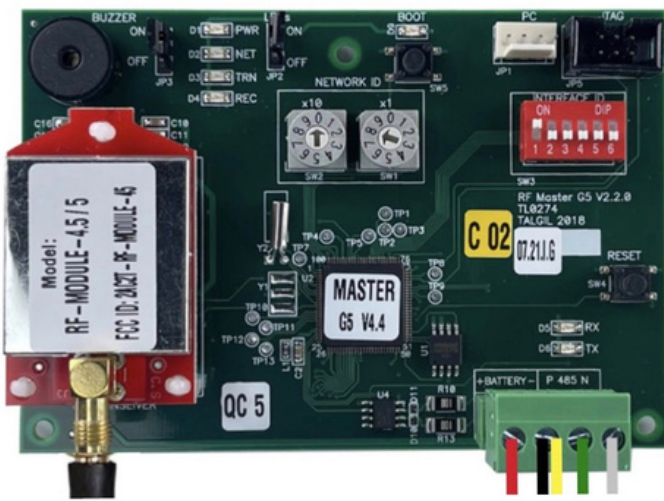


Data Sheet

Talgil - RF G5 - Master



Description: RF Master Interface for Dream 2 Controller
Product Code: TG-DREAM2RFG5MASTER



Product Description

The Generation 5 RADIO RTU system of TALGIL offers a perfect solution for controlling distributed irrigation systems, eliminating the need for costly and complex cabling and the potential for future cable integrity issues.

The G5 RADIO RTU system was launched in 2018; it is based on all the accumulated experience in TALGIL of thousands of wireless systems installed and supported during the past 20 years. The system utilizes low transmission energy, and therefore, no licensing is required.

Under good conditions, the distance between two units in the communication chain can reach a distance of 3 km, but the full coverage of the system is much larger since the G5 RTUs can serve as ROUTERS for other RTUs with up to 11 levels of repetition (total of 30km).

The G5 radio RTUs are energized by rechargeable batteries, ROUTERS are energized by solar cells with rechargeable batteries. For energy-saving purposes, the outputs activated by the system are pulse-latching. Therefore, they are suitable for use where no electric energy exists.

The bidirectional communication between the RTUs and the control unit enables not only activating remote outputs but also reading remote inputs, both digital and analog. To ensure information integrity, each communication gets a confirmation signal, and failure is followed by retries.

A G5 radio RTU system channel may handle up to 999 RTUs.

Features and Benefits

- The point-to-point distance of up to 3km can be multiplied up to 11 times by using the RTUs as routers for others.
- Bidirectional communication.
- Powered by battery or solar energy.
- Up to 999 RTUs per channel.
- Automatic selection of the suitable frequency out of 16 optional channels.
- Automatic selection of the most suitable routing option.
- License exempt.
- Asynchronous communication
- I/O test mode
- Automatic shutdown of outputs on communication loss and automatic recovery when communication is regained.
- Visual and sound signalling of statuses by LED and buzzer.
- Reporting RTU low battery
- Configurable wake-up signals.
- Existence of diagnostic RF sniffer tool.



Typical Application

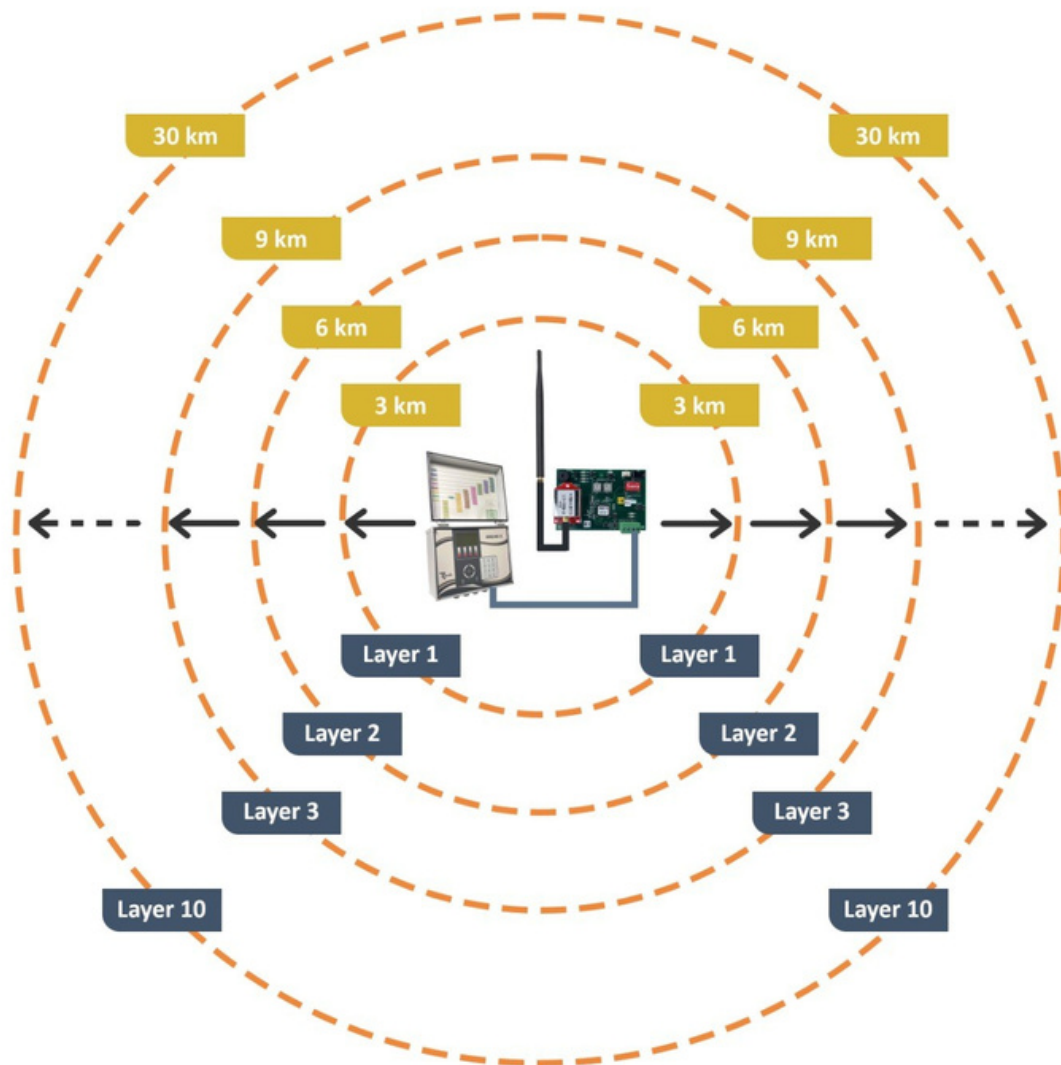
- Irrigation control and management of medium and large farms.
- Centralized irrigation control of multi-crop and multi-irrigation sections operation.
- Monitoring, analytical planning, and irrigation control tools.
- Climate and other environmental parameters monitoring and control
- Where sophisticated irrigation methods are required
- Central control of a large number of control valves grouped together and spread over separated and large geographical areas
- Farms in remote areas that require remote control over cellular communication
- Projects requiring control of multiple and various types of water sources
- Irrigation Schemes - Offtake/Turn-Out

RTU RF G5 MASTER - Technical Specifications

Specification	Description
RF Frequency Range	915 - 928 MHz
Channel Spacing	1.5 MHz
Channel Bandwidth	500 KHz
Effective Radiation Power (ERP)	79/250 mW
Modulation	Spread Spectrum LoRa
Number of RF Channels	9
Firmware Upgrade Options	RF or Local Connection (PC)
Ambient Temperature	-20°C + 65°C
Ambient Relative Humidity	0 - 90%

Additional Features and Benefits

- Self-healing network – If an RTU loses communication with the master antenna, it will find an alternative route automatically.
- Automatic frequency selection – In case the frequency used by the system becomes too noisy due to interferences, the system will switch automatically to a different frequency.
- Communication retries – In case interference occurred exactly at a time an RTU was trying to communicate; the system will retry to send the message up to 3 times more.



Technical Data

RTU RF G5 Master

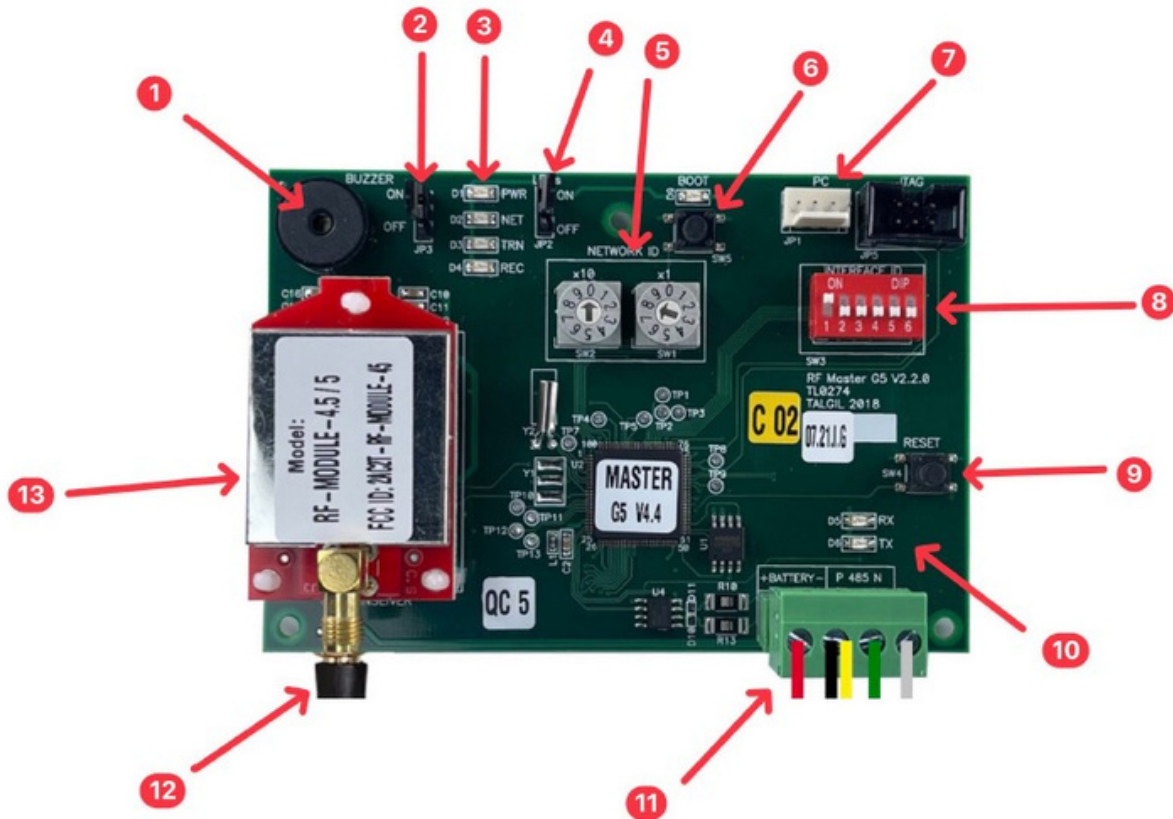
All RTUs are expected to communicate with the center. The central receiver/transmitter is known as the MASTER.

The MASTER is the one who decides the frequency to be used by all the members of the system. When the MASTER is powered up, it starts scanning the area, looking for a frequency that is free enough to be utilized.

Each RF MASTER is capable of communicating with up to 600 RF RTUs. The communication with all the RTUs is done every couple of seconds (Depending on the number of RTUs)



RTU RF G5 MASTER - CARD Description



- 1 - Buzzer
- 2 - Buzzer - On/Off Jumper
- 3 - Power, Network, TRN, REC - LEDs
- 4 - LEDs - On/Off Jumper
- 5 - Network ID - Rotary switches
- 6 - Boot Button & Boot LED
- 7 - Programming PC Connector
- 8 - Interface ID - Dip Switch
- 9 - Reset Button
- 10 - Rx, Tx - LEDs
- 11 - Power & Communication terminal (from/to DR2 Controller)
- 12 - Antenna Connector
- 13 - RF / Radio Modem