C Humidity : 50%		
Requirement: The field strength of emissions from the unintentional radiators comply with the following limit.		
Results: Pass		
Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
31.590	20.7	40.0 / QP
48.214	26.9	40.0 / QP
123.360	30.0	43.5 / QP
Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
121.680	19.7	43.5 / QP