MobileCollect™

RF Sniffer

User's Guide

MICRORIDGE

Measurement Collection Specialists
Connect Any Gage into Any Software

MobileCollect RF Channel Sniffer Program

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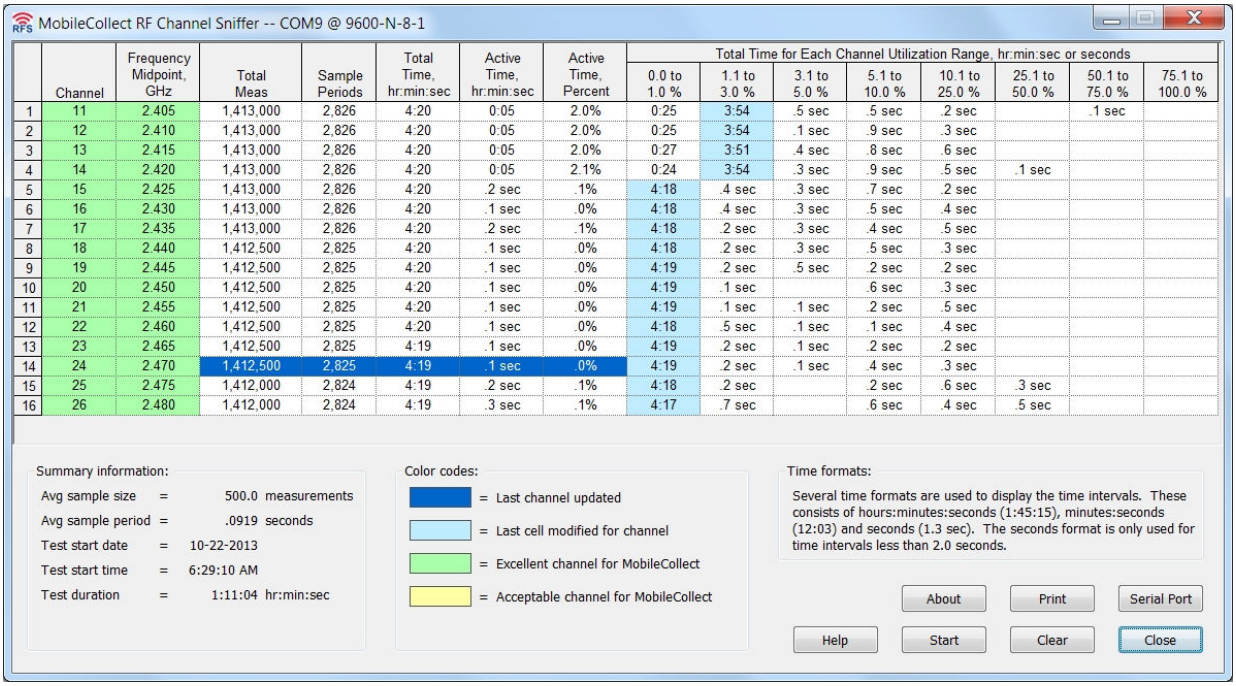
1 MobileCollect RF Channel Sniffer

The MobileCollect RF Channel Sniffer allows you to determine the amount of RF communications occurring on each of the RF channels that can be used by MobileCollect wireless. The Sniffer takes 500 measurements on a channel and determines for each measurement if there was any RF activity. After the measurements are taken on a channel, the Sniffer moves to the next channel and repeats the process. It takes approximately .096 seconds (96 msec) to capture the 500 measurements on a channel. The total time to scan all 16 channels is about 1.6 seconds.



	Channel	Frequency Midpoint, GHz	Total Meas	Sample Periods	Total Time, hr:min:sec	Active Time, hr:min:sec	Active Time, Percent	Total Time for Each Channel Utilization Range, hr:min:sec or seconds							
								0.0 to 1.0 %	1.1 to 3.0 %	3.1 to 5.0 %	5.1 to 10.0 %	10.1 to 25.0 %	25.1 to 50.0 %	50.1 to 75.0 %	75.1 to 100.0 %
1	11	2.405	1,413,000	2,826	4:20	0:05	2.0%	0:25	3:54	.5 sec	.5 sec	.2 sec		.1 sec	
2	12	2.410	1,413,000	2,826	4:20	0:05	2.0%	0:25	3:54	.1 sec	.9 sec	.3 sec			
3	13	2.415	1,413,000	2,826	4:20	0:05	2.0%	0:27	3:51	.4 sec	.8 sec	.6 sec			
4	14	2.420	1,413,000	2,826	4:20	0:05	2.1%	0:24	3:54	.3 sec	.9 sec	.5 sec	.1 sec		
5	15	2.425	1,413,000	2,826	4:20	.2 sec	.1%	4:18	.4 sec	.3 sec	.7 sec	.2 sec			
6	16	2.430	1,413,000	2,826	4:20	.1 sec	.0%	4:18	.4 sec	.3 sec	.5 sec	.4 sec			
7	17	2.435	1,413,000	2,826	4:20	.2 sec	.1%	4:18	.2 sec	.3 sec	.4 sec	.5 sec			
8	18	2.440	1,412,500	2,825	4:20	.1 sec	.0%	4:18	.2 sec	.3 sec	.5 sec	.3 sec			
9	19	2.445	1,412,500	2,825	4:20	.1 sec	.0%	4:19	.2 sec	.5 sec	.2 sec	.2 sec			
10	20	2.450	1,412,500	2,825	4:20	.1 sec	.0%	4:19	.1 sec		.6 sec	.3 sec			
11	21	2.455	1,412,500	2,825	4:20	.1 sec	.0%	4:19	.1 sec	.1 sec	.2 sec	.5 sec			
12	22	2.460	1,412,500	2,825	4:20	.1 sec	.0%	4:18	.5 sec	.1 sec	.1 sec	.4 sec			
13	23	2.465	1,412,500	2,825	4:19	.1 sec	.0%	4:19	.2 sec	.1 sec	.2 sec	.2 sec			
14	24	2.470	1,412,500	2,825	4:19	.1 sec	.0%	4:19	.2 sec	.1 sec	.4 sec	.3 sec			
15	25	2.475	1,412,000	2,824	4:19	.2 sec	.1%	4:18	.2 sec		.2 sec	.6 sec	.3 sec		
16	26	2.480	1,412,000	2,824	4:19	.3 sec	.1%	4:17	.7 sec		.6 sec	.4 sec	.5 sec		

MobileCollect Sniffer is only compatible with the following base units:

- MobileCollect USB Base
- MobileCollect MicroBase
- MobileCollect RS-232 Base

MobileCollect wireless operates in the 2.45 GHz Industrial, Scientific and Medical (ISM) radio band. This frequency is also used by other wireless equipment such as WiFi. If you are not using other 2.45 GHz equipment in your facility, you would not need to use the Sniffer to determine the best channels to use. However, if you have other wireless systems operating in the 2.45 GHz band, it is a good idea to run the Sniffer to determine the activity levels on the available channels.

Operation

In order to use the Sniffer, you must have a MobileCollect USB Base, RS-232 Base or MicroBase connected to your PC. You also need to specify the serial port that the base unit is connected to. The Sniffer will automatically determine the baud rate required by the base unit. After selecting the appropriate serial port, press the Start button to begin the Sniffer test.

The Sniffer test should run for hours, not minutes. If the time period that you will be using MobileCollect runs from 7:00 AM to 4:00 PM, your Sniffer test should be run during that time period. If you are not using MobileCollect from 4:00 PM to 7:00 AM, any information collected by the Sniffer during the 4:00 PM to 7:00 AM time period is useless in determining channel availability.

You cannot save the data collected by the Sniffer. However, a one page printed report can be generated by pressing the print button. All printing should be done in landscape mode.

Time Formats

The times are displayed in 3 different formats. Pay close attention to these formats so you do not misinterpret the times being displayed.

hr:min:sec	This format is used when the time being displayed is greater than 1 hour.
min:sec	This format is used for times less than 1 hour and greater than 2 seconds
sec	When the total time is less than 2 seconds, the number of seconds are displayed with 1 decimal place (i.e. 1.3 sec). When the time is 2 seconds or greater, the min:sec format is used. When this seconds format is used, the word sec always appears after the time.

Grid Columns

Channel	The MobileCollect channel number. The channel number for WiFi equipment is different from this channel numbering.
Frequency Midpoint	The midpoint frequency for each channel. The frequency range for each channel is 0.0030 GHz. The minimum and maximum frequency for each channel is 0.0015 GHz below and 0.0015 GHz above the frequency midpoint. The frequency range for each channel is smaller than the channel frequency range used by WiFi.
Total Meas	The total number of measurements for each channel. If you run the Sniffer 8 hours, each channel will have about 9,000,000 measurements.
Sample Periods	The total number of sample periods for each channel. If you run the Sniffer 8 hours, each channel will have about 18,000 sample periods.

Total Time	The total time each channel was monitored during the test. If you run the Sniffer 8 hours, the total sample time for each channel will be about 30 minutes.
Active Time	The total time that activity was observed for a channel.
Active Time, Percent	The percentage of the time that a channel had RF activity while it was being monitored. This value is used to flag the Excellent and Acceptable MobileCollect channels.
0 to 1.0%	The amount of time that RF activity was observed for this utilization range. The utilization range for this item is 0 to 1.0%. When data for a sample period is received by the Sniffer, the percent utilization is calculated (total measurements with RF activity / total measurements). If this calculation ranges from 0 to 1.0%, the time of the sample period is added to the total for the channel being analyzed. Larger times for this utilization range indicates very little RF activity for the channel.
1.1 to 3.0%	See explanation above. Times for this utilization range indicate a low amount of RF activity for a channel.
3.1 to 5.0%	See explanation above. Times for this utilization range indicate a low amount of RF activity for a channel.
5.1 to 10.0%	See explanation above. Times for this utilization range indicate a low amount of RF activity for a channel.
10.1 to 25%	See explanation above. Times for this utilization range indicate a moderate amount of RF activity for a channel.
25.1 to50%	See explanation above. Times for this utilization range indicate a moderate amount of RF activity for a channel.
50.1 to75%	See explanation above. Times for this utilization range indicate a high amount of RF activity for a channel.
75.1 to 100%	See explanation above. Times for this utilization range indicate a high amount of RF activity for a channel.

Excellent & Acceptable Channels

To assist in identifying channels to use for MobileCollect, Excellent and Acceptable channels are marked with a light green or light yellow color. Even if a channel is marked as Excellent or Acceptable, you should still take at close look at the time in each of the utilization ranges.

You could have a channel that has virtually no activity most of the time; however, when there is activity, all of the activity is in the 75.1 to 100% utilization range. This channel may experience some measurement problems if you are taking measurements when the channel activity very high.

MobileCollect Channels

The following MobileCollect products can utilize channels 11 to 26.

- USB Base
- RS-232 Base
- MicroBase
- Digital Mobile Module
- Command Mobile Module
- Mini Mobile Module
- RS-232 Mobile Module (V2)

The default channel for MobileCollect is 21. Channel 14 is reserved for firmware updates and Mobile Module setup.

2 Contact MicroRidge

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Note: There is no mail delivery to this address. This address should only be used for UPS and FedEx package delivery services.

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