

MODEL: PM5820

DESCRIPTION OF CIRCUIT OPERATION

BASE UNIT :

1. BASE RF MODULE

SEPARATED RX ANTENNA AND TX ANTENNA TO TRANSMIT 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 10.73MHz 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 2468MHz ~ 2479.7MHz 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 (10.73MHz).

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 (3361). 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.

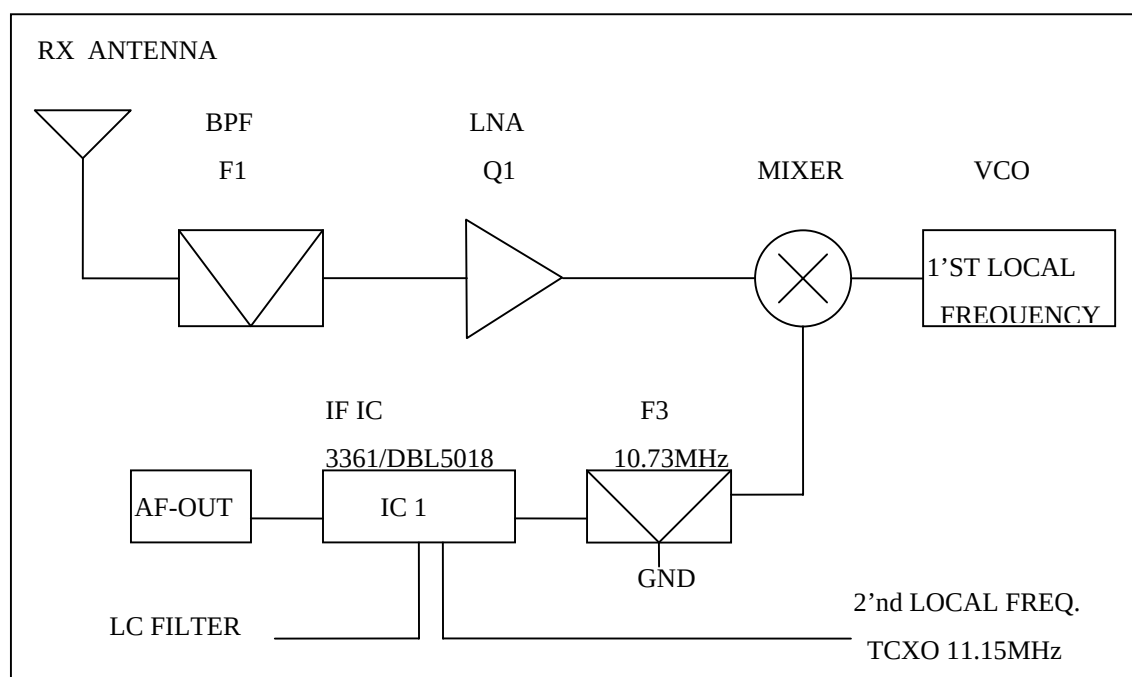


FIG. 1

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 (Q8, C69,C68,C67,C65 AND VD2) CONTROLLED BY PLL IC.

TX OSCILLATOR FREQUENCY IS FROM 1160.6038MHz TO 1163.2038MHz.

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

TX FREQUENCY IS FROM 5803.019MHz TO 5816.019MHz.

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,Q10. ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TOWARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 5803.019MHz ~ 5816.019MHz.

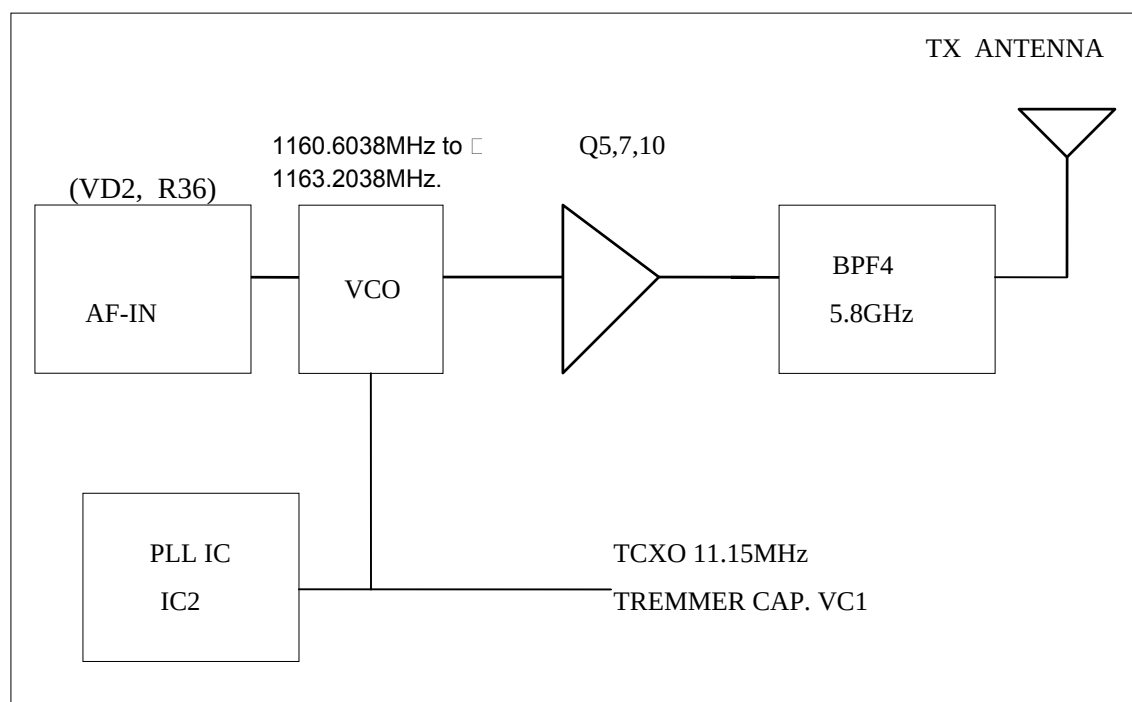


FIG. 2

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 Q8.

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

SEPARATED RX ANTENNA AND TX ANTENNA TO TRANSMIT 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 10.73MHz "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 5803.019MHz ~ 516.019MHz PASS THROUGH RF AMP (Q1) AND BAND PASS FILTER..

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

OSCILLATOR. THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q3) AND THE SIGNAL PASS THROUGH THE CERANIC FILTER (10.73MHz)

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 (3361). 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.

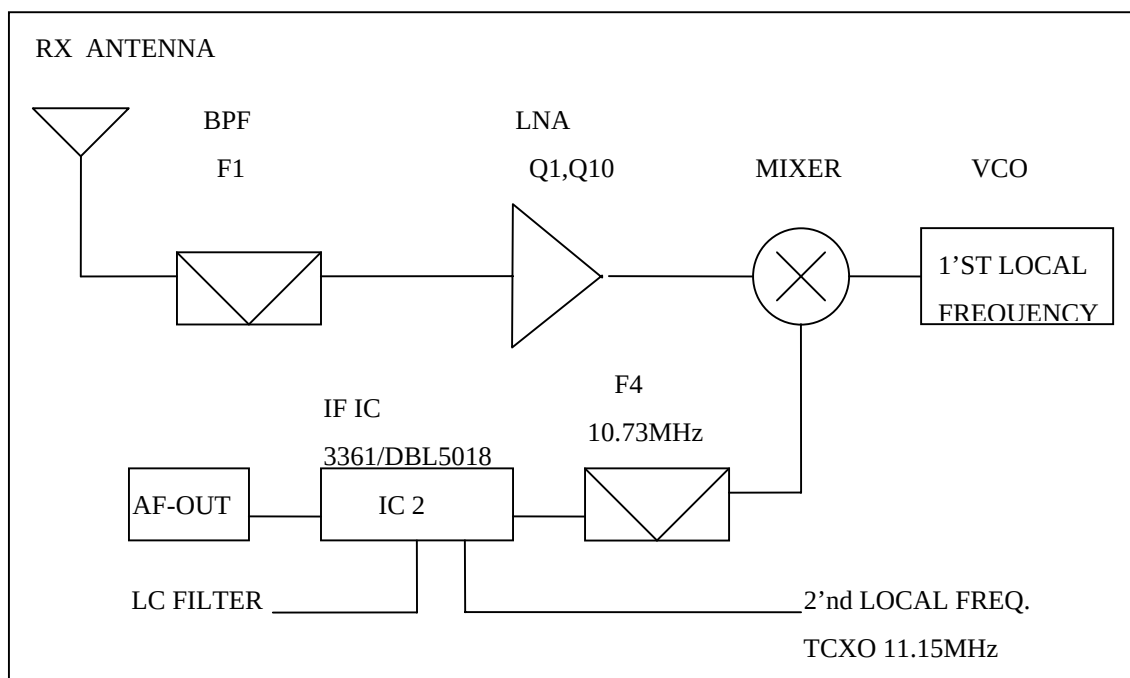


FIG.3

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 (Q8,C69,C68,C67,C65 AND VD2) CONTROLLED BY PLL IC.

TX OSCILLATOR FREQUENCY IS FROM 822.667MHz TO 826.567MHz.

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

TX FREQUENCY IS FROM 2468MHz TO 2479.7MHz.

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 2468MHz ~ 2479.7MHz.

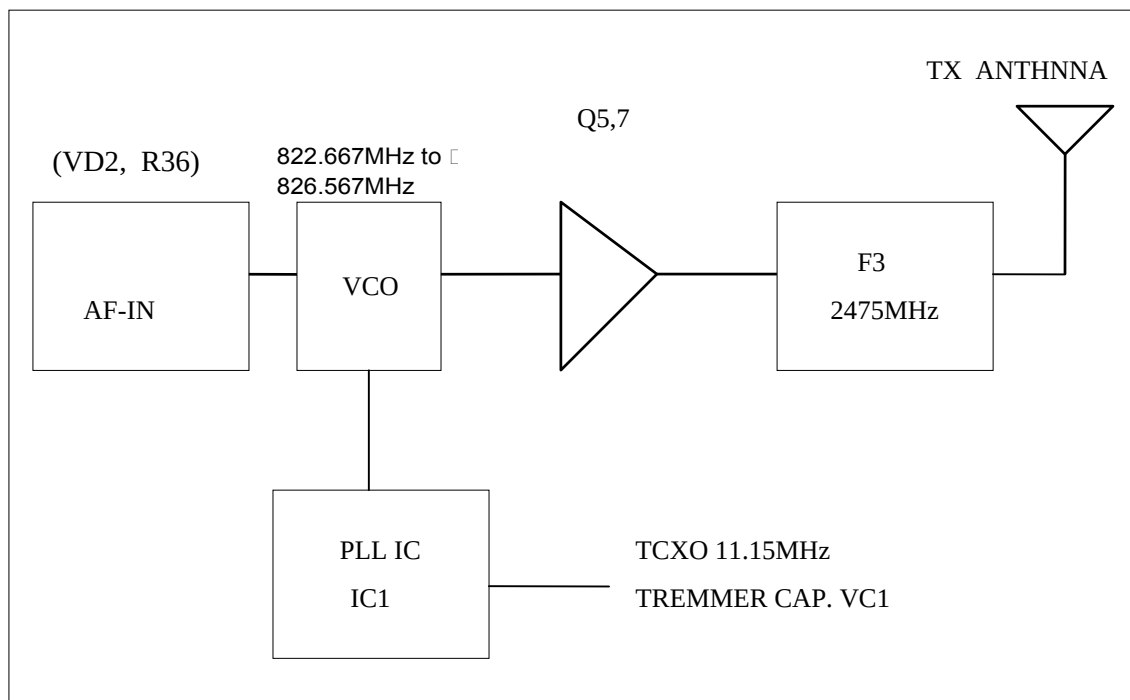


FIG. 4

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.