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Circuit Description for HP288 (43-2105)

This is a 900 MHz Band cordless telephone for domestic use. Radio transmitter with FM technology provides greater mobility to the user within approximately 200 meters radius around the base.

Following paragraphs describe the detail of major building blocks.

I) Ringer Detection

A) Base

Incoming ringer signal is first attenuated by R51, C42 and Z2 and input to U3, which is an optically isolated transistor. The secondary signal is then feed to micro-controller (MPU) U1 for generating response signal according to the setting of inputs. When the ringer switch is set to on position MPU sends digitally coded information to handset via RF link.

B) Handset

When digitally coded information is received from the base it will be decoded at MPU U1. Then necessary ringer is generated and applied to Q9, which drives the transducer J3.

II) Surge protection

The surge absorber V1 is mounted in the Base unit. It designed to operate when voltage over 330V. In general it is common to have induced surges in the telephone line due to lightening. If it allow entering the unit damage to the unit is imminent. The relay, fuse and hybrid transformer is most vulnerable to high voltage surges and V1 surge absorber can prevent it.

III) Line control

When the unit is operated by remote handset, line control is done by MPU. It turns on transistor Q8. Then telephone line power feeds to hybrid transformer T1, which acts as a bridge between telephone line and internal voice path, and around component.

IV) Power Control

A) Base unit

The main power is come from AC/DC adapter, which provide 12V DC to the unit. Inside the unit there are two different voltages available for different modules. 12V non-back up voltage is supplied to the audio amplifier. Radio part, MPU and hybrid transformer related circuit is supplied with non-backup regulated 5V voltage.

B) Handset*p. 7/2*

Three cells of Ni-MH battery (3.6V) provided necessary power to the handset. In order to keep power consumption to minimum, the radio receiver is turn on and off periodically by MPU and Q4. The MPU is supplied with regulated 3.6V by U3

V) Radio Module

Both handset and base use 900MHz analogue radio that transmits and receive signal in full duplex mode. Audio and data signal is FM modulated before transmitting from the module. The radio module is fully cover with shield plate in order to minimize interference to other equipment.

Frequency Table

BASE Rx / Handset Tx		Base Tx / Handset Rx
Ch1	925.35	902.85
Ch2	925.55	903.05
Ch3	925.75	903.25
Ch4	925.95	903.45
Ch5	926.15	903.65
Ch6	926.35	903.85
Ch7	926.55	904.05
Ch8	926.75	904.25
Ch9	926.95	904.45
Ch10	927.15	904.65