Using APRS with the Radioddity GA-5WB

V1.0, June 2nd, 2024

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At Radioddity, customers are important to us. As a customer, your time and money are important to you. When you buy radios online, you face a dilemma: buy from a reputable website at a high price, or try to save money by choosing a dealer who may or may not offer quality goods, service, and advice. At Radioddity.com, you do not have to choose between low prices and a secure shopping experience. Whether you are buying from us for the first time or a seasoned amateur radio operator, we always hope that with our products, prices, content, and sources, you will find exactly what you need. In recent years, Radioddity has better met the needs of wireless device buyers by creating a secure shopping experience. We do this by offering the highest quality products at an affordable price and providing you with first-class service. You deserve no less.

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support@radioddity.com

1 Disclaimer

This document is intended to help our GA-5WB customers to successfully setup APRS on their radio. If you still cannot get it working as expected, write a message to our support@radioddity.com stating the expected behavior, the actual behavior and how to reproduce the issue. Often a additional short video is of further help.

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2 Revision history of this document

We are constantly trying to update our manuals according to changes resulting of new firmware or CPS versions. If you miss any aspect in this document or believe that something has been described incorrectly or in a misleading way, please feel free to give us feedback at support@radioddity.com. We will try our best to make the next version of this document of even more added value for you.

Revision	Changes	released
V1.0	• Initial version	2024-06-02

3 Analog APRS

For analog APRS to work, several parameters need to be set using the smartphone app. Those are:

- APRS frequency to use for the APRS reporting channel
- HAM radio call sign
- Optional SSID
- Passcode (matching to the HAM radio call sign)
- APRS reporting channel
- APRS signal path
- APRS beaconing specific (interval, data, message, ...)

The following pages do describe all the relevant settings step by step.

3.1 APRS frequency to use

For Analog APRS data, check which frequency is to be used for your region. The below table does list a couple of APRS-frequencies that are in use in the amateur radio network. Keep in mind that you may need an amateur radio license to operate the radio on the listed frequencies.

The frequency specified with this parameter for analog APRS is totally independent of the selected channels frequency. The APRS beacon is transmitted using 1200 Baud AFSK. The frequency data within the following table is subject to change without prior notice.

Region	Frequency
Argentina, Uruguay	144.9300 MHz
Australia	145.1750 MHz
Austria (test)	433.8000 MHz
Brazil	145.5700 MHz
Chile	144.3900 MHz
China	144.6400 MHz
Colombia	144.3900 MHz
Europe	144.8000 MHz
Germany	432.5000 MHz
Indonesia	144.3900 MHz
Japan	144.6400 MHz
Malaysia	144.3900 MHz
Netherlands (test)	430.5125 MHz
New Zealand	144.5750 MHz
North America	144.3900 MHz
Russia	144.8000 MHz
South Africa	144.8000 MHz

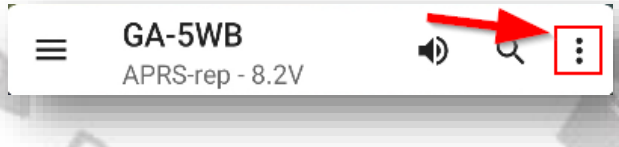
Taiwan	144.6400 MHz
Thailand	145.5250 MHz

Create a channel with the required parameters and save it to the radio.

3.2 Specify Callsign & password

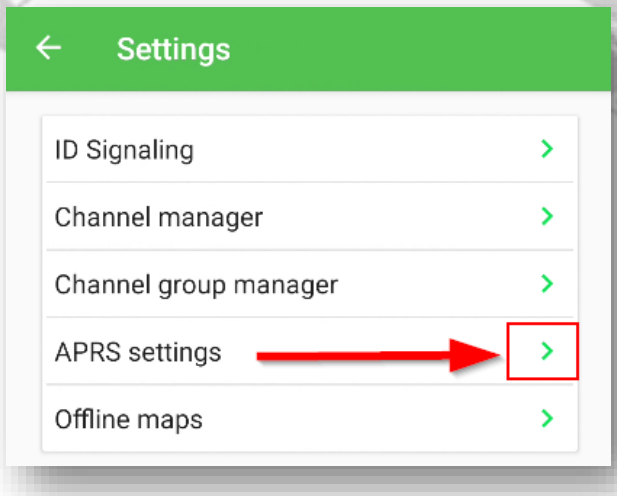
Besides the frequency to be used for APRS, you need to specify your ham radio call sign.

Click on the 3 buttons in the upper right corner of the HT-app.



Then select “Settings”.

Next select “APRS settings”.



Now enter your "Call sign" (maximum length 6 characters) and a SSID (none,1...15), you want to be appended to your callsign.

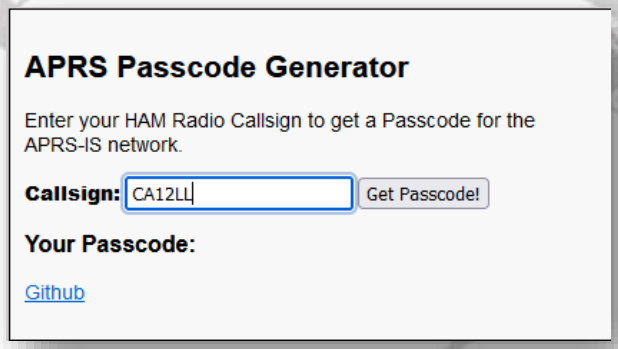
To further specify the type of station that sends out an APRS beacon, 15 SSIDs have been assigned as follows:

SSID	Definition
0	Your primary station usually fixed and message capable
-1, -2, -3, -4	generic additional station, digi, mobile, wx, etc.
-5	Smartphone user
-6	Satellite or special operations (Camping)
-7	**walkie talkies, HT's or other human portable**
-8	boats, sailboats, RV's or second main mobile
-9	Primary Mobile (usually message capable)
-10	internet, iGate, echolink, winlink, AVRS, APRN, etc.
-11	balloons, aircraft, spacecraft, etc.
-12	APRStt, DTMF, RFID, devices, one-way trackers, etc.
-13	Weather station
-14	Truckers or generally full-time drivers
-15	generic additional station, digi, mobile, wx, etc.

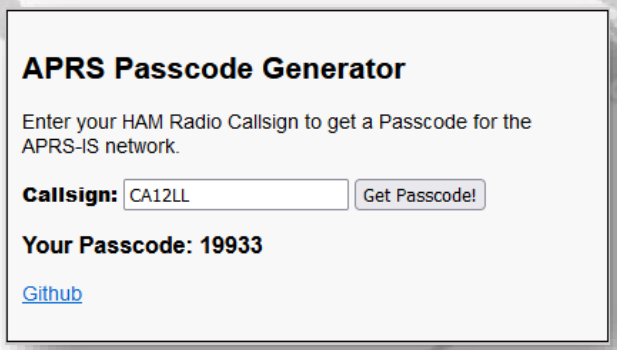
Thus entering "7" within the corresponding input field would be appropriate for a hand held radio.

In order to give APRS packets a minimum level of security, transmitted APRS-packets need to be signed with a passcode. If you search for "APRS passcode" on the internet, you will find various sites that do offer the required service for free. The source for the passcode generator was developed by Peter Goodhall, 2M0SQL and is available on github at https://github.com/magicbug/PHP-APRS-Passcode

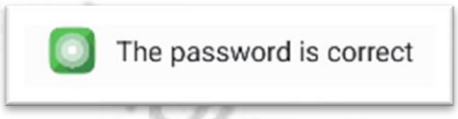
On such sites you first enter your callsign



before you hit the button Get Passcode! to get your passcode.



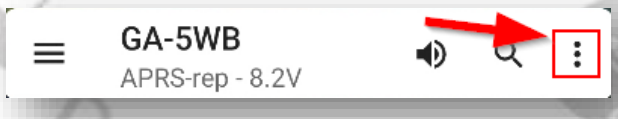
After you entered all the 3 parameters (Callsign, SSID and passcode), click on VERIFY PASSCODE to verify the entered passcode. On the smartphone running the HT-app you will see a popup stating



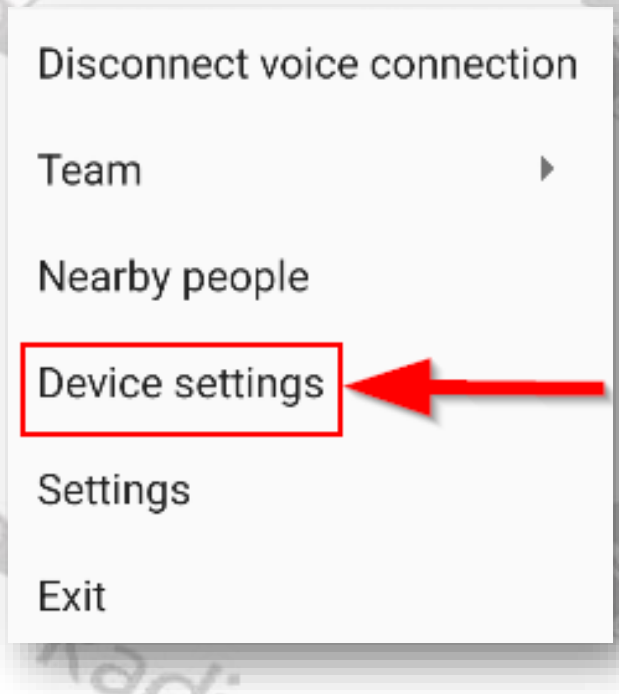
for a couple of seconds on the lower half of screen.

3.3 Specify APRS reporting channel and signal path

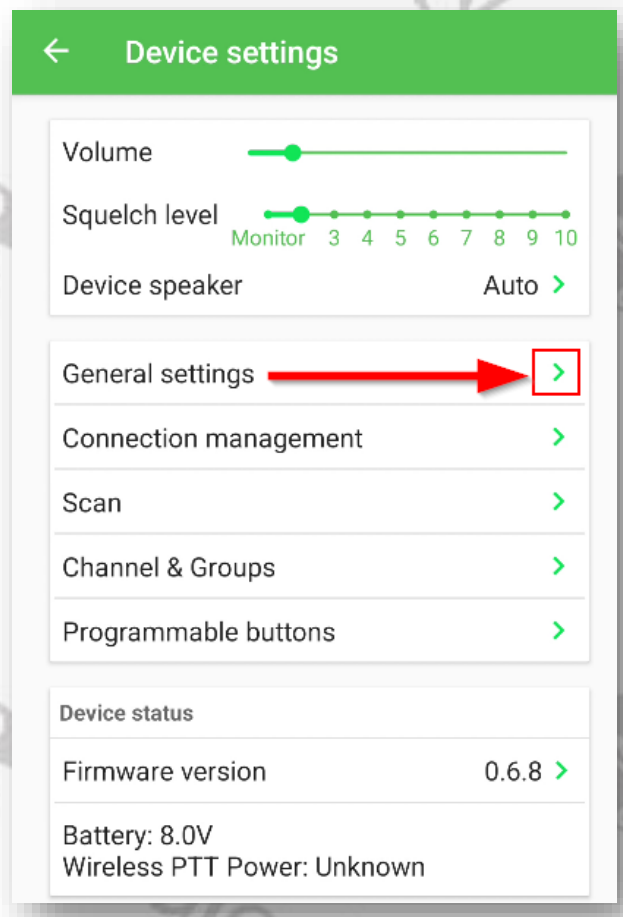
Next you need to specify the APRS reporting channel and the APRS signal pass. To do so, click once more on the 3 buttons in the upper right corner of the HT-app.



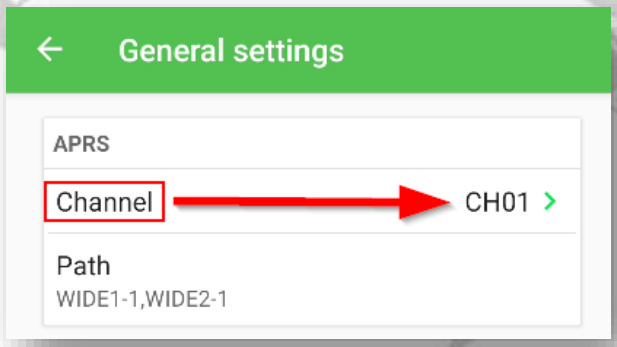
But this time select “Device settings”.



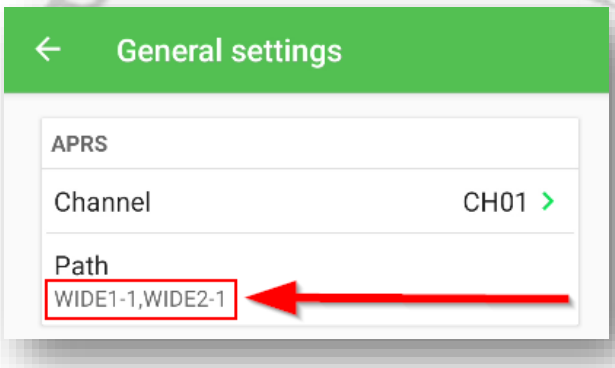
Next click on “General settings”.



Within APRS:Channel you specify the previously defined APRS reporting channel.



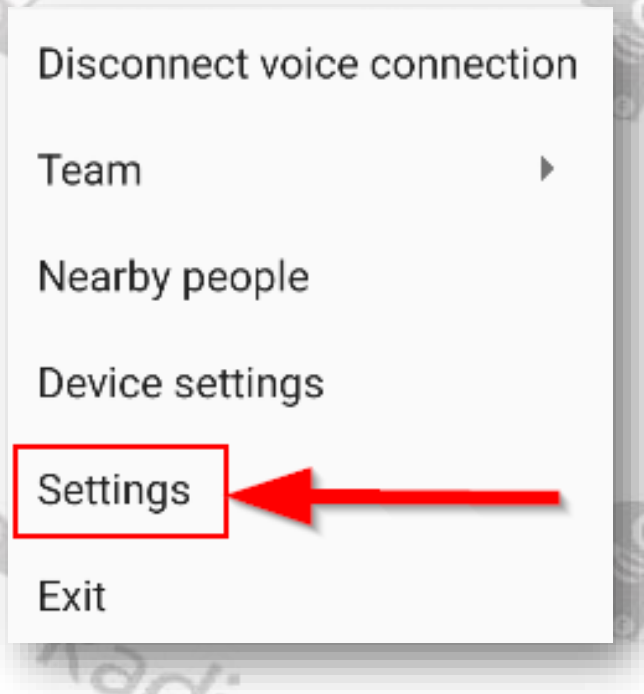
Next click on “Path” and select the path settings that are best to your local APRS system. Often "WIDE1-1,WIDE2-1" is a good choice.



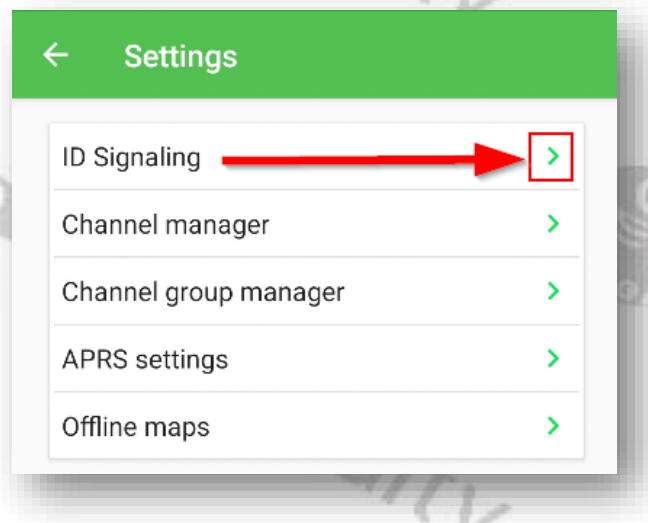
3.4 Specify beaconing

Again click on the 3 buttons in the upper right corner of the HT-app.

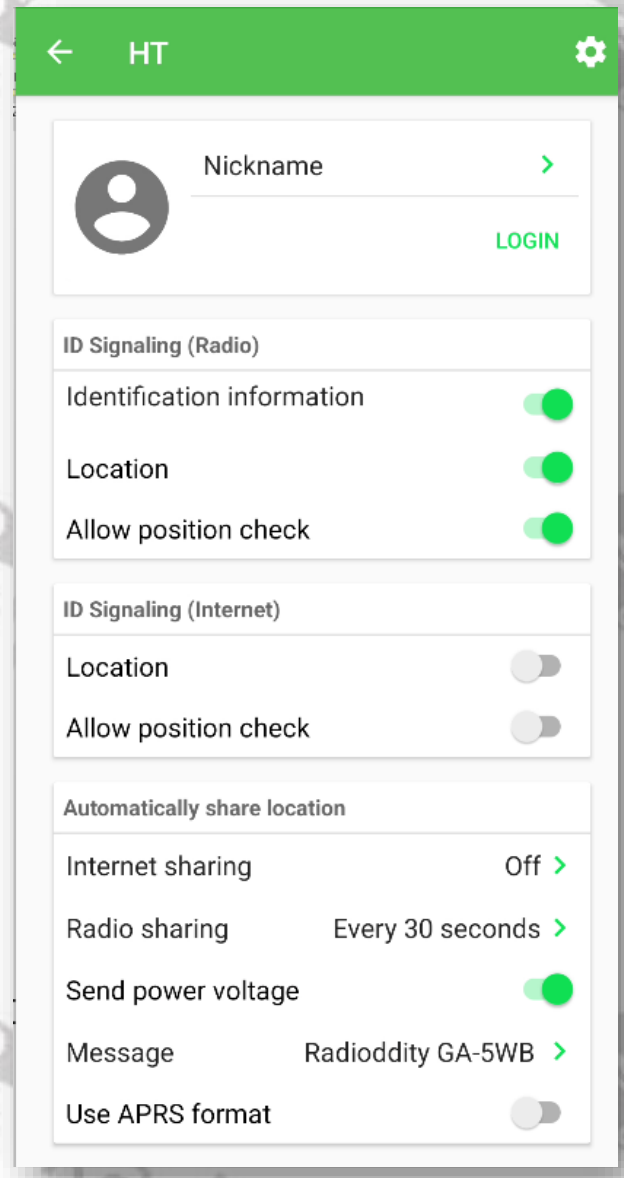
Then once more select “Settings”.



But this time select “ID Signaling”.



Set the parameters according to the below screenshot.



Now your radio should be setup for proper APRS beaconing as soon as it got a GPS-fix from at least 3 satellites. You may later on alter certain parameters to your personal needs.

4 Where to find support material

Please kindly note that all the firmware, software, and user manuals can be found in the Support area of our official website by following these steps:

https://www.radioddity.com/ → Support → Radioddity → GA-5WB

As for the Radioddity GA-5WB the resulting support page will look similar to the following:

As soon as any new file becomes available, those will be published within our support area.

We would like to thank all Radioddity customers for their constructive feedback.

If you do find any bug in the radio's firmware, the HT-App, this documentation or if you are missing a feature, you would have expected, write an email to support@radioddity.com.

Thank You for Shopping at Radioddity!

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