

Test report

Customer:

Identive GmbH

Oskar-Messter-Str. 13
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Fax: +49 89 9595-595512

EMC test report

120276-AU01+E03



Identive GmbH

Contact Card reader

CLOUD 2700 F



The test results refer exclusively
to the model tested.

This report must not be copied without
the written authorization by the lab.
Revision: 1.0



Deutsche
Akkreditierungsstelle
D-PL-12155-01-01

EMV **TESTHAUS** GmbH

Gustav-Hertz-Straße 35
94315 Straubing
Tel.: +49 9421 56868-0
Fax: +49 9421 56868-100
Email: company@emv-testhaus.com

Accreditation:



VCCI measurement facility numbers:
VCCI Supporting Member No: 719
R-834 valid until 30.06.2014
C-651 valid until 30.09.2012

Location of Testing:

EMV **TESTHAUS** GmbH
Gustav-Hertz-Straße 35
94315 Straubing

The technical accuracy is guaranteed through the quality management of the
EMV **TESTHAUS** GmbH.



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1. Test regulation

Emission

VCCI V-2 / 2011.04

Rules for voluntary control measures

EN 55022:2010
+AC:2011

Information technology equipment Radio
disturbance characteristics –
Limits and methods of measurement

☐ Class A:

Class A ITE is a category of all other ITE which satisfies the Class A ITE limits but not the Class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use.

Warning:

This is a class A product. In a domestic environment this product may cause radio interferences in which case the user may be required to take adequate measures.

☒ Class B

Class B ITE is a category of apparatus which satisfies the class B disturbance limits. Class B ITE is intended primarily for use in the domestic environment and may include

- equipment with no fixed place of use; for example portable equipment powered by built-in batteries;
- telecommunication terminal equipment powered by a telecommunication network;
- personal computers and auxiliary connected equipment.



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Includes the following tests:

Measurement of the conducted disturbance at mains ports in a frequency range from 150 kHz to 30 MHz.

Measurement of the conducted common mode disturbance at telecommunication ports in a frequency range from 150 kHz to 30 MHz.

Measurement of radiated disturbance in a frequency range from 30 MHz to 1GHz.

Measurement of radiated disturbance in a frequency range from 1GHz to max. 6 GHz.

Deviation of regulations and standards: No



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Not applied tests:

EN 55022:2010
+AC:2011

Measurement of radiated disturbance in a frequency range from 1GHz to max. 6 GHz.

Remark:

In pursuant to customer information the EUT has no internal frequencies above 108MHz.

EN 55022:2010
+AC:2011

Measurement of the conducted common mode disturbance at telecommunication ports in a frequency range from 150 kHz to 30 MHz.

Remark:

The EUT has no telecommunication ports.



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2. Equipment under test

Product type: Contact Card reader

Model name: CLOUD 2700 F

Serial number: 5399YYWWMNNNNN

Manufacturer: Identive Technologies India Pvt., Ltd.

Operational description of the EUT: Continuously reading



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Photo documentation



Picture 1: EUT



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3. Test configuration and mode of operation

Test configuration

Numbers:	Description:	Serial No.:
1	EUT: Identive CLOUD 2700F	5399YYWWMNNNN
1	Fujitsu test notebook	N/A
1	Identive chip card	N/A

Mode of operation

The EUT was tested in the following mode of operation:

Settings: Continuously reading

Applied Software: CE Test V1.0.0, build 1

Failure criterion for test of immunity from disturbances:

It was observed whether the EUT is influenced in any form or program interruptions occurred.



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4. Measurement of conducted emission

according to EN 55022 Class B

Location of measurement

Description	Manufacturer	Inventory No.
Shielded chamber	Siemens - Matsushita	E00107

Measurement equipment

	Description	Manufacturer	Inventory No.
<input type="checkbox"/>	ESH 3	Rohde & Schwarz	E00007
<input type="checkbox"/>	ESCS 30	Rohde & Schwarz	E00003
<input type="checkbox"/>	ESCI	Rohde & Schwarz	E00001
<input checked="" type="checkbox"/>	ESU	Rohde & Schwarz	W00002
<input type="checkbox"/>	ESH3 Z2	Rohde & Schwarz	E00028
<input type="checkbox"/>	ESH 2-Z5	Rohde & Schwarz	E00004
<input checked="" type="checkbox"/>	ESH 2-Z5	Rohde & Schwarz	E00005
<input type="checkbox"/>	ENY 41	Rohde & Schwarz	E00041
<input type="checkbox"/>	ENY 22	Rohde & Schwarz	E00042
<input type="checkbox"/>	ISN LAN	EMV TESTHAUS GmbH	E00357

Test related measurement inaccuracies have to be taken into consideration when evaluating the test results.
All used test instrument as well as the test accessories are calibrated at regular intervals.



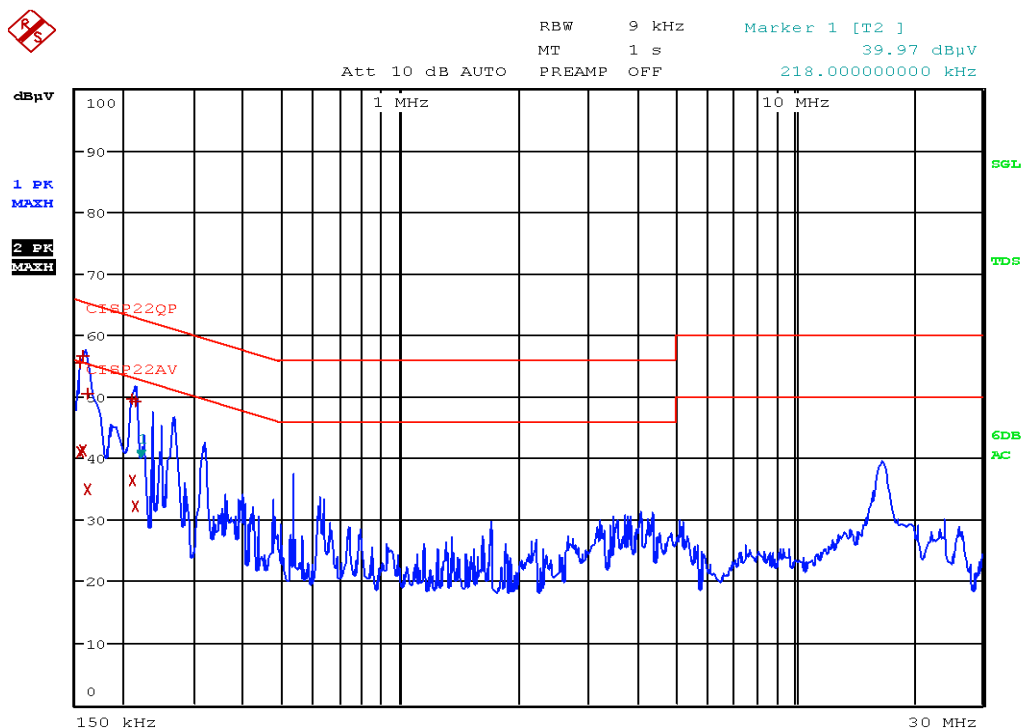
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Picture 2: Measurement report of conducted emission (phase L1)



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Trace	Frequency	Level (dBuV)	Detector	Delta Limit/dB
2	154.000000000 kHz	41.04	Average	-14.74
1	154.000000000 kHz	55.66	Quasi-Peak	-10.12
2	158.000000000 kHz	41.19	Average	-14.38
1	158.000000000 kHz	56.62	Quasi-Peak	-8.95
2	162.000000000 kHz	34.90	Average	-20.46
1	162.000000000 kHz	50.62	Quasi-Peak	-14.74
2	210.000000000 kHz	36.41	Average	-16.80
1	210.000000000 kHz	49.73	Quasi-Peak	-13.48
2	214.000000000 kHz	32.35	Average	-20.70
1	214.000000000 kHz	49.29	Quasi-Peak	-13.76

Picture 3: Frequency table of conducted emission (Phase L1)

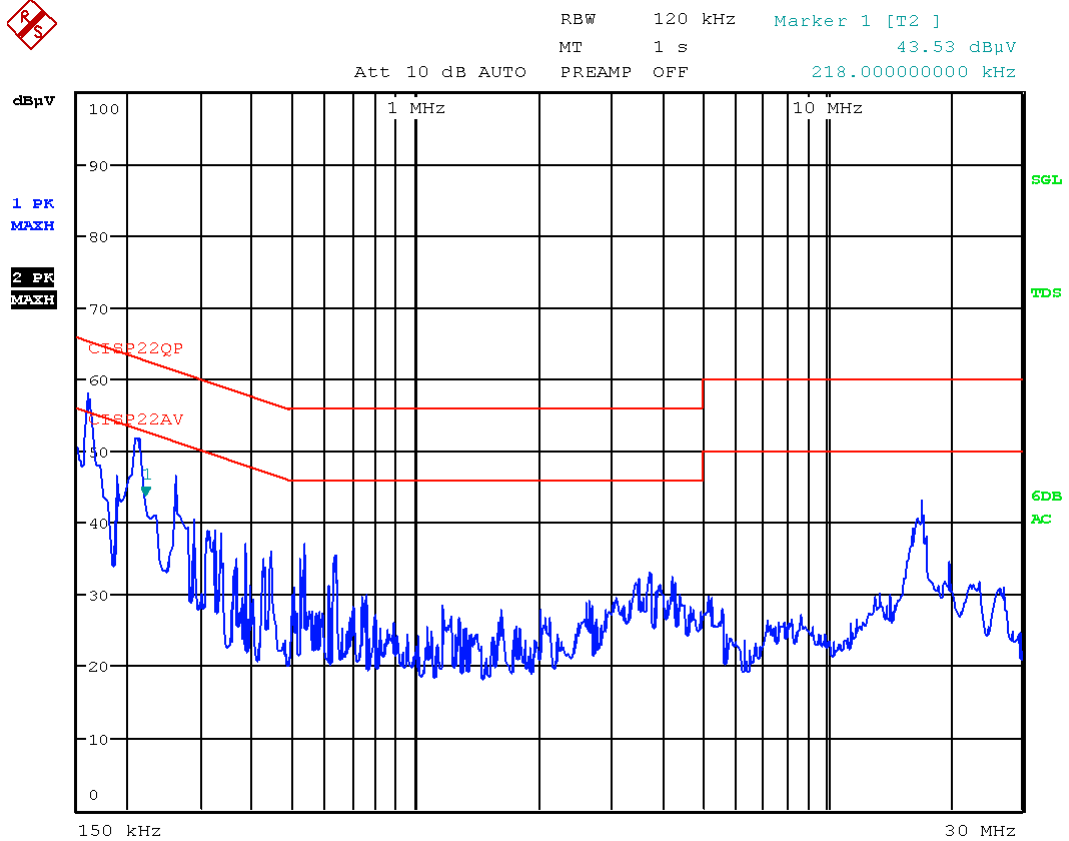


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Picture 4: Measurement report of conducted emission (Neutral N)



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Trace¶	Frequency¶	Level (dBµV)¶	Detector¶	Delta Limit/dB¶
2¶	154.000000000 · kHz¶	· 41.04¶	Average¶	· -14.74
1¶	154.000000000 · kHz¶	· 55.66¶	Quasi-Peak¶	· -10.12
2¶	158.000000000 · kHz¶	· 41.19¶	Average¶	· -14.38
1¶	158.000000000 · kHz¶	· 56.62¶	Quasi-Peak¶	· -8.95
2¶	162.000000000 · kHz¶	· 34.90¶	Average¶	· -20.46
1¶	162.000000000 · kHz¶	· 50.62¶	Quasi-Peak¶	· -14.74
2¶	210.000000000 · kHz¶	· 36.41¶	Average¶	· -16.80
1¶	210.000000000 · kHz¶	· 49.73¶	Quasi-Peak¶	· -13.48
2¶	214.000000000 · kHz¶	· 32.35¶	Average¶	· -20.70
1¶	214.000000000 · kHz¶	· 49.29¶	Quasi-Peak¶	· -13.76

Picture 5: Frequency table of conducted emission (Neutral N)



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Picture 3: Test setup conducted emission



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Test result

The requirements according to EN 55022 Class B are

☒ **Kept**

☐ **Not kept**

Information about measurement uncertainty is on page 22.

Comments:



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5. Measurement of radiated emission

according to EN 55022 Class B

Procedure of radiated emission measurement:

- ☒ Scan with max-peak detector in 3 m CDC
- ☒ Final CISPR measurement with quasi peak detector on 10m open site area.

Location of measurement

Description	Manufacturer	Inventory No.
CDC	Albatross Projects	E00026
Open site area	EMV TESTHAUS GmbH	E00354

Measurement equipment

	Description	Manufacturer	Inventory No.
<input checked="" type="checkbox"/>	ESCS 30 (FF)	Rohde & Schwarz	E00003
<input checked="" type="checkbox"/>	ESCI (CDC)	Rohde & Schwarz	E00001
<input type="checkbox"/>	ESU26	Rohde & Schwarz	W00002
<input checked="" type="checkbox"/>	VULB 9163 (CDC)	Schwarzbeck	E00013
<input checked="" type="checkbox"/>	VULB 9160 (FF)	Schwarzbeck	E00011
<input type="checkbox"/>	MDS 20	Rohde & Schwarz	E00132
<input type="checkbox"/>	MDS 21	Rohde & Schwarz	E00010

Test related measurement inaccuracies have to be taken into consideration when evaluating the test results.
All used test instrument as well as the test accessories are calibrated at regular intervals.



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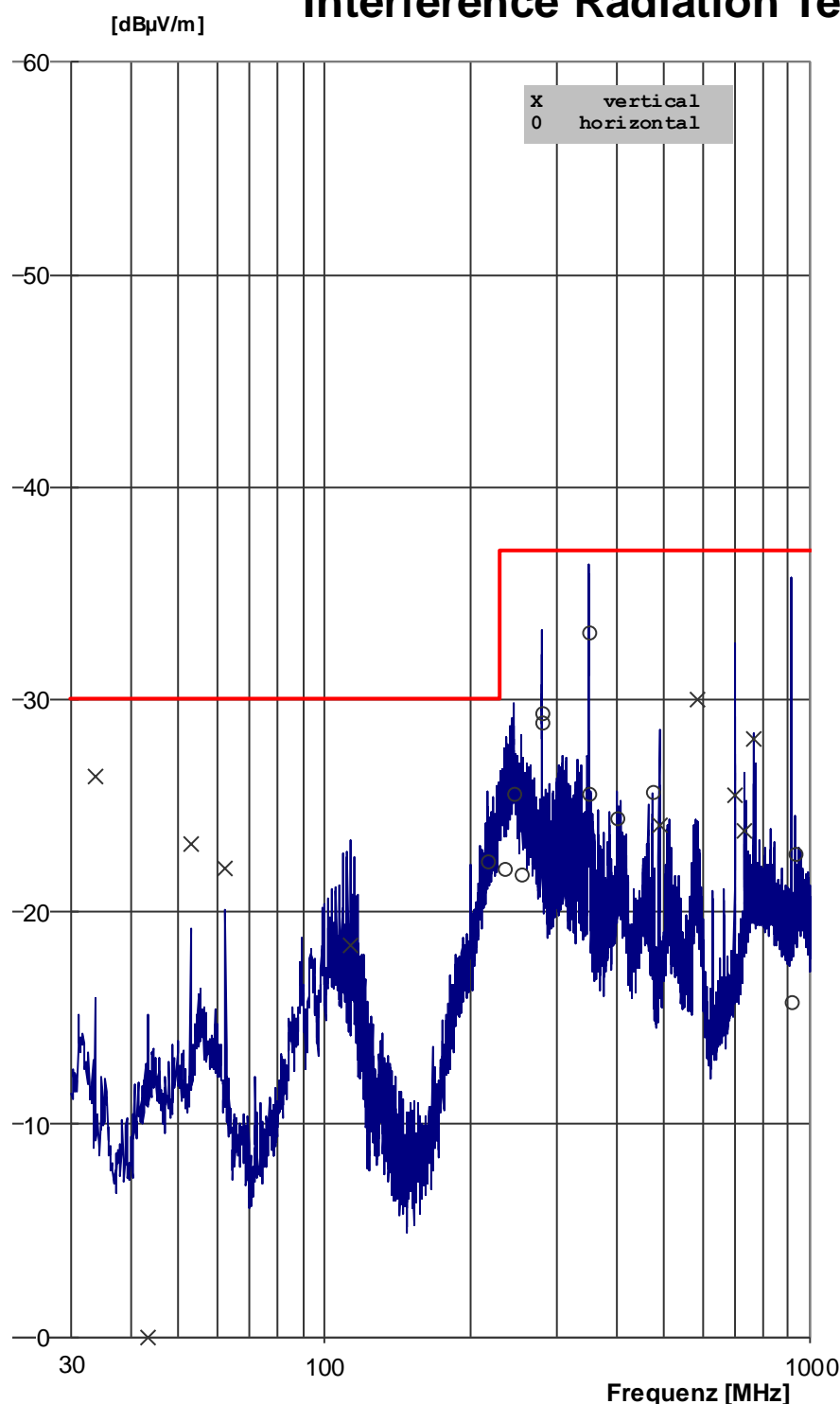
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Interference Radiation Test



REGULATIONS:
EN 55022 Class B
PEAK / CISPR

TEST EQUIPMENT:
R&S ESCS30 (E00003)
VULB 9163 (E00013)

ORDER NO.:
120276-AU01+E01

EUT:
Identive Technologies India
Pvt., Ltd.
EMC test for Contact Card
Reader CE, FCC + IC, VCCI,,
ACMA

OPERATION MODE:
Continuously reading

TEST FACILITY:
EMV TESTHAUS GmbH
Gustav-Hertz-Straße 35
94315 Straubing

DATE / TIME:
2012-11-08
8°C 42% 97kPa

TEST ENGINEER:
Fabian Schmidt

120276-AU01+E01 CDC 01.E10

Picture 4: Measurement report of radiated emission



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Interference Radiation Test

Freq. [MHz]	U_Rec [dBµV/m]	Limit [dBµV/m]	Corr. [dB]	U_Ant. [dBµV]	delta_U [dB]	Turn- table	Antenna	Pol.	Remark
									120276-AU01+E01 CDC 01.F10
33,60	26,4	30,0	12,6	13,8	3,6	18°	100 cm	V	
43,20	0,0	30,0	14,6	-14,6	30,0	0°	100 cm	V	
52,80	23,2	30,0	14,6	8,7	6,8	182°	128 cm	V	
62,40	22,0	30,0	13,0	9,0	8,0	86°	100 cm	V	
112,80	18,4	30,0	6,3	12,1	11,6	95°	100 cm	V	
216,00	22,4	30,0	13,1	9,2	7,6	48°	255 cm	H	
233,70	22,1	37,0	14,1	8,0	14,9	190°	250 cm	H	
244,50	25,6	37,0	10,5	15,2	11,4	104°	100 cm	H	
253,90	21,7	37,0	14,4	7,4	15,3	282°	250 cm	H	
278,80	29,3	37,0	14,7	14,7	7,7	299°	374 cm	H	
279,90	29,0	37,0	10,3	18,7	8,0	116°	100 cm	H	
348,70	33,2	37,0	11,8	21,4	3,8	83°	112 cm	H	
349,30	25,6	37,0	16,9	8,6	11,5	73°	250 cm	H	
400,00	24,4	37,0	18,4	6,0	12,6	73°	250 cm	H	
473,20	25,6	37,0	19,6	6,1	11,4	154°	250 cm	H	
487,90	24,1	37,0	13,7	10,4	12,9	127°	100 cm	V	
583,00	30,0	37,0	22,0	8,1	7,0	230°	100 cm	V	
697,00	25,5	37,0	14,8	10,7	11,5	85°	100 cm	V	
731,90	23,8	37,0	23,5	0,3	13,2	335°	138 cm	V	
766,70	28,2	37,0	24,1	4,1	8,8	137°	100 cm	V	
911,00	15,8	37,0	19,2	-3,4	21,2	27°	100 cm	H	
930,00	22,8	37,0	26,8	-4,0	14,2	312°	245 cm	H	

Picture 5: Frequency table of radiated emission



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Picture 6: Test setup of radiated emission



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Test result

The requirements according to EN 55022 Class B are

☒ **Kept**

☐ **Not kept**

Information about measurement uncertainty is on page 22.

Comments:



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6. Measurement uncertainty

Standard	Description	Max. deviation	k=
EN 55022	Conducted emission AMN (150 kHz to 30 MHz)	+/- 4,1 dB	2
EN 55022	Conducted emission ISN LAN (150 kHz to 30 MHz)	+/- 4,1 dB	2
EN 55022	Radiated emission open field (30 MHz to 300 MHz) (300 MHz to 1 GHz)	+/- 5,4 dB +/- 4,7 dB	2
EN 55022	Radiated emission absorber chamber (1 GHz to 6 GHz)	+/- 4,5 dB	2

Comment: The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k. If k=2 the value of the measurands lies within the assigned range of values with a probability of 95 %.



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7. Summary

The EMC regulations according to the marked specifications are

☒ **Kept**

The Equipment under Test fulfills the general approval requirements mentioned.

☐ **Not kept**

The Equipment under Test does not fulfill the general approval requirements mentioned.

Straubing, November 22nd, 2012



Fabian Schmidt
Test engineer
EMV **TESTHAUS** GmbH



Markus Biberger
Technical executive
EMV **TESTHAUS** GmbH



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