BreezeNet

Functional Description and Block Diagram Description

AP-10D, AP-10 Access Point; SA-10D, SA-10 Station Adapter and WB-10D, WB-10 Wireless Bridge.

Digital Part

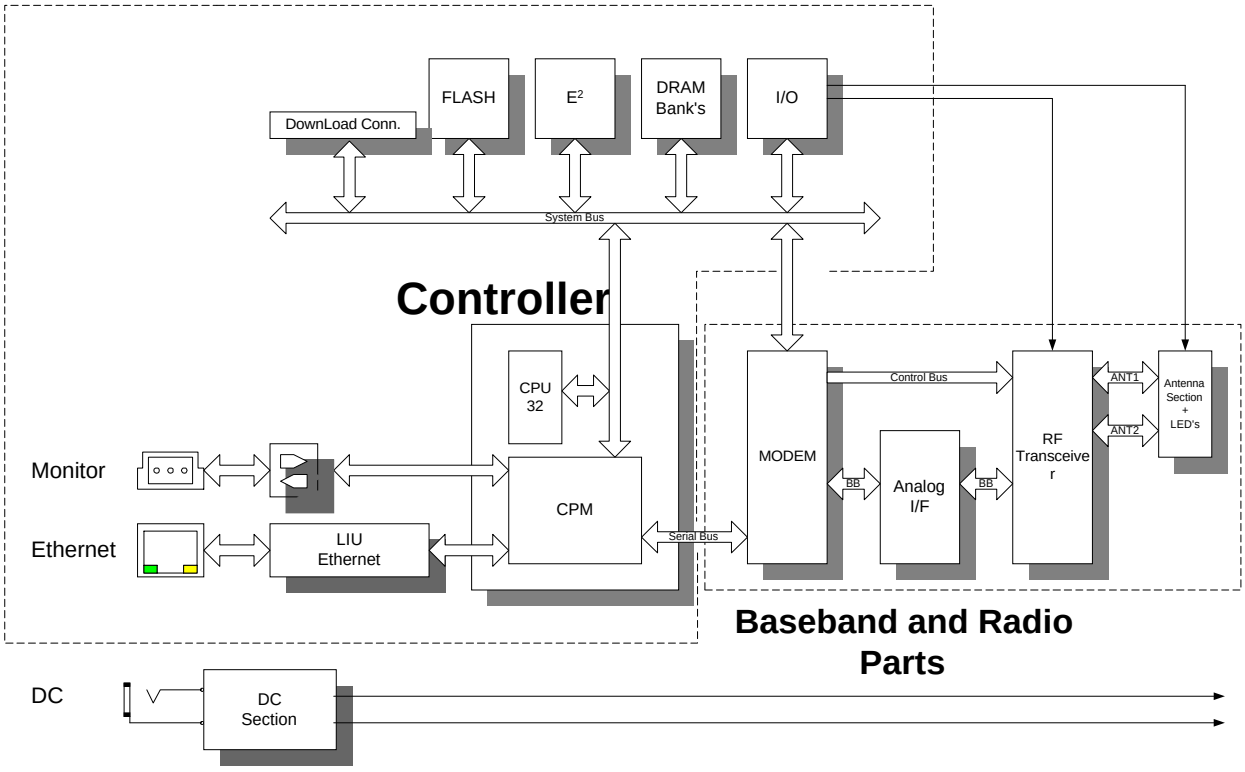

Fig.1.Block Diagram of Device.

3. Block Diagram of RF Part.

3.1 The RF part has 2 main functions:

1. Modulate and transmit analog data.
2. Receive and demodulate the RF signals and forward these signals to the Baseband processor in analog form.

The block diagram of the radio is shown in Fig. 2.

3.2 Oscillators.

There are three RF oscillators on the RF board:

1. Tx VCO (Modulator), which continuously operates at 880 MHz, and in transmit mode is divided by two;
2. Rx VCO, serves as LO for the second conversion, Operates at 463 MHz;
3. Hopping synthesizer, Operate in the frequency range of 1962 MHz to 2040 MHz, Step size is 1 MHz.

There is also a Reference Oscillator that operating at 40 MHz. After division by 2 its signal is used as reference for all 3 VCO's.

All 3 synthesizers are frequency locked by use of PLL.

3.3 Transmit Path.

The transmit path consists of a modulator operating at twice the IF frequency, Hopping VCO, Up converter, PA and Diversity switch.

In transmit mode the divider is operated and thus enabling the division of the modulator by 2. This signal is upconverted by mixing it with the hopping signal that operates as LO. The mixed signal that is now in the 2.4 GHz band is filtered and fed to the PA, filtered again and through the diversity switch feeds the antenna.

The modulating signal is a 2, 4 or 8 levels analog signal.

3.4 Receive Path.

The received signal is received in any of the antennas, selected by the diversity switch, filtered and transferred to the LNA, filtered again and down converted by mixing the received signal with the hopping synthesizer. The product has a 440 MHz IF where the signal is filtered and down converted to 23 MHz where it is demodulated into baseband signal. The baseband signal is filtered and transferred to the baseband processor. The output signal is a 2, 4, or 8 levels analog signal with 0.5 MHz bandwidth.

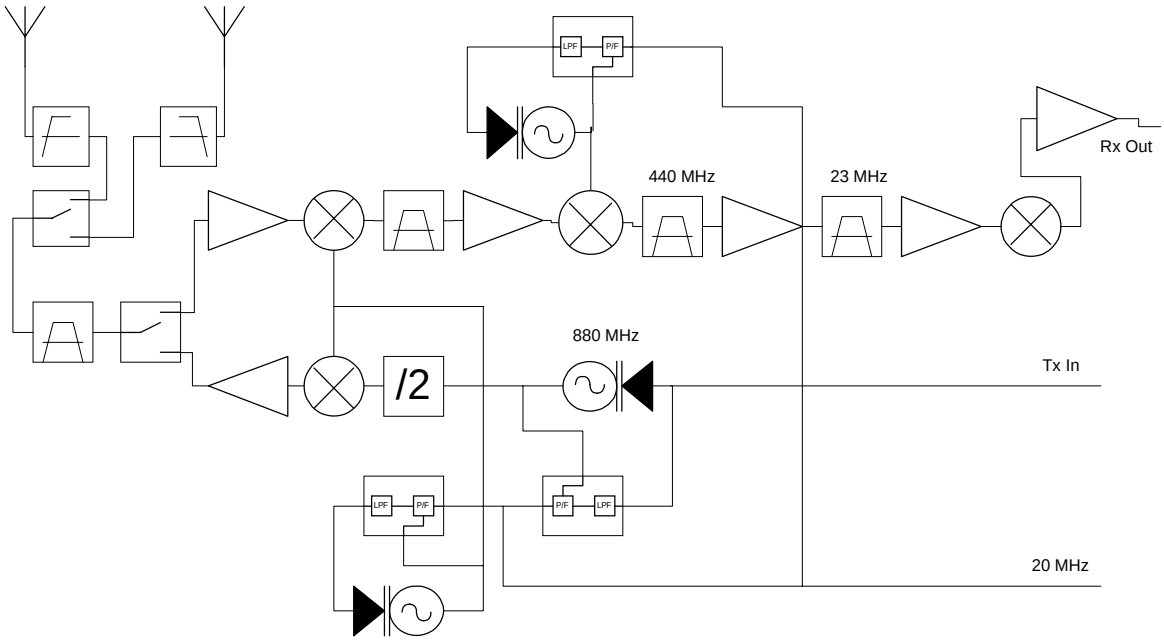

Fig.2. Radio Part Block Diagram

4. Block Diagram of Baseband Part.

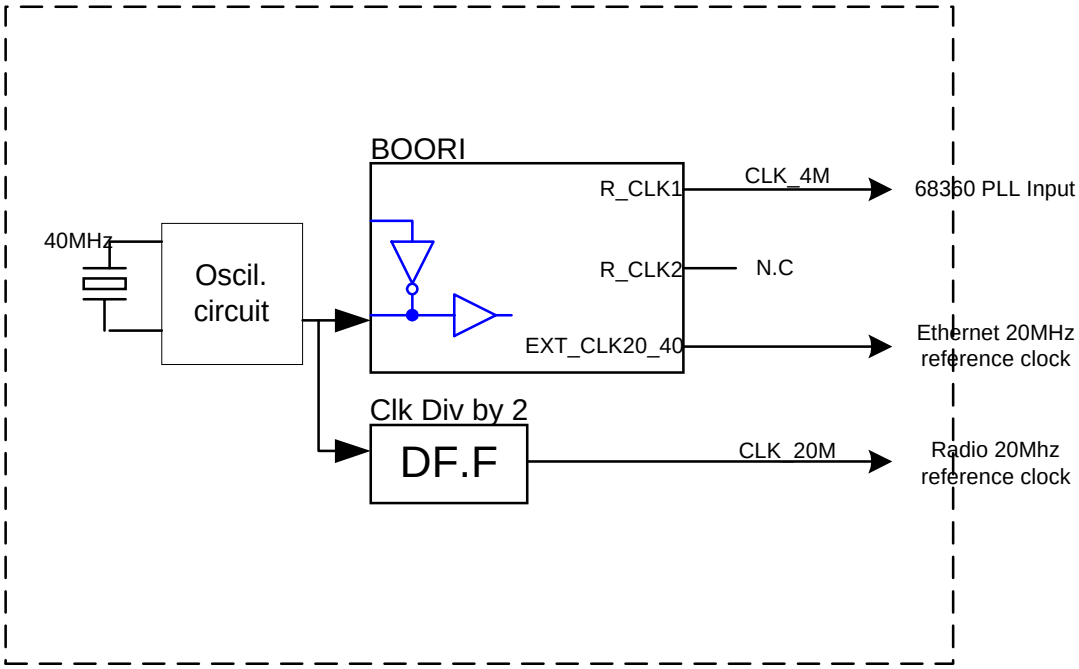

Fig.3. Clock Distribution