

Band Decoder 2 Kit

Errata Found During Build

Gene Hinkle

K5PA

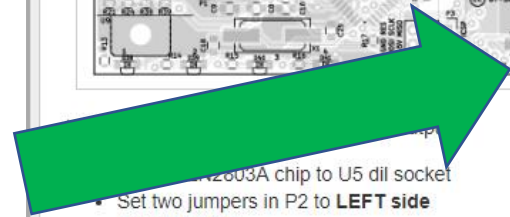
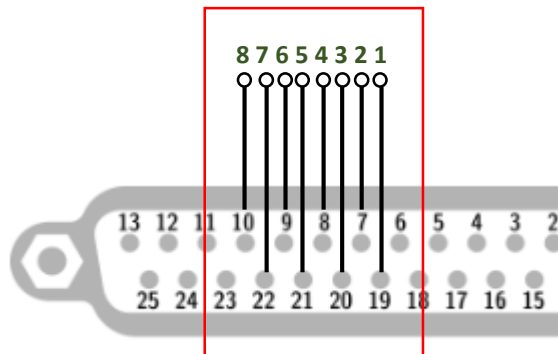
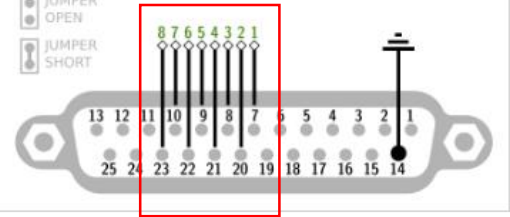
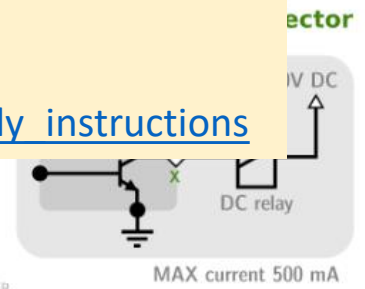
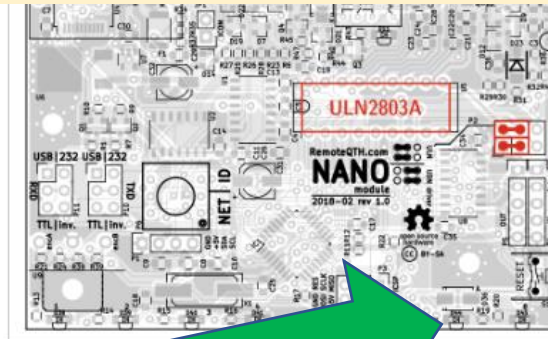
8/29/2019

Background

- I purchased the Band Decoder 2 Kit on 30 June 2019
- Several errors were found during assembly and testing that I thought would be helpful to document for other builders, namely:
 - Information sheet provided with my kit
 - Wiki information
 - Arduino Sketch reference to LCD Library
 - Hardware provided with kit
- All errors have solutions that are documented in this technical note
- This is a very nice kit and highly recommended

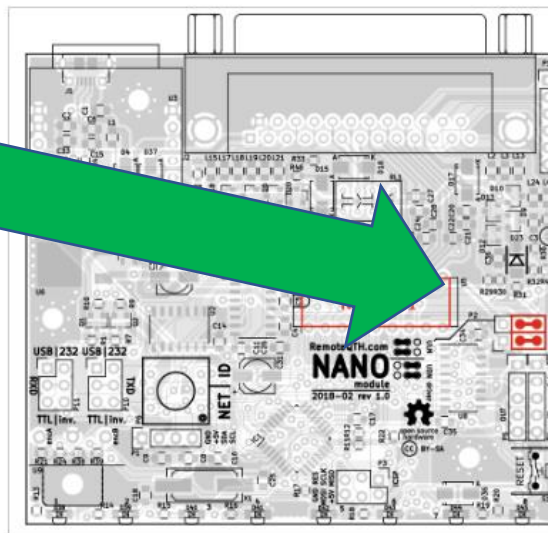
wiki Information page

https://remotegth.com/wiki/index.php?page=Band+decoder+MK2#KIT_assembly_instructions

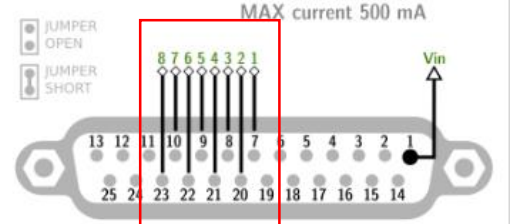
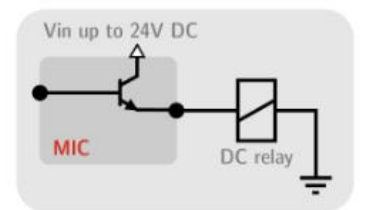


- Set two jumpers in P2 to **LEFT** side
- board **rev 1.0**
 - If relay voltage is **higher than band decoder power supply (Vin)**, do not mount the upper jumper.
- board **rev 1.2 and higher**
 - Connect relay power voltage also on **pin23** J2-DB25 connector.

OPEN EMITTER



Connect relays - open emitter



Incorrect

Information Sheet That Was Shipped With the Kit

13 12 11 10 9 8 7 6 5 4 3 2 1

Band decoder 2 KIT

rev 2.0 | 2018-05 | CC BY-SA

Assembly manual available at https://remoteqth.com/wiki/index.php?page=band_decoder+MK2

Allows you to read the frequency or band data from your transceiver and switch output relay(s) by the defined rules. Another feature allows you to send frequency to another Icom or Kenwood transceiver (synchronize tuning). Suitable for switching antennas, RX/TX filters, PA, transverters.

Main functions:

Available Inputs

- ICOM CIV
- Kenwood/Elecraft RS232
- YAESU/General BCD
- ICOM ACC(2)voltage
- YAESU CAT
- Input Serial

Always usable - may all at once.

- 8 output driver - allways enabled
- Yaesu BCD
- Serial echo

Only one from

- Icom CIV
- Kenwood CAT
- Yaesu CAT

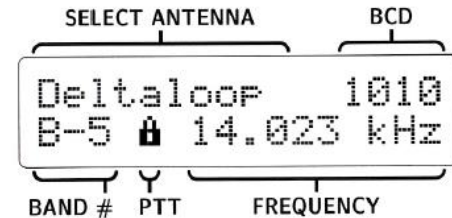
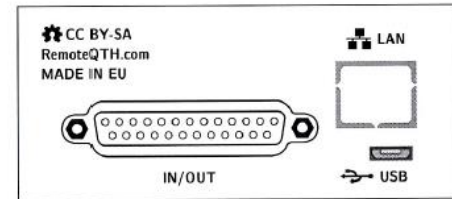
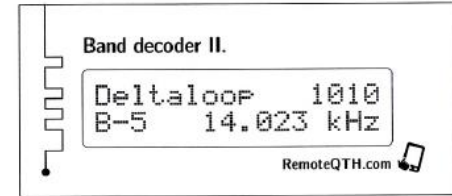
- Block switching during **PTT detect**
- **Watchdog** - if input data missing all relays go OFF after defined time.
- LCD
- **Configurable** in arduino source code.
- Open code - you can modify.
- Arduino NANO module compatible.

RemoteQTH.com



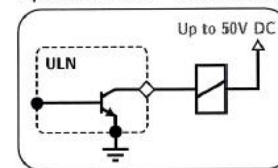
RADIO - DB25 female, rear view

1	in	8-18V DC from TRX
2	in	ICOM CI-V
3	out	TXD TTL
4	out	TXD TTL inverted
5	out	TXD 232 level
6	out	PTT output
7	out	Relay 2
8	out	Relay 4
9	out	Relay 6
10	out	Relay 8
11	in/out	BCD4
12	in/out	BCD2
13	in	AZ
14	in	GND
15	in	RXD TTL
16	in	RXD TTL inverted
17	in	RXD 232 level
18	in	PTT in
19	out	Relay 1
20	out	Relay 3
21	out	Relay 5
22	out	Relay 7
23	out	+5V
24	in/out	BCD3
25	in/out	BCD1
shield	in	GND



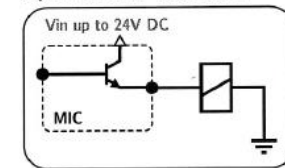
One of the output driver possibilities

Open collector - ULN2803A



MAX current 500 mA

Open emitter - MIC2981



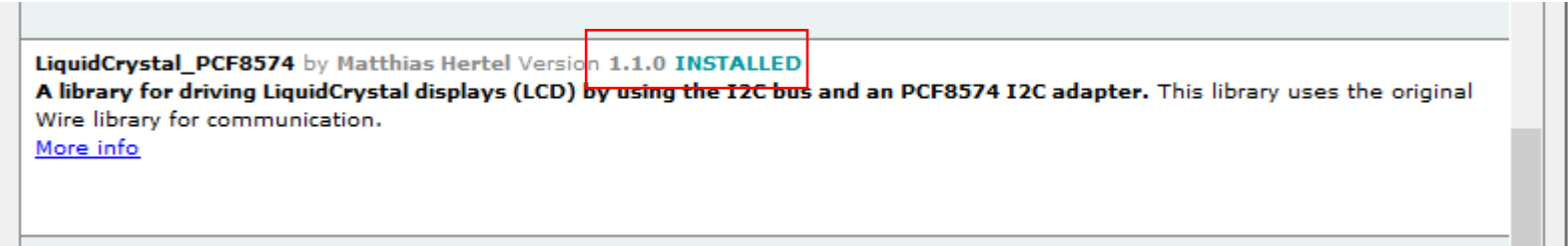
MAX current 500 mA

LCD Driver Library Reference in the Sketch

- My LCD Board Required the *LiquidCrystal_PCF8574.h* Library

```
#include <LiquidCrystal_PCF8574.h>
```

```
// Important note: Must use library version v1.1.0 because sketch is  
incompatible with v1.2.0
```

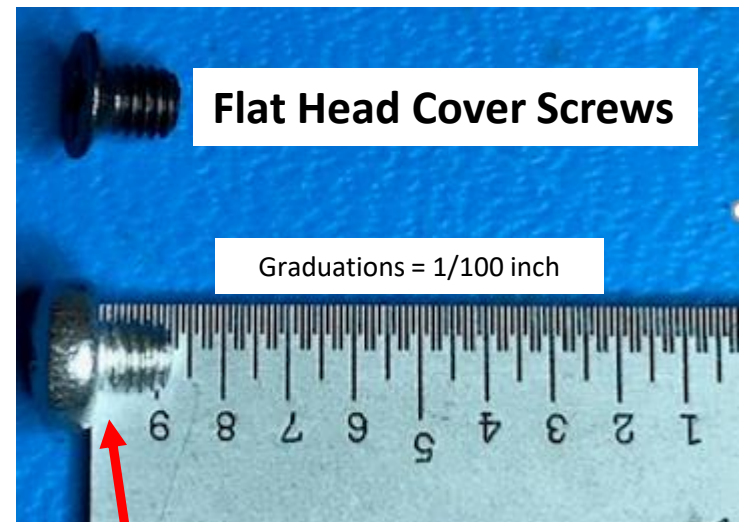


LiquidCrystal_PCF8574 by Matthias Hertel Version 1.1.0 **INSTALLED**
A library for driving LiquidCrystal displays (LCD) by using the I2C bus and an PCF8574 I2C adapter. This library uses the original Wire library for communication.
[More info](#)

DO NOT UPDATE LIBRARY TO v1.2.0
It is incompatible with the sketch

Two Screws Provided to Mount PCBA in the Enclosure Were Not Long Enough

- Two silver screws provided were short and could not be used to mount PCBA in chassis
- I had to use two flat head, black screws (borrowed from 2 of 4 side cover screws). The head shape of flat head screws allowed it to bite into the threaded post in the chassis.



Silver, Binder Head PCBA Screws
(2) Provided Were Too Short