APPLICATION FOR FCC CERTIFICATION

For

Click2Enter

Scanner/Receiver
Model: C2E-1.0
FCC ID:

Job # J20016531
Report #J20016531a

Date of Testing: June 2000
Date of Report: June 30, 2000

Number of Pages: 19 + data pages

Table of Contents

AUTHORIZATION LETTER

Please see attached page

ATTESTATION LETTER TO FCC '15.121

Please see attached page.

TEST REPORT

0.0 **Summary of Test Results**

Click2Enter - Model: C2E-1.0
FCC ID:

TEST	REFERENCE	RESULTS
Radiated Emission	15.109	Complies
Conducted Emission	15.107	Complies

We attest to the accuracy of this report:

Barry Smith
Test Engineer

David Chernomordik
EMC Site Manager

1.0 General Description

1.1 Product Description

The Click2Enter. Model No.: C2E-1.0 is a scanning receiver used to listen to police and fire departments, ambulance services, government agencies, private companies, amateur radio services, aircraft and military operations.

Please refer to the attached users manual for more details.

A pre-production version of the sample was received on September 13, 1999 in good condition.

1.2 Related Submittal(s) Grants

This is an Application for Certification of a scanning receiver.

1.3 Test Methodology

Both AC mains line-conducted (if applicable) and radiated emission measurements were performed according to the procedures in ANSI C63.4 (1992). All measurements were performed in Open Area Test Sites. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **"Data Section"** of this Application.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is Site 1. This test facility and site measurement data have been fully placed on file with the FCC.

2.0 System Test Configuration

2.1 Justification

For emission testing, the equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). During testing, all cables were manipulated to produce worst case emissions.

For the measurements, the EUT is attached to a cardboard box (if necessary) and placed on the wooden turntable. If the EUT attaches to peripherals, they are connected and operational (as typical as possible). The EUT is wired to transmit full power without modulation.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Detector function is in peak mode. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance if measured at a closer distance..

2.2 EUT Exercising Software

For emissions testing, the units were setup to receive continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing.

2.3 Mode of Operation

The EUT was tested in two modes and the worst case emission was recorded:

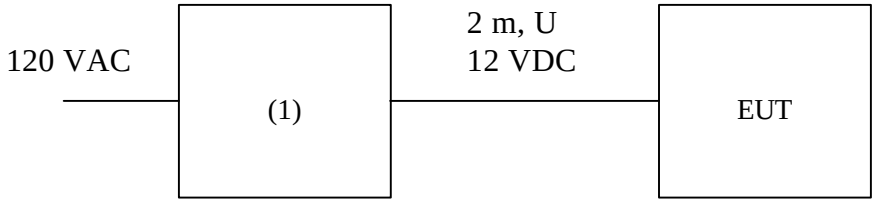
1. EUT was set to constantly receive at a particular frequency.
2. EUT was set to constantly scan and receive a particular band.

2.3 Support Equipment List and Description

a) The FCC ID's for all equipment used in the tested system (included inserted cards, which have grants) are:

Item #	Description	Model No.	Serial No.	FCC ID
1	GRE Power Adaptor	AM-121000	N/A	N/A

b) Equipment Setup Block Diagram



***** = EUT ****** = No ferrites on video cable	**S** = Shielded; **F** = With Ferrite **U** = Unshielded

2.4 Equipment Modification

Any modifications installed previous to testing by Radio Shack, A Division of Tandy Corporation will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services.

3.0 **Emission Results**

AC line conducted emission measurements were performed from 0.45 MH to 30 MHz. Analyzer resolution is 10 kHz or greater.

Radiated emission measurements were performed from 30 MHz to 5000 MHz. Analyzer resolution is 100 kHz or greater for 30 MHz to 1000 MHz, 1 MHz for >1000 MHz.

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

3.1 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 + AF + CF - AG + DF

where FS = Field Strength in dBµV/m
RA = Receiver Amplitude (including preamplifier) in dBµV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
DF = Distance Factor

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

FS = RR + LF

where FS = Field Strength in dµV/m
RR = RA - AG in dBµV
LF = CF + AF + DF in dB

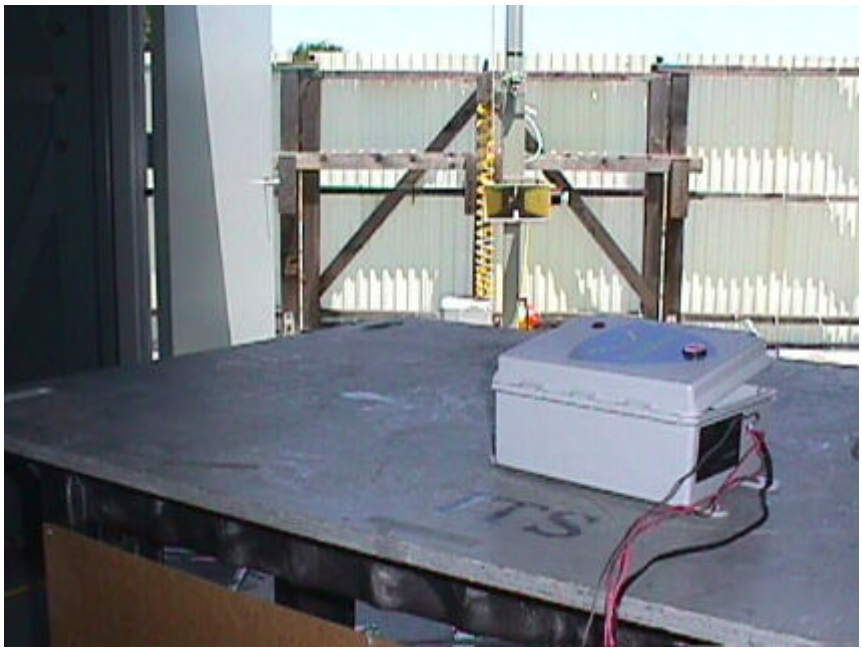
Assume a receiver reading of 52.0 dBµV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBµV/m. This value in dBµV/m was converted to its corresponding level in µV/m.

RA = 52.0 dBµV DF = 0 dB
AF = 7.4 dB RR = 23.0 dBµV
CF = 1.6 dB LF = 9.0 dB
AG = 29.0 dB
FS = RR + LF
FS = 23 + 9 = 32 dBµV/m

Level in µV/m = Common Antilogarithm [(32 dBµV/m)/20] = 39.8 µV/m

3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
at 952 MHz



3.3 Radiated Emission Data

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement: Passed by 3.6 dB

ITS Intertek Testing Services

Radiated Emissions Test Data

Company:	GRE America	**Model #:**		**Standard**	FCC § 15.209	
EUT:	Click 2 Enter Scanner	**S/N #:**		**Limits**	3	
Project #:	J20016531	**Test Date:**	June 30, 2000	**Test Distance**	3	meters
Test Mode:	Normal	**Engineer:**	Barry Smith	**Duty Relaxation**	0	dB

		Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:		1	2	8	5	8	0	9	0	0	0
Model:		EMCO 3143	EMCO 3143	EMCO 3115	CDI_P950	CDI_P1000	None	NPS258-1	None	None	None

Tuned Freq	LO Freq	Reading	Detector	Ant	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	MHz	dB(µV)	P/A/Q	#	H/V	dB(1/m)	dB	dB	dB	dB(µV/m)	dB(µV/m)	dB
29	286.5	20.8	Peak	1	H	13.0	0.0	0.8	0.0	34.6	46.0	-11.4
29	278.9	40.3	Peak	7	H	14.9	19.2	3.1	0.0	39.1	46	-6.9
39.5	297.0	18.0	Peak	1	H	13.5	0.0	0.8	0.0	32.3	46.0	-13.7
54	311.5	17.9	Peak	1	H	13.6	0.0	0.9	0.0	32.4	46.0	-13.6
108	365.5	17.7	Peak	1	H	15.7	0.0	1.1	0.0	34.5	46.0	-11.5
122.5	380.0	18.7	Peak	1	H	15.7	0.0	1.1	0.0	35.5	46.0	-10.5
136.975	394.48	16.6	Peak	1	H	15.8	0.0	1.1	0.0	33.5	46.0	-12.5
137	394.5	17.2	Peak	1	H	15.8	0.0	1.1	0.0	34.1	46.0	-11.9
154	411.4	19.6	Peak	1	V	15.7	0.0	1.0	0.0	36.3	46.0	-9.7
174	431.5	20.6	Peak	1	V	16.4	0.0	1.0	0.0	38.0	46.0	-8.0
380	637.5	19.3	Peak	1	V	18.9	0.0	1.1	0.0	39.3	46.0	-6.7
440	697.5	19.9	QP	1	V	19.8	0.0	1.4	0.0	41.1	46.0	-4.9
512	769.5	11.4	Peak	1	V	21.0	0.0	1.2	0.0	33.6	46.0	-12.5
806	552.0	26.7	Peak	7	V	18.0	15.6	4.6	0.0	33.7	46.0	-12.3
815	557.5	28.4	Peak	7	V	18.0	15.6	4.6	0.0	35.4	46.0	-10.6
849	591.5	33.7	Peak	7	V	18.5	15.6	4.6	0.0	41.2	46.0	-4.8
859	601.5	32.8	Peak	7	V	18.8	15.0	5.1	0.0	41.7	46.0	-4.3
894	636.5	32.9	Peak	7	V	19.4	15.0	5.1	0.0	41.9	46.0	-4.1
926	668.5	29.9	Peak	7	V	20.4	14.0	5.6	0.0	41.9	46.0	-4.1
952	695.0	30.0	QP	7	V	20.8	14.0	5.6	0.0	42.4	46.0	-3.6

Notes:

a) D.C.F.:Distance Correction Factor

b) Insert. Loss (dB) = Cable A + Cable B + Cable C .

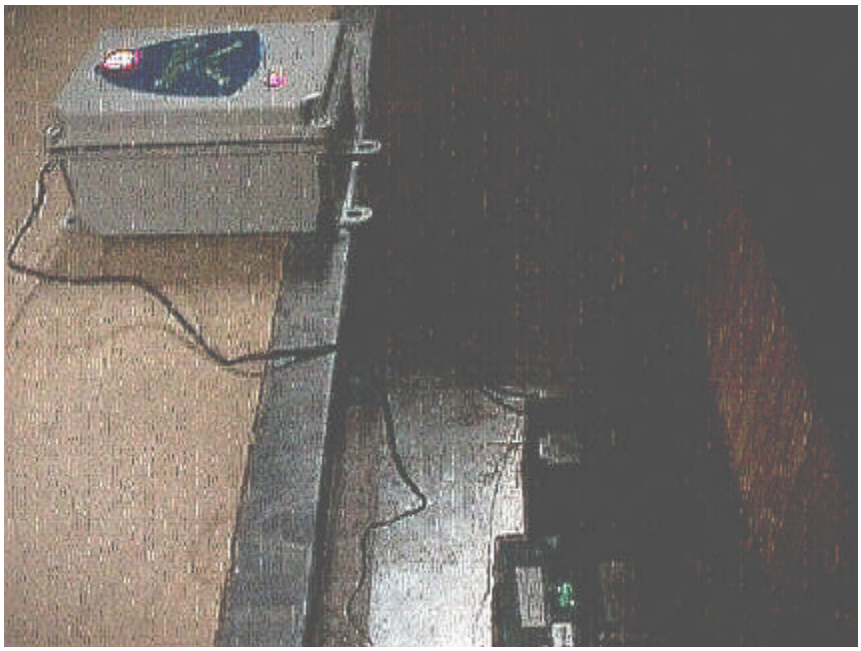
c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transm only).

d) Negative signs (-) in Margin column signify levels below the limits.

e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.

3.4 AC conducted Emission Configuration Photograph

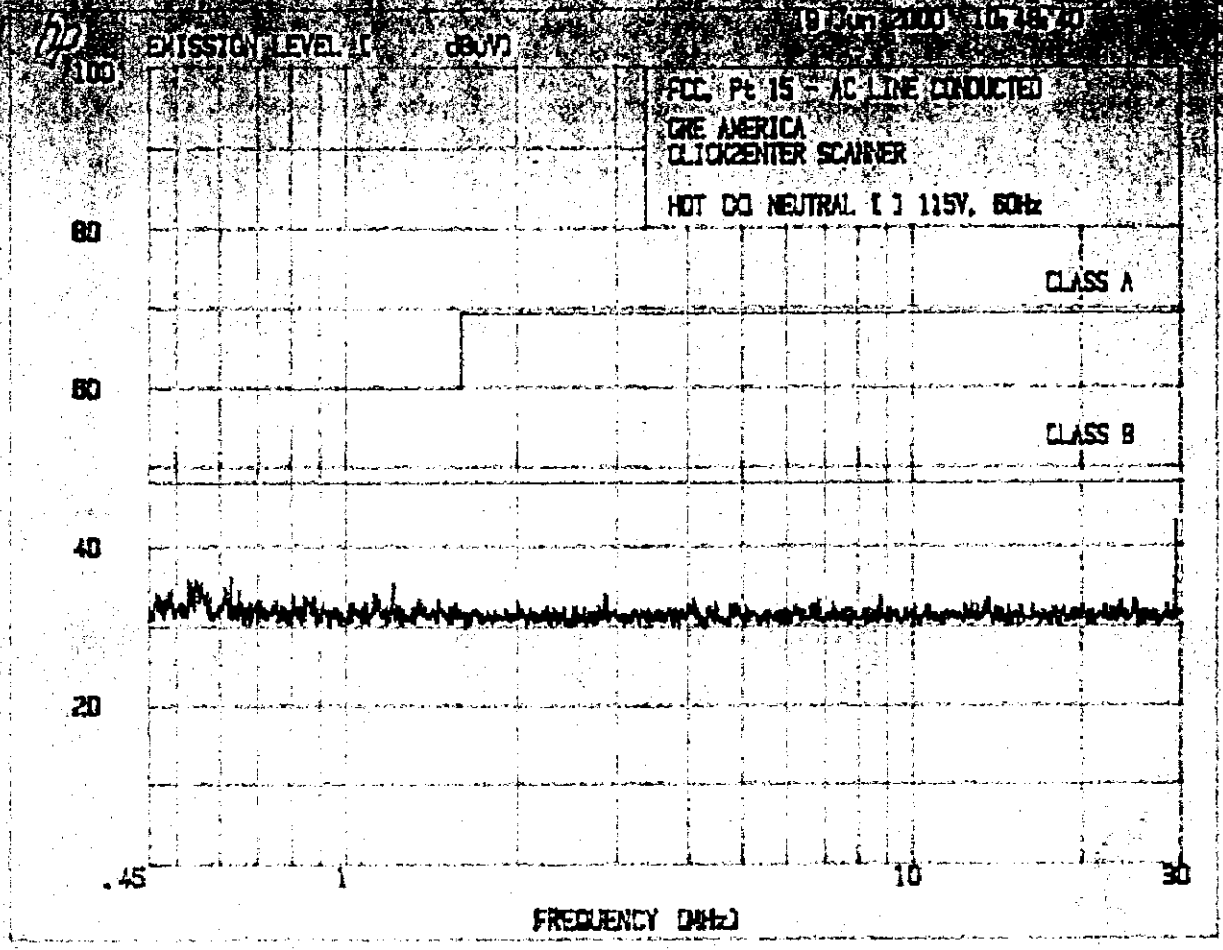
Worst Case Conducted Emission
at 29.5 MHz

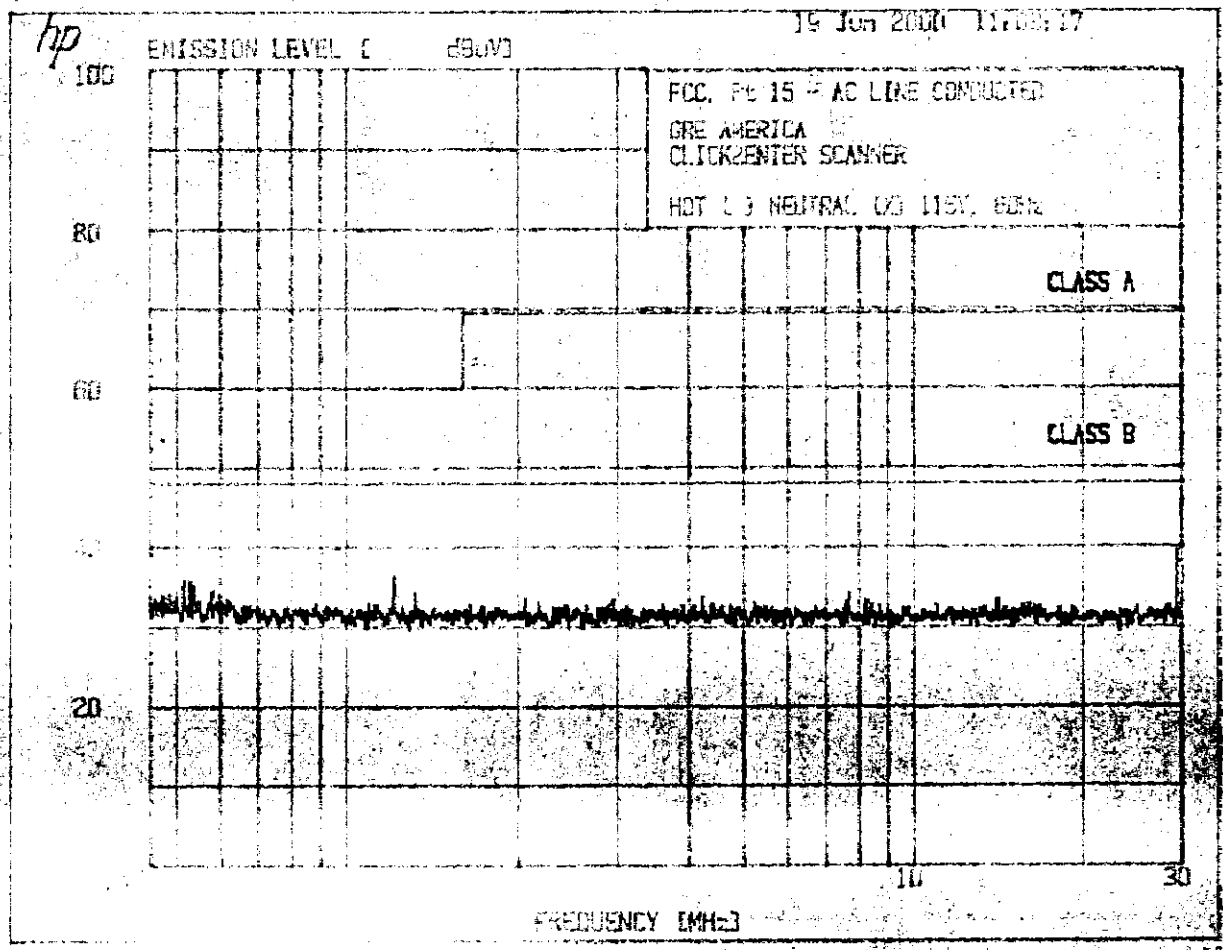


3.5 Conducted Emission Data

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement: Passed by 4.7 dB


EMISSION LEVEL [dBuV]
19 Jun 2000 11:03:20
FCC, Pt 15 - AC LINE CONDUCTED
GRE AMERICA
CLICKZENTER SCANNER
HOT DO NEUTRAL [ ] 115V, 60Hz
CLASS A
CLASS B
100
80
60
40
20
.45
1
10
30
FREQUENCY [MHz]


EMISSION LEVEL [dBuV]
19 Jun 2000 11:03:17
FCC, Pt 15 - AC LINE CONDUCTED
GRE AMERICA
CLICKZENTER SCANNER
HOT [ ] NEUTRAL [X] 115V, 60Hz
CLASS A
CLASS B
100
80
60
20
10
30
FREQUENCY [MHz]

4.0 **Antenna Requirement**

The BNC connector inside the ETU is for manufacturer test use only. The EUT is equiped with a 2 inch wire for permanent Ant use. This Ant is located inside EUT.

5.0 **Equipment Photographs**

Photographs of the EUT are attached.

6.0 **Product Labeling**

6.1 Label Artwork

An engineering drawing of the label that will be permanently affixed to the unit is attached. This label will be attached to the unit at the location shown in Section 6.2.

6.2 Label Location

See attached page.

Click2Enter™ MODEL : C2E-1.0

MONITOR RECEIVER / ACTUATOR

Freq: 29-54, 137-174, 380-512, 806-824, 849-869, 894-960 MHz

Power Supply: 12-30 VDC / 12-24 VAC

Warning: Modification of this device to receive cellular radio telephone service signals is prohibited under FCC rules and Federal Law.

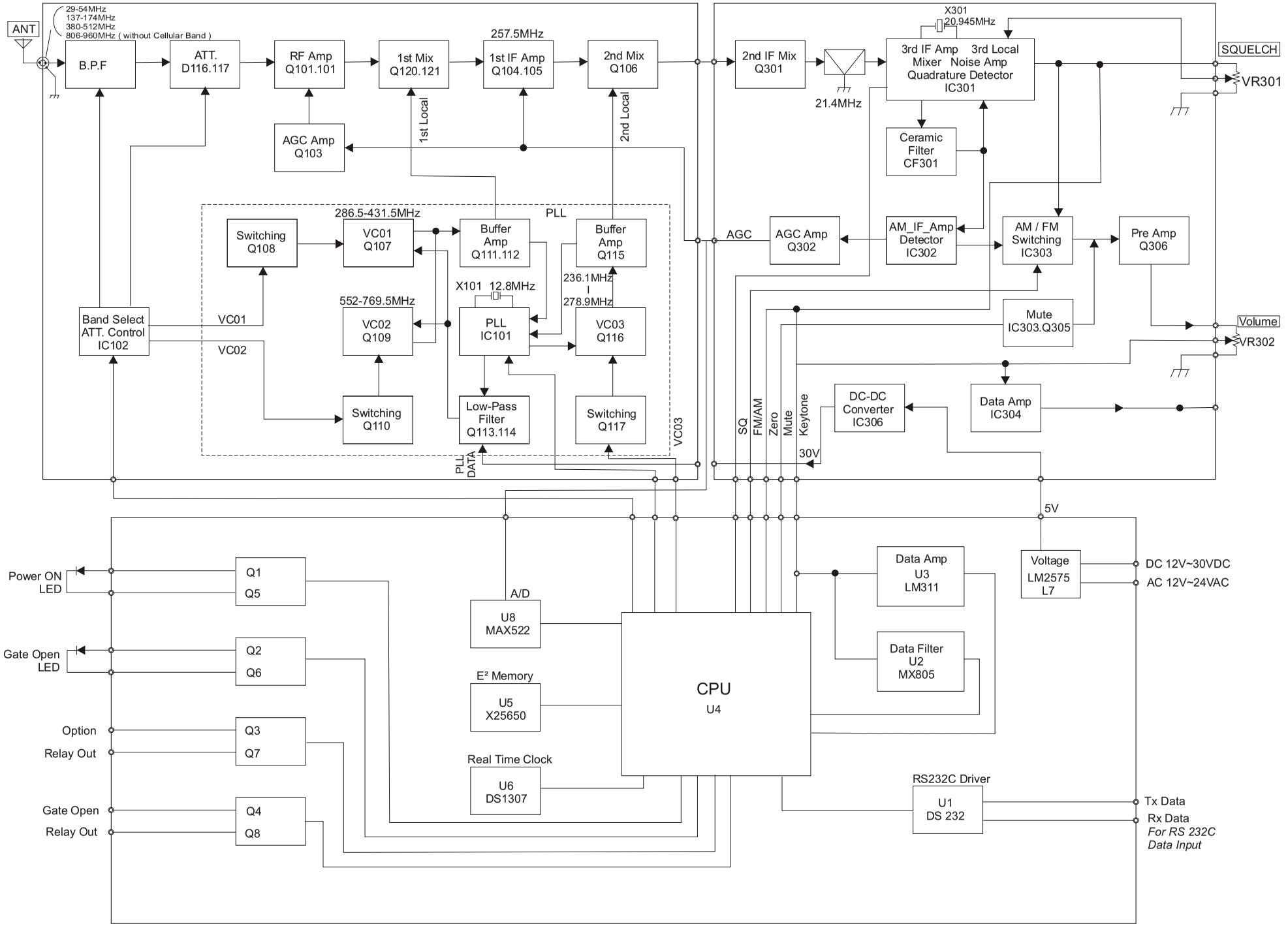
FCC ID : 07CC2E10 S/N :

Click2Enter, Inc. in Sonoma, CA USA
"Made in USA "
U.S. Patent's: 5,903,216 & 5,955,947
Foreign Patents Pending

7.0 **Technical Specifications**

7.1 Receiver Block Diagram

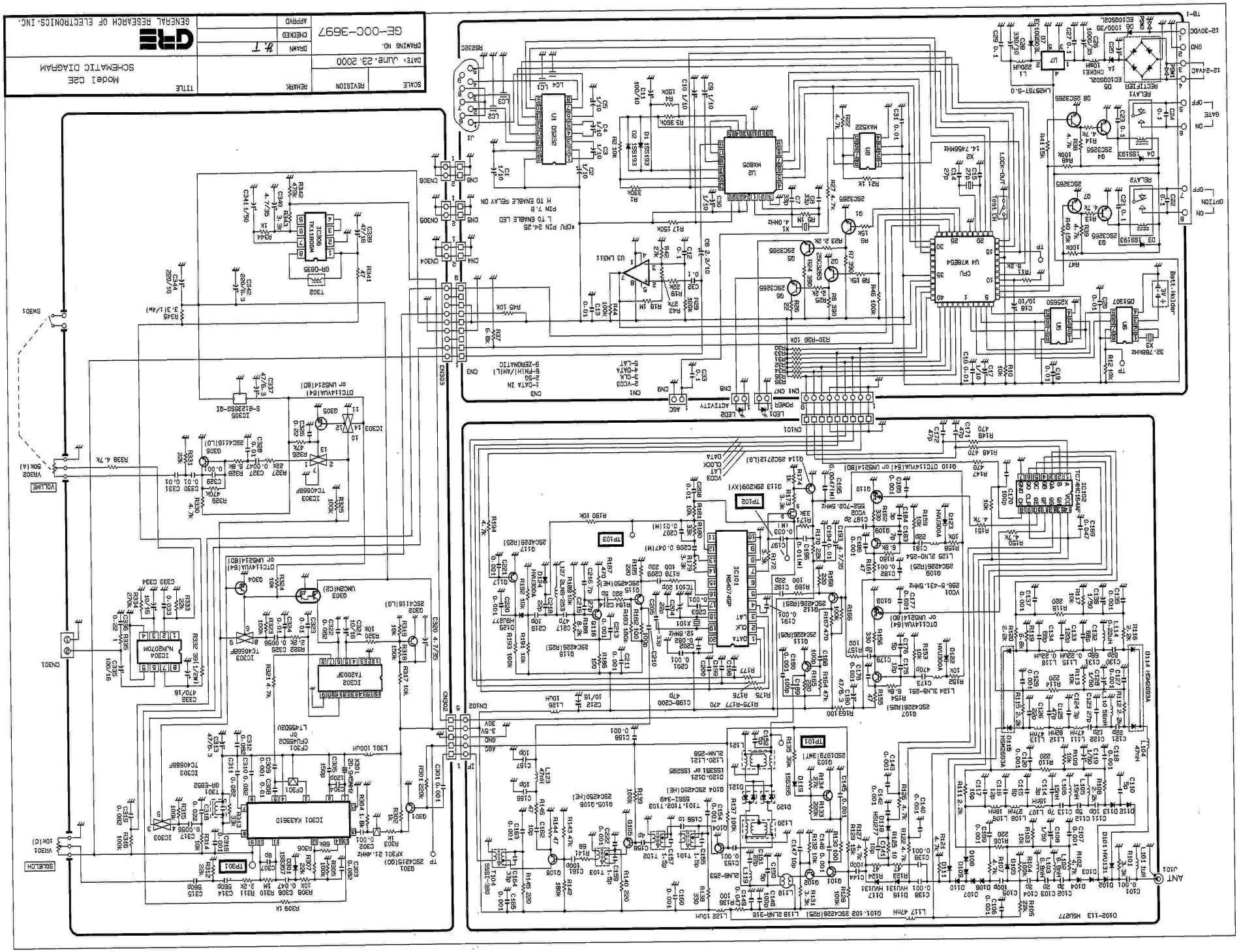
See attached page.



C2E BLOCK DIAGRAM

7.2 Receiver Circuit Diagram

See attached page.



GENERAL RESEARCH OF ELECTRONICS, INC.			
	APPROVED		
GE-OOC-3697	CHECKED		
DRAWING NO.	DRAWN		
DATE: JUNE. 23. 2000			
SCALE	REVISION	REMARK	
TITLE: Model 02E SCHEMATIC DIAGRAM			

Circuit function of the device per section

RF section

Q101,101	RF Amplifier
Q103	Bias for Q101
Q104,105	1st IF Amplifier
Q106	2nd Mixer
Q107	VCO 1 for VHF
Q108	Switching for Q107
Q109	VCO 2 for UHF
Q110	Switching for Q109
Q111,112	Buffer for VCO1,2 (VHF and UHF)
Q113,114	Low pass filter for VCO loop
Q115	Buffer for VCO3
Q116	VCO 3 for 2nd IF
Q117	Switching for Q116
D120,121	1st Mixer
IC101	PLL
IC102	Band selects and attenuates

IF section

Q301	2nd IF Amplifier for FM Modulation
Q302	2nd IF Amplifier for AM Modulation (option)
Q303,304	Switching
Q305,306	Low pass filter and switching
IC301	3rd IF Amplifier,3rd LO,3rd MIX, Noise AMP,Quadrature detector
IC302	3rd IF for AM modulation (option)
IC304	Audio Amplifier for Factory TEST
IC303	Switching
IC305	Voltage regulator
IC306	DC to DC converter

CPU section

U1	RS232C driver for configuer CPU
U2	Tone decoder and digital filter
U3	Data Amplifier
U4	CPU
U5	EE ROM
U6	Real Clock timer
U7	Voltage Regulator
U8	D to A converter

Q1,2,5,6	Driver for LED
Q3,7	Driver for Relay
Q4,8	Driver for Relay

8.0 **Instruction Manual**

Attached is a preliminary copy of the Instruction Manual.

This manual will be provided to the end-user with each unit sold/leased in the United States.