# RedFrog

User Manual Version 1.3

# Table of Contents

# Unboxing & Setup


Remove the rugged Pelican 1200 travel case from packaging. Be sure to keep all shipping materials in case your RedFrog unit requires shipping back to BVS for repair or calibration.

The case includes the RedFrog-Pro wide band power meter unit itself, DC power transformer, USB-A to USB-mini cable, USB stick containing PC controller software and this user manual, calibration certificate and Type ‘N’ to Type ‘N’ barrel plug adapter.

We recommend turning the power switch OFF while charging.

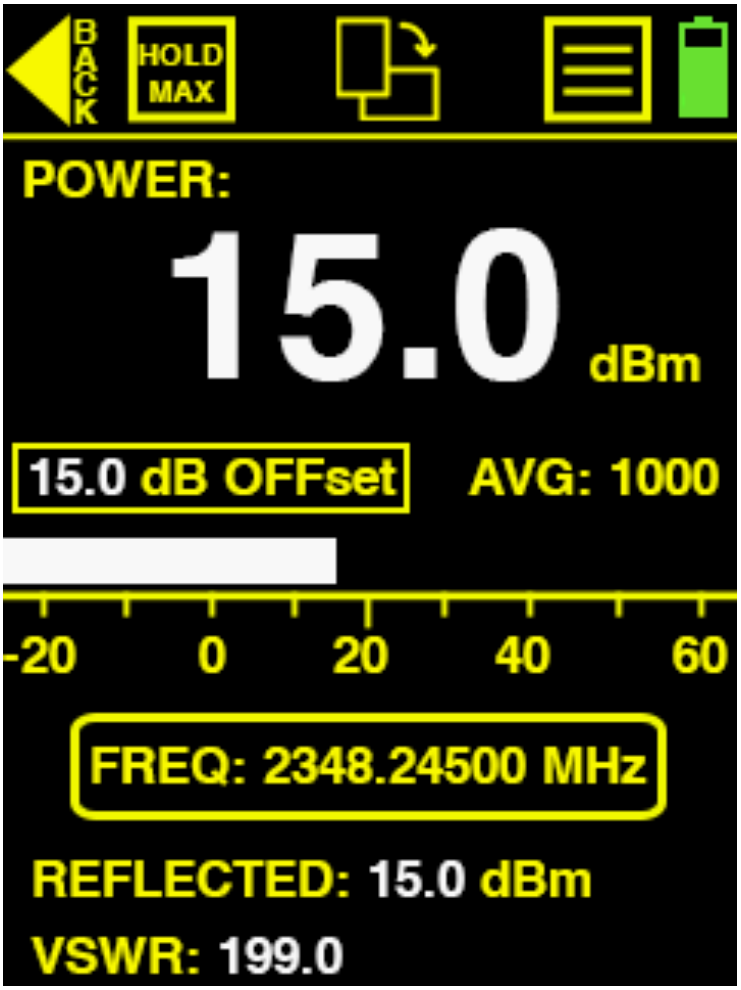
Before operating your unit, be sure to plug in the included power adapter to fully charge the unit. The red LED will turn on indicating charging in process. The red LED will turn off when the unit is fully charged.

NOTE: If the red LED is flashing, it indicates the unit temperature is too hot to charge internal battery. Turn off the unit and let it cool down before attempting to charge. Turn on the unit’s power using the ON/OFF switch. Connect the USB-A to USB-mini cable from your unit to a PC running the included RedFrog Controller software. Connect the supplied barrel plug to adapt to your required power output connection.

**FROM POWER SOURCE** → 

→ **TO ANTENNA**

# Power Mode (portrait view)




Upon powering up RedFrog, you will see this POWER MODE screen. From here you can monitor power measurements in real time and navigate to all of the other screens.


Touch HOLD MAX button to display the maximum power measured. This functions like a peak hold.

Touch this button to flip the display from portrait to landscape view and back again. This feature is convenient for connection to stiff power cables that do not let users easily manage the unit from the desired viewing angle.

Touch this MAIN MENU screen button to navigate to more adjustment settings

This battery indicator shows remaining power in the unit.


Power can be displayed in dBm or Watts. This can be toggled on or off in the OPTIONS screen.


This indicates the OFFset of forward power. Touch this button to change the forward power OFFset. Adjust the number of AVG. samples in the OPTIONS screen

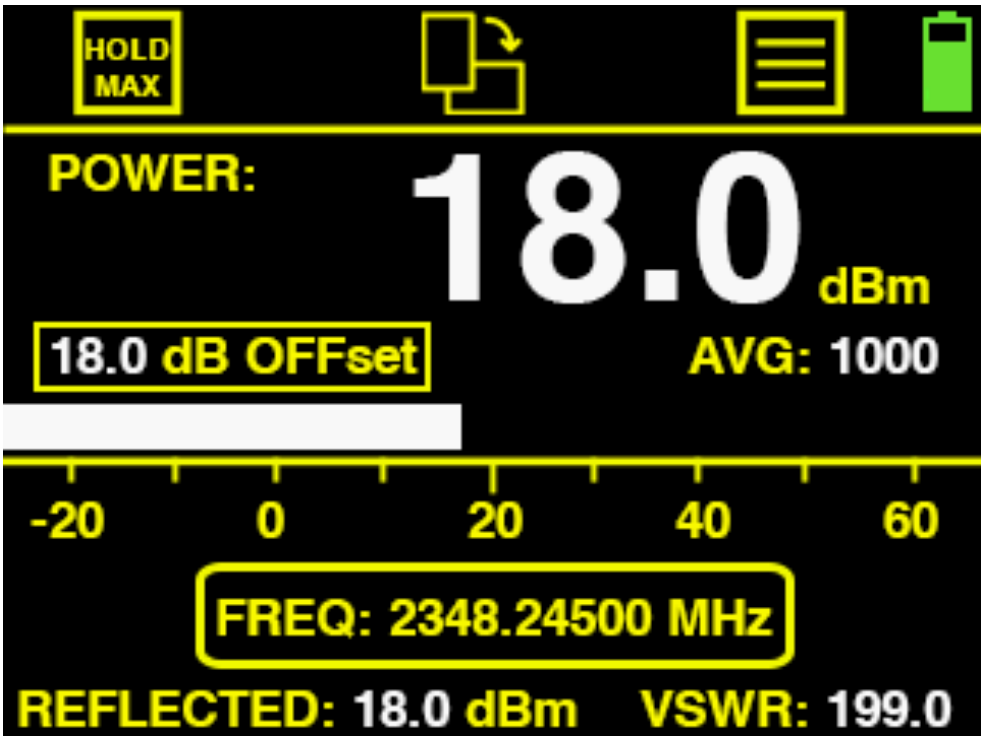

This horizontal scale represents the power measured from 0 dBm through +54 dBm.


Touch this button to change the input frequency measured. You will be taken to a numeric keypad FREQUENCY INPUT screen where you enter in any frequency between 700 MHz and 6000 MHz with accuracy of 5 places to the right of the decimal.


This indicates the reflected power in dBm.


This indicates the VSWR (Voltage Standing Wave Ratio)

## Power Mode (landscape view)

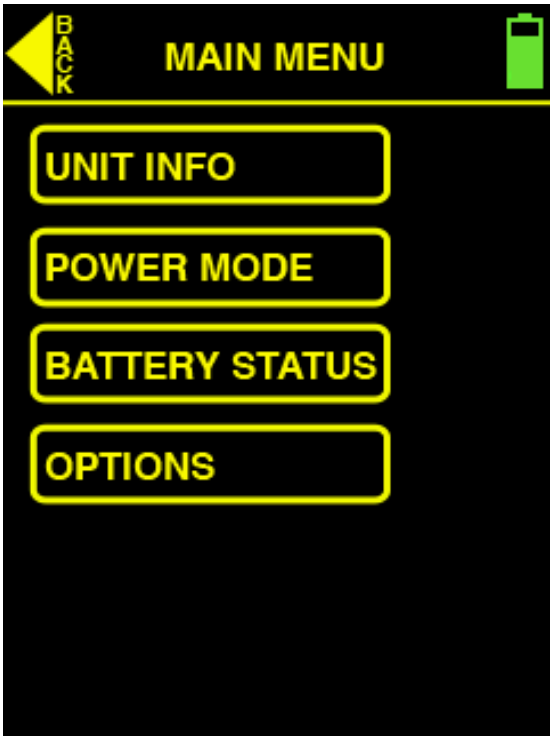



This POWER MODE screen is in landscape view but is functionally identical to the portrait view screen. Some work environments require RedFrog to connect directly to rigid antennas that do not bend or adjust easily to the user's vantage point. You may flip back and forth to each of these screens at any time by touching the orientation button at the top.

# Frequency Input

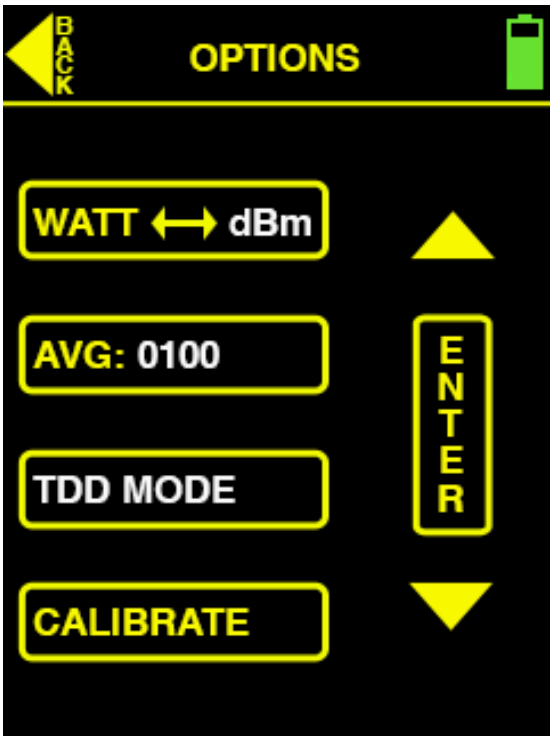

Use this screen to enter in any custom frequency between 700 MHz and 6000 MHz. Arrow keys allow the users to adjust single digits of the frequency without the need to enter the entire frequency. Touch the ENTER button at any time to complete your entry and it will return you back to the POWER MODE screen.

# Main Menu




From this MAIN MENU, users can view or adjust UNIT INFO, go back to the main POWER MODE screen, BATTERY STATUS and more OPTIONS. Touch the OPTIONS button to enter a new screen allowing adjustment of dB OFFset, TDD mode toggle and more.

# Options




Use this screen to change the output display to either dBm or Watts.

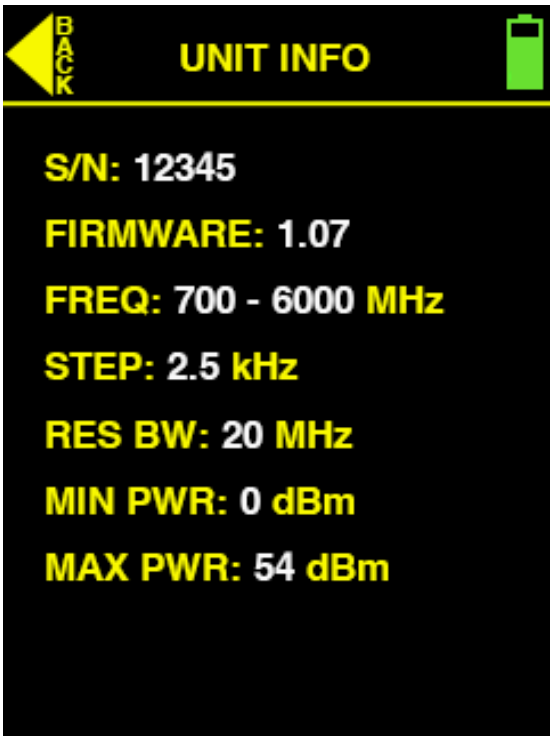
You may also adjust your average forward power measurements using the up/down arrows and enter buttons on the right side of this screen

You may also toggle TDD mode on or off (recommended to keep off) TDD should only be turned on when you want to measure a TDD (Time Division Duplex) for TDD LTE and future 56 bands.

The CALIBRATE button is disabled and reserved to BVS support. Contact your BVS sales or support staff member if you have any questions.

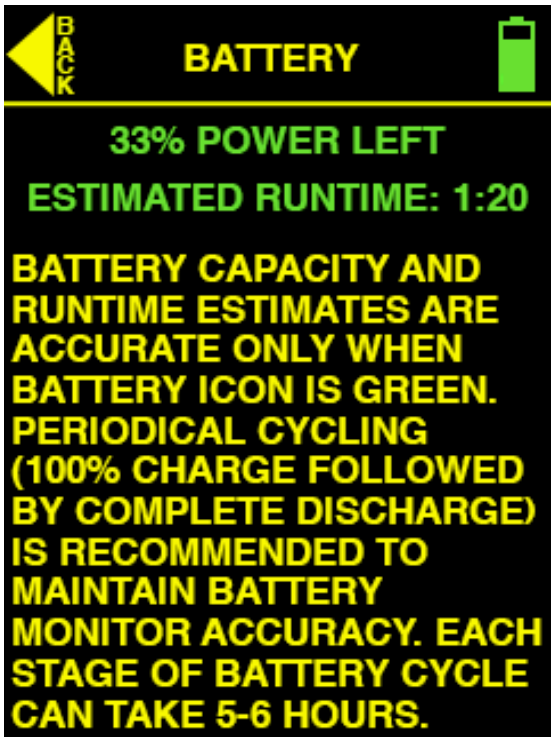
Touch the BACK arrow in the upper left corner of the screen to navigate back to the previous screen.

# Unit Information




From this screen, users can view vital information and unit parameters including unit serial number, firmware, frequency range, step size, resolution bandwidth, minimum power and maximum power.

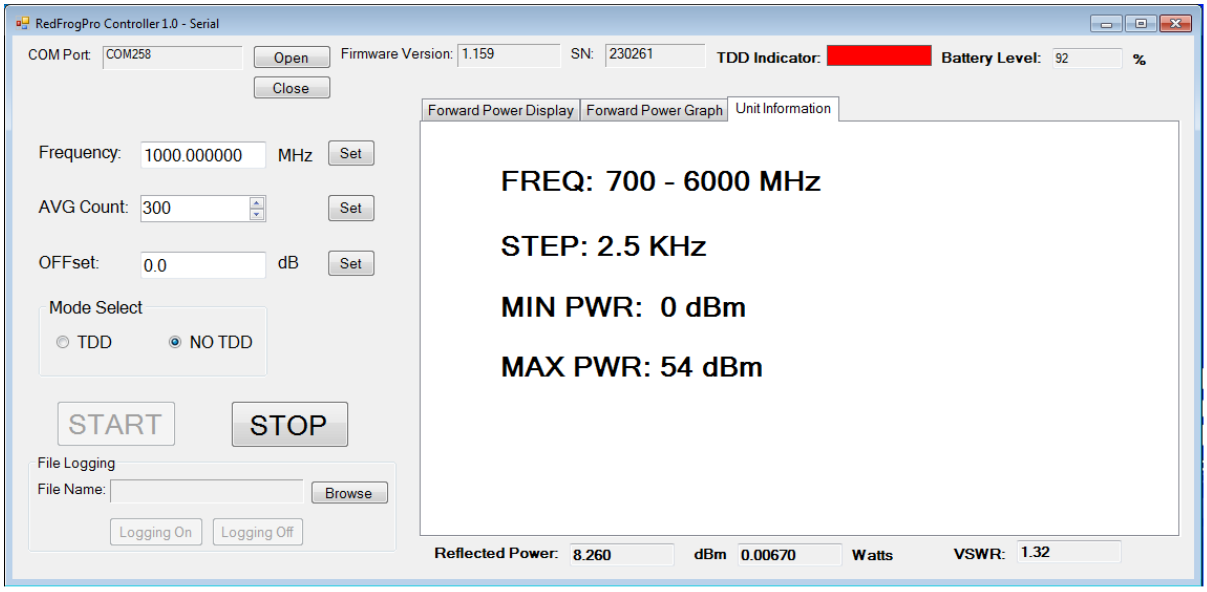
# Battery Information



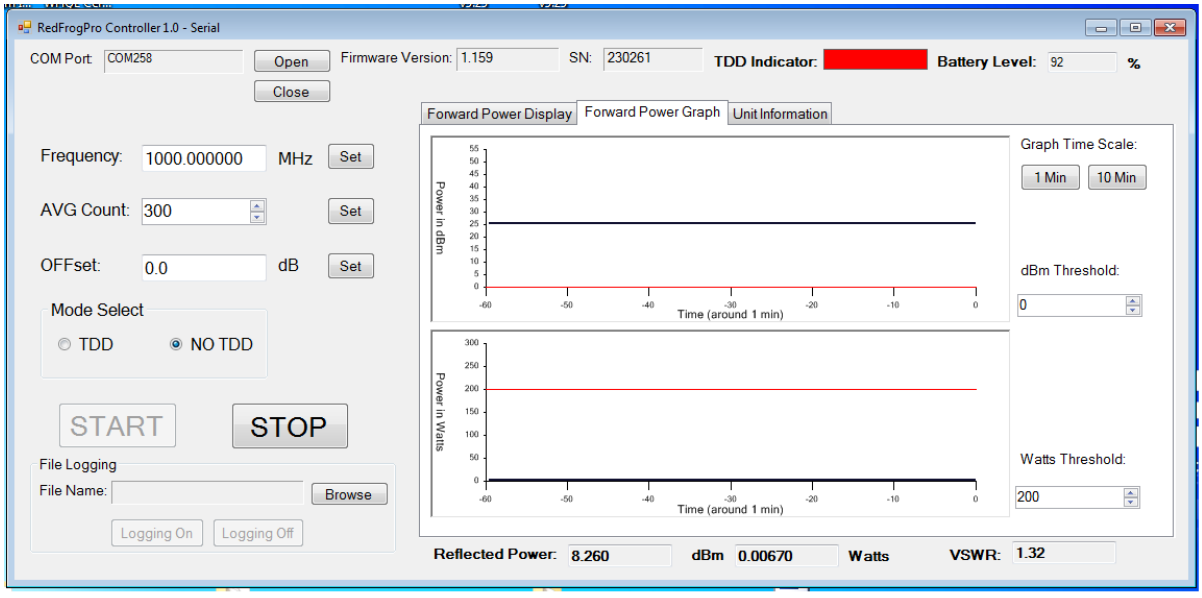

Touch the battery icon in this screen to see additional battery capacity information and battery care instructions.

# PC Controller Software

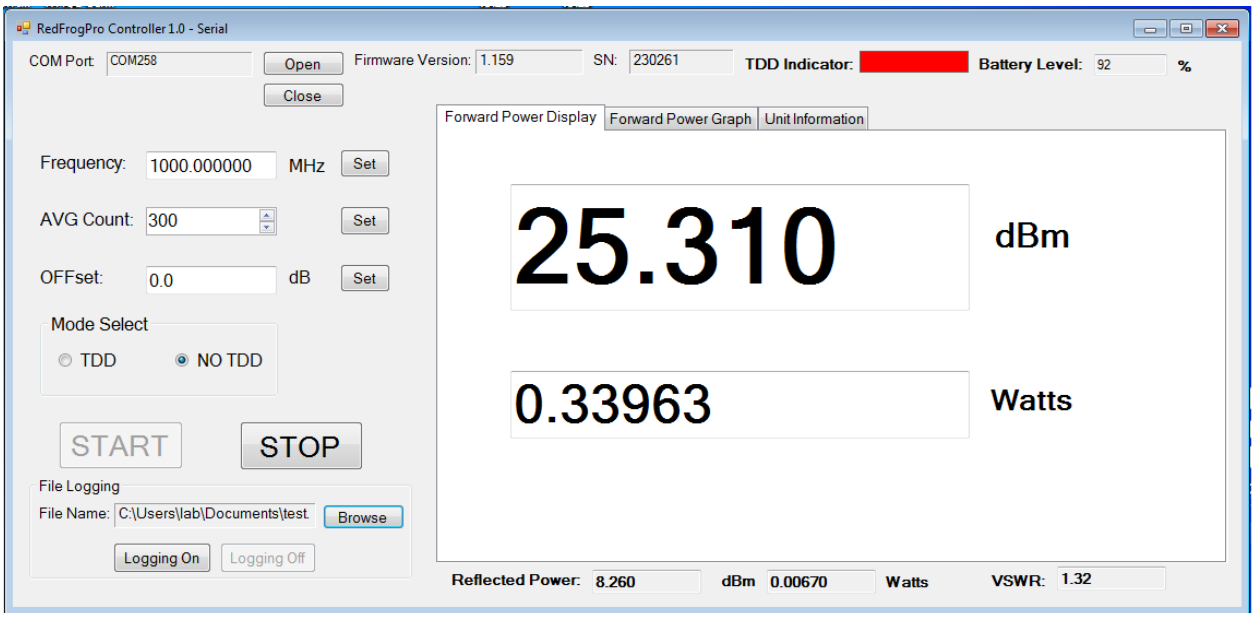
You will find all the necessary Windows 10 PC software and drivers on the included USB stick with your unit. The RedFrog-Pro PC controller software allows users to monitor measurements and control unit settings without having to physically access the unit. In addition to control over settings, this PC software also allows users to view power measurements as a graph of power measured over time. Once connected to the PC, turn on the unit to initiate control over it.




**Unit Information Screen**




**Forward Power Graph**




**Forward Power Display**

# dBm to Watts Conversion Chart

| dBm | Watts | dBm | Watts | dBm | Watts |
|---|---|---|---|---|---|
| 0 | 1.0 mW | 16 | 40 mW | 32 | 1.6 W |
| 1 | 1.3 mW | 17 | 50 mW | 33 | 2.0 W |
| 2 | 1.6 mW | 18 | 63 mW | 34 | 2.5 W |
| 3 | 2.0 mW | 19 | 79 mW | 35 | 3.2 W |
| 4 | 2.5 mW | 20 | 100 mW | 36 | 4.0 W |
| 5 | 3.2 mW | 21 | 126 mW | 37 | 5.0 W |
| 6 | 4 mW | 22 | 158 mW | 38 | 6.3 W |
| 7 | 5 mW | 23 | 200 mW | 39 | 8.0 W |
| 8 | 6 mW | 24 | 250 mW | 40 | 10 W |
| 9 | 8 mW | 25 | 316 mW | 41 | 13 W |
| 10 | 10 mW | 26 | 398 mW | 42 | 16 W |
| 11 | 13 mW | 27 | 500 mW | 43 | 20 W |
| 12 | 16 mW | 28 | 630 mW | 44 | 25 W |
| 13 | 20 mW | 29 | 800 mW | 45 | 32 W |
| 14 | 25 mW | 30 | 1.0 W | 46 | 40 W |
| 15 | 32 mW | 31 | 1.3 W | 47 | 50 W |

## Power Measurement Units

dBm - decibels relative to one milliwatt
dBW - decibels relative to one Watt

## Gain Measurement Units

dBi - decibels relative to an isotrope
dBd - decibels relative to a dipole

Thank you for your purchase, we look forward to supporting you and your team.

**Customer Support**

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