

AVS-1025 Application Note

The AVS-1025-001 and the AVS_1025-002 are typically used together to make up a complete transmitter, the AVS-1025. The AVS-1025-001 is the FPGA based digital processing unit that provides control for the AVS-1026-002 block up converter.

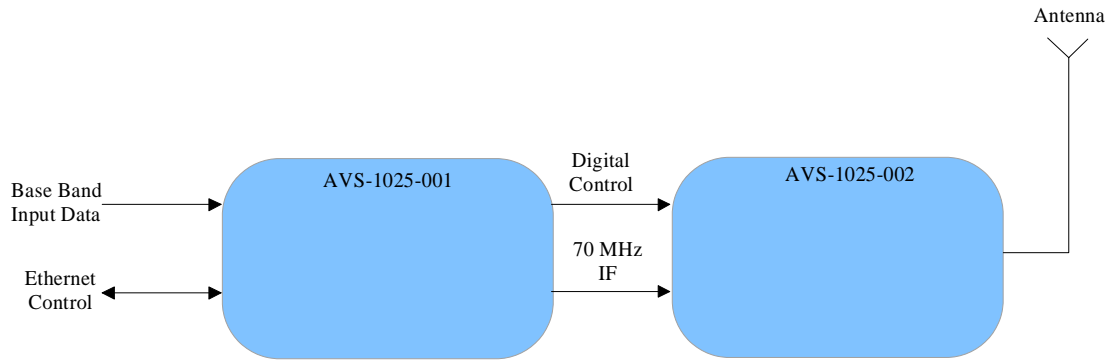


Figure 1 – AVS-1025 Transmitter

The block diagram of the AVS-1025-001 is shown in figure #2. The micro-controller on the AVS-1025-001 serves a web page that enables the user to set transmit power, transmit frequency, and modulation type. The AVS-1025-001 operates in a Direct Sequence Spread Spectrum mode or in QPSK mode. The input base band data for the AVS-1025 is typically an E1 up and down link. The E1 links are synchronized, framed and then sent to the FPGA to be packed into a flexible air frame that is 1/2 rate Turbo FEC encoded. The FEC encoded air frame is digitally up converted in the FPGA onto a digital IF 70 MHz IF. The 70 MHz digital IF is converted to an analog 70 MHz IF using an A to D converter and sent to the AVS-1025-002.

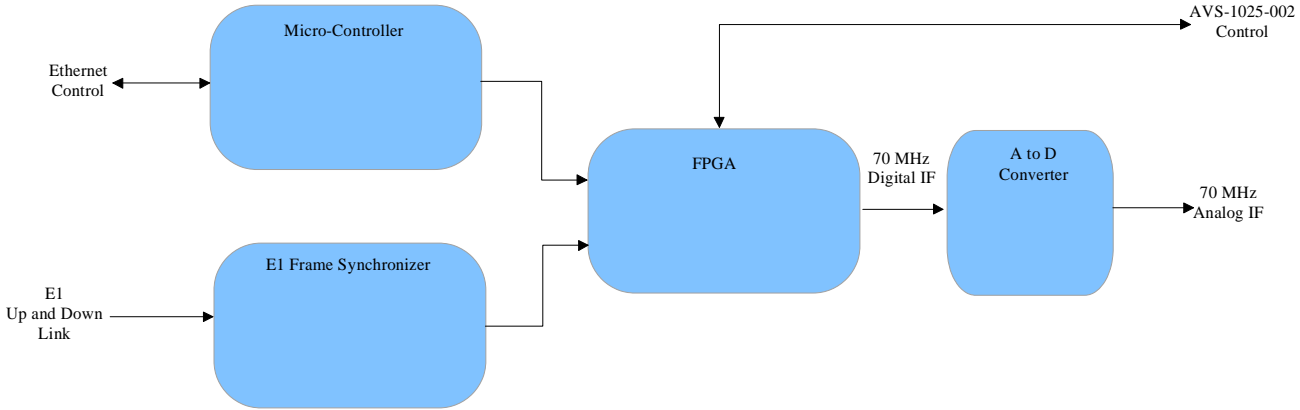
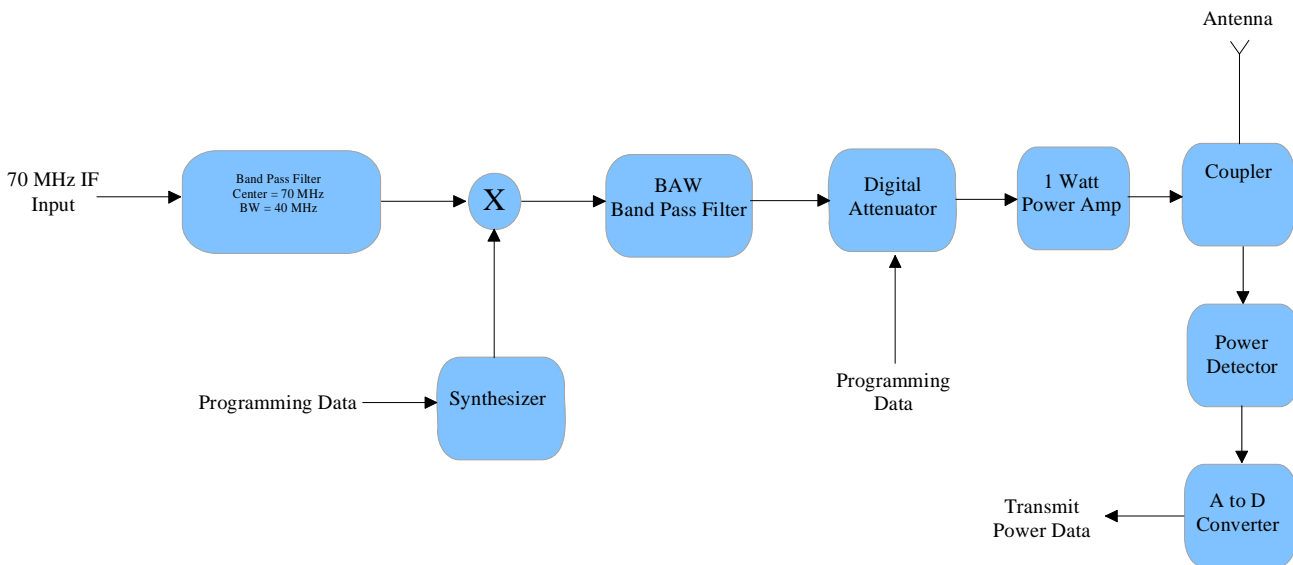


Figure 2 – AVS-1025-001 Digital Processing Board Block Diagram

The AVS-1025-002 is controlled from the AVS-1025-001 through a flexible controlled impedance micro cable. This data connection is used to program the synthesizer frequency, monitor and set transmit power. The block diagram of the AVS-1025-002 is shown below.





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The AVS-1025-002 makes use of SAW and BAW filters. This allows the AVS-1025 transmitter to be customized for each customer's unique bandwidth and center frequency applications.