ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR SUPER REGENERATIVE RECEIVER

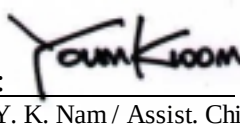
Test report file number	**: E025R-039**
Applicant	**: Menix Co., Ltd.**
Address	**: 1694-1, 4 Industrial Area, Shinil-dong, Taeduk-gu, Taejon, Korea**
Manufacturer	**: Menix Co., Ltd.**
Address	**: 1694-1, 4 Industrial Area, Shinil-dong, Taeduk-gu, Taejon, Korea**
Type of Equipment	**: SECURITY CAMERA**
FCC ID	**: QDYIC-100M**
Model / Type No.	**: IC-100M**
Serial number	**: N/A**
Total page of Report	**: 13 pages (including this page)**
Date of Incoming	**: April 30, 2002**
Date of issuing	**: May 23, 2002**

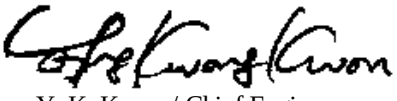
SUMMARY

The equipment complies with the regulation; ***FCC CFR 47 PART 15 SUBPART B, Certification.***

This test report contains only the results of a single test of the sample supplied for the examination.

It is not a general valid assessment of the features of the respective products of the mass-production.

Prepared by: 
Y. K. Nam / Assist. Chief Engineer
EMC Dept.
ONETECH Corp.

Reviewed by: 
Y. K. Kwon / Chief Engineer
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1. VERIFICATION OF COMPLIANCE

APPLICANT	: Menix Co., Ltd.
ADDRESS	: 1694-1, 4 Industrial Area, Shinil-dong, Taeduk-gu, Taejon, Korea
CONTACT PERSON	: Gyu-Cheol, Kim / Manager
TELEPHONE NO	: +82-42-934-6544
FCC ID	: QDYIC-100M
MODEL NO/NAME	: IC-100M
SERIAL NUMBER	: N/A
DATE	: May 23, 2002

DEVICE TYPE	UNINTENTIONAL RADIATOR
E.U.T. DESCRIPTION	SECURITY CAMERA - SUPER REGENERATIVE RECEIVER
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4/1992
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. GENERAL INFORMATION

2.1 Product Description

The Menix Co., Ltd., Model IC-100M (refer to the EUT in this report) is a SECURITY CAMERA that receives the RF signal from **the Remote Control, M/N: RC-200, FCC ID: QDYRC-200** which was manufactured by Menix Co., Ltd. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic – Non Coated
RECEIVING FREQUENCY	311.06 MHz
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	12.288 MHz, 4.8358 MHz on the main board
NUMBER OF LAYERS	Main Board: 4 Layers, Camera Board: 2 Layers
EXTERNAL CONNECTOR	DC Inlet, Video Jack
POWER INPUT VOLTGAE	Adapter Used (Input: 120Vac, 60Hz, 8W, Output: 9Vdc, 500mA)

Model Differences:

-. None

2.2 Related Submittal(s) / Grant(s)

Original submittal only.

2.3 Test System Details

The model numbers for all the equipments, which were used in the tested system is:

Model	Manufacturer	FCC ID	Description	Connected to
IC-100M	Menix Co., Ltd.	QDYIC-100M	Security Camera (EUT)	CCTV
SR-0950U	Seorim Electronics Co., Ltd.	N/A	AC Adapter	EUT
PVM-95	SONY Corp.	N/A	CCTV Monitor	EUT

2.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4/1992. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.5 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Si, Kyounggi-Do, 464-080, Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)

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3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
MAIN B/D	Jungang & Digital Korea	J-2	N/A

3.2 EUT exercise Software

1) The EUT was operated by signal from the remote control.

2) The EUT and peripheral equipments were connected as follows;

The video output jack on the EUT was connected to the CCTV Monitor by using RCA Cable and video input jack on the EUT was connected to Camera by using the video signal cable (6Pin).

The EUT was operated at 2 modes such as armed mode and emergency mode.

The armed mode - When one press “Armed” button on the remote control, it does has a feature of detecting intruder and it does take and store the images when it finds a moving intruder.

The emergency mode - camera can take the pictures of “Emergency situation” by pressing the “Emergency” button on the remote control.

Above modes were tested, but the worst emission levels were recorded in this report.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
Security Camera (EUT)	N	N	1.5 (P), 1.2 (D)
CCTV Monitor	N	N	1.2 (P), 1.2 (D)

* The marked “(P)” means the Power Cable and “(D)” means the Data Cable.

3.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
Security Camera (EUT)	N	N/A	Y	BOTH END
CCTV Monitor	N	N/A	Y	BOTH END

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3.5 Equipment Modifications

-. None

3.6 Configuration of Test System

Line Conducted Emission Test:

The EUT used AC Adapter, so AC Adapter was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4/1992 7.2.3 to determine the worse operating conditions.

Radiated Emission Test:

Preliminary radiated emission test was conducted using the procedure in ANSI C63.4/1992 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.

Coherent Test:

During Radiated Emission Tests, H.P. signal generator model no: 8657A was used to radiate an unmodulated CW signal to EUT at 311.06 MHz in order to cohere the individual components of the characteristic broadband emissions from EUT.

Antenna-conducted Power Measurement:

The antenna of the EUT was built in on the PCB, so a terminating resistor of an antenna connected to the antenna input terminals of the EUT cannot be connected.

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4. PRELIMINARY TEST

4.1 Conducted Emission Test

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Displaying Mode	
Recording and Displaying Mode	X

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Displaying Mode	
Recording and Displaying Mode	X

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5. FINAL RESULT OF MEASURMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level.

5.1 Conducted Emission Test

Humidity Level : 42 % Temperature : 24 ºC

Limits apply to : FCC CFR 47, PART 15, SUBPART B (SECTION 15.107)

Type of Test : CLASS B

Result : PASSED BY –5.45 dB at 9.80 MHz

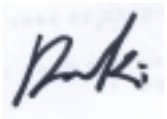
EUT : SECURITY CAMERA (RECEIVER) Date: May 20, 2002

Operating Condition : Recording and Displaying Mode

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Power Line Conducted Emission			**FCC CLASS B**	
Frequency (MHz)	**Amplitude (dBuV)**	**Conductor**	**Limit (dBuV)**	**Margin (dB)**
6.14	24.32	NEUTRAL	48.00	-23.68
9.80	42.55	HOT	48.00	-5.45
12.29	34.05	HOT	48.00	-13.95
23.42	42.22	HOT	48.00	-5.78
28.57	36.81	HOT	48.00	-11.19
29.05	35.44	NEUTRAL	48.00	-12.56

Line Conducted Emission Tabulated Data



Tested by: Dan-Gi, Lee / Test Engineer

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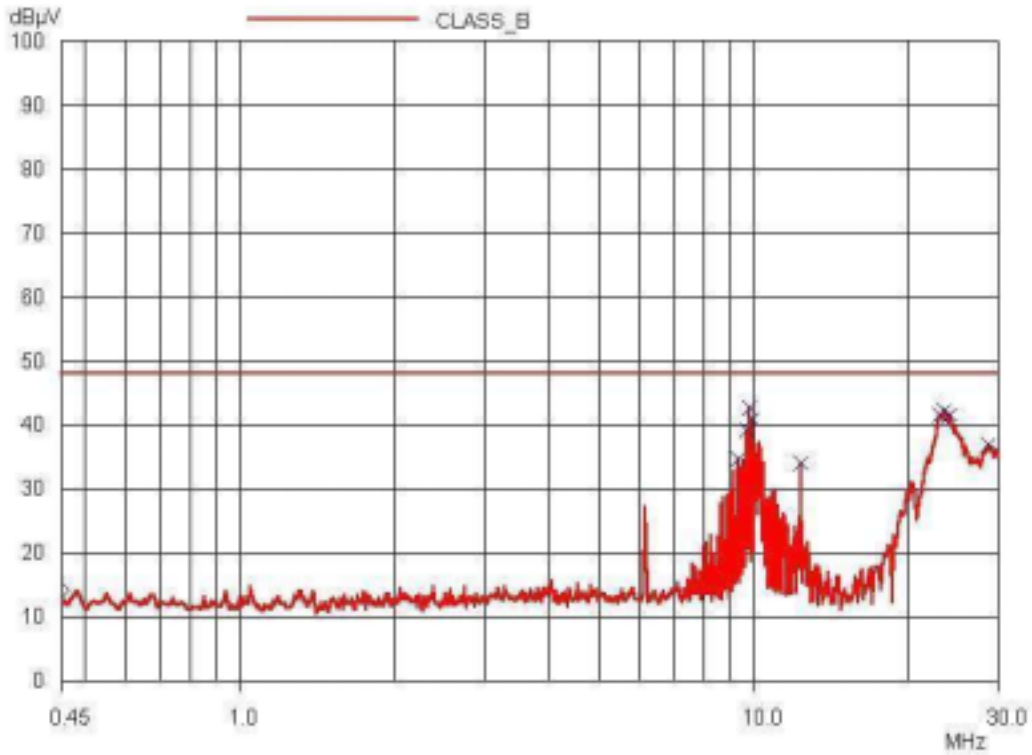
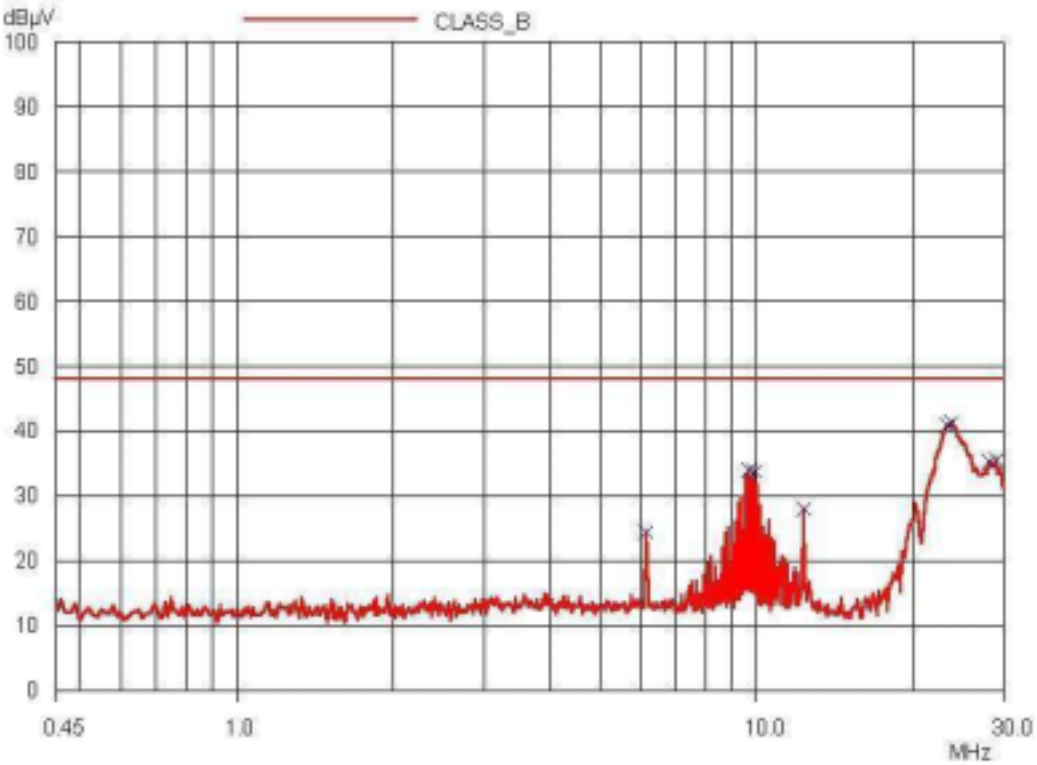


HOT LINE



NEUTRAL LINE

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5.2 Radiated Emission Test

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 45 % Temperature : 23ºC

Limits apply to : FCC CFR 47, PART 15, SUBPART B (SECTION 15.109)

Type of Test : CLASS B

Result : PASSED BY – 5.50 dB at 61.49 MHz

EUT : SECURITY CAMERA (RECEIVER) Date: May 20, 2002

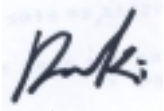
Operating Condition : Recording and Displaying Mode

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

Distance : 3 Meter

Radiated Emission		Ant	Correction Factors		Total	FCC CLASS B	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36.76	17.30	V	10.83	0.81	28.94	40.00	-11.06
49.38	14.40	V	11.09	0.92	26.41	40.00	-13.59
55.31	16.00	V	10.54	0.98	27.52	40.00	-12.48
61.49	23.90	V	9.61	0.99	34.50	40.00	-5.50
79.89	16.10	V	6.38	1.00	23.48	40.00	-16.52
86.04	18.80	V	7.53	1.10	27.43	40.00	-12.57
92.18	17.20	V	9.04	1.11	27.35	43.50	-16.15
135.29	13.90	V	13.02	1.29	28.21	43.50	-15.29
159.90	15.30	V	15.02	1.38	31.70	43.50	-11.80
171.97	12.80	V	15.79	1.43	30.02	43.50	-13.48
311.06	7.30	H	14.82	2.07	24.19	43.50	-19.31

Radiated Emission Tabulated Data



Tested by: Dan-Gi, Lee / Test Engineer

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6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)

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7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	OCT/01	12MONTH	■
2.	Test receiver	R/S	ESHS10	834467/007	APR/02	12MONTH	■
3.	Spectrum analyzer	HP	8568B	3026A0226	APR/02	12MONTH	■
4.	RF preselector	HP	85685A	3107A01264	APR/02	12MONTH	■
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	APR/02	12MONTH	■
6.	Dipole Antenna	EMCO	3121C	9107-745	JUN/01	12MONTH	
7.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	APR/02	12MONTH	■
8.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	APR/02	12MONTH	■
10.	Horn Antenna	EMCO	3115	9509-4563	MAR/02	12MONTH	
11.	Signal Generator	HP	8657A	3134A-03919	JUN/01	12MONTH	■
12.	LISN	EMCO	3825/2	9109-1867 9109-1869	JUL/01	12MONTH	■
13.	RF Amplifier	HP	8447F	3113A04554	JUN/01	N/A	
14.	Spectrum Analyzer	HP	8561E	3350A00546	SEP/01	12MONTH	■
15.	Spectrum Analyzer	HP	8591A	3131A02312	APR/02	12MONTH	
16.	Computer System Hard disk drive	HP	98581C 9153C	98543A CMC762Z9153	N/A N/A	N/A N/A	■ ■
17.	Plotter	HP	7475A	30052 22986	N/A	N/A	■
18.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	■
19.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	■
20.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	■

* Remark ■ means used equipment.

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