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Technical descriptions of STR918

STR918 is the Transmitter w/ Built In Solar Cell unit of the Remote Weather Station system. It consists of two parts, one part is the solar cell charging part and the other part is the transmitter part. Charging part uses a solar cell panel to provide the power source to charge the re-chargeable battery. A backup power source (2xAA battery) is also provided to supply the power when the re-chargeable battery is low. The transmitter part is basically a Colpitts oscillator, where C4, C6 and X1 are used to determinate the resonant frequency that is 433.92MHz. There is a LC filtering circuitry, is used to suppress harmonics of the oscillator. An inductor, L3, is employed to match the impedance of the antenna. The transmit data and transmitter power control signals are input from the connected sensor through the 6-pin cable.



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Technical descriptions of RGR918

RGR918 is the Remote Outdoor Rain Collector sensor unit of the remote weather station system. Vbat first be regulated into 1.5V to provide the operating voltage of the U1 (micro-controller). Rain drops will be collected into the funnel and being measured its volume with the Reed Switch. Data will be input to the U1 (Micro-controller) and processed. It will then be encoded and sent to the STR918 (solar & TX module) through the 6-pin cable.



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Technical descriptions of THGR918

THGR918 is the Remote Outdoor Thermo Hygro sensor unit of the Remote Weather Station system. Vbat first be regulated into 1.5V to provide the operating voltage of the U1 (micro-controller). It uses a thermistor R17 to measure the temperature and uses a humidity sensor R23 to measure the humidity. Measured signal will be input to the U1 (Micro-controller) and processed. It will then be encoded and sent to the STR918 (solar & TX module) through the 6-pin cable.



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Technical descriptions of WGR918

WGR918 is the anemeter unit of the remote weather station system. An DC/DC convertor U4 will step up the Vbat then regulate into 3V to provide a stable power for the system. It uses a high performance variable resistor (high reliability & accuracy) to identify the direction of wind, ADC U3 will convert the resistance changes into digital data then input to U1. It uses a Reed Switch to count the wind speed. Those data will be sampled by the U1 (Micro-controller) and processed. Data will be encoded and sent to the STR918 (solar & TX module) through the 6-pin cable.