CIRCUIT DESCRIPTION

1.RECELVER

1-1 Front end (RF AMP)

The signal coming from the antenna passes through the transmit/receive switching diode circuit,is amplified by the RF amplifier Q8.The winding, L17,L18,L19 making up of select band pass, enter into RDA1846S15 pins, and then pass through low noise amplification (LNA). (See fig.1).

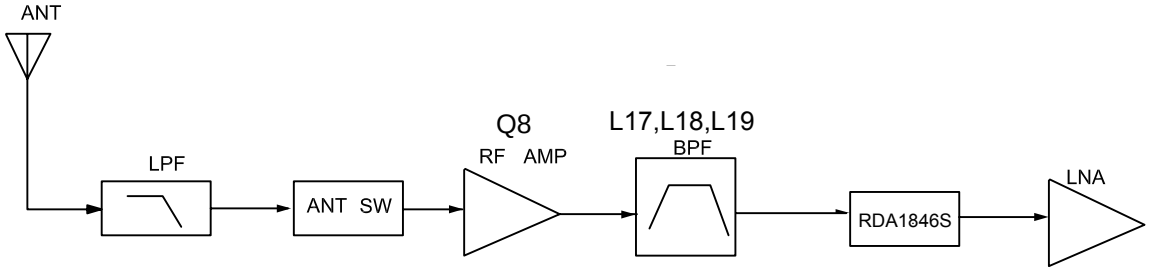

Fig .1

1-2 Mixing

(Completed in RDA1846S)IC in RDA1846S can program to control frequency synthesizer to generate local oscillation and receiving signal, and then mix frequency in image frequency interference suppression mixers to generate IF (intermediate frequency).(See fig.2)

1-3 IF,Squelch,AF

(Completed in RDA1846S) IF signal passes through analog signal band-pass for processing, in order to suppress out of band noise, then entry programmable gain control, after high-precision analog-digital conversion and digital signal processing, to complete the processing of squelch and acceptance of intensity etc. The audio signal is sent out after high-precision digital-analog conversion.

1.Analog Channle:after high-precision digital-analog conversion, analog audio signal is sent to the afamplifier through RDA1846S.

2.DIGITAL channel:signal is sent to band-pass processor(U2) from RDA1846S to be decodeed and decomepressed to convert to digital signal,and then is sent to the AF amplifier.(See fig.2).

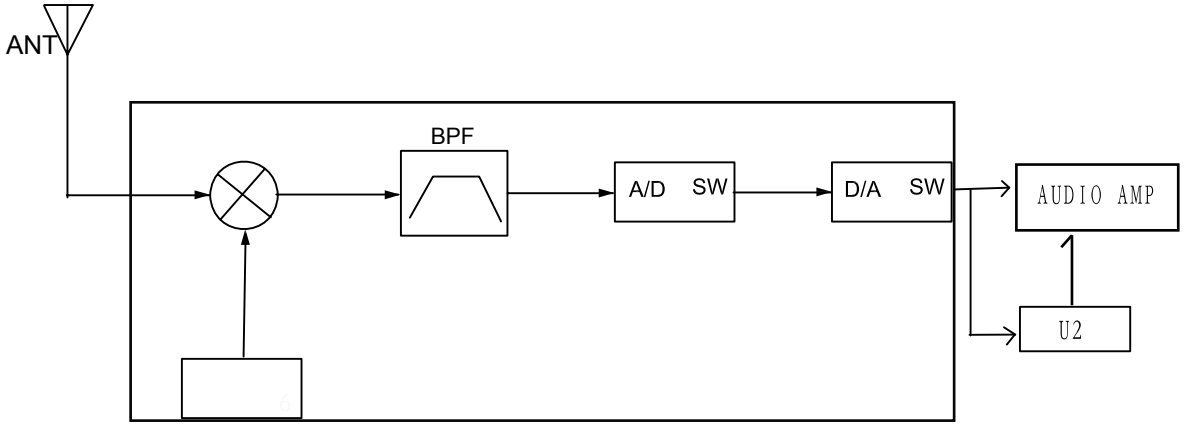

Fig .2

2.TRANMITTER

2-1 Transmit audio

1.Analog channel:sent to RDA1846S for frequency modulation and then sent out.

2.Digital channel:sent into band-pass processor HR_C6000 for sampling,decompressing and I/Q modulation,then is sent into RDA1846S for frequency modulation berfer sending out.

2-2 CTCSS DCS

CTCSS,DCS encoding can be generated by the microprocessor and sent into U1 MCU Modulation is performed at MCU VCO side .

2-3 VCO and RF amplifie

By programming to control RDA1846S to c-omplete the autocontrol of frequency.The RF signal from the RDA1846S is amplifed , by Q2 , Q3, Q4 to the sufficient level to drive the power module.

2-4 Final module

The MOS FET-type power module Q5 is used tp amplify the tranmission power .

2-5 ANT switch and LPF

The signal from the module passes through, D3 D4 diode and composed of LPF with , L10,L11, L12 then is transmitted from the ANT terminal . D3,D4,D7,D8 are consist of TR switch . (See fig.4)

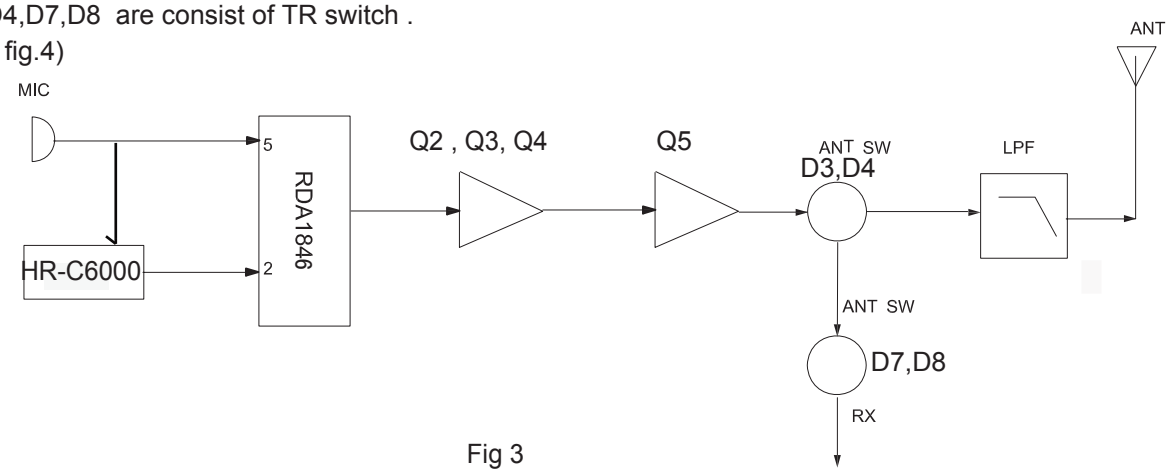

Fig 3

2-6 APC

The APC keep the current constant to the final module. The current to the final mudule is output as a voltage by detecting the pote-ntial difference between R141,R142,R143 by U9 . Comaring with APC voltage from the microp-rocessor, the signal in U9 aways controls the voltage to have the same value with APC vol-tage .

3.AF amplifier

Analog signal passes from 9 pins of RDA1846S while digital signal passes from HR_C6000, Then will be amplified by the U6(4890) audio power amplifer to drive the loud sperker. (See fig.3)

4.Receive signalina

The CTSS,DCS from (U3)RDA1846S the microprocessor determines,and controls the MUTE,and AFCO and the speaker output sounds in line with the squelch results of that content (seefig3)

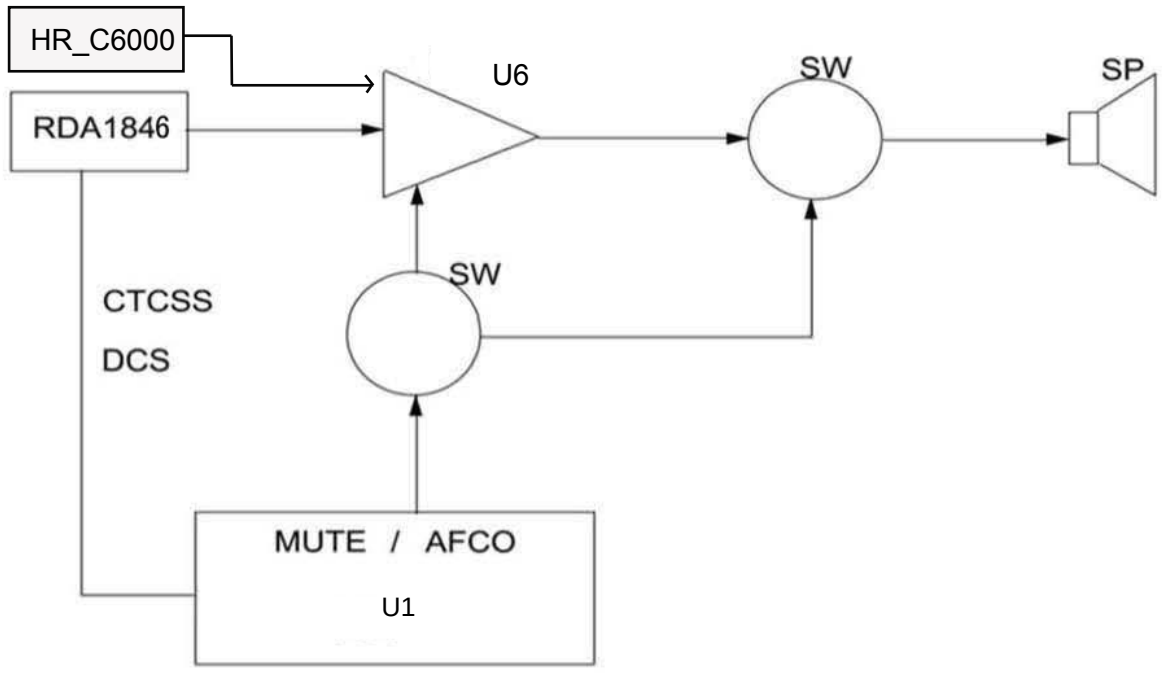

Fig.4

5.PLL

The VCO of receive and transmitter are integrated within RDA1846S,PLL control is controlled program Reference Oscillator through external TCXO 26M oscillatinon signals.Using the adjustable side of crystal oscillation to calibrate the VCO frequency.

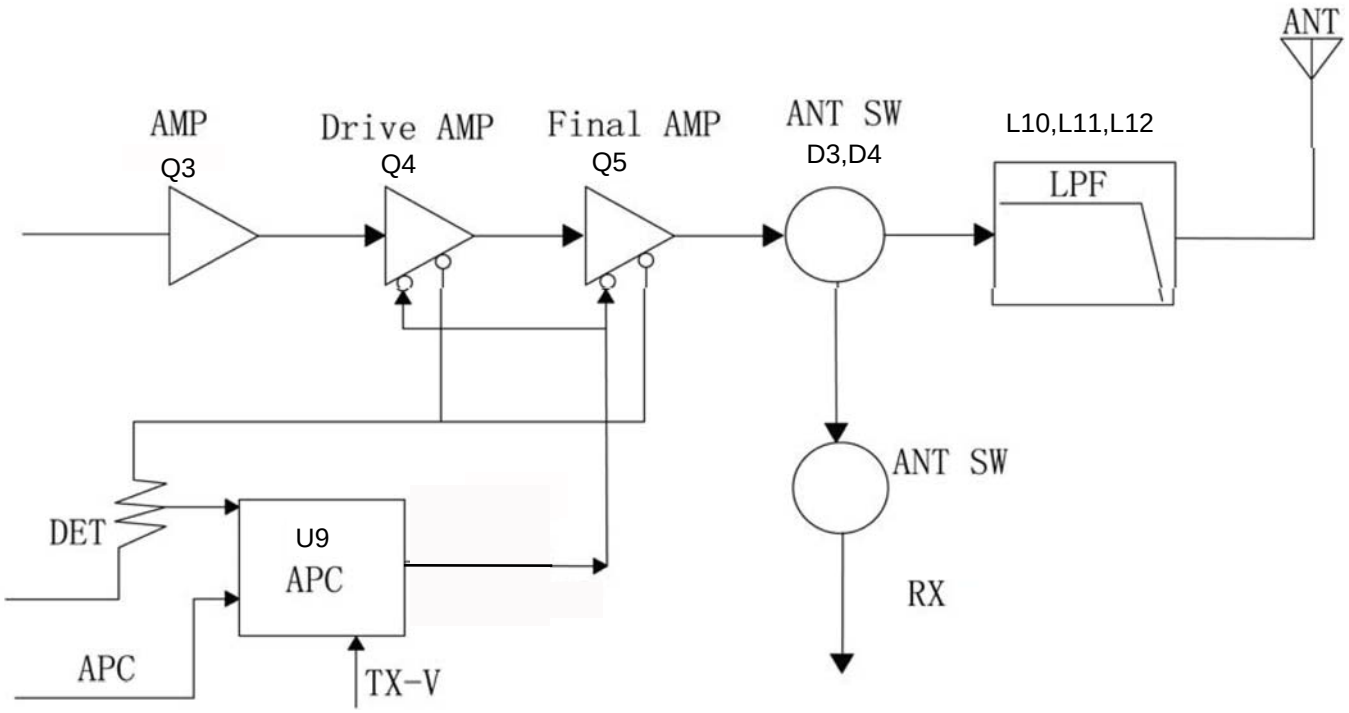

Fig .5

6.POWER SUPPLY

There are poewer supplies for the miceocomputer 3.3V RV and TV . 3.3V for the microcmputer is always out while the piwer is on RV is 3V3 for reception and is pitput during reception.TV is 3V3 for transmission and is oiyput during transmission.

7. COMTRLO SYSYEM

The U1 microprocessor operarws at 12MHZ