# EXHIBIT 1
# GENERAL DESCRIPTION

## 1.0 General Description

### 1.1 Product Description

The equipment under test is a 900 MHz Cordless Phone with model Mato 915B. The unit is capable of either tone or pulse dialing. The internal power supply's isolation is accomplished through a power transformer having an adequate dielectric rating. The circuit wiring is consistent under the requirement of part 68.

The handset unit consists of a keypad with twelve standard keys (0,...9,*,#), eight function keys (intercom, lamp, pause, mute, flash, memory, redial and tone), and one channel switch key. A Phone/end key is provided to control pick/release telephone line in a toggle base.

The base unit has a page key, which is used to page the handset unit.

The circuit description are listed in the following pages.

Connection between the device and the telephone network is accomplished through the use of USOC RJ11C in the 2-wire loop calling central office line.

Curcuitry Description

(1) Audio signal path from hand set microphone to telephone line.
(2) Audio signal path from telephone line to hand set receiver-end.
(3) Control data path from hand set to base unit MCU.
(4) Control data path from base unit to hand set MCU.
(5) Hand set MCU functions.
(6) Base unit MCU function.

* Audio signal path from Hand set to telephone line

Audio signal is picked up by the microphone and is amplified by Q8,then,feed to the RF module for modulation and transmitted to the base unit,The base RF module received and demodulated the RF signal, thus audio signal is recovered,after the amplification and filtering (U6F,Q10) the audio signal is splited in to two;

(1) via amplification stage U5,the signal will reach the speaker,if intercom mode is in used ;
(2) send to the phone line via Q2 and in/out stage (Q1,T1), if on line mode is in operation.

* Audio signal path from telephone line to Handset receiver-end.

Audio signal from the telephone line is entered Q7.U8D for amplification (if in intercom mode,the audio signal of the microphone is also injet to Q7) via in/out stage (T1),U8C and Q9 form a noise reduction and side tone mixing stage, this will ensure better sound quality and privatcy ,Tx data from MCU is also mixing in at this point ,then RFmodule picks up these signal and transmitted to the hand set after modulation .The Handset RF module received and demodulated these signal and recover the audio signal ,Q9,Q14 and Q2 amplify this audio signal and send to the receiver-end for sound reproduction and generation of magnetic field for hearing aid device.

*Control data path from hand set to base MCU.

Hand set RF module pick up the mcu Tx data from U2A for modulation and transmitted to the base unit ,the base unit received the RF signal and recover the data then send it to the data shapping curcuitry (U4C,U4B and Q5),thus data is prepared for the Base MCU.

*Control data path from Base unit to Hand set MCU.

Base RF module pick up the MCU tx data (via D25;D11 andD23) for modulation and trans mitted to the HAND SET unit. The HAND SET RF module received the signal and recovered the data after demodulation,then send to U2D for shapping ,Q5 will then transfrom these data in to proper level and supply to the MCU.

## HAND SET MCU FUNCTIONS

(1) Key board ----------MCU pin 7-15 are for key board scanning.
(2) Battery charging detection ----------MCU pin 27 is for battery charging detection ,if charging is in operation then mcu will reset all functions and perform new security code exchanging.
(3) PLL programming ----------MCU pin 19-22 are for RF module PLL programming.

## BASE MCU FUNCTIONS

(1) DTMF---------MCU generated the DTMF signal then feed to Q2 and in/out curcuitry (Q1/T1) after the filter (Q17)for dialing function.
(2) In coming call detection -------The MCU pin 10 will detect the in coming ring signal via U3 (optical coupler).
(3) Noise detection ----------The U4D,Q18,and Q12 will detect the noise level from the RF module if the noise level is high for a duration of 30 sec, then it will signal the MCU that a automatic off line is needed.
(4) Battery charging detection----------MCU pin 8 will detect the current of the battery charging curcuitry, if charging of battery is occuring then the mcu will reset all functions and ready for new security code exchanging operation.
(5) PLL programming ----------MCU pin 19-22 will send data to the RF module for PLL programming.

# RF MODULE CURCUIT DESCRIPTION

* Frequency generation

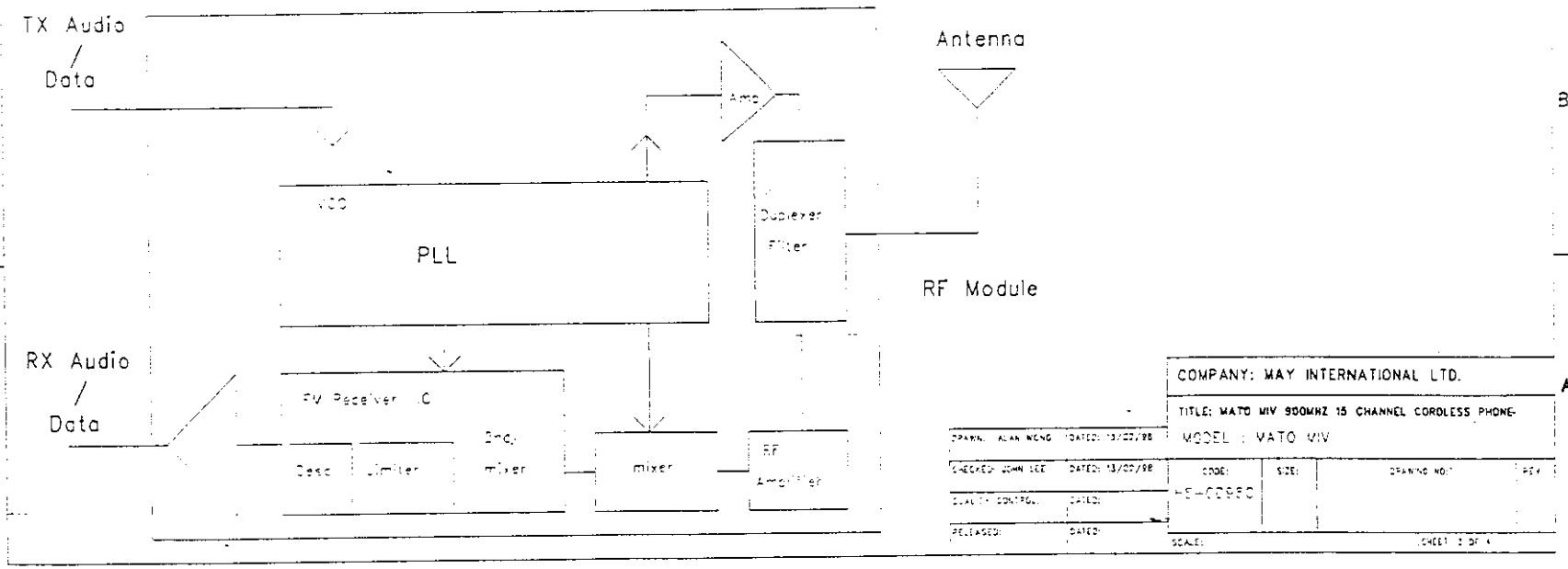
  Utilizing RF synthesizer to generated the desirable frequency (904.9 Mhz – 906.4 Mhz for base unit, 925.6 Mhz – 927.1 Mhz for handset unit) for the transmitter and the receiver.

* Transmitter

  The audio and control data is feed to the VCO for modulation, after amplification the RF signal is reached the antenna through the duplexer filter.

* Double conversion superheterodyne receiver

  Signals that picked up from the antenna are injected to the RF amplifier after the duplexer filter, in the mixer stage, the RF signal will converted into 20.7 Mhz, then the 2nd mixer stage will change the 20.7 Mhz into 10.7 Mhz, after the limiter and desciminator an audio signal is recovered, it will be feed to the main board as Rxaudio /data.




COMPANY: MAY INTERNATIONAL LTD.

TITLE: MATO MIV 900MHZ 15 CHANNEL CORDLESS PHONE-

MODEL : MATO MIV

DRAWN: ALAN WONG DATED: 13/02/98

CHECKED: JOHN LEE DATED: 13/02/98

QUALITY CONTROL: DATED:

RELEASED: DATED:

CODE: HS-CD98C SIZE: DRAWING NO.: REV

SCALE: SHEET 3 OF 4