Circuit description for Base unit

A Frequency modulation signal transmitted from the handset is received through a antenna of Base unit.
And then delivered to the Filter U9 which eliminates harmonics of Rx signal.
This signal is amplified by LNA (Q3) and be mixed, with RX VCO (D2,Q8,) signal.
The VCO oscillation is controlled by error signal from PLL IC (U2) pin no. 16.
The channel information to U2 is provided by CPU (microprocessor IC) pin no. 28,29,30.
The mixer output from FET1 passes through Q10, Filter U4(10.7MHz Filter) and enter to U1(FM DEMODULATOR IC) pin no. 16.

This signal is mixed with 11.1566MHz signal from IC U2 pin no 9, which is connected IC U1 pin no. 1.
The mixed signal is filtered by CF2 (455KHz Filter).

The demodulated signal, resulting from double super Heterodyne system, which appears at output pin no. 9 of IC U1, is sent through LPF to pin no. 15 of IC U6(scrambler IC) for protection your privacy by changing the voice signal between the Handset and Base unit when you make or receive calls. It' s difficult or impossible for some one to receive and understand your calls, and then, into the pin no. 15 of IC (KA8507) for audio expansion.
The Audio is expanded at the Talk mode.

The amplified Audio signal sent to the Telephone Line via Hybrid Transformer KA-9.

The demodulated data code from IC U1 (TA31136FN) pin no. 9 is modified by U2A (KA2902). This signal is fed to pin no. 17(RX DATA) of IC CPU.

The Audio signal receiving from Tel-Line is input to IC U6 pin no. 4. Via Hybrid Transformer for protection your privacy by changing the voice signal between the Handset and Base unit when you make or receive calls. It' s difficult or
impossible for some one to receive and understand your calls, and then, into the pin no. 7 of IC (KA8507) for audio for compassion.
The compressed Audio signal from pin no. 1 of IC (KA8507) is connected to TX VCO for modulation.

The signal is modulated with the carrier frequency of oscillator Q1 (RF part).
The oscillator frequency is controlled by error output signal from pin no. 1of IC U2 (RF part)

The modulated signal is amplified and tripled by RF amplifier signal Q2 (RF part) and amplified by Q9 (RF part)
And then passes through BPF filter stage U7.

The FM modulated signal is radiated by Antenna of Base unit to the Handset.

Pin no. 9 of IC CPU is output port for TX data codes that should be transmitted to Handset.

The data code port is connected to the TX VCO stage to modulation.

The ringer signal from the Telephone Line is detected by U3 which is connected to CPU pin no.14.

When the ringer sound signal from the Telephone Line come, the detected signal is repeated from high to low continually pin no. 14 of CPU.

The DTMF dialing signal is output through the pin no. 20,21,22,23,24,25 of CPU. The signal is filtered by Q2 and amplified by U2(KA2902) and then goes out to the Telephone Line via Hybrid transformer.

The pulse dialing code composed of digital code signal.

Then CPU pins no. 18 control the Hook Switch TR Q3 for pulse dial to the Telephone Line.

When the handset is placed on the base cradle the charging is detected by pin no.13 of CPU and CPU sends data codes to handset for security code setting between handset and base unit.

When the handset is for away from base unit, during the Talk mode, squelch circuit of IC 1 operates and pins no. 12 of IC U1(RF part) goes High.

This will be detected by the CPU (microprocessor) and after 20 seconds go to the stand by mode.

The power to the base unit is supplied by IC U5 (5V Regulator IC).

Circuit description for HANDSET

An incoming RF signal of 2462 to 2463MHz band from the base unit is received though a antenna of the handset.
And then delivered to the filter U9 which eliminates harmonics of RX signal.
This signal is amplified by LNA (Q3 RF part) and be mixed, with RX VCO (D2,Q8,) signal.
The VCO oscillation is controlled by error signal from PLL IC (U2) pin no. 16.
The channel information to U2 is provided by CPU (microprocessor IC) pin no. 21,22,23.
The mixer output from FET1 passes through Q10, Filter U4 (10.7MHz Filter) and enter to U1(FM DEMODULATOR IC) pin no. 16.

This signal is mixed with 11.1566MHz signal from IC U2 pin no 9, which is connected IC U1 pin no. 1.
The mixed signal is filtered by CF2 (455KHz Filter).

The demodulated signal, resulting from double super Heterodyne system, which appears at output pin no. 9 of IC U1, (RF part)is sent through LPF to pin no. 15 of IC U6(scrambler IC) for protection your privacy by changing the voice signal between the Handset and Base unit when you make or receive calls. It' s difficult or impossible for some one to receive and understand your calls, and then, into the pin no. 15 of IC (KA8507) for audio expansion.
The Audio is expanded by compander IC at the Talk mode.
The Audio signal output from IC (KA8507) pin no. 19 is coupled to Q5, and AC coupled to the Receiver unit with HAC.

The demodulated RX data code from IC U1(RF part) pin no. 9 is fed toU4 for Schmitt Trigger Stage.

The demodulated data code from IC U1(TA31136FN) pin no. 9 is modified by U4(KA358). This signal is fed to pin no. 27(RX DATA) of IC CPU.

Voice signal from the C-MIC is coupled to pin no. 8 of IC U2.
The voice signal is compressed by IC U2 and output pin no. 1 is connected to U6 (MSM7545) for voice scramble
And then fed to TX VCO for modulation.
The signal is modulated with the carrier frequency generated by the RF oscillation by Q1 (RF part).
The oscillator frequency is controlled by the error output signal from pin no. 1 of IC U2 (TB31206,RF part).

The modulated signal is tripled by Q2 (RF part) and amplified by RF amplifier stage Q9(RF part) and then passes through BPF filter stage U7.
The FM modulated signal is radiated by the Handset Antenna.

Pin no. 29 of CPU IC is output port for TX data code that should be transmitted to the base unit.
This TX data code is connected to the TX VCO stage for modulation.

When the any on the keyboard is pressed, data codes from pin 29 of CPU IC send to the base unit.

Keyboard operation is monitored by pin 5, 6,16,9,10,11 and 31.

Key Tone and the ringer sound from pin no. 30 of CPU IC driver the buzzer.

During the charging it is detected by CPU IC pin no. 13.

Ringer on off is detected by pin no. 20 of CPU IC, and IC (KIA7033) detects the low battery state when the battery voltage drops be low 3.3V.