

FS29660 Circuit Description

The following circuit description is for model FS29660 and which base on the circuit diagram and block diagram.

1. RECEIVING PATH (HANDSET)

After the RF signal is pick up by the solid-wire antenna, the receiving path is Established by the SAW duplexer after and input to tuning amplifier Q4 before output to COMBO IC 1st mixer.

a. Mixer

Mixer is included in COMBO U3. Local Oscillator (LO) is controlled through External coil T3. The first IF (10.7MHZ) is filtered by ceramic filter CF1

b. IF amplifier

IF amplifier is built in U3. Amplifier IF is filtered again by a ceramic filter CF2, Then input to FM demodulator also inside COMBO.

c. FM demodulator and expander

The IF demodulated by quadrate coil COMBO, then the recovered audio is input to the expander for de-emphasis, before output to the handset speaker though audio amplifier.

2. TRANSMITTING PATH (HANDSET)

The transmitting path is established by below sections.

a. Microphone amplifier and compressor

Audio frequency picked up by handset microphone is amplified by internal mic Amplifier of U3, the input to compressor for pre-emphasis, before input to the modulator.(Tx VCO).

b. Modulator and Tx VCO

The transmit PLL is internal at U3 and the transmit VCO is controlled by external coil T4. Both audio and data signal input to the transmit VCO will cause a frequency modulation progress.

C. RF power amplifier

FM signal is amplified by Q8 and fed to the telescopic antenna through SAW duplexer .

1.RECEIVING PATH (BASE)

The receiving path is established by below sections.

a . Low Noise Amplifier (LNA)

FM signal picked up by the rubber type antenna is filtered by the SAW duplexer, and input to tuning amplifier Q201 before output to COMBO IC 1st mixer.

b. Mixer

Mixer is included in COMBO U201. Local Oscillator (LO) is controlled through external coil T2. The first IF (10.7MHz) is filtered by a ceramic filter CF201.

C.IF amplifier

IF amplifier is built in U201. Amplified IF is filtered again by a ceramic filter CF1, then input to FM demodulator also inside COMBO.

d. FM demodulator and expander

The IF demodulated by quadrature coil COMBO, then the recovered audio is input to the expander for de-emphasis, before output to the final AF amplifier for speech circuitry and line interfacing.

2. TRANSMITTING PATH

The transmitting path is established by below sections.

a. Mic amplifier and compressor

Audio frequency input from the line interface is amplified by internal mic amplifier of U201, then input to compressor for pre-emphasis, before input to the modulator (TX VCO)

b. Modulator and TX VCO

The transmit PLL is internal at U201 and the transmit VCO is controlled by external coil T203. Both audio and data signal input to the transmit VCO will cause a frequency modulation process.

C.RF power amplifier

FM signal is amplified by Q205 and fit to the soft-wire spring type antenna through SAW duplexer.

3.TELEPHONE INTERFACE

The telephone line interface circuit and speech circuitry is established by below sections.

a. Audio power amplifier

Q13, Q14 & Q25, Q26 are built as power amplifier, according to high current output requirement for speech circuitry.

b. Line control

Q3 & Q19 is the opening for line seizure, which is controlled by Q4.

c. Ring detect circuit

Q35 is for detecting the ring signal.

d. Caller ID

The Caller ID signal pass through C73, C74, R116, R117 to MCU for decoding.

46/49 Frequency Table

	Handset Unit (MHz)		BASE UNIT(MHz)			
CHANNEL	TX Freq	RX Freq	TX Freq	RX Freq	HS TX VCO	Base TX VCD
1	49.670	46.610	46.610	49.670	49.670	46.610
2	49.854	46.630	46.630	49.845	49.845	46.630
3	49.860	46.670	46.670	49.860	49.860	46.670
4	49.770	46.710	46.710	49.770	49.770	46.710
5	49.875	46.730	46.730	49.875	49.875	46.730
6	49.830	46.770	46.770	49.830	49.830	46.770
7	49.890	46.830	46.830	49.890	49.890	46.830
8	49.930	46.870	46.870	49.930	49.930	46.870
9	49.990	46.930	46.930	49.990	49.990	46.930
10	49.970	46.970	46.970	49.970	49.970	46.970