



EMC TEST REPORT

Report No.	:	21127012BKK-001			
Testing laboratory	:	Intertek Testing Services (Thailand) Ltd. 1285/5 Prachachuen Rd., Wongsawang Bangsue, Bangkok 10800 THAILAND			
Issue Date	:	6 May 2022			
Client's Reference Number	:	01227733			
Product Description	:	Air conditioner			
Model/Type	:	Indoor unit: RAV-HM561SDTY-E, RAV-HM1101KRTP-E, RAV-HM1601UTP-E, RAV-HM1601CTP-E, RAV-HM1601BTP-E and RAV-HM1601FT-E			
Applicant's name	:	Toshiba Carrier (Thailand) Co., Ltd.			
Address	:	144/9 Moo 5, Bangkadi Industrial Park, Tivanon Road, Tambol Bangkadi, Amphur Muang, Pathumthani 12000 THAILAND			
Sample received date	:	17 January 2022			
Test date	:	21 January 2022 - 5 April 2022			
Received Sample Condition	:	The sample(s) was(were) in working condition when received.			
Test conclusion	:	Comply Non-comply			
Test standard	:	EN 55014-1: 2017/A11: 2020 EN 55014-2: 2015 EN 61000-3-2: 2014 EN 61000-3-3: 2013 EN 61000-3-11: 2000 EN 61000-3-12: 2011			
Test Result	:	See the attached sheets			

Prepared & Checked By:

Approved By:

Norme

Namo Laoprasert

Test Engineer

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Chairat Saeheng Reviewer





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General Remark:

- "-" refers to item is not requested to test. .
- "P" refers to the item does meet the requirement. .
- "F" refers to the item does not comply with standard.
- "N/A" refers to test case does not apply to the test object.
- Throughout this report a point is used as the decimal separator.

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Manufacturer 1:

	:	Toshiba Carrier (Thailand) Co., Ltd.
Model	:	RAV-HM561UTP-E/TR, RAV-HM801UTP-E/TR,
		RAV-HM901UTP-E, RAV-HM1101UTP-E/TR,
		RAV-HM1401UTP-E/TR, and RAV-HM1601UTP-E/TR,
		RAV-HM401CTP-E, RAV-HM561CTP-E/TR,
		RAV-HM801CTP-E/TR, RAV-HM901CTP-E,
		RAV-HM1101CTP-E/TR, RAV-HM1401CTP-E/TR,
		and RAV-HM1601CTP-E/TR,
		RAV-HM561BTP-E/TR, RAV-HM801BTP-E/TR,
		RAV-HM901BTP-E, RAV-HM1101BTP-E/TR,
		RAV-HM1401BTP-E/TR, and RAV-HM1601BTP-E/TR,
		RAV-HM301KRTP-E, RAV-HM401KRTP-E,
		RAV-HM561KRTP-E/TR, RAV-HM801KRTP-E/TR,
		RAV-HM901KRTP-E, and RAV-HM1101KRTP-E/TR
Address	:	144/9 Moo 5, Bangkadi Industrial Park, Tivanon Road, Tambol Bangkadi, Amphur Muang, Pathumthani 12000, Thailand
Manufacturer 2:		
		Toshiba Carrier Corporation Fuji Factory & Engineering Center
Mode	:	RAV-HM301MUT-E, RAV-HM401MUT-E,
		and RAV-HM561MUT-E/TR,
		RAV-HM561FT-E/TR, RAV-HM801FT-E/TR,
		RAV-HM901FT-E, RAV-HM1101FT-E/TR,
		RAV-HM1401FT-E/TR, and RAV-HM1601FT-E/TR,
		RAV-HM561UT-E/TR, RAV-HM801UT-E/TR,
		RAV-HM1101UT-E/TR, and RAV-HM1401UT-E/TR





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Manufacturer 3:		
		Toshiba Carrier Air Conditioning (China) Co., Ltd.
Model	:	RAV-HM301SDTY-E, RAV-HM401SDTY-E,
		and RAV-HM561SDTY-E/TR
Address	:	Building 1 No.60, 21st Avenue, Baiyang Street, Hangzhou, Economic and Technological Development Area, P.R. China
Address	:	Same as applicant
Factory(ies)	:	Same as applicant
Address	:	Same as applicant
Test Facility		Intertek Testing Services (Thailand) Ltd.
		Electrical and Electronics Product Test Center (PTEC).
Tested by		Namo Laoprasert
Subcontractor Remark	:	Following tests subcontract to ILAC accredited laboratory:
		Harmonic current emission
		Voltage fluctuation and flicker
		Radiated electromagnetic field
		Fast transients
		Surges
		Injection current up to 230 MHz
		Voltage dips





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1. GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

51	•	All Conditioner			
escription of EUT:					
ne EUTs are air cond opliance.		door unit intended	l to use as househo	ld/ light commercia	
Toot model			Turpo		
			туре	model	
(Indoor unit)	(1	: Air Conditioner oner indoor unit intended to use as household/ light common component in EUT: Indoor unit intended to use as household/ light common (Indoor unit) RAV-HM301SDTY-E RAV-HM301SDTY-E RAV-HM301SDTY-E RAV-HM301KRTP-E RAV-HM301KRTP-E/TR RAV-HM301KRTP-E/TR RAV-HM901KRTP-E/TR RAV-HM901KRTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM101UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561UTP-E/TR RAV-HM561CTP-E/TR RAV-HM561CTP-E/TR RAV-HM561CTP-E/TR RAV-HM561CTP-E/TR RAV-HM561CTP-E/TR RAV-HM561CTP-E/TR RAV-HM561CTP-E/TR RAV-HM101CTP-E/TR RAV-HM101CTP-E/TR RAV-HM561CTP-E/TR RAV-HM561CTP-E/TR RAV-HM101CTP-E/TR RAV-HM101CTP-E/TR RAV-HM101CTP-E/TR RAV-HM101CTP-E/TR RAV-HM561CTP-E/TR RAV-HM101CTP-E/TR MCC-164	model		
RAV-HM561SDTY-E	RAV- RAV-	HM301SDTY-E HM401SDTY-E	Slim duct (TCAC)	MCC-1643	
	: Air Conditioner tioner indoor unit intended to use as household/ light c I component in EUT: Cover model (Indoor unit) Type RAV-HM301SDTY-E RAV-HM301SDTY-E RAV-HM401SDTY-E Slim duct (TCAC) RAV-HM301KRTP-E RAV-HM301KRTP-E RAV-HM901KRTP-E RAV-HM901KRTP-E RAV-HM901KRTP-E RAV-HM901KRTP-E RAV-HM901KRTP-E/TR RAV-HM901KRTP-E/TR RAV-HM101UTP-E/TR RAV-HM561UTP-E/TR RAV-HM101UTP-E/TR RAV-HM101UTP-E/TR RAV-HM101UTP-E/TR RAV-HM101UTP-E/TR RAV-HM101UTP-E/TR RAV-HM101UTP-E/TR RAV-HM561UT-E/TR RAV-HM561UT-E/TR RAV-HM561UT-E/TR RAV-HM561UT-E/TR RAV-HM401CTP-E RAV-HM401CTP-E RAV-HM401CTP-E RAV-HM401CTP-E RAV-HM801CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM1010TCP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM901CTP-E/TR RAV-HM1010TCP-E/TR RAV-HM1010TCP-E/TR RAV-HM1010TCP-E/TR RAV-HM901CTP-E/TR Under celling (TCTC)				
	RAV- RAV- RAV-H	HM301KRTP-E HM401KRTP-E M561KRTP-E/TR			
RAV-HMITUIKRTP-E	I101KRTP-E RAV-HM561KRTP-E/TR RAV-HM801KRTP-E/TR RAV-HM901KRTP-E RAV-HM1101KRTP-E/TR RAV-HM561UTP-E/TR	High wall (TCTC)	MCC-1696		
	RAV-HN	A1101KRTP-F/TR	-	old/ light commerci Indoor unit PCB model MCC-1643 MCC-1696 MCC-1643	
	RAV-F RAV-F	IM561UTP-E/TR IM801UTP-E/TR	-	MCC-1643	
	RAV	-HM901UTP-E	4-way cassette		
	RAV-H	M14010TP-E/TR M1601UTP-E/TR	-		
RAV-HM1601UTP-E	RAV-I	HM561UT-E/TR			
	RAV-I	HM801UT-E/TR	Smart cassette		
	RAV-F	IM1101UT-E/TR	(TCC)		
	RAV-F	IM1401UT-E/TR	1		
	RAV	HM301MUT-E			
	RAV	HM401MUT-E	Compact 4 Way		
	RAV-H	M561MUT-E/TR	(100)		
	RAV	-HM401CTP-E			
	RAV-F	IM561CTP-E/TR	1		
	RAV-F	IM801CTP-E/TR	1		
RAV-HM1601CTP-E	RAV	-HM901CTP-E	Under celling	MCC-1643	
	RAV-H	M1101CTP-E/TR			
	RAV-H	M1401CTP-E/TR	1		
			4		





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Test model	Cover model	Туре	Indoor unit PCB	
(Indoor unit)	(Indoor unit)		modor	
	RAV-HM561BTP-E/TR		MCC-1720	
	RAV-HM801BTP-E/TR			
	RAV-HM901BTP-E	Standard duct		
	RAV-HM1101BTP-E/TR	(TCTC)		
	RAV-HM1401BTP-E/TR			
	RAV-HM1601BTP-E/TR			
	RAV-HM561FT-E/TR	Type Ir Standard duct (TCTC) Ir Floor standing (TCC) Ir		
	RAV-HM801FT-E/TR		MCC-1643	
	RAV-HM901FT-E	Floor standing		
RAV-HIVI 100 IF I-E	RAV-HM1101FT-E/TR	(TCC)		
	RAV-HM1401FT-E/TR			
	RAV-HM1601FT-E/TR			

EUT operated with connect to outdoor unit as dummy load for certify indoor unit.

Test result of model RAV-HM1601CTP-E and RAV-HM1601BTP-E have been referred to report no. 21025489BKK-001 issue date 12 May 2021 with evaluated update standard from EN 55014-1: 2017 to EN 55014-1: 2017/A11: 2020, after review test result in referred report can be transferred to this report without additional test require.

The EMC compliance of EUT can be found in this report and represents also the compliance of others model in family as shown in Appendix II.

EUT Model number	:	Indoor unit:
		RAV-HM561SDTY-E,
		RAV-HM1101KRTP-E,
		RAV-HM1601UTP-E,
		RAV-HM1601CTP-E,
		RAV-HM1601BTP-E and
		RAV-HM1601FT-E
Serial number	••	



Rating(s)



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	RAV-HM561SDTY-E:
	220 - 240 Va.c.; 50 Hz; 15.50 A; Class I,
	RAV-HM1101KRTP-E:

		220 - 240 Va.c.; 50 Hz; 15.50 A; Class I,		
		RAV-HM1101KRTP-E:		
		220 - 240 Va.c.; 50 Hz; 22.80 A; Class I,		
		RAV-HM1601UTP-E:		
		220 - 240 Va.c.; 50 Hz; 27.40 A; Class I,		
		RAV-HM1601CTP-E:		
		220 - 240 Va.c.; 50 Hz; 27.40 A; Class I,		
		RAV-HM1601BTP-E:		
		220 - 240 Va.c.; 50 Hz; 27.40 A; Class I and		
		RAV-HM1601FT-E:		
		220 - 240 Va.c.; 50 Hz; 27.40 A; Class I		
Clock frequency (MHz)	:	10.00 for all model		
Main lead length (m)	:	Fixed Appliance		
Data line length (m)	:	N/A		
Control line length (m)	:	14.00 for model:		
		RAV-HM561SDTY-E, RAV-HM1101KRTP-E		
		RAV-HM1601UTP-E, RAV-HM1601CTP-E,		
		RAV-HM1601CTP-E, and RAV-HM1601BTP-E		
		N/A for model:		
		RAV-HM1601FT-E		
Mounting position	:	Table-top equipment (Indoor unit)		
		Wall/Ceiling mounted equipment (Indoor unit)		
		Floor standing equipment (Indoor unit and dummy outdoor unit)		
		Hand-held equipment		
		Other:		





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1.2 Operation modes during the test

Operating modes: No. Ope		Operating mode of test item	Applied for testing		
			Emission	Immunity	
	1	Within this test report, EUT has been measured with the temperature controller setting at the lowest position when in cooling mode.			
		The ambient temperature is defined at the temperature of the air flow to the indoor unit.			
		The ambient temperature for testing is			
		30 ± 5 °C when it is operating in cooling mode			
2					
	3				
	4				
	5				
	6				
	7				
	8				
Used mains voltage for the test Measured:			230 V		
Used mains frequend	cy for t	he test Measured (50 Hz / 60 Hz):	50 Hz		
Supplemental inform operating modes	ation to	o the			





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2. TEST SPECIFICATIONS

2.1 Test equipment

Equipment used refer to 21025489BKK-001

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test receiver	Rohde&Schwarz	ESR7	E5-026	18-Oct-19	17-Apr-21
EMI Test receiver	Rohde&Schwarz	ESR7	E5-026	25-Mar-21	24-Mar-22
Absorbing clamp	Schaffner	AMZ41	E5-004	15-May-20	14-May-21
Click Analyzer	NARDA	PMM9010	E5-038	26-Oct-20	25-Oct-21
EMI Receiver	NARDA	PMM9010	E5-037	26-Oct-20	25-Oct-21
LISN	AFJ Instruments	LT32C/10	E5-040	08-Nov-19	07-May-21
LISN	AFJ Instruments	LT32C/10	E5-040	26-Mar-21	25-Mar-22

Equipment used test in this report

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test receiver	Rohde&Schwarz	ESR7	E5-026	25-Mar-21	24-Mar-22
Voltage Probe	Schwarzbeck	TK9420	E5-035	02-Mar-21	01-Mar-22
Absorbing clamp	TESEQ	MDS 21B	E5-036	13-May-21	12-May-22
Click Analyzer	Schaffner	DIA1512D	E5-002	01-Sep-21	31-Aug-22
LISN	AFJ Instruments	LT32C/10	E5-040	26-Mar-21	25-Mar-22
Harmonics, Flicker Test System	TESEQ	Profline2105	E5-030	21-Sep-21	20-Sep-22
EMC Simulator Test System	TESEQ	NSG3040	E5-017	07-Dec-21	06-Dec-22
Single Supply Source for PQT Testing	TESEQ	INA6501	E5-021	20-Dec-21	19-Dec-22
Compact Immunity Test System	TESEQ	NSG4070	E5-022	07-Dec-21	06-Dec-22
Coupling/Decoupling Network	TESEQ	CDN M016S	E5-023	07-Jun-21	06-Jun-22
ESD Simulator	TESEQ	NSG435	E5-024	14-Jul-21	13-Jul-22
Signal Conditioning Unit	TESEQ	CCN1000-3	1347A01034		18-Apr-22
AC-Power Source	TESEQ	NSG1007	1347A01034		18-Apr-22
Signal Conditioning Unit	TESEQ	CCN1000-3	1347A01034		18-Apr-22
Three Phase Impedance Network	TESEQ	INA2197	1347A01034		18-Apr-22
EMC Simulator	TESEQ	NSG3040	1943		17-May-22





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Coupling/Decoupling network	TESEQ	CDN M332S	39604	37751	22-May-22
PQF Simulator	TESEQ	INA 6501	223		18-May-22

2.2 Software

Software used refer to 21025489BKK-001

Software	Manufacturer	Version
EMC Calculator	-	2018.07
PMM Emission Suite	Narda	2.31.0.0

Software used in this report

Software	Manufacturer	Version	
EMC Calculator	-	2018.07	
DIS9966	Schaffner	2.5.0.0	



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2.3 Uncertainty application

Uncertainty of Measurement applied according to CISPR 16-4-2. Reference Ucispr in the table as followed used as a reference value for the judgment.

Test Method	U _{Lab} (dB)	U _{cispr} (dB)
Conducted disturbance at mains port using AMN 9 kHz – 150 kHz	3.41	3.8
Conducted disturbance at mains port using AMN 150 kHz – 30 MHz	3.44	3.4
Conducted disturbance at mains port using voltage probe 150 kHz – 30 MHz	2.89	2.9
Disturbance power 30 MHz – 300 MHz	3.89	4.5
Conducted disturbance at mains port using CDNE 30 MHz – 300 MHz	3.46	3.8
Radiated disturbance 30 MHz – 1000 MHz	S ¹	6.3

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

- a) If U_{lab} is less than or equal to U_{cispr} in Table, then the test report may either state the value of U_{lab} or state that U_{lab} is less than U_{cispr}.
 - Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
 - Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
- b) If U_{lab} exceeds U_{cispr} of Table, then the test report shall contain the value of U_{lab} (in dB) for the measurement instrumentation actually used for the measurements.
 - Compliance is deemed to occur if no measured disturbance level, increased by (U_{lab} – U_{cispr}), exceeds the disturbance limit;
 - Non-compliance is deemed to occur if any measured disturbance level, increased by (U_{lab} – U_{cispr}), exceeds the disturbance limit.

¹ Refer to subcontractor uncertainty of measurement, if applicable.





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3. TEST SUMMARY

Test standard		Requirement – Test case	Verdict
EN 55014-1	\boxtimes	Continuous disturbances mains port	Р
			Р
		(150 KHZ to 30 MHZ)	
	\bowtie	Disturbance power	Р
		(30 MHz to 300 MHz)	
		Radiated emission	N/A
		(30 MHz to 1000 MHz)	(Note 1)
	\square	Discontinuous disturbance (clicks)	Р
EN 61000-3-2	\boxtimes	Harmonic current emission (≤ 16 A)	Р
EN 61000-3-12	\square	Harmonic current emission (> 16 A)	Р
EN 61000-3-3	\boxtimes	Voltage fluctuation and flicker (\leq 16 A)	Р
EN 61000-3-11	\boxtimes	Voltage fluctuation and flicker (> 16 A)	Р
EN 55014-2	\boxtimes	Electrostatic discharge	Р
Category I		Radiated electromagnetic field	N/A
	\boxtimes	Fast transients	Р
	\square	Surges	Р
Category III		Injected currents 0.15 to 230 MHz	Р
Category IV		Injected currents 0.15 to 80 MHz	N/A
Voltage dips F			
Note : Note 1: Not applica	ble, d	ue to the EUT that contains clock frequency of less than 30 N	IHz.

 \boxtimes Test topic applicable in this test report

Test topic non-applicable in this test report





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4. Continuous disturbances

4.1 Test method

- □ EUT is configured by follow the particular requirement in the reference standards, if available. If the particular requirements are not specified, EUT shall be configured with appropriate load to maximize the disturbance signal.
- □ Mains terminal disturbance is measure at line to earth and neutral to earth.
- Pre-scan shall be done over the whole range of frequency as specified by the standard.
- At least 6 worst peaks which are closet to the limit(s) shall be selected to do the Final scan.
- □ Final scan shall be done by reduce the span zooming in to the selected peak and fine tune to the exact frequency which give the highest disturbance value. Re-measure at that frequency with peak detector and other detector according to the limit(s) applied.





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4.1.1 Test set up

Test set-up description:	\square	Table-top equipment set-up (40 cm distance to vertical ground plane, 80 cm over ground plane) (Indoor unit)
	\boxtimes	Wall/Ceiling mounted equipment (Indoor unit)
		Floor standing equipment set-up (10 cm over ground plane) (Indoor unit and dummy outdoor unit)
		Artificial hand applied
		Other:

4.1.2 Limit

Table 1: Limit for Continuous disturbance

Frequency range		Main Disturbance	ports voltage limits	Associated ports Disturbance voltage limits		
(MHz)	Quasi-peak dB(µv)	Average dB(µv)	Quasi-peak dB(µv)	Average dB(µv)	
0.1	15 - 0.5	66 - 56 *	59 - 46 *	80	70	
C).5 - 5	56	46	74	64	
Ę	5 - 30	60	50	74	64	
Note:	1. * means the limit decreasing linearly with the logarithm of the frequency from 0.15MHz to 0.5MHz.					
	2. The test re applied	port shall state wh	ich test method wa	as used and which	limits were	





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4.2 Test result

4.2.1 Test environment

Ambient Temperature (15 - 35 °C):	26	°C
Relative Humidity (30 - 60 %):	48	%
Air pressure (800 - 1060 mbar):	1008	mbar

4.2.2 Test port

Test port:	\boxtimes	Mains ports
		Associated ports
		Other:

4.2.3 Scanning trace and final measurement

Model:		RAV-HM561SDTY-E					
Operating mo	odes:	1					
Test port:		Mains port	S				
Freq List (MHz)	QP Level (dB(µV))	QP Limit (dB(µV))	QP Margin (dB)	AV Level (dB(µV))	AV Limit (dB(µV))	AV Margin (dB)	Path
0.6940	50.80	56.00	-5.20	44.40	46.00	-1.60	L-PE
0.7700	49.90	56.00	-6.10	43.10	46.00	-2.90	N-PE
0.5420	49.20	56.00	-6.80	43.10	46.00	-2.90	N-PE
2.3220	48.60	56.00	-7.40	42.10	46.00	-3.90	L-PE
2.1980	48.30	56.00	-7.70	41.60	46.00	-4.40	N-PE
4.9200	47.80	56.00	-8.20	41.20	46.00	-4.80	L-PE
Note: 1. The	e test result sh	nown are 6 wo	orst measure	ment result a	nd sort by ave	erage margin	





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Model:		RAV-HM1101KRTP-E						
Operating mo	odes:	1						
Test port:		Mains ports	s					
Freq List (MHz)	QP Level (dB(µV))	QP Limit (dB(µV))	QP Margin (dB)	AV Level (dB(µV))	AV Limit (dB(µV))	AV Margin (dB)	Pat	
3.3180	50.30	56.00	-5.70	43.10	46.00	-2.90	L-P	
3.0820	49.60	56.00	-6.40	42.40	46.00	-3.60	L-P	
0.7620	44.60	56.00	-11.40	38.70	46.00	-7.30	L-P	
0.7300	43.90	56.00	-12.10	37.80	46.00	-8.20	N-F	
8.6540	44.30	60.00	-15.70	38.70	50.00	-11.30	N-F	
0.3700	42.40	58.50	-16.10	36.10	49.25	-13.15	N-F	

Model:		RAV-HM1601UTP-E						
Operating mo	odes:	1						
Test port:		Mains ports						
Freq List (MHz)	QP Level (dB(µV))	QP Limit (dB(µV))	QP Margin (dB)	AV Level (dB(µV))	AV Limit (dB(µV))	AV Margin (dB)	Path	
0.3660	51.60	58.59	-6.99	45.10	49.36	-4.26	N-PE	
0.2620	54.50	61.36	-6.86	47.30	52.97	-5.67	L-PE	
0.2180	56.50	62.89	-6.39	48.00	54.96	-6.96	L-PE	
0.1580	59.20	65.56	-6.36	51.00	58.43	-7.43	L-PE	
0.2540	53.70	61.62	-7.92	45.70	53.31	-7.61	N-PE	
15.7620	47.80	60.00	60.00 -12.20 42.20 50.00 -7.80 N-PE					
Note: 1. The	e test result sl	nown are 6 wo	orst measure	ment result a	nd sort by ave	erage margin	•	





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RAV-HM1601CTP-E Model: 1 Operating modes: Test port: Mains ports QP AV Freq List **QP** Level **QP** Limit AV Level AV Limit Margin Margin Path (MHz) $(dB(\mu V))$ $(dB(\mu V))$ $(dB(\mu V))$ $(dB(\mu V))$ (dB) (dB) 0.2580 55.60 61.49 45.50 53.14 N-PE -5.89 -7.64 55.10 -7.20 0.2340 62.30 44.90 54.19 -9.29 L-PE L-PE 1.1020 50.80 56.00 -5.20 34.90 46.00 -11.10 0.1780 -7.77 45.90 57.15 -11.25 N-PE 56.80 64.57 1.0180 50.90 34.50 46.00 -11.50 N-PE 56.00 -5.10 L-PE 0.1820 55.40 -8.99 44.70 -12.21 64.39 56.91 1. The test result shown are 6 worst measurement result and sort by average margin. Note:

Model:		RAV-HM16	601BTP-E					
Operating mo	odes:	1						
Test port:		Mains ports						
Freq List (MHz)	QP Level (dB(µV))	QP Limit (dB(µV))	QP Margin (dB)	AV Level (dB(µV))	AV Limit (dB(µV))	AV Margin (dB)	Path	
0.1620	62.90	65.36	-2.46	53.80	58.16	-4.36	N-PE	
0.1620	63.00	65.36	-2.36	53.30	58.16	-4.86	L-PE	
0.1780	60.50	64.57	-4.07	50.80	57.15	-6.35	N-PE	
0.1780	60.10	64.57	-4.47	50.20	57.15	-6.95	L-PE	
1.1500	52.40	56.00	-3.60	37.90	46.00	-8.10	L-PE	
0.3020	54.70	60.18	-5.48	42.50	51.44	-8.94	N-PE	
Note: 1. The	e test result sl	nown are 6 wo	orst measure	ment result a	nd sort by ave	erage margin		





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Model:		RAV-HM1601FT-E					
Operating mo	odes:	1					
Test port:		Mains port	s				
Freq List (MHz)	QP Level (dB(µV))	QP Limit (dB(µV))	QP Margin (dB)	AV Level (dB(µV))	AV Limit (dB(µV))	AV Margin (dB)	Path
0.4060	53.10	57.72	-4.62	46.70	48.24	-1.54	L-PE
0.3900	52.50	58.06	-5.56	45.50	48.68	-3.18	N-PE
0.3380	53.70	59.25	-5.55	46.80	50.22	-3.42	L-PE
0.1980	56.90	63.69	-6.79	49.20	56.00	-6.80	L-PE
0.2300	53.90	62.44	-8.54	46.50	54.38	-7.88	N-PE
11.4260	47.80	60.00	-12.20	41.70	50.00	-8.30	N-PE
Note: 1. The	e test result sh	nown are 6 wo	orst measure	ment result a	nd sort by ave	erage margin	



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4.2.4 Graphical representation of conducted emissions data







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Receiver																
RBW		9 kHz	мт		10	ms		LT32L1.TD	F							
nput 2 DC Att		10 dB	Pre	am	p c	FF S	tep LIN		-							
Scan O1Pk MaxO	2Pk Ma	ix :			NAL 1-								10.			
				1	MH2								101	MHZ		
о авиу			_									_	_			
о авиу			_									_	-			
155014 <u>H</u> N QP.LIN																
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dвµV												_	_			
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in terminal dist	urban	ce vo	Itag	e, n	eutr	al to I	PE Mode	el: RAV-H	IM11	01K	RTF	р-Е				
ain terminal dist	urban	ce vo	Itag	e, r	eutr	al to I	PE Mode	el: RAV-H	IM11	01K	RTF	Р-Е				
ain terminal dist	urban	CC VO 9 kHz 10 dB	Itag	e, n		al to I		el: RAV-H	IM11	01K	RTF	р-Е				
ain terminal dist eceiver nput 2 DC Att scan 01Pk Max0	Urban (QPK) 2PK Ma	CE VO 9 kHz 10 dB	Itage MT Pre	e, n	eutr	ms DFF S		el: RAV-H	IM11	01K	RTF	р-Е				
ain terminal dist	Urban (QPK) 2PK Ma	CE VO 9 kHz 10 dB 3×	Itag MT Pre	e, n		ms DFF S		el: RAV-H	IM11	01K	RTF	р-Е	101	MHz		
ain terminal dist	Urban (QPK) 2PK Ma	CE VO 9 kHz 10 dB	Itag	e, n		ms DFF S		el: RAV-H	IM11	01K	RTF	Р-Е	10 1	МНz		
ain terminal dist	Urban (QPK) 2Pk Ma	9 kHz 10 dB	Itag	e, n		ms DFF s		el: RAV-H	IM11	01K	RTF	?-Е	10 1	MHz		
Ain terminal dist	Urban (QPK) 2PK Ma	Ce VO	Itag	e, n		ms DFF S		el: RAV-H	IM11	01K	RTF	2-E	101	МНZ		
ain terminal dist	Urban (QPK) 2PK Ma	Ce VO 9 kHz 10 dB 3×	Itag	e, n		ms DFF s		el: RAV-H	IM11	01K	RTP	P-E	10 1	мнz		
ain terminal dist	Urban (QPK) 2PK Ma	CE VO 9 kHz 10 dB 38	Itag	e, n		ms DFF S		el: RAV-H	IM11	01K		P-E	10 1	мнz		
ain terminal dist	Urban (QPK) 2PK Ma	CE VO	Itag	e, n		ms DFF S		el: RAV-H	IM11	01K	RTF	P-E	10	MHz		
ain terminal dist	Urban (QPK) 2PK Ma	Ce VO	Itag	e, r		ms DFF S		el: RAV-H	IM11	01K		2-E	101	MHz		
in terminal dist		Ce VO	Itag	e, r		ms DEF S		el: RAV-H	IM11	01K		р-Е	10 1	мнz """"""""""""""""""""""""""""""""""""		
in terminal dist		CE VO	Itag	e, r		ms DFF s			IM11	01K		2-E	101	мнz """"""""""""""""""""""""""""""""""""		
in terminal dist		CE VO	MT Pre	e, r		ral to I			IM11	01K	RTF	2-E		мнz """"""""""""""""""""""""""""""""""""		
ain terminal dist		CE VO	MT Pre	e, r		ms DFF s			IM11	01K	RTF	2-E		мнz """"""""""""""""""""""""""""""""""""		
ain terminal dist	Urban (QPK) 2PK Ma	CE VO	MT Pre	e, r		ms DFF s			IM11	01K	RTF	2-E		MHZ MMMM		
ain terminal dist		CE VO	Itag	e, r		ms DFF s		el: RAV-H	IM11	01K		2-E		MH2		
ain terminal dist						ms DFF s		el: RAV-H	IM11	01K		2-E		чнz ""Мулл W		
ain terminal dist				e, n		ms DFF s		el: RAV-H	IM11	01K		P-E		vitiz "whywe W		
ain terminal disti				e, r		ms DFF 8			IM11	01K		2-E		VH2	~	
iin terminal dist ecciver Pput 2 DC Att can IPk Max D dBuv 55014 HN QP.LIN D dBuv 55014 HN QP.LIN D dBuv D dBuv D dBuv D dBuv D dBuv D dBuv D dBuv D dBuv D dBuv				e, r		ms DFF 8		el: RAV-H	IM11	01K		2-E		vitiz		
iin terminal dist ecciver Pput 2 DC Att ican IPk Maxe 1 dBµV 55014 HN QP.LIN 1 dBµV 55014 HN AV.LIN 1 dBµV 1 dBµV 1 dBµV 1 dBµV 1 dBµV 1 dBµV 1 dBµV				e, r		ral to I		el: RAV-H	IM11	01K		2-E		MHz Whow W	Stop 2	





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RP	W (QPK)	9 kHz	мт		10 ms		E5-0	040 L1								
nput 2 DC At	t :	10 dB	Prea	mp	OFF	Step L	.IN									
ican O1Pk Ma	ixo2Pk Ma	×		1 64								10	N41.1-3			
					Π2							10				
	_															
5PR 14-1 HN AV	J. Jame Videly .															
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	>05/66	Mryles .									Λ	1	and the	mark	$\nabla \nabla$	
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	2							: <u> </u>						Ste	op 30	.0 МП
in terminal c	2 disturban	ce vol	tage	, ne	utral to	o PE M	lodel: R	AV-H	M16	01UT	P-E			Sto	<u>op 30</u>	.0 MH
in terminal o	ź disturban∂	ce vol	tage,	, ne	utral to	o PE M	lodel: R	AV-H	M16	01UT	P-E			Sto	<u>op 30</u>	
in terminal c eceiver	disturban	ce vol	tage,	, ne	utral to	o PE M	lodel: R	AV-H	M16 ∍н	01UT	P-E			Sto	<u>op 30</u>	
in terminal c eceiver nput 2 DC At	disturban	CE VOI	tage, мт Ргеа	, ne	utral to	DPEN	10del: R	AV-H	M16 ∍н	01UT	P-E			Sti	<u>op 30</u>	
in terminal o eceiver Pput 2 DC At	disturban W (QPK) (t :: ו 2PK Ma	CE VO	tage, MT Prea	, ne	utral to	DPEN	lodel: R	AV-H	M16 ∍н	01UT	P-E			Sti	<u></u>	
in terminal o eceiver put 2 DC At scan O1Pk Ma		CE VO	tage, мт Prea	, ne mp	utral to	DPEN Step L	lodel: R	AV-H	M16 ∍н	01UT	P-E	10	MHz	Sti		
in terminal of ecciver Poput 2 DC At Scan © 1Pk Ma	listurban W (QPK) t ו2Pk Ma		tage, MT Prea	, ne	utral to ^{10 ms} OFF	DPEN	1odel: R	AV-H	M16 ∍н	01UT	P-E	10	MHz	Ste		
in terminal c eceiver nput 2 DC At ican ©1Pk Ma		Ce vol	tage, MT Prea	, ne	utral to ^{10 ms} OFF	DPEN Step L	1odel: R	AV-H	М16 ∍н	01UT	P-E	10	MHz			
in terminal c eceiver Pput 2 DC At ican © 1Pk Ma			tage, Prea	, ne	utral to	DPEN	1odel: R	AV-H	М16 ∍н	01UT	P-E	10	MHz	St		
in terminal c eceiver приt 2 DC At ican O1Pk Ма о dBµV		Ce vol 9 kHz 10 dB	tage, Prea	, ne	utral to ^{10 ms} OFF Hz	o PE M	1odel: R	AV-H	М16 ∍н	01UT	P-E	10	MHz			
in terminal c eceiver Pput 2 DC At can O1Pk Ma dBµV dBµV		Ce vol	MT Prea	, ne	utral to ^{10 ms} OFF Hz	D PE M	1odel: R 	AV-H	М16 ∍н	01UT	P-E	10	MHz	St		
in terminal c eceiver RE put 2 DC At can ●1Pk Ma dBµV dBµV SPR 14-1 HN OF dBµV	disturban w (QPK) (t x • 2Pk Ma	Ce vol	MT Prea	, ne	utral to	D PE M	1odel: R 	AV-H	М16 ∍н	01UT	P-E	10	MHz			
in terminal c ecciver Pput 2 DC At Can O1Pk Ma 0 dBµV 0 dBµV 0 dBµV 0 dBµV 0 dBµV 0 dBµV 0 dBµV			MT Prea	, ne	utral to	DPEN	fodel: R	AV-H	М16 ∍н	01UT	P-E	10	MHz			
in terminal c ecciver Pput 2 DC At Can O1Pk Ma O dBµV SPR 14-1 HN OF SPR			MT Prea	, ne	utral to	DPEM	fodel: R		М16 ∍н	01UT	P-E	10	MHz			
in terminal c eceiver Pout 2 DC At ican • 1Pk Ma d dbµV b dbµV spR 14-1 HN QF b dbµV spR 14-1 HN QF b dbµV spR 14-1 HN QF b dbµV			MT Prea	, ne	utral to	DPEM	1odel: R	AV-H	М16 ^{эн}	01UT	P-E	10	MHz	*		[
in terminal c eceiver Put 2 DC At can O1Pk Ma 0 dBµV PR 14-1 HN OF PR 14-1 HN OF PR 14-1 HN OF O dBµV > PR 14-1 HN OF > O dBµV > O dBµV > O dBµV			MT Prea	, ne	utral to	DPEM			М16 ∍н	01UT	P-E	10	MHz	Ste		
in terminal c eceiver Pput 2 DC At can ●1Pk Ma 0 dBµV 0 dBµV PR 14-1 HN QF PR 14-1 HN QF			MT Prea	, ne	utral to	DPEM	1odel: R E5-0		М16 ∍н	01UT	P-E	10	MH2	St.		
in terminal c ecciver Pput 2 DC At Can ● 1Pk Ma D dBµV D dBµV SPR 14-1 HN QF D dBµV C dBµV A dBµV D dBµV D dBµV D dBµV D dBµV D dBµV	disturban w (QPK) (t OPK) (t OP		MT Prea	, ne	utral to	DPEN	Iodel: R	AV-H	M16	01UT	P-E	10	MHz			
in terminal c ecciver Pput 2 DC At Can ●1Pk Ma D dBµV D dBµV SPR 14-1 HN QF D dBµV X D d dBµV X D d dBµV X D dBµV X D d D dBµV X D d D dBµV			MT Prea	, ne	utral to		1odel: R		M16		P-E	10	MHz	St.		[
in terminal c ecciver Pput 2 DC At ican ●1Pk Ma 0 dBµV SPR 14-1 HN OF SPR 14-1 HN OF SPR 14-1 HN OF SPR 14-1 HN OF O dBµV > dBµV > dBµV > dBµV > dBµV			MT Prea	, ne	utral to	DPEM	1odel: R E5-0		M16	01UT	P-E	10	MH2	**		
in terminal c eceiver Reput 2 DC At ican O1Pk Ma d dbµV b dbµV b dbµV b dbµV b dbµV b dbµV b dbµV b dbµV			MT Prea	, ne	utral to	DPE M	1odel: R	AV-H	M16	01UT	P-E	10	MH2	St.		
in terminal c ecciver Re put 2 DC At Can ● 1Pk Ma D dBµV D dBµV D dBµV D dBµV A BµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV	Jisturban W (QPK) (2Pk Ma		MT Prea	, ne	utral to	DPEM	1odel: R		M16	01UT	P-E	10	MHz	**•		[
in terminal c ecciver Pput 2 DC At Scan ●1Pk Ma D dBµV D dBµV	Jisturban → (QPK) (t → 2Pk Ma		MT Prea	, ne	utral to	DPEN	1odel: R		M16	01UT	P-E	10	MHz	*		
in terminal c ecciver Pput 2 DC At Scan ● 1Pk Ma D dBµV D dBµV SPR 14-1 HN QF D dBµV C dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV	Jisturban		MT Prea	, ne	utral to	DPEN	1odel: R		M16		P-E	10	MHz	*		
in terminal c ecciver Pput 2 DC At ican ●1Pk Ma 0 dBµV 0 dBµV SPR 14-1 HN QF 0 dBµV > dBµV > dBµV 0 dBµV > dBµV > dBµV > dBµV > dBµV			MT Prea	, ne	utral to	DPEM	1odel: R		M16		Р-Е	10	MHz	***		
in terminal c ecciver			MT Prea	, ne	utral to	DPE M	1odel: R	AV-H	M16	01UT	P-E	10	MHz			





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PRW (CIS	SPR) 9 kHz MT	10 ms		173211 7	DE					[_
nput 2 DC Att	10 dB Prea	amp_OFF	Step LIN							
Scan O1Pk MaxO2Pk	Max			,,						
		1 MHz						101	MHZ 	
о авил										
55014 HN OP.LIN										
DidBUM								_		
	สมานสัมผมสมไปการสาราวิที่ได้ได้ได้ได้ได้ได้ได้ได้ได้ได้ได้ได้ได้ไ	- many								
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ain terminal disturb	ance voltage,	neutral to F	PE Model:	RAV-HI	M160 ⁻	1CTF	Р-Е			
ain terminal disturb	ance voltage,	neutral to F	PE Model:		V160 ⁻	1CTF	Р-Е			
ain terminal disturb eceiver RBW (CIS		neutral to F	PE Model: step LIN	RAV-HI	V160 ⁻	1CTF	P-E			
ain terminal disturb eceiver nput 2 DC Att Scan OIPK MaxO2Pk	ance voltage,	neutral to F	PE Model:	RAV-H	V160 ⁻		р-Е			
ain terminal disturb eceiver nput 2 DC Att Scan ©1Pk Max©2Pk	ance voltage, SPR) 9 kHz MT 10 dB Pred Max	neutral to F	PE Model:		V160 ⁻		р-Е	10	MHz	
ain terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Pred Max	10 ms 0 ms 0 FF	PE Model:		V160 ⁻		р-Е	10	MHz	
ain terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Prec Max	10 ms OFF	PE Model:		V160 ⁻		р-Е	10	MHz	
ain terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Prec Max	10 ms OFF	PE Model:		W160 ⁻		р-Е	10	MHz	
in terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Pree Max	10 ms 10 ms 0 FF 1 MHz	PE Model:		M160 ⁻		р-Е	101	MHz	
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ain terminal disturb	ance voltage, PR) 9 kHz MT 10 dB Prez Max	10 ms 0 FF 1 MHz			M160 ⁻		P-E	101	MHz	
ain terminal disturb	ance voltage, PR) 9 kHz MT 10 dB Prez Max	10 ms 0 FF 1 MHz 1 MHz			M160 ⁻		P-E	101	MHz	
ain terminal disturb	ance voltage, PR) 9 kHz MT 10 dB Prez Max	10 ms 0 FF 1 MHz 1 MHz	PE Model:		M160 ⁻		P-E	10 1	MHz	
ain terminal disturb Receiver RBW (CIS nput 2 DC Att Scan ●1Pk Max●2Pk D dBµV D dBµV D dBµV D dBµV D dBµV	ance voltage, PR) 9 kHz MT 10 dB Prez Max	10 ms 0 FF 1 MHz 1 MHz 1 MHz			V160		P-E	101	MHz	(P
ain terminal disturb Receiver RBW (CIS RBW	ance voltage, SPR) 9 kHz MT 10 dB Prec Max	10 ms 0 FF 1 MHz			V160		P-E	101	MHz Mhallan	(P)
ain terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Prec Max	INHZ			M160		P-E	101	MHZ MALALA	
ain terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Pree Max	INHZ			V160		E	101	MHZ MA-Mana	
ain terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Pree Max	Ineutral to F			V160		E	101	MHz MANA MANA	
ain terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Pree Max	I MHZ			V160		P-E	10	MHz	
ain terminal disturb	ance voltage, SPR) 9 kHz MT 10 dB Pree Max	Ineutral to F			V160		P-E		MHz Mhaddar Marandar	
ain terminal disturb Receiver RBW (CII nput 2 DC Att Scan ● 1Pk Max ● 2Pk D dBµV SS014 HN QP,LIN SS014 HN QP,LIN SS014 HN QP,LIN SS014 HN QP,LIN D dBµV D dBµV D dBµV D dBµV D dBµV	ance voltage, ^{3PR) 9 kHz MT 10 dB Prez Max}	Ineutral to F			V160		P-E		MHz	
in terminal disturb ecciver RBW (CIS put 2 DC Att can IPk Max 2Pk dBuv dBuv dBuv dBuv dBuv dBuv	ance voltage, PR) 9 kHz MT 10 dB Prez Max	Ineutral to F			M160		P-E	10	MHz	





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RBW (CI	SPR)9 kHz MT	10 ms		LT32L1.T	DE					(
nput 2 DC Att	10 dB Pre-	amp OFF	Step LIN							
Scan O1Pk MaxO2Pk	Max									
		1 MHz						10	MHz 	
55014 HN AV.LIN	Litter & Municipanes CoCIC*1	- many								
	MAN AN ANALY AND BUILT I	+ ++						-		
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dBµV								_		
								1		
in terminal disturb	oance voltage,	neutral to F	PE Model:	RAV-HI	//160 1	BTP	-E			
ain terminal disturk	pance voltage,	neutral to F	PE Model:	RAV-HN	/160 1	BTP	-E			
ain terminal disturk eceiver RBW (CI nput 2 DC Att	SPR) 9 kHz MT	neutral to F	PE Model:	RAV-HN	//16 01	BTP	-E			
ain terminal disturk eceiver nput 2 DC Att Scan O1Pk MaxO2Pk	SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:	RAV-HN	//160 1	BTP	-E		AU 1-	
ain terminal disturk eceiver RBW (CI nput 2 DC Att Scan O1Pk MaxO2Pk	Dance voltage, SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	101	MH2	
ain terminal disturk Receiver RBW (CI Can O1Pk MaxO2Pk	SPR) 9 KHZ MT 10 dB Pre- Max	neutral to F	PE Model:		//160 1	BTP	-E	10 1	MHz	
ain terminal disturk eceiver nput 2 DC Att Scan ●1Pk Max●2Pk	Dance voltage, SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	10 (MHz	
ain terminal disturt	Dance voltage, SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	10 (MHz	
In terminal disturb Receiver RBW (CI RBW (CI Can ●1Pk Max●2Pk D dBµV 55014 HN QP,LIN	SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	10 (MHz	
In terminal disturt	SPR) 9 kHz MT 10 dB Pre. Max	neutral to F	PE Model:		M1601	BTP	-E	101	MHz	
In terminal disturt	Dance voltage, SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	10 1	MHz	
in terminal disturt ecceiver nput 2 DC Att iccan ●1Pk Max●2Pk D dBµV 55014 HN QP LIN HENVENTED	Dance voltage, SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	10 1	MHz	
in terminal disturt	SPR) 9 KHZ MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	101	MHz	
in terminal disturt ecceiver Pput 2 DC Att ican ● 1Pk Max● 2Pk 0 dBµV 55014 HN QP,LIN 1 dBµV 55014 HN QP,LIN 1 dBµV 0 dBµV	Dance voltage,	neutral to F	PE Model:		M1601	BTP	-E	101	MH2	
ain terminal disturt ecceiver RBW (CI Pput 2 DC Att CCan OIPK Max O2PK D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV	SPR) 9 KHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	101	MHz	(E
ain terminal disturt ecceiver RBW (CI mput 2 DC Att Scan OIPk Max O2Pk D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV	SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	101	MHz	(P
ain terminal disturt	Dance voltage, SPR) 9 kHz MT 10 dB Pre- Max	neutral to F			M1601	BTP	-E	101	MH2	(P
ain terminal disturt	SPR) 9 kHz MT 10 dB Pre. Max	neutral to F	PE Model:		M1601	BTP	-E	101	MH2	(E
ain terminal disturt	Dance voltage, MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E	101	MHz	(P
ain terminal disturt	Dance voltage,	neutral to F	PE Model:		M1601	BTP	-E	101	MHz	(E
ain terminal disturk	Dance voltage,	neutral to F	PE Model:		M1601	BTP	-E	101	MHz	
ain terminal disturb	Dance voltage,	neutral to F	PE Model:		M1601	BTP	-E		MHz	
Ain terminal disturb Receiver RBW (CI Att CCan OIPK Max O2PK D dBµV D dBµV 55014 HN QP LIN HN QP LIN 55014 HN QP LIN HN QP LIN 1 dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV	SPR) 9 kHz MT 10 dB Pre- Max	neutral to F	PE Model:		M1601	BTP	-E			





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							. 15
RBW (CIS	PR)9 kHz MT	10 ms	LT32L1.TD	F			
nput 2 DC Att Scan O1Pk MaxO2Pk (10 dB Prear Max	mp OFF Step	LIN				
	1	MHz			10 MHz		
о авил							
о авил							
55014 HN QP.LIN							
55014 HN AV.LIN							
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d d bu N							
o dept							
dBuW							
dep:							
ain terminal disturba	ance voltage, n	eutral to PE M	lodel: RAV-HM	11601FT-E			_
ain terminal disturba	ance voltage, n	eutral to PE M	lodel: RAV-HM	11601FT-E			
ain terminal disturba	ance voltage, n	eutral to PE M	lodel: RAV-HM	11601FT-E			[
ain terminal disturba	ance voltage, n PR) 9 kHz MT 10 dB Prear	eutral to PE M	lodel: RAV-HM	11601FT-E			
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max	ID ms D FF Step	Iodel: RAV-HN	11601FT-E	10 MHz		
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max	eutral to PE M	Iodel: RAV-HN	11601FT-E	10 MHz		[
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max	Deutral to PE M	Iodel: RAV-HN	11601FT-E	10 MHz		
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max 1	eutral to PE M	Iodel: RAV-HIV	11601FT-E	10 MHz		
ain terminal disturba	Ance voltage, n 10 dB Prear Max 1	eutral to PE M	Iodel: RAV-HM	11601FT-E	10 MHz		
in terminal disturba Receiver RBW (CIS RBW (CIS Can OIPK Max O2PK I O dBuV 55014 HN QP LIN	Ance voltage, n 10 dB Prear Max 1	eutral to PE M	Iodel: RAV-HM	11601FT-E	10 MHz		
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max 1	eutral to PE M	Iodel: RAV-HM	11601FT-E	10 MHz		
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max 1	eutral to PE M	Iodel: RAV-HM	11601FT-E	10 MHz		
Ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max 1 1	eutral to PE M	lodel: RAV-HM	11601FT-E	10 MHz		E
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max 1	eutral to PE M	Iodel: RAV-HN	11601FT-E	10 MH2		
ain terminal disturba	Ance voltage, n 10 dB Prear Max 1	eutral to PE M		11601FT-E			
ain terminal disturba	Ance voltage, n 10 dB Prear Max 1	eutral to PE M		11601FT-E	10 MHz		
ain terminal disturba Receiver RBW (CIS nput 2 DC Att Scan • 1Pk Max • 2Pk I D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV	Ance voltage, n	eutral to PE M		11601FT-E			
ain terminal disturba Receiver RBW (CIS nput 2 DC Att Scan O 1Pk Max O 2Pk I D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV D dBµV	Ance voltage, n	eutral to PE M		11601FT-E		Man	
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max 1 1 1 1 1 1 1 1 1 1 1 1 1	eutral to PE M		11601FT-E		Many	
ain terminal disturba	Ance voltage, n PR) 9 kHz MT 10 dB Prear Max 1 1 1 1 1 1 1 1 1 1 1 1 1	eutral to PE M	lodel: RAV-HM	11601FT-E	10 MHz	Man Jan	
ain terminal disturba	Ance voltage, n 10 dB Prear Max 1 1 1 1 1 1 1 1 1 1 1 1 1	eutral to PE M	lodel: RAV-HM	11601FT-E		Man	(E
ain terminal disturba	Ance voltage, n 10 dB Prear Max 1 1 1 1 1 1 1 1 1 1 1 1 1	eutral to PE M		11601FT-E			The second secon
ain terminal disturba Receiver RBW (CIS nput 2 DC Att Scan 1Pk Max 2Pk f 0 dBµV 0 dBµV	Ance voltage, n	eutral to PE M	Iodel: RAV-HM	11601FT-E	10 MHz		And the second s
ain terminal disturba Receiver RBW (CIS nput 2 DC Att Scan IPk Max 2Pk I D dBµV D dBµV	Ance voltage, n	eutral to PE M		11601FT-E			And the second s





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5. Disturbance power

5.1 Test method

- □ EUT is configured by follow the particular requirement in the reference standards, if available. If the particular requirements are not specified, EUT shall be configured with appropriate load to maximize the disturbance signal.
- Continuous disturbance power is measure over the 6 m length cable by pre-scan 2m a time. The pre-scan is done at 0.1m (the closet to EUT), 3m.
- Pre-scan shall be done over the whole range of frequency as specified by the standard. One worst trace will be selected to report as a pre-scan trace.
- At least 6 worst peaks which are closet to the limit(s) shall be selected to do the Final scan. The selection will do base on the 3 scanning results as mention above. Different frequency will be selected.
- □ Final scan shall be done by reduce the span zooming in to the selected peak and fine tune to the exact frequency which give the highest disturbance value. Re-measure at that frequency with peak detector and other detector according to the limit(s) applied.





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5.1.1 Test set up

Test set-up description:	\boxtimes	Equipment on table of 80 cm height (Indoor unit)
	\boxtimes	Wall/Ceiling mounted equipment (Indoor unit)
	\boxtimes	Equipment on support of 10 cm height (Indoor unit and dummy outdoor unit)
		Other:

5.1.2 Limit

Table 2: Disturbance power limits

Frequ	uency range (MHz)	Quasi-peak dB(pW)	Average dB (pW)
3	30 - 300	45 - 55*	35 - 45*
Note:	1. * means the	limit increasing linearly with the fre	equency.
	2. If the limit for receiver with meet both lim not be carried	 the measurement with the average a quasi-peak detector, the equipm hits and the measurement with the d out. 	ge detector is met when using a nent under test shall be deemed to receiver with average detector need

Table 3: Reduction applicable to disturbance power limits

Frequency range	Quasi-peak	Average
(MHz)	dB(pW)	dB (pW)
200 - 300	0 to 10	0





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5.2 Test result

5.2.1 Test environment

Ambient Temperature (15 - 35 °C):	26	°C
Relative Humidity (30 - 60 %):	48	%
Air pressure (800 - 1060 mbar):	1008	mbar

5.2.2 Test port

Test port:	\boxtimes	Mains power lines
		Signal lines
	\boxtimes	Control lines
		Other:

5.2.3 Scanning trace and final measurement

Model:			RAV-HM5	61SDTY-E				
Operating	g mod	es:	1					
Test port:			Mains power lines, inter-connecting cable and remote wire					
Freq L (MHz	.ist <u>z)</u>	QP Level (dB(pW))	QP Limit (dB(pW))	QP Margin (dB)	AV Level (dB(pW))	AV Limit (dB(pW))	AV Margin (dB)	Sensor
41.	7600	42.50	45.43	-2.93	30.20	35.43	-5.23	Remote
55.	0800	41.70	45.92	-4.22	28.30	35.92	-7.62	I/D
38.	9600	37.80	45.33	-7.53	27.10	35.33	-8.23	I/D
30.	5200	37.40	45.01	-7.61	27.80	35.01	-7.21	Remote
55.	0000	36.30	45.92	-9.62	24.20	35.92	-11.72	Main
38.	0400	33.80	45.29	-11.49	24.20	35.29	-11.09	Main
Note:	1. Th	e test result s	hown are 6 w	vorst measur	ement result	and sort by q	uasi-peak m	argin.
Remark:	Main:	Clam	o on main cat	ole, sensor h	ead to main.			
	I/D:	Clamp	o on inter-con	necting cabl	e, sensor hea	ad to indoor.		
	Remo	ote: Clamp	o on remote v	vire, sensor l	nead to air co	nditioner.		





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Model:			RAV-HM1101KRTP-E					
Operating	g mod	es:	1					
Test port:			Mains pow	ver lines, int	er-connecti	ng cable and	d remote wi	re
Freq L (MHz	ist :)	QP Level (dB(pW))	QP Limit (dB(pW))	QP Margin (dB)	AV Level (dB(pW))	AV Limit (dB(pW))	AV Margin (dB)	Sensor
30.	5600	40.80	45.02	-4.22	26.80	35.02	-8.22	I/D
31.	2000	42.20	45.04	-2.84	27.90	35.04	-7.14	Remote
39.	7200	36.70	45.36	-8.66	23.90	35.36	-11.46	Main
39.	8000	36.10	45.36	-9.26	23.00	35.36	-12.36	Remote
35.	2800	30.50	45.19	-14.69	19.10	35.19	-16.09	I/D
36.	9600	28.50	45.25	-16.75	18.50	35.25	-16.75	Main
Note:	1. Th	e test result s	hown are 6 w	orst measur	ement result	and sort by q	uasi-peak m	argin.
Remark:	Main:	Clamp	o on main cat	ole, sensor h	ead to main.			
	I/D:	Clamp	o on inter-con	necting cabl	e, sensor hea	ad to indoor.		
	Remo	ote: Clamp	o on remote v	vire, sensor l	nead to air co	nditioner.		

Model:			RAV-HM1	601UTP-E				
Operatin	g mod	es:	1					
Test port: Mains power lines, inter-connecting cable				ng cable and	d remote wi	re		
Freq L (MHz	.ist <u>z)</u>	QP Level (dB(pW))	QP Limit (dB(pW))	QP Margin (dB)	AV Level (dB(pW))	AV Limit (dB(pW))	AV Margin (dB)	Sensor
32.	5200	30.90	45.09	-14.19	19.60	35.09	-15.49	I/D
49.	49.3200 31.30		45.71	-14.41	19.30	35.71	-16.41	Remote
37.	7200	30.50	45.28	-14.78	18.60	35.28	-16.68	Remote
49.	0400	30.90	45.70	-14.80	19.00	35.70	-16.70	I/D
78.	4400	29.20	46.79	-17.59	13.80	36.79	-22.99	Main
103.	3600	29.50	47.71	-18.21	13.40	37.71	-24.31	Main
Note:	1. Th	e test result s	hown are 6 w	orst measur	ement result	and sort by q	uasi-peak m	argin.
Remark:	Main:	Clam	o on main cat	ole, sensor h	ead to main.			
	I/D:	Clam	o on inter-cor	necting cabl	e, sensor hea	ad to indoor.		
	Remo	ote: Clam	o on remote v	vire, sensor l	nead to air co	nditioner.		





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Model:		RAV-HM1601CTP-E						
Operating	g mod	es:	1					
Test port:			Mains power lines, inter-connecting cable and remote wire					
Freq L (MHz	.ist z)	QP Level (dB(pW))	QP Limit (dB(pW))	QP Margin (dB)	AV Level (dB(pW))	AV Limit (dB(pW))	AV Margin (dB)	Sensor
30.3200 34.50			45.01	-10.51	21.40	35.01	-13.61	Main
30.	9200	34.10	45.03	-10.93	24.10	35.03	-10.93	Remote
41.	1200	32.90	45.41	-12.51	21.50	35.41	-13.91	Main
39.	8000	30.90	45.36	-14.46	22.30	35.36	-13.06	Remote
30.	3200	29.90	45.01	-15.11	18.20	35.01	-16.81	I/D
41.	4400	26.70	45.42	-18.72	18.30	35.42	-17.12	I/D
Note:	1. Th	e test result s	hown are 6 w	orst measur	ement result	and sort by q	uasi-peak m	argin.
Remark:	Main:	Clamp	o on main cat	ole, sensor h	ead to main.			
	I/D:	Clamp	o on inter-con	necting cabl	e, sensor hea	ad to indoor.		
	Remo	ote: Clamp	o on remote v	vire, sensor l	nead to air co	nditioner.		

Model:			RAV-HM1	601BTP-E				
Operatin	g mod	es:	1					
Test port: Mains pow				ver lines, int	er-connecti	ng cable and	d remote wi	re
Freq L (MHz	.ist <u>z)</u>	QP Level (dB(pW))	QP Limit (dB(pW))	QP Margin (dB)	AV Level (dB(pW))	AV Limit (dB(pW))	AV Margin (dB)	Sensor
30.	0400	40.50	45.00	-4.50	29.80	35.00	-5.20	Remote
38.	6000	35.00	45.31	-10.31	24.50	35.31	-10.81	Remote
41.	3200	32.90	45.41	-12.51	23.00	35.41	-12.41	Main
30.	9200	30.50	45.03	-14.53	16.20	35.03	-18.83	Main
30.	0000	26.50	45.00	-18.50	17.70	35.00	-17.30	I/D
39.	9600	25.50	45.36	-19.86	17.40	35.36	-17.96	I/D
Note:	1. Th	e test result s	hown are 6 w	orst measur	ement result	and sort by q	uasi-peak m	argin.
Remark:	Main:	Clam	o on main cat	ole, sensor h	ead to main.			
	I/D:	Clam	o on inter-con	necting cabl	e, sensor hea	ad to indoor.		
	Remo	ote: Clam	o on remote v	vire, sensor l	nead to air co	nditioner.		





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Report No. Page 30 of 115 **Issue Date** 6 May 2022 Model: RAV-HM1601FT-E 1 Operating modes: Test port: Mains power lines, inter-connecting cable QP QP AV **QP** Limit AV Level AV Limit Freq List Level Margin Margin Sensor (dB(pW))(dB(pW)) (dB(pW)) (MHz) (dB<u>(pW))</u> (dB) (dB) 45.08 20.30 35.08 -14.78 32.2000 33.10 -11.98 Main I/D 52.1600 33.80 45.82 -12.02 19.80 35.82 -16.02 I/D 37.8000 33.20 45.28 -12.08 20.80 35.28 -14.48 31.40 45.08 35.08 -15.98 I/D 32.1600 -13.68 19.10 Main 100.3600 32.50 47.60 -15.10 15.50 37.60 -22.10 Main 27.30 -17.93 14.80 35.23 -20.43 36.2800 45.23 Note: 1. The test result shown are 6 worst measurement result and sort by quasi-peak margin. Main: Remark: Clamp on main cable, sensor head to main. I/D: Clamp on inter-connecting cable, sensor head to indoor.





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5.2.4 Graphical representation of disturbance power data

	urbance, sensor	to mains Model: R	AV-HM561SDTY-E		
Receiver					
Input 2 DC	RBW (QPK) 120	kHz MT 10 ms	AMZ41-1. Step LIN	TDF	· · · · ·
Scan 01P	rk Max ⊚ 2Pk Max]
90 dвр.w.— 					
80 dBpW					
70 dвруў—— 					
60 dBpW					
50 dBpW	wer QPR.LIN				
40_dBpW-					
EN 55014 Po 単 二八構	wer AV.LIN				
va¢′da¢∕vi—	Contra Man	Mun Mr.	N.L	an minut	
20 dBpW		Monoral a water	an well-when both	man when we	mannon
10 dBpw —					
Start 30.0	MHZ				Stop 300.0 MHz J
Power dist	urbance sensor	to indoor Model: F		-	
	andanioo, oonoon		(AV-HM561SDTY-I		
Receiver			(AV-HM561SDTY-I	E	
Receiver		KHZ MT 10 ms	AV-HM561SDTY-I	TDF	
Receiver	RBW (QPK) 120 Att 10 ² K Max O 2PK Max	kHz MT 10 ms dB Preamp OFF	AV-HM561SDTY-I AMZ41-1. Step LIN	TDF	
Receiver	RBW (QPK) 120 Att 10 2 Att 10 2 k Max 2 2Pk Max	KHZ MT 10 ms odb Preamp OFF	AV-HM561SDTY-I		
Receiver	RBW (QPK) 120 Att 10 2 Att 10 2 Max @ 2Pk Max	KHZ MT 10 ms 0 dB Preamp OFF	AV-HM561SDTY-I		
Receiver	RBW (QPK) 120 Att 10 2k Max 2Pk Max	KHZ MT 10 ms odB Preamp OFF	AW-HM561SDTY-I		
Receiver Input 2 DC Scan © 1P 90 dBpW 80 dBpW	RBW (QPK) 120 Att 100 2 Att 100 2 K Max 2 2 Pk Max	KHZ MT 10 ms odB Preamp OFF	AMZ41-1.		
Receiver Input 2 DC Scan @1P 90 dBpW 80 dBpW 70 dBpW	RBW (QPK) 120 Att 10 Max@2Pk Max	KHZ MT 10 ms odB Preamp OFF	AMZ41-1. Step LIN		
Receiver Input 2 DC Scan •1P 90 dBpW 80 dBpW 70 dBpW 60 dBpW	RBW (QPK) 120 Att 10 Maxe 2Pk Max	KHZ MT 10 ms	AMZ41-1. Step LIN		
Receiver Input 2 DC Scan © 1P 90 dBpW 80 dBpW 70 dBpW 60 dBpW	RBW (QPK) 120 Att 10 K Maxe2Pk Max	KHZ MT 10 ms odB Preamp OFF	AMZ41-1. Step LIN		
Receiver Input 2 DC Scan OIP 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW EN 55014 Po	RBW (QPK) 120 Att 10 K Max 2Pk Max	KHZ MT 10 ms odb Preamp OFF	AV-HM561SDTY-I		
Receiver Input 2 DC Scan © 1P 90 dBpW 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW 50 dBpW 60 dBpW	RBW (QPK) 120 Att 10 % Max © 2Pk Max	KHZ MT 10 ms odB Preamp OFF			
Receiver Input 2 DC Scan @ IP 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW 60 dBpW 50 dBpW 60 dBpW 50 dBpW 90 dBpW	RBW (QPK) 120 Att 10 Wer QPR.LIN	KHz MT 10 ms odB Preamp OFF			
Receiver Input 2 DC Scan @ 1P 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW EN 55014 PO IAD HBpW EN 55014 PO IAD HBpW State State State	RBW (QPK) 120 Att 10 Max 2Pk Max wer QPR.LIN wer AV.LIN	KHZ MT 10 ms b dB Preamp OFF	AMZ41-1. Step LIN		
Receiver Input 2 DC Scan @ IP 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW EN 55014 Po MO JBpW EN 55014 Po S0 JBpW 20 dBpW	RBW (QPK) 120 Att 10 Pk Max 2Pk Max	KHZ MT 10 ms b dB Preamp OFF	AMZ41-1. Step LIN		
Receiver Input 2 DC Scan • 1P 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW EN 55014 Po FN 55014 Po Addpow 30 dBpW 20 dBpW 20 dBpW	RBW (QPK) 120 Att 10 Pk Max 2Pk Max	KHZ MT 10 ms b dB Preamp OFF	AMZ41-1. Step LIN		
Receiver Input 2 DC Scan 1P 90 dBpW 90 80 dBpW 90 70 dBpW 90 60 dBpW 90 60 dBpW 90 60 dBpW 90 50 dBpW 90 80 dBpW 90 60 dBpW 90 80 dBpW 90 60 dBpW 90 80 dBpW 90 80 dBpW 90 80 dBpW 90 90 dBpW 90	RBW (QPK) 120 Att 10 K Max © 2Pk Max	KHZ MT 10 ms D dB Preamp OFF	AMZ41-1. Step LIN		
Receiver Input 2 DC Scan 90 dBpW 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW EN S5014 Po 10 dBpW 20 dBpW 10 dBpW	RBW (QPK) 120 Att 10 K Max © 2Pk Max wer QPR.LIN wer AV.LIN		AMZ41-1. Step LIN		
Receiver Input 2 DC Scan @1P 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW 60 dBpW 50 dBpW 20 dBpW 90 dBpW	RBW (QPK) 120 Att 10 K Max © 2Pk Max wer QPR.LIN wer AV.LIN MHz		AMZ41-1. Step LIN	TDF	Stop 300.0 MHz





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Power disturbance, sensor	to remote wire Mo	del: RAV-HM561SI	DTY-E	
Receiver				
RBW (QPK) 120	kHz MT 10 ms	AMZ41-1.	TDF	
Scan O1Pk MaxO2Pk Max	Dub Pleanp OFF	Step Lin		
90 двр.				
80 dBpW				
60 dBpw				
EQ dB play				
EN 55014 Power QPR.LIN				
မှစ de				
W. UN M.	na in in in			
30 dep mp	The show with	Mary Maria		
20 dBpW	v ~	1 Martin Martin Martin	have a second and the second s	mounterman
10 dBpW				
etaat 20.0 MHz				Stop 200 0 MHz
L start 30.0 MHZ				atop 300.0 MHz j





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Power disturbance, senso	r to mains Model: R	AV-HM1101KRTP	-E	
Receiver				
RBW (QPK) 120) kHz MT 10 ms	AMZ41-1.	TDF	(•)
Input 2 DC Att 3 Scan O1Pk MaxO2Pk Max	lo dB Preamp OFF	Step LIN		
90 dBpW				
во авруу				
60 dBpw				
50 dBpW EN 55014 Power OPR				
40 dBpW				
EN 55014 Power AV				
*** What have have	Mentennemannen	moundermours	an mark mark mark market	a management
20, đepw				
10 dBpW				
Start 30.0 MHz				Stop 300.0 MHz
Power disturbance, senso	r to indoor Model: R	AV-HM1101KRTP	-E	
Power disturbance, senso	r to indoor Model: R	AV-HM1101KRTP	-E	
Power disturbance, senso	r to indoor Model: R	AV-HM1101KRTP	-E	
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan @1Pk Max@2Pk Max	r to indoor Model: R	AMZ41-1.	-E TDF	
Power disturbance, senso Receiver Input 2 DC Att Scan @1Pk Max@2Pk Max	r to indoor Model: R	AV-HM1101KRTP	-E TDF	
Power disturbance, senso Receiver Input 2 DC Att Scan © 1Pk Max@2Pk Max 90 dBpW	r to indoor Model: R	AV-HM1101KRTP	-E	
Power disturbance, senso Receiver Input 2 DC Att Scan © 1Pk Max © 2Pk Max 90 dBpw	r to indoor Model: R	AV-HM1101KRTP	-E	
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att 1 Scan OIPk Max O2Pk Max 90 dBpw 80 dBpw	r to indoor Model: R	AV-HM1101KRTP		
Power disturbance, senso Receiver Input 2 DC Att Scan OIPk MaxO2Pk Max 90 dBpw 80 dBpw 70 dBpw	r to indoor Model: R	AV-HM1101KRTP		
Power disturbance, senso Receiver Input 2 DC Att Scan IPk Max 2Pk Max 90 dBpw 80 dBpw 70 dBpw	r to indoor Model: R	AV-HM1101KRTP		
Power disturbance, senso Receiver Input 2 DC Att Scan IPk Max 2Pk Max 90 dBpw 80 dBpw 60 dBpw 60 dBpw	r to indoor Model: R	AMZ41-1.		
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan @1Pk Max@2Pk Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW	r to indoor Model: R	AMZ41-1.		
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan @1Pk Max@2Pk Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW 50 dBpW EN 55014 Power QPR	r to indoor Model: R	AMZ41-1.		
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan @1Pk Max@2Pk Max 90 dBpW 80 dBpW 70 dBpW 60 dBpW 50 dBpW 50 dBpW EN 55014 Power QPR	r to indoor Model: R	AMZ41-1.		
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan @1Pk Max@2Pk Max 90 dBpW 80 dBpW 60 dBpW 50 dBpW EN 55014 Power QPR 40 dBpW EN 55014 Power AV	r to indoor Model: R	AMZ41-1.		
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan ● 1Pk Max● 2Pk Max 90 dBpW 80 dBpW 80 dBpW 50 dBpW EN 55014 Power QPR EN 55014 Power AV 30 dBpW	r to indoor Model: R	AMZ41-1.		
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan @1Pk Max@2Pk Max 90 dBpW 80 dBpW 80 dBpW 50 dBpW EN 55014 Power QPR So dBpW EN 55014 Power AV 30 dBpW 20 dBpW	r to indoor Model: R	AMZ41-1. Step LIN		
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan • 1Pk Max•2Pk Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW 50 dBpW EN 55014 Power QPR 40 dBpW 20 dBpW	r to indoor Model: R	AMZ41-1. Step LIN	-E	
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan • 1Pk Max • 2Pk Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW 50 dBpW EN 55014 Power QPR 40 dBpW 20 dBpW 10 dBpW	T to indoor Model: R	AV-HM1101KRTP		
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att 1 Scan • 1Pk Max • 2Pk Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW 50 dBpW EN 55014 Power QPR 40 dBpW 20 dBpW 10 dBpW	T to indoor Model: R	AMZ41-1. Step LIN	-E	
Power disturbance, senso Receiver RBW (QPK) 120 Input 2 DC Att Scan • 1Pk Max • 2Pk Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW EN 55014 Power QPR EN 55014 Power QPR 20 dBpW 10 dBpW Start 30.0 MHz	r to indoor Model: R	AV-HM1101KRTP	-E	E Stop 300.0 MHz





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Power d	listurbance, sens	or to remote v	vire Model: RA	V-HM1101KRT	P-E	
Receiv	rer					
	RBW (CISPR)	120 kHz MT	10 ms	AMZ41-1.TD	F	
Input 2	DC Att	10 dB Prear	np OFF Step	LIN		
Scan 🤇	∋трк мах⊜2рк мах Г					
90 dBpW	/					
80 dBpW	 /					
	Ì					
ZO dBoW						
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OO GBDVV	ĺ					
EN 55014	+ Power QPR					
40 αβργν EN 55014	+ Power AV					
Albe	h					
зраврич	1 M 1					
· ·	" When we	mar have	moundermon	1 March mark Marine	mound	a shut my monthly
20 dBpW	/					
10 dBpW	/					
Start 30	0.0 MHz					Stop 300.0 MHz
						· · · · · · · · · · · · · · · · · · ·





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keceiver l				
RBW (QPK) 12	0 kHz MT 10 ms	E5-036		
nput 2 DC Att	10 dB Preamp OFF	Step LIN		
Scan O1Pk MaxO2Pk Max			1	
о авруу				
o depwi				
o depw				
0 dBpW				
SPR 14-1 PE QPR.LIN-				
о авруу				
SPR 14-1 PE AV.LIN	M			
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o depw		man marching a sur		A had a had a had a
<u>_</u>		and is add march	When My marker and the contraction of the second se	the show the second state of the second
0 dBpW				
tart 30.0 MHz				Stop 300.0 MH
wer disturbance, senso	or to indoor Model: F	RAV-HM1601UTP-	E	ſ
wer disturbance, senso teceiver	Dr to indoor Model: F	RAV-HM1601UTP-	E	(I
wer disturbance, senso Receiver nput 2 DC Att	DIT TO INDOOR MODEL: F	RAV-HM1601UTP-	E	[
wer disturbance, senso ecceiver nput 2 DC Att Scan OIP MaxO2Pk Max	DI TO INDOOR MODEL: F	RAV-HM1601UTP-	E	
wer disturbance, sens(Receiver nput 2 DC Att Scan OIPK Max O2PK Max	DI TO INDOOR MODEL: F	RAV-HM1601UTP-	E	
wer disturbance, sense Receiver nput 2 DC Att Scan OIPK Max O2PK Max o dBpw	Dr to indoor Model: F	RAV-HM1601UTP-	E	٦
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o dBpW	Dr to indoor Model: F	RAV-HM1601UTP-	E	
wer disturbance, senso Receiver nput 2 DC Att Scan OIPK MaxO2PK Max O dBpW	Dr to indoor Model: F	RAV-HM1601UTP-	E	
wer disturbance, senso Receiver nput 2 DC Att Scan PIPk Max 2Pk Max 0 dBpw 0 dBpw	Dr to indoor Model: F	RAV-HM1601UTP-	E	(*
o dBpw	or to indoor Model: F		E	
o dBpW	or to indoor Model: F	RAV-HM1601UTP-	E	
o dBpW	or to indoor Model: F	RAV-HM1601UTP-	E	
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ower disturbance, sense Receiver nput 2 DC Att Scan 1Pk Max 2Pk Max 0 dBpW	or to indoor Model: F	RAV-HM1601UTP-	E	
ower disturbance, sense Receiver nput 2 DC Att Scan 1Pk Max 2Pk Max 0 dBpW 0 dBpW 0 dBpW 0 dBpW 0 dBpW SPR 14-1 PE QPR.LIN SPR 14-1 PE AV.LIN	or to indoor Model: F	RAV-HM1601UTP-		
ower disturbance, sense RBW (CISPR) nput 2 DC Att Scan IPk Max O dBpW O dBpW O dBpW O dBpW SPR 14-1 PE QPR.LIN O dBpW O dBpW	or to indoor Model: F	RAV-HM1601UTP-	E	
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ower disturbance, sense Receiver nput 2 DC Att Scan IPk Max 2Pk Max o dBpW o dBpW o dBpW SPR 14-1 PE QPR.LIN o dBpW SPR 14-1 PE AV.LIN	or to indoor Model: F	RAV-HM1601UTP-		
ower disturbance, sense Receiver nput 2 DC Att Scan 1Pk Max 2Pk Max 0 dBpW 0 dBpW 0 dBpW 0 dBpW SPR 14-1 PE QPR.LIN 0 dBpW SPR 14-1 PE AV.LIN 0 dBpW	or to indoor Model: F	RAV-HM1601UTP-		
ower disturbance, sense Receiver nput 2 DC Att Scan 1Pk Max 2Pk Max 0 dBpw 0 dBpw 0 dBpw 0 dBpw SPR 14-1 PE QPR.LIN SPR 14-1 PE AV.LIN 0 dBpw 0 dBpw	or to indoor Model: F			
ower disturbance, sense Receiver nput 2 DC Att Scan IPk Max 2Pk Max 0 dBpW 0 dBpW	The second secon			





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Receiver RBW (QPK) 120 kHz MT 10 ms E5-036 Input 2 DC Att 10 dB Preamp OFF Step LIN Scan 1Pk Max 2Pk Max Imput Impu<	
RBW (QPK) 120 kHz MT 10 ms E5-036 Input 2 DC Att 10 dB Preamp OFF Step LIN Scan 1Pk Max 2Pk Max	
Input 2 DC Att 10 dB Preamp OFF Step LIN Scan O1Pk MaxO2Pk Max	
Scan O1Pk MaxO2Pk Max	
an gebw	
80 dBpW	
70 dBpW	
50 dbow-	
CISPR 14-1 PE QPR.LIN	
CISPR 14-1 PE AV.LIN-	
20 dBp W Vow W W when we are a set in the set of the se	
a second a second a second sec	man
10 dBpW	
start 20.0 MHz Stop 200.0	112




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wer disturbance, se	ensor to mains M	lodel: RAV-HM160	1CTP-E	G
eceiver				
RBW (CIS)	PR) 120 kHz MT 10 dB Prea	10 ms mp OFF Step LIN	AMZ41-1.TDF	
Scan O1Pk MaxO2Pk	Max			
0 dBpw				
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о авруу́——————				
) dBpW				
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) dвpW				
tart 30.0 MHz				Stop 300.0 MF
wer disturbance, se	ensor to indoor N	/lodel: RAV-HM160)1CTP-E	[I
wer disturbance, se eceiver	PR) 120 KHZ MT	Nodel: RAV-HM16)1CTP-E	[1
wer disturbance, se seceiver nput 2 DC Att	PR) 120 KHZ MT 10 dB Prea	Model: RAV-HM160	MZ41-1.TDF	[
Wer disturbance, se eceiver nput 2 DC Att Scan O 1Pk MaxO2Pk f	PR) 120 kHz MT 10 dB Prea Max	Model: RAV-HM160	MZ41-1.TDF	[
Wer disturbance, se eceiver nput 2 DC Att Scan O1Pk MaxO2Pk f	PR) 120 KHZ MT 10 dB Prea Max	Model: RAV-HM160	MZ41-1.TDF	
wer disturbance, se Receiver RBW (CIS) nput 2 DC Att Scan O1Pk MaxO2Pk f D dBpw	PR) 120 kHz MT 10 dB Prea Max	Model: RAV-HM160	AMZ41-1.TDF	[t
Wer disturbance, se REW (CIS) Pput 2 DC Att Scan O1Pk MaxO2Pk f OdBpW	PR) 120 kHz MT 10 dB Prea Max	Model: RAV-HM160	DICTP-E	
Wer disturbance, se REW (CIS) RBW (CIS) RBW (CIS) RBW (CIS) Att COMPUTE 2 DC Att COMPUTE 2 DC A	PR) 120 kHz MT 10 dB Prea Max	Model: RAV-HM160	AMZ41-1.TDF	
Wer disturbance, se Receiver RBW (CIS) RDW 2 DC Att Scan O1Pk MaxO2Pk r OdBpw	PR) 120 kHz MT 10 dB Prea Max	Model: RAV-HM160	DICTP-E	[t
Wer disturbance, se Receiver RBW (CIS) RDW 2 DC Att Scan O1Pk Max O2Pk f Odbpw	PR) 120 kHz MT 10 dB Prea Max	Model: RAV-HM160	DICTP-E	(T
wer disturbance, se Receiver RBW (CIS) nput 2 DC Att Scan O1Pk MaxO2Pk r D dBpw D dBpw D dBpw	PR) 120 kHz MT 10 dB Prea Max	Nodel: RAV-HM160	DICTP-E	
o dBpW	PR) 120 kHz MT 10 dB Prea Max	Model: RAV-HM160	DICTP-E	
wer disturbance, se Receiver RBW (CIS RBW (CIS RBW (CIS Att Code D dBpW D dBpW D dBpW D dBpW D dBpW D dBpW	PR) 120 kHz MT 10 dB Prea Max	Model: RAV-HM160	DICTP-E	
D dBpW	PR) 120 kHz MT 10 dB Prea Max	Nodel: RAV-HM160	D1CTP-E	
wer disturbance, se Receiver RBW (CIS RDW (CIS COMPANY (CIS Att COMPANY (CIS Att	PR) 120 KHZ MT 10 dB Prea Max	Nodel: RAV-HM160	DICTP-E	
Wer disturbance, se Receiver RBW (CIS RBW (CIS Can OIPK MaxO2PK f D dBpW D dBpW	PR) 120 KHz MT 10 dB Prea Max	Model: RAV-HM160	DICTP-E	
Wer disturbance, se Receiver RBW (CIS RDW 2 DC Att Scan OIPK MaxO2PK F D dBpW D dBpW D dBpW D dBpW D dBpW D S5014 Power QPR.LIN S5014 Power AV.LIN	PR) 120 kHz MT 10 dB Prea Max	Nodel: RAV-HM160	DICTP-E	
Wer disturbance, se Receiver RBW (CIS RDW (CIS D dBpW D dBpW		Aodel: RAV-HM160		
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o dBpW 0 dBpW		Aodel: RAV-HM160		
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D dBpW D dBpW		Nodel: RAV-HM160	DICTP-E	





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Power disturbance, sense	or to remote wir	e Model: RAV-HM	1601CTP-E	
Receiver				(The second sec
RBW (CISPR)	120 kHz MT	10 ms A	MZ41-1.TDF	2
Input 2 DC Att	10 dB Preamp	OFF Step LIN		
90 dBpW				
80 dBpW				
70 dBpW				
60 dBpW				
 50 dBpW				
EN 55014 Power AV.LIN				
× hunder how	undurman m	as mar a manutation	my her man mith une	un en anter anter anter anter
20 dBpW		A Martin of Martinet Control of C		Case Pullback Professional Lange de La Case
10 dBpW				
Start 30.0 MHz				Stop 300.0 MHz





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Power disturbance, senso	or to mains Model: R	AV-HM1601BTP-E		
Receiver				
RBW (CISPR) : Input 2 DC Att	120 kHz MT 10 m 10 dB Preamp OFI	s AMZ41- F Step LIN	1.TDF	
Scan O1Pk MaxO2Pk Max				
90 dBpW				
80 dBpW				
70 dBpW				
60 dBpW				
50 dBpW EN 55014 Power QPR.LIN				
40 dBpW				
30 dPriv				
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10 dBpW				
Start 30.0 MHz				Stop 300.0 MHz
Receiver	120 kHz MT 10 m	AMZ41-	1.TDF	
Scan O1Pk MaxO2Pk Max	10 dB Preamp OFF	- Step LIN		
90 dBpw 				
80 dBpW	_			
60 dBpw				
50 dBpW				
50 dBpW EN 55014 Power QPR.LIN				
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S0 dBpW EN 55014 Power QPR.LIN EN 55014 Power AV.LIN S0 dBpW to to 20 dBpW	Mughryananananananan	www.warana	mit det Marman Mar	
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S0 dBpW EN 55014 Power QPR.LIN 40 dBpW EN 55014 Power AV.LIN S0 dBpW 20 dBpW 10 dBpW	Morellow, and a second and a se	www.constance.com/constances	maderialena	
S0 dBpW EN 55014 Power QPR.LIN 40 dBpW EN 55014 Power AV.LIN 30 dBpW 50 dBpW 10 dBpW Start 30.0 MHz	Marghry Weinselweist rubean	www.whence.com	m in the man white	ოჯიეტიკი MHz Stop 300.0 MHz





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wer disturbance, sensor to remote wire Model: RAV-HM1601BTP-E	
eceiver	₽)
RBW (CISPR) 120 kHz MT 10 ms AMZ41-1.TDF	
iput 2 DC Att 10 dB Preamp OFF Step LIN can ⊖1Pk Max⊖2Pk Max	
I dBpW	
I dBpW	
I dBpW	
1 dBpW- 55014 Power OPR.LIN	
155014 Power AV.LIN	
<	
	~~~~
dBpW	
art 30.0 MHz Stop 300.0 MH	1z





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Power disturbance, sensor	to mains Model: R	AV-HM1601FT-E		
Receiver				
RBW (QPK) 120	kHz MT 10 ms	E5-036		
Scan O1Pk MaxO2Pk Max				
90 dBpW				
80 dBpW				
70 dBpW				
60 dBpW				
50 dBpW CISPR 14-1 PE QPR.LIN				
40 dBpW				
CISPR 14-1 PE AV.LIN-	h			
130 BB JAY M A A MA	L.M.			
20 dBpW	W Swammy	Markey Warden and an and a		
	×	and the second second	holder hand have many	Markedonahahan makala
Start 30.0 MHz				Stop 300.0 MHz
Power disturbance, sensor	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver Input 2 DC Att	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver Input 2 DC Att Scan @1Pk Max@2Pk Max	to indoor Model: R	AV-HM1601FT-E		( <del>\</del>
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan OlPk MaxO2Pk Max	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver Input 2 DC Att Scan O 1Pk Max O 2Pk Max 90 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver Input 2 DC Att Scan @1Pk Max@2Pk Max 90 dBpW 80 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver Input 2 DC Att Scan OIPK MaxO2PK Max 90 dBpW 80 dBpW 70 dBnW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan ●1Pk Max●2Pk Max 90 dBpW 80 dBpW 70 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan OIPK MaxO2PK Max 90 dBpW 80 dBpW 70 dBpW 60 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan @1Pk Max@2Pk Max 90 dBpW 80 dBpW 60 dBpW 50 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan OIPK MaxO2PK Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW 50 dBpW CISPR 14-1 PE QPR.LIN	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan • 1Pk Max • 2Pk Max 90 dBpW 80 dBpW 60 dBpW 50 dBpW CISPR 14-1 PE QPR.LIN #0 dBpW CISPR 14-1 PE AV.LIN	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan 1Pk Max 2Pk Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW CISPR 14-1 PE QPR.LIN 10 dBpW CISPR 14-1 PE AV.LIN 10 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan OIPK Max O2PK Max 90 dBpW 80 dBpW 70 dBpW 60 dBpW CISPR 14-1 PE QPR.LIN 0 dBpW CISPR 14-1 PE AV.LIN 0 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan OIPK Max O2PK Max 90 dBpW 80 dBpW 60 dBpW 50 dBpW CISPR 14-1 PE QPR.LIN 10 dBpW CISPR 14-1 PE AV.LIN 20 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan OIPK MaxO2PK Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW CISPR 14-1 PE QPR.LIN 00 dBpW 20 dBpW 20 dBpW 20 dBpW 20 dBpW 20 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan O1Pk Max O2Pk Max 90 dBpW 80 dBpW 60 dBpW 50 dBpW CISPR 14-1 PE QPR.LIN 50 dBpW 20 dBpW 10 dBpW 10 dBpW	to indoor Model: R	AV-HM1601FT-E		
Power disturbance, sensor Receiver RBW (CISPR) 12 Input 2 DC Att Scan • 1Pk Max • 2Pk Max 90 dBpW 80 dBpW 70 dBpW 50 dBpW CISPR 14-1 PE QPR.LIN %0 dBpW CISPR 14-1 PE AV.LIN %0 dBpW 10 dBpW Start 30.0 MHz	to indoor Model: R	AV-HM1601FT-E		E





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## 6. Radiated disturbance

## 6.1 Test method

- □ The radiated disturbance measurements were performed with EMI receiver to measure the emissions characteristic and to identify the frequency of emission that has the highest amplitude related to the EUT configuration. EUT configuration, cable configuration of operation are determined for product the maximum level of emission.
- The antenna (30 MHz 1000 MHz) was used for received the noise of EUT and put on the antenna mast. The testing method and EUT setup were performed according to EN 55014-1.





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#### 6.1.1 Test set up

Test set-up description:		Equipment on a table of 80 cm height			
	Wall/Ceiling mounted equipment				
		Equipment on the floor (insulated from ground plane)			
		Other:			

#### 6.1.2 Limit

Table 4: Radiated disturbance limits in the frequency range 30 - 1000MHz

Test n	st method Frequency range (MHz)		Limit ª Quasi-peak (dB(µV/m))	Measurement distance (m)			
OATS o	.TS or SAC ^b 30 -230 230 - 10		30 37	10 m			
FAR ° 3 230		30 -230 230 - 1000	42 to 35 ^d 42	3 m			
FA	FAR ° 30 -230 230 - 1000		42 to 35 ^d 42	3 m			
Note:	a. The low	er limit is applies at the transiti	ion frequency.				
	b. Measurements may be made at closer distance, down to 3 m. An inverse proportionality factor of 20 dB per decade shall be used to normalize the measured data to the specified distance for determining the limit in this case the recommendations of the CISPR basic standards shall be considered when testing large EUT at frequency approaching 30 MHz, due to near field effects.						
	c. All equip in Figure	oment shall be measured withins 12 to 19.	n the test volume as describ	ed in 5.3.4.3 and shown			
	d. Decreas	sing linearly with the logarithm	of the frequency.				





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## 6.2 Test result

## 6.2.1 Test environment

Ambient Temperature (15 - 35 °C):	 °C
Relative Humidity (30 - 60 %):	 %
Air pressure (800 - 1060 mbar):	 mbar

#### 6.2.2 Test method applied

Test method applied:	OATS or SAC with measurement distance [m]: 10
	FAR CISPR 16-2-3 with measurement distance [m]: 3
	FAR IEC 61000-4-22 with measurement distance [m]: 3

## 6.2.3 Scanning trace and final measurement

Operating me	odes:				
Test port:		Enclosure			
Freq List (MHz)	QP (dB(j	Level uV/m))	QP Limit (dB(µV/m))	QP Margin (dB)	Path
Note: 1. The	e test result	shown are 6	worst measurement re-	sult and sort by quasi-pe	ak margin.



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6.2.4 Graphical representation of radiated emissions data





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## 7. Discontinuous disturbance

## 7.1 Test method

- □ EUT is configured by follow the particular requirement in the reference standards, if available. If the particular requirements are not specified, EUT shall be configured with appropriate load to maximize the disturbance signal.
- □ The observation time is based on the EUT (ensure that cycle of operation shall be fully complete) or 120 minutes.
- Discontinuous disturbance (click) is measured by Discontinuous disturbance analyzer with the limit specified in 7.1.2 for the defined observation time.
- Test and conclusion of test result shall be referred to the flow chart in EN 55014-1.





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7.1.1 Test set up

Test set-up description:	$\square$	Table-top equipment set-up (40 cm distance to vertical ground plane, 80 cm over ground plane) (Indoor unit)
	$\square$	Wall/Ceiling mounted equipment (Indoor unit)
	$\square$	Floor standing equipment set-up (10 cm over ground plane) (Indoor unit)
		Artificial hand applied
		Other:

## 7.1.2 Limit

Table 5: Allowable limits for discontinuous noise terminal voltage

Frequency range (MHz)	0.15	0.5	1.4	30
Limit (dB(µV))	66	56	56	60





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## 7.2 Test result

#### 7.2.1 Test environment

Ambient Temperature (15 - 35 °C):	26	°C
Relative Humidity (30 - 60 %):	48	%
Air pressure (800 - 1060 mbar):	1008	mbar

## 7.2.2 Test method applied

Test method applied:		Click rate determined on base of switching operations
	$\square$	Click rate determined on base of clicks measurements
		Other:

#### 7.2.3 Test result

Model: RA		RAV-HM561SDTY-E								
Operating modes: 1										
Test port:		Mains	(Line-	PE)						
Frequency	First measu	rement:	ement: Determine the limit $L_q$ – Quasi-peak							
(MHz)	Limit <i>L</i> (dB(µV))	Numbo clicks -	er of – N1	Time of measurement <i>T</i> (min)	Click ra N	ate	Increasing ratio (dB)	Limit <i>L</i> q (dB(µV))		
0.15	66			120	0.00	)				
0.5	56			120	0.00	)				
1.4	56			120	0.00	)				
30	60			120	0.00	)				
Frequency	Second me	asureme	ent wit	h Limit = L _q (Upp	ber quartil	e met	hod)			
(MHz)	Limit L (dB(µ∨	-q /))	Ν	Number of clicks – N2		۲ auth ا	Number of horized clicks N2 ≤N1/4	Verdict		
0.15								Р		
0.5								Р		
1.4								Р		
30							Р			
Supplementary information: N not more than 5 and no long click.										





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Issue	Date

Model:	RAV-H		RAV-HM1101KRTP-E							
Operating m	perating modes: 1			1						
Test port:		Mains	Mains (Line-PE)							
Frequency	First measu	rement:	Deter	mine the limit $L_q$	– Quasi-p	beak				
(MHz)	Limit <i>L</i> (dB(µV))	Number of clicks – N1		Time of measurement <i>T</i> (min)	Click ra N	ate	Increasing ratio (dB)	Limit <i>L</i> q (dB(µV))		
0.15	66			120	0.00					
0.5	56			120	0.00	)				
1.4	56			120	0.00	)				
30	60			120	0.00	)				
Frequency	Second me	asureme	ent wit	h Limit = <i>L</i> _q (Upp	er quartil	e metl	hod)			
(MHz)	Limit L _q (dB(µV))		1	Number of clicks – N2		N auth I	lumber of orized clicks N2 ≤N1/4	Verdict		
0.15								Р		
0.5								Р		
1.4								Р		
30								P		

#### Supplementary information:

N not more than 5 and no long click.





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Model: RAV-H		RAV-HM1601UTP-E							
Operating modes: 1		1							
Test port:		Mains	(Line-	PE)					
Frequency	First measu	rement:	ment: Determine the limit $L_q$ – Quasi-peak						
(MHz)	Limit <i>L</i> (dB(µV))	Numbe clicks -	er of - N1	Time of measurement <i>T</i> (min)	Click rate N		Increasing ratio (dB)	Limit <i>L</i> q (dB(µV))	
0.15	66			120	0.00	)			
0.5	56			120	0.00				
1.4	56			120	0.00				
30	60			120	0.00	)			
Frequency	Second mea	asureme	ent wit	h Limit = <i>L</i> _q (Upp	er quartile	e metl	hod)		
(MHz)	Limit L (dB(µ∨	-q ())	Number of clicks – N2		N auth I	lumber of orized clicks N2 ≤N1/4	Verdict		
0.15								Р	
0.5								Р	
1.4								Р	
30								Р	
Supplementary information: N not more than 5 and no long click.									





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Model: RAV-HM		RAV-HM1601CTP-E						
Operating modes: 1								
Test port:		Mains	(Line-	PE)				
Frequency	First measu	rement:	Deter	mine the limit $L_q$	– Quasi-p	beak		
(MHz)	Limit <i>L</i> (dB(µV))	Numbe clicks -	er of - N1	Time of measurement <i>T</i> (min)	Click rate N		Increasing ratio (dB)	Limit <i>L</i> q (dB(µV))
0.15	66			120	0.00	)		
0.5	56			120	0.00			
1.4	56			120	0.00	)		
30	60			120	0.00			
Frequency	Second mea	asureme	ent wit	h Limit = <i>L</i> q (Upp	er quartil	e metl	nod)	
(MHz)	Limit L (dB(µ∨	-q ())	Ν	Number of clicks – N2		N auth I	lumber of orized clicks N2 ≤N1/4	Verdict
0.15								Р
0.5								Р
1.4								Р
30								Р
Supplementary information: N not more than 5 and no long click.								





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Model:	el: RAV-H		RAV-HM1601BTP-E					
Operating modes: 1								
Test port:		Mains	(Line-	PE)				
Frequency	First measu	rement:	Deter	mine the limit $L_q$	– Quasi-p	beak		
(MHz)	Limit <i>L</i> (dB(µV))	Numbe clicks -	er of - N1	Time of measurement <i>T</i> (min)	Click rate N		Increasing ratio (dB)	Limit <i>L</i> q (dB(µV))
0.15	66			120	0.00	)		
0.5	56			120	0.00			
1.4	56			120	0.00			
30	60			120	0.00			
Frequency	Second mea	asureme	ent wit	h Limit = <i>L</i> _q (Upp	er quartile	e metl	hod)	
(MHz)	Limit L (dB(µ∨	-q ())	Ν	Number of clicks – N2		N auth I	Number of orized clicks N2 ≤N1/4	Verdict
0.15								Р
0.5								Р
1.4								Р
30						Р		
Supplement N not more the	Supplementary information: N not more than 5 and no long click.							





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Model: RA		RAV-HM1601FT-E							
Operating m	odes:	1							
Test port:		Mains	(Line-	PE)					
Frequency	First measu	rement:	ment: Determine the limit $L_q$ – Quasi-peak						
(MHz)	Limit <i>L</i> (dB(µV))	Number of clicks – N1		Time of measurement <i>T</i> (min)	Click rate N		Increasing ratio (dB)	Limit <i>L</i> q (dB(µV))	
0.15	66			120	0.00	)			
0.5	56			120	0.00				
1.4	56			120	0.00				
30	60			120	0.00				
Frequency	Second mea	asureme	ent wit	h Limit = L _q (Upp	er quartil	e metl	hod)		
(MHz)	Limit L (dB(µ∨	-q ())	Number of clicks – N2		N auth I	lumber of orized clicks N2 ≤N1/4	Verdict		
0.15								Р	
0.5								Р	
1.4								Р	
30								Р	
Supplement	ary informat	tion:							
N not more than 5 and no long click.									





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# 8. Harmonics current emission

## 8.1 Test method

8.1.1 Test set up

Test set-up description:	Table-top equipment set-up (Indoor unit)			
	$\square$	Floor standing equipment set-up (Indoor unit and dummy outdoor unit)		
	$\boxtimes$	Wall or ceiling mounted equipment (Indoor unit)		
		Other:		
Operating modes of EUT:	EUT specin in th stea	operated at lowest temperature setting, maximum fan ed. The ambient temperature for testing shall be 30 °C $\pm$ 2 °C e cooling mode. Measured after the operation becomes dy state.		

## 8.1.2 Limit according classification of EUT current ≤ 16 A

Class		EUT classified								
A	Equipment not specified as belonging to Class B, C or D shall be considered as Class A equipment.									
		balanced three-phase equipment								
	$\boxtimes$	household appliances, excluding equipment identified as Class D								
		tools, excluding portable tools								
		dimmers for incandescent lamps								
		audio equipment								
В		portable tools								
		arc welding equipment which is not professional equipment								
С		lighting equipment								
D	Equ less	ipment having a specified power according to 6.2.2, than or equal to 600 W, of the following types:								
		personal computers and personal computer monitors								
		television receivers								
		refrigerators and freezers having one or more variable-speed drives to control compressor motor(s)								





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8.1.3 Limit according classification of EUT current > 16 A

Table	Current emission limits								
2	Equipment other than balanced three-phase equipment								
	Minimum R _{sce} =								
	33								
	66 for model:								
	RAV-HM1101KRTP-E, RAV-HM1401UTP-E, RAV-HM1601UTP-E,								
	RAV-HM1601CTP-E and RAV-HM1601FT-E								
	120 for model:								
	RAV-HM1601BTP-E								
	250								
	≥350								
3	Balanced three-phase equipment								
	Minimum R _{sce} =								
	33								
	66								
	120								
	250								
	□ ≥350								
4	Balanced three-phase equipment under specified conditions (a, b, c)								
	Minimum R _{sce} =								
	33								
	□ ≥120								
5	Balanced three-phase equipment under specified conditions (d, e, f)								
	Minimum R _{sce} =								
	33								
	□ ≥250								





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## 8.2 Test result

8.2.1 Test environment

Ambient Temperature (15 - 35 °C):	28	°C
Relative Humidity (30 - 60 %):	48	%

## 8.2.2 Limit classification applied for EUT current ≤ 16 A

Limit classification applied:	$\square$	Class A
		Class B
		Class C with power > 25 W, 7.3a
		Class C with power ≤ 25 W, 7.3b
		Class D

#### 8.2.3 Limit classification applied for EUT current > 16 A

Current emission limits	Table 2;		33
applied:	Minimum R _{sce} =	$\square$	66
		$\boxtimes$	120
			250
			≥350
	Table 3;		33
	Minimum R _{sce} =		66
			120
			250
			≥350
	Table 4;		33
	Minimum R _{sce} =		≥120
	Table 5;		33
	Minimum R _{sce} =		≥250





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8.2.3 Test result

Test Verdict:	🛛 Pass	🗌 Fail
AC mains voltage during test (V):	230	

Model:		RAV-GM562ATP-E					
Phase:		L		Measured I _{ref} (A):		2.379	
THC(A):	THC(A):			POHC(A):		0.042	
I-THD(%):		74.0		POHC Limit (A):		0.251	
Harm#	Harm(arg)	100%Limit	%of Limit	Harm(max)	150%Limit	%of Limit	Status
2	0.005	1.080	N/A	0.006	1.620	N/A	Р
3	1.283	2.300	55.8	1.291	3.450	37.4	Р
4	0.003	0.430	N/A	0.003	0.645	N/A	Р
5	0.493	1.140	43.3	0.494	1.710	28.9	Р
6	0.002	0.300	N/A	0.002	0.450	N/A	Р
7	0.104	0.770	13.6	0.105	1.155	9.1	Р
8	0.001	0.230	N/A	0.001	0.345	N/A	Р
9	0.122	0.400	30.5	0.123	0.600	20.4	Р
10	0.001	0.184	N/A	0.001	0.276	N/A	Р
11	0.079	0.330	23.9	0.079	0.495	16.0	Р
12	0.001	0.153	N/A	0.001	0.230	N/A	Р
13	0.067	0.210	31.7	0.067	0.315	21.2	Р
14	0.001	0.131	N/A	0.001	0.197	N/A	Р
15	0.039	0.150	26.2	0.039	0.225	17.5	Р
16	0.001	0.115	N/A	0.001	0.173	N/A	Р
17	0.027	0.132	20.6	0.027	0.198	13.8	Р
18	0.000	0.102	N/A	0.000	0.153	N/A	Р
19	0.017	0.118	14.7	0.018	0.178	9.9	Р
20	0.000	0.092	N/A	0.001	0.138	N/A	Р
21	0.021	0.107	19.8	0.021	0.161	13.4	Р
22	0.000	0.084	N/A	0.001	0.125	N/A	Р
23	0.019	0.098	19.3	0.019	0.147	13.0	Р
24	0.001	0.077	N/A	0.001	0.115	N/A	Р
25	0.020	0.090	21.7	0.020	0.135	14.6	Р
26	0.001	0.071	N/A	0.001	0.107	N/A	Р
27	0.013	0.083	N/A	0.014	0.125	N/A	Р
28	0.001	0.066	N/A	0.002	0.099	N/A	Р
29	0.010	0.078	N/A	0.010	0.116	N/A	Р
30	0.001	0.061	N/A	0.001	0.092	N/A	Р
31	0.006	0.073	N/A	0.006	0.109	N/A	Р
32	0.002	0.058	N/A	0.002	0.086	N/A	Р
33	0.008	0.068	N/A	0.009	0.102	N/A	Р
34	0.001	0.054	N/A	0.001	0.081	N/A	Р
35	0.009	0.064	N/A	0.009	0.096	N/A	Р
36	0.000	0.051	N/A	0.000	0.077	N/A	Р
37	0.010	0.061	N/A	0.010	0.091	N/A	Р
38	0.000	0.048	N/A	0.001	0.073	N/A	Р
39	0.008	0.058	N/A	0.009	0.087	N/A	Р
40	0.000	0.046	N/A	0.001	0.069	N/A	Р





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Test Verdict:	🛛 Pass	🗌 Fail
AC mains voltage during test (V):	230	

Model:		RAV-HM1101KRTP-E						
Phase:		L		Measured I _{ref} (A):		13.397		
THC/Iref (%	THC/Iref (%):			PWHC/Iref (	%):	5.1		
Limit (%):	•	26.0		PWHC Limit	(%):	26.0	26.0	
Harm#	Harm(arg)	100%Limit	%of Limit	Harm(max)	150%Limit	%of Limit	Status	
2	0.047	1.050	4.5	0.059	1.574	3.8	Р	
3	2.033	3.149	64.6	2.072	4.723	43.9	Р	
4	0.006	0.525	1.1	0.009	0.787	1.1	Р	
5	1.181	1.706	69.2	1.194	2.558	46.7	Р	
6	0.003	0.350	N/A	0.004	0.525	N/A	Р	
7	0.880	1.050	83.9	0.891	1.574	56.6	Р	
8	0.003	0.262	N/A	0.004	0.394	N/A	Р	
9	0.214	0.656	32.6	0.226	0.984	23.0	Р	
10	0.003	0.210	N/A	0.005	0.315	N/A	Р	
11	0.103	0.525	19.5	0.121	0.787	15.3	Р	
12	0.002	0.175	N/A	0.003	0.262	N/A	Р	
13	0.208	0.394	52.8	0.217	0.590	36.7	Р	
14	0.002	N/A	N/A	0.003	N/A	N/A	N/A	
15	0.100	N/A	N/A	0.110	N/A	N/A	N/A	
16	0.001	N/A	N/A	0.002	N/A	N/A	N/A	
17	0.161	N/A	N/A	0.165	N/A	N/A	N/A	
18	0.002	N/A	N/A	0.002	N/A	N/A	N/A	
19	0.048	N/A	N/A	0.057	N/A	N/A	N/A	
20	0.001	N/A	N/A	0.002	N/A	N/A	N/A	
21	0.046	N/A	N/A	0.054	N/A	N/A	N/A	
22	0.001	N/A	N/A	0.002	N/A	N/A	N/A	
23	0.054	N/A	N/A	0.055	N/A	N/A	N/A	
24	0.001	N/A	N/A	0.002	N/A	N/A	N/A	
25	0.048	N/A	N/A	0.050	N/A	N/A	N/A	
26	0.001	N/A	N/A	0.002	N/A	N/A	N/A	
27	0.015	N/A	N/A	0.020	N/A	N/A	N/A	
28	0.002	N/A	N/A	0.002	N/A	N/A	N/A	
29	0.042	N/A	N/A	0.049	N/A	N/A	N/A	
30	0.001	N/A	N/A	0.002	N/A	N/A	N/A	
31	0.060	N/A	N/A	0.062	N/A	N/A	N/A	
32	0.001	N/A	N/A	0.002	N/A	N/A	N/A	
33	0.010	N/A	N/A	0.012	N/A	N/A	N/A	
34	0.002	N/A	N/A	0.003	N/A	N/A	N/A	
35	0.006	N/A	N/A	0.011	N/A	N/A	N/A	
36	0.002	N/A	N/A	0.003	N/A	N/A	N/A	
37	0.041	N/A	N/A	0.044	N/A	N/A	N/A	
38	0.002	N/A	N/A	0.004	N/A	N/A	N/A	
39	0.005	N/A	N/A	0.009	N/A	N/A	N/A	
40	0.002	N/A	N/A	0.003	N/A	N/A	N/A	
Phase L =	83.9 % of tes	ted Rsce = 6	6.000	Minimum Rsce required: Rsce = 55.353			53	

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Test Verdict:	🛛 Pass	🗌 Fail
AC mains voltage during test (V):	230	

Model:		RAV-HM1601UTP-E					
Phase:		L		Measured Iref (A):		20.014	
THC/Iref (%	THC/Iref (%):			PWHC/Iref (	%):	5.0	
Limit (%):		26.0		PWHC Limit	(%):	26.0	
Harm#	Harm(arg)	100%Limit	%of Limit	Harm(max)	150%Limit	%of Limit	Status
2	0.129	1.594	8.1	0.169	2.391	7.1	Р
3	4.130	4,783	86.4	4.197	7,174	58.5	Р
4	0.049	0.797	6.2	0.066	1.196	5.6	Р
5	2.021	2.591	78.0	2.034	3.886	52.3	Р
6	0.035	0.531	6.5	0.042	0.797	5.3	Р
7	0.833	1.594	52.3	0.851	2.391	35.6	Р
8	0.022	0.399	5.6	0.029	0.598	4.9	Р
9	0.445	0.996	44.6	0.450	1.495	30.1	Р
10	0.017	0.319	5.2	0.022	0.478	4.6	Р
11	0.526	0.797	66.0	0.552	1.196	46.2	Р
12	0.010	0.266	3.8	0.012	0.399	3.1	Р
13	0.373	0.598	62.3	0.377	0.897	42.1	Р
14	0.005	N/A	N/A	0.007	N/A	N/A	N/A
15	0.043	N/A	N/A	0.049	N/A	N/A	N/A
16	0.003	N/A	N/A	0.005	N/A	N/A	N/A
17	0.241	N/A	N/A	0.245	N/A	N/A	N/A
18	0.004	N/A	N/A	0.006	N/A	N/A	N/A
19	0.150	N/A	N/A	0.156	N/A	N/A	N/A
20	0.003	N/A	N/A	0.007	N/A	N/A	N/A
21	0.076	N/A	N/A	0.088	N/A	N/A	N/A
22	0.004	N/A	N/A	0.005	N/A	N/A	N/A
23	0.030	N/A	N/A	0.038	N/A	N/A	N/A
24	0.003	N/A	N/A	0.005	N/A	N/A	N/A
25	0.151	N/A	N/A	0.154	N/A	N/A	N/A
26	0.003	N/A	N/A	0.004	N/A	N/A	N/A
27	0.084	N/A	N/A	0.090	N/A	N/A	N/A
28	0.003	N/A	N/A	0.004	N/A	N/A	N/A
29	0.079	N/A	N/A	0.092	N/A	N/A	N/A
30	0.003	N/A	N/A	0.004	N/A	N/A	N/A
31	0.083	N/A	N/A	0.090	N/A	N/A	N/A
32	0.003	N/A	N/A	0.005	N/A	N/A	N/A
33	0.122	N/A	N/A	0.126	N/A	N/A	N/A
34	0.003	N/A	N/A	0.004	N/A	N/A	N/A
35	0.120	N/A	N/A	0.128	N/A	N/A	N/A
36	0.003	N/A	N/A	0.005	N/A	N/A	N/A
37	0.073	N/A	N/A	0.081	N/A	N/A	N/A
38	0.003	N/A	N/A	0.004	N/A	N/A	N/A
39	0.084	N/A	N/A	0.089	N/A	N/A	N/A
40	0.003	N/A	N/A	0.005	N/A	N/A	N/A
Phase L =	91.9 % of tes	ted Rsce = 6	6.000	Minimum Rsce required: Rsce = 60.678			78





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Issue Date

Test Verdict:	🛛 Pass	🗌 Fail
AC mains voltage during test (V):	230	

Model:		RAV-HM1601CTP-E					
Phase:		L		Measured Iref (A):		19.797	
THC/Iref (%	THC/Iref (%):			PWHC/Iref (	%):	5.1	
Limit (%):		26.0		PWHC Limit	(%):	26.0	
Harm#	Harm(arg)	100%Limit	%of Limit	Harm(max)	150%Limit	%of Limit	Status
2	0.134	1.574	8.5	0.170	2.362	7.2	Р
3	4.053	4.723	85.8	4.140	7.085	58.4	Р
4	0.051	0.787	6.4	0.065	1.181	5.5	Р
5	2.062	2.558	80.6	2.084	3.838	54.3	Р
6	0.035	0.525	6.7	0.043	0.787	5.5	Р
7	0.808	1.574	51.3	0.823	2.362	34.9	Р
8	0.023	0.394	5.9	0.029	0.590	4.9	Р
9	0.482	0.984	49.0	0.498	1.476	33.7	Р
10	0.017	0.315	5.5	0.022	0.472	4.6	Р
11	0.482	0.787	61.2	0.502	1.181	42.6	Р
12	0.011	0.262	4.2	0.013	0.394	3.3	P
13	0.371	0.590	62.9	0.381	0.886	43.0	P
14	0.006	N/A	N/A	0.008	N/A	N/A	N/A
15	0.071	N/A	N/A	0.080	N/A	N/A	N/A
16	0.003	N/A	N/A	0.005	N/A	N/A	N/A
17	0.243	N/A	N/A	0.250	N/A	N/A	N/A
18	0.004	N/A	N/A	0.005	N/A	N/A	N/A
19	0.138	N/A	N/A	0.147	N/A	N/A	N/A
20	0.003	N/A	N/A	0.005	N/A	N/A	N/A
21	0.077	N/A	N/A	0.084	N/A	N/A	N/A
22	0.004	N/A	N/A	0.006	N/A	N/A	N/A
23	0.049	N/A	N/A	0.063	N/A	N/A	N/A
24	0.004	N/A	N/A	0.005	N/A	N/A	N/A
25	0.136	N/A	N/A	0.142	N/A	N/A	N/A
26	0.003	N/A	N/A	0.005	N/A	N/A	N/A
27	0.092	N/A	N/A	0.097	N/A	N/A	N/A
28	0.003	N/A	N/A	0.004	N/A	N/A	N/A
29	0.082	N/A	N/A	0.090	N/A	N/A	N/A
30	0.003	N/A	N/A	0.004	N/A	N/A	N/A
31	0.085	N/A	N/A	0.098	N/A	N/A	N/A
32	0.003	N/A	N/A	0.005	N/A	N/A	N/A
33	0.115	N/A	N/A	0.119	N/A	N/A	N/A
34	0.003	N/A	N/A	0.004	N/A	N/A	N/A
35	0.129	N/A	N/A	0.135	N/A	N/A	N/A
36	0.003	N/A	N/A	0.005	N/A	N/A	N/A
37	0.077	N/A	N/A	0.081	N/A	N/A	N/A
38	0.003	N/A	N/A	0.005	N/A	N/A	N/A
39	0.079	N/A	N/A	0.088	N/A	N/A	N/A
40	0.003	N/A	N/A	0.005	N/A	N/A	N/A
Phase L = 92.1 % of tested Rsce = 66.000			Minimum Rsce required: Rsce = 60.812				





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Report No. Issue Date

Test Verdict:	🛛 Pass	🗌 Fail
AC mains voltage during test (V):	230	

Model:		RAV-HM1601BTP-E		RAV-HM1601BTP-E				
Phase:		L		Measured Iref (A):		21.640		
THC/Iref (%	%):	25.5		PWHC/Iref (%):		4.3		
Limit (%):	,	23.0	23.0		PWHC Limit (%):		30.0	
Harm#	Harm(arg)	100%Limit	%of Limit	Harm(max)	150%Limit	%of Limit	Status	
2	0.145	1.686	8.6	0.194	2,529	7.7	Р	
3	4.544	5.691	79.8	4.749	8.536	55.6	Р	
4	0.056	0.843	6.6	0.081	1.265	6.4	Р	
5	2.705	3.162	85.6	2.785	4.742	58.7	Р	
6	0.036	0.562	6.4	0.048	0.843	5.7	Р	
7	0.467	2.108	22.1	0.578	3.162	18.3	Р	
8	0.024	0.422	5.8	0.034	0.632	5.3	Р	
9	0.643	1.265	50.8	0.684	1.897	36.0	Р	
10	0.017	0.337	5.1	0.023	0.506	4.6	Р	
11	0.245	1.054	23.3	0.271	1.581	17.2	Р	
12	0.009	0.281	3.2	0.011	0.422	2.6	Р	
13	0.213	0.843	25.2	0.220	1.265	17.4	Р	
14	0.004	N/A	N/A	0.007	N/A	N/A	N/A	
15	0.116	N/A	N/A	0.123	N/A	N/A	N/A	
16	0.003	N/A	N/A	0.005	N/A	N/A	N/A	
17	0.216	N/A	N/A	0.221	N/A	N/A	N/A	
18	0.004	N/A	N/A	0.006	N/A	N/A	N/A	
19	0.159	N/A	N/A	0.176	N/A	N/A	N/A	
20	0.003	N/A	N/A	0.005	N/A	N/A	N/A	
21	0.048	N/A	N/A	0.052	N/A	N/A	N/A	
22	0.003	N/A	N/A	0.004	N/A	N/A	N/A	
23	0.102	N/A	N/A	0.109	N/A	N/A	N/A	
24	0.003	N/A	N/A	0.005	N/A	N/A	N/A	
25	0.134	N/A	N/A	0.136	N/A	N/A	N/A	
26	0.004	N/A	N/A	0.006	N/A	N/A	N/A	
27	0.083	N/A	N/A	0.098	N/A	N/A	N/A	
28	0.003	N/A	N/A	0.004	N/A	N/A	N/A	
29	0.054	N/A	N/A	0.060	N/A	N/A	N/A	
30	0.003	N/A	N/A	0.004	N/A	N/A	N/A	
31	0.099	N/A	N/A	0.106	N/A	N/A	N/A	
32	0.003	N/A	N/A	0.004	N/A	N/A	N/A	
33	0.130	N/A	N/A	0.133	N/A	N/A	N/A	
34	0.003	N/A	N/A	0.005	N/A	N/A	N/A	
35	0.100	N/A	N/A	0.117	N/A	N/A	N/A	
36	0.003	N/A	N/A	0.004	N/A	N/A	N/A	
37	0.083	N/A	N/A	0.090	N/A	N/A	N/A	
38	0.003	N/A	N/A	0.004	N/A	N/A	N/A	
39	0.098	N/A	N/A	0.102	N/A	N/A	N/A	
40	0.003	N/A	N/A	0.004	N/A	N/A	N/A	
Phase L =	85.6 % of tes	ted Rsce = 1	20.000	Minimum Rs	ce required: I	Rsce = 102.6	680	





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Test Verdict:	🛛 Pass	🗌 Fail
AC mains voltage during test (V):	230	

Model:		RAV-HM1601FT-E			RAV-HM1601FT-E		
Phase:		L		Measured Iref (A):		20.702	
THC/Iref (%	%):	24.5		PWHC/Iref (%):		4.3	
Limit (%):	•	26.0		PWHC Limit (%):		26.0	
Harm#	Harm(arg)	100%Limit	%of Limit	Harm(max)	150%Limit	%of Limit	Status
2	0.131	1.646	8.0	0.171	2.468	6.9	Р
3	4.275	4.937	86.6	4.368	7.405	59.0	Р
4	0.044	0.823	5.3	0.060	1.234	4.9	Р
5	2.520	2.674	94.2	2.542	4.011	63.4	Р
6	0.030	0.549	5.5	0.035	0.823	4.3	Р
7	0.412	1.646	25.0	0.425	2.468	17.2	Р
8	0.021	0.411	5.1	0.028	0.617	4.5	Р
9	0.707	1.028	68.7	0.722	1.543	46.8	Р
10	0.017	0.329	5.1	0.022	0.494	4.4	Р
11	0.315	0.823	38.3	0.334	1.234	27.0	Р
12	0.010	0.274	3.5	0.012	0.411	2.9	Р
13	0.259	0.617	42.0	0.263	0.926	28.5	Р
14	0.005	N/A	N/A	0.008	N/A	N/A	N/A
15	0.155	N/A	N/A	0.159	N/A	N/A	N/A
16	0.003	N/A	N/A	0.007	N/A	N/A	N/A
17	0.212	N/A	N/A	0.215	N/A	N/A	N/A
18	0.003	N/A	N/A	0.006	N/A	N/A	N/A
19	0.132	N/A	N/A	0.140	N/A	N/A	N/A
20	0.003	N/A	N/A	0.005	N/A	N/A	N/A
21	0.022	N/A	N/A	0.024	N/A	N/A	N/A
22	0.003	N/A	N/A	0.005	N/A	N/A	N/A
23	0.075	N/A	N/A	0.082	N/A	N/A	N/A
24	0.003	N/A	N/A	0.005	N/A	N/A	N/A
25	0.133	N/A	N/A	0.135	N/A	N/A	N/A
26	0.003	N/A	N/A	0.005	N/A	N/A	N/A
27	0.100	N/A	N/A	0.107	N/A	N/A	N/A
28	0.003	N/A	N/A	0.004	N/A	N/A	N/A
29	0.039	N/A	N/A	0.044	N/A	N/A	N/A
30	0.003	N/A	N/A	0.005	N/A	N/A	N/A
31	0.106	N/A	N/A	0.112	N/A	N/A	N/A
32	0.003	N/A	N/A	0.007	N/A	N/A	N/A
33	0.131	N/A	N/A	0.133	N/A	N/A	N/A
34	0.003	N/A	N/A	0.005	N/A	N/A	N/A
35	0.099	N/A	N/A	0.106	N/A	N/A	N/A
36	0.003	N/A	N/A	0.005	N/A	N/A	N/A
37	0.084	N/A	N/A	0.089	N/A	N/A	N/A
38	0.003	N/A	N/A	0.005	N/A	N/A	N/A
39	0.093	N/A	N/A	0.096	N/A	N/A	N/A
40	0.003	N/A	N/A	0.005	N/A	N/A	N/A
Phase L =	94.3 % of tes	ted Rsce = 66.000		Minimum Rs	ce required:	Rsce = 62.24	2





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# 9. Voltage fluctuation and flicker

## 9.1 Test method

## 9.1.1 Test set up

Test set-up description:	$\square$	Table-top equipment set-up (Indoor unit)	
	$\boxtimes$	Floor standing equipment set-up (Indoor unit)	
	$\boxtimes$	Wall or ceiling mounted equipment (Indoor unit and dummy outdoor unit)	
		Other:	
Operating modes of EUT:	Ope esta The cool	berate the equipment until a steady-state condition has been tablished or for a minimum compressor run time of 30 min. The ambient temperature for testing shall be 30 °C $\pm$ 5 °C for oling.	

#### 9.1.2 Limit for EUT current ≤ 16 A

Observation time selected:	] 10 Minutes			
	] 120 Minutes	120 Minutes		
	24 times switching according to Anr	24 times switching according to Annex B		
	Other:			
Limit for dmax applied:	4 % for all model			
	] 6%			
	7 %			
AC mains voltage during test:	230			
In case the EN 61000-3-11	s been applied: 🛛 Yes			
	No			





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9.1.3 Limit for EUT current > 16 A

Observation time		10 Minutes
selected:	$\square$	120 Minutes
		24 times switching according to Annex B
		Other:
Limit for dmax applied:		4 %
	$\square$	6 % for all model
		7 %
AC mains voltage during test (V):	230	
Means of IEC 61000-3-11		Declaration of maximum permissible system impedance Zmax (clause 4, a) of IEC 61000-3-11, Measurement and evaluation according to subclause 6.3)
		Declaration of minimum service current being equal to or greater than 100 A (clause 4, b) of IEC 61000-3-11)





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Total Quality. Assured.

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## 9.2 Test result

g	9.2.1 Test environment					
	Ambient Temperature (15 - 35 °C):	28	°C			
	Relative Humidity (30 - 60 %):	48	%			

## 9.2.2 Test result

Model:	RAV-HM561SDTY-E			
Measurement Description	Measurement Result	Limit	Verdict	
T-max (ms)	0.00	5.00	Р	
Highest dc (%)	0.00	3.30	Р	
Highest dmax (%)	0.00	4.00	Р	
Highest Pst (10 min. period)	0.064	1.000	Р	
Highest Plt (2 hr. period)	0.064	0.650	Р	
Test Verdict:	🛛 Pass			
	🗌 Fail			
	☐ IEC 61000-3-11 has been applied.			
Note:				

In case the EN 61000-3-11 has been applied:				
System impedance	Calculated	Impedance [Ohm]		
Zsys1 (dmax)				
Zsys2 (dc)				
Zsys3 (Pst)				
Zsys4 (Plt)				
Minimum Zsys calculated is ma impedance, Zmax:				





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Report No. Issue Date

Model:	RAV-HM1101KRTP-E		
Measurement Description	Measurement Result		
T-max (ms)	0.	00	
Highest dc (%)	0.	00	
Highest dmax (%)	-0.	31	
Highest Pst (10 min. period)	0.097		
Highest Plt (2 hr. period)	0.073		
Evaluation results and Lowest system impedance calculation according to 6.3.2:			
System impedance	Calculated		
Zsys1 (dmax)	0.4	18	
Zsys2 (dc)	0.000		
Zsys3 (Pst)	0.130		
Zsys4 (Plt)	0.098		
Minimum Zsys calculated is maximum permissible system impedance, Zmax:		6.848 Ohm + j 4.280 Ohm (6.848 Ohm + 13624 μH)	





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Report No. Issue Date

Model:	RAV-HM1601UTP-E	
Measurement Description	Measurement Result	
T-max (ms)	0.00	
Highest dc (%)	-0.27	
Highest dmax (%)	-0.37	
Highest Pst (10 min. period)	0.073	
Highest Plt (2 hr. period)	0.068	
Evaluation results and Lowest system impedance calculation according to 6.3.2:		
System impedance	Calculated	
Zsys1 (dmax)	0.500	
Zsys2 (dc)	-0.358	
Zsys3 (Pst)	0.098	
Zsys4 (Plt)	0.091	
Minimum Zsys calculated is maximum permissible system impedance, Zmax:		7.634 Ohm + j 4.771 Ohm (7.634 Ohm + 15188 μH)





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Report No. Issue Date

Model:	RAV-HM1601CTP-E	
Measurement Description	Measurement Result	
T-max (ms)	0.00	
Highest dc (%)	-0.31	
Highest dmax (%)	-0.36	
Highest Pst (10 min. period)	0.078	
Highest Plt (2 hr. period)	0.069	
Evaluation results and Lowest system impedance calculation according to 6.3.2:		
System impedance	Calculated	
Zsys1 (dmax)	0.485	
Zsys2 (dc)	-0.412	
Zsys3 (Pst)	0.105	
Zsys4 (Plt)	0.092	
Minimum Zsys calculated is maximum permissible syste impedance, Zmax:		7.552 Ohm + j 4.720 Ohm (7.552 Ohm + 15024 μH)





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Model:	RAV-HM1601BTP-E	
Measurement Description	Measurement Result	
T-max (ms)	0.00	
Highest dc (%)	0.00	
Highest dmax (%)	-0.24	
Highest Pst (10 min. period)	0.073	
Highest Plt (2 hr. period)	0.066	
Evaluation results and Lowest system impedance calculation according to 6.3.2:		
System impedance	Calculated	
Zsys1 (dmax)	0.320	
Zsys2 (dc)	0.000	
Zsys3 (Pst)	0.098	
Zsys4 (Plt)	0.088	
Minimum Zsys calculated is maximum permissible system impedance, Zmax:		8.080 Ohm + j 5.050 Ohm (8.080 Ohm + 16075 μH)





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Report No. Issue Date

Model:	RAV-HM1601FT-E	
Measurement Description	Measurement Result	
T-max (ms)	0.00	
Highest dc (%)	-0.32	
Highest dmax (%)	-0.37	
Highest Pst (10 min. period)	0.073	
Highest Plt (2 hr. period)	0.068	
Evaluation results and Lowest system impedance calculation according to 6.3.2:		
System impedance	Calculated	
Zsys1 (dmax)	0.496	
Zsys2 (dc)	-0.427	
Zsys3 (Pst)	0.098	
Zsys4 (Plt)	0.091	
Minimum Zsys calculated is maximum permissible system impedance, Zmax:		7.634 Ohm + j 4.771 Ohm (7.634 Ohm + 15188 μH)





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# **IMMUNITY TEST**

## **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.
В	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.
С	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:	

## Specific information EN 55014-2

Category of test item:		CAT I (Category I)
	$\square$	CAT II (Category II)
		CAT III (Category III)
		CAT IV (Category IV)

	Test Description	Performance criteria required
$\boxtimes$	Electrostatic discharges	В
	Radiated electromagnetic field	А
$\boxtimes$	Fast transients	В
$\boxtimes$	Surges	В
$\boxtimes$	Injected currents 0.15 to 230 MHz	A
	Injected currents 0.15 to 80 MHz	A
$\boxtimes$	Voltage dips	С





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# 10. Electrostatic discharge

## 10.1 Test method

10.1.1 Test set up

Test set-up description:	$\square$	Table-top equipment set-up (Indoor unit)
	$\square$	Floor standing equipment set-up (Indoor unit and dummy outdoor unit)
	$\square$	Wall or ceiling mounted equipment (Indoor unit)
		Other:

## 10.1.2 Test specification

Location of discharge:	Enclosure
	Horizontal coupling plate
	Vertical coupling plate
	Other:
Test polarity:	Positive
	Negative Negative
Test level:	Air discharge = 8 kV
	Contact discharge = 4 kV
Number of discharges for each test point:	10
Discharge interval time:	1 s
Performance criterion:	В




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## 10.2 Test result

10.2.1 Test environment

Ambient Temperature (15 - 35 °C):	26	°C
Relative Humidity (30 - 60 %):	48	%
Air pressure (860 - 1060 mbar):	1008	mbar

10.2.2 Results for electrostatic discharges



## Photos of selected test points Model: RAV-HM561SDTY-E



Photos of selected test points Model: RAV-HM1101KRTP-E







### Photos of selected test points Model: RAV-HM1601UTP-E



Photos of selected test points Model: RAV-HM1601CTP-E







Photos of selected test points Model: RAV-HM1601BTP-E







Photos of selected test points Model: RAV-HM1601FT-E





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Model	:	RAV-I	RAV-HM561SDTY-E				
Test V	/erdict:	🛛 Pa	🛛 Pass				
Opera	ting mode:	1	1				
Monito	oring condition:	There	was no	change of operation	tion status	during test.	
Locati	on of discharge	Polarity	Discharge	Number of discharges	Test level (kV)	Observations (Criterion)	
HCP		Р	С	10	4		
HCP		Ν	С	10	4		
VCP		Р	С	10	4	Normal operate (A)	
VCP		Ν	С	10	4	Normal operate (A)	
Point of surfac Photos points	on conductive e as indicate in s of selected test	P	С	10	4	Normal operate (A)	
Point of surfac Photos points	on conductive e as indicate in s of selected test	N	С	10	4	Normal operate (A)	
Point of surfac Photos points	on non-conductive e as indicate in s of selected test	P	A	10	8		
Point of surfac Photos points	on non-conductive e as indicate in s of selected test	N	A	10	8		
Note:	HCP = Horizontal coup VCP = Vertical couplin	oling plate	e	N = Negative P = Positive	A = Air C = Cc	discharge	





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Model	:	RAV-	RAV-HM1101KRTP-E				
Test V	/erdict:	🛛 Pa	🛛 Pass				
Opera	ting mode:	1					
Monito	oring condition:	There	was no	change of operat	tion status	during test.	
Locati	on of discharge	Polarity	Discharge	Number of discharges	Test level (kV)	Observations (Criterion)	
HCP		Р	С	10	4		
HCP		Ν	С	10	4		
VCP		Р	С	10	4	Normal operate (A)	
VCP		Ν	С	10	4	Normal operate (A)	
Point of surfac Photos points	on conductive e as indicate in s of selected test	P	С	10	4		
Point of surfac Photos points	on conductive e as indicate in s of selected test	N	С	10	4		
Point of surfac Photos points	on non-conductive e as indicate in s of selected test	Р	A	10	8	Normal operate (A)	
Point of surfac Photos points	on non-conductive e as indicate in s of selected test	N	A	10	8	Normal operate (A)	
Note:	HCP = Horizontal coup VCP = Vertical couplin	oling plate g plate	Э	N = Negative P = Positive	A = Air C = Co	discharge ontact discharge	





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Report No. Issue Date

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Model	:	RAV-I	RAV-HM1601UTP-E				
Test V	/erdict:	🛛 Pa	🛛 Pass			🗌 Fail	
Opera	iting mode:	1					
Monito	oring condition:	There	was no	change of opera	tion status	during test.	
Locati	on of discharge	Polarity	Discharge	Number of discharges	Test level (kV)	Observations (Criterion)	
HCP		Р	С	10	4		
HCP		Ν	С	10	4		
VCP		Р	С	10	4	Normal operate (A)	
VCP		Ν	С	10	4	Normal operate (A)	
Point of surfact Photos points	on conductive e as indicate in s of selected test	P	С	10	4		
Point of surfac Photo points	on conductive e as indicate in s of selected test	N	С	10	4		
Point of surfac Photo points	on non-conductive e as indicate in s of selected test	P	A	10	8	Normal operate (A)	
Point surfac Photo points	on non-conductive e as indicate in s of selected test	N	A	10	8	Normal operate (A)	
Note:	HCP = Horizontal coup	oling plate	e	N = Negative	A = Air	discharge	
1	VCP = Vertical couplin	g plate		P = Positive	C = Cc	ontact discharge	





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Model	:	RAV-I	RAV-HM1601UTP-E				
Test V	/erdict:	🛛 Pa	🛛 Pass			🗌 Fail	
Opera	iting mode:	1			•		
Monito	oring condition:	There	was no	change of opera	tion status	during test.	
Locati	on of discharge	Polarity	Discharge	Number of discharges	Test level (kV)	Observations (Criterion)	
HCP		Р	С	10	4		
HCP		Ν	С	10	4		
VCP		Р	С	10	4	Normal operate (A)	
VCP		Ν	С	10	4	Normal operate (A)	
Point of surfact Photo points	on conductive e as indicate in s of selected test	P	С	10	4		
Point of surfac Photo points	on conductive e as indicate in s of selected test	N	С	10	4		
Point of surfac Photo points	on non-conductive e as indicate in s of selected test	P	A	10	8	Normal operate (A)	
Point of surfac Photo points	on non-conductive e as indicate in s of selected test	N	A	10	8	Normal operate (A)	
Note:	HCP = Horizontal cou	oling plate	Э	N = Negative	A = Air	discharge	
1	VCP = Vertical couplin	ig plate		P = Positive	C = Cc	intact discharge	





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Model	:	RAV-I	RAV-HM1601CTP-E				
Test V	/erdict:	🛛 Pa	🛛 Pass				
Opera	iting mode:	1	1				
Monito	oring condition:	There	was no	change of operation	tion status	during test.	
Locati	on of discharge	Polarity	Discharge	Number of discharges	Test level (kV)	Observations (Criterion)	
HCP		Р	С	10	4		
HCP		Ν	С	10	4		
VCP		Р	С	10	4	Normal operate (A)	
VCP		Ν	С	10	4	Normal operate (A)	
Point of surfac Photos points	on conductive e as indicate in s of selected test	Р	С	10	4	Normal operate (A)	
Point of surfac Photos points	on conductive e as indicate in s of selected test	N	С	10	4	Normal operate (A)	
Point of surfac Photos points	on non-conductive e as indicate in s of selected test	Р	A	10	8	Normal operate (A)	
Point of surfac Photos points	on non-conductive e as indicate in s of selected test	N	A	10	8	Normal operate (A)	
Note:	HCP = Horizontal coup	ling plate	e	N = Negative	A = Air	discharge	
	VCP = Vertical coupling	g plate		P = Positive	C = Co	intact discharge	





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Model:	RAV-HM1601BTP-E				
Test Verdict:	🛛 Pa	🛛 Pass			
Operating mode:	1				
Monitoring condition:	There	was no	change of operation	tion status	during test.
Location of discharge	Polarity	Discharge	Number of discharges	Test level (kV)	Observations (Criterion)
HCP	Р	С	10	4	
НСР	Ν	С	10	4	
VCP	Р	С	10	4	Normal operate (A)
VCP	Ν	С	10	4	Normal operate (A)
Point on conductive surface as indicate in Photos of selected test points	Ρ	С	10	4	Normal operate (A)
Point on conductive surface as indicate in Photos of selected test points	N	С	10	4	Normal operate (A)
Point on non-conductive surface as indicate in Photos of selected test points	Р	A	10	8	
Point on non-conductive surface as indicate in Photos of selected test points	Ν	A	10	8	
Note: HCP = Horizontal coup VCP = Vertical coupling	ling plate	e	N = Negative P = Positive	A = Air C = Co	discharge





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Model	:	RAV-I	RAV-HM1601FT-E				
Test V	/erdict:	🛛 Pa	SS		🗌 Fail		
Opera	iting mode:	1					
Monito	oring condition:	There	was no	change of operation	tion status	during test.	
Locati	on of discharge	Polarity	Discharge	Number of discharges	Test level (kV)	Observations (Criterion)	
HCP		Р	С	10	4		
HCP		Ν	С	10	4		
VCP		Р	С	10	4	Normal operate (A)	
VCP		Ν	С	10	4	Normal operate (A)	
Point of surfact Photos points	on conductive e as indicate in s of selected test	P	С	10	4	Normal operate (A)	
Point of surfact Photo points	on conductive e as indicate in s of selected test	N	С	10	4	Normal operate (A)	
Point of surfact Photos points	on non-conductive e as indicate in s of selected test	P	A	10	8	Normal operate (A)	
Point surfac Photo points	on non-conductive e as indicate in s of selected test	N	A	10	8	Normal operate (A)	
Note:	HCP = Horizontal coup	oling plate	e	N = Negative	A = Air	discharge	
1	VCP = Vertical couplin	g plate		P = Positive	C = Co	ontact discharge	





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# 11. Radiated electromagnetic field

## 11.1 Test method

11.1.1 Test set up

Test set-up description:	Table-top equipment set-up
	Floor standing equipment set-up
	Wall or ceiling mounted equipment

### 11.1.2 Test specification

Exposed side of EUT:	0° (Front)		
	90 °		
	180 ° (Rear)		
	270 °		
	Top side		
	Bottom side		
Distance Antenna to EUT:	3 m		
Frequency range:	80 - 1000 MHz		
Test level (V/m):	3 V/m (r.m.s.) (unmodulated)		
Modulation:	80 % AM @ 1 kHz		
Step size (%):	1 %		
Performance criterion:	A		





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## 11.2 Test result

11.2.1 Test environment	
-------------------------	--

Ambient Temperature (15 - 35 °C):	 °C
Relative Humidity (30 - 60 %):	 %
Air pressure (800 - 1060 mbar):	 mbar

### 11.2.2 Results for radiated electromagnetic field

Test Verdict:			🗌 Pass 🔹 🗍 Fail				
Operating mode:							
Monitoring co	ndition:						
Frequency range (MHz)	Angle.	Ant. Polarity	Test Level (V/m)	Modulation	Dwell time (s)	Observations (Criterion)	
80 - 1000	0 °	Horizontal	3	80 % AM @ 1 kHz	3		
80 - 1000	90 °	Horizontal	3	80 % AM @ 1 kHz	3		
80 - 1000	180 °	Horizontal	3	80 % AM @ 1 kHz	3		
80 - 1000	270 °	Horizontal	3	80 % AM @ 1 kHz	3		
80 - 1000	0 °	Vertical	3	80 % AM @ 1 kHz	3		
80 - 1000	90 °	Vertical	3	80 % AM @ 1 kHz	3		
80 - 1000	80 - 1000 180 ° Vertical		3	3 80 % AM @ 1 kHz			
80 - 1000	270 °	Vertical	3	80 % AM @ 1 kHz	3		
Note:							



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# 12. Fast transients

## 12.1 Test method

12.1.1 Test set up

Test set-up description:	$\boxtimes$	Table-top equipment set-up (Indoor unit)
	$\square$	Floor standing equipment set-up (Indoor unit and dummy outdoor unit)
	$\square$	Wall or ceiling mounted equipment (Indoor unit)
		Other:

## 12.1.2 Test specification

Test port:	Signal lines & control lines		
	Input & output d.c. power ports		
	Input & output a.c. power ports		
Test level (kV):	Signal lines & control lines = 0.5 kV		
	Input & output d.c. power ports = 1 kV		
	Input & output a.c. power ports = 1 kV		
Repetition frequency:	5 kHz, 5/50ns Tr/Td		
Number of discharges for each test point:	10		
Test time:	2 min with a positive polarity		
	and 2 min with a negative polarity		
Performance criterion:	В		





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## 12.2 Test result

1	2.2.1 Test environment		
	Ambient Temperature (15 - 35 °C):	26	°C
	Relative Humidity (30 - 60 %):	48	%
	Air pressure (800 - 1060 mbar):	1008	mbar

#### 12.2.2 Results for fast transients

Model:		RAV-HM561SDTY-E					
Test Verdict:		🛛 Pass			🗌 Fail		
Opera	ating mode:		1				
Monite	oring condition:		There wa	There was no change of operation status during test.			
	Test port	Cou	ıpling	Polarity	Test	Observations	
					Level	(Criterion)	
					(kV)		
Inpu	t a.c. power ports	L to GND		Р	1	Normal operate (A)	
Inpu	t a.c. power ports	L to	GND	N	1	Normal operate (A)	
Inpu	t a.c. power ports	N to	GND	Р	1	Normal operate (A)	
Inpu	t a.c. power ports	N to	GND	N	1	Normal operate (A)	
Inpu	t a.c. power ports	PE to	GND	Р	1	Normal operate (A)	
Inpu	Input a.c. power ports PE to		GND	Ν	1	Normal operate (A)	
Input a.c. power ports L, N, PE		E to GND	Р	1	Normal operate (A)		
Input a.c. power ports L, N, PE		E to GND	N	1	Normal operate (A)		
Note:	P = Positive						
	N = Negative						





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Model:		RAV-HM	RAV-HM1101KRTP-E			
Test Verdict:		🛛 Pass			🗌 Fail	
Operating mode:		1				
Monitoring condition:		There wa	There was no change of operation status during test.			
Test port	Co	Coupling		Test Level (kV)	Observations (Criterion)	
Input a.c. power por	s L to	GND	Р	1	Normal operate (A)	
Input a.c. power por	Input a.c. power ports L to		N	1	Normal operate (A)	
Input a.c. power por	s N to	GND	Р	1	Normal operate (A)	
Input a.c. power por	s N to	GND	N	1	Normal operate (A)	
Input a.c. power por	s PE t	o GND	Р	1	Normal operate (A)	
Input a.c. power ports PE to		o GND	N	1	Normal operate (A)	
Input a.c. power ports L, N, PE		E to GND	Р	1	Normal operate (A)	
Input a.c. power ports L, N, PE		E to GND	Ν	1	Normal operate (A)	
Note: P = Positive N = Negative						

Model:			RAV-HM1601UTP-E				
Test Verdict:		🛛 Pass	🛛 Pass 🗌 🗌 Fail				
Operating mode:		1					
Monitoring condition:		There was	There was no change of operation status during test.				
	Test port	Coupling		Polarity	Test Level (kV)	Observations (Criterion)	
Inpu	t a.c. power ports	L to	GND	Р	1	Normal operate (A)	
Inpu	t a.c. power ports	L to	GND	N	1	Normal operate (A)	
Inpu	t a.c. power ports	N to	GND	Р	1	Normal operate (A)	
Inpu	t a.c. power ports	N to	GND	N	1	Normal operate (A)	
Inpu	t a.c. power ports	PE to	GND	Р	1	Normal operate (A)	
Inpu	Input a.c. power ports PE to		GND	N	1	Normal operate (A)	
Inpu	t a.c. power ports	L, N, PE	to GND	Р	1	Normal operate (A)	
Input a.c. power ports L, N, PE		to GND	N	1	Normal operate (A)		
Note:	P = Positive N = Negative						





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Model:		RAV-HM1601CTP-E						
Test Verdict:		🛛 Pass		[	Fail			
Operating mode:		1						
Monito	oring condition:		There wa	There was no change of operation status during test.				
	Test port	Coupling		Polarity	Test Level (kV)	Observations (Criterion)		
Inpu	t a.c. power ports	L to GND		Р	1	Normal operate (A)		
Inpu	t a.c. power ports	L to	GND	N	1	Normal operate (A)		
Inpu	t a.c. power ports	N to	GND	Р	1	Normal operate (A)		
Inpu	t a.c. power ports	N to	GND	N	1	Normal operate (A)		
Inpu	t a.c. power ports	PE to	) GND	Р	1	Normal operate (A)		
Input a.c. power ports PE to		GND	Ν	1	Normal operate (A)			
Input a.c. power ports L, N, PE		to GND	Р	1	Normal operate (A)			
Input a.c. power ports L, N, PE		to GND	Ν	1	Normal operate (A)			
Note:	P = Positive N = Negative							

Model:			RAV-HM1601BTP-E			
Test Verdict:		🛛 Pass	🛛 Pass 🗌 🗌 Fail			
Operating mode:		1				
Monitoring condition:		There was	There was no change of operation status during test.			
	Test port	Coupling		Polarity	Test Level (kV)	Observations (Criterion)
Inpu	t a.c. power ports	L to	GND	Р	1	Normal operate (A)
Inpu	t a.c. power ports	L to	GND	N	1	Normal operate (A)
Inpu	t a.c. power ports	N to	GND	Р	1	Normal operate (A)
Inpu	t a.c. power ports	N to	GND	N	1	Normal operate (A)
Inpu	t a.c. power ports	PE to	GND	Р	1	Normal operate (A)
Input a.c. power ports PE to		GND	N	1	Normal operate (A)	
Input a.c. power ports L, N, PE		E to GND	Р	1	Normal operate (A)	
Input a.c. power ports L, N, PE		E to GND	Ν	1	Normal operate (A)	
Note:	P = Positive N = Negative					





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Model:			RAV-HM ²	RAV-HM1601FT-E				
Test Verdict:		🛛 Pass	🛛 Pass 🗌 🗌 Fail					
Operating mode:		1						
Monitoring co	ndition:		There wa	There was no change of operation status during test.				
Test p	oort	Coupling		Polarity	Test Level (kV)	Observations (Criterion)		
Input a.c. po	ower ports	L to	GND	Р	1	Normal operate (A)		
Input a.c. po	ower ports	L to	GND	N	1	Normal operate (A)		
Input a.c. po	ower ports	N to	GND	Р	1	Normal operate (A)		
Input a.c. po	ower ports	N to	GND	N	1	Normal operate (A)		
Input a.c. po	ower ports	PE to	GND	Р	1	Normal operate (A)		
Input a.c. po	ower ports	PE to	GND	N	1	Normal operate (A)		
Input a.c. power ports L, N, PE		to GND	Р	1	Normal operate (A)			
Input a.c. power ports L, N, PE		to GND	N	1	Normal operate (A)			
Note: P = Po N = Ne	sitive gative							





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## 13. Surges

## 13.1 Test method

13.1.1 Test set up

Test set-up description:	$\square$	Table-top equipment set-up (Indoor unit)
	$\square$	Floor standing equipment set-up (Indoor unit and dummy outdoor unit)
	$\square$	Wall or ceiling mounted equipment (Indoor unit)
		Other:

### 13.1.2 Test specification

Test port:	Input a.c. power ports		
Test polarity:	Positive		
	Negative		
Test specification:	1.2/50 (8/20) Tr/Td μs		
Test level (kV) and impedance:	phase-to-phase = 1 kV with 2 $\Omega$ Impedance		
	phase-to-neutral = 1 kV with 2 $\Omega$ Impedance		
	phase-to-earth = 2 kV with 12 $\Omega$ Impedance		
	neutral -to-earth = 2 kV with 12 $\Omega$ Impedance		
Repetition rate:	1/min		
Number of pulses for each coupling:	5		
Performance criterion:	В		





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## 13.2 Test result

13.2.1 Test environment							
Ambient Temperature (15 - 35 °C):	26	°C					
Relative Humidity (30 - 60 %):	48	%					
Air pressure (800 - 1060 mbar):	1008	mbar					

#### 13.2.2 Results for surges

Mode	:		RAV-HM561SDTY-E			
Test \	/erdict:		🛛 Pass 🗌 🗌 Fail			] Fail
Opera	ating mode:		1			
Monite	oring condition:		There wa	as no change	of operation	on status during test.
	Test port	Coupling	Polarity	Phase angles (°)	Test level (kV)	Observations (Criterion)
Input	a.c. power ports	L-N	Р	90	1	Normal operate (A)
Input	a.c. power ports	L-N	N	270	1	Normal operate (A)
Input	a.c. power ports	L-PE	Р	90	2	Normal operate (A)
Input	a.c. power ports	L-PE	N	270	2	Normal operate (A)
Input	a.c. power ports	N-PE	Р	90	2	Normal operate (A)
Input	a.c. power ports	N-PE	N	270	2	Normal operate (A)
Lower test levels:			ver test lev	els are teste	d also.	
		$\boxtimes$ The lower test levels are not tested.				
Note:	P = Positive N = Negative					





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Mode	l:		RAV-HM1101KRTP-E				
Test \	/erdict:		🛛 Pass 🗌 Fail			Fail	
Opera	ating mode:		1				
Monito	oring condition:		There wa	There was no change of operation status during test.			
	Test port	Coupling	ling Polarity Phase Test Obse angles level (Cri (°) (kV)			Observations (Criterion)	
Input	a.c. power ports	L-N	Р	90	1	Normal operate (A)	
Input	a.c. power ports	L-N	N	270	1	Normal operate (A)	
Input	a.c. power ports	L-PE	Р	90	2	Normal operate (A)	
Input	a.c. power ports	L-PE	N	270	2	Normal operate (A)	
Input	a.c. power ports	N-PE	Р	90	2	Normal operate (A)	
Input	a.c. power ports	N-PE	N	270	2	Normal operate (A)	
Lower test levels:			ver test levels are tested also.				
		🛛 The lov	$\boxtimes$ The lower test levels are not tested.				
Note:	P = Positive N = Negative						

Model:		RAV-HM1601UTP-E				
Test Verdict:		🛛 Pass	🛛 Pass 🗌 Fail			
Operating mode:		1				
Monitoring condition	1:	There wa	as no change	of operation	on status during test.	
Test port	Coupling	Polarity	Phase angles (°)	Test level (kV)	Observations (Criterion)	
Input a.c. power po	ts L-N	Р	90	1	Normal operate (A)	
Input a.c. power po	ts L-N	N	270	1	Normal operate (A)	
Input a.c. power po	ts L-PE	Р	90	2	Normal operate (A)	
Input a.c. power po	ts L-PE	N	270	2	Normal operate (A)	
Input a.c. power po	ts N-PE	Р	90	2	Normal operate (A)	
Input a.c. power po	ts N-PE	N	270	2	Normal operate (A)	
Lower test levels:	wer test lev	ver test levels are tested also.				
	🛛 The lo	The lower test levels are not tested.				
Note: P = Positive N = Negative						





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Model:			RAV-HM1601CTP-E			
Test Verdict:			🛛 Pass	🛛 Pass 🗌 🗌 Fail		
Operat	ting mode:		1			
Monito	oring condition:		There wa	as no change	of operati	on status during test.
	Test port	Coupling	PolarityPhase anglesTest level (kV)C			Observations (Criterion)
Input a	a.c. power ports	L-N	Р	90	1	Normal operate (A)
Input a	a.c. power ports	L-N	N	270	1	Normal operate (A)
Input a	a.c. power ports	L-PE	Р	90	2	Normal operate (A)
Input a	a.c. power ports	L-PE	N	270	2	Normal operate (A)
Input a	a.c. power ports	N-PE	Р	90	2	Normal operate (A)
Input a	a.c. power ports	N-PE	N	270	2	Normal operate (A)
Lower	test levels:	The lower test levels are tested also.				
		The lov	The lower test levels are not tested.			
Note:	P = Positive N = Negative					

Mode	l:		RAV-HM1601BTP-E				
Test \	/erdict:		🛛 Pass 🗌 🗌 Fail			] Fail	
Opera	ating mode:		1				
Monite	oring condition:		There wa	as no change	of operati	on status during test.	
Test port Coupling		Coupling	Polarity	Phase angles (°)	Test level (kV)	Observations (Criterion)	
Input	a.c. power ports	L-N	Р	90	1	Normal operate (A)	
Input	a.c. power ports	L-N	N	270	1	Normal operate (A)	
Input	a.c. power ports	L-PE	Р	90	2	Normal operate (A)	
Input	a.c. power ports	L-PE	N	270	2	Normal operate (A)	
Input	a.c. power ports	N-PE	Р	90	2	Normal operate (A)	
Input a.c. power ports N-PE		N-PE	N	270	2	Normal operate (A)	
Lower test levels:			ver test levels are tested also.				
		🛛 The lov	$\boxtimes$ The lower test levels are not tested.				
Note:	P = Positive N = Negative						





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Mode	l:		RAV-HM1601FT-E				
Test \	/erdict:		🛛 Pass 🗌 🗌 Fail			] Fail	
Opera	ating mode:		1				
Monito	oring condition:		There wa	as no change	of operation	on status during test.	
	Test port	Coupling	Polarity	Phase	Test	Observations	
				(°)	(kV)	(Criterion)	
Input	a.c. power ports	L-N	Р	90	1	Normal operate (A)	
Input	a.c. power ports	L-N	N	270	1	Normal operate (A)	
Input	a.c. power ports	L-PE	Р	90	2	Normal operate (A)	
Input	a.c. power ports	L-PE	N	270	2	Normal operate (A)	
Input	a.c. power ports	N-PE	Р	90	2	Normal operate (A)	
Input	a.c. power ports	N-PE	N	270	2	Normal operate (A)	
Lower test levels:			ver test lev	er test levels are tested also.			
		🛛 The lov	he lower test levels are not tested.				
Note:	P = Positive						
	N = Negative						



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# 14. Injected currents

## 14.1 Test method

14.1.1 Test set up

Test set-up description:	$\square$	Table-top equipment set-up (Indoor unit)
	$\square$	Floor standing equipment set-up (Indoor unit and dummy outdoor unit)
	$\square$	Wall or ceiling mounted equipment (Indoor unit)
		Other:

## 14.1.2 Test specification

Test port:	Signal lines & control lines			
	Input & output d.c. power ports			
	Input & output a.c. power ports			
Modulation:	80 % AM with 1 kHz			
	Other:			
Frequency range /discrete frequencies:	0.15 to 80 MHz			
	0.15 to 230 MHz			
	Other:			
Test level (V):	1 V (r.m.s.) (unmodulated)			
	for signal lines & control lines			
	3 V (r.m.s.) (unmodulated)			
	for Input & output d.c. power ports			
	3 V (r.m.s.) (unmodulated)			
	for Input & output a.c. power ports			
Source impedance:	150 Ω			
Performance criterion:	A			





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### 14.2 Test result

#### 14.2.1 Test environment

Ambient Temperature (15 - 35 °C):	26	°C
Relative Humidity (30 - 60 %):	48	%
Air pressure (800 - 1060 mbar):	1008	mbar

#### 14.2.2 Results for injection currents

Model:		RAV-HM561SDTY-E					
Test Verdict:		🛛 Pass			🗌 Fail		
Operating mode:		1					
Monitoring condition	:	There was no change of operation status during test.			There was no change of		tatus during test.
Frequency range /discrete frequencies	Test port	Test Level (V)	Modulat	tion	Observation (Criterion)		
0.15 to 230 MHz	Input a.c. power port	3 V (r.m.s.) (unmodulated)	80 % A with 1 k	۸M Hz	Normal operate (A)		
Note:							

Model:			RAV-HM1101KRTP-E			
Test Verdict:	Test Verdict:		🛛 Pass 🗌 Fail			ail
Operating mode:			1			
Monitoring condition:		There was no change of operation status during test.			tatus during test.	
Frequency /discret frequenc	range :e ies	Test port	Test Level (V)	Modula	tion	Observation (Criterion)
0.15 to 230	MHz	Input a.c. power port	3 V (r.m.s.) (unmodulated)	80 % A with 1 k	λM «Hz	Normal operate (A)
Note:						





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Model:			RAV-HM1601UTP-E			
Test Verdi	ct:		🛛 Pass 🗌 Fa		Fail	
Operating	mode:		1			
Monitoring condition:			There was no change of operation status during test.			
Frequency range /discrete frequencies		Test port	Test Level (V)	Modulation	Observation (Criterion)	
0.15 to 230 MHz		Input a.c. power port	3 V (r.m.s.) (unmodulated)	80 % AM with 1 kHz	Normal operate (A)	
Note:						

Model:			RAV-HM1601CTP-E			
Test Verdict:			🛛 Pass 🗌 F		🗌 Fail	
Operating mode:			1			
Monitoring condition:			There was no change of operation status during test.			
Frequency range /discrete frequencies		Test port	Test Level (V)	Modula	tion C	Observation (Criterion)
0.15 to 230 MHz		Input a.c. power port	3 V (r.m.s.) (unmodulated)	80 % A with 1 k	AM Norm KHz	nal operate (A)
Note:						

Model:			RAV-HM1601BTP-E			
Test Verdict:			🖂 Pass 🗌 Fa		ail	
Operating mode:			1			
Monitoring condition:			There was no change of operation status during test.			
Frequency range /discrete frequencies		Test port	Test Level (V)	Modulat	tion	Observation (Criterion)
0.15 to 230 MHz		Input a.c. power port	3 V (r.m.s.) (unmodulated)	80 % A with 1 k	M Hz	Normal operate (A)
Note:						





Total Quality. Assured.

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Model:			RAV-HM1601FT-E			
Test Verdict:			🖾 Pass 🛛 🗌 Fa		Fail	
Operating mode:			1			
Monitoring condition:			There was no change of operation status during test.			
Frequency range /discrete frequencies		Test port	Test Level (V)	Modulation	Observation (Criterion)	
0.15 to 230 MHz I		Input a.c. power port	3 V (r.m.s.) (unmodulated)	80 % AM with 1 kHz	Normal operate (A)	
Note:						





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# 15. Voltage dips

## 15.1 Test method

## 15.1.1 Test set up

Test set-up description:	$\square$	Table-top equipment set-up (Indoor unit)
	$\square$	Floor standing equipment set-up (Indoor unit and dummy outdoor unit)
	$\square$	Wall or ceiling mounted equipment (Indoor unit)
		Other:

#### 15.1.2 Test specification

Test port:			Input a.c. power ports					
Test specification:								
Environmental phenomena Test level			in % UT	Durations for voltage dips				
				50 Hz	60 Hz			
Voltage	100	0		0.5 cycle	0.5 cycle			
dips in %	60	40 70		10 cycle	12 cycle			
	30			25 cycle	30 cycle			
$U_{\rm T}$ is the rated voltage of the EUT								
Performance crite	rion:		С					





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## 15.2 Test result

15.2.1 Test environment

Ambient Temperature (15 - 35 °C):	26	°C
Relative Humidity (30 - 60 %):	48	%
Air pressure (800 - 1060 mbar):	1008	mbar

#### 15.2.2 Results for voltage dips

Model:		RAV-HM561SDTY-E				
Test Verdict:		🛛 Pass		🗌 Fail		
Operating mode:		1				
Monitoring con	dition:	The fan motor	The fan motor was malfunction.			
<i>U</i> т (V)	Frequency (Hz)	Test Level % of <i>U</i> t	Duration in cycles	Observations (Criterion)		
230	50	0	0.5 (50Hz) 0.5 (60Hz)	Malfunction (B)		
230	50	40	10 (50Hz) 12 (60Hz)	Malfunction (B)		
230	50	70	25 (50Hz) 30 (60Hz)	Malfunction (B)		
Note: $U_{\rm T}$ = The rated voltage of the EUT						

Model:		RAV-HM1101KRTP-E					
Test Verdict:		🛛 Pass		🗌 Fail			
Operating mode:		1					
Monitoring con	dition:	The fan motor	The fan motor was malfunction.				
U _T (V)	Frequency (Hz)	Test Level % of <i>U</i> ⊤	Duration in cycles	Observations (Criterion)			
230	50	0	0.5 (50Hz) 0.5 (60Hz)	Malfunction (B)			
230	50	40	10 (50Hz) 12 (60Hz)	Malfunction (B)			
230	50	70	25 (50Hz) 30 (60Hz)	Malfunction (B)			
Note: $U_{\rm T} = {\rm The}$	e rated voltage c	of the EUT					





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Model:		RAV-HM1601UTP-E					
Test Verdict:		🛛 Pass		🗌 Fail			
Operating mode:		1					
Monitoring cor	dition:	The fan motor	The fan motor was malfunction.				
<i>U</i> т (V)	Frequency (Hz)	Test Level % of <i>U</i> t	Duration in cycles	Observations (Criterion)			
230	50	0	0.5 (50Hz) 0.5 (60Hz)	Malfunction (B)			
230	50	40	10 (50Hz) 12 (60Hz)	Malfunction (B)			
230	50	70	25 (50Hz) 30 (60Hz)	Malfunction (B)			
Note: $U_{\rm T}$ = The rated voltage of the EUT							

Model:		RAV-HM1601CTP-E					
Test Verdict:		🛛 Pass		🗌 Fail			
Operating mode:		1	1				
Monitoring of	condition:	The fan motor	The fan motor was malfunction.				
<i>U</i> т (V)	Frequency (Hz)	Test Level % of <i>U</i> t	Duration in cycles	Observations (Criterion)			
230	50	0	0.5 (50Hz) 0.5 (60Hz)	Malfunction (B)			
230	50	40	10 (50Hz) 12 (60Hz)	Malfunction (B)			
230	50	70	25 (50Hz) 30 (60Hz)	Malfunction (B)			
Note: $U_{\rm T}$ = The rated voltage of the EUT							





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Model:		RAV-HM1601BTP-E				
Test Verdict:		🛛 Pass		🗌 Fail		
Operating mode:		1				
Monitoring con	dition:	The fan motor	The fan motor was malfunction.			
<i>U</i> т (V)	Frequency (Hz)	Test Level % of <i>U</i> t	Duration in cycles	Observations (Criterion)		
230	50	0	0.5 (50Hz) 0.5 (60Hz)	Malfunction (B)		
230	50	40	10 (50Hz) 12 (60Hz)	Malfunction (B)		
230	50	70	25 (50Hz) 30 (60Hz)	Malfunction (B)		
Note: $U_{T}$ = The rated voltage of the EUT						

Model:		RAV-HM1601FT-E		
Test Verdict:		🛛 Pass		🗌 Fail
Operating mode:		1		
Monitoring condition:		The fan motor was malfunction.		
U _T (V)	Frequency (Hz)	Test Level % of <i>U</i> t	Duration in cycles	Observations (Criterion)
230	50	0	0.5 (50Hz) 0.5 (60Hz)	Malfunction (B)
230	50	40	10 (50Hz) 12 (60Hz)	Malfunction (B)
230	50	70	25 (50Hz) 30 (60Hz)	Malfunction (B)
Note: $U_T$ = The rated voltage of the EUT				





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# **APPENDIX I: PHOTO(S) OF EUT**



Figure AI.1: EUT Photos indoor model: RAV-HM561SDTY-E



Figure AI.2: EUT Photos indoor model: RAV-HM1101KRTP-E



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Figure AI.3: EUT Photos indoor model: RAV-HM1601UTP-E



Figure AI.4: EUT Photos indoor model: RAV-HM1601CTP-E



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Figure AI.5: EUT Photos indoor model: RAV-HM1601BTP-E



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Figure AI.6: EUT Photos indoor model: RAV-HM1601FT-E



Figure AI.7: EUT Photos remote model: RBC-AMS41E-ME




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## **APPENDIX II: MODEL(S) INFORMATION**

Model cover by this report

Test model	Cover model	Туре	Indoor unit PCB	
(Indoor unit)	(Indoor unit)		model	
	RAV-HM301SDTY-E			
RAV-HM561SDTY-E	RAV-HM401SDTY-E	Slim duct (TCAC)	MCC-1643	
	RAV-HM561SDTY-E/TR			
	RAV-HM301KRTP-E		MCC-1696	
RAV-HM1101KRTP-E	RAV-HM401KRTP-E			
	RAV-HM561KRTP-E/TR			
	RAV-HM801KRTP-E/TR	High wall (TCTC)		
	RAV-HM901KRTP-E			
	RAV-HM1101KRTP-E/TR			
	RAV-HM561UTP-E/TR			
	RAV-HM801UTP-E/TR			
	RAV-HM901UTP-E	4-wav cassette		
	RAV-HM1101UTP-E/TR	(TCTC)		
	RAV-HM1401UTP-E/TR			
	RAV-HM1601UTP-E/TR			
RAV-HM1601UTP-E	RAV-HM561UT-E/TR		MCC-1643	
	RAV-HM801UT-E/TR	Smart cassette		
	RAV-HM1101UT-E/TR	(TCC)		
	RAV-HM1401UT-E/TR			
	RAV-HM301MUT-E			
	RAV-HM401MUT-E	Compact 4 Way		
	RAV-HM561MUT-E/TR	(100)		
	RAV-HM401CTP-E			
	RAV-HM561CTP-E/TR		MCC-1643	
	RAV-HM801CTP-E/TR			
RAV-HM1601CTP-E	RAV-HM901CTP-E	Under celling		
	RAV-HM1101CTP-E/TR			
	RAV-HM1401CTP-E/TR			
	RAV-HM1601CTP-E/TR			
	RAV-HM561BTP-E/TR			
RAV-HM1601BTP-E	RAV-HM801BTP-E/TR		MCC-1720	
	RAV-HM901BTP-E	Standard duct		
	RAV-HM1101BTP-E/TR	(TCTC)		
	RAV-HM1401BTP-E/TR			
	RAV-HM1601BTP-E/TR			
RAV-HM1601FT-E	RAV-HM561FT-E/TR			
	RAV-HM801FT-E/TR			
	RAV-HM901FT-E	Floor standing	M00 4040	
	RAV-HM1101FT-E/TR	(TCC)	MCC-1643	
	RAV-HM1401FT-E/TR	7		
	RAV-HM1601FT-E/TR			





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Figure AII.1: Nameplate indoor unit model: RAV-HM561SDTY-E



Figure AII.2: Nameplate indoor unit model: RAV-HM1101KRTP-E





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TOSHIBA   AIR CONDITIONER   MODEL   RAV-HM1601UTP-E   QUKA   220-240V   220V   60Hz   120 W   10 W	6 May 2022
Name of the manufacturer Toshiba Carrier (Thailand) Co., Ltd.   Address, city, country   1440 Moo S, Bangkald Industrial Park, Tivanon Road, Tambol Bangkadi, Amphur Muang, Pathumthani 12000, Thailand.   Importer for EU TOSHIBA CARRIER EUROPE S.A.S   Address   Route de Thil 01120 Montuel FRANCE   Importer for GB TOSHIBA CARRIER UK LTD.   Address   Porsham Close, Belliver Industrial Estate, Roberough Plymouth, Devon, PL6 7DB, United Kingdom   Importer (Thailand) Co., Ltd.   Made IN THAILAND   Value   Inta Kingdom	

Figure AII.3: Nameplate indoor unit model: RAV-HM1601UTP-E



Figure AII.4: Nameplate indoor unit model: RAV-HM1601CTP-E





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TOSHIB AIR CONDITION MODEL Secure NET WEIGHT The production SERIAL NO. Name of the m Address, city, 1440 Moo 5	A NER C C C C F 220-240V ~ 50H 220V ~ 60H 360 W 41 kg n year 2022 13200005 anufacturer Toshiba Carrier (Thailand) Co.,Ltd country Bandradi Industrial Bark		
Tivanon Road Amphur Muan Thailand. Importer for E TOSHI Address	ng, Pathoustina Park, g, Pathoumthani 12000, U BA CARRIER EUROPE S.A.S		
Route de Thil 01120 Montlu Importer for G	el FRANCE	4	
TOSHI Address Porsham Clo Roborough F United Kingd	BA CARRIER UK LTD. ose, Belliver Industrial Estate, Plymouth, Devon, PL6 7DB, Iom		
Toshiba Ca	rrier (Thailand) Co., Lt MADE IN THAILAN	] d.	
	X		
	107209057	3	

Figure AII.5: Nameplate indoor unit model: RAV-HM1601BTP-E

TOSHIBA	۹
AIR CONDITIONEI MODEL RA	R V-HM1601FT-E 220-240V~ 50Hz 220V~ 60Hz 180 W 59 kg
PRODUCTION YEAR	R 2022
SERIAL NO.	202A0001
Toshiba Carr	ier Corporation MADE IN JAPAN

Figure All.6: Nameplate indoor unit model: RAV-HM1601FT-E





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## APPENDIX III: PHOTO OF TEST SETUP



Figure AIII.1: Continuous/Discontinuous disturbance voltage test set-up



Figure AIII.2: Disturbance power test set-up



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Figure AIII.3: Harmonic current emission, Voltage fluctuation and flicker test set-up



Figure AIII.4: Electrostatic discharge test set-up



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Figure AIII.5: Injection current test set-up



Figure AIII.6: Fast transients, Surges, Voltage dips test set-up