

# Tode Manual

## *Users Guide*

### Setup and Operation Guide

by TGit-Tech [ <http://www.tgit-tech.com> ]

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# 1. Introduction

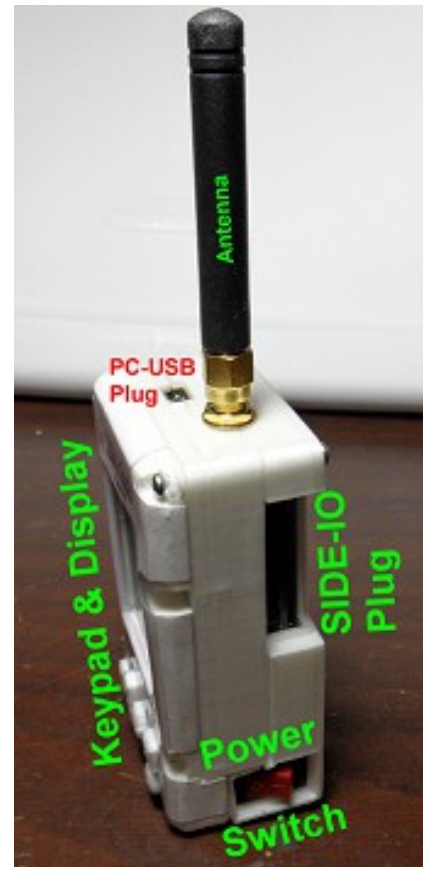
- ✓ The Tode Project is a Universal Platform of...
  - Face - UI Options
  - Tode – Backplane with optional Radio & Arduino Micro-Controller
  - Extensions - IO Interfaces, Battery Trays

Face Options ( User Interface )		
Model	Components	Resources
#TFT18KB6	1.8" TFT LCD Color Screen (6) Key keypad	Design Files <a href="https://github.com/TGit-Tech/Tode-RC">https://github.com/TGit-Tech/Tode-RC</a>
#COVER	A Cover Only	<i>Not available at this time</i>

Tode Models (post-fix RC=Remote/Radio Control equipped)		
Model	Components	Resources
Tode #AMP	Arduino Mega Pro (AtMega2560)	<i>Not available at this time</i>
Tode-RC #AMPE32T30	Arduino Mega Pro (AtMega2560) Ebyte E32-433T30D Radio (1W/30dbm)	Design Files <a href="https://github.com/TGit-Tech/Tode-RC">https://github.com/TGit-Tech/Tode-RC</a> Firmware <a href="https://github.com/TGit-Tech/Tode-RC-Firmware">https://github.com/TGit-Tech/Tode-RC-Firmware</a>
Tode-RC #AMPE32T20	Arduino Mega Pro (AtMega2560) Ebyte E32-433T20D Radio (250mW/20dbm)	<i>Not available at this time</i>
Tode-RC #AMPXBEE	Arduino Mega Pro (AtMega2560) Digi Xbee Radio	<i>Not available at this time</i>



SIO Stations ( Input/Output by Tode's Side-IO [SIO] plug )		
Model	Components	Resources
#SIOST	Screw Terminals	Design Files <a href="https://github.com/TGit-Tech/Tode-SIOST">https://github.com/TGit-Tech/Tode-SIOST</a>
#SIOAP	Aviation Plugs	<i>Not available at this time</i>

The Tode System is licensed under the MIT License. It's hosted on Github.com at:  
<https://github.com/TGit-Tech/Tode-RC>



## 2. Menu Structure

- ✓ Top-Level Menu Structure ( Introduced at Power-ON )
  - Each Tode in a remote-control network of Tode's has ONE Top-Level Screen.
  - This-Tode has (2) Top-Level Display Screens
    - 1<sup>st</sup> Screen is This-Todes IO-Control Screen (This is the first screen on Power-ON)
    - 2<sup>nd</sup> Screen is This-Todes SETUP Screen
    - 3<sup>rd</sup>, 4<sup>th</sup>, etc.... Screens are Remote Controllable Todes (Not This-Tode)

<p><b>1<sup>st</sup> Screen</b> <b>This-Todes</b> <b>IO-Control Screen</b></p> <p>On initial Power-ON this screen is blank because This-Tode hasn't been configured yet. Press Right →</p> 	<p><b>2<sup>nd</sup> Screen</b> <b>This-Todes</b> <b>SETUP Screen</b></p> <p>Where all configuration is done Press Right →</p> 	<p><b>3<sup>rd</sup>, 4<sup>th</sup>, etc.. Screens</b> <b>Remote-Todes</b> <b>Control Screens</b></p> <p>Remote Tode's</p> <p>On Initial Power-ON the SETUP Screen doesn't change because there are NO other Remote Tode's added at this Time.</p>
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- ✓ Sub-Level Menu Screens ( From This-Todes **SETUP** Screen )
  - Selecting **Radio** and Pressing **GET** will produce the Radio Settings Sub-Level Screen
  - Selecting **Devices** and Pressing **GET** will produce the Devices Sub-Level Screen
  - Selecting **Todes** and Pressing **GET** will produce the Todes Sub-Level Screen
  - To Exit a Sub-Level Screen press the ← button.



### 3. Configuring

#### 3.1 Name

1. Enter a Name for This-Tode

**SETUP**

Press ↵ to the blank [NAME] field.  
Press SET|



**SETUP – 'Set Name'**

The 'Set Name' Screen appears  
Press ↵



**SETUP – 'Set Name' – Entry Field**

Text Entry field highlights (Blue)  
Character Position highlights (White)  
↵↵ to change character position.



**SETUP – 'Set Name' – Enter Name**

Use     to select a character

Press **SET** to put character at position.


Repeat until Name is entered.

Use the 'Entry Field' (Under 'Set Name') to highlight (White) unwanted character; then pick the blank character ( Under Exit before ! ) **SET** to clear it.

**SETUP – 'Set Name' – SAVE & EXIT**

Once desired Name is Entered (RC1 in picture). Highlight **SAVE** and press **SET**

Then highlight **EXIT** press 





*Note: On Setup the  can often be correlated as the 'OKAY' button.*

**SETUP**

SETUP screen should now show the [NAME] just entered.





## 3.2 Radio Settings

- ✓ Radio Settings that **must be identical** for Tode Communication.
  - SecNet - This is a Security Code selected by you ( 0x01 to 0x7F ) that prevents unauthorized access.
  - Frequency - This is the radio frequency the Tode Communication will operate on
- ✓ Radio Setting that **must be Unique**
  - Address - This is a Unique Address selected by you of the Radio ( 0x0001 to 0xFFFF ) do not use 0000 or FFFF.
- ✓ Other Radio Settings
  - Tx Power - This is the POWER of transmission. Run lower to preserve power, run higher for longer distance.
  - PC Connex - This option when set to ON will allow the Radio to be connected to a PC via the USB Port.
- ✓ Name → Value Pair Settings
  - All Settings on the Radio Screen are set by going to the Value, changing the Value and then **SET**-ing it.
  - **SecNet** and **Address** Value is set PER-DIGIT using  and 
  - All other settings are simply incremental by using just  or 

\*\* Below Demonstrates the procedure for changing the **SecNet** \*\*


\*\* other settings are changed in the same manner \*\*

#### SETUP - RADIO

Press  to select **Radio**.  
Press 



#### SETUP - RADIO - SecNet

Press  to select **SecNet**




#### SETUP - RADIO - SecNet

Press  to select Value '23'







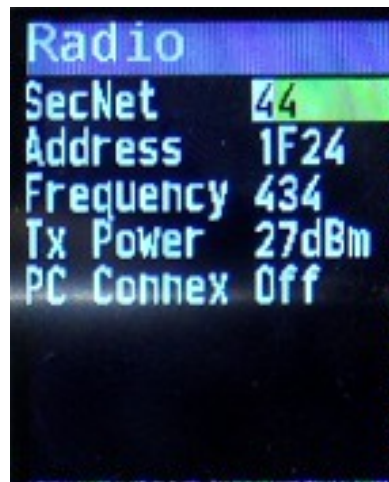
#### SETUP - RADIO - SecNet

Press  to set a Value  
The Value field turns (Yellow)  
with ONE-DIGIT '4' (White).




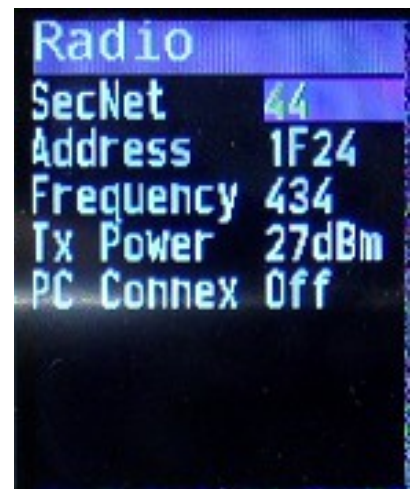
#### SETUP - RADIO - SecNet



Use   to change digit  
Up/Down.  
Use   to move digit (White)  
Left/Right.



#### SETUP - RADIO - SecNet - SET

Once the Value is where you  
want it.  
Press  to SET the Value.



✓ To return to the SETUP screen press  then again 



### 3.3 IO HDW & Add Devices

1. The Tode must know what IO attachment ability it has. At the time of this writing the only option is a 'Side-IO' Plug (SIO).

- Set the IO HDW attachment ability as shown
- Add an 'OnOff' Device as shown

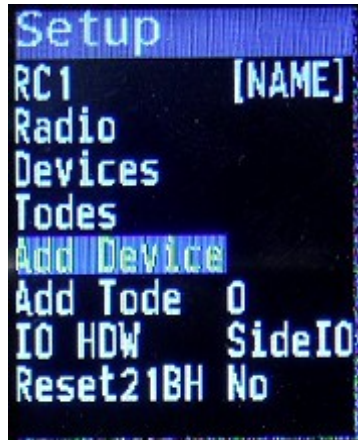
#### SETUP - IO HDW

Press  $\downarrow$  to select **IO HDW**.  
 Press  $\rightarrow$  to select Value 'NotSet'  
 Use  $\uparrow$   $\downarrow$  to change to 'SideIO'  
 Press **SET** to set the Value



#### SETUP - Add Device

Press  $\uparrow$  to select **Add Device**  
 Press **GET**






#### SETUP - Add Device - OnOff

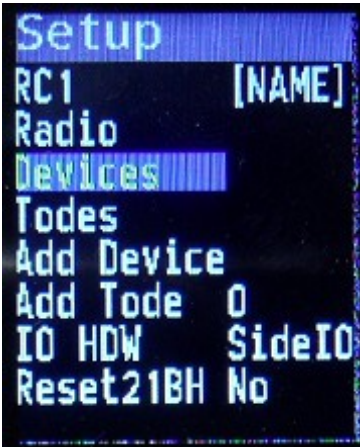
Press  $\downarrow$  to select 'OnOff'  
 Press **GET**  
 Only Press once; nothing changes but the selected device was added.





2. Name the 'OnOff' Device just added.


**SETUP - DEVICES**

Press  to return to **SETUP**.  
 Press  and select **Devices**  
 Press 

**SETUP – DEVICES – NAME?**

Press  to select **NAME?**.  
 Press 



**SETUP – DEVICES – Name the Device**

Use the same procedure to  
[Enter Name](#) for the Device.  
 Select **SAVE** and press  then  
**EXIT**






3. Set the IO Pin for the 'OnOff' Device just added.




**SETUP - DEVICES**

Press  to select **RELAY1** just  
 named  
 Press 

**SETUP – DEVICES – PIN**

Press  to select **PIN**.  
 Press  to select Value 'NotSet'  
 Press 

**SETUP – DEVICES – Set IO Pin #**


Use   to change Value to  
 33.  
 Press   
*Check IO HDW if value won't  
 change*





4. To return to the SETUP screen press  then again  then again 

5. Test the new device as shown below



**SETUP**

From the SETUP screen press  to return to **THIS TODE**

**THIS TODE**

Press  to select **RELAY1**.  
Press  to select Value 'Off'  
Press **SET**

**THIS TODE – DEVICE CONTROL**

Use   to change Value to 'On'.  
Press **SET**  
Relay1 on pin 33 should activate.

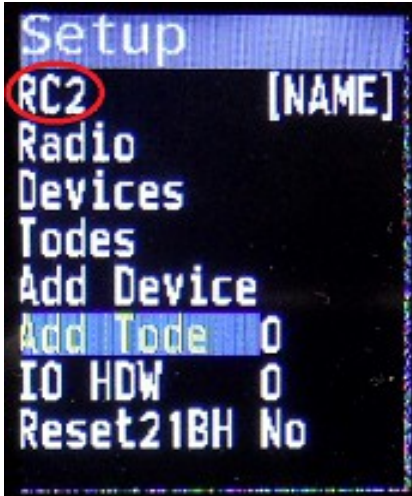
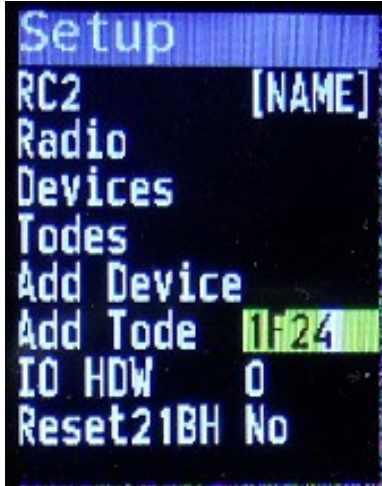



6. NOTE: To READ the Devices on a Tode Screen (one's with '?' as their value) press 

## 4. REMOTE TODE'S

### 4.1 Add Tode

- ✓ To Remotely Control another Tode's Devices. That "Remote" Tode must be added to THIS-TODE as shown
  - In this Example we have setup a 2<sup>nd</sup> Tode with the Name 'RC2'
    - Check Radio settings **SecNet**, **Frequency** and **Address** of 'RC1' ( shown as pictured in [#2.2.Radio Settings\outline.](#) )
      - SecNet = 44
      - Frequency = 434 MHz
      - Address = **1F24**
  - Set 'RC2' Tode Radio Settings for SecNet and Frequency exactly the same as 'RC1'
  - Add 'RC1' Device Controls to 'RC2' as shown below

SETUP	Add Tode by Radio-Address	Check Tode Add Success.
Press ↵ to select <b>Add Tode</b>	Press ↵ to select <u>Value</u> Change to <b>1F24</b> ( RC1 – Address ) Press <b>SET</b>	Press ↵ again for Next-Tode See <a href="#">#2.1.1.Turn the Power ON</a> for screen order.
		

- ✓ If the Add Tode was successful it will have a screen for it. If there is no Screen for it try to Add it again closer to the other RC.
  - **Add Tode** gets the Name and Devices from it's Target Tode as Configured.
  - Once Successful use **GET** to retrieve Remote Tode's Device Readings or Select a Devices Value and **SET**

## 5. Deleting Todes & Devices

As of this writing the firmware only allows the 'Reset' option which will erase all Todes and Devices. You will have to re-configure from the beginning to erase a Device or Tode.

Reset is the last item on the **SETUP** menu – Set the Value to YES and press **SET**



NOTE; The four digits after 'Reset' on the menu is the current firmware version. As shown above the Tode has firmware version 21BH loaded on it.