


HEDY.七喜	HEDY Industry Automation Control	Doc. No.	HDIAC-RD-305	Doc. Ver.	V1.0
		Secret Level	secret	Temp. Ver.	V1.0
		Release Scope	HD700 size A project team		

<p>EMC TEST REPORT</p> <p>CONDUCTED EMISSION</p>
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Tested by : Liang Ma	Date of test : 2013-07-12
Report by: Liang Ma	Date of Issue : 2013-7-12
Report approved by : Liang Ma	Date of Issue : 2013-07-15
Signature : 	
Location of test : EMC Lab. Of Pubic Testing Centre, Building C, Innovation Park, Taohuayuan, Tiegang Reservoir, Xixiang, Bao 'an District, Shenzhen	

Product under test:

Full description	HD700 dirve
Model reference	20D00040
Serial number	/
Other details / Reasons for test	/

Version numbers:

Assembly	Version
HD700EP1	V3.0
HD700AC2	V3.0
HD700EC1	V3.0
HD700EP2	V0.0

Software versions:

Drive board	SH7215 Software versions: V1.09
Control board	R8C2B Software versions: V2.03

Result Summary:

The HD700A prototype meets the requirements for conducted emission.

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Test Site1–EMC Laboratory

<input type="checkbox"/> -	Test Area No. 1 – EMC test laboratory open area
<input type="checkbox"/> -	Test Area No. 2– On Site (<i>In situ</i>) Test
<input checked="" type="checkbox"/> -	Test Area No. 3–10m Chamber
<input type="checkbox"/> -	

Operating environment:

-Temperature:	24°C
-Relative humidity:	50%RH
-Atmospheric Pressure:	102Kpa

Test performed in accordance with Test procedure:

Test standard(s)	EN50081-2:1993 & EN61800-3:2004
Reference/Generic standard(s)	EN50081-2:1993 & EN61800-3:2004
Any special conditions or departures from the procedure	/

Test Level:

C3

Test Equipment:

Control Room - Conducted disturbance Test (10m part)				
Equipment	Manufacturer	Model	Serial No.	Due Date
Receiver	R&S	ESCI	100435	07/19/2013
LISN	schwarzbeck	NNLK8121	8121-529	07/19/2013

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Test arrangement:

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
150kHz – 30MHz	QuasiPeak; Average	10kHz	.01s	ESCI

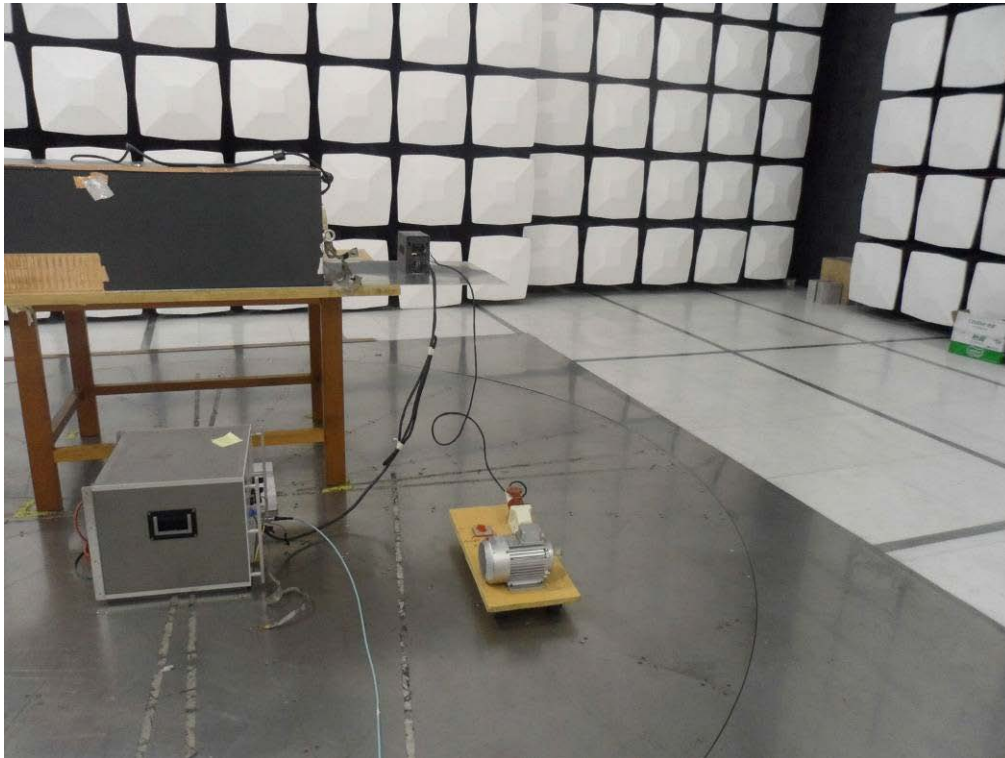
20D00040

Supply to drive: 200 V mains PE, L, N

Output: 50Hz

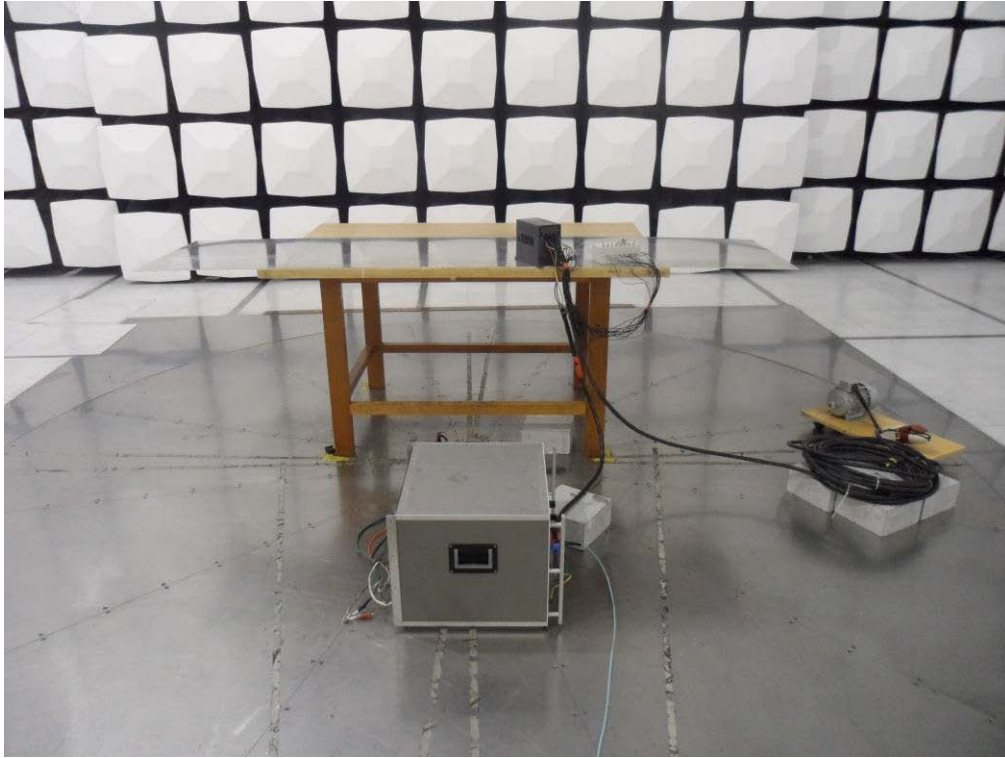
Load: 0.37kW motor with no load

Control: control by keyboard



Output: 3M

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Output: 20M

Result

For 20D00040:output-3M

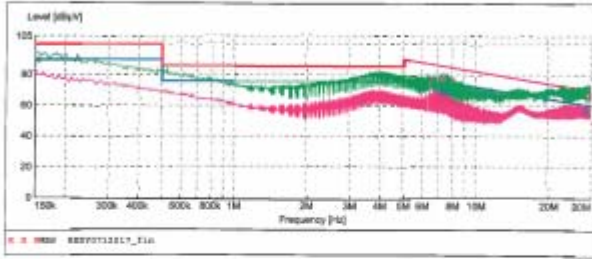
CENTRE TESTING INTERNATIONAL CORPORATION

RADIATED EMISSION

SUT: 3806048
 Manufacturer: HEDY
 Operating Condition: AC230V/50Hz
 Test Site: 10M CSAMSHH
 Operator: DSE
 Test Specification: NO LOAD
 Comment:
 Start of Test: 12/07/2013 / 12:18:59PM

SCAN TABLE: "VOLTAGE 10-30M FIN"

Short Description: 10k-30M Field
 Unit: dBµV
 Detector: Modg:



MEASUREMENT RESULT: "HEDY0712017_fin"

12/07/2013 12:22PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE
0.154000	90.30	1.4	100	9.7	QP	L1	GND
29.388000	67.40	2.7	70	2.8	QP	L1	GND
29.450000	67.40	2.7	70	2.7	QP	L1	GND
29.670000	67.30	2.7	70	2.8	QP	L1	GND
29.698000	67.40	2.7	70	2.7	QP	L1	GND
29.738000	67.40	2.7	70	2.7	QP	L1	GND
29.942000	67.40	2.7	70	2.6	QP	L1	GND



MEASUREMENT RESULT: "HEDY0712017_fin2"

12/07/2013 12:22PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE
0.150000	82.20	1.4	90	7.8	AV	L1	GND
7.174000	80.40	2.3	76	7.6	AV	L1	GND
7.294000	68.70	2.3	76	7.1	AV	L1	GND
7.324000	67.80	2.3	76	7.9	AV	L1	GND
7.450000	68.30	2.3	76	7.0	AV	L1	GND
7.646000	67.70	2.3	76	7.6	AV	L1	GND
28.030000	56.60	2.7	60	3.8	AV	L1	GND
28.886000	56.90	2.7	60	3.5	AV	L1	GND

MEASUREMENT RESULT: "HEDY0712017_fin2"

(continued)

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE
28.994000	57.10	2.7	60	3.3	AV	L1	GND
29.478000	56.90	2.7	60	3.3	AV	L1	GND



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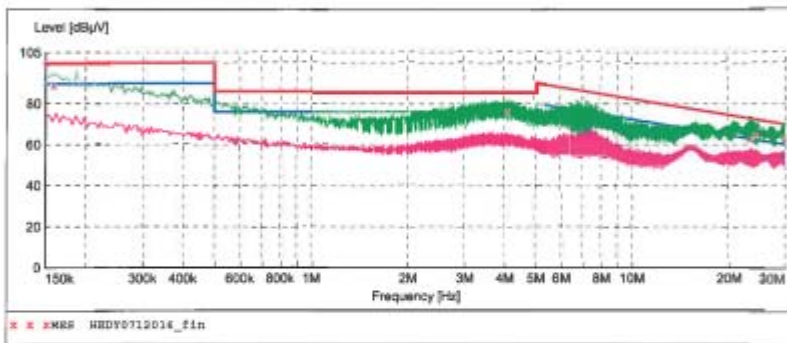
CENTRE TESTING INTERNATIONAL CORPORATION

RADIATED EMISSION

EUT: 20D00040
 Manufacturer: HEDY
 Operating Condition: AC230V/50Hz
 Test Site: 10M CHAMBER
 Operator: FEZ
 Test Specification: NO LOAD
 Comment:
 Start of Test: 12/07/2013 / 12:15:00PM

SCAN TABLE: "VOLTAGE 10-30M FIN"

Short Description: 10k-30M Field
 Unit: dBµV
 Detector: Mode:



MEASUREMENT RESULT: "HEDY0712016_fin"

12/07/2013 12:17PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE
0.158000	89.30	1.4	100	10.7	QP	N	GND
4.050000	76.10	2.2	86	9.9	QP	N	GND
23.366000	63.00	2.7	73	9.8	QP	N	GND
24.434000	65.30	2.7	72	7.0	QP	N	GND
24.514000	64.70	2.7	72	7.6	QP	N	GND
29.918000	63.50	2.7	70	6.5	QP	N	GND

MEASUREMENT RESULT: "HEDY0712016_fin2"

12/07/2013 12:17PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE
7.214000	66.70	2.3	76	9.2	AV	N	GND
7.254000	66.90	2.3	76	8.9	AV	N	GND
7.294000	67.10	2.3	76	8.7	AV	N	GND
7.334000	66.80	2.3	76	8.9	AV	N	GND
29.606000	54.10	2.7	60	6.0	AV	N	GND



For 20D00040:output-20M

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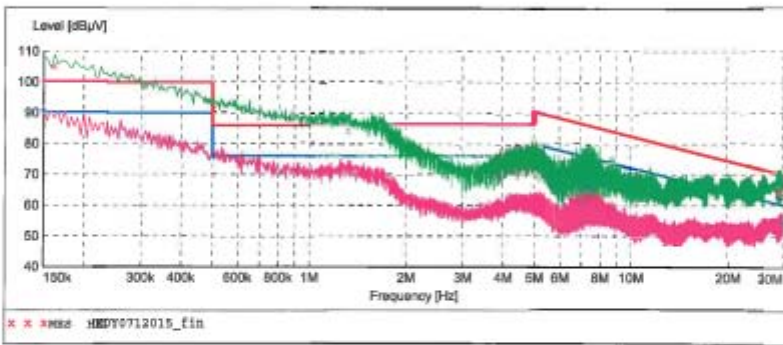
CENTRE TESTING INTERNATIONAL CORPORATION

RADIATED EMISSION

EUT: 20D00040
 Manufacturer: HEDY
 Operating Condition: AC230V/50Hz
 Test Site: 10M CHAMBER
 Operator: PRZ
 Test Specification: NO LOAD
 Comment:
 Start of Test: 12/07/2013 / 12:08:28PM

SCAN TABLE: "VOLTAGE 10-30M FIN"

Short Description: 10k-30M Field
 Unit: dBuV
 Detector: Mode:



MEASUREMENT RESULT: "HEDY0712015_fin"

Frequency MHz	Level dBuV	Transd dB	Limit dB	Margin dB	Detector	Line	PE
0.162000	105.10	1.4	100	-5.1	QP	N	GND
0.502000	91.50	1.5	86	-5.5	QP	N	GND
1.322000	84.20	1.9	86	1.8	QP	N	GND
28.846000	64.20	2.7	70	6.2	QP	N	GND
29.198000	65.90	2.7	70	4.8	QP	N	GND
29.414000	64.00	2.7	70	6.2	QP	N	GND

MEASUREMENT RESULT: "HEDY0712015_fin2"

Frequency MHz	Level dBuV	Transd dB	Limit dB	Margin dB	Detector	Line	PE
0.150000	90.60	1.4	90	-0.6	AV	N	GND
0.506000	75.60	1.6	76	0.4	AV	N	GND
1.390000	70.60	1.9	76	5.4	AV	N	GND
7.370000	66.20	2.3	76	9.5	AV	N	GND
7.410000	65.90	2.3	76	9.7	AV	N	GND
29.654000	54.10	2.7	60	6.0	AV	N	GND



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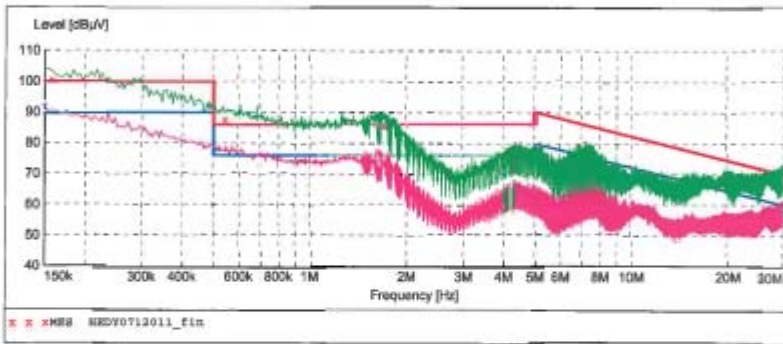
CENTRE TESTING INTERNATIONAL CORPORATION

RADIATED EMISSION

EUT: 20D00040
 Manufacturer: HEDY
 Operating Condition: AC230V/50Hz
 Test Site: 10M CHAMBER
 Operator: PRE
 Test Specification: NO LOAD
 Comment:
 Start of Test: 12/07/2013 / 11:27:44AM

SCAN TABLE: "VOLTAGE 10-30M FIN"

Short Description: 10k-30M Field
 Unit: dBuV
 Detector: Mode:



MEASUREMENT RESULT: "HEDY0712011_fin"

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.158000	100.50	1.4	100	-0.5	QP	L1	GND
0.542000	87.70	1.6	86	-1.7	QP	L1	GND
1.606000	86.30	1.9	86	-0.3	QP	L1	GND
1.678000	85.50	1.9	86	0.5	QP	L1	GND
1.694000	85.30	1.9	86	0.7	QP	L1	GND

MEASUREMENT RESULT: "HEDY0712011_fin2"

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	92.70	1.4	90	-2.7	AV	L1	GND
0.510000	78.00	1.6	76	-2.0	AV	L1	GND
1.618000	75.10	1.9	76	0.9	AV	L1	GND
1.630000	74.90	1.9	76	1.1	AV	L1	GND
1.642000	73.30	1.9	76	2.7	AV	L1	GND
29.994000	59.00	2.7	60	2.0	AV	L1	GND



PASS.
 20D00040-output 3M meets the requirements of conducted emission.
 output cables more than 3 m:Suggest increase the EMI filter.
 EMI filter model: corcom-20VSK6

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Further notes, actions if required:

No further actions needed.

APPENDIX A

EMISSIONS STANDARD FOR RADIATED RADIO FREQUENCY TESTING:

EN55011 CLASS B

The following table shows the limits for the given frequency ranges required to meet the above standard:

Frequency band (MHz)	Quasi peak dB(uV)	Average dB(uV)
$0.15 \leq f < 0.50$	66 Decreases with log of frequency down to 56	56 Decreases with log of frequency down to 46
$0.50 \leq f \leq 5.0$	56	46
$5.0 < f < 30.0$	60	50

EN55011 CLASS A

The following table shows the limits for the given frequency ranges required to meet the above standard:

Frequency band (MHz)	Quasi peak dB(uV)	Average dB(uV)
$0.15 \leq f < 0.50$	79	66
$0.50 \leq f \leq 5.0$	73	60
$5.0 < f < 30.0$	73	60

C3 (I ≤ 100A)

Frequency band (MHz)	Quasi peak dB(uV)	Average dB(uV)
$0.15 \leq f < 0.50$	100	90
$0.50 \leq f \leq 5.0$	86	76
$5.0 < f < 30.0$	90 Decreases with log of frequency down to 70	80 Decreases with log of frequency down to 60

C3 (I > 100A)

Frequency band (MHz)	Quasi peak dB(uV)	Average dB(uV)
$0.15 \leq f < 0.50$	130	120

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$0.50 \leq f \leq 5.0$	125	115
$5.0 < f < 30.0$	115	105