

Circuitry Description for 9000MWD Cordless Phone

1. Part of Cordless Phone

1) Handset

RF signal sent from base unit is received by ANT1 antenna and passes through L3, C46, L8, C73, L4 and C74 and sends to U4 RF105-12 IC for amplification and demodulation. Afterwards the signal is delivered to U1 R6753-14 (CPU) for D/A conversion and amplification. One path: output speech signal via R2 and R5 to SPK1, 150ohm receiver for sound reduction. The other path: ringer signal outputs from Pin 44 of U1 R6753-14 and is amplified via R54, Q1 to drive BU1 buzzer to sound.

The speech signal picked up by MIC1 microphone sends to CPU U1 R6753-14 via R13, R14, R15, R16, R10, R11, C13 and C14 for amplification and A/D conversion and passes to U4 RF105-12 for RF modulating via R37, L10 and C56, then passes to U5 RF106-12 for RF power amplification via R49 and C69, then outputs the amplified RF modulation signal from Pin 1 and passes to ANT1 for sending out via L14, L7, L6, C47, D10, C46 and L3.

Q2, Q3, L1, D10 and D11 form the TX/RX switching circuitry.

U3 XC62GR3012 is voltage regulation IC for power supply.

U2 93C66 is EEPROM IC.

BAT1 is 3.6V battery power supply connected with each IC for use with J1 jack.

2) Cordless Part of Base Unit

RF signal is received by ANT1 antenna from handset and passes through band-pass filter made up by L14, C171, L13, and C175 to U21 RF105-12 IC for receiving, amplification and demodulation. Afterwards the signal is delivered to U7 R6753-14 (CPU) for D/A switching and amplification then passes through U8 CD4066 to switch on/off, then uses T1 adaptor for coupling and sends to telephone line.

The sound signal from telephone line passes through U7 R6753-14 for A/D switching and amplification after T1 coupling and passes through U21 RF105-2 for RF modulation and amplification and passes through 15pin to R232, C163 and get into U23 RF-106-12 for RF amplification, then passes through wave falling loop made up by L9, L10, L11, L169, D43, C171 and L14 to ANT1 for sending out.

Q44, Q45, D43 and D44 make up of TX/RX switching circuitry.

U21 is frequency amplification IC.

U22 XC62CTR3012 is voltage regulation IC.

U13 93C66A is EEPROM.

2. Telephone Part

1) DC Power Circuit

D6, D7, D9, D11 and 1N4004 make up of Polarity Protecting of DC Input to acquire +9VDC. U18 and 78L05 make up of +5V Voltage Regulation Circuit to supply the working voltage of complete unit. The Charge Circuit of Battery is made up of Q43, Q37, IN 3906 and Q42MPSW51, Q18 and IN3904.

2) Ring Circuit of Base Unit

After input from TIP and RING of telephone line, provide over-voltage protection via FU1 and FU2, block (cut off) direct current with C183 1uF/250v capacitor and limit amplitude with ZD3 and ZD1, one circuit pass through U19, PC817 to make up of RF Ring Detection Circuit and activate the U7 R6753-14CPU to send out ring command to cordless handset; another circuit passes through D30, D31, D32, D33 and IN4004 to make up of polarity protecting circuit and get the positive and negative ring voltage, after voltage regulated with ZD12 24V zener diode, send to U5 GL6851 ring IC to ensure the base BUZ1 to ring.

3) Telephone Line Circuit of Base Unit

The current of wire TIP and RING pass through D13, D20, D24, D25 and IN4004 to make up of polarity protecting circuit after overvoltage/overcurrent protected by FU1, FU2, ZNR1 270V.

One circuit is wireless communication circuit. ON/OFF HOOK circuit of which are made up of REY, Relay, Q16 and 2N3906. T1 and EI-24 coil as coupling coil can match with input/output impedance of phone.

Another circuit is base unit communication circuit. ON/OFF HOOK circuits are made up of Q5, Q6, A92, Q7 and A42 and as the major circuit path of phone operation.

4) Dialing Circuit of Base Unit

U1 KS57P 5208 is the kernel (key) circuit of the phone part which can implement dial, memory, and mute etc features.

5) Speaker Circuit of Base Unit

U2 MC3321S (speaker IC) as base unit communication circuit can implement the input/output impedance switch and amplify dial. U4 CD4051A IC controls the volume control circuit of communication. The unit can be electrically adjusted to 8 steps in volume.

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2-1. Transmit and receiver Frequency

Channel 1	904.20MHz	Channel 8	912.00MHz	Channel 15	920.40MHz
Channel 2	904.80MHz	Channel 9	913.20MHz	Channel 16	921.40MHz
Channel 3	906.00 Mhz	Channel 10	914.40MHz	Channel 17	922.80MHz
Channel 4	907.20MHz	Channel 11	915.60MHz	Channel 18	924.00MHz
Channel 5	908.40 Mhz	Channel 12	916.80MHz	Channel 19	925.20MHz
Channel 6	909.60MHz	Channel 13	918.00MHz	Channel 20	925.80MHz
Channel 7	910.80MHz	Channel 14	919.20MHz		