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MICKEY MOUSE ANIMATED TALKING CORDLESS PHONE CIRCUIT DESCRIPATION

A. Micro Audio Transmitting

Handset Unit section:

The handset microphone signals pass through R52, C92 into COMPANDOR IC U4/KA8507B pin8 , outputs from pin3 after amplified and compressed, then into the Low Pass Filter consisted by R55,C86,C88,R54 and internal OP Amp. in U4. The audio signals then are to be modulated at TX VCO where RF Transistor NE88130/ Q4 functions as two issues: oscillation at center frequency 927MHZ/2 and second is a double frequency conversion. The TX VCO is controlled by Programmed digital PLL:U2/M64082 which PD signals are generated and output from Pin9 and passed through LP Filter consisted by C28,R14,C27,C29,R18,and RC31. The modulated carrier wave passes through C17,C16 into TXPOWER amplifier NE88130/Q3, is selected by DUPLEXER F1, then bypassed by L0,C1 and lastly transmitted through ANTENNA .

Base unit section:

After the base unit antenna receives the carrier wave current signal, the modulated carrier is sent into the Base of RF Transistor NE88130/Q1 selected by DUPLEXER F1/SFX033, Q1 serves as Low Noise Amplifier for the input weak carrier signal. Q2/ BF998R , L1,C10,R6,C9,C7,R5 function together as a Mixer which the Local frequency signal is produced by another VCO, The RX VCO consisted by Q5,L5,VD2,C38~C43 is controlled by U2/PLL IC M64082 to modify the oscillator frequency so as to meet the request of different channel change from Microprocessor unit U3/KS57P5307 program. 1^{ST} IF 10.7Mhz signal, that production come from mixing result, will go into the base of IF amplifier Q6/2SC1623L6 after selected by F2/10.7Mhz Filter, then pass through C12 and into IF RECEIVER IC U1 pin 16.

The demodulated audio signal will be output from Pin11 of U1 after the 1^{ST} IF signal is amplified , limited and converted to 2^{ND} IF 450KHZ signal ,further the 2^{ND} IF signal is descriminated all these happen at the internal of U1 IC.

The audio signal from U1 pin11 output will be sent into COMPANDOR IC/U4 pin15 and then delivered from U4/Pin19, after amplified, expended internally by U4.

The expended audio signal will be amplified by Q11, and then be sent into the Tel-line passed through Transformer T2 second side, coupled to primary side, and through Polarity Protection circuitry D5,D6,D7,D8, then the RL1 contact.

B. Audio receiving.

Base Unit section:

Received audio signals from Tel-line, pass through Z1,R97, F3, RL1 to Polarity Protection circuitry D5,D6,D7,D8, then are coupled to Transformer T2 second side, then pass through C92,R104,R56,C95,C96,C97,R57into COMPRESSOR IC U4 pin 8 .

The audio signal will output from pin3 of U4 after amplified, compressed internally by U4, then pass through the filter consisted by R59,C102,R60,C105, and the OP AMP. In U4 Pin1,2 into TX VCO circuit and are modulated here.

Q4, together with L4, VD1, C20~C26 make the function as TX VCO, which the center oscillation frequency is modified by PLL IC U2/M64082 through its Pin9 according the requirement of Channel changing and setup from Microprocessor unit U3/KS57P5308 program. The RF transistor Q4 also serves as double frequency converter which convert the TX Channel Fre/2 into TX Channel.

The carrier wave will go to TXPOWER AMPLIFIER Q3, then pass through C14 to DUPLEXER F1, After selected by F1, The carrier signal is transmitted out bypass L0, C1 and passed through ANTENNA.

HANDSET section:

The handset antenna receives the carrier wave, which will pass through L0,C1 and into DUPLEXER F1, After amplified by the high frequency AMPLIFIER Q1, the carrier is sent into MIXER ,Q2 together with C10, L1, C9,C7,R5,R6 consisted by. The Local frequency signal which need to be into MIXER is produced by RX VCO, consisted by Q5,C34, C38~C43,VD2, Its working is almost same as TX VCO.

There are almost same as the IF receiving circuit description as BASE UNIT section ,The expended audio output signal from COMPANDOR U4 pin 19 at HANDSET section, passes through C109,R89,C110 into U5 pin 6 of U5 , then is supplied to the RECEIVER after filtered by U5-B.

C. Data transmit and receive

The all data signals implicated all key operation at HANDSET are output from MCU U3 pin 14 , then pass through C113,R53 into TX VCO circuit Q4, The signals are modulated here, The following process is same as A. Section

The Base unit data receiving is same as A. section too, The demodulated RX DATA output from Pin9 of U1 are filtered and shaped by U5-C port, then sent into Pin19 of U3/KS57P5308.The Microprocessor Unit will make correct operation after it receives correct data order.

The all data signals implicated all order, such as Ringing, Paging output from pin14 of U3 of BASE UNIT, pass through R50,C91,R16 to VCO circuit Q4, The signals are modulated here, The following process is same as B. Section.

The handset data receiving is same as B. Section too. The demodulated RX DATA signals output from Pin9 of U1 are filtered and shaped by U5-C and

Q17, then sent into Pin25 of U3/KS57P5308.

D. Mickey mouse operation

At Base unit, if Ringer select switch is selected at ANIMATATION site, its means that SW4-A is switched to SHOW at BASE MAIN SCHEMATIC, When income call happens,U3/KS57P5308 can detect the ringing signal by detecting its Pin22 input level status that produced due to Optic coupler operation when Ringer trigging happens, then U3 will give off buzzer trigging signals from its Pin29 ,The buzzer signal will be filtered and used as to trigger for Pin3 of U8 /W581**, so U8 can output melody from Pin10 to Q13 Amplifier ,and then driver SPEAKER., also switch Q16 and Q15 on ,The motor can move.

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