SDR TECHNICAL DETAILS AND SPECIFICATIONS
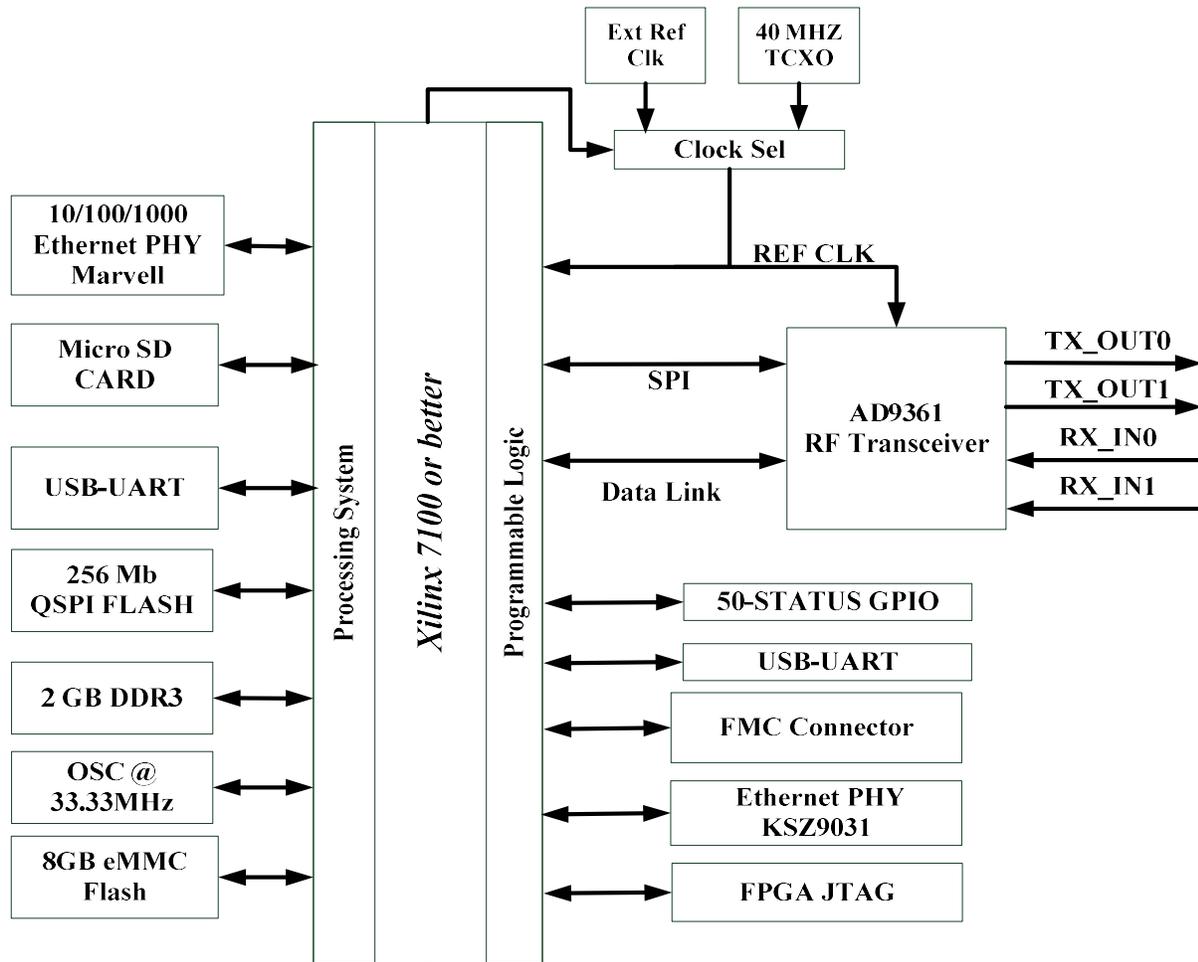
The Xilinx SoC based SDR hardware (preferably Xilinx Zynq7100 or better) with interfaces as shown in the block diagram below will be needed for implementation of Modem functionality.

BLOCK DIAGRAM FPGA BASED SDR HARDWARE

Sr. No.	Parameter	Specifications
1.	Xilinx SoC Device	Zynq-7100 or better Logic Cells : 444 K or more DSP Slices : 2020 or more Total Block RAM : 26.5 Mb or more
2.	RF Transceiver	AD9361/64 or Equivalent functionality
3.	LAN PHY	Tri-Speed (10/100/1000MHz)
4.	Rx frequency band	70 MHz/L-band

5.	Receive level	-30 dBm to -65dBm (Typical) -20 dBm to -80dBm (Preferred)
6.	Reference Clock	a. TCXO (Frequency = 40 MHz & Stability = 0.1 ppm or better over temperature and over 1 year) b. External Reference via SMA
7.	Boot Modes	JTAG, SD card, eMMC FLASH, QSPI FLASH
8.	Power supply	Through DC Adaptor
9.	Thermal management	Heat Sink / Fan (Proper Thermal management of the hardware for 24x7 operation.)
10.	Status GPIO	LVCMOS-IO (3.3V): 50 Nos (Typical for status display)
11.	FMC	One FMC Connector (preferable)
12.	Mechanical Enclosure	Multiple cards should be installed in rack mounted chassis for operational needs.

Deliverable Quantity:

Sr.No	Item Description	Quantity	Remarks
1.	FPGA based SDR Hardware with all accessories	16	Typically multiple channels of BDM will be ported on single card depending on FPGA resources

Note:

1. The specifications of SDR given above are indicative.
2. SDR hardware with Zynq 7100 or better FPGA is required.
3. The data IO interfaces supported should as per BDM operational requirements.

Tentative List of Modem Suppliers (TDM Modulator and Burst Demodulator)

1. M/s Datum Systems
2. M/s Teledyne Paradise Datacom
3. M/s Comtech EFData
4. M/s Avantel Limited
5. M/s ADTL Limited
6. M/s Astra Microwave
7. M/s Saankhya Labs
8. M/s BEL
9. M/s Signion Systems
10. M/s Digisat International (Newtec)

Note: The above list is not exhaustive.