

Pit Stop 2™ RF Reader

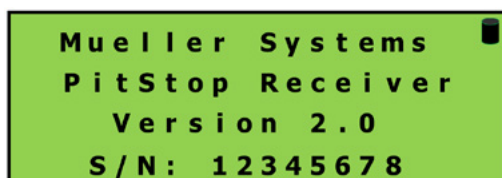
Mueller SYSTEMS

OVERVIEW:

The Pit Stop 2 RF Reader is a dual use Radio Meter reading handheld. It is designed to collect readings from a single meter or collect and store up to 1000 separate RF metered accounts. The Pit Stop 2 RF Reader operates on two different frequencies with a booster aerial that bends to 90 degrees so it will not interfere with the meter reading personnel as it is clipped to their belt or pocket. The unit is very compact and is not much larger than a standard smart phone. It is powered by a lithium battery that is charged via a USB cable and is rated to last for 20 hours of continuous operation.

USER INTERFACE:

The Pit Stop 2 uses a green and black dot matrix display with a physical number pad below the screen. There is a battery life indicator located at the top right of the screen.



USAGE:

There are two main functions for the Pit Stop 2 RF Reader handheld, Meter Reading and the Installation Tool. After pressing the ENT (ON) button to turn on the unit, press ENT (ON) again to access the first menu screen. To select an option, press the corresponding number to the left of the selection. To go back, press the CLR button



1 Meter Reading:

This mode is used for collecting meter readings inside a route that is downloaded into the Pit Stop 2 RF Reader handheld. Readings may also be collected if no route is downloaded into the handheld. The collected readings can also be viewed in the Meter Reading tool

When the user selects option 1, they will be taken into the Meter Reading Menu which contains three options: Meter Logging, Transparent Mode and Setup. The functionality of each is outlined below.

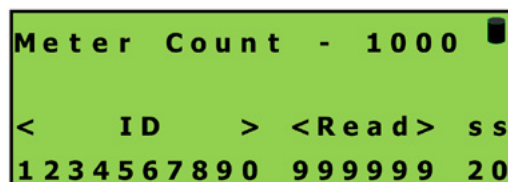


METER LOGGING:

This houses the main meter reading portion of the Pit Stop 2 RF Reader handheld. Inside this menu are three sub-selections: Start Logging, View List Data and View Unlist Data.

1-1-1 Start Logging

Selecting Start Logging by pressing 1 will start the Meter Logging function of the Pit Stop 2 RF Reader. The screen will show the List Count, the Non List Count, the Meter ID of the last collected reading, the Read of the last collected reading and the Signal Strength of the last collected reading's signal. To stop the Meter Logging process, press the CLR button. This will exit to the Meter Logging menu screen.



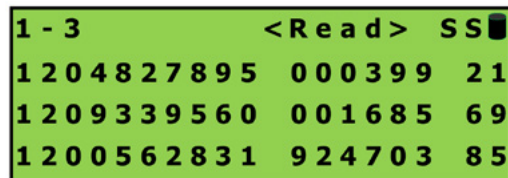
1-1-2 View List Data

Selecting View List data from the Meter Logging menu screen will bring up the list of collected RF readings in groups of three. The top row of the display shows what page number is being displayed followed by the total number of pages. 1-3 would mean that the user is viewing page one of three. The logged readings are displayed by Meter ID with the Reading and Signal Strength listed to the right. To scroll through this list the user can press on the 2 key to move up or the 8 button to move down through the list.

* Note: no addresses are loaded into the list, only Meter ID's.

1-1-3 View Unlist Data

Selecting View Unlist data from the Meter Logging menu screen will bring up a list of collected RF readings in groups of three. These will only display the collected readings that were not a part of any downloaded route. The top row of the display shows what page number is being displayed followed by the total number of pages. 1-3 would mean that the user is viewing page one of three. The logged readings are displayed by Meter ID with the Reading and Signal Strength listed to the right. To scroll through this list the user can press on the 2 key to move up or the 8 button to move down through the list.



1-2 Transparent Mode

By pressing 2 in the Meter Reading menu, Transparent Mode will come up. This mode simply listens for any Mueller RF reading and shows a list of the collected readings that scrolls as they come in. If the reader is around many meters, the list will move very quickly as each radio sends out its reading every two seconds.

1-3 Setup

The Setup menu has three different sub-selections; Clear Meter Data, Clear List Data and Change



1 - Clear Meter Data
2 - Clear List Data
3 - Change Frequency

FREQUENCY

1-3-1 Clear Meter Data

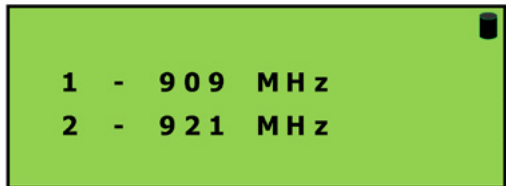
This option allows the reader to erase all the collected readings in the Pit Stop 2 RF Reader handheld while keeping the downloaded route intact. The Clear Meter Data option can be chosen by pressing 1 in the Setup menu. When this is chosen, the user will be prompted to press ENT to clear the all the collected readings. The handheld will display “erasing...” in the lower left corner. Once done erasing, the display will jump back to the Setup menu.

1-3-2 Clear List Data

This option allows the reader to erase all the collected readings that are stored within the downloaded route in the Pit Stop 2 RF Reader handheld. The collected readings that are outside the route will still be stored in the Pit Stop 2 RF Reader and the route will remain intact, but free of readings. The Clear List Data option can be chosen by pressing 2 in the Setup menu. When this is chosen, the user will be prompted to press ENT to clear the all the collected readings. The handheld will display “erasing...” in the lower left corner. Once done erasing, the display will jump back to the Setup menu.

1-3-3 Change Frequency

If no reading is obtained there may be interference on one of the frequency. By pressing 3 in the setup menu, the user can switch the frequency by which the Pit Stop 2 RF Reader handheld reads the Mueller RF signal. When in the Change Frequency menu, the selected frequency will have an arrow pointing to it. To select 909 MHz, press one. To select 921 MHz, press two. Once selected, the handheld screen will jump back to the Setup menu.



1 - 909 MHz
2 - 921 MHz

2 INSTALLATION TOOL:

This mode does not log Mueller RF readings for route reading, but instead, it is used when a meter is installed or needs to be checked. The three main functions of the Installation Tool are Receive, View Last 9 and Change Frequency.



1 - Receive
2 - View Last 9
3 - Change Freq

2-1 Receive

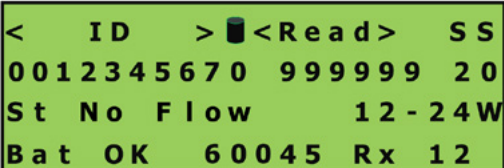
To go into the Receive menu, press 1 on the key pad. There are two main functions inside the Receive menu; Receive All and Receive One.

2-1-1 Receive All

By pressing 1 in the Receive menu, the Receive All functionality will be selected. This mode simply listens for any Mueller RF reading and shows a list of the collected readings that scrolls as they come in. If the reader is around many meters, the list will move very quickly as each radio sends out its reading ever two seconds. Pressing any number key (0-9) will pause the screen.

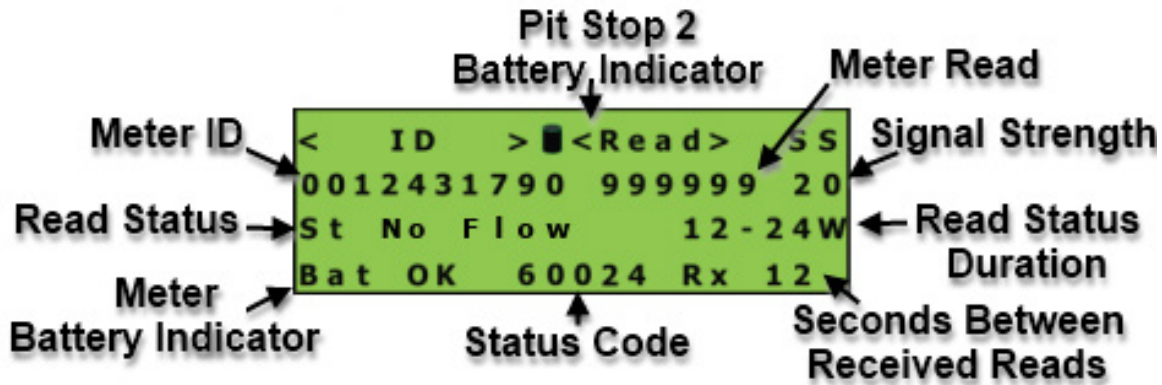
2-1-2 Receive One

By pressing 2 in the Receive menu, the user will be prompted to enter a ten digit ID number. This is accomplished by entering in “00” followed by the Translator ID located at the top of the meter. The example in the picture reads 0012345670. Once this ID is entered, the user will press the ENT key to get the handheld to read the RF signal from that particular meter.



<	ID	>	<Read>	SS
00	12345670	999999	20	
St	No Flow	12	24W	
Bat	OK	60045	Rx	12

Once ENT is pressed, the user will see 4 rows of information. The first row is a header row that shows ID, the Pit Stop battery level indicator, Read and SS (Signal Strength). The second row will display information under its concurrent header. For Example, the ID = 0012431790, the Read = 999999 and the Signal Strength = 20. The Third row contains the status of the meter and the duration. In the example picture, the status is a No Flow with the duration of 12-24 weeks. The bottom row displays the Battery status, the 6 digit X-data Status Code and the number of seconds took to receive the signal. In the example picture the battery status is OK, the X-Data code shows 60024 and it took 12 seconds to receive the signal.



To get out of this screen, press the CLR button and this will take the user back to the Receive menu.

2-2 View Last 9

Selecting 2 in the Installation Tool menu will pull up the last 9 readings that were received. The top row of the display shows what page number is being displayed followed by the total number of pages. 1-3 would mean that the user is viewing page one of three. The logged readings are displayed by Meter ID with the Reading and Signal Strength listed to the right. To scroll through this list the user can press on the 2 key to move up or the 8 button to move down through the list.

2-3 Change Frequency

By pressing 3 in the Installation Tool menu, the user can switch the frequency by which the Pit Stop 2 RF Reader handheld reads the Mueller RF signal. When in the Change Frequency menu, the selected frequency will have an arrow pointing to it. To select 909 MHz, press 1. To select 921 MHz, press 2. Once selected, the handheld screen will jump back to the Setup menu.

HANDHELD TO COMPUTER INTERFACE

The Pit Stop 2 RF Reader is charged via USB cable which is plugged into a desktop or laptop computer. This same cable acts as a data transmitter cable. The cable is controlled by a driver (provided by Mueller Systems) which views the Pit Stop 2 RF Reader as a serial device with its own COM port. To view The COM designation, the user can go into the Device Manager in the Windows Control Panel. With the unit unplugged from the computer, dropdown to Ports (COM & LPT) list (if this list is not present, it is because there are no COM ports present on the computer). When the Pit Stop 2 RF Reader is connected to the computer, its COM port designation will show up in the Ports (COM & LPT) list (if the list was not there, it will appear when the Pit Stop 2 RF Reader is plugged to the computer and the COM port designation will be shown under that list).