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To: BITX20@groups.io
Subject: [BITX20] My sBITX Explained
Attachments: zBITX VU2UPX SCHEMATIC.pdf; zBITX VU2UPX.jpg

sBITX Explained

Hello friends, let me take some timeout to explain you my design of the sBITX Analog section, which I will henceforth call it an excitor board or simply Analog board.

My sBITX design is broken up in 3 sections, viz.

1. Analog Board or the Exciter Board
2. Digital Board which will host the Raspberry Pi and the CODEC chip and if I plan to use the Pi-HAT as circulated by Farhan during the FDIM 2024 presentation then it would also contain the Si5351 block.
3. RF PA board

My design was broadly based on the Block diagram from Farhan's presentation at FDIM 2024 and a homebrew build by KK4DAS as seen on his blog. Since I homebrewed a uBITX from Farhan, I decided to follow its principle. Comparing the blocks (although both have not officially shared their schematics) I found similarity in the design and I agreed to follow the uBITX TIA block.

My design has a **40Mhz Ladder filter** on an adapter board which is plugged onto the main board. It also has the provision to insert a Si5351 BoB in which the I2C signals are received from **MY** digital Board. If when using Farhan's Pi-HAT the Signals are directly routed to the mixer via an SMA connector onboard.

Each TIA block has a Rx/Tx circuit in mirror and have their own supply, VRx and VTx. this is 12V DC. they are switched externally on a different board in Rx/Tx mode. This is applied at J3 connector on the PCB.

I will initially be building and testing the Rx side of the project; hence I would only be assembling the Rx side in the TIA block.

I will keep sharing assembly pictures and test results of the project at various stages.

I share the Schematic of my version of the Analog Board here, for your study.

73

de VU2UPX

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