

MODEL: SW-928

DESCRIPTION OF CIRCUIT OPERATION

BASE UNIT :

1. BASE RF MODULE

THOROUGH RF ANTENNA TRANSMITS THE RF SIGNAL. THE WIRING ANTENNA IS SOLDERED ON THE RF MODULE.

1) RX PART

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER, AND RF LOW NOISE AMPLIFIER, A ACTIVE TRANSISTOR MIXER, A CERAMIC FILTER AND 10.7MHz IF AMPLIFIER.

ALSO IT INCLUDES BUFFER AMPLIFIERS FOR THE GENERATION OF LOCAL OSCILLATOR POWER.

THIS FRONT-END RECEIVER RECEIVERS AND RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 2470MHz ~ 2479.75MHz PASS THROUGH RF AMP (Q1) AND BAND PASS FITER.

AFTER PASSING THROUGH THE BAND PASS FILTER AND THE SIGNAL IS MIXED WITHIN 1'ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR. THE SIGNAL IS AMPLIFIED ON THE OF AMP TRANSISTOR (Q3) AND THE SIGNAL PASS THROUGH THE CERAMIC FILTER (10.7MHz).

AFTER THE IF SIGNAL PASS THE CERAMIC FILTER, THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC1.

AND THE SIGNAL IS MIXED IN THE FM IF IC (MC3361). THE SIGNAL PASS THROUGH THE LC FILTER. THE OUTPUT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TERMINAL OF THE CONNECTOR TO THE BASE.

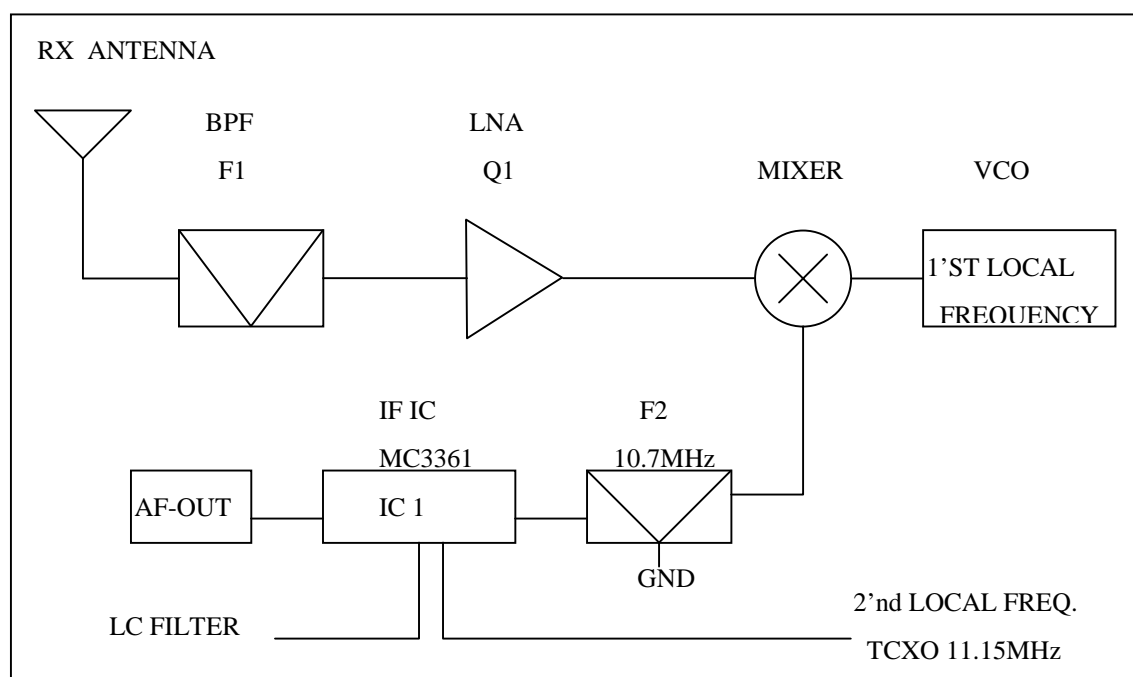


FIG. 1

2)TX PART

THE SIGNAL (AUDIO OR DATA SIGNAL) IS MADE TO THE BASE, ENTER BY THE AF-IN TERMINAL OF THE CONNECTOR (CON1 OF PIN NO.10).

CARRIER SINGAL(TX FREQUENCY) IS GENARATED BY THE OSCILLATOR (Q4, C69,C68,C67,C65 AND VD2) CONTROLLED BY PLL IC.

AUDIO AND DATA SIGNAL SEND OUT BY MOULATE IT ON THE CARRIER SIGNAL THROUGH CHANGE THE CAPACITANCE OF VD2.

TX FREQUENCY IS FROM 2400.25MHz TO 2410MHz.

THE SIGNAL IS MIXED IN THE TX VCO MIXING THE RF SIGNAL, THE RF SIGNAL ADJUST THE TRIMMER CAPACITOR (VC1).

THE RF SIGNAL ENTER BY THE TRANSMISSION POWER AMP TRANSISTOR Q7

THE SIGNAL IS AMPLITUDE IN THE Q5. ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TOWARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 2400.25MHz ~ 2410MHz.

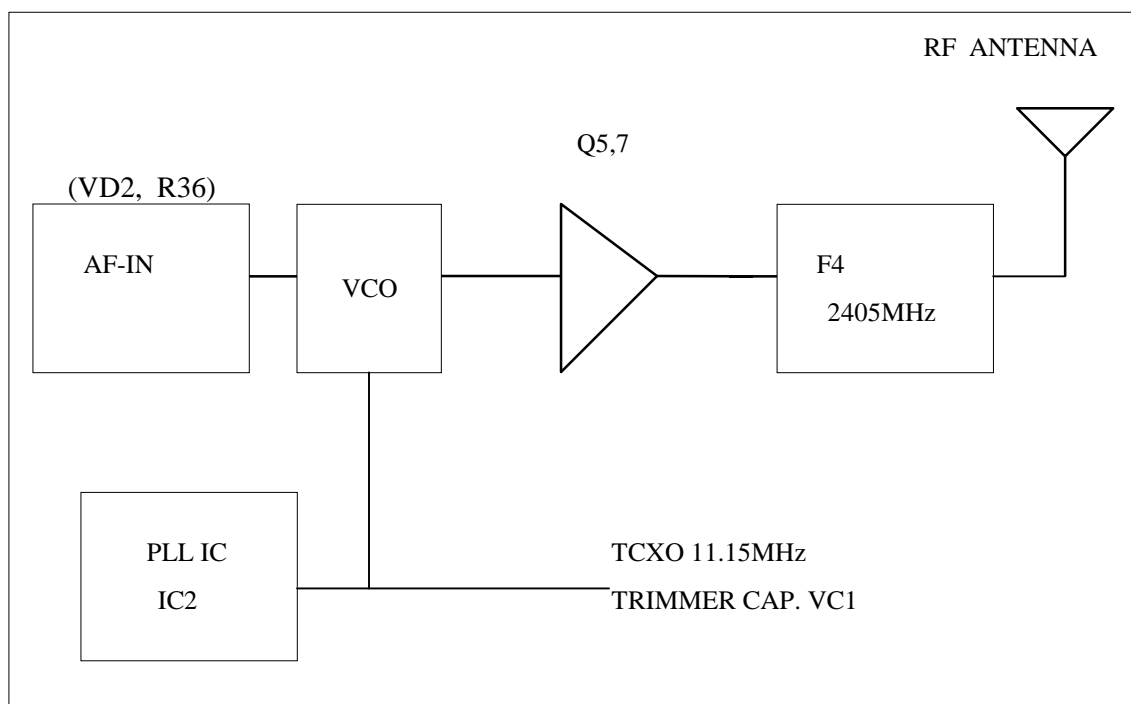


FIG. 2

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.3 of J3 is sent to IC2 (COMPANDER IC) Pin no.16 for Expansion. The expended audio signal output from Pin no.19 is coupled to Q8,Q3 during the TEL. mode. The audio signal is sent to the Telephone Line via Q3.

The demodulated data code from J3 Pin no.3 is generated by U5-C, U5-B.

It's output is connected to CODE Input Pin no.31 of IC4.

The Audio signal receiving from TEL-LINE is input to IC2 Pin no.8 for compression. The compressed audio signal from Pin no.1 of IC2 is connected to Pin no.10 of J3 for TX modulation.

Pin no.21 of IC4 is the output port for data codes that should be transmitted to the handset the data code is connected to Pin no.10 of J3 for modulation.

Line controlling is done by Pin no.10 of IC4.

Ring signal monitored by U5-A is detected by Pin no.9 of IC4 resulting a data code to the handset.

DTMF dialing is generated by IC4 Pin no.38 this signal output through the Q6.

When the handset is placed on the base cradle, the charging is detected by Pin no.8 of IC4 and IC4 sends data codes to handset for security code setting.

When the handset is far away from base unit, squelch circuit of RF module operates and Pin no.30 of IC4 goes "HI". This will be detected by the micro processor and after 20 sec. the base unit go to stand by mode.

The power to the base unit is supplied by IC5(5V REGULATOR IC).

LED display control Pin no.23 of IC4.

HANDSET :

1. PORTABLE RF MODULE

THOROUGH RF ANTENNA TRANSMITS THE RF SIGNAL. THE WIRING ANTENNA IS SOLDERED ON THE RF MODULE.

1) RX PART

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER, AND RF LOW NOISE AMPLIFIER, ACTIVE TRANSISTOR MIXER, CERAMIC FILTER AND 10.7MHz "IF" AMPLIFIER.

ALSO IT INCLUDES BUFFER AMPLIFIERS OR THE GENERATION OF LOCAL OSCILLATOR POWER.

THIS FRONT-END RECEIVERS AND RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 2400.25MHz ~ 2410MHz PASS THROUGH RF AMP (Q1) AND BAND PASS FILTER..

AFTER PASSING THROUGH THE BAND PASS FILTER, THE SIGNAL IS MIXED WITHIN 1'ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED

OSCILLATOR. THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q3) AND THE SIGNAL PASS THROUGH THE CERANIC FILTER (10.7MHz)

AFTER THE IF SIGNAL PASS THE MCF FILTER, THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC. AND THE SIGNAL IS MIXED IN THE FM IF IC (MC3361). THE SIGNAL PASS THROUGH THE LC FILTER.

THE OUTPUT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TERMINAL OF THE CONNECTOR 1 TO THE PORTABLE.

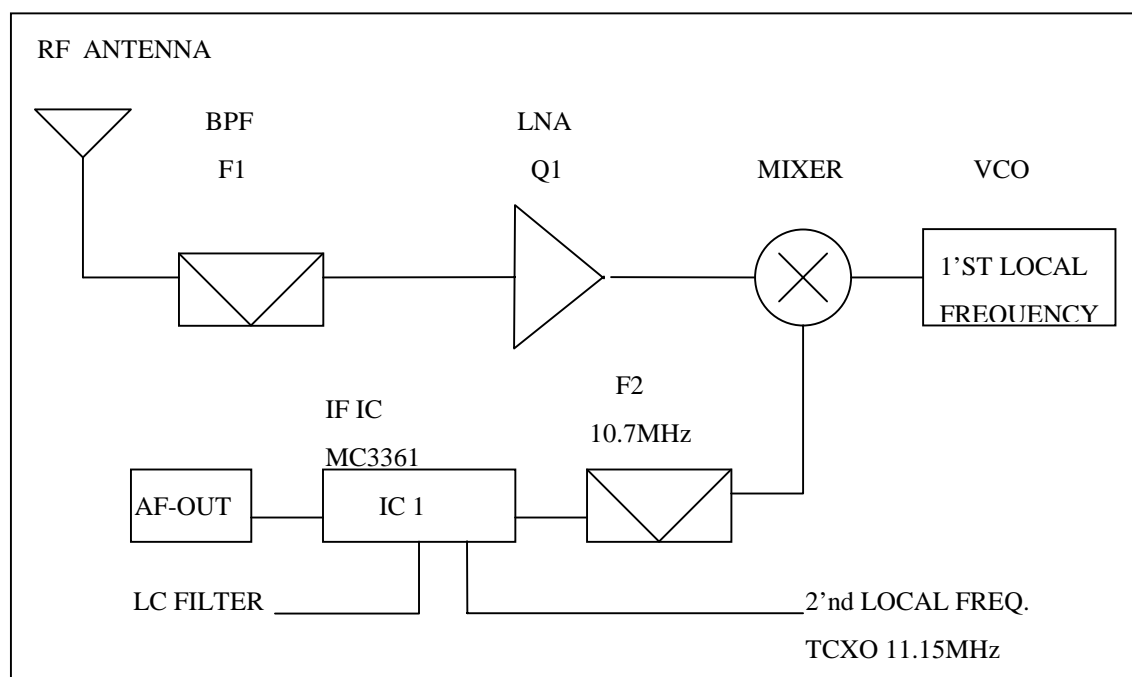


FIG.3

2) TX PART

THE SIGNAL(AUDIO OR DATA SIGNAL) IS MADE TO THE PORTABLE, ENTER BY THE AF-IN TERMINAL OF THE CONNECTOR.

CARRIER SINGAL(TX FREQUENCY) IS GENARATED BY THE OSCILLATOR (Q4,C69,C68,C67,C65 AND VD2) CONTROLLED BY PLL IC.

AUDIO & DATA SIGNAL SEND OUT BY MOULATE IT ON THE CARRIER SIGNAL THROUGH CHANGE THE CAPACITANCE OF VD2.

TX FREQUENCY IS FROM 2470MHz TO 2479.75MHz.

THE SIGNAL IS MIXED IN THE TX VCO MIXING THE RF SIGNAL, THE RF SIGNAL ADJUST THE TRIMMER CAPACITOR VC1.

THE RF SIGNAL ENTER BY THE TRANSMISSION POWER AMP TRANSISTOR (Q5,7). ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TO WARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 2470MHz ~ 2479.75MHz.

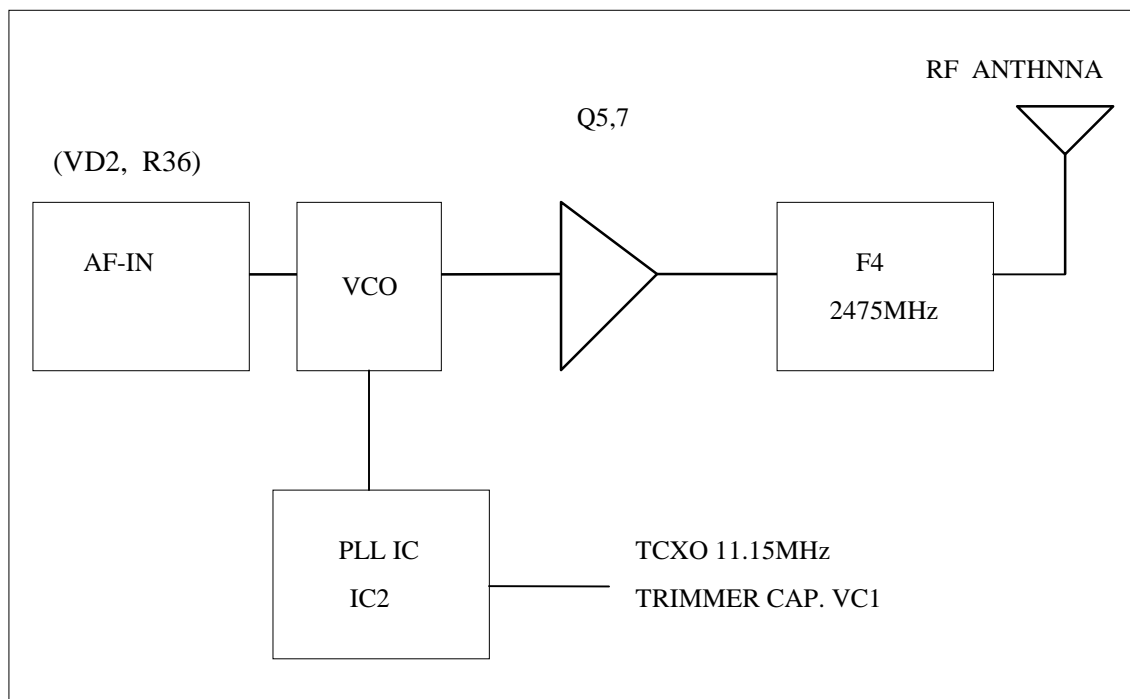


FIG. 4

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.3 of CON1 is connected to U2 Pin no.16 Expander input. The audio output from U2 Pin no.19 is finally amplified by Q8 and A.C coupled to the Receiver unit with HAC compatibility.

The demodulated data code from CON1 Pin no.3 is fed to Q9,Q10. Q9 is connected to (DATA IN) Pin no.26 of U1.

Voice signal from C-MIC is coupled to Pin no.8 of U2-A. The voice signal is compressed by U2-A and output Pin no.1 is connected to Pin no.10 of CON1 for modulation.

Pin no.29 of U1 is the output port for data code that should be transmitted to the base unit. This data code is connected to the Pin no.10 of CON1 for modulation.

During the charging, it is detected by U1 Pin no.23.

Keyboard operation is monitored by Pin no.50~ 61of U1.

Key Tone and the ringing from Pin no.62 of U1 drives the BUZZER.

FM Part

1. FM receiver contains LC tuning circuit, a low noise IC and two 10.7MHZ filters.
2. RF signal, received from FM antenna, enter into the IC internal high frequency amplifier through LC circuit, mixed with signal produced by LC oscillator and then produced IF signal in the mixer, which is 10.7MHZ middle frequency signal after it is filtered by external filter, and amplified by middle frequency amplifier and produced AF audio signal after checked by detector, finally the audio signal will be voice through speaker switched by audio switcher.

CD part

1. CD part contains servo circuit digital with microprocessor and clock with 16.9344MHZ connected by audio switching circuit outside.
2. The signal produced through the signal on the disk reflected by raises diode on the chip, will be passed to microprocessor to be processed, and the digital signal produced will be input on the digital/audio switching circuit to be processed and then output the audio signal AF, which will be voice through speaker after pushed by audio amplifier of audio signal switcher.

2.4G(40CH) FREQ

HANDY			BASE		
CH	TX			TX	
1	2470.0000			2400.2500	
2	2470.2500			2400.5000	
3	2470.5000			2400.7500	
4	2470.7500			2401.0000	
5	2471.0000			2401.2500	
6	2471.2500			2401.5000	
7	2471.5000			2401.7500	
8	2471.7500			2402.0000	
9	2472.0000			2402.2500	
10	2472.2500			2402.5000	
11	2472.5000			2402.7500	
12	2472.7500			2403.0000	
13	2473.0000			2403.2500	
14	2473.2500			2403.5000	
15	2473.5000			2403.7500	
16	2473.7500			2404.0000	
17	2474.0000			2404.2500	
18	2474.2500			2404.5000	
19	2474.5000			2404.7500	
20	2474.7500			2405.0000	
21	2475.0000			2405.2500	
22	2475.2500			2405.5000	
23	2475.5000			2405.7500	
24	2475.7500			2406.0000	
25	2476.0000			2406.2500	
26	2476.2500			2406.5000	
27	2476.5000			2406.7500	
28	2476.7500			2407.0000	
29	2477.0000			2407.2500	
30	2477.2500			2407.5000	
31	2477.5000			2407.7500	
32	2477.7500			2408.0000	
33	2478.0000			2408.2500	
34	2478.2500			2408.5000	
35	2478.5000			2408.7500	
36	2478.7500			2409.0000	
37	2479.0000			2409.2500	
38	2479.2500			2409.5000	
39	2479.5000			2409.7500	
40	2479.7500			2410.0000	