

VT2 – Operating description

The VT2 is an RF control device with a 2 digit LCD, used for remotely controlling the VD1 queue system display.

The main function of the VT2 is to turn feed the numbers displayed by VD1 onto a local LCD display.

For this purpose, the VT2 has a receiving module and a transmitting module which operate in the ISM 433.92 MHz band.

In addition, the VT2 performs the following functions:

- ✓ Queue number repetition
- ✓ Queue number reset
- ✓ Queue number decrease
- ✓ Brightness intensity and beeper volume regulation
- ✓ Vocal device volume regulation, VOICE model.
- ✓ Audio message, reproduced by the VOICE, selection
- ✓ MUTE setting of the VOICE
- ✓ System code setting, with 8 valid numbers (1...8)

VT2 remote control has three front buttons, that are used more frequently.

The three front buttons allow:

- ✓ Central button: turn feed; fast feed by applying continuous pressure (2 secs); VT2 turning ON.
- ✓ Upper button: turn number repetition; display turning OFF by applying continuous pressure (2 sec)
- ✓ Lower button: turn number reset by long pressure (2 secs)

The less frequently used settings are made by the back keyboard which can be located by removing the cover.

Apart from the above specific functions, the three front buttons control the turning ON of VT2, with a timeout of at least 30 secs (the 30 secs timeout is reloaded whenever you press a button).

Immediately after the turning on, the VT2 does not display the queue number but shows two hyphens, “—” and transmit a command to the VD1 display with a dual purpose to increase the queue number (or reset or repeat the queue number) and receive current feedback from VD1. After receiving the VD1 state, the VT2 displays the valid queue number.

VT2 – Block diagram

The VT2 device has the following blocks (see drawing PN007.061.1)

1. CPU
2. 3x4 Keyboard Matrix
3. LCD display
4. Power control
5. 433MHz Receiver
6. 433MHz OOK Transmitter

1. CPU

All the functions of VT2 are controlled by a 1MHz “single chip” CPU.

2. 3x4 Keyboard Matrix

The keyboard is designed as a one 3x4 matrix, but due to the ergonomics of the product it is divided into a more frequently used front part with three buttons, and a back part with 9 buttons.

3. LCD Display

The display is a TN (Twisted Nematic) type with static polarization which guarantees a wide angle of vision and a good contrast.

4. Power control

The power supply circuit performs the following functions:

- turning ON, activated by front buttons controlled by the CPU
- security against accidental inversion of the battery

- power supply set at 5V
- low current for stand-by mode
- gate to measure the battery voltage, enabled by the CPU

5. 433MHz Receiver

The data reception is performed by the RR10-433 module, a 433.92 MHz super-generative receiver (see enclosed data sheet).

The data decoding is performed by the CPU.

6. 433MHz OOK Transmitter

The data transmission is performed by a two-stage Colpitts oscillator, controlled by a 433.92MHz SAW resonator. ON-OFF Keying modulation is applied.

The data encoding is performed by the CPU.