<u>For English speaking HAM's.</u>

First of all please excuse that poor English.

Unfortunately there is no English version of the user manual available yet. This is only a short description of the features. If you are interested in to get more information about it, please feel free to contact me.

CALLMACHINE V10D
DK7NT 26. Feb 1999

User programmable CW-text memory for hand keyer and for paddles.

<u>Introduction of the project:</u>

Especially for radio contacts on the VHF/UHF/SHF bands, CW-text memories are used to allow the QSO partner to find the signal, to correct the antenna direction or simply to call CQ for a longer period.

Of cause, there are a lot of commercial electronic keyers available, with fixed or programmable memories. There are also much more home brewed projects. Because of several reasons explained below this hardware and software has been designed. The solutions mentioned have at least two basic disadvantages , especially under the considerations of portable usage.

- The first point is : For programming of memory and for adjustments, a paddle is always needed. Paddles however, are normally rather heavy and sensitive.
- The second point is the fact, that the PCBs are rather large and the mechanical affort , to put the boards into a housing with all its control elements, is also rather tedious and time consuming.
- Also, nobody likes to take more equipment as necessary with him.

During the construction of a new 10 GHz transverter the idea was born to design a new keyer for these special demands. It should be part of the transverter and should be mounted with less mechanical affort. A step-down converter should be able to supply the board over a wide input voltage range without much dissipation. An under voltage detector, to prevent to get below the cut-off voltage of the battery, will be available for free

The most important differences between existing Elbugs and the Callmachine are:

- The control of the keyer and the programming of the text memories can
  be done by the hand key (or by the paddle).
- Only an additional small push-button switch is necessary.
- All functions and the course of programming is controlled by CW-
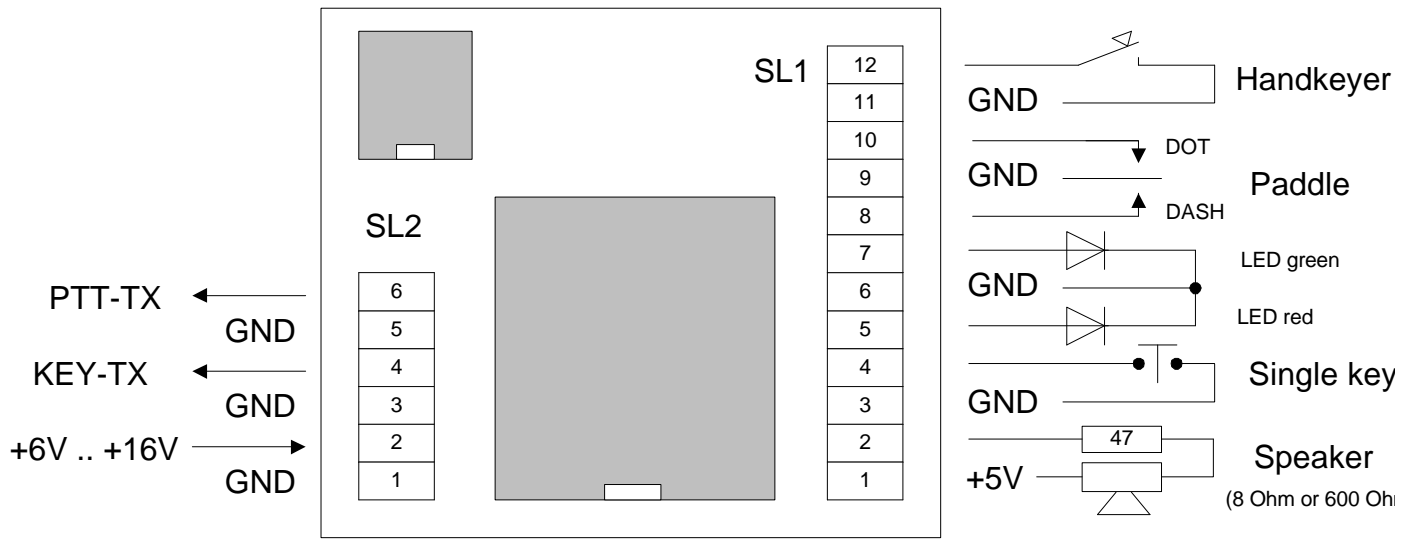 characters themselves.

The result was a microcontroller solution with additional features, which could possibly be also very interesting for other users.
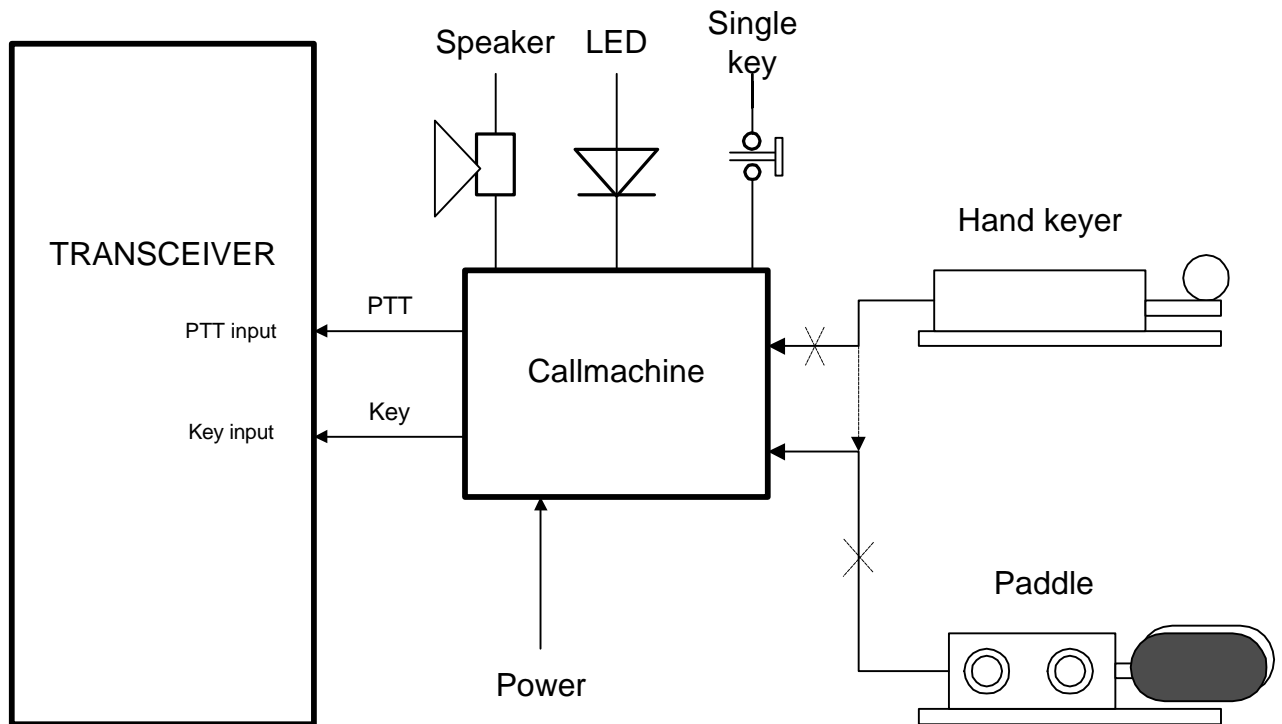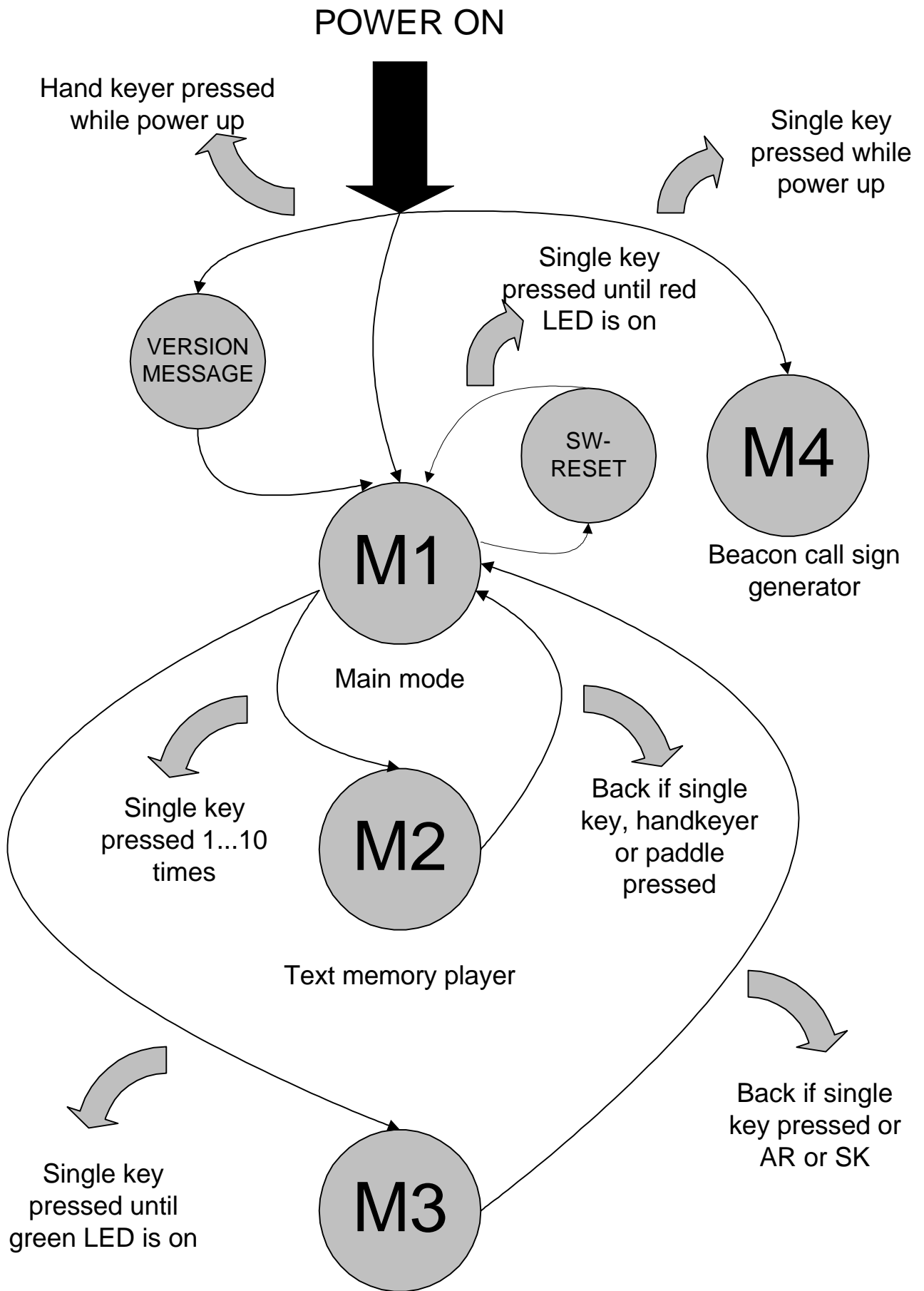
Features

- 10 universal text memories. (up to 95 characters per memory).
- Programming can be done by hand key or by a paddle using a
  CW-character decoder and an automatic speed recognizer.
- Repeat function up to 999 times or infinitely.
- Continuous dash up to 999 seconds or infinitely.
- Text memories can be chained.
- Intelligent Morse hand keyer.
- Ordinary elbug for usual and squeeze technology paddles.
- Only one additional push-button (single key) for all control purposes needed.
- Beacon call generator .
- Automatic speed recognizer.
- Acoustic information about the keyer status using CW-characters. (speaking keyer).
- Beep if the single key has been pressed..
- Software controlled sound monitor with two different volumes and 4 different
  sound pairs.
- Software controlled VOX on PTT output..
- Polarity of the key output and the PTT output can be selected by software.
- Optional sleep mode if nothing happens.
- N-channel FET output for keyer output and PTT output.
- Programmable via any CW program on PC .
- Low drop regulator for a wide range supply input (6V .. 16V).
- Battery cut-off voltage warning.
- Software reset by single key.
- Hand keyer and paddles can be connected to only one connector (not simultaniously)
- PCB size 50mm by 32mm (about 2" by 1.26")
- VCC 5V-   40   mA with LED and buzzer on (depending on LED and buzzer)
              7   mA in standby (no key, paddle or button pressed)
              2.5 mA in sleep

CALLM2/3 Connections

SL1

| 12 |
| 11 |
| 10 |
| 9 |
| 8 |
| 7 |
| 6 |
| 5 |
| 4 |
| 3 |
| 2 |
| 1 |

SL2

| 6 |
| 5 |
| 4 |
| 3 |
| 2 |
| 1 |

PTT-TX ←

GND

KEY-TX ←

GND

+6V .. +16V →

GND

TOP VIEW

GND — Handkeyer

GND — DOT / DASH — Paddle

GND — LED green / LED red

GND — Single key

+5V — 47 — Speaker (8 Ohm or 600 Ohm)

(for Piezo buzzer refer to description)

POWER ON

Hand keyer pressed
while power up

Single key
pressed while
power up

Single key
pressed until red
LED is on

VERSION
MESSAGE

SW-
RESET

M4

Beacon call sign
generator

M1

Main mode

M2

Text memory player

Single key
pressed 1...10
times

Back if single
key, handkeyer
or paddle
pressed

M3

Single key
pressed until
green LED is on

Back if single
key pressed or
AR or SK

System and text memory setup