JUMA-TRX2 Voice memory option OH2NLT 22.08.2007

General

Voice Memory option for JUMA-TRX2 is ad on board, Board can be attached behind JUMA-TRX DDS/control board. The key component of the voice memory board is the ISD17240 voice recorder chip. Detailed description of the ISD17240 chip and its operation can be found from ISD17240 data sheet and application notes.

http://www.winbond-usa.com/en/content/view/160/290/

In the control software ISD17240 memory is divided into 10 sections. One is about 120s long and others are shorter, about 11s each. Control functions for all the memories are the same. In this application ISD17240 chip is clocked for 8kHz audio sample rate. 8kHz sample rate is more than adequate for high quality SSB voice storage.

Operation

JUMA-TRX2 voice memory board is powered from DDS board 5V regulated power supply. Key component of the voice memory board is Winbond ISD17240 voice recorder chip. JUMA-TRX2 dsPIC30F6014A controller via the SPI bus controls the ISD17240 chip. Other components are CMOS switch and an operation amplifier. With these components and an internal ISD17240 features all required audio paths can be formed. In normal operation JUMA-TRX2 RX audio is routed through ISD17240 chip to audio amplifier. ISD17240 internal microphone amplifier is connected in parallel with JUMA-TRX2 microphone input to allow recording from the microphone. Op amp and CMOS switch is used to connect JUMA-TRX 2 RX signal to JUMA-TRX2 microphone input and override microphone signal for RX recording. Same audio path is also used to TX selected memory location (play to the band). ISD17240 internal switches are used to break the audio path and play selected memory content to the JUMA-TRX2 speaker.

JUMA-TRX2 voice memory board also contains one led for debug purposes. Led LD1 shows which command ISD17240 has received and is executing. This indication is useful information in case troubleshooting.

Commands

See JUMA-TRX2 control software documentation for available control commands.