

Müşteri Adı / Adresi: GUNAY EXPORT LOJISTIK TİCARET VE SANAYİ LIMITED SİRKETİ
Client name/address : İTOSB Mahallesi 3. Cadde No:10 Zemin Kat 34959 Tepeoren/ Tuzla/İstanbul/TÜRKİYE

İş Emri No: 240705-01
Work Order No:

Test Edilen Ürün: CUPER 125, Isı Geri Kazanım Ünitesi
Items tested: CUPER 125, Heat Recovery Unit

Açıklamalar DGC'ye EN 55014-1:2021, EN 55014-2:2021 standardı uyarınca testler uygulanmıştır.
Detaylı Bilgi için 8. sayfaya bakınız.

Remarks: Test were applied to EUT according to EN 55014-1:2021, EN 55014-2:2021 standart.
Check Page 8 for further information.

Numune Kabul Tarihi: 25.03.2024
The date of receipt of test item:

Deney Tarihi : 30.03.2024-03.05.2024
Date of test:

Yayımlandığı Tarih: 07.08.2024
Date of Publication:

Onay Tarihi : 09.08.2024
Date of Approval

Rapor Sorumlusu
Person in Charge of Test Report

Laboratuvar Müdürü
Head of Testing Laboratory

Mühür / Seal

Güleç Gökçe ALTINBAŞ

Oktay TOSUN

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The results and analysis in content of this report are only about the product/system provided by the manufacturer/applicant for testing. Ensuring all the other models meet the requirements stated in this report is the manufacturer's/applicant's responsibility. The test report does not contain any results regarding the products in the product family group, since this process is carried out completely theoretically, the laboratory does not accept any legal liability regarding the products in the group.

Bu raporun içerisinde belirtilen ürün bilgileri, üretici/başvuru sahibi tarafından sağlanmış olup, test sonuçları ve uygunluk beyanı bu bilgiler doğrultusunda değerlendirilmiştir. Üretici/başvuru sahibi tarafından sağlanan bilgilerde/verilerde meydana gelebilecek değişikliklerden üretici/başvuru sahibi sorumludur.

The test results and conformity assessments in this report are evaluated with the product information written in this report which was provided by the manufacturer/applicant. All responsibilities of any changes in the information about the product belongs to the manufacturer/applicant.

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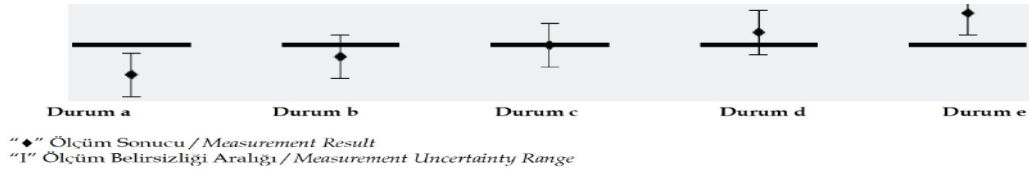
DOKÜMAN TARİHÇESİ / REVISION HISTORY

NOT: Bu rapor, üreticinin talebi ile EMC24-133 numaralı rapordan çoğaltılarak "GUNAY EXPORT LOJISTIK TİCARET VE SANAYİ LIMITED SİRKETİ" adına tekrar düzenlenmiştir.

(NOTE: This report was rearranged on behalf of "GUNAY EXPORT LOJISTIK TİCARET VE SANAYİ LIMITED SİRKETİ" by duplicating from the report numbered EMC24-133 at the request of the manufacturer.)

Baskı / Edition	Tarih / Date	Açıklama / Remarks
İlk baskı / First edition	07.08.2024	-
İkinci baskı / Second edition	09.08.2024	Sayfa 7 üretici adı, Sayfa 9 etiket, Sayfa 18 uzaktan kumanda marka fotoğrafı değiştirilmiştir. / Page 7 manufacturer name, Page 9 label, Page 18 remote control's brand photo changed.

Karar Kuralı Seçimi / Decision Rule Chosen



Durum a / Situation a; Üst sınırın altındadır bu sebeple ürün spesifikasyona uygundur. / EUT results below the upper limit therefore results are OK.

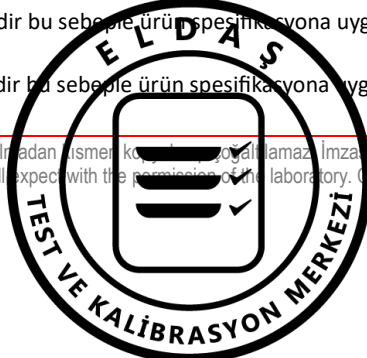
Durum b / Situation b; Üst sınırın altındadır fakat ölçülen sonuç, belirsizlik aralığının yarısından az bir pay ile üst sınırın altındadır; bu sebeple, uygunluk belirtmek mümkün değildir. Laboratuvar bu sınıra kendi ölçüm belirsizliği hesabına göre karar vererek müşteriye bilgilendirme sağlar. / EUT results are but below the upper limit line with a margin of less than half of the uncertainty; therefore it is not possible to state conformity. The laboratory decides this limit according to its own measurements of the uncertainty and informs the customer.

Durum c / Situation c; Ölçülen sonuç sınırın tam üzerindedir, bu sebeple ile “uygun” ya da “uygun değil” diye belirtmek mümkün değildir. Müşteri ile görüşülerek ölçülen değerin limitinin altına indirilmesi sağlanmalıdır. / EUT results are on the limit line therefore, it is impossible to determine whether the test was “passed” or “failed”. In consultation with the customer, it should be ensured, that the measured value is reduced below the limit.

Durum d / Situation d; Üst sınırın üstündedir bu sebeple ürün spesifikasyona uygun değildir. / EUT results are above the limit, therefore the test results are not OK.

Durum e / Situation e; Üst sınırın üstündedir bu sebeple ürün spesifikasyona uygun değildir. / EUT results are above the limit, therefore the test results are not OK.

Bu sertifika laboratuvarın yazılı izni olmadan başka bir şekilde kullanılamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.
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Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle çoğaltılamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
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1 DGC, ÇEVRE KOŞULLARI VE SEMBOLLERİN TANIMLARI

(Conditions/Power Utilized, Description of the EUT & Symbol Definitions)

Deney raporunda Kullanılan Sembollerin Tanımları:

(Definitions of Symbols Used in This Test Report)

DGC-Deneyden Geçirilen Cihaz
(EUT-Equipment Under Test)

LISN-Hat Empedansını Sabitleyen Şebeke
(LISN-Line Impedance Stabilization Network)

AM-Genlik modülasyonu
(AM-Amplitude Modulation)

CDN-Bağlaştırma/Ayrıştırma Şebekesi
(CDN-Coupling/Decoupling Network)

■ - Siyah kutu, deney raporunda kullanılan cihaz, standard ve koşulları gösterir.

(The black square indicates that the listed condition, standard or equipment is applicable for this report.)

□ - Boş kutu, deney raporunda kullanılmayan cihaz, standard ve koşulları gösterir.

(The empty square indicates that the listed condition, standard or equipment is not applicable for this report.)

Deneyden Geçirilen Cihazın:

(Equipment Under Test's)

Markası: VENTEUROPE
(Brand)

Beyan Gerilimi: 220-240 V AC, 50/60 Hz
(Rated Gerilim)

Modeli: CUPER 125
(Model)

Beyan Gücü: 9,4 W
(Rated Power)

Seri No: 2402001546
(Serial Number)

Kısa Tanımı: Isı geri kazanım ünitesi dairelerde, özel evlerde, otellerde, kafelerde ve diğer ev içi veya kamu binalarında kalıcı hava değişimi için kullanılır. Cihaz duvara montaj için tasarlanmıştır.

(Short Description: The heat recovery unit is used for a permanent air exchange in apartments, private houses, hotels, cafes and other domestic or public premises. The device is designed for wall mounting.)

■ **Testler; VENTEUROPE brand CUPER 125 model ürüne 50 Hz, 230 V AC gerilim ile beslenerek yapılmıştır.**

(Tests were applied to VENTEUROPE brand CUPER 125 model product under 50 Hz, 230 V AC voltage.)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmza ve mühürsüz sertifikalar geçersizdir.
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■ Bu test raporunda listelenen her ölçüm için belirsizlikler UKAS LAB34 Ed.1 08.2002 ve CISPR-16-4-2:2018'e göre hesaplanmıştır ve ölçüm belirsizliği talimatında EN ISO/IEC 17025'e göre dökümanite edilmiştir.
(Uncertainties calculated according to UKAS LAB34 Ed.1 08.2002 and CISPR-16-4-2:2018 for listed every measurement in the test report and instruction of measurement uncertainty documented according to EN ISO/IEC 17025.)

Çevre Şartları:

(Environmental Conditions)

Deneyler sırasında ölçülen çevre şartları ilgili sayfalarda belirtilmiştir.

(The environmental conditions are measured during tests, are determined related pages.)

DGC'nin, TS EN 55014-2 Standardına göre kategori sınıflandırması:

(Classification of EUT according to EN 55014-2 Standard)

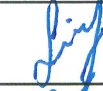
☐	Kategori I: Elektronik kontrol devresi içermeyen cihazlar. (Category I: Apparatus containing no electronic control circuitry.)
☐	Kategori II: Saat frekansı 15 MHz'den yüksek olmayan elektronik kontrol devresi içeren cihazlar. (Category II: Apparatus containing electronic control circuitry with no clock frequency higher than 15 MHz.)
☐	Kategori III: Normal kullanımda, bağlı kablosu olmayan ve bir güç şebekesine bağlı olmayan ekipman. (Category III: Equipment which in normal use, is not connected to a power network and has no cables attached.)
■	Kategori IV: Saat frekansı 15 MHz'den büyük, 200 MHz'e eşit ya da daha küçük elektronik kontrol devresi içeren cihazlar. (Category IV: Mains operated equipment containing electronic control circuitry with a highest clock frequency greater than 15 MHz but lower than or equal to 200 MHz.)
☐	Kategori V: Saat frekansı 200 MHz'den büyük elektronik kontrol devresi içeren cihazlar. (Category V: Mains operated equipment containing electronic control circuitry with a highest clock frequency greater than 200 MHz.)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya tamamen kullanılamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.
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TEST REPORT CISPR 14-1, CISPR 14-2, IEC 61000-3-2, IEC 61000-3-3 Household appliances, electrical tools & similar apparatus	
Report Reference No.	EMC24-180/R1
Date of issue:	09.08.2024
Total number pages:	60
Name of Testing Laboratory preparing the Report	ELDAŞ Test ve Kalibrasyon Elektrik San. Tic. A.Ş.
Applicant's name	GUNAY EXPORT LOJISTIK TICARET VE SANAYI LIMITED Sirketi
Address.....	ITOSB Mahallesi 3. Cadde No:10 Zemin Kat 34959 Tepeoren/ Tuzla/İstanbul/TÜRKİYE
Test specification: Standard CISPR 14-1:2020, CISPR 14-2:2020, IEC 61000-3-2:2018, AMD1:2020, AMD2:2024, IEC 61000-3-3:2013, AMD1:2017, AMD2:2021, EN IEC 55014-1:2021, EN IEC 55014-2:2021, EN 61000-3-2:2019/A1:2021, EN 61000-3-3:2013/A1:2019/A2:2021 Test procedure EMC Non-standard test method N/A	
TRF template used.....	-
Test Report Form No.	-
Test Report Form(s) Originator:	-
Master TRF	-
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General disclaimer: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	



Test item description.....:	Heat recovery unit	
Trademark.....:	VENTEUROPE	
Manufacturer	GUNAY EXPORT LOJISTIK TICARET VE SANAYI LIMITED SİRKETİ	
Model / Type reference	CUPER 125	
Rating(s)	220-240 V AC, 50/60 Hz	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	Testing Laboratory: ELDAŞ Test ve Kalibrasyon Elektrik San. Tic. A.Ş.	
Testing location/ address	OSB. Büyük Selçuklu Bulvarı, No: 2/A, Sincan/Ankara	
Tested by (name, function, signature).....:	Sefa ERYILMAZ (Test Engineer)	
Tested by (name, function, signature).....:	Mesut TEKİN (Test Engineer)	
Tested by, Approved by (name, function, signature).....:	Mesut YILDIZ (EMC Laboratory Director)	



List of Attachments (including a total number of pages in each attachment):

- Component list: Page 60

Summary of testing:**Tests performed (name of test and test clause):**

- 4.1 Disturbance voltage (150 kHz to 30MHz)
- 4.2 Disturbance power (30 MHz to 300 MHz)
- 4.5 Discontinuous disturbances (clicks)
 - 5 Harmonic current emissions
 - 6 Voltage changes, voltage fluctuations and flicker
- 7.3 Electrostatic discharge
- 7.4 Fast transient
- 7.5 Injected currents (0,15 MHz to 230 MHz)
- 7.6 Radio-frequency electromagnetic fields (80 MHz to 1000 MHz)
- 7.7 Surges
- 7.8 Voltage dips and interruptions

Testing location:

Organize Sanayi Bölgesi Büyük Selçuklu Bulvarı
No: 2/A Sincan / Ankara

Summary of compliance with National Differences (List of countries addressed):

-

Statement concerning the uncertainty of the measurement systems used for the tests

☒ Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:

Procedure number, issue date and title:

PT-06 Measurement Uncertainty Procedure (18.04.2019)

Uncertainties calculated to according to UKAS LAB34 Ed.1 08.2002 and CISPR-16-4-2:2018 for listed every measurement in the test report and instruction of measurement uncertainty documented according to EN ISO/IEC 17025.

Calculations leading to the reported values are on file with testing laboratory that conducted the testing.

☐ Statement not required by the standard used for type testing



Copy of marking plate:



CUPER 125

Heat recovery unit / Isı geri kazanım ünitesi

220-240V~50/60Hz 9,4W T IP24 Tmax=40°C

GUNAY EXPORT LOJISTIK TICARET VE SANAYI LIMITED

SIRKETI Tepeoren ITOSB Mh. 3. Cadde No: 10 Zemin Kat

34959 Tuzla/ Istanbul Tel. +90 530 420 24 89, E-mail:

sales@gunayexport.com

Date of manufacture:

**Made in
Turkey**



Test item particulars :	
Possible test case verdicts:	
- test case does not apply to test object : N/A	
- test object does meet requirement : Pass (P)	
- test object does not meet requirement : Fail (F)	
Testing	
Date of receipt of test item : 25.03.2024	
Date(s) of performance of tests : 30.03.2024-03.05.2024	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:	
The application for obtaining a Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided:	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory(ies)	GUNAY EXPORT LOJISTIK TICARET VE SANAYI LIMITED SİRKETİ İTOSB Mahallesi 3. Cadde No:10 Zemin Kat 34959 Tepeoren/ Tuzla/İstanbul/TÜRKİYE
General product information and other remarks:	
- Tested according to CISPR14-1 standard A.1.6 clause. - It has been tested as Category IV in the CISPR14-2 standard.	



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1 General description of test item(s)

Note: The information in this section has been provided by the applicant.

1.1 Ports

No.	Port name	Port type	Cable		
			Specified length in m	Attached during test	Shielded
1	Enclosure	Enclosure	-	☐	☐
2	Mains power	AC Mains	<3m	☒	☐
				☐	☐
				☐	☐
				☐	☐
Supplementary information: --					

1.2 Power supply

Rated power supply		Voltage and Frequency	1 ph/PE	2 ph/N/PE	3 ph/N/PE
	☒	AC: 220-240 V, 50/60 Hz	☒	☐	☐
	☐	DC:			
Rated Power	9,4 W				

1.3 Additional parameters

Protection Class	Class II				
Clock frequencies	16 MHz				
Other parameters	-				
Software version	V.1.125RT				
Hardware version	V.1.2 (PCB power board RT and PCB control board RT with temperature sensor)				
Dimensions in cm (W x H x D)	-				
Mounting position	☐	Table-top equipment			
	☒	Wall/Ceiling mounted equipment			
	☐	Floor standing equipment			
	☐	Hand-held equipment			
	☐	Other: --			



1.4 Modules / parts

No.	Module/parts of test item	Type	Manufacturer
1	-	-	-
Supplementary information: --			

1.5 Operating modes

No.	Abbreviation	Detailed description of the operating mode	Applied for testing	
			Emission	Immunity
1	Normal	The EUT is operated continuously with maximum airflow.	☒	☒
Supplementary information: --				

1.6 Accessories (not part of the test item)

No.	Accessory description
1	-

1.7 Documents as provided by the applicant

No.	Description	File name	Issue date
1	Component used in EUT.	Component list	29.07.2024
2	Information form about EUT.	Information form	29.07.2024

1.8 Modifications to the test item during testing

☒	No modifications done during testing	
☐	Modifications done during testing (see details below)	
No.	Description of modification	Date of modification
1	-	
Supplementary information: --		



1.9 Photo(s) of the test item

Test item photo(s)



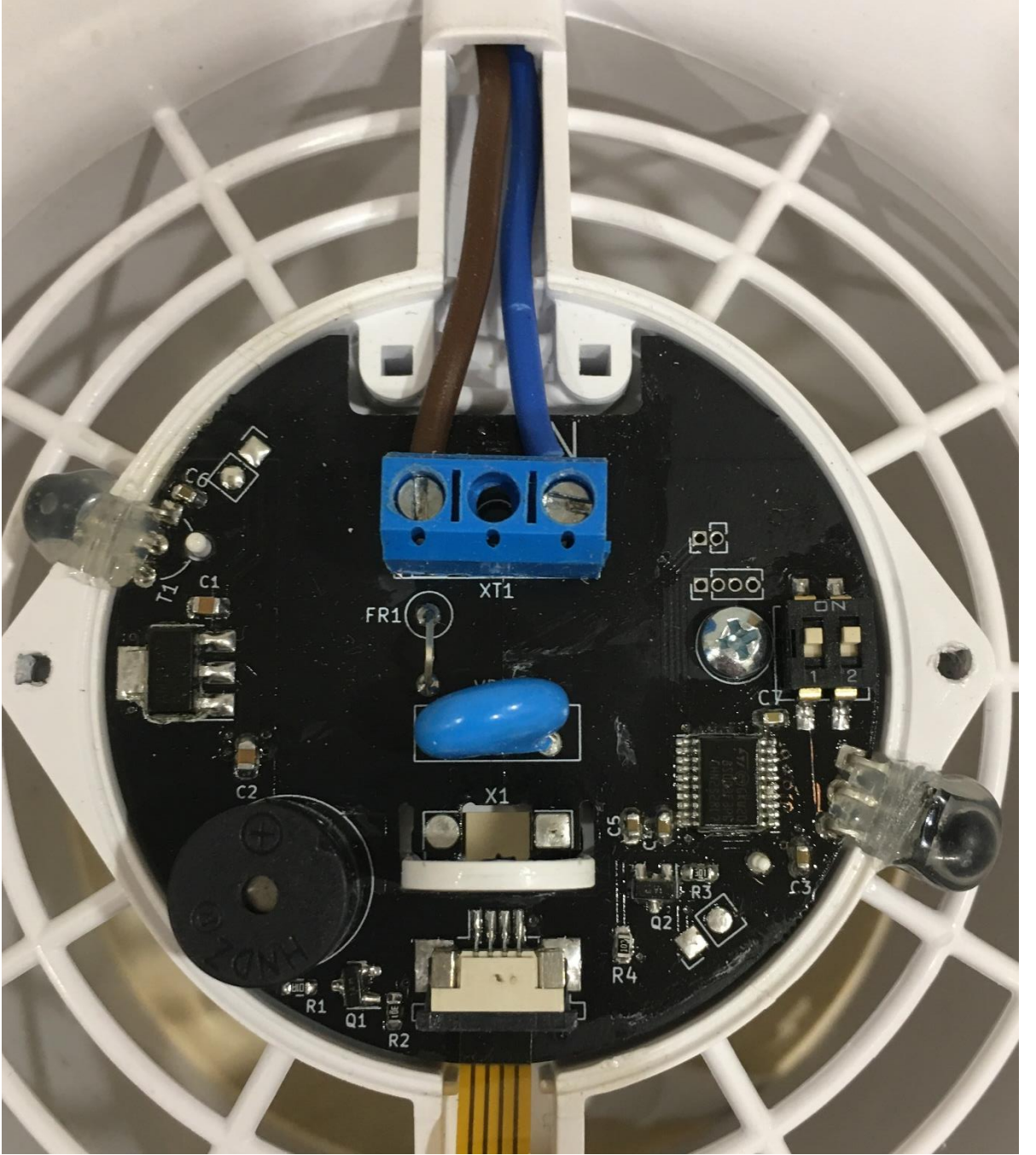
Test item photo(s)



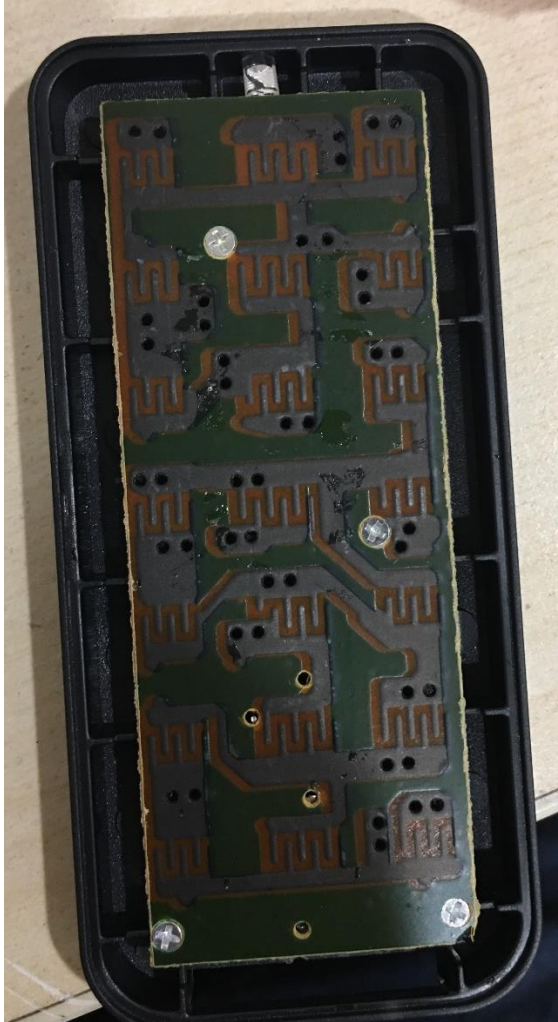
Test item photo(s)



Test item photo(s)



Test item photo(s)



2 Verdict summary section

CISPR-14-1			
Clause	Requirement – Test case	Basic standard	Verdict
Table 2	Continuous disturbances conducted (Induction cooking and IPT) (9 kHz to 30 MHz)	CISPR 16-1-1:2019 CISPR 16-1-2:2014 + AMD1:2017 CISPR 16-2-1:2014 + AMD1:2017	N/A
Table 5 Table 6	Continuous disturbances conducted (150 kHz to 30 MHz)	CISPR 16-1-1:2019 CISPR 16-1-2:2014 + AMD1:2017 CISPR 16-2-1:2014 + AMD1:2017 CISPR 32:2015	P
Table 3 Table 4	Magnetic field (Induction cooking and IPT) (9 kHz – 30 MHz)	CISPR 16-1-4:2019 CISPR 16-2-3:2010 + AMD1:2010 + AMD2:2014	N/A
Table 7 Table 8	Disturbance power (30 MHz – 300 MHz)	CISPR 16-1-1:2019 CISPR 16-1-3:2004 + AMD1:2016 + AMD2:2020 CISPR 16-2-2:2010	P
Table 9	Radiated emission (30 MHz to 1000 MHz)	CISPR 16-1-1:2019 CISPR 16-1-4:2019 CISPR 16-2-3:2016 + AMD1:2019 IEC 61000-4-20:2010 IEC 61000-4-22:2010	N/A
Table 11	Radiated emission (1 GHz to 6 GHz)	CISPR 16-1-1:2019 CISPR 16-1-4:2019 CISPR 16-2-3:2016 + AMD1:2019	N/A
4.4	Discontinuous disturbance (clicks)	CISPR 16-1-1:2019 CISPR 14-1:2020	P
Supplementary information (e.g. detailed information to verdicts): --			

IEC 61000-3-2			
Clause	Requirement – Test case	Basic standard	Verdict
6.1	Control principle shall be allowed for the application according to the clause 6.1	IEC 61000-3-2:2018 + AMD1:2020 + AMD2:2024	P
6.2	Harmonic current emissions	IEC 61000-4-7:2002+AMD1:2008	P
Supplementary information (e.g. detailed information to verdicts): --			



IEC 61000-3-3 (or IEC 61000-3-11)			
Clause	Requirement – Test case	Basic standard	Verdict
4	Voltage changes, voltage fluctuations and flicker	IEC 61000-4-15:2010	P
Supplementary information (e.g. detailed information to verdicts): --			

CISPR-14-2			
Clause	Requirement – Test case	Basic standard	Verdict
5.1	Electrostatic discharge	IEC 61000-4-2:2008	P
5.2	Fast transients	IEC 61000-4-4:2012	P
5.3	Injected currents, 0,15 MHz to 230 MHz	IEC 61000-4-6:2013	P
5.4	Injected currents, 0,15 MHz to 80 MHz	IEC 61000-4-6:2013	N/A
5.5	Radio frequency electromagnetic fields, 80 MHz to 1000 MHz	IEC 61000-4-3:2006 + AMD1:2007 + AMD2:2010 IEC 61000-4-22:2010 IEC 61000-4-20:2010	N/A
5.6	Surges	IEC 61000-4-5:2014 + AMD1/2017	P
5.7	Voltage dips and interruptions	IEC 61000-4-11:2020	P
Supplementary information (e.g. detailed information to verdicts): --			



3 Test conditions

3.1 General

Measurement uncertainties:	For all measurements where guidance for the calculation of the instrumentation uncertainty of a measurement is specified in CISPR 16-4-2, IEC 61000-4 series or a product standard, the measurement instrumentation uncertainty has been calculated and applied in accordance with these standards. In all cases if the test laboratory uncertainty is larger than the value for U_{CISPR} given in CISPR 16-4-2 the uncertainty is included in the test report annex. In case the standards in the IEC 61000-4 series or the product standard requires the indication of the uncertainty in the report these uncertainty values are included in the annex.
Conformity decision rule:	ISO / IEC 17025:2017 item 3.7 (Please see page 2 for decision rule of laboratory.)

3.2 Specific conditions required by CISPR 14-1

AC or DC mains voltage used during the test if not otherwise specified.....:	230 V AC, 50 Hz
--	-----------------



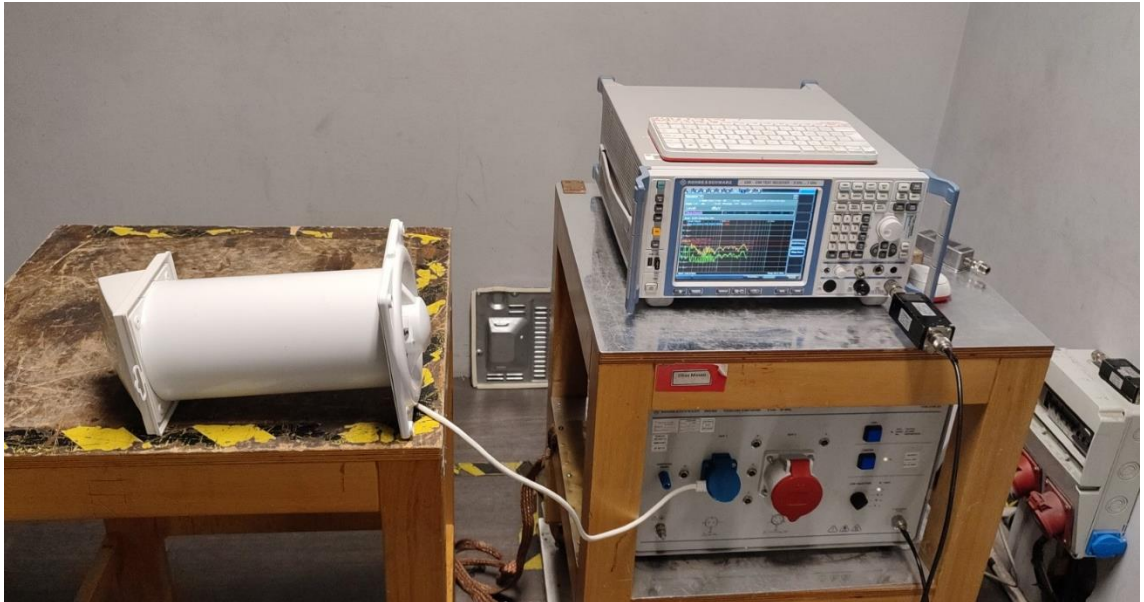
4 Emission

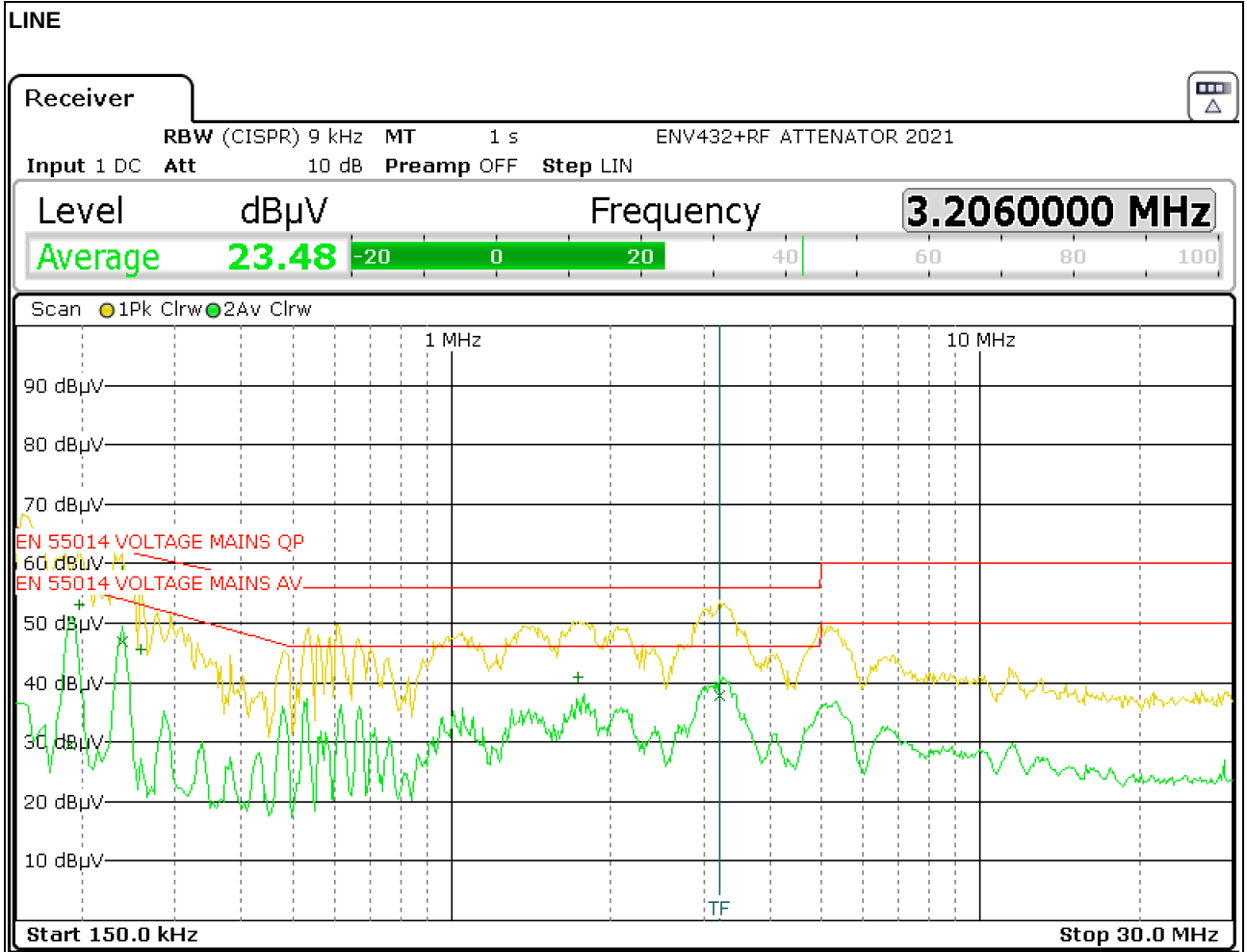
4.1 Disturbance voltage – 150 kHz to 30 MHz

Tested by	Mesut TEKİN
Test date	30.03.2024
Test Location (stand)	Shielded room
Applied limit class or environment	☐ Table 2 (Induction cooking and IPT: 100 V rated); Mains terminals ☐ Table 2 (Induction cooking and IPT; Other appliances); Mains terminals ☒ Table 5 (Columns 2 and 3); Mains port ☐ Table 5 (Columns 4 and 5); Auxiliary ports ☐ Table 5 (Columns 6 and 7); Auxiliary ports ☐ Table 6 (Columns 2 and 3); Mains port of tools $P \leq 700 \text{ W}$ ☐ Table 6 (Columns 4 and 5); Mains port of tools $700 \text{ W} < P \leq 1000 \text{ W}$ ☐ Table 6 (Columns 6 and 7); Mains port of tools $P > 1000 \text{ W}$ ☐ Wired Network port according CISPR 32 class B ☐ Other: --
Test set-up description	☒ Set-up Type A (40 cm distance to vertical ground plane, 80 cm o ground plane) ☐ Set-up Type B (40 cm distance to horizontal ground plane) ☐ Floor standing equipment set-up (10 cm over ground plane) ☐ Other: ☐ Artificial hand applied
Supplementary Test set-up description.....	EUT has been supplied by LISN equipment on L, N couplings. Emission value that was given to system has been measured by Emi Test Receiver. Tested according to CISPR 14-1 standard A.1.6 clause.
Test method applied	☒ Artificial mains network ☐ Voltage probe



	☐	Current probe
	☐	ISN according CISPR 32
	☐	In situ CDN (150 Ohm and current probe)
	☐	Current probe and capacitive voltage probe (CVP) according CISPR 32
	☐	CDN according to IEC 61000-4-6
	☐	Artificial mains network used as voltage probe
	☐	Other: --
Supplementary information.....:		--

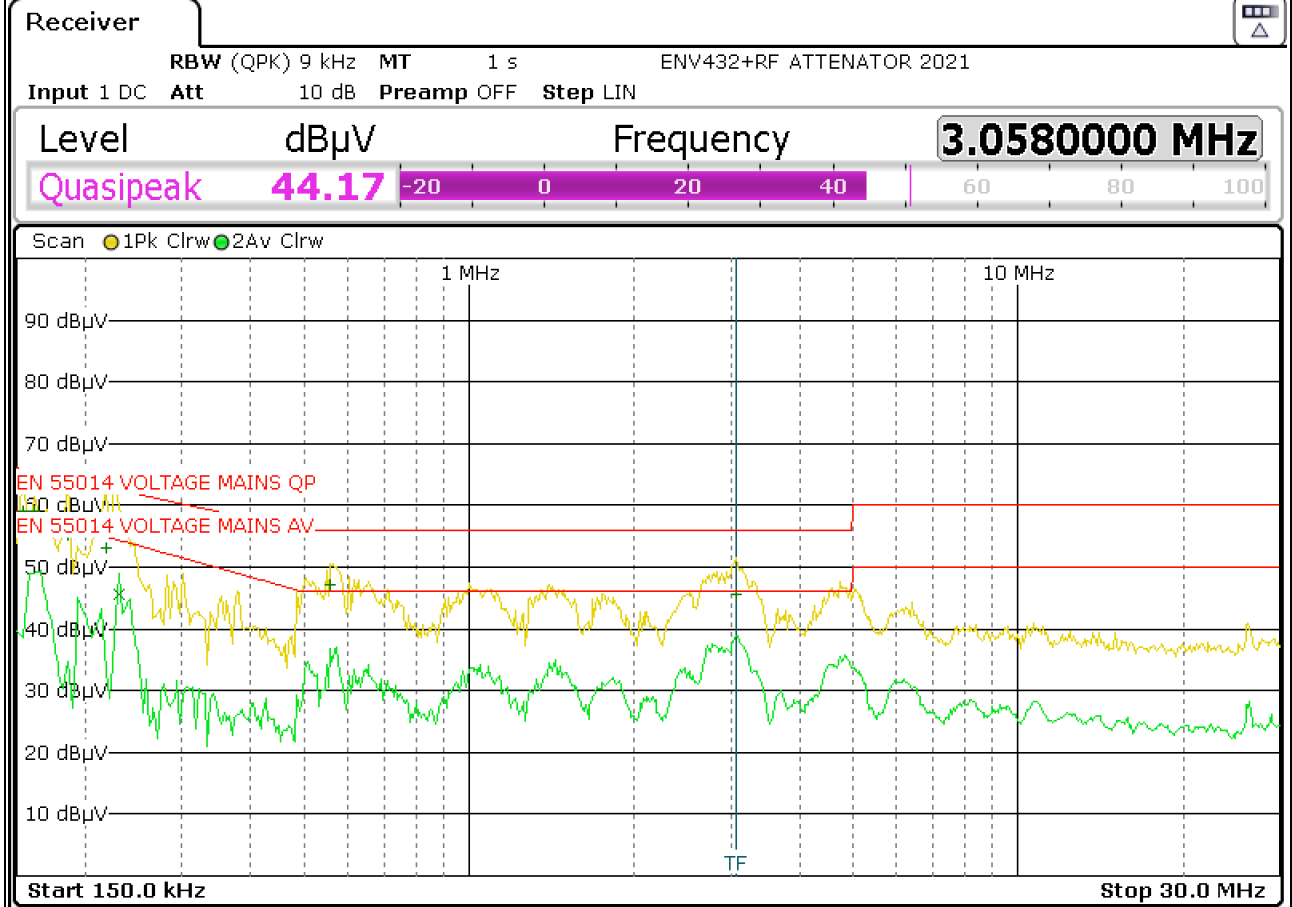
Test set-up photo



Trace/Detector	Frequency	Level dBμV	DeltaLimit
1 Quasi Peak	238.0000 kHz	58.69	-3.48 dB
2 Average	238.0000 kHz	47.02	-7.00 dB
2 Average	3.2060 MHz	37.86	-8.14 dB
1 Quasi Peak	154.0000 kHz	56.07	-9.71 dB
1 Quasi Peak	3.2060 MHz	46.08	-9.92 dB
1 Quasi Peak	198.0000 kHz	53.08	-10.61 dB
1 Quasi Peak	1.7340 MHz	40.81	-15.19 dB
1 Quasi Peak	258.0000 kHz	45.58	-15.92 dB
2 Average	190.0000 kHz	29.61	-26.84 dB



NOTR



Trace/Detector	Frequency	Level dBμV	DeltaLimit
1 Quasi Peak	226.0000 kHz	56.84	-5.76 dB
1 Quasi Peak	162.0000 kHz	59.11	-6.25 dB
1 Quasi Peak	154.0000 kHz	58.96	-6.82 dB
2 Average	230.0000 kHz	45.65	-8.73 dB
1 Quasi Peak	558.0000 kHz	47.23	-8.77 dB
1 Quasi Peak	186.0000 kHz	55.28	-8.93 dB
1 Quasi Peak	218.0000 kHz	53.04	-9.85 dB
1 Quasi Peak	3.0580 MHz	45.65	-10.35 dB

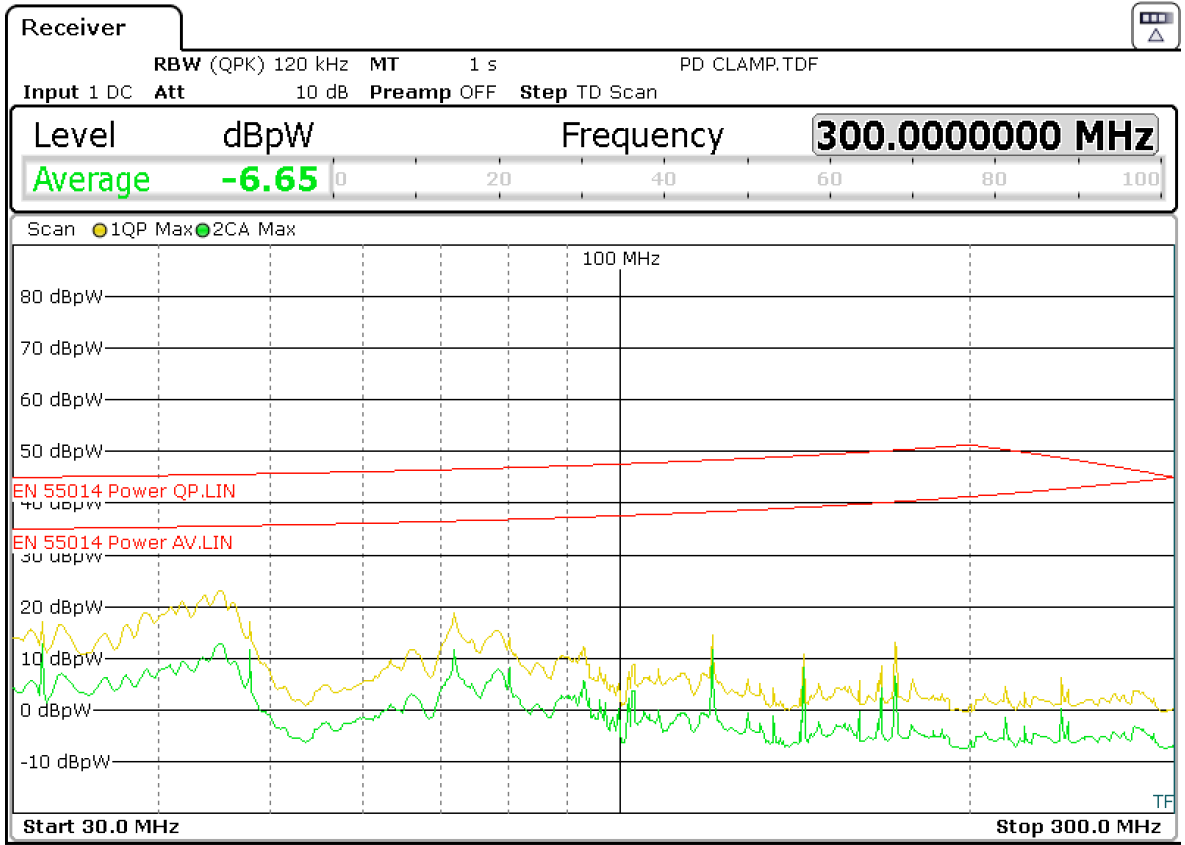


4.2 Disturbance power – 30 MHz to 300 MHz

Tested by	Mesut TEKİN	
Test date	03.04.2024	
Test Location (stand)	Shielded room	
Applied limit class or environment	☒	Table 7 (Columns 2 and 3); General
	☐	Table 7 (Columns 4 and 5); Tools $P \leq 700 \text{ W}$
	☐	Table 7 (Columns 6 and 7); Tools $700 \text{ W} < P \leq 1000 \text{ W}$
	☐	Table 7 (Columns 8 and 9); Tools $P > 1000 \text{ W}$
Test set-up description	☒	Equipment on table of 80 cm height
	☐	Equipment on support of 10 cm height
	☐	Other: --
Supplementary test set-up description.....	EUT has been placed on a wooden isolator which was 80 cm height from reference ground plane in the shielded room. The tested cable has extended to 6 meters along the strength line. It is tested to find the voltage value to produce the maximum emission on the frequency range 30 MHz - 300 MHz. Measurement clamp is placed to find the highest disturbance level for each test frequency.	
Conditions for exemption from radiated measurements above 300 MHz (Both required)	☒	Table 8 reduction of Table 7 limits applied and passed
	☒	Maximum clock frequency < 30 MHz
Supplementary information.....	Tested according to CISPR 14-1 standard A.1.6 clause.	



Test set-up photo



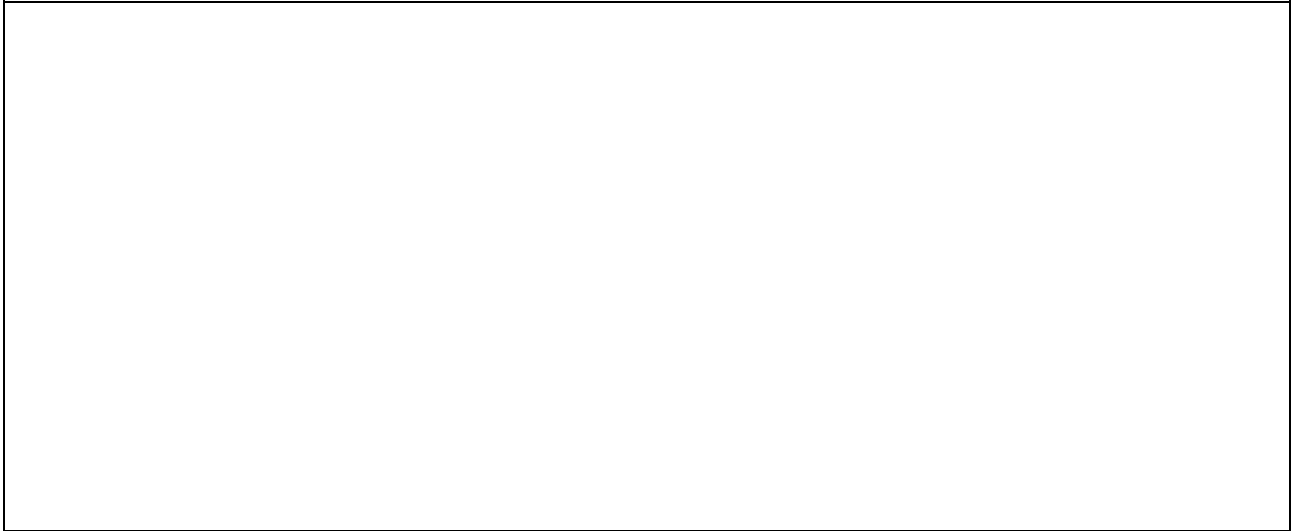
4.3 Radiated disturbances – 30 MHz to 1000 MHz

Tested by	N/A	
Test date	N/A	
Test Location (stand)	N/A	
Radiated test application	☒	Radiated test NOT applied because conditions of 4.3.4.2 are met Only disturbance power measurement applied
	☐	Radiated test applied from 300 MHz to 1000 MHz Disturbance power measurement from 30 MHz to 300 MHz
	☐	Radiated test applied from 30 MHz to 1000 MHz Disturbance power measurement applied
Upper frequency limit for testing .:	Clock frequency F_x (As informed by applicant)	
	☐	< 108 MHz
	☐	108 MHz < F_x ≤ 500 MHz
	☐	500 MHz < F_x ≤ 1 GHz
	☐	F_x > 1 GHz
	☐	Information not provided for testing
Applied limits.....	☐	Table 9 Radiated disturbance limits 30 MHz to 1000 MHz
	☐	Table 10 Radiated disturbance limits 1 GHz to 6 GHz
	☐	Other: --
Test set-up description	☐	Equipment on a table of 80 cm height
	☐	Equipment on the floor (insulated from ground plane)
	☐	Other: --
Supplementary test set-up description.....	--	
Test method applied (< 1000 MHz)	☐	OATS or SAC with measurement distance [m]: 3
	☐	FAR CISPR 16-2-3 with measurement distance [m]: 3
	☐	FAR IEC 61000-4-22 with measurement distance [m]: 3
	☐	TEM Waveguide according IEC 61000-4-20
Test method applied (1 GHz to 6 GHz).....	☐	FSOATS with measurement distance [m]: 3
	☐	FAR CISPR 16-2-3 with measurement distance [m]: 3
	☐	Other: --
Supplementary information.....	---	



4.4 Magnetic field – 9 kHz to 30 MHz

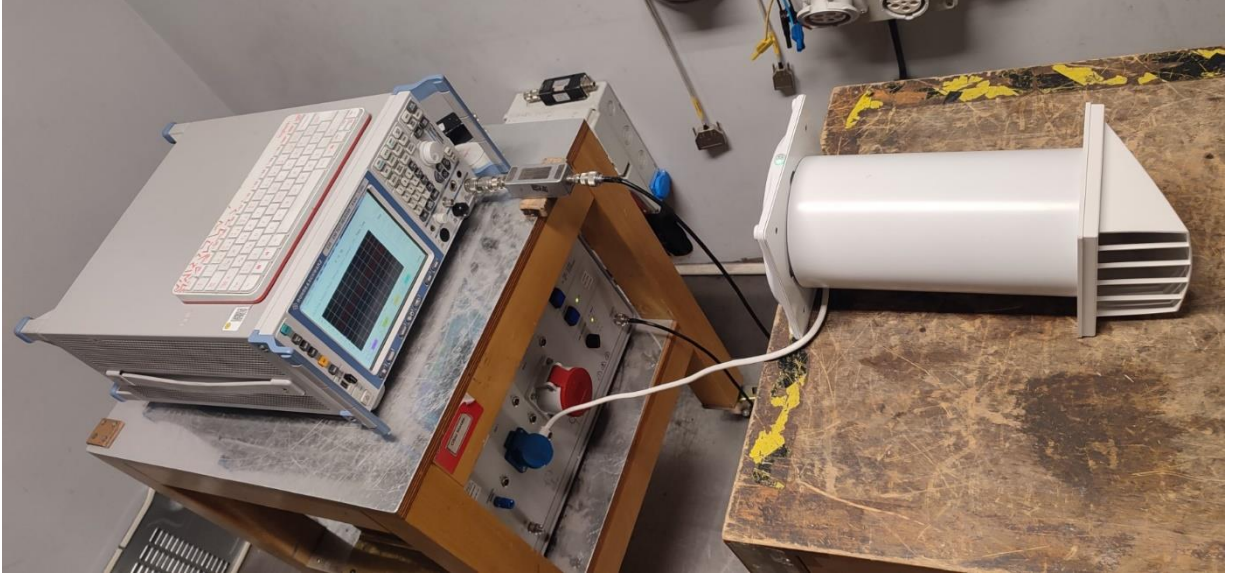
Tested by	N/A	
Test date	N/A	
Test Location (stand)	N/A	
Application	☒	Not applied because no induction cooking appliance
Applied limit class	☐	Table 3; Magnetic field; IPT equipment
	☐	Table 4; Magnetic field induced current; IPT equipment
	☐	Other: --
Test set-up description	☐	Equipment on a table of 80 cm height
	☐	Equipment on the floor (insulated from ground plane)
	☐	Equipment placed in the centre of the large loop antenna system (LLAS) according CISPR 16-1-4:2019, 4.7
	☐	Other: --
Supplementary test set-up description.....	---	
Test method applied	☐	3 m distance, small loop antenna (e.g. 60 cm) according CISPR 16-1-4:2019, 4.3.2
	☐	2 m large loop antenna system (LLAS) according CISPR 16-1-4:2019, 4.7
Supplementary information.....	---	

Test set-up photo



4.5 Discontinuous disturbances (clicks)

Tested by	Mesut TEKİN
Test date	03.04.2024
Test location (stand).....	Shielded room
Test set-up description	☒ Set-up Type A (40 cm distance to vertical ground plane, 80 cm over ground plane) ☐ Set-up Type B (40 cm distance to horizontal ground plane) ☐ Floor standing equipment set-up (10 cm over ground plane) ☐ Other: --- ☐ Artificial hand applied
Supplementary test set-up description:	EUT is supplied by LISN equipment on L, N couplings in the shielded room. When the EUT is in the normal period of operation click value that was given to main supply is measured by Emi Test Receiver.
Coupling network	☒ Artificial mains network ☐ Artificial mains network used as voltage probe ☐ Voltage probe ☐ Other: ---
Applied method for discontinuous disturbances	☐ Click rate determined on base of switching operations ☒ Click rate determined on base of clicks measurements ☐ Other: ---
Click-analyser.....	☒ 4-channel click analyser ☐ 1-channel click analyser ☐ Other: ---
Exceptions from the click definition applied.....	☐ 5.4.3.2 Individual switching operations ☐ 5.4.3.3 Combination of disturbances in a time frame less than 600 ms ☐ 5.4.3.4 Instantaneous switching ☐ 5.4.3.5 Separation less than 200 ms ☐ Test item only causes single switching events (5.4.3.2) ☐ 5.4.3.6 Thermostatically controlled three-phase switches ☐ 5.4.3.7 Superposition of clicks with continuous disturbance (QP continuous level is at least 2 dB lower than the QP Limit) ☐ Other: ---
Supplementary information	Tested according to CISPR 14-1 standard A.1.6 clause. The test was stopped after 20 minutes because EUT did not produce any clicks throughout its operate. Clicks in individual switching operations are not recorded (CISPR 14-1 Clause 5.4.3.2).



Test set-up photo

Clicks (≤ 10 ms)	0	Frequency	150 kHz
Clicks (> 10 ms, ≤ 20 ms)	0	Test Duration (h:mm:ss)	0:20:00
Clicks (> 20 ms, ≤ 200 ms)	0	Click Rate per Minute	0.00
Clicks > Lq (Number)	0	L (dBuV)	66
Clicks > Lq (Percent)	0	Lq (dBuV)	110.0
Continuous Disturbances	0	600 ms Rule used	No
Overload Occured ?	No	Number of Refrigerator Rule Used	0
Overall Correction	10.00	LISN Phase	L1
Factor f	-	Margin for PK Detector	0.00
Attenuation	35		
PASSED			

Clicks (≤ 10 ms)	0	Frequency	500 kHz
Clicks (> 10 ms, ≤ 20 ms)	0	Test Duration (h:mm:ss)	0:20:00
Clicks (> 20 ms, ≤ 200 ms)	0	Click Rate per Minute	0.00
Clicks > Lq (Number)	0	L (dBuV)	56
Clicks > Lq (Percent)	0	Lq (dBuV)	100.0
Continuous Disturbances	0	600 ms Rule used	No
Overload Occured ?	No	Number of Refrigerator Rule Used	0
Overall Correction	10.00	LISN Phase	L1
Factor f	-	Margin for PK Detector	0.00
Attenuation	35		
PASSED			



Clicks (<= 10 ms)	0	Frequency	1.4 MHz
Clicks (> 10 ms, <= 20 ms)	0	Test Duration (h:mm:ss)	0:20:00
Clicks (> 20 ms, <= 200 ms)	0	Click Rate per Minute	0.00
Clicks > Lq (Number)	0	L (dBuV)	56
Clicks > Lq (Percent)	0	Lq (dBuV)	100.0
Continuous Disturbances	0	600 ms Rule used	No
Overload Occured ?	No	Number of Refrigerator Rule Used	0
Overall Correction	10.00	LISN Phase	L1
Factor f	-	Margin for PK Detector	0.00
Attenuation	35		
PASSED			

Clicks (<= 10 ms)	0	Frequency	30 MHz
Clicks (> 10 ms, <= 20 ms)	0	Test Duration (h:mm:ss)	0:20:00
Clicks (> 20 ms, <= 200 ms)	0	Click Rate per Minute	0.00
Clicks > Lq (Number)	0	L (dBuV)	60
Clicks > Lq (Percent)	0	Lq (dBuV)	104.0
Continuous Disturbances	0	600 ms Rule used	No
Overload Occured ?	No	Number of Refrigerator Rule Used	0
Overall Correction	10.00	LISN Phase	L1
Factor f	-	Margin for PK Detector	0.00
Attenuation	35		
PASSED			



Clicks (≤ 10 ms)	0	Frequency	150 kHz
Clicks (> 10 ms, ≤ 20 ms)	0	Test Duration (h:mm:ss)	0:20:00
Clicks (> 20 ms, ≤ 200 ms)	0	Click Rate per Minute	0.00
Clicks > Lq (Number)	0	L (dBuV)	66
Clicks > Lq (Percent)	0	Lq (dBuV)	110.0
Continuous Disturbances	0	600 ms Rule used	No
Overload Occured ?	No	Number of Refrigerator Rule Used	0
Overall Correction	10.00	LISN Phase	N
Factor f	-	Margin for PK Detector	0.00
Attenuation	35		
PASSED			

Clicks (≤ 10 ms)	0	Frequency	500 kHz
Clicks (> 10 ms, ≤ 20 ms)	0	Test Duration (h:mm:ss)	0:20:00
Clicks (> 20 ms, ≤ 200 ms)	0	Click Rate per Minute	0.00
Clicks > Lq (Number)	0	L (dBuV)	56
Clicks > Lq (Percent)	0	Lq (dBuV)	100.0
Continuous Disturbances	0	600 ms Rule used	No
Overload Occured ?	No	Number of Refrigerator Rule Used	0
Overall Correction	10.00	LISN Phase	N
Factor f	-	Margin for PK Detector	0.00
Attenuation	35		
PASSED			



Clicks (≤ 10 ms)	0	Frequency	1.4 MHz
Clicks (> 10 ms, ≤ 20 ms)	0	Test Duration (h:mm:ss)	0:20:00
Clicks (> 20 ms, ≤ 200 ms)	0	Click Rate per Minute	0.00
Clicks > Lq (Number)	0	L (dBuV)	56
Clicks > Lq (Percent)	0	Lq (dBuV)	100.0
Continuous Disturbances	0	600 ms Rule used	No
Overload Occured ?	No	Number of Refrigerator Rule Used	0
Overall Correction	10.00	LISN Phase	N
Factor f	-	Margin for PK Detector	0.00
Attenuation	35		
PASSED			

Clicks (≤ 10 ms)	0	Frequency	30 MHz
Clicks (> 10 ms, ≤ 20 ms)	0	Test Duration (h:mm:ss)	0:20:00
Clicks (> 20 ms, ≤ 200 ms)	0	Click Rate per Minute	0.00
Clicks > Lq (Number)	0	L (dBuV)	60
Clicks > Lq (Percent)	0	Lq (dBuV)	104.0
Continuous Disturbances	0	600 ms Rule used	No
Overload Occured ?	No	Number of Refrigerator Rule Used	0
Overall Correction	10.00	LISN Phase	N
Factor f	-	Margin for PK Detector	0.00
Attenuation	35		
PASSED			

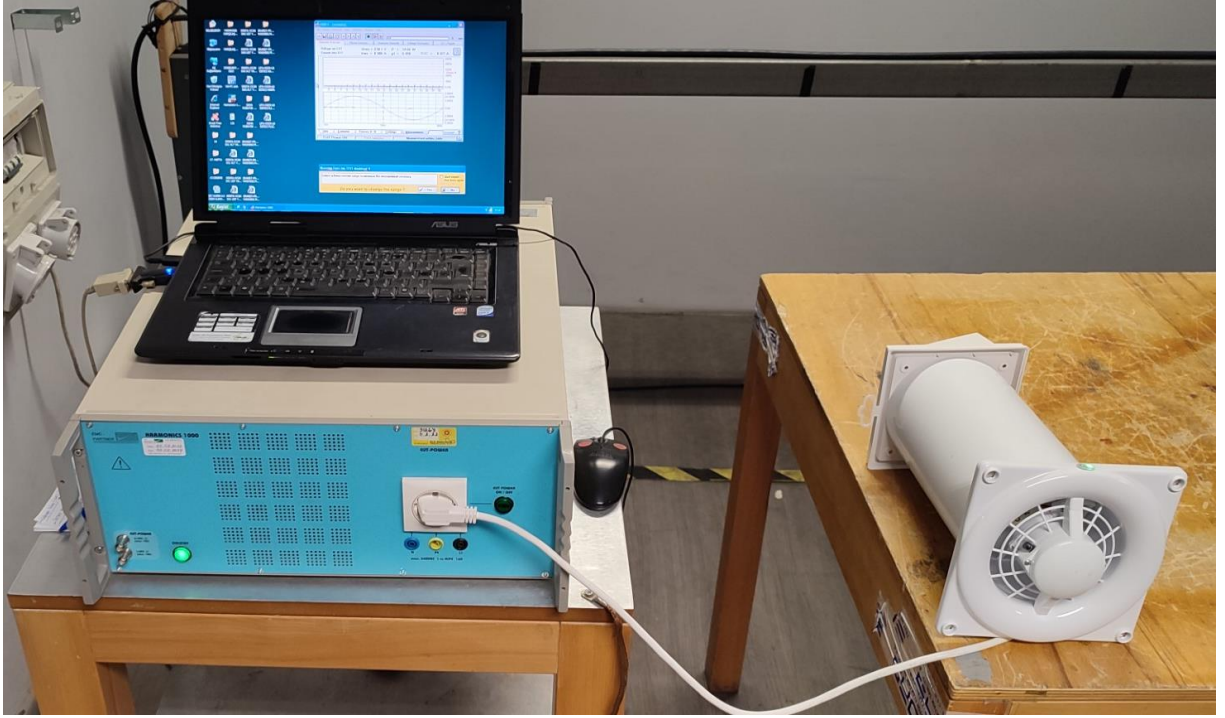


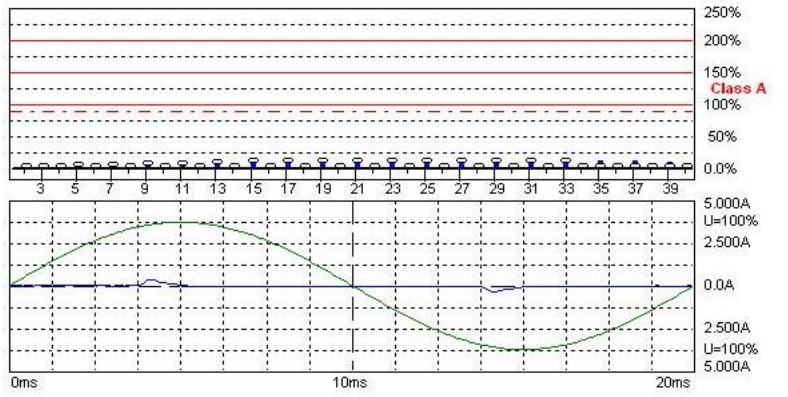
5 Harmonic current emissions

Tested by	Mesut TEKİN		
Test date	30.03.2024		
Test location (stand)	Shielded room		
Version of measurement instrument standard used IEC 61000-4-7 (Clause 7)	☒	Measuring instrumentation according IEC 61000-4-7:2002 + AMD1:2008, (Grouping ON)	
	☐	Measuring instrumentation according IEC 61000-4-7:1991, (Grouping OFF)	
Test set up description.....	The power supply of the EUT is connected to Harmonic device. The harmonics that the device gave to the grid were measured.		
Operating modes	Normal operating mode		
	☒	Class A	
	☐	Class B	
	☐	Class C with rated power > 25 W (Table 2)	
	☐	Class C with rated power ≥ 5 and ≤ 25 W (First requirement, Table 3 column 2)	
	☐	Table 3, column 2 (Power related limits)	
	☐	3 rd harmonic ≤ 86 %, 5 th harmonic ≤ 61 % and waveform conditions	
	☐	THD ≤ 70 %, Harmonics: 3 rd ≤ 35 %, 5 th ≤ 25 %, 7 th ≤ 30 %, 9 th and 11 th ≤ 20 %, 2 nd ≤ 5 %	
	☐	Other: --	
	☐	Class D	
Observation period	Description	Period selected T_{obs}	
	☐	Quasi stationary	2.5 min
	☐	Short cyclic	$T_{obs} \geq 10$ cycles =
	☒	Random	$T_{obs} = 5$ min
	☐	Long cyclic	Full program cycle or 2.5 min. with highest THC $T_{obs} =$
Control principle used in the sample	☒	The EUT does not utilize half-wave rectification or any other method to control the active input power. Such equipment is in conformity with the standard if the measured values comply with the applicable limit.	
	☐	The EUT uses half-wave rectification directly on the mains supply, or it uses symmetrical or asymmetrical methods to control the active input power. Such equipment is permitted under conditions only. An evaluation on the control method is	



		required. However, the equipment shall still comply with the harmonic requirements of the standard.
Supplementary information..... :	-	

Test set-up Photo



Harmonic Emission - IEC 61000-3-2, EN 61000-3-2, (EN60555-2)

30.03.2024 14:54:42

Urms = 230.1 V P = 8.590 W THC = 0.069 A Range: 5 A
 Irms = 0.078 A pf = 0.478 V-nom: 230 V
 TestTime: 5 min (100%)

CUPER 125

Test completed, Result: PASSED

HAR-1000 EMC-Partner

Full Bar : Actual Values
 Empty Bar : Maximum Values
 Blue : Current , Green : Voltage , Red : Failed

Urms = 230.1V Freq = 50.000 Range: 5 A
 Irms = 0.078A Ipk = 0.391A cf = 5.000
 P = 8.590W S = 17.98VA pf = 0.478
 THDi = 175 % THDu = 0.10 % Class A

Test - Time : 5min (100 %)

Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Irms [A]	Imax [A]	Limit [A]	Status
1	50	0.0394	0.0397	0.0507		
2	100	0.0000	0.0003	0.0009	1.0800	
3	150	0.0320	0.0327	0.0415	2.3000	
4	200	0.0000	0.0003	0.0009	0.4300	
5	250	0.0299	0.0302	0.0366	1.1400	
6	300	0.0000	0.0003	0.0009	0.3000	
7	350	0.0268	0.0275	0.0305	0.7700	
8	400	0.0000	0.0003	0.0009	0.2300	
9	450	0.0232	0.0238	0.0247	0.4000	
10	500	0.0000	0.0003	0.0009	0.1840	
11	550	0.0192	0.0198	0.0201	0.3300	
12	600	0.0000	0.0003	0.0009	0.1533	
13	650	0.0155	0.0159	0.0162	0.2100	
14	700	0.0000	0.0003	0.0009	0.1314	
15	750	0.0124	0.0128	0.0131	0.1500	
16	800	0.0000	0.0003	0.0009	0.1150	
17	850	0.0100	0.0104	0.0116	0.1324	
18	900	0.0000	0.0003	0.0009	0.1022	
19	950	0.0091	0.0095	0.0110	0.1184	
20	1000	0.0000	0.0003	0.0009	0.0920	
21	1050	0.0089	0.0092	0.0104	0.1071	
22	1100	0.0000	0.0003	0.0009	0.0836	
23	1150	0.0086	0.0089	0.0098	0.0978	
24	1200	0.0000	0.0003	0.0009	0.0767	
25	1250	0.0085	0.0089	0.0092	0.0900	
26	1300	0.0000	0.0003	0.0009	0.0708	
27	1350	0.0080	0.0082	0.0085	0.0833	
28	1400	0.0000	0.0006	0.0009	0.0657	
29	1450	0.0072	0.0076	0.0076	0.0776	
30	1500	0.0000	0.0006	0.0009	0.0613	
31	1550	0.0063	0.0067	0.0067	0.0726	
32	1600	0.0000	0.0006	0.0006	0.0575	
33	1650	0.0052	0.0055	0.0058	0.0682	
34	1700	0.0000	0.0003	0.0006	0.0541	
35	1750	0.0001	0.0046	0.0052	0.0643	
36	1800	0.0000	0.0003	0.0006	0.0511	
37	1850	0.0000	0.0040	0.0046	0.0608	
38	1900	0.0000	0.0003	0.0006	0.0484	
39	1950	0.0000	0.0034	0.0040	0.0577	
40	2000	0.0000	0.0003	0.0006	0.0460	



Calculation of Individual Harmonic Limits

Fixed Limits for **Class A**:

Order	Limits in Ampere			
	90%	100%	150%	200%
2	0.9720	1.0800	1.6200	2.1600
3	2.0701	2.3001	3.4502	4.6002
4	0.3870	0.4300	0.6450	0.8600
5	1.0261	1.1401	1.7102	2.2803
6	0.2700	0.3000	0.4500	0.6000
7	0.6930	0.7700	1.1549	1.5399
8	0.2071	0.2301	0.3452	0.4602
9	0.3601	0.4001	0.6001	0.8002
10	0.1656	0.1840	0.2760	0.3680
11	0.2969	0.3299	0.4948	0.6598
12	0.1379	0.1532	0.2298	0.3064
13	0.1890	0.2100	0.3149	0.4199
14	0.1184	0.1315	0.1973	0.2631
15	0.1351	0.1501	0.2252	0.3003
16	0.1035	0.1151	0.1726	0.2301
17	0.1192	0.1324	0.1987	0.2649
18	0.0920	0.1022	0.1534	0.2045
19	0.1066	0.1184	0.1776	0.2368
20	0.0827	0.0919	0.1378	0.1837
21 *	0.0964	0.1071	0.1607	0.2142
22	0.0753	0.0836	0.1254	0.1672
23 *	0.0882	0.0980	0.1469	0.1959
24	0.0689	0.0766	0.1149	0.1532
25 *	0.0810	0.0900	0.1350	0.1801
26	0.0637	0.0708	0.1062	0.1416
27 *	0.0750	0.0833	0.1250	0.1666
28	0.0591	0.0656	0.0984	0.1312
29 *	0.0698	0.0775	0.1163	0.1550
30	0.0552	0.0613	0.0920	0.1227
31 *	0.0654	0.0726	0.1089	0.1453
32	0.0516	0.0574	0.0861	0.1147
33 *	0.0612	0.0681	0.1021	0.1361
34	0.0486	0.0540	0.0810	0.1080
35 *	0.0580	0.0644	0.0966	0.1288
36	0.0459	0.0510	0.0764	0.1019
37 *	0.0547	0.0607	0.0911	0.1215
38	0.0437	0.0485	0.0728	0.0970
39 *	0.0519	0.0577	0.0865	0.1154
40	0.0415	0.0461	0.0691	0.0922

EUT is PASSED if:

- all Average values of the Individual Harmonic Currents (Iavg) are below 100% of the Individual Limits.
- all Maximum values of the Individual Harmonic Currents (Imax) are below 150% of the Individual Limits.

Exceptions:

These exceptions are mutually exclusive and cannot be used together.

- 1) All Maximum values of the Individual Harmonic Currents (Imax) are below 200% of the Individual Limits if :
 EUT belongs to Class A
AND excursion beyond 150% lasts less than 10% of observation time with a maximum of 10 minutes
AND the average value of the corresponding harmonic current over the entire observation period is less than 90% of applicable limits
- 2)
 - Average values of some Individual Harmonic Currents (marked with "*") may be up to 150% if the Partial Harmonic Current (PHC) is lower than the PHC which is calculated from the Limit Currents:
 Actual PHC = 0.0202A
 PHC calculated from Limit values = 0.2514A
 - Individual Harmonic Currents less than 5mA or less than 0.6% of Irms (which is $0.006 \times 0.078 = 0.000474$) are disregarded.



Definitions of Abbreviations

Urms	***	Actual	total Voltage in Volt RMS
Irms	***	Actual	total Current in Ampere RMS
Ipk	***	Actual	Peak value of the Current in Ampere
cf	***	Actual	Crest Factor (Ipk/Irms)
P	***	Actual	Active Power in Watt
S	***	Actual	Apparent Power in VA (Urms*Irms)
pf	***	Actual	Power Factor (P/S)
THDi	***	Actual	Total Harmonic Current Distortion in %
THDu	***	Actual	Total Harmonic Voltage Distortion in %
THC	***	Actual	Total Harmonic Current in Ampere
PHC	***	Actual	Partial Harmonic Current in Ampere

Individual measurements for 2nd to 40th order:

Iavg		Average value of the Individual Harmonic Current
		in Ampere RMS
Irms	***	Actual Individual Harmonic Current
		in Ampere RMS
Imax		Maximum Individual Harmonic Current
		in Ampere RMS
Limit Irms		Individual Limit (100%) for the selected Class
		in Ampere RMS

General :

- Maximum and Average values are calculated over the full test-time
- The values marked with "****" are actual values which could vary during test-time and are taken at the time of protocol printout.
- The individual measurements are taken over every 200ms and smoothed with an 1,5second filter.



6 Voltage changes, voltage fluctuations and flicker

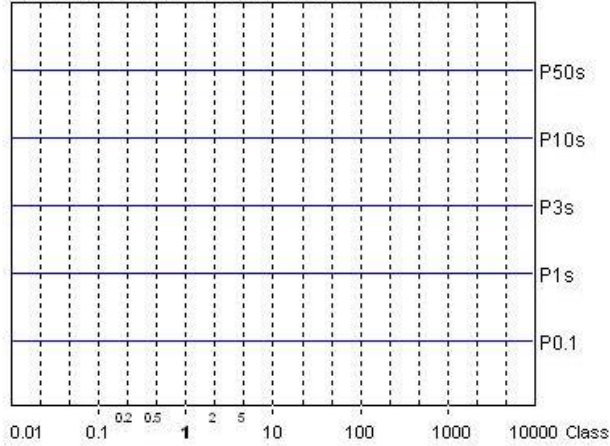
Tested by	Mesut TEKİN	
Test date	30.03.2024	
Test Location (stand)	Shielded room	
Test set-up description	The power supply of the EUT is connected to Harmonics device. The voltage variations and flicker value of the device to the network were measured.	
Test method	☒	4.2.2 Flicker meter according IEC 61000-4-15
	☐	4.2.3 Simulation
	☐	4.2.4 Analytical method
	☐	4.2.5 Use of $P_{st} = 1$ curve
Observation time selected	☒	10 Minutes
	☐	120 Minutes
	☐	24 times switching according to Annex B
	☐	Other: --
Limit for d_{max} applied	☒	4 %, clause 5 a)
	☐	6 %, clause 5 b)
	☐	7 %, clause 5 c)
AC Mains voltage during test.....	230 V AC, 50 Hz	
Supplementary information.....	--	

IEC 61000-3-11:

IEC 61000-3-11 applied?	☒	NO (IEC 61000-3-11 has NOT been applied)
	☐	YES (IEC 61000-3-11 has been applied. Please fill in the following data)
Statement regarding IEC 61000-3-11	☐	The equipment under test (EUT) deems to be compliant with the applied standard, on condition the manufacturer meets his obligations regarding EN 61000-3-11:2000, Section 4a. The result is regarded as PASS if all information requested by EN 61000-3-11 is published in the user manual.
Maximum permissible system impedance	.. Ω	



Flicker Emission IEC 61000-4-15 for 230V/50Hz



Actual Flicker (Fli): 0.00

Short-term Flicker (Pst): 0.07

Limit (Pst): 1.00

Long-term Flicker (Plt): 0.07

Limit (Plt): 0.00

Maximum Relative

Volt. Change (dmax): 0.00%

Limit (dmax): 4.00%

Relative Steady-state

Voltage Change (dc): 0.08%

Limit (dc): 3.30%

Tmax 3.30% (dt): 0.00ms

Limit (dt>Lim): 500ms

Flicker Emission - IEC 61000-3-3, EN 61000-3-3

30.03.2024 15:06:29

Urms = 230.1 V P = 8.467 W
 Irms = 0.078 A pf = 0.471

Range: 5 A
 V-nom: 230 V
 TestTime: 10 min (100%)

CUPER 125

Test completed, Result: PASSED

HAP-1000 EMC-Parber

Full Bar : Actual Values
 Empty Bar : Maximum Values
 Circles : Average Values
 Blue : Current , Green : Voltage , Red : Failed

Urms = 230.1V Freq = 50.000 Range: 5 A
 Irms = 0.078A IpK = 0.396A cf = 5.063
 P = 8.467W S = 17.98VA pf = 0.471

Test - Time : 1 x 10min = 10min (100 %)

LIN (Line Impedance Network) : L: 0.24ohm +j0.15ohm N: 0.16ohm +j0.10ohm

Limits : Plt : 0.00 Pst : 1.00
 dmax : 4.00 % dc : 3.30 %
 dtLim: 3.30 % dt>Lim: 500ms

Test completed, Result: PASSED

dmax
 [%]
 1 0.000

Definitions of Abbreviations

Urms *** Actual total Voltage in Volt RMS
 Irms *** Actual total Current in Ampere RMS
 IpK *** Actual Peak value of the Current in Ampere
 cf *** Actual Crest Factor (IpK/Irms)
 P *** Actual Active Power in Watt
 S *** Actual Apparent Power in VA (Urms*Irms)
 pf *** Actual Power Factor (P/S)

Plt Long term Flicker over all Pst cycles

For every Pst-cycle:

dmax Maximum voltage changes between two steady state conditions

General :

- The values marked with "****" are actual values which could vary during test-time and are taken at the time of protocol printout.



7 Immunity

7.1 General information

Performance criteria as defined by the standard	
Criterion	Description from standard
A	The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
B	The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however no change of actual operating state or stored data is allowed to persist after the test. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
C	Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.
Other:	--

Performance criteria details		
Criterion	Description	Monitoring
A	The EUT's airflow continue to operate normally. No changes in EUT were observed during and after testing.	Visual inspection
B	There may be changes in the EUT's airflow during the test, but no changes in EUT were observed after testing.	Visual inspection
C		
Supplementary information: --		



7.2 Specific information CISPR 14-2

Category of test item acc. CISPR 14-2 (7.2)	☐	CAT I (Category I) Equipment containing no electronic control circuitry.
	☐	CAT II (Category II) Mains operated equipment containing electronic control circuitry with no clock frequency higher than 15 MHz.
	☐	CAT III (Category III) Battery operated equipment not included in Category I.
	☒	CAT IV (Category IV) mains operated equipment containing electronic control circuitry with a highest clock frequency greater than 15 MHz but lower than or equal to 200 MHz.
	☐	CAT V (Category V) Mains operated equipment containing electronic control circuitry with a highest clock frequency greater than 200 MHz.
Supplementary information: --		



7.3 Electrostatic discharge

Tested by	Sefa ERYILMAZ		
Test date	05.04.2024		
Test Location(Stand)	Shielded room		
Environmental conditions.....	Parameter	During test	Limits
	Temperature:	22,8 ° C	15 °C to 35 °C
	Rel. Humidity:	% 39 RH	30 % to 60 %
	Air pressure:	930 mbar	860 mBar to 1060 mbar
Test set-up	☒ Table-top equipment ☐ Floor standing equipment ☐ Wall or ceiling mounted equipment (Treated as table top)		
Supplementary test set-up description.....	EUT has been placed on a wooden isolator which was 0,5 mm thickness from reference ground plane in the shielded room. Test set-up is prepared related to IEC 61000-4-2. EUT has been applied contact discharge to coupling plane, air discharge at insulating surfaces.		
Size of horizontal coupling plate ..	1,6 x 0,8 m		
Size of vertical coupling plate	0,5 x 0,5 m		
Number of discharges.....	Min. 10 per discharge location		
Discharge interval	1 s		
Performance criterion	B		
Supplementary information.....	--		

Test results for electrostatic discharges

No.	Location of discharge	Type	Polarity	Test level in kV	Operating mode	Observations
1	HCP	CON	P	4	Normal operating mode	Pass
2	HCP	CON	N	4	Normal operating mode	Pass
3	VCP	CON	P	4	Normal operating mode	Pass
4	VCP	CON	N	4	Normal operating mode	Pass

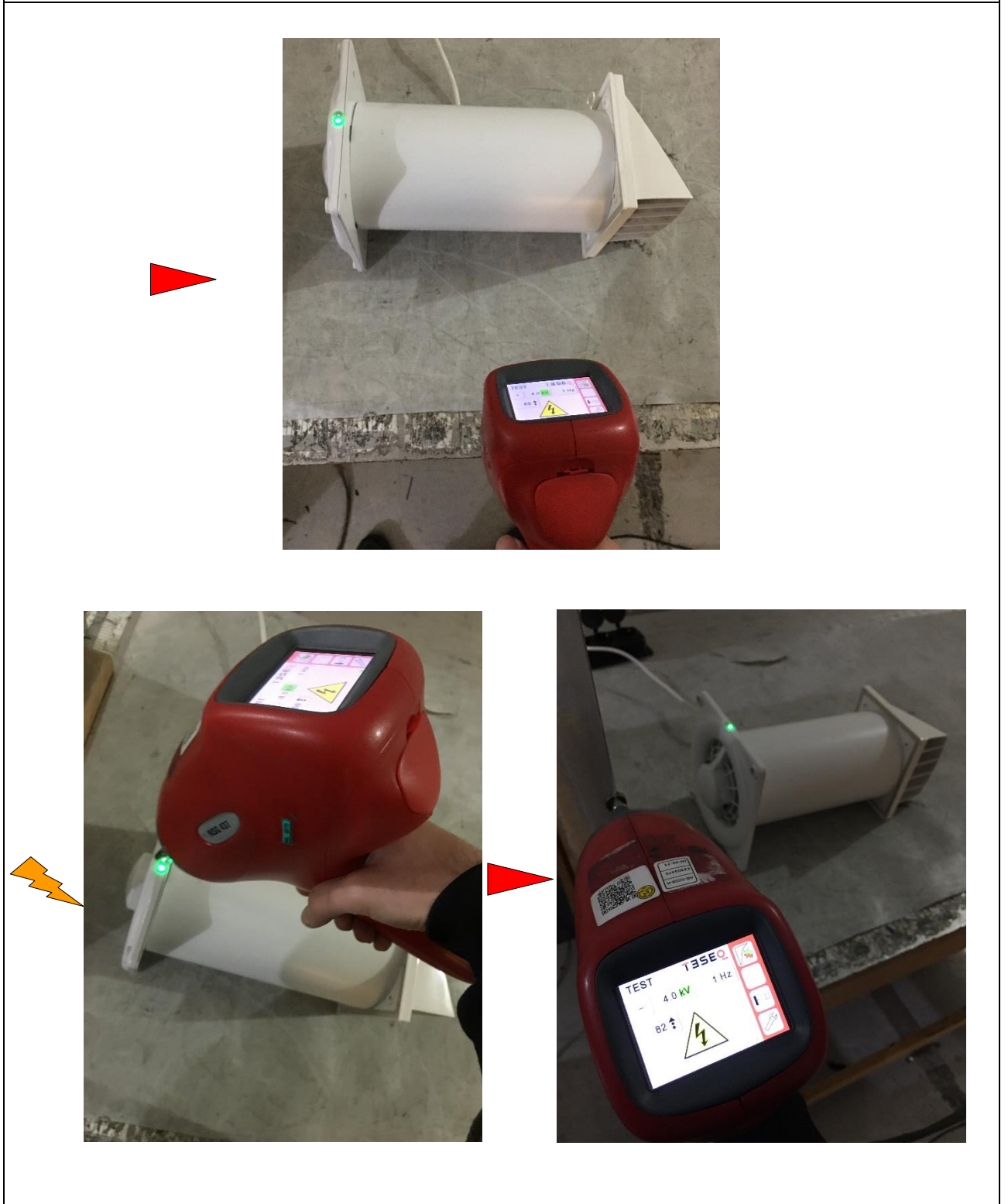


Test results for electrostatic discharges						
No.	Location of discharge	Type	Polarity	Test level in kV	Operating mode	Observations
5	Points on conductive surface as indicated in the picture above	CON	P	4	Normal operating mode	The EUT has no conductive surface.
6	Points on conductive surface as indicated in the picture above	CON	N	4	Normal operating mode	The EUT has no conductive surface.
7	Points on non-conductive surface as indicated in the picture above	AIR	P	8	Normal operating mode	Pass
8	Points on non-conductive surface as indicated in the picture above	AIR	N	8	Normal operating mode	Pass
HCP = Horizontal coupling plate N = Negative AIR = Air discharge VCP = Vertical coupling plate P = Positive CON = Contact discharge						
Observations (Detail)		--				
Supplementary information.....		--				

Symbols identifying discharge applied		Contact discharge
		Air discharge



Test set-up photo - Photo(s) of selected test points



7.4 Fast transients

Tested by	Sefa ERYILMAZ
Test date	03.04.2024
Test location (stand)	Shielded room
Test set-up	☒ Equipment on the table (0,1 ± 0,01) m above ground plane
	☐ Equipment standing on floor at (0,1 ± 0,01) m above ground plane
	☐ Artificial hand applied. Location see photo.
Supplementary test set-up description.....	EUT has been placed on a wooden isolator which was 10 cm height from reference ground plane in the shielded room. Test set-up is prepared related to IEC 61000-4-4. When EUT is power on, burst signal is applied to the power line.
Repetition frequency	5 kHz
Test time	2 min
Performance criterion	B
Supplementary information	---

Test set-up photo



Test results fast transients						
Port	Coupling	Level [kV]	Polarity	Operating mode	Mains voltage/ frequency	Observation
Power	L	1	+/-	Normal operating mode	230 V AC, 50 Hz	Pass
Power	N	1	+/-	Normal operating mode	230 V AC, 50 Hz	Pass
Power	L-N	1	+/-	Normal operating mode	230 V AC, 50 Hz	Pass
Observations (Detail)			--			
Supplementary information: ---						

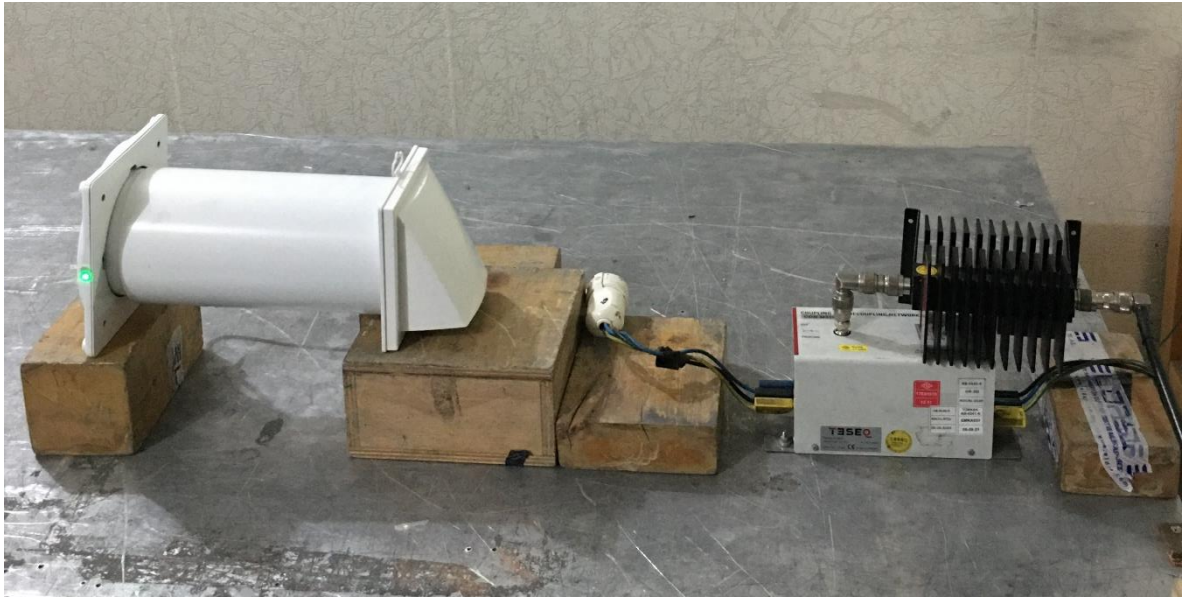


7.5 Injected currents, 0,15 MHz to 230 MHz

Tested by	Sefa ERYILMAZ	
Test date	15.04.2024	
Test location (Stand).....	Shielded room	
Test set-up	☒	Equipment located (0,1 ± 0,05) m above ground plane
	☐	Elevated ground plane according to Annex F
	☐	Artificial hand applied. Location see photo.
	☐	Other:
Supplementary test set-up description.....	Electrical power input terminals of EUT were connected to CDN device. EUT was placed on an wooden isolator which is 10 cm height from reference ground plane in shielded room. Test set-up was prepared related to IEC 61000-4-6 standard.	
Modulation	☒	80 % AM with 1 kHz
	☐	Other: ---
Step size	1 % with 3 s dwell time	
Performance criterion	A	
Mains voltage / frequency during test	230 V AC, 50 Hz	
Supplementary information.....	--	



Test set-up photo



Test results for conducted disturbances, induced by radio-frequency fields

Frequency range /discrete frequencies	Test Level [V]	Port under test	CDN type	Port with terminated CDN	Operating mode	Dwell time [s]	Observations
0,15 MHz to 230 MHz	3 V	Power input	M3	-	Normal operating mode	>2 s	Pass
Observations (Detail) :		--					
Supplementary information: ---							



7.6 Radio-frequency electromagnetic fields

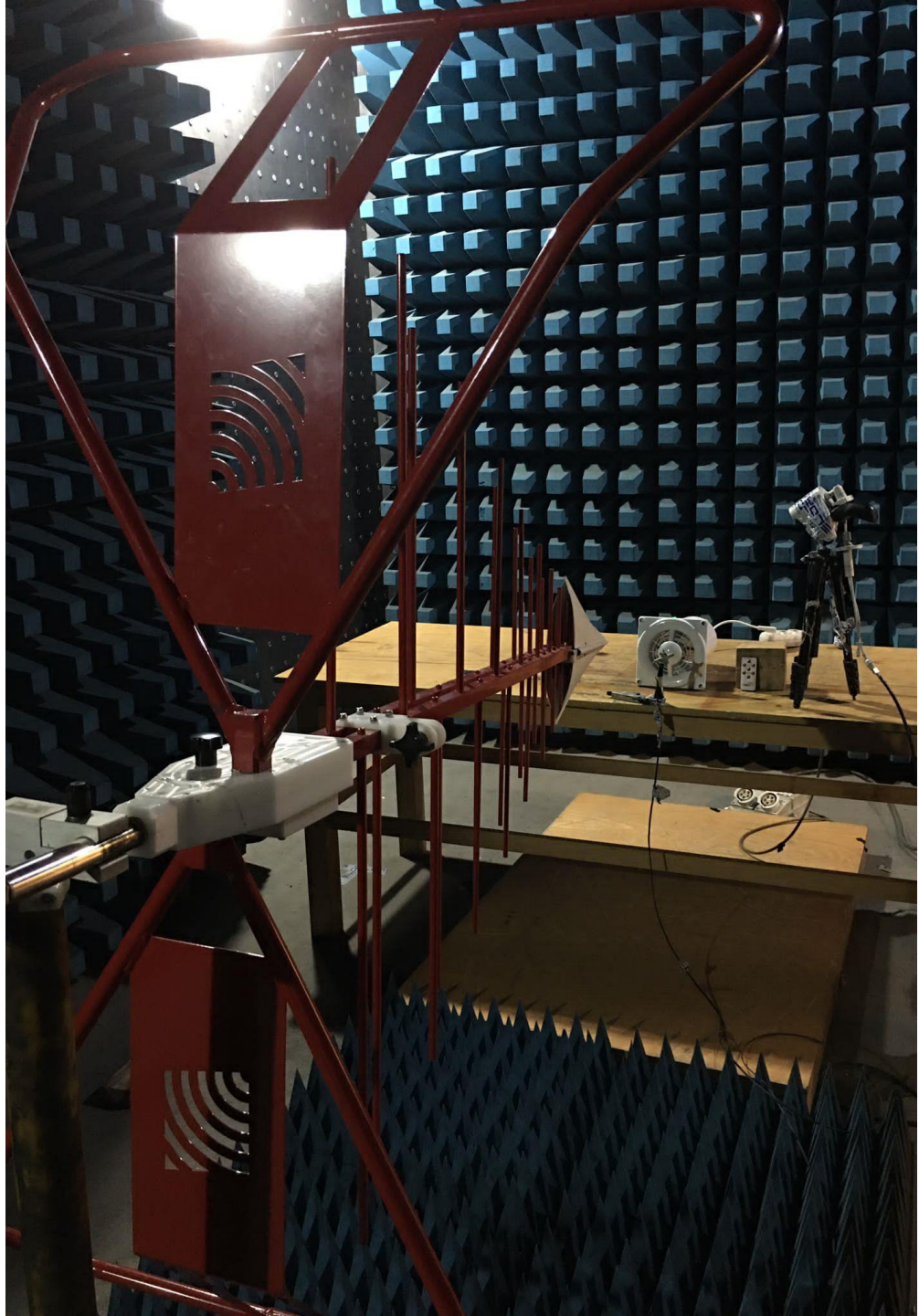
Tested by	Sefa ERYILMAZ
Test date	03.05.2024
Test location (Stand).....	Full anechoic room
Test set-up	☒ Equipment on the table (0,8 m height)
	☐ Equipment standing on floor (0,05 – 0,15 m height)
Supplementary test set up description.....	EUT has been supplied with 230 V in full anechoic chamber on a wooden table that is above 80 cm height from floor. In the horizontal and vertical positions of the antenna, test is made by turning EUT four dimensions.
Exposed side of EUT	☒ 0° (Front)
	☒ 90 °
	☒ 180 ° (Rear)
	☒ 270 °
	☐ Top side
	☐ Bottom side
Reason for not exposing a side ...	Not suitable considering its use
Distance Antenna to EUT	1 m
Test method	☒ IEC 61000-4-3 (FAR)
	☐ IEC 61000-4-22 (FAR, uniform set-up)
	☐ IEC 61000-4-20 (TEM)
Step size [%]	1 %
Performance criterion	A criterion
Supplementary information.....	--

Test results for radiated electromagnetic field

Frequency range	Test Level [V/m]	Polarization	Modulation	Operating mode	Dwell time [s]	Observations
80 MHz – 1000 MHz	3	H	80 % AM @ 1 kHz	Normal	2	Pass
80 MHz – 1000 MHz	3	V		Normal	2	Pass
H = Horizontal V = Vertical						
Observations (Detail)		--				
Supplementary information: --						



Test set-up photo



7.7 Surges

Tested by	Sefa ERYILMAZ
Test date	03.04.2024
Test location (Stand).....	Shielded room
Test set-up description	EUT has been placed on a wooden isolator which was 10 cm height from reference ground plane in the shielded room. Test set-up is prepared related to IEC 61000-4-5. When EUT is power on, surge signal is applied to the power line.
Repetition rate	1/min
Number of pulses for each coupling	10 (5 positive, 5 negative)
Performance criterion	B
Supplementary information.....	---

Test set-up photo



Test results for surges								
Port	Coupling	CDN	Level [kV]	Polarity	Phase angles [°]	Operating mode	Mains voltage/ frequency	Observation
Power	Line-Neutral	-	1	P	90°	Normal operating mode	230 V AC, 50 Hz	Pass
Power	Line-Neutral	-	1	N	270°	Normal operating mode	230 V AC, 50 Hz	Pass
Lower test levels :			☐	The lower test levels are tested also.				
			☒	The lower test levels are not tested.				
Observations (Detail) :			--					
Legend: Polarity: P = Positive, N = Negative CDN (figure no.) from IEC 61000-4-5 etc. F5 = Figure 5 – AC / DC lines line-to-line coupling F6 = Figure 6 – AC / DC lines: line-to-ground coupling F7 = Figure 7 – AC lines (3 phases): line L2-to-line L3 coupling F8 = Figure 8 – AC lines (3 phases): line L3-to-ground coupling F9 = Figure 9 – network for unshielded unsymmetrical interconnection lines: line-to-line and line-to-ground coupling F10 = Figure 10 – network for unshielded symmetrical interconnection lines: lines-to-ground coupling F11 = Figure 11 – network for unshielded symmetrical interconnection lines: lines-to-ground coupling via capacitors F12 = Figure 12 – surges applied to shielded lines								
Supplementary information: --								



7.8 Voltage dips and interruptions

Tested by	Sefa ERYILMAZ
Test date	03.04.2024
Test Location (Stand)	Shielded room
Test set-up description	Test is done when EUT is power on voltage interruption is applied to the power line.
Repetition rate	3
Number of dips or interruptions ..	3
Performance criterion	C
Supplementary information.....	---

Test set-up photo



Test results voltage dips						
U_T in V	Frequency in Hz	Test Level % of U_T	Phase angle	Duration in cycles	Operating mode	Observations
230	50	0	0°	0,5 (50 Hz)	Normal operating mode	Pass
230	50	40	0°	10 (50 Hz)	Normal operating mode	Pass
230	50	70	0°	25 (50 Hz)	Normal operating mode	Pass
Observations (Details)			--			
Supplementary information: --						



8 List of test equipment

Equipment used					
Equipment	Type	Inventory number	Manufacturer	Last Calibration date	Calibration due date
Test stand: Continuous disturbances – Discontinuous disturbance					
EMI Test Receiver	ESR7	101817	Rohde & Schwarz	05/2023	05/2024
LISN	ENV432	101489	Rohde & Schwarz	12/2023	12/2024
Transient Limiter	TL10K30M	121404	EMC Elektronik	11/2023	11/2024
RF Attenuator	2322	8341-200	Bird Electronic	11/2023	11/2024
Test stand: Disturbance power					
EMI Test Receiver	ESR7	101817	Rohde & Schwarz	05/2023	05/2024
EM Measurement PD Clamp	EL1000M	1024040602	EMC Elektronik	12/2021	06/2024
Horizontal Sliding System	KT0600M	1024040603	EMC Elektronik	N/A	N/A
Test stand: Harmonic current emissions - Voltage variations and flicker					
Harmonics and Flicker Analyzer	HAR1000-1P	103488	EMC PARTNER	02/2024	02/2025
Test stand: Electrostatic discharge					
ESD Simulator	NSG 437	1152	TESEQ	06/2023	06/2024
Test stand: Fast transients – Surges - Voltage dips and short interruptions					
Ametek Surge Burst	Compact NX5 bsp-1-300-16	P1602169864	EM Test	02/2024	02/2025
Ayaklı Varyak	VAR 2	V002	ELDAŞ	11/2023	11/2024
Test stand: Immunity to conducted disturbances					
Signal Generator	SML03	102312	Rohde & Schwarz	07/2023	07/2024
Solid State Power Amplifier 15W	BSA012515	035357A	Bonn Elektronik	N/A	N/A
Coupling Decoupling	CDN M316	43158	TESEQ	02/2024	02/2025
Test stand: Radio-frequency electromagnetic fields					
Signal Generator	SML03	102312	Rohde & Schwarz	07/2023	07/2024
Biconilog Antenna	3142E	217721	ETS-LINDGREN	09/2023	09/2024
RF Power Amplifier	100W1000B1	305583	AR	N/A	N/A
Field Probe	EFS-10	611WX70703	Frankonia	06/2022	06/2024

Calibration interval may be extended based on sufficient calibration data and experience of use (see IEC 61010-1:2019 clause 8.2.5)



9 Measurement instrumentation uncertainties

Type of disturbance test method	Used test equipment (only main instruments, no details)	Calculated uncertainty	U_{CISPR}
Conducted disturbance (150 kHz to 30 MHz)	-	2,52 dB	3,4 dB
Disturbance power (30 MHz to 300 MHz)	-	3,11 dB	4,5 dB
The measurement uncertainty is given with a confidence of 95.45 % with the coverage factor, k=2			



10 Annex

10.1 Critical components table

COMPONENTS LIST of the Heat recovery unit CUPER 125						
No	Object	Manufacturer	Type, Model	Technical data	Standard	Mark (s) of conformity
1	PCB	Shenzhen Kingford Technology CO., LTD	Power board RT (Power)	Thickness: 1 mm; Layers: 2	IEC 60355-1	Test in appliance
2	PCB	Shenzhen Kingford Technology CO., LTD	Control board RT (Cntr) with temperature sensor	Thickness: 1 mm; Layers: 2	IEC 60355-1	Test in appliance
3	Motor	Shenzhen silaida Technology Co., Ltd	SLD1202H12B-S002	Rated voltage: DC12V Rated current: 0.63A Rated input power: 7.56W. Operating voltage range: 6-13.5V Starting voltage: 8V. Rated speed (range): 3500±10%RPM PWM	IEC 60355-1	Test in appliance
4	IR remote control	ShenZhen Labra Tech Co., Limited	IR remote control RT	Lithium battery 3V included Signal transmission frequency: 36 kHz Encoding: 36 kHz carrier RC-6 format	IEC 60355-1	Test in appliance

Position:General Manager

Name:Yücel Bülent Günay

Signature:

Company stamp:

GUNAY EXPORT LOJİSTİK
TİCARET VE SANAYİ LİMİTED ŞİRKETİ
11050 Mh. 3. Cadde Birlesik No: 10
Tepeköy Tuzla İstanbul
PENDİK VD.: 4271075359

