Operational Description

General Product Information
The E-FLY 2.4GHz transmitter series of ETC61-2.4GHz / ETC62-2.4GHz and the receiver ER62-2.4GHz are the latest RC products of ART-TECH.

Circuit Description
The transmitter ETC61-2.4GHz / ETC62-2.4GHz is composed of input signals sample module, digital encode module and signal amplifier.

The input signals of the transmitter are from joysticks and switches. These signals are processed by MCU and transmitted through SPI interface. Then the signal is sent by RF IC at frequency of 2.4 GHz.

The receiver ER62-2.4GHz is composed of digital decode module and signal output module.

The received signal enters into the MCU of the receiver through SPI interface. After processed the signals are sent to servos or ESC (Electronic Speed Controller).

Ratings and System Details
- Data rate: 125 kbps
- Asynchronous or packet mode transmission format: 8DR mode
- Format of RX/TX data: Preamble(3 byte) + SOP(2 byte) + Length(1 byte) + Payload data (max is 16 bytes) + CRC (2 byte)

Synchronization mechanism for transmitter and receiver devices:
1. At bind mode, the transmitter sends the work channels, PNCODE and CRC seed information to the receiver.
2. At work mode, the receiver waits on one of the two work channels, and the transmitter transmits data using the two work channels.
3. If the receiver receives a packet of useful data, it switches to another channel.
4. Repeat step 2 and step 3.

Channel spacing = 1MHz
After binding, two channels are chosen as work channels.

Transmitter
- Transmitter Frequency: 2.402-2.480GHz
- Crystal Tolerance: ± 20ppm
- RF Power: < 20 dbm
- Power Consumption: DC 12V 200mA
- Modulation mode: DSSS
- Antenna length: 15 cm

Receiver
- Receiver Frequency: 2.402-2.480GHz
- Crystal Tolerance: ± 20ppm
- Power Consumption: DC 5V 20mA
- Antenna length: 4cm