



IDT Technology Limited

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Technical descriptions of RT918

RT918 is a remote data repeater unit to extend the reception range of existing remote weather station. It locates in-between the remote sensor and receiver unit. It is capable to recognize most of our existing remote sensors and only one sensor can be served at the time and selecting by its provided DIP switch before power on.

RT918 includes one 433.92MHz receiver and 433.92MHz transmitter. It receives the 433.92MHz RF data from the remote sensor then repeats the RF data through its 433.92MHz transmit module.

The 433.92MHz receiver part is an enhanced regenerative type receiver by adding a front-end amplifier. It composes a front-end amplifier, mixer, envelope detector and a decoder. The front-end possesses two matching circuitries. The circuitry of C26-28 and L5 matches the leading antenna. The circuitry of C23-24 and L3 matches the following mixer. The mixer's center frequency is controlled by a delay feedback circuitry of C2, C6, C11, C10, C19, and L2. RF signal from 433.92MHz is downconverted to baseband signals. The demodulated signal is further extracted by using the envelope detector. The controller checks the data and verify then repeats the valid data through its transmit circuit. The transmitter is basically a Colpitts oscillator where C1, C2 and X1 are used to determine the resonant frequency which is 433.92MHz. The LC filtering circuitry, L1 and C3, is used to suppress harmonics of the oscillator. An inductor, L3, is used to match the impedance of the antenna.