

Engineering Bulletin

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ECLIPSE
Engineering Bulletin No:

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Product : All Eclipse Exciters and Receivers (exclude 50 Series)

Topic : DCS, CWID, Pilot Tone are available in Eclipse series Products

Date : 14/12/2004

What's new?

RF Technology is pleased to announce that new features are available in Eclipse series products. With replacement of the CTCSS module and some minor modifications on TX/RX PCB, the receiver will be able to do CTCSS, DCS decoding and pilot tone generating for voting applications, the exciter will be able to do CTCSS, DCS encoding and CWID transmitting.

Essential elements

- A new sub-tone module to replace the old 9150 CTCSS module.
- Updated firmware: 059115V9 for receiver, 059103V11 for exciter
- New service monitor software V2.2
- Modifications on receiver and exciter PCBs

New Sub-Tone Module

The module has same pin layout with the old 9150 CTCSS module. The functions of some pins are slightly different. Table 1 shows the differences

	New Sub-Tone Module	9150 CTCSS Module
Pin1	+5V	+5V
Pin2	GND	GND
Pin3	Data Out	NC
Pin4	Data In	Data In
Pin5	Chip Select	Chip Select
Pin6	Clock	Clock
Pin7	Xtal1	Xtal1
Pin8	Xtal2	Xtal2
Pin9	Sub-Tone Out	Sub-Tone Out
Pin10	Sub-Tone In	Sub-Tone In
Pin11	IRQ	Tone Detected
Pin12	NC	NC
Pin13	CWID/Pilot Tone Out	NC

Table1: Pin definitions of two modules

There are two jumpers on new sub-tone module for selecting the polarity of the DCS.

9150_0003.pcb
Top Layer

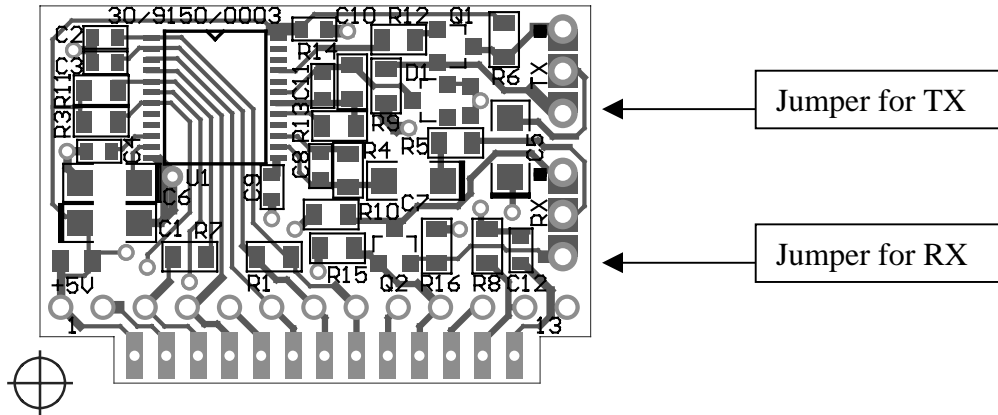


Figure 1

Connect solder pads marked with dots and the center solder pads to select the normal polarity; connect the center and bottom solder pads to reverse the polarity.

Updated firmware

New version firmware, 059115V9(RX) and 059103V11(TX) are compatible with both new sub-tone module and old 9150CTCSS module, while the firmware 059915V8 and 9103V10 only work for 9150 CTCSS module.

The firmware is pre-burned in the EPROM, replace U5 in TX and U12 in RX with new firmware to update.

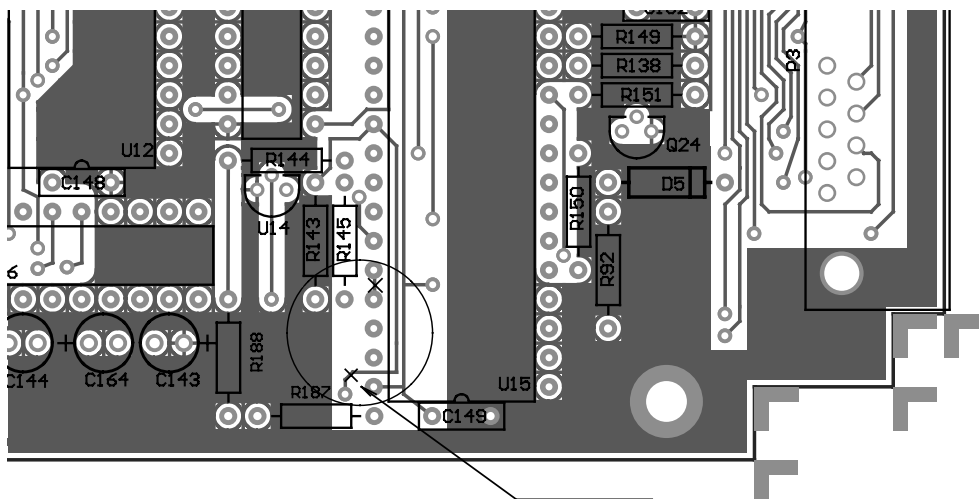
Service Monitor V2.2

New service monitor software supports both new sub-tone module and old CTCSS module. Some new features are also added in this version. See help file for details.

Modifications on RX and TX PCBs

RX PCB:

1. Change Crystal Y2 from 4MHz to 4.032MHz
2. Cut the tracks and add connections as shown in Figure 2. Figure 3. Figure 4



Cut two tracks marked with crosses

Figure 2 RX PCB Top layer

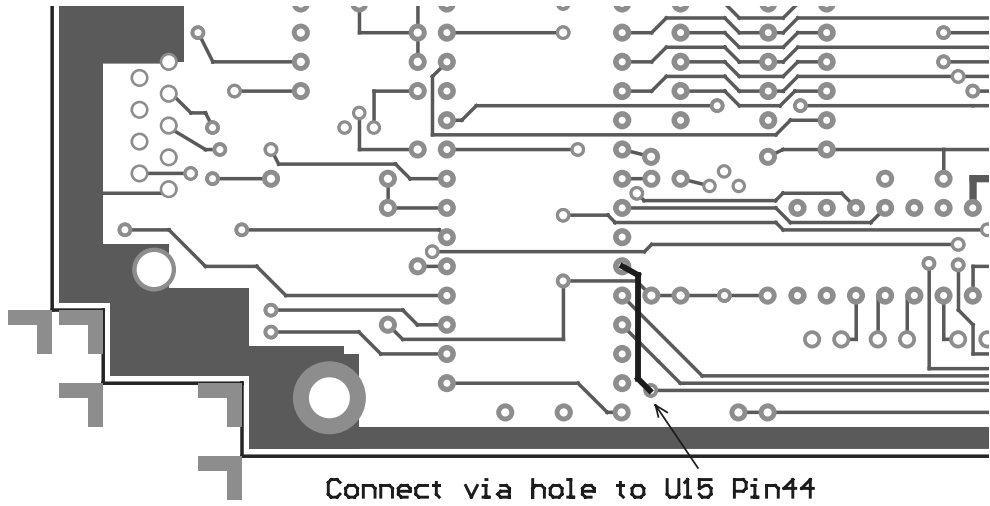


Figure3 RX PCB: Bottom layer

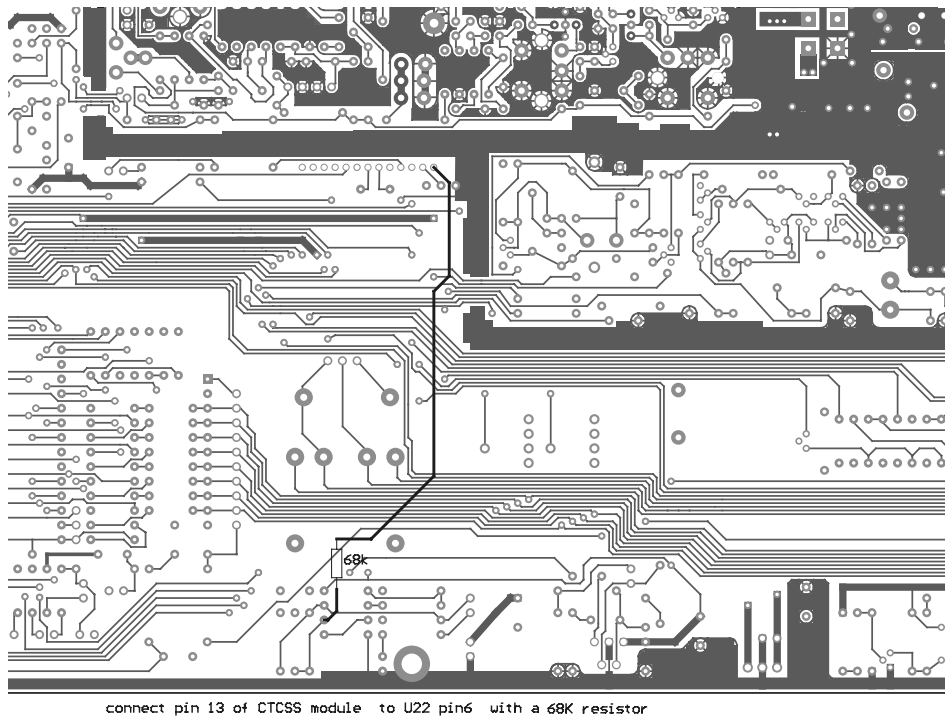


Figure 4 RX PCB bottom layer

TX PCB

1. Change Crystal Y2 from 4MHz to 4.032MHz
2. Change R44 from 6K8 to 15K
3. Add connections as shown in Figure 5

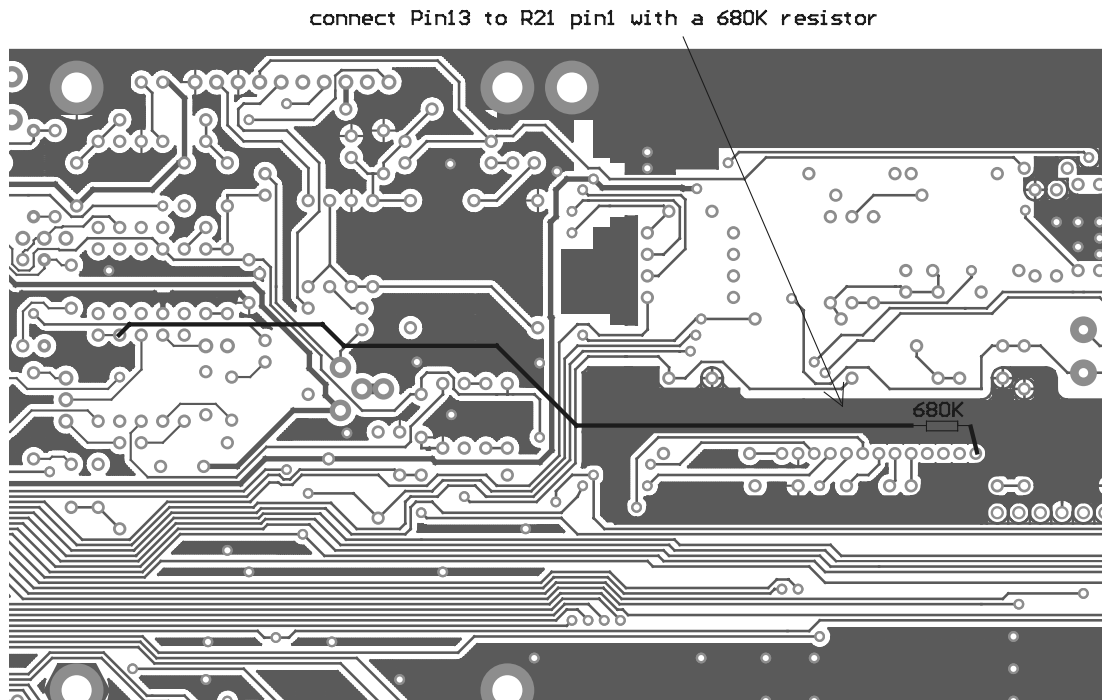


Figure 5 Tx PCB bottom layer

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