

## **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 degreed 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.*



SONUS TELECOM, INC.  
FCC ID : OU3IBM3920  
JOB # : 244AK1-1

EXHIBIT # : 20