

VitalCom, Inc.
FCC Part 15, Certification Application
Model DR-10000

August 10, 2000

MEASUREMENT/TECHNICAL REPORT

COMPANY NAME: VitalCom, Inc.
MODEL: DR-10000
FCC ID: BQI00DR-10000
DATE: August 10, 2000

This report concerns (check one): Original grant X
Class II change _____

Equipment type: **Low Power Transmitter (for Biomedical Applications)**

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? yes _____ No X

If yes, defer until: _____
date

N.A. agrees to notify the Commission by N.A.
date

of the intended date of announcement of the product so that the grant can be issued on that date.

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SECTION 1
GENERAL INFORMATION

GENERAL INFORMATION

Product Description

The Equipment Under Test (EUT) is a VitalCom, Inc., DR-10000. The DR-10000 is a wireless Access Point (AP) designed for use in medical monitoring applications. The DR-10000 receives patient monitoring data from similar radios (FCC ID: BQI00DT-4500) attached to the patients in that hospital. The DR-10000 is linked to other DR-10000's through a 10Base-T Ethernet backbone. This backbone allows the AP's to pass patient data back to the end user of the system - a nurses monitoring station. The DR-10000 is composed of two 608-614 MHz wireless transceivers and Ethernet conversion circuitry that passes data from these transceivers to the Ethernet backbone.

The DR-10000 may operate with two different types of antennas: a 0 dBi monopole to provide omni-directional coverage and a + 2 dBi patch antenna to provide unidirectional coverage. The unit requires external DC power but has its own internal voltage regulation. The DR-10000 is self contained in a plastic package and is designed to be installed on the ceiling of a hospital hallway.

Related Submittal(s)/Grant(s)

The EUT will be used with other transceivers (already submitted and approved under FCC ID: BQI00DT-4500).

SECTION 2
TESTS AND MEASUREMENTS

TESTS AND MEASUREMENTS

Configuration of Tested System

The sample was tested per ANSI C63.4, Methods of Measurement from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (1992). Conducted and radiated emissions data were taken with the test receiver or spectrum analyzer's resolution bandwidth adjusted to 9 kHz and 120 kHz, respectively. All measurements are peak unless stated otherwise. The video filter associated with the spectrum analyzer was off throughout the evaluation process. Interconnecting cables were manipulated as necessary to maximize emissions. A block diagram of the tested system is shown in Figure 1. Test configuration photographs for spurious and fundamental emissions are shown in Figure 2.

Test Facility

Testing was performed at US Tech's measurement facility at 3505 Francis Circle, Alpharetta, GA. This site has been fully described and submitted to the FCC, and accepted in their letter marked 31040/SIT. Additionally this site has also been fully described and submitted to Industry Canada (IC), and has been approved under file number IC2982.

Modifications

To bring the EUT into compliance to meet the Part 15 Class B digital device emissions limits, the following modifications were made by Digital Wireless Corporation (Refer to ECO on following page):

- 1) The R35 was changed to 270 Ω .
- 2) 270 Ω resistor was added to the output of Y2 (pin 8). This part will be designated as R104.

Test Equipment

Table 2 describes test equipment used to evaluate this product.

Engineering Change Order



DIGITAL WIRELESS

Ref #: 800307-062000

Product: 4-way access point (SNAP608 & SSurfNet)	Date: 6/20/2000
Revision: Schematic Rev B PWB Rev B	Author: Greg Ratzel
	Engineer: Greg Ratzel
Disposition: <input checked="" type="checkbox"/> New builds <input checked="" type="checkbox"/> Current inventory & WIP <input type="checkbox"/> Recall <input type="checkbox"/> Update warranty repairs	Approval:

Changes:

Vitalcom units only (SNAP608):

- Change front panel LEDs
 - D2 (Transmit),
 - D3 (Receive),
 - D10 (Collision),
 - D15 (Alert)
 to green.

All units:

- Change R35 to 270 ohms.
- Cut a gap in the short trace leading away from the output of Y2 (pin 8) and insert a 270 ohm resistor (which will become R104).

Reason:

- Vitalcom requires green LEDs.
- Clock outputs must be filtered to pass FCC requirements.

FIGURE 1
TEST CONFIGURATION

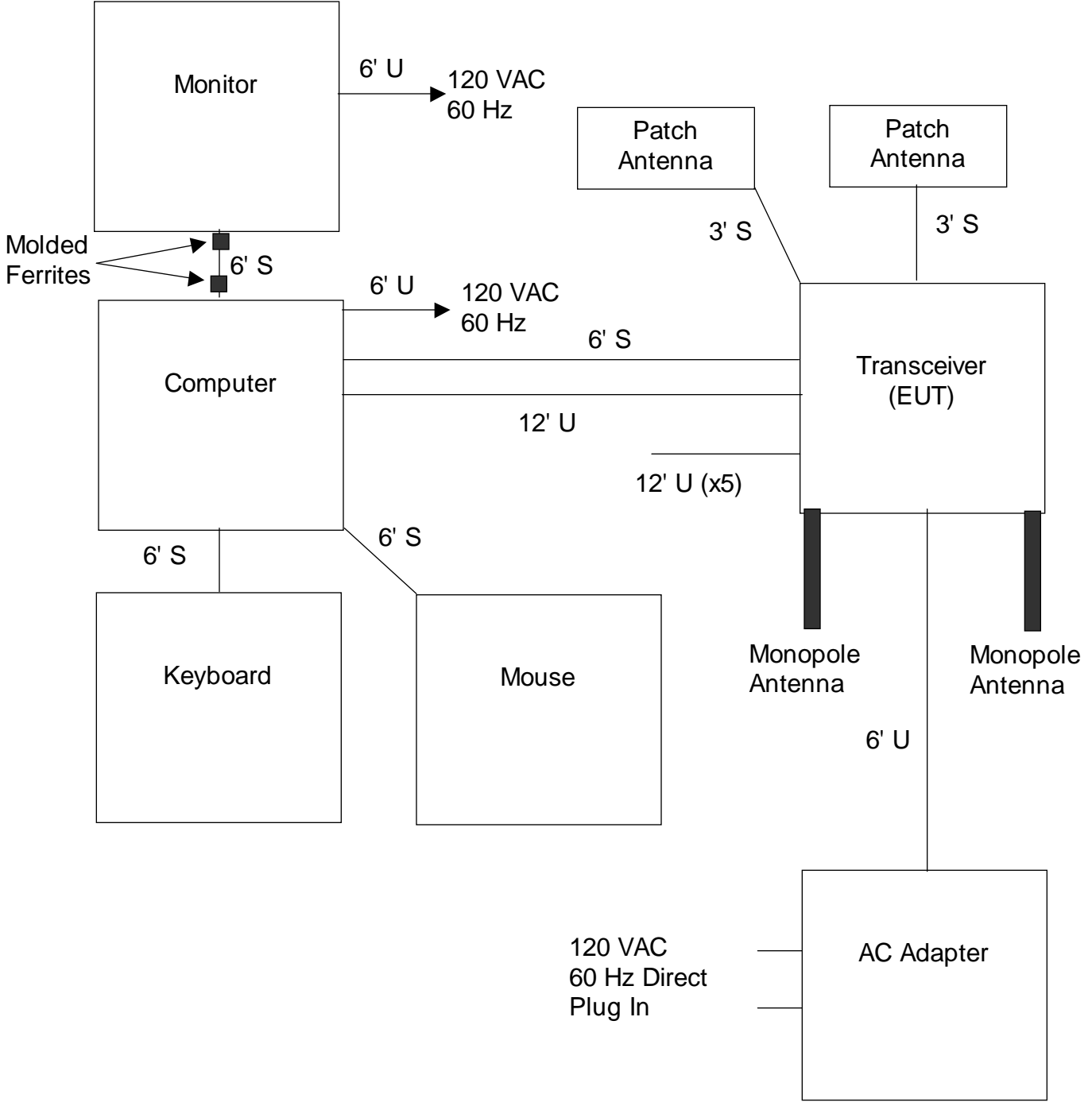


FIGURE 2a

Photograph(s) for Fundamental, Spurious and Digital Devices Emissions



FIGURE 2b

Photograph(s) for Fundamental, Spurious and Digital Devices Emissions



FIGURE 2c

Photograph(s) for Conducted Emissions



TABLE 1

EUT and Peripherals

PERIPHERAL MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID:	CABLES P/D
Transmitter VitalCom, Inc. (EUT)	DR-10000	None	BQI00DR-10000 (Pending)	6' S 12' U 5 @ 12' U
Antenna (x2) Cushcraft	SL6081P48SMM (Patch, +2 dBi)	Prototype	None	3' S each
Antenna (x2) Nearson, Inc.	P-24A48G (Monopole, 0 dBi)	None	None	None
AC Adapter Volgen	SPU10R-2	00014484 9953	N/A	6' U
Computer Hewlett Packard	Vectra VE17DT	US92702722	DoC Approved	6' U Power Cord
Monitor Toshiba	TekBright 510V	89035633	EWBOC15DB06	6' S 6' U Power Cord
Keyboard Hewlett Packard	SK-2502C	C990608784	DoC Approved	6' S
Mouse Hewlett Packard	M-S34	LZE92123016	DZL211029	6' S

TABLE 2

TEST INSTRUMENTS

TYPE	MANUFACTURER	MODEL	SN.
SPECTRUM ANALYZER	HEWLETT-PACKARD	8593E	3205A00124
SPECTRUM ANALYZER	HEWLETT-PACKARD	8558B	2332A09900
S A DISPLAY	HEWLETT-PACKARD	853A	2404A02387
COMB GENERATOR	HEWLETT-PACKARD	8406A	1632A01519
RF PREAMP	HEWLETT-PACKARD	8447D	1937A03355
RF PREAMP	HEWLETT-PACKARD	8449B	3008A00480
HORN ANTENNA	EMCO	3115	3723
BICONICAL ANTENNA	EMCO	3110	9307-1431
LOG PERIODIC ANTENNA	EMCO	3146	9110-3600
LISN	SOLAR ELE.	8028	910495 & 910494
THERMOMETER	FLUKE	52	5215250
MULTIMETER	FLUKE	85	53710469
PLOTTER	HEWLETT-PACKARD	7475A	2325A65394