

## **BASE MAIN** □ □ □ □ □ □

*The signal which inputted in TEL-LINE is DC coupled at TR and transformed Analog into Digital at U100.*

*DATA that 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 at U903 and create TX frequency of using channel and then is transmitted to ANTENNA through U801 by TX control of U802.*

*The signal received to antenna is transmitted to U901 by RX/TX control time.*

*The signal inputted at U901 is mixed Carrier of VCO(U903) 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 CODEC(U100) and transmitted to TEL-LINE through the transformer( X100 ).*

*Caller ID signal which inputted to the Tel-Line (in case of TYPEI) passes through C136, R118, pin37 of U100 and then, is transformed into digital data at U100 and is transmitted to RF,*

*The CAS signal and FSK DATA is received (in case of TYPEII) passes through Transformer, and then, transformed into digital data at U100, and is transmitted to RF.*

*The transformed signal into digital data is transmitted to the Handset, and then, The Handset is displayed Caller ID information.*

*Line in use state : When the unit is off hook or the line is off hook state, The line detector port is high through R143,R144,R145,R146, Bridge diode and U105.*

*When the unit is on hook or the line is on hook state, The line detector is low.*

*When the ring is incoming in to the TEL-LINE, the signal passes through C146,D116,D100,R140, R100,C121,R102,U103 and then detected at U100.*

*The ring data is transformed into analog to digital at U100 and transmitted to Handset.*

### **ID setting :**

*when handset is placed on baseunit , ID data (Handset) is transmitted to base units by RF.*

*The base unit is received ID and transmitted ACK signal to handset by RF PART.*

*Y100 (19.2MHz) is crystal generating RF - reference signal (9.6MHz) and should be adjusted by C164 (Varicap 20pF) accurately.*

*J102(DC JACK) is inputted DC9V main Power and passes through D110 and transmitted to U104 (Voltage Regulator) is used to constant Voltage at 3.3V source voltage Vcc.*

## **HAND MAIN** □ □ □ □ □

*The signal which is inputted to MIC is transformed Analog into Digital at U7.*

*DATA, which is transformed into Digital signal, is mixed with PN code at U901 (by spread spectrum) And transmitted to RF part.*

*Spreading signal, which inputted to RF part, is mixed with Carrier supplied to VCO at U903 and create TX frequency of using channel and then, is transmitted to ANTENNA through U801 by TX control of U802*

*The signal received to antenna is transmitted to U802 by RX/TX control time.*

*The signal inputted at U901 is mixed Carrier of VCO (U903) 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 U7 and remixed with PN code and generated Digital signal.*

*Digital signal is transformed into Analog at U7.*

*This audio signal is passed through R56,R58 and transmitted the RECEIVER unit.*

*The Caller ID data which is received from Baseunit is transformed to data which is able to display at U7.*

*U7 activates LCD driver (J11 LCD con14), and then, display caller ID messages.*

*When the handset is low voltage*

*R57,R61,C79 makes 80 pin of U7 change HIGH to LOW and indicate low voltage.*

*Y2 (19.2MHz) is crystal generating RF - reference signals (9.6MHz) and should be adjusted by C16 (Varicap 20pF) accurately.*

*U10 is parts for stabilization to voltage (3.3V) of U7(ASIC) ,LCD,U9 (eeprom) part.*

## **RF Circuit Description**

⇒ *LO Generation : The LO signal is generated by a programmable PLL frequency synthesizer in the U901(RF109) and the an external 2.4GHz VCO(U903).*

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

*Therefore a BALUN(U906) 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(U903) and an RF bandpass filter. The output of the bandpass filter is ac-coupled to the Low Noise Amplifier (LNA) of the U901.*

*The U901 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 (R920, C925, L901, C924, R918) and inputted to the TXD1 Port of the U901 (RF109).*

*The inputted baseband digital data is mixed with Carrier supplied to VCO (U903) and transmitted to the U801 (RF110) with a phase difference of 180 degree between the two branch.*

*The inputted a differential signals to the U801 (RF110) are amplified by the U801 (RF110) and the differential output signals of the U801 (RF110) output port are converted to a single-ended signal at the RF matching network.*