

ATTACHMENT E.

- USER'S MANUAL

U.S.A.

U.S.FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT INFORMATION TO THE USER

NOTE : This equipment has been tested and found to comply with the limits for a
Class B digital device pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful
Interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if
Not installed and used in accordance with the instructions, may cause harmful
Interference to radio communications.

However, there is no guarantee that interference will not occur in a particular
Installation.

If this equipment does cause harmful interference to radio or television reception,
Which can be determined by turning the equipment off and on, the user is
encouraged to try to correct the interference by one or more of the following
measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet of a circuit different from that
to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

Changes or modification not expressly approved by the party responsible for
Compliance could void the user's authority to operate the equipment.
Connecting of peripherals requires the use of grounded shielded signal cables.

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Chapter 1 Abstract

1-1. Name of goods and Uses

This equipment is WCS-211 type, electric instrument, and use UHF, range of 311.0625 MHz.

It is wellbeing call system remote control, when it operate that the memorized message of telephone machine, in the same time all the assigned number.

1-2. Characteristic

- a. All element of this equipment use semiconductor and direct circuit, it is designed to be contained the reliability.
- b. This equipment use the crystal oscillation circuit is designed to satisfy the allowable error and occupied bandwidth.
- c. It is designed DC 3V as the power source

1-3. Organization

This equipment is constructed as following.

- a. Transmission
- b. Control (S3C9442)
- c. ANT (PCB Pattern ANT)

Chapter 2 Electrical Characteristic

2-1. General Item

- a. Usable frequency : 311.0625 MHz.
- b. Channel space : 12.5KHz (single channel)
- c. Working voltage : DC 3V
- d. Operating temperature : -10℃ ~ 50℃
- e. Shape : 1. Weight : under 100g
2. Size : 62mm*43mm*20mm

2-2. Electrical Characteristic

- a. Generating power of transmission : under 500uv/m at 3m away
- b. Frequency stability : ± 7 ppm
- c. Emission type : A 1 D
- d. Modulation system : ASK
- d. Occupied bandwidth : 8.5 KHz
- e. Ground system : itself cathode ground
- f. Communication mode : one way communication
- g. Oscillation mode : X-TAL oscillation mode

Chapter 3 Antenna and Transmitter Specifications

- 3-1. Between antenna and transmitter : active circuit unimposition
- 3-2. Type and Shape : PCB PATTERN (length 65mm, picture : see PCB picture)
- 3-3. Antenna direction gain
 - Gain : -2 dBi
 - Directional characteristic : The shape of 8 on the horizontal plane
- 3-4. Antenna frequency polarization characteristic : inapplicable
- 3-5. Connection mode with transmitter : internal
- 3-6. Pproducer / model name : inapplicable

** certification specific

- 1. Name of equipment : radio equipment which use 'The extremely low power radio'
- 2. Model name : WCS - 211
- 3. Certification number : R-LPD1-XX-XXXX
- 4. Certificated company : C&TT Co., Ltd.
- 5. Manufacture date : 2004.
- 6. Manufacturer / Manufacture nation : Daeho IT / Republic of KOREA

Chapter 4 Equipment operational mode

- 4-1. Emergency remote control button - press on the transmit button over 0.5 sec
If you press on the transmit button, the phone automatically turn 'ON' by the signal emission while blinking transmitter INDICATOR.
It would transmit the Message according to the memorial phone number by calling.
- 4-2. LED (pilot lamp)
It would be checked by the lighting whenever transmitted.

Chapter 5 Circuit explanation

5-1. Component of Circuit

1. Key Input Circuit

The components of circuit deliver the signal to CPU when input switch SW1(High) was turned on.

2. CPU

In CPU, the signal 'High' which was turned on at Key input circuit and ID code are combined and transmitted to RF circuit through R9.

3. RF

RF circuit is composed of oscillating part Q2, 3rd overtone Q3, and amplification part Q5.

Q1 and Q6 are in charge of the regulation circuit at RF

Q4 converts data, which is transmitted to CPU, into RF signal.

5-2. Process

When the control switch, which is a kind of emergency call button, is turned on, electric power will be supplied to IC U1(S3C9442) 7 and 8 PINs via Q6 and Q7(2N3904). Then, PIN 6 will be controled as high.

As soon as IC PIN 6 is converted to 'High', transistor Q6 and Q1 will be turned on, and it activates transmission circuit and LED will be lightened up (only when it transmitted).

This electronic power is the fundamental oscillation by CRYSTAL X1 and Transistor Q2(BFQ67W) which consisted of oscillation circuit.

Then, this will be multiplying by Q1(BFQ67W) and surrounding circuits.

The self coded code is altered by TRANSMITOR Q4(2N3904) from IC U1 2 PIN. Then, it passes C20, is amplified by TRANSMITOR Q5(BFQ67W), and is discharged to an antenna through C6.

Chapter 6 Control method

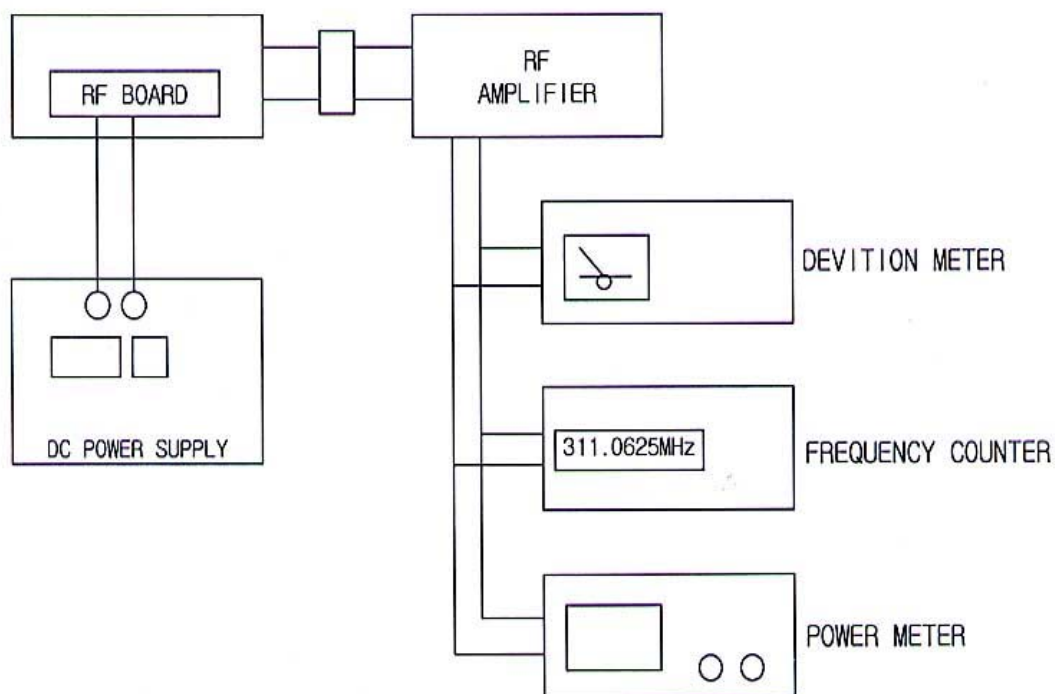
6-1. Control method

1. Measurement equipment

- a. Frequency Counter
- b. DC Power Supply
- c. Spectrum Analyzer
- d. Devition Meter
- e. RF Transmitter Jig
- f. RF Amplifier

2. Measurement method

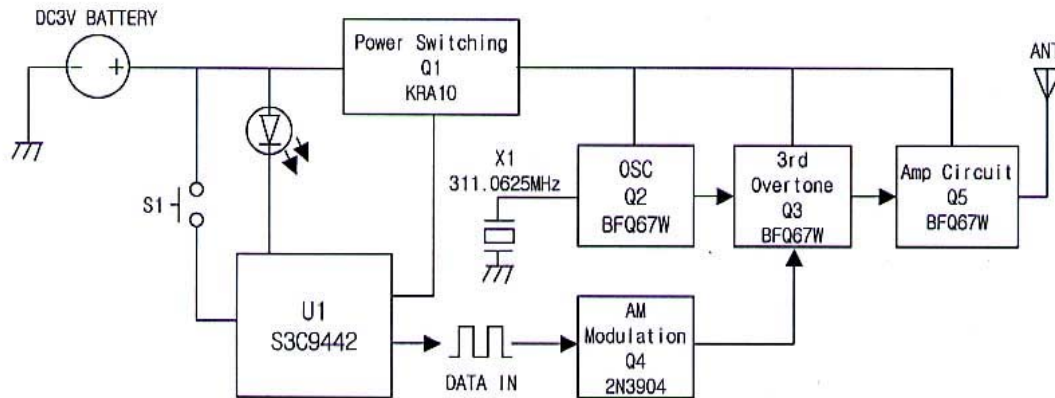
a. Equipment connection



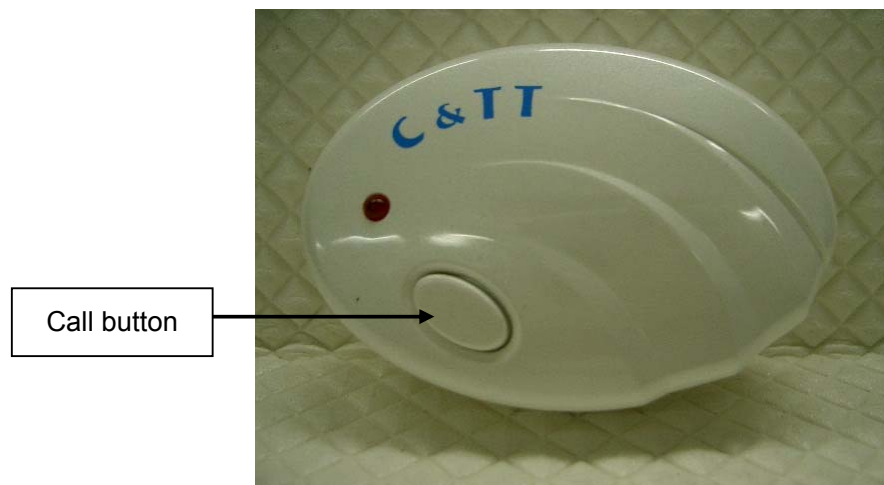
< Measurement equipment connection >

- Must do condenser coupling(2pF) between end and cable of product in measurement equipment connection.

Chapter 7 Block Diagram



Chapter 8 How to operate



The EUT use for Emergency.

When user press the Call button, the EUT connect to receiver. Receiver get the sign, it call to emergency center automatically.