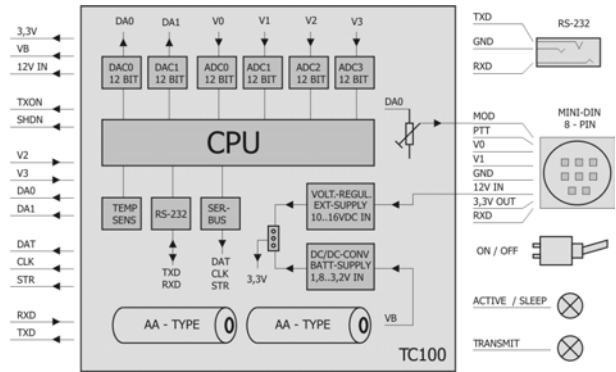
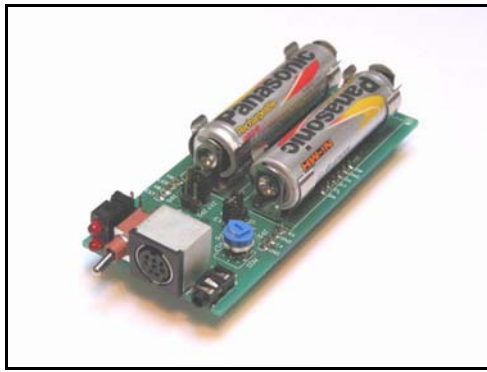


Using the ACE-TEK TC100 for APRS



The TC100 was designed as a versatile Measuring- and Control Unit mainly for wireless applications. Just by loading a specific user program (available for free) it immediately runs as an APRS controller. Following modes are possible:

- Simple APRS Beacon transmitting fixed location and short status info
- Mobile use taking data from any GPS-RX (NMEA 0183) without individual beacon text
- Mobile use taking data from a particular GPS-RX (NMEA 0183) including individual beacon text
- Mobile use taking data from a particular GPS-RX (NMEA 0183) including individual beacon text and telemetry data
- Direct plug on of GPS RX-Module using Extension Board XT100 (e.g. Navilock / Globalsat EM-402)
- Direct plug on of GPS Mouse (e.g. Navilock NL-208P)
- Direct plug on of any transmitter module (using Extension Board XT100)
- Simple APRS weather station of up to 5 parameters (up to 12 when using the Universal Controller UC100 instead)

Already existing User Programs for the TC100 are taking the RMC data string and generate the ready to use Packet Radio modulation signal as a digital to analog converted sinus (square wave when using 9k6). Modulation level can be adjusted by a variable resistor on the board. PTT is switched by an on board FET. All control signals for the used TRX are provided by an 8-pin Mini-DIN socket, including external power supply by the transmitter, additional RXD input and 2 analog data inputs. GPS data may be applied either to the Mini-DIN socket, the XT100 Extension Board, or via an additional 2,5mm stereo jack. (also used for connecting the PC in order to upload user specific software. See also UC100 on www.ace-tek.com).

How to use the TC100:

- Enter personal parameters in the user program (txt-file) by using a text editor
- Connect the PC's serial interface to the TC100 jack socket (RXD, TXD, GND)
- Switch on the TC100 and transfer TXT file into the internal flash memory
- Loaded program will start immediately after every power-on
- Uploading software may be done by almost unlimited cycles

All existing APRS user software for mobile use is expecting valid data from the GPS-RX on the RXD input. Receiving it the TC100 starts to send position and speed information using the APRS data protocol. Intervals between transmissions while moving may be set in the user program, longer intervals at standstill are possible as well.

Technical Specifications TC100A:

Operating voltage	10 ... 16 VDC (as an option 2x AA cells with TC100B)
Current Consumption	max. 20mA (100µA in „Sleep Mode“)
PTT Switch	max. 24 VDC / 100mA against GND
Mod.-level	0 ... 250mV _{pp} (optional 0 ... 2,5 V _{pp})
Analog Inputs	2x max. 2,5 VDC / 1MOhm optional 4x max. 2,5 VDC / 1MOhm
Dimension	abt. 100x40x25mm (lwxhx)

Additional Features of the TC100 (same hardware, different programming):

- Sending messages or measured data by AX-25 (Packet Radio, Baud rates up to 9k6)
- Sending messages or measured data by Morse code (A1A, F3E) or BPSK31
- Generating audio tones or DTMF sequences
- Data output also via serial interface or LC Display
- Output of on board temperature as above
- Sending alarm signals on exceeding certain voltage thresholds
- Arithmetic correction of measured voltage levels
- Combinations of all features mentioned above