

EXHIBIT B

(FCC Ref. 2.1033(b)(4))

"Description of Circuit Functions"

EQUIPMENT DESCRIPTION

Subject RANGE EXTENDER is comprised of a terminating device which is directly connected to the telecommunications network and which is used for communicating via radio frequency signals with a remote unit.

By affording telephone subscribers more choice in the provision and interconnection of terminal equipment, the market for such devices has -ent equipment suppliers has resulted. This Certifying Engineer understands the telephone companies at present time do not offer the services provided by this Range Extender Apparatus. Also, known "Wireless Telephone - Class WI-E"

The RANGE EXTENDER provides the means of extending a telephone loop via radio frequencies. The device operates in conjunction with a cordless transponder. This enables the user to achieve indoor and outdoor portability.

The device utilizes 100 percent solid state circuitary. There are no moving parts, unless the normal portions of a relay are indicated as "Moving," and no vacuum tubes are used.

The device is subject to the provisions of part 15, Rules and Regulations of the Federal Communications Commission, pertaining to the use of Direct Sequence Spread Spectrum radio frequency emission.

The Spread Spectrum System of this device is as follows.

1. 20 independent RF channels (902-928MHz band)
2. Maximum Transmitting power is 17 dBm
3. 12 chips/bit , 11 dB processing gain
4. Time Division Duplexing control
5. 1200 kbps data bit rate

Signals are transmitted and received on frequencies authorized by the Federal Communications Commission in the authorized bands for this type of service and as detailed in part 15.247 of the Rules.

A ringing signal from the telephone loop modulates the carrier at various voice band frequencies which are chosen so as to prevent interference.

The RANGE EXTENDER consists of a receiver, a transmitter and audio-processing circuitary.

The audio processing circuitry accepts an encoded command from its receiver to latch closed a relay contact connecting the Range Extender audio transformer to the telephone line. The circuitry energizing the relay will turn on the Range Extender's the audio processing also senses if the receiver has a carrier signal present. If the carrier signal is not present, the relay will be de-energized, opening the contact connecting the telephone line to the Range Extender's audio coupling/isolating network.

When the telephone line is connected through the relay contact to the Range Extender, the audio processing circuitry will direct the audio from the telephone line to modulate the transmitter in conjunction with a reduced modulation level of the audio from the Range Extender receiver (hybrid circuitry). The receiver's audio output will be directed to the telephone line.

A ring detector in the Range Extender is part of the audio circuitry which will detect a normal telephone line ring signal. The detected output will energize the transmitter and modulate it with a voiceband sine wave for a set ringing interval.

The receiver and the transmitter of the Range Extender are both crystal controlled and provided time division duplexing signal.

Operating range of the device depends upon factors such as the nature of objects in the radio signal paths and upon radio noise which may be present. In this range is at least 1000 meters.

In compliance with subpart F of Part 68, Rules and Regulations of the Federal Communications Commission, this device must be connected to a telephone utility supplied connecting arrangement (jack). A plug-ended modular cord is supplied by the manufacturer of this device to mate the telephone utility connecting arrangement.

The connecting arrangement (jack) is furnished and installed only by the local telephone utility under applicable local tariffs, usually for a one-time non-recurring charge. However, depending upon the tariffs of each particular state, a monthly rental charge may also be imposed upon the user.

EXHIBIT E

TECHNICAL SPECIFICATIONS

The power for this device is secured from an internal power supply. AC Adaptor to 120 V,60 Hz housepower terminated in the device on a terminated to which no other connection is made.

The primary power supply was tested for breakdown in the transformer at 1500 volts RMS, 60 Hz from the primary winding to secondary winding, from primary winding to ground and from secondary winding to ground. No breakdown was noted using Breakdown Test Set with observations by instrumentation, aural and olfactory means.

The maximum internal voltage furnished by the power supply is 9 volts which, by definition, is non-hazardous.

All circuitry is placed on precision fabricated printed circuit boards which are rigidly mounted and interconnected by industry standard ribbon connecting cables.

The plug-ended modular cord provided by the manufacturer will mate the designated utility-provided connecting arrangement (jack).

All exposed metallic surfaces are at permanent grounded potential. The entire assembly is placed within a high impact plastic enclosure.

A drawing of the circuitry with related proprietary circuitry is attached giving indications of protection to the network. The parts so concerned area also detailed with ratings and values.

Photographs are attached showing the device in detail.

The Certifying Engineer states, in his professional opinion, the device complies with all requirements of Subpart D, Part 68. In addition, and as stated in the affirmative under Item 18, Form 730, this equipment as represented in this application will continue to comply with the rules in Subpart D of Part 68 for its intended service life, after application of the environmental simulations specified in the rules.

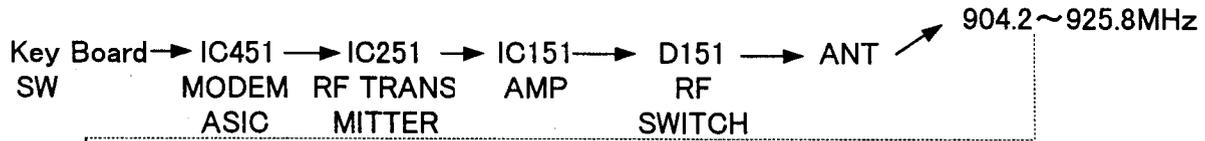
By inclusion of Exhibit H, the graphic format of the required labeling to be permanently affixed to each item manufactured is indicated together with the requirements of Subsection 68.300 of the identifying information to be permanently affixed to each item so manufactured.

By inclusion of Exhibit J, "Information Supplied to Customer", the applicant has been duly notified this information is to be provided with each item manufactured or distributed by the applicant.

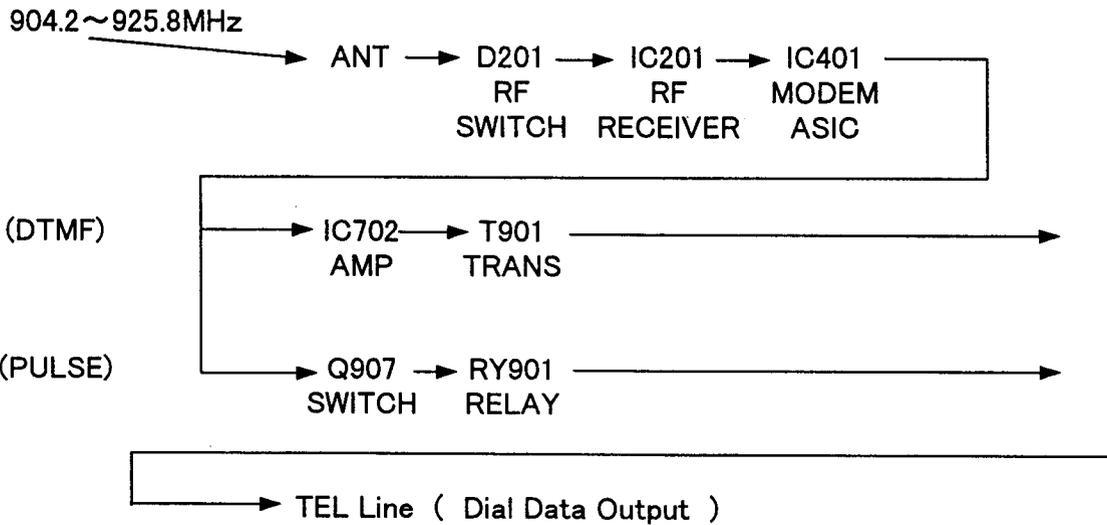
1. TELEPHONE OPERATION

1. In case of outgoing call

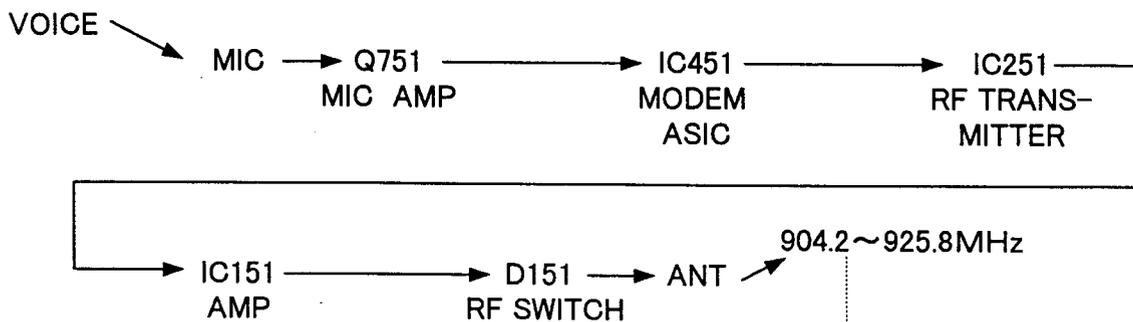
A) Remote unit (TALK SW → ON) ; Dial Data Transmit



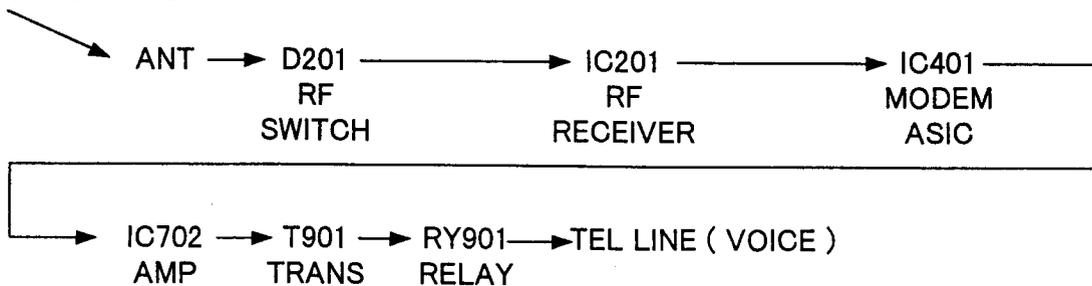
B) Base unit

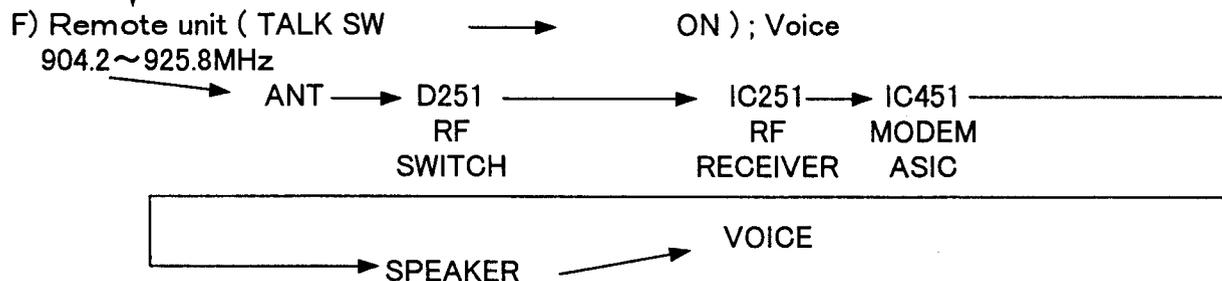
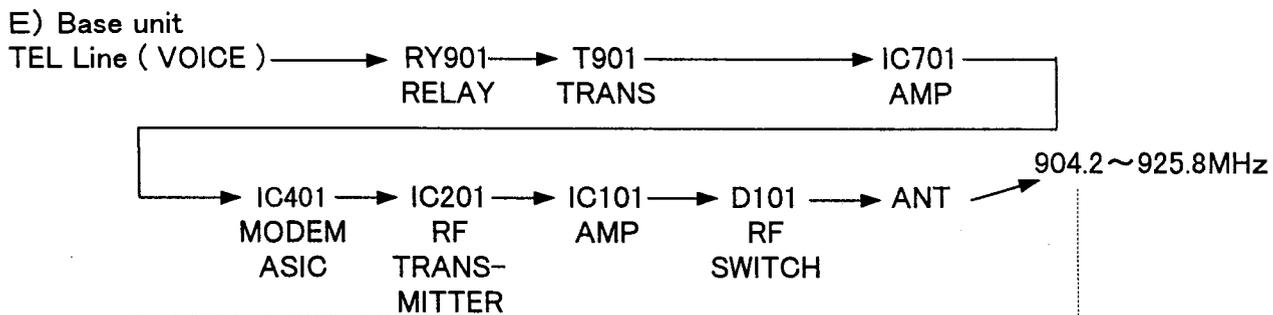


C) Remote unit (TALK SW → ON) ; Voice



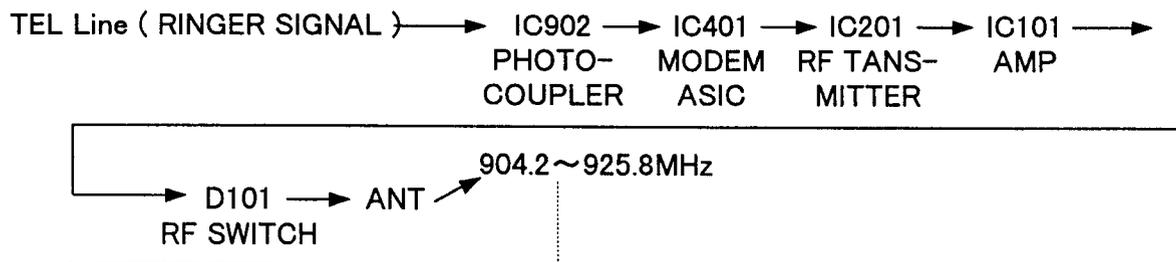
D) Base unit
904.2~925.8MHz



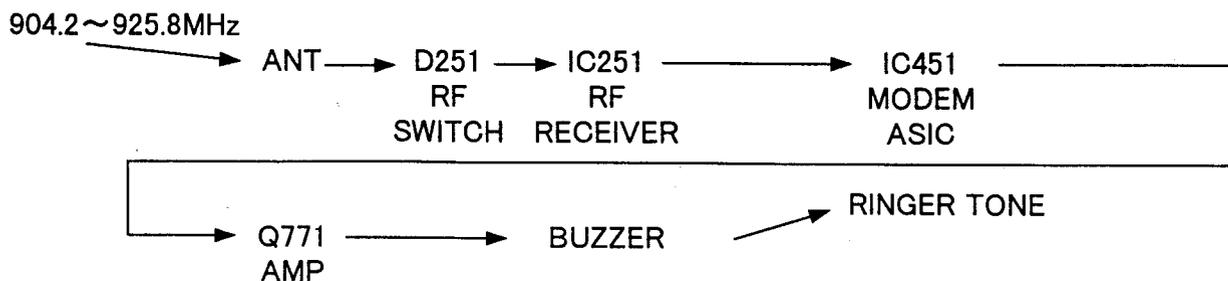


2. In case of incoming call

G) Base unit ; (RINGER ON/OFF SW ON) Ringer



H) Remote unit (RINGER ON/OFF SW ON); Ringer



I) Remote unit (TALK SW ON)



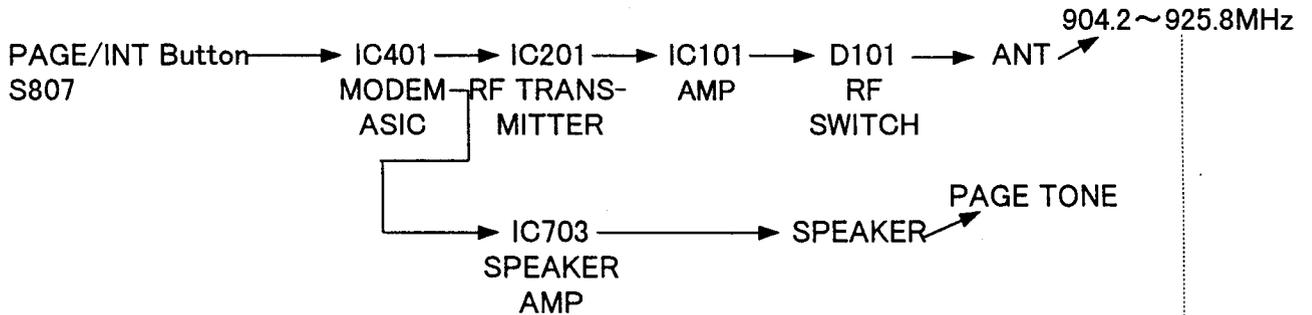
J) In coming voice same as item E & F.

K) Answering voice same as item C & D.

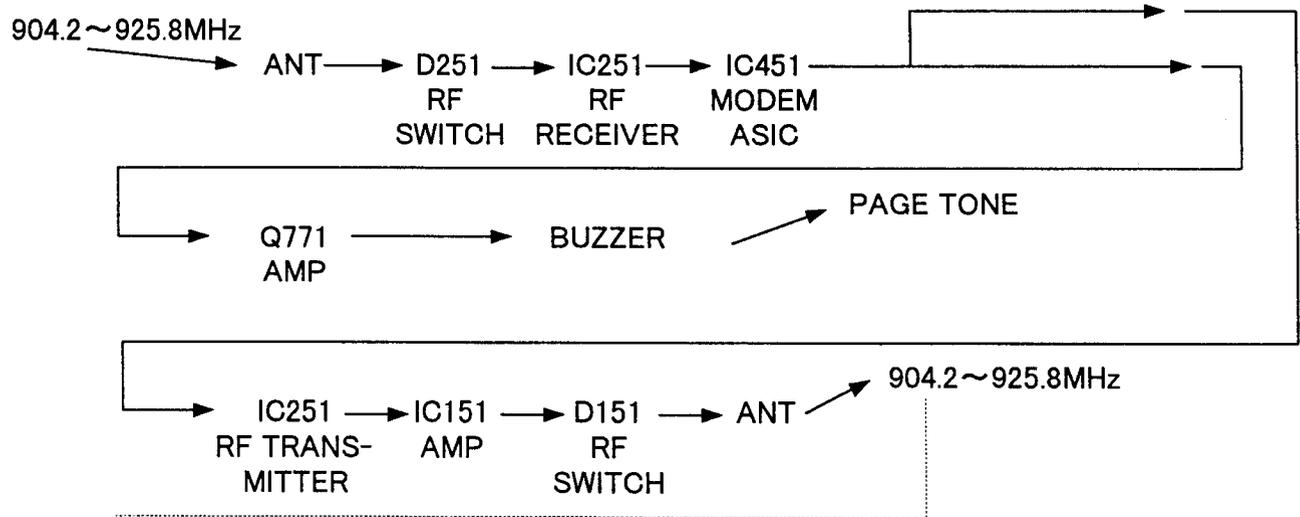
2. INTERCOM OPERATION

1. Calling the Remote unit from the Base unit.

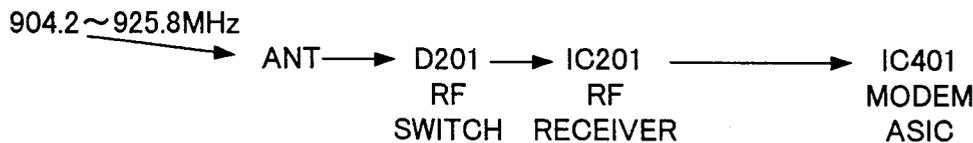
A) Base unit ; Page Signal Data



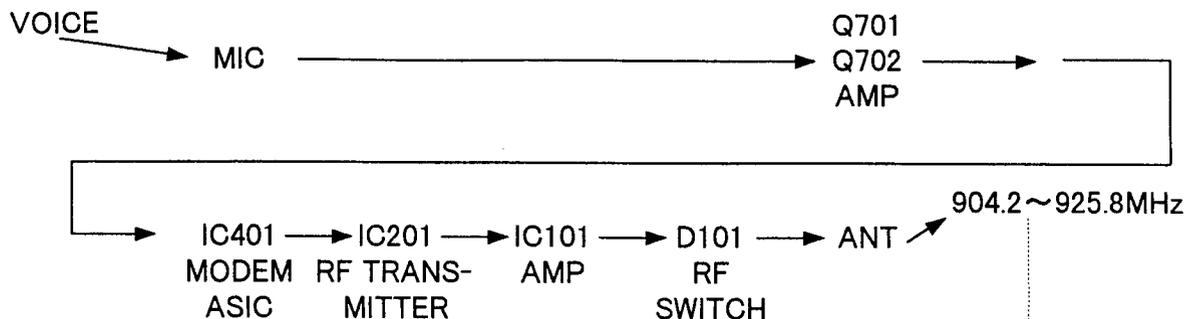
B) Remote unit (RINGER ON/OFF SW → ON)



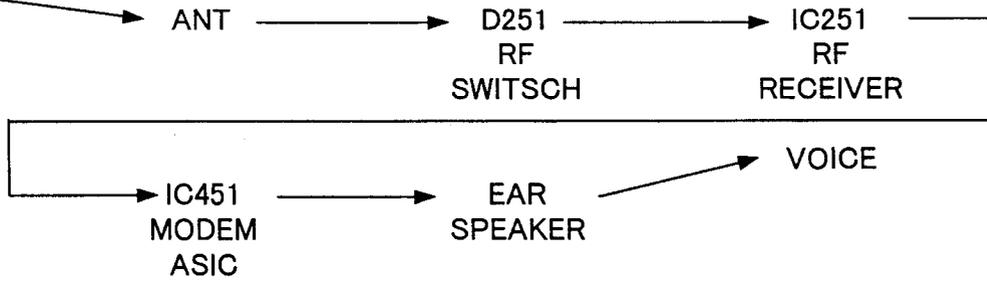
C) Base unit



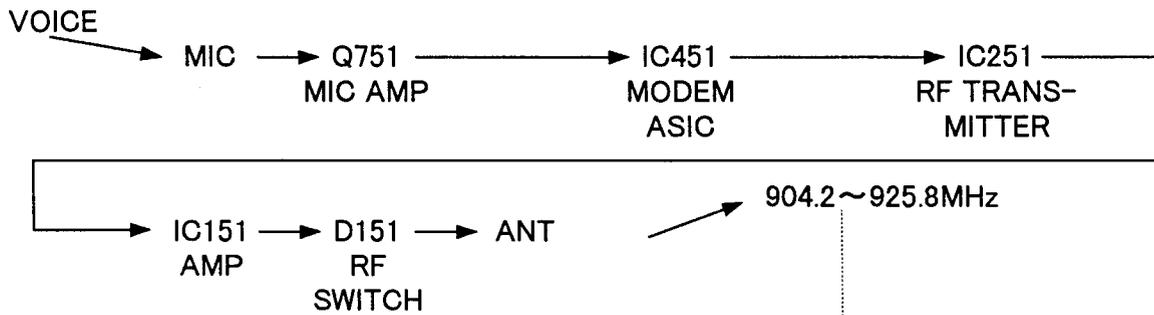
D) Base unit ; Voice



E) Remote unit
904.2~925.8MHz

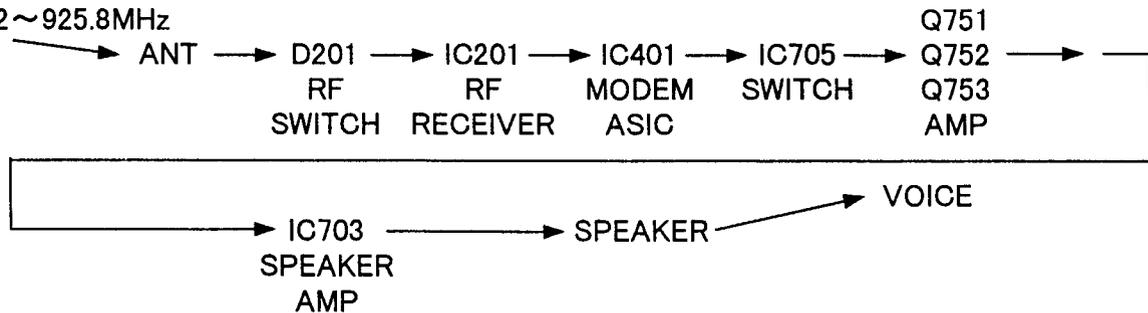


F) Remote unit ; Voice



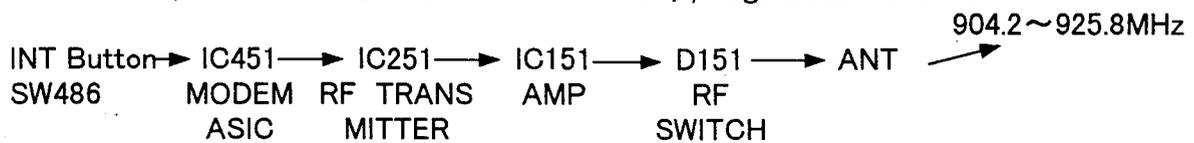
G) Base unit

904.2~925.8MHz



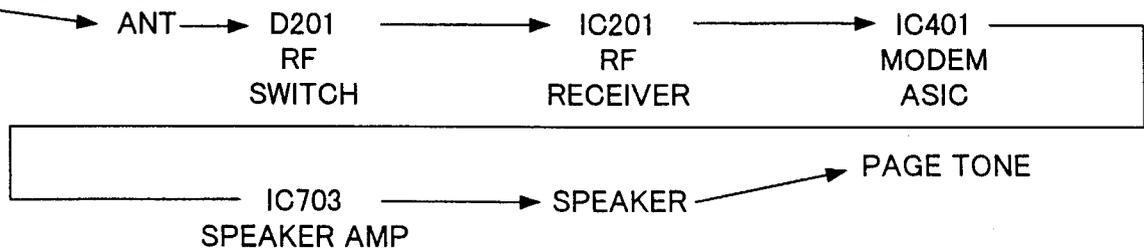
2. Calling the Base unit from the Remote unit

H) Remote unit (RINGER ON/OFF SW → ON) ; Page Data Transmit



I) Base unit

904.2~925.8MHz



SECURITY CODE EXPLANATION

This cordless telephone has 16 million possible security codes.

The operation of initialization and updating the security code is as follows:

- 1, The initial code is randomly fixed for each sets by the microprocessor at the time of system testing at the manufacturer.
This is done by parking the handset on the base station.
- 2, The security code is updated by the microprocessor every 10 times of parking the handset on the base station.
- 3, Every the handset is parked for the tenth time, the base station microprocessor generates a new ID and loads it into the handset via the parking serial port.
Then, the new code is verified by RF link.
If it is correct, the new ID is stored in NVRAM.
- 4, The customer can use the phone without having to park the handset initially.
This is due to that the first code (At the factory) is stored in NVRAM on the handset and the base station.
- 5, The security code will prevent any similar telephone from establishing a link with another.