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Technical descriptions of RGR122

A RGR122 is a remote-rain gauge receiver. It is composed of two main parts that are control part and remote-receiver part. The center frequency of the remote-receiver part is 433.92MHz.

The remote-receiver part employs enhanced superregenerative receiver technique. An amplifier, mainly by Q1, is used to collect higher gain of the received RF signal. There are two matching circuits to optimize the gain. One of the matching circuit is composed of L5, C21, C26, and C27. The another is composed of L3, C23, C24, and C25. The LC circuitry, L2, C6, C10 and C19 provides channel selection and the resonant frequency is set to 433.92MHz. By extracting the emitter output of the transistor, Q2, a regenerated signal is obtained. The circuitry, C7 and R10, acts as a low pass filter which extracts the envelope of the regenerated signal. Demodulated signal is obtained from the output port of operational amplifier, pin 1 of LMV358. The other part of LMV358 composes a schmitt-trigger circuitry that converts the demodulated signal into pulses that can be read by micro-controller.