K-TERM 70 Functional Description

1 Content

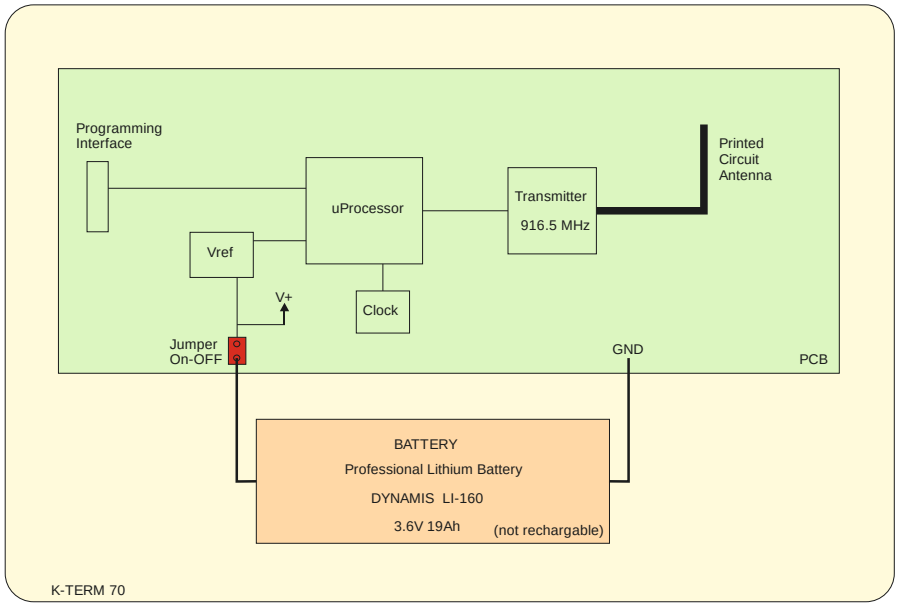
2 Functionality

The K-TERM70 beacon unit is a self-contained transmitter for short range localization applications. The beacon transmits information's in short burst transmission packets. The interval between the transmissions can be configured by the user within certain limits. In between transmission, the unit is in sleep mode with minimal power consumption.
The power supply is an integrated lithium battery 3,6V 19Ah. This battery allows a functional operation time of up to two years or more, depending of the configuration (power, transmit intervals).

These units are used as parts of in house localization systems.

The transmission signals will be received by corresponding receiving units for further processing. These receiving units are not part of this description.

3 Block diagram



The K-TERM70 electronic is placed in an IP65 case. No external wires or connectors.

The battery supplies the operating voltage of 3.6 Volts to the unit. On the first installation, the user has to adjust the jumper ON-OFF in order to connect the battery to the circuit.

The microprocessor controls the functionality. It steers the transmitter and its power level and monitors the voltage of the battery for the operation between 2.7 to 4.0V. Below the minimum voltage, the unit stops working and transmitting.

The user can configure the following:

- Bacon Number (0000h up to FFFFh)
- Transmission interval in milliseconds (adjustable from 0.6 to 5.0 Seconds)
- Power level
- Status bit

These information's are kept in flash inside the processor.

In order to program and configure the K-TERM70 unit, a programming interface connector is placed on the board. An authorized service dealer will be able to configure the settings with appropriate programming tools and software.

The clock circuit consists of two clock frequencies. The main working clock is 4.032MHz and it is active on startup and during the transmission phases. The sub clock operates on 32.768 KHz and allows for low power sleep state in between the transmission.

The transmitter is activated for transmitting short messages. A transmission last for apr. 4 milliseconds. It transmits on 916.5MHz with ASK modulation and a bit rate of 43Kbits. After a transmission, the transmitter is put to sleep mode for minimal power consumption.

The antenna is integrated on the board as printed circuit antenna.

4 Technical data

Case	Polycarbonat 120 x 80 x 55 mm IP65 / DIN EN 60529 / UL listed
Weight	300 Gramm
Battery	3,6V 19Ah Size D(R20) Professional Lithium Battery (not rechargeable) Lithium/Thionylchlorid ($Li/SOCl_2$) Live time 2-3 Years (depending on the configuration).
Temperature range	Operation: -20°C to +70°C Storage: -25°C to +85°C
Transmitter	916.5 MHz
Modulation	ASK / 43Kbit
Power Transmitter	1.5 dBm maximum
Transmission cycle	apr. 4 milliseconds

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