1.3 Tested System Details

The FCC ID(s) for all equipment, plus descriptions of all cables used in the tested system are listed below:

PERIPHERAL MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID:	CABLES P/D
Vibration Remote Trainer Receiver Radio Systems Corporation (EUT)	VC200	None	KE3VC200 (Pending)	7"U

1.4 Test Methodology

The EUT was configured as shown in the following block diagrams and photographs. 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 on the spectrum analyzer was OFF throughout the evaluation process. Interconnecting cables were manipulated as necessary to maximize emissions. Appendix A describes other instruments and accessories used to evaluate this product.

The EUT is a super-regenerative receiver. A signal generator was used to radiate an unmodulated CW Signal at the EUT's operating frequency to "cohere" the individual components of the characteristics broad band emissions as specified in ANSI C63.4-1992. The level of the signal generator was varied form -80 dBm to 0 dBm in order to maximize the individual components.

Both conducted and radiated testing were performed according to the procedures in 47 CFR Part 15. Radiated testing was performed at an antenna to EUT distance of 3 meters from 30 MHz to 2 GHz.

1.5 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.

3 SYSTEM TEST CONFIGURATION

3 SYSTEM TEST CONFIGURATION

3.1 Justification

The EUT was configured for testing in a typical fashion. The emissions were measured while the unit was waiting for data and while the unit was receiving an unmodulated CW signal at its operating frequency. The unit was tested at a receive frequency of 303.8 MHz.

3.2 EUT Exercise Software

Not applicable

3.3 Special Accessories

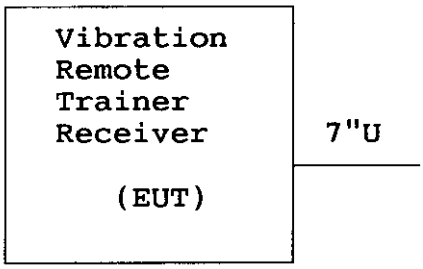
Not required

3.4 Equipment Modifications

No modifications were made by US Tech to bring the EUT into compliance with FCC Rules and Regulations.

3.5 Configuration Of Tested System

Figure 3.1 Configuration of Tested System



5 RADIATED MEASUREMENT PHOTOS

6 CONDUCTED EMISSION DATA

6 CONDUCTED EMISSIONS DATA

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Date: July 16, 1998
UST Project: 98-336
Customer: Radio Systems Corporation
Model: VC200

Frequency (MHz)	Test Data (dBm)		Results (uV)		FCC Limit (uV)
	Phase	Neutral	Phase	Neutral	
NOT APPLICABLE EUT IS BATTERY POWERED					

SAMPLE CALCULATIONS:
Results uV = Antilog ((+ 107)/20) =
Conversion from dBm to dBuV = 107 dB

Tested By: _____ **Name:** Erik Collins

7 RADIATED EMISSION DATA

7 Radiated Emission Data

7.1 The following data lists the significant emission frequencies, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, plus the limit. All emissions within 12 dB of the margin are reported.

Test Date: **July 16, 1998**
UST Project: **98-336**
Customer: **Radio Systems Corporation**
Model: **VC200**

Frequency (MHz)	Polarity (V/H)	Receiver Reading (dBm) @ 3m	Correction Factor (dB)	3 Meter Corrected Reading (uV/m)	3 Meter Limit (uV/m)
299.0	H	-96.0	18.7	30.7	200
300.0	H	-96.0	18.8	30.9	200
302.0	H	-96.0	18.8	31.0	200
303.0	H	-96.0	18.8	31.0	200
304.0	H	-96.0	18.8	31.0	200
306.0	H	-97.0	18.8	27.7	200

* = Quasi Peak

Tested By: _____ **Name:** **Erik Collins**

7 Radiated Emission Data

7.1 The following data lists the significant emission frequencies, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, plus the limit. All emissions within 12 dB of the margin are reported.

Test Date: July 16, 1998
UST Project: 98-336
Customer: Radio Systems Corporation
Model: VC200

Average Readings above 1 GHz

Frequency (MHz)	Receiver Reading (dBm) @ 3m	Amp Gain	Antenna Factor (dB)	Cable Loss (dB)	3 Meter Corrected Reading (uV/m)	Peak 3 Meter Limit (uV/m)
NO EMISSIONS FOUND WITHIN 20 dB OF THE FCC LIMIT						

Tested By: _____ **Name:** Erik Collins

7.2 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + CF - AG

where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Factor

AG = Amplifier Gain

Assume a receiver reading of -96.0 dBm is obtained. The Antenna Factor and Cable Factor of 18.7 dB is added. The value is mathematically converted to its corresponding level in uV/m.

Level in uV/m = Common Antilogarithm (-96.0 + 18.7 + 107/20) = 30.7

8 PHOTOS OF TESTED EUT

8 PHOTOS OF TESTED EUT

The following photos are attached:

Photo 1. Front View

Photo 2. Rear View

Photo 3. Front View, Cover Removed

Photo 4. Vibration Board with Receiver Board Attached

Photo 5. Receiver Board, Component Side

Photo 6. Receiver Board, Solder Side

Photo 7. Vibration Board, Component Side

Photo 8. Vibration Board, Solder Side