MEASUREMENT/TECHNICAL REPORT

FCC Part 15 Section 15-209-15.249

Datalogic

FCC ID: OMJ0003

May 21st, 2001

This report concerns (check one): Original grant __X__ Class II change____

Equipment type: CRADLE (BASE/CHARGER) (ex.: computer, printer, modem, etc.)

Deferred grant request per 47 CFR 0.457(d)(1)(ii)? yes _____ no __X__

If yes, defer until: _____
date

Company Name agrees to notify the Commission by _____
date
of the intended date of announcement of the product so that the grant can be issued on that date.

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Table of Contents Page

1 GENERAL INFORMATION

1.1 Product Description

The EUT was a Datalogic OM-GRYPHON USA device which forms part of a cordless barcode reader system.
The unit acts as a base station receiving data via radio link to a cordless bar code reader (GRYPHON M series). The OM-GRYPHON USA also acts as an interface to peripheral equipment such as a personal computer. The radio link operates at 910 MHz.
The device was therefore considered as an intentional radiator (CFR47 part 15 sub-section C – section 15.249) and also as a class B digital device.

The unit is powered by an external power ac adapter. The unit also operates as a battery charger for the cordless bar code readers.

The EUT has a single port for connection to a PC. This port may be configured for a different types of interface: “serial” and “wedge” interface (connects to PC keyboard port).

This report covers two versions of the OM-GRYPHON USA.

They differs only for the interface to peripheral equipment :

1) The **OM-GRYPHON USA (ver. BASE/CHR 910 MHz)** version contains full circuit components. It can connect the device to a peripheral equipment via serial, wedge and wand interface.

2) The **OM-GRYPHON USA (ver. BASE/CHG MULTIINTERF. 910 MHz)** version has some components not mounted but can connect the host device with the same serial, wedge and wand interfaces of version 1).
It differs only for hw internal functionality of the interfaces.This unit was derived from unit 1) by not mounting some interface electronic components.

Cradle is able to recharge gun GRYPHON M series batteries when gun is placed onto the cradle.

1.2 Related Submittal(s)/Grant(s)

FCC ID: OMJ0002

1.3 Tested System Details

The FCC IDs for all equipment, plus descriptions of all cables used in the tested system (including inserted cards, which have grants) are:

Model & Serial No.	FCC ID	Description	Cable Descriptions
OM GRYPHON USA (1) s/n EMC-2001-121	**OMJ0003**	**Cradle**	**Unshielded power cord Shielded signal cable**
FPS1 Model A30907G S/n 0399C	None	AC adapter for cradle	Unshielded power cords
GRYPHON M200 USA S/n EMC-2001-120	OMJ0002	Gun	none
Compaq Contura 430C S/n 7606HUC21843	CNT75MB2CC	Notebook	Unshielded power cord Shielded signal cables
Series 2862 S/n E4514234399T	None	AC adapter for notebook	Unshielded power cords
DM 119 S/n 3031602	DYKDM119	Printer, parallel I/F	Unshielded power cord Shielded signal cable

(1) EUT submitted for grant.

1.4 Test Methodology

Both conducted and radiated testing were performed according to the ANSI C63.4-1992 test procedures . Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

TÜV QSL test site No. 3 – semi-anechoich chamber

The semi-anechoic chamber test site and conducted measurement facility used to collect the radiated data are located at Via Montalenghe 12, Scarmagno, Italy. This site has been fully described in a report dated May 12, 2000 submitted to your office, and accepted in a letter dated May 30, 2000 (registration Number: 90860)

1.6 Test equipment list:

Test receiver	Rohde & Schwarz ESH3	s/n 881364/012
LISN	Schwarzbeck NNLA8120	s/n 8120399
Test receiver/spectrum anal.	HP 8568B+QP adapter	s/n 2601A02134
Biconical antenna	Tensor 4104	s/n 2222
Log-periodic antenna	Electro-metrix LPA-25	s/n 1117
Spectrum analyzer	HP 8562A	s/n 3043A05627
Horn antenna	EMCO 3115	s/n 3572

3 SYSTEM TEST CONFIGURATION

3.1 Justification

The EUT was configured for testing in a typical fashion (as a customer would normally use it).
All test have been run on the **OM-GRYPHON USA (ver. BASE/CHR 910 MHz)** (most complete equipment)

In order to simulate a real application, its interface port has been connected to a Personal Computer (Notebook); two conditions have been scanned:
- EUT connected to a serial port of the PC (RS 232) and
- EUT connected to keyboard port of the PC (wedge interface).

Worst case was RS 232 interface, therefore final testing was performed with EUT connected to a serial port of the PC.
A cordless barcode reader (FCC ID: OMJ0002) has been placed in the chamber, at a convenient distance, in order to operate the EUT, but not to interfere with testing.
Testing has also been performed with with the barcode reader placed in the base station cradle. This report also cover emissions on the base station while charging the barcode reader.

3.2 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

Note:
- transmission frequency was fixed
- modulation was fixed

(no regulation are permitted by the operator or factory settings)

Software used:

In normal operation, OM-GRYPHON cradle is waiting for a message from radio link. When a correct radio frame is received, cradle replay with an acknowledge message and send the data received via the output interface to a personal computer.

3.3 Special Accessories

None.

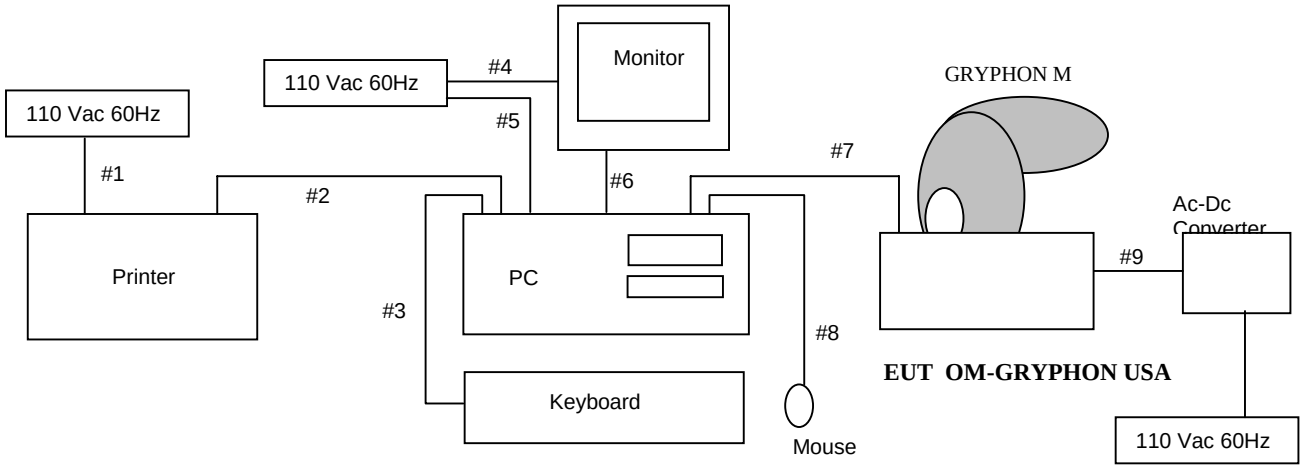
As shown in Figure 3.1 all interface cables used for compliance testing are shielded as normally supplied by Datalogic Company. These cable models and part numbers are marketed with the Datalogic peripherals to the end users, and appear on related product price lists supplied to customers.

3.4 Equipment Modifications

To achieve compliance to Class B levels, no changes were made during compliance testing.

3.5 Configuration of the Tested System

Figure 3.1 Configuration of the Tested System



#1 : Power unscreened printer cable
#2 : Screened Printer Cable
#3 : Screened Keyboard Cable
#4 : Unscreened Monitor Power Cable
#5 : Unscreened PC Power Cable
#6 : Screened Video Cable
#7 : 2 m screened cable from cradle to serial port
#8 : Screened Mouse Cable
#9 : 1.5 m unscreened power cable

5 CONDUCTED AND RADIATED MEASUREMENT PHOTOS

See attached files : setup_photo.doc

6 CONDUCTED EMISSION DATA

6.1 Tests of the worst case configuration.

The conducted tests are performed with a receiver in quasi-peak mode.

	Frequency (MHz)	Measured* (dBμV)	Limit (dBμV)
neutral	0.46	35	48
	0.7	37	
	0.8	38	
	0.94	36	
	20.5	36	
	25.2	36	
line	0.46	34	48
	0.7	36	
	0.8	37	
	0.94	35	
	20.5	36	
	25.2	37	

* All readings are quasi-peak

Test Personnel:

Tester Signature  Date March 12, 2001

Typed/Printed Name Giuseppe MECCHIA .

7 RADIATED EMISSION DATA

- frequency range 30 MHz – 10 GHz (10th Harmonic of highest fundamental frequency generated).

7.1 Tests of the worst case configuration

The following data list the significant emission frequencies, measured levels, correction factors (including cable and antenna corrections), the corrected reading, plus the limit. Field strenght calculation is given in paragraph 7.2.

Judgement: Passed by 2.5 dB

Spurious emissions (limits according to section 15.209).

Frequency (MHz)	Polarity (V/H)	Receiver* Reading (dBµV)	Correction Factor (dB/m)	Corrected Reading (dBµV/m)	3 Meter Limit (dBµV/m)
121.1	V	25.4	13.2	38.6	43.5
130.6	V	27	14	41	43.5
233.6	H	26.6	14.3	40.8	46
300	H	25.3	17.8	43.1	46
400	H	22.6	20.1	42.7	46
467	H	20.8	22	42.8	46

Fundamental and harmonics (limits according to section 15.249).

910	H	59	30.4	89.4	94
1820	H	11.4	26.9	38.3	54
2730	V	2	29.4	31.4	54
3640	V	-0.6	31.1	30.5	54

* below 1 GHz readings are quasi-peak, with an IF bandwidth of 120 kHz, above 1 GHz are peak with an IF bandwidth of 1 MHz.

Test Personnel:

Tester Signature  Date March 12, 2001

Typed/Printed Name Giuseppe MECCHIA .

7.2 Field Strength Calculation

7.2.1 The field strength is calculated by adding the Antenna and Cable Factor to the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

where

FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 27 dBμV is obtained. The Antenna and Cable Factor of 14 is added, giving a field strength of 41 dBμV/m. The 41 dBμV/m value was mathematically converted to its corresponding level in μV/m.

FS = 27 + 14 = 41 dBμV/m

Level in μV/m = Common Antilogarithm [(41 dBμV/m)/20]= 112 μV/m

1.6 Test equipment list:

Description	Model	serial No.	Cal due date
Spectrum analyzer	HP 8568B+QP adapter	s/n 2601A02134	10/01
Biconical antenna	Tensor 4104	s/n 2222	03/02
Log-periodic antenna	Electro-metrix LPA-25	s/n 1117	03/02
Spectrum analyzer	HP 8562A	s/n 3043A05627	10/01
Horn antenna	EMCO 3115	s/n 3572	11/01