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Technial description of CMR113A

CMR113A is an Remote AC current meter. The AC current pass through a conductor, it will induce a magnetic flux and coupled by the Current Transformer, the Current Transformer will output a AC voltage, this voltage will detect by the MCU analog port, the MCU will based on the voltage to calculate the current through the conductor, and transmit the data to receiver unit through 433.9MHz. The MCU allow maximum three Current Transformer working at the same time, and calculate the voltage as three phase AC current.

It composes a controller part and a transmitter part. The transmitter is basically a Colippttis oscillator, where C14, C5 and X1 are used to determinate the resonant frequency that is 433.9 MHz. Transistor Q2 whose f_T is greater than 6GHz, provides a good frequency response to the circuit. There is a LC filtering circuitry, L3, C16 and C17, that is used to suppress harmonics of the oscillator. An inductor, L18, and capacitor C19 is employed to match the impedance of the antenna, L4.