

FCC/MELLON OCT 13 1998

EMC TEST REPORT

No. 9829075E

Emission of electromagnetic disturbances

EQUIPMENT UNDER TEST

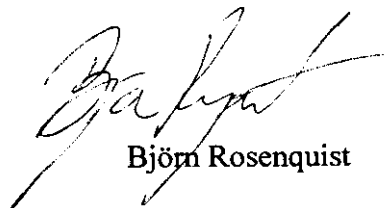
Equipment : Remote radio control
Type / model : RC400
Manufacturer : Scanreco AB
Tested by request of : Scanreco AB

SUMMARY

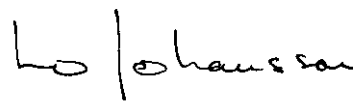
The equipment complies with the requirements according to FCC 15C

Date of issue: August 13, 1998

Tested by:


Björn Rosenquist

Approved by:


Lars-Olov Johansson

CONTENTS

	Page
1. Client information.....	3
2. Equipment under test (EUT).....	3
2.1 Identification of the EUT	3
3. Test specifications.....	3
3.1 Standards.....	3
3.2 Purpose of the test.....	3
4. Test summary.....	4
5. Field strength of fundamental frequency, transmitter	5
5.1 Operating environment.....	5
5.2 Test setup and test procedure	5
5.3 Measurement uncertainty	5
5.4 Test equipment.....	5
5.5 Test protocol	6
6. Radiated spurious emission, transmitter	7
6.1 Operating environment.....	7
6.2 Test setup and test procedure	7
7.3 Measurement uncertainty	7
7.4 Test equipment.....	7
7.5 Test protocol, transmitting mode	8

1. CLIENT INFORMATION

The EUT has been tested by request of

Company: Scanreco AB
Box 47144
100 74 Stockholm

Name of contact: Björn Askestig

Telephone: +46 8 744 02 20

Telefax: +46 8 744 01 95

2. EQUIPMENT UNDER TEST (EUT)

2.1 Identification of the EUT

Equipment: Radio remote control

Type/Model: RC 400

Brand name: SCANRECO

Manufacturer: Scanreco AB
Box 47144
100 74 Stockholm

Country of origin: Sweden

Rating: 7,2 VDC, Battery

Transmitting frequency: 434,025 MHz

Rated RF power : 60 μ W

Antenna Integrated Helix antenna

3. TEST SPECIFICATIONS

3.1 Standards

FCC part 15 Subpart C- Intentional Radiators, § 15.209

ANSI C63.4:1992

3.2 Purpose of the test

Purpose of test: To determine whether the equipment under test fulfils the FCC requirements in section 3.1

4. TEST SUMMARY

The results in this report apply only to the tested samples:

Section	Test	Passed the test	Note
5	Field strength of fundamental frequency, transmitter	Yes	
6	Radiated spurious emission, transmitter	Yes	

5. FIELD STRENGTH OF FUNDAMENTAL FREQUENCY, TRANSMITTER

5.1 Operating environment

Measurements were performed in a semi-anechoic chamber.

Temperature: 21 °C
 Relative Humidity: 42 %

5.2 Test setup and test procedure

The EUT was placed on a turntable on a wooden table, 1,5 m above the RGP.

The field strength of fundamental frequency was measured at a distance of 3 m. The measuring antenna was placed 1,6 m above the RGP and the turntable was rotated a full revolution in order to find maximum value of the fundamental. The measurements were performed in both horizontal and vertical polarisation. The measurements were performed with a peak detector.

5.3 Measurement uncertainty

The measurement uncertainty: ±3,0 dB

5.4 Test equipment

<i>Equipment</i>	<i>Manufacturer. and type</i>		<i>Serial No.</i>
Test site:	Semi-anechoic shielded chamber. 10 x 20 x 8,5 m (w x l x h).		
Computer: Software	Hewlett Packard, 9000/340 R&S EMI-K2		
Measurement receiver			
Display unit	R&S	ESAI	894702/030
RF unit	R&S	ESAI	860686/019
Preamplifier	SEMKO		S 7992
Power supply preamplifier	SEMKO		S 7993
Bilog antenna	Chase	CBL6111A	S 1550

HP = Hewlett-Packard

5.5 Test protocol

Date of test: June 23, 1998

Radiated emission limits at 3 m distance: 200 $\mu\text{V/m}$

Field strength [dB$\mu\text{V/m}$]	Field Strength [$\mu\text{V/m}$]
45	178

6. RADIATED SPURIOUS EMISSION, TRANSMITTER

6.1 Operating environment

Temperature: 21 °C
 Relative Humidity: 42 %

6.2 Test setup and test procedure

The EUT was placed on a turntable, on a wooden table, 1,5 m above the RGP.

An overview sweep with peak detection of the radiated spurious emission was performed at a measuring distance of 10 m, in a semi-anechoic chamber. The overview sweep, in the frequency range 30 MHz to 1 GHz, was performed with the measurement receiver in max-hold view. The height of the measuring antenna was varied 1 to 4 m in both horizontal and vertical polarization. Measurement was repeated with the EUT rotated in 60 degrees steps.

The final measurements were performed with the height of the measuring antenna varied between 1 to 4 m in both horizontal and vertical polarization. The turntable was rotated a full revolution in order to find maximum values. The measurements of the highest levels were performed with a Quasi-Peak detector.

The radiated spurious emission in the frequency range above 1 GHz was performed at a measuring distance of 3 m. The measuring antenna was placed 1,6 m above the RGP and the turntable was rotated a full revolution in order to find maximum values. The measurements were performed in both horizontal and vertical polarization. The measurements were performed with a peak detector.

7.3 Measurement uncertainty

The measurement uncertainty: ± 4 dB

7.4 Test equipment

<i>Equipment</i>	<i>Manufacturer and type</i>		<i>Serial No.</i>
Test site:	Semi-anechoic shielded chamber. 10 x 20 x 8,5 m (W x L x H).		
Computer:	Hewlett Packard, 9000/340		
Software	R&S EMI-K2		
Measurement receiver			
Display unit	R&S	ESAI	894702/030
RF unit	R&S	ESAI	860686/019
Preamplifier	SEMKO		S 7992
Power supply preamplifier	SEMKO		S 7993
Bilog antenna	Chase	CBL6111A	S 1550
Double ridge guide horn antenna	EMCO	3106	S 3006
Standard gain horn antenna	Narda	638	
Coaxial feeder	Narda	4608B	
Preamplifier	HP	8449B	S 6685
Spectrum analyzer	HP	8593A	S 6661
RF cable	Suhner	Sucoflex 104	S 5177
RF cable	Suhner	Sucoflex 104	S 6676

HP = Hewlett-Packard, R&S = Rohde & Schwarz

7.5 Test protocol, transmitting mode

Date of test: June 23, 1998

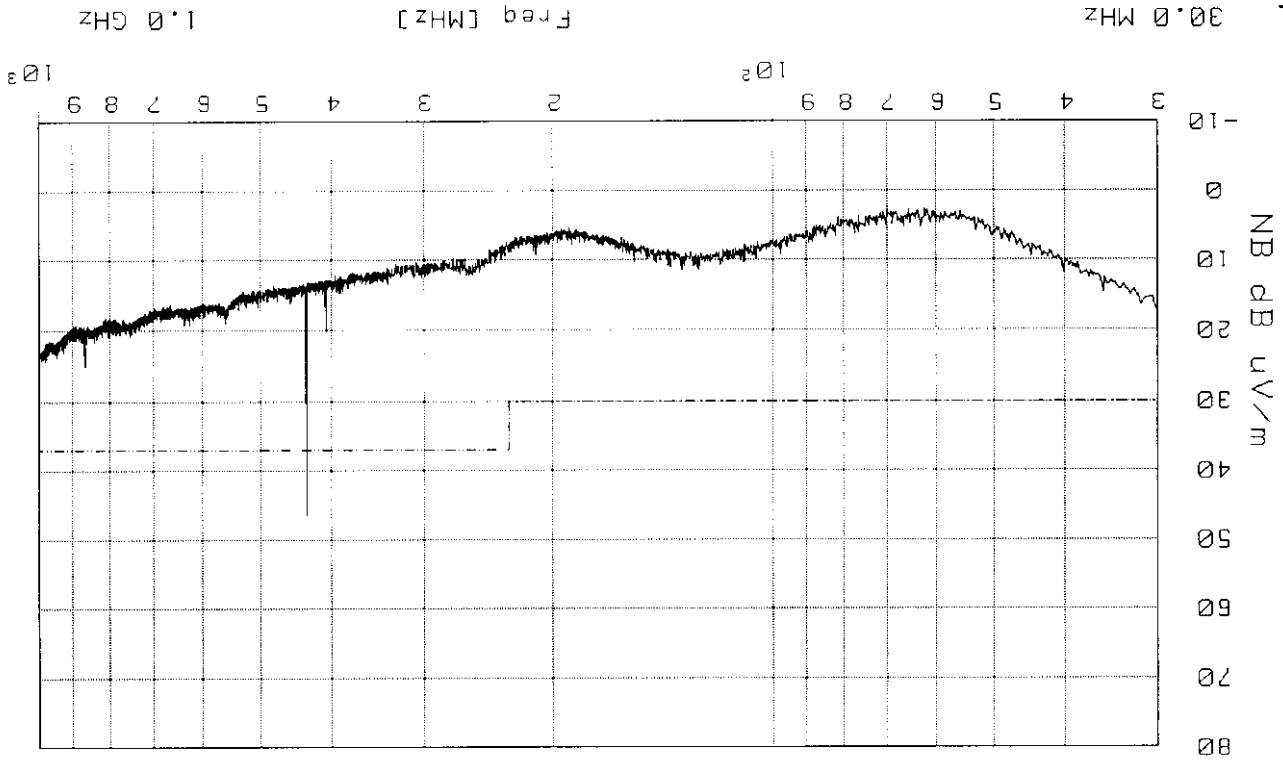
Overview sweep in the frequency range 30 MHz to 1 GHz see chart A

Frequency /MHz	Disturbance level /μV/m	Peak	Bandwidth	
		Permitted limit / μV/m	Resolution bandwidth / kHz	Video bandwidth / kHz
868	18	200	120	300
1302	44*	500	1000	3000
1736	50*	500	1000	3000
2170	47*	500	1000	3000
2604	50*	500	1000	3000
3038	57*	500	1000	3000
3472	63*	500	1000	3000
3906	60*	500	1000	3000
4340	63*	500	1000	3000

* Noise floor level.

EMI - K2 Date : 23.06.98 Performed by: CHN/ALK
 Test site : SEMI ANECHOIC CHAMBER

Comment : STEP 60 DEG
 Comment :



TEST REPORT

Diagram header : OVERVIEW SWEEP IN THE SEMI-ANECHOIC CHAMBER

Start. Freq.	Stop Freq.	N RBW/kHz	B RBW/kHz	Detector	Meas time	max.lev.
770.000 MHZ	1000.000 MHZ	120.000	---	MAX_PEAK	0.200	25.2
500.000 MHZ	770.000 MHZ	120.000	---	MAX_PEAK	0.200	20.9
230.000 MHZ	500.000 MHZ	120.000	---	MAX_PEAK	0.200	46.6
30.000000 MHZ	230.000 MHZ	120.000	---	MAX_PEAK	0.200	17.5

Regulation : EN 55022, CLASS B, FCC PART 15

Equipment : SCANRECO
 Manufacturer : SCANRECO
 Requested by : SCANRECO
 Trade mark :
 Serial number :
 Rating : 7.2 V DC
 Regulation : EN 55022, CLASS B, FCC PART 15
 Mode of operat.: TRANSMITTING
 Type :
 Reference No. :