TEST REPORT

REPORT NO.: ABUV-ESH-P21111265B-4-A3

MODEL NO.: AS09THRHRA (indoor unit) with 1U09YERFRA (outdoor unit),AS12THRHRA (indoor unit) with 1U12YERFRA (outdoor unit),HEC25T0-IN (indoor unit) with HEC25T0-OU (outdoor unit),HEC35T0-IN (indoor unit) with HEC35T0-OU (outdoor unit), HSU-09T0R32(DB)-IN (indoor unit) with HSU-09T0R32(DB)-OUT (outdoor unit),HSU-12T0R32(DB)-IN (indoor unit) with HSU-12T0R32(DB)-OUT (outdoor unit), TRK09INVDMEI (indoor unit) with TRK09INVDMEO (outdoor unit), TRK12INVDMEI (indoor unit) with TRK12INVDMEO (outdoor unit), OLE-09DIH (indoor unit) with OLE-09DIH (outdoor unit), OLE-12DIH (indoor unit) with OLE-12DIH (outdoor unit), CY-09TBIN (indoor unit) with CY-09TBOUT (outdoor unit),CY-12TBIN (indoor unit) with CY-12TBOUT (outdoor unit),AS09PHBHRA (indoor unit) with1U09YERFRA (outdoor unit),AS25PHBHRA (indoor unit) with 1U25YERFRA (outdoor unit), AS25RHBHRA (indoor unit) with 1U25YERFRA (outdoor unit),AS12PHBHRA (indoor unit) with 1U12YERFRA (outdoor unit),AS35PHBHRA (indoor unit) with 1U35YERFRA (outdoor unit),AS35RHBHRA (indoor unit) with 1U35YERFRA (outdoor unit), AS25RHBHRA-TU (indoor unit) with 1U25YERFRA-TU (outdoor unit), AS35RHBHRA-TU (indoor unit) with 1U35YERFRA-TU (outdoor unit)

RECEIVED: Feb. 15, 2022

ISSUED: Apr. 03, 2023

APPLICANT: Qingdao Haier Air Conditioner General Corp. Ltd.

ADDRESS: No.1 Haier Road, Hi-Tech Zone, Qingdao 266101, P.R. China

ISSUED BY: LCIE China Company Limited

LAB LOCATION: Building 4, No. 518, Xin Zhuan Road, CaoHejing Songjiang High-Tech Park, Shanghai, CHINA

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1. Test program

PRODUCT: Single split type room air conditioner

MODEL NO.: AS09THRHRA (indoor unit) with 1U09YERFRA (outdoor unit),AS12THRHRA (indoor unit) with 1U12YERFRA (outdoor unit),HEC25T0-IN (indoor unit) with HEC25T0-OU (outdoor unit),HEC35T0-IN (indoor unit) with HEC35T0-OU (outdoor unit),HSU-09T0R32(DB)-IN (indoor unit) with HSU-09T0R32(DB)-OUT (outdoor unit),HSU-12T0R32(DB)-IN (indoor unit) with HSU-12T0R32(DB)-OUT (outdoor unit), TRK09INVDMEI (indoor unit) with TRK09INVDMEO (outdoor unit), TRK12INVDMEI (indoor unit) with TRK12INVDMEO (outdoor unit), OLE-09DIH (indoor unit) with OLE-09DIH (outdoor unit), OLE-12DIH (indoor unit) with OLE-12DIH (outdoor unit), CY-09TBIN (indoor unit) with CY-09TBOUT (outdoor unit),CY-12TBIN (indoor unit) with CY-12TBOUT (outdoor unit),AS09PHBHRA (indoor unit) with1U09YERFRA (outdoor unit),AS25PHBHRA (indoor unit) with 1U25YERFRA (outdoor unit),AS25RHBHRA (indoor unit) with 1U25YERFRA (outdoor unit),AS12PHBHRA (indoor unit) with 1U12YERFRA (outdoor unit),AS35PHBHRA (indoor unit) with 1U35YERFRA (outdoor unit),AS35RHBHRA (indoor unit) with 1U35YERFRA (outdoor unit), AS25RHBHRA-TU (indoor unit) with 1U25YERFRA-TU (outdoor unit), AS35RHBHRA-TU (indoor unit) with 1U35YERFRA-TU (outdoor unit)

APPLICANT: Qingdao Haier Air Conditioner General Corp. Ltd.

TESTED: /

STANDARDS: EN 62311:2008 & EN 50665:2017

We, LCIE China Company Limited, declare that the equipment above has been tested and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

PREPARED BY : Tony Mao **DATE:** Apr. 03, 2023

Tony MAO
Project Engineer

APPROVED BY : **DATE:** Apr. 03, 2023

Daniel SUN
Product Line Manager

2. General information

2.1 General description of EUT

Product	Single split type room air conditioner
Brand	Haier , HEC , Tronic , OLEFINI , CANDY
Model	AS09THRHRA (indoor unit) with 1U09YERFRA (outdoor unit),AS12THRHRA (indoor unit) with 1U12YERFRA (outdoor unit),HEC25T0-IN (indoor unit) with HEC25T0-OU (outdoor unit),HEC35T0-IN (indoor unit) with HEC35T0-OU (outdoor unit),HSU-09T0R32(DB)-IN (indoor unit) with HSU-09T0R32(DB)-OUT (outdoor unit),HSU-12T0R32(DB)-IN (indoor unit) with HSU-12T0R32(DB)-OUT (outdoor unit), TRK09INVDMEI (indoor unit) with TRK09INVDMEO (outdoor unit), TRK12INVDMEI (indoor unit) with TRK12INVDMEO (outdoor unit), OLE-09DIH (indoor unit) with OLE-09DIH (outdoor unit), OLE-12DIH (indoor unit) with OLE-12DIH (outdoor unit), CY-09TBIN (indoor unit) with CY-09TBOUT (outdoor unit),CY-12TBIN (indoor unit) with CY-12TBOUT (outdoor unit),AS09PHBHRA (indoor unit) with1U09YERFRA (outdoor unit),AS25PHBHRA (indoor unit) with 1U25YERFRA (outdoor unit),AS25RHBHRA (indoor unit) with 1U25YERFRA (outdoor unit),AS12PHBHRA (indoor unit) with 1U12YERFRA (outdoor unit),AS35PHBHRA (indoor unit) with 1U35YERFRA (outdoor unit), AS35RHBHRA (indoor unit) with 1U35YERFRA (outdoor unit), AS25RHBHRA-TU (indoor unit) with 1U25YERFRA-TU (outdoor unit), AS35RHBHRA-TU (indoor unit) with 1U35YERFRA-TU (outdoor unit)
Model Difference	different power and appearance
Nominal Voltage	AC 220-240V, 50Hz
Temperature Operating Range	-20deg.c to +60deg.c
Modulation Type	CCK DSSS,OFDM
Modulation Technology	802.11b, 802.11g and 802.11n(HT20) and 802.11n(HT40)for module HEWRQU1; 802.11b, 802.11g and 802.11n(HT20) for module ESP32-for-Haier.
Operating Frequency	802.11b, 802.11g and 802.11n (HT20) and 802.11n (HT40):2400MHz~2483.5MHz for modules HEWRQU1; 802.11b/g/n(HT20):2412MHz-2472MHz for modules ESP32-for-Haier.
Number of Channel	Modules HEWRQU1:802.11 b/g/n(HT20):13, 802.11 b/g/n(HT40):9 Modules ESP32-for-Haier:802.11 b/g/n(HT20):13
Adaptive/Non-Adaptive	☐ non-adaptive Equipment ☒ adaptive Equipment without the possibility to switch to a non-adaptive mode ☐ adaptive Equipment which can also operate in a non-adaptive mode
EIRP Power (Measured Max. Average)	17.22dBm for module HEWRQU1; 15.62dBm for module ESP32-for-Haier
Antenna Type	PCB antenna

Antenna Gain	2dBi for modules HEWRQU1; 3dBi for modules ESP32-for-Haier
Data Cable Supplied	NA

Note:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
2. The EIRP Power is refer to test report number of 4842020233500B and SHEM200500402605.

3. EN 62311 Requirement

3.1 Human exposure to the electromagnetic fields

LIMIT

The electronic and electro-technical apparatus shall comply with the basic restriction as specified in Annex II of Council Recommendation 1999/519/EC.

The reference levels in the Council Recommendation 1999/519/EC on public exposure to electromagnetic fields are derived from the basic restrictions using worst-case assumptions about exposure.

According to EN62311, the reference level listed in the following table 2 shall be used to evaluate the environment impact of human exposure human exposure to electromagnetic fields (0 Hz - 300 GHz) as specified in 1999/519/EC. Council Recommendation 1999/519/EC of 12 July 1999

Table 2

Reference levels for electric, magnetic and electromagnetic fields(0 Hz to 300 GHz, unperturbed rms values)

Frequency Range	E-field Strength (V/m)	H-field Strength (A/m)	B-field (μT)	Equivalent plane wave power density Seq (W/m2)
0-1 Hz	−	3.2×10^4	4×10^4	−
1-8 Hz	10000	$3.2 \times 10^4/f^2$	$4 \times 10^4/f^2$	−
8-25 Hz	10000	4000/f	5000/f	−
0.025-0.8 kHz	250/f	4/f	5/f	−
0.8-3 kHz	250/f	5	6.25	−
3-150 kHz	87	5	6.25	−
0.15-1 MHz	87	0.73/f	0.92/f	−
1-10 MHz	$87/f^{1/2}$	0.73/f	0.92/f	−
10-400 MHz	28	0.73	0.092	2
400-2000 MHz	$1.375\ f^{1/2}$	$0.0037\ f^{1/2}$	$0.0046\ f^{1/2}$	f/200
2-300G Hz	61	0.16	0.20	10

Notes:

1. ƒ as indicated in the frequency range column.
2. For frequencies between 100 kHz and 10 GHz, Seq, E2, H2, and B2 are to be averaged over any six-minute period.
3. For frequencies exceeding 10 GHz, Seq, E2, H2, and B2 are to be averaged over any 68/ƒ1.05 -minute period (ƒ in GHz).

4. No E-field value is provided for frequencies < 1 Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 25 kV/m. Spark discharges causing stress or annoyance should be avoided.

3.2 Assessment methods

Under normal use of condition, this device has a separation distance of at least 20cm between the antenna and the body of the user. A radiation exposure statement" this equipment should be installed and operated with minimum distance between the antenna and your body" is shown on the user manual, so human exposure to the electromagnetic field of this product is at far-field region under normal use.

Far-field region Calculation Formula:

P watts are radiated, from a point, uniformly over the surface of sphere of radius r.

In free space

$E = \eta_0 H = [30*P*G(\theta,\phi)]^{0.5} / r$

Where

G = antenna gain relative to an isotropic antenna

θ,ϕ = elevation and azimuth angles to point of investigation

r = distance from observation point to the antenna (m)

η = characteristic impedance of free space

Safety Distance Calculation Formula:

The power flux:

$$S = \frac{P*G_{(\theta,\phi)}}{4*\pi*r^2}$$

So safety distance as following:

$$r = \sqrt{\frac{P*G}{4*\pi*S}}$$

P = input power of the antenna

G = antenna gain relative to an isotropic antenna

θ, Φ = elevation and azimuth angles.

r = distance from the antenna to the point of investigation

3.3 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 25℃and 60％ RH.

3.4 Test Result of RF Exposure Evaluation

Modules HEWRQU1

Max Power Operation Mode	Frequency Range (MHz)	Maximum EIRP (dBm)	Limit of Power Density S(W/m^2)	Power Density S(W/m^2)	Result
802.11b	2400MHz~2483.5MHz	17.5	10	0.17	Pass

Modules ESP32-for-Haier

Max Power Operation Mode	Frequency Range (MHz)	Maximum EIRP (dBm)	Limit of Power Density S(W/m^2)	Power Density S(W/m^2)	Result
802.11b	2412MHz~2472MHz	15.62	10	0.07	Pass

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