

The High Dynamic Range Front End Receiver for Band-I (30-80 MHz) for uGMRT

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Extended Abstract :The High Dynamic Front End Receiver for Band-I (30-80 MHz) for uGMRT developed by Front End Group at GMRT. Four dipoles are used in quad configuration, one pair of dipoles for vertical and another pair of dipoles for horizontal is connected to a power-combiner. The band pass filter is used to suppress out of band rejection and pass 30-80 MHz signal. The polarizer is used before the LNA which converts the received linear polarization to circular. To calibrate the gain of the receiver chain, there is provision to inject an additional noise signal (ENR of 30 dB) into the input of the LNA using directional coupler. It is possible to inject noise at any one of four levels. These are called Low cal, Medium cal, High cal and Extra high cal. To minimize crosstalk between two channels (CH-1 and CH-2) signals a phase switching facility using separate Walsh functions for each signal path is provided at the RF section of the receiver. Additional low pass and band stop filter is used after High Dynamic post amplifier for further suppression of SW and FM band. The RF power detector is used for RF CH power monitoring.

References:

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