CIRCUIT DESIGN, INC.

# UHF Narrowband Radio Transceiver Module

# STD-602 429 MHz

The UHF FM narrowband compact radio module STD-602 429 MHz is suitable for industrial remote control and telemetry applications operating in the 429 MHz band. This module which is targeted for use in Japan, has the Type Certification of Construction Design (Giteki mark) meaning no radio licence or registration is required to use it. The STD-602 has a simple serial interface and allows own communication protocol to be used. The RF Power, Data rate and Channel can be set through the use of dedicated serial commands.

As required by the Japanese regulations, the carrier sensing function is also implemented and automatically executed.

## Features

- Small 36 x 26 x 6.1 mm
- Low power operation
  - 27 mA (TX 3.0 V)
  - 17 mA (RX 3.0 V)
- Transparent interface for data input and output
- Contains the Type Certification of Construction Design (Giteki mark)

## Applications

- Industrial remote control system
- Telemetry system
- Monitoring system


Narrow FSK

## General

| Parameter | Specification |
|---|---|
| Applicable standard | ARIB STD-T67 |
| Communication method | Simplex, Half duplex |
| Emission type | F1D (FSK narrow) |
| Frequency | 429.246875 to 429.915625 MHz |
| Number of RF channels | 40 ch (4,800 bps), 96 ch (2,400 bps) |
| Channel step | 12.5 or 6.25 kHz |
| RF bit rate | 4,800 / 2,400 bps |
| Supply voltage | 3.0 to 5.0 V |
| Supply current | 27 mA typ. (TX), 17 mA typ. (RX) |
| Operating temperature | -20 to +65 C |
| Antenna | Only to be used with the specified antennas |
| Dimensions | 36 x 26 x 6.1 mm |
| Weight | 13 g |

## Transmitter part

| Parameter | Specification |
|---|---|
| RF output power | 10 / 5 / 1 mW at 50 ohm |
| Spurious emission | < -27 dBm |
| Adjacent channel leakage power | > 40 dBc (PN9 2,400 / 4,800 bps) |

## Receiver part

| Parameter | Specification |
|---|---|
| Sensitivity (BER 1%) | -114 dBm (PN9 4,800 bps) |
| Adjacent channel selectivity | 50 dB (+/-12.5 kHz, 4,800 bps) |
| Blocking | 75 dB (+/-1 MHz) |

## Timing

| Parameter | Specification |
|---|---|
| Power on to TX / RX | 350 ms typ. |
| TX / RX switching time | 20 ms typ. (TX to RX), 30 ms typ. (RX to TX) |

## Interface

| Parameter | Specification |
|---|---|
| Data interface (DI / DO) | Digital L = GND, H = Vcc (Asynchronous) |
| Command interface (TXD / RXD) | UART 19,200 bps |
| | Data length: 8 bit, Parity: None, Stop bit: 1 |

Specifications are subject to change without prior notice

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