

## **SELECT DTMF**

### **Selective Calling Decoder / Loudspeaker**

### **User manual**

#### **General description and installation:**

Select DTMF is a multi-purpose extension speaker system for nearly any kind of 2-way radio with built-in selective calling decoder for 4 digit DTMF codes.

The system works as a normal extension speaker (suitable to 4-8 Ohms output, 4 Watts) with push-buttons for manual on / off , auto switch-on after correct code decoding and call LED.

The speaker can be connected to the radio receiver output by means of the speaker cable with 3.5 mm standard speaker plug. The audio connection is earth free and can also be used in simple CB radios where the audio amplifier is also used as modulation amplifier.

Additionally, the decoder unit requires 12 V DC connection. Please use the same power supply as for the radio, wherever possible. The red wire must be connected to + and the black wire to -. The unit has a short circuit and wrong polarity protection. If the fuse should blow, please replace only by the correct original fuse value, never use more than 1 Amp fuse and never use any jumper across a fuse as a „replacement“. The supply voltage is 10-16 Volts (normal car battery range).

#### **The DTMF system - how it works:**

On the rear side of Your speaker You will find a sticker with the factory pre-installed individual calling numbers, for example „1234“.

If properly installed, the speaker will be off initially. You can switch the speaker on and off any time by pressing the appropriate push buttons.

Please set the volume to the desired value (the decoder will need a certain minimum loudness value, off course). To reach highest sensitivity, it is possible to leave the squelch open (!). Press the off-button. The speaker will be muted and You are no more disturbed by any conversation or noise on the radio channel..

If a distant party wants to reach You, he must use a DTMF keyboard microphone or simply a handy telephone dialer, which has to be coupled acoustically to the microphone. The correct number (in our example 1234) must be pressed on the keyboard in sequence in the same way as known from the push-button telephones. In case of much interference on the radio channel it is desirable to press each digit of the code consequently about ½ - 1 second. The maximum dialing pause between 2 digits should be less than 5 seconds.

If the correct code (in the example 1-2-3-4) is detected by the decoder in Your speaker, the speaker will automatically switch on and You can hear the conversation on the channel.

The CALL LED will be on and can remember that You have received a call. You can answer Your call and after the conversation is finished, press the off button to mute Your speaker again (Also, call LED will be off again).

Please do not forget to switch on Your speaker manually any time You want to start any transmission from Your side!

The DTMF selective call system uses the same standard tone dialing system which is used in most public and private telephone networks. In this system, any digit of a telephone number is represented by 2 simultaneously transmitted different tones. The

systems assures high sensitivity and accuracy and an optimum wrong code rejection, when used in radio communication.

### Changing the individual code:

The code, printed on the rear side of the speaker, is individually factory pre-programmed. Because 4 wire jumpers (1 wire for each digit) are used for this „hardware“ programming, the individual code will never be lost, even not during power supply failure or anything else. The factory will use an individual code for each produced system out of more than 6000 possible decoder codes, so there is a large security that nobody else in Your receiving range will use the same code. However, if You should wish a certain special code, it is possible to modify the wiring accordingly. Please note that all combinations of digits 1-9 are possible. The digits 0, \* and # cannot be used because of technical reasons. Even codes like 1-1-1-1 or 9-9-9-9 are possible.

Modification of code programming should be done only by qualified service personnel, because it requires knowledge in soldering on printed circuits boards.

Open the speaker and take out the decoder PC-Board. On the soldering side You will find 4 coloured wires which will connect the four positions M1, M2, M3, M4 with the appropriate soldering points for the digits 1 to 9. In our example (1-2-3-4):

wire 1 = first digit of the code (M1) is connected to	PIN 11
wire 2 = second digit of the code (M2) is connected to	PIN 12
wire 3 = third digit of the code (M3) is connected to	PIN 13
wire 4 = fourth digit of the code (M 4) is connected to	PIN 14

If you desire the new code 5-6-7-8, then re-solder as follows:

wire 1 = first digit of the code (M1) is connected to	PIN 15
wire 2 = second digit of the code (M2) is connected to	PIN 16
wire 3 = third digit of the code (M3) is connected to	PIN 17
wire 4 = fourth digit of the code (M 4) is connected to	PIN 18