

Basestation Circuit Description

- ⇒ The signal which inputted in TEL-LINE is DC coupled at TR and transformed Analog into Digital at U100.
Data which is transformed into Digital signal is mixed with PN code at U100 (by spread spectrum) and transmitted to RF part.
Spreading signal which inputted to RF part is mixed with Carrier supplied to VCO(U5) and create TX frequency of using channel and then is transmitted to ANTENNA through U1 by TX control of U3.
- ⇒ The signal received to antenna is transmitted to U1 by RX/TX control time.
The signal inputted at U1 is mixed Carrier of VCO(U5) and got to direct conversion and create Base band signal. And then, create I and Q signal by demodulation (QPSK :quadrature Phase Shift Keying method is phase- shifted by 90°).
I and Q signal (Two signal phase is 90°) is transmitted to U100 and remixed with PN code and generated Digital signal.
Digital signal is transformed into Analog at U100.
This audio signal is passed through U100 and transmitted to TEL-LINE.
- ⇒ **ID setting** : when Handset is placed on Basestation , charge data is transmitted to Handset by CT2 of Basestation. The Handset is received ID and transmitted ACK signal to RF PART.
- ⇒ Y100 is X-TAL generating RF - reference signal and should be adjusted by C1 accurately.
- ⇒ Q101,Q102,Q104 is charge detector and ID detector circuitry.
- ⇒ U103 is ring signal detector circuitry

Handset Circuit Description

- ⇒ The signal which is inputted to MIC is transformed Analog into Digital at U100.
DATA which is transformed into Digital signal is mixed with PN code at U100 (by spread spectrum) and transmitted to RF part.
Spreading signal which inputted to RF part is mixed with Carrier supplied to VCO(U5) and create TX frequency of using channel and then is transmitted to ANTENNA through U1 by TX control of U3
- ⇒ The signal received to antenna is transmitted to U100 by RX/TX control time.
The signal inputted at U1 is mixed Carrier of VCO(U5) and got to direct conversion and create base band signal.
And then, create I and Q signal by demodulation (QPSK : Quadrature Phase Shift Keying method is phase- shifted by 90°)
I and Q signal (Two signal phase is 90°) is transmitted to U100 and remixed with PN code and generated Digital signal.
Digital signal is transformed into Analog at U100.
This audio signal is passed through receiver and transmitted.
- ⇒ When the Handset is low voltage R105,R106,C110 make 77pin of U100 change HIGH to LOW and indicate low voltage.
- ⇒ Y101 is X-TAL generating RF - reference signal and should be adjusted by C204 accurately.

RF Circuit Description

- ⇒ *LO Generation : The LO signal is generated by a programmable PLL frequency synthesizer in the U1(RF109) and the an external 2.4GHz VCO(U5).*

The RF109 synthesizer requires differential input signals from the external VCO to generate the LO Frequency.

Therefore a BALUN(U6) transformer is used to generate differential signals from single-ended VCO output.

- ⇒ *Receive Path : The signal is received at the antenna and pass the T/R switch(U3) and an RF bandpass filter. The output of the bandpass filter is ac-coupled to the Low Noise Amplifier (LNA) of the U1.*

The U1 downconverts the RF signal into In-phase(I) and Quadrature signal(Q) baseband signals.

The differential I and Q baseband signals are dc-coupled to the ASIC(U100) RXIP, RXIN, RXQP and RXQN inputs.

- ⇒ *Transmit Path : The baseband digital data input signal is shaped by external filter (R18, C53, L6, C54, R19) and inputted to the TXD1 Port of the U1 (RF109).*

The inputted baseband digital data is mixed with Carrier supplied to VCO (U5) and transmitted to the U2 (RF110) with a phase difference of 180 degree between the two branch.

The inputted a differential signals to the U1 (RF110) are amplified by the U1 (RF110) and the differential output signals of the U1 (RF110) output port are converted to a single-ended signal at the RF matching network.