

RSU Status

MTE User Manual - Data Collection

3.21 May 2009



RSU Status

Overview

Clicking the **RSU Status** button on the main toolbar displays a snapshot of a RSU's current status, grouped into separate pages. It is advisable to do a status check regularly:

- Before setup to check remaining battery life.
- After setup to check the setup was successful, and the RSU is active.
- During a survey to monitor axle statistics and memory usage.

If a potential problem exists in any of the status pages, the relevant page will be automatically displayed, along with a warning message describing the problem.



Note: Use the left and right arrow keys to step through the RSU Status pages.

Site Information

The **Data** page displays the survey parameters of the data currently in memory, as specified when the RSU was setup.

U St	tatus - Chan	inel 0	X
Data RSU Battery Hits Memory		Battery Hits Memory	
Property		Value	
	Site Name	001	
	Attribute	MetroCount HQ	
	Lane	00	
	Description	O'Connor Close north of Rollinson Rd	
Layout Direction A Direction B		Axle sensors - Paired (Class/Speed/Count)	=
		7 - North bound A>B, South bound B>A. [7]	
		0 - Unused or unknown. [0]	
First Data Last Data		Unknown! (Roadside Unit start = 13:35 Wednesday, 14	
		Unknown! (Roadside Unit finish = 18:03 Monday, 19 Nov	
	D	A 10 D 10	
Debounce A= Spacing 10		A=TUms, B=TUms	
		1000 mm - 3 ft 3.4 in	-
	Unerator	RC	
		Close	e

RSU Site Information

RSU Activity

The **RSU** page displays information about the RSU's hardware, and the Status list at the bottom shows the RSU's current state of activity. It also lists recent events that may impact the data currently in memory, or the RSU's condition.

รรเ	ISU Status - Channel 0			
	Data	RSU	Battery Hits Memory	
	Pro	operty	Value	
		Ident.	? N200MPRS MC56-L5 [MC55] (c)Microcom 190 ct04	
		RSU	MC5600	
		Batteries	Main=6.01, RAM=4.43, (M=6.01V, R=4.41V)	
		Memory	Used=11.03% (229451 of 2080768) [HI=0f, L0=404b]	
		Setup Time	13:35 Wednesday, 14 November 2007	
		Start Time	13:35 Wednesday, 14 November 2007	
		Finish Time	18:03 Monday, 19 November 2007	
		Run Time	5 days 4 hr 28 min	
		Status	[0x81] Roadside Unit ACTIVE: Running normally	
	~		DATA available to unload	
	•	_	4	
			Close	

RSU status information

Text	Description
Roadside Unit not ACTIVE	The RSU is in its idle state.
Roadside Unit ACTIVE: Waiting for start time	The RSU has been setup with a deferred start time. When the start time is reached the RSU will switch to its active state.
Roadside Unit ACTIVE: Running normally	The RSU is in its active state, logging data.
DATA available to unload	The RSU contains data that has not been unloaded. This will remain until the RSU is stopped.
Memory FULL	The RSU has filled to capacity, and will have stopped logging data.
Main battery ran down	The RSU will switch to its idle state if the main battery drops below a certain level. This ensures that there is always sufficient power to communicate, barring battery failure. This message indicates the RSU may have stopped logging sooner than expected.
Roadside Unit POWER was interrupted	Power was interrupted while the RSU was active. If power is interrupted the RSU will stop logging data.
Dropped to IDLE (No hits)	The RSU stopped logging because no hits were detected for seven days.

Battery Levels

Non-rechargeable Main Battery

For RSUs with a non-rechargeable battery pack, the RSU Status gives an estimated number of days of continuous use, until the pack will need to be replaced. This estimate is based on the typical discharge curve for a battery pack supplied by MetroCount.



RSU battery status

When the battery voltage enters the yellow region of the graph, a reminder to replace the pack will be issued. Once in the red region, the battery should be replaced before any further use.

RSU Status - Channel 0	<u> </u>	
Data RSU A Batt Main battery 6.5 Main ba	Pry Hits Memory Hits Memory Herry - replaceable alkaline cells 4.5 3.83	
5.19 6.0 4.8	ain battery getting low! Object: Main battery Details: Replace soon! OK	
	Close	

Battery warning message

Even if the voltage is in the red region, the battery pack still has sufficient power for the RSU to

communicate, unload any data, and retain data almost indefinitely. The RSU will automatically shutdown below the red region to ensure communication will still be possible.

Some RSUs have a separate RAM backup battery to retain the RSU's memory while the main battery is changed. This is automatically charged from the main battery.

Rechargeable Main Battery

To ensure optimal capacity and service life, RSUs with rechargeable main batteries should have their battery voltage kept in the green region at all times. Actual days of use between charging will vary depending on the age of the battery.



RSU battery status (rechargeable)

Running the main battery down to the red zone may result in irreversible damage to the battery, and it will probably need to be replaced.

Memory Usage

RSUs dedicate their entire memory to the current survey, and data must be unloaded onto a PC before the next setup. The RSU's Operator Guide lists an approximate hit capacity for each RSU memory size. Obviously the higher the traffic volume at a site, the shorter the survey that can be conducted. Once full, a RSU will stop logging data, and return to its idle state.

A RSU's status reports the percentage of capacity used so far, and an approximate time remaining until full. This is simply extrapolated from the amount of data logged and the Run Time (time elapsed since the RSU was setup).

RSU Status - Channel 0
Data RSU Battery Hits Memory
Total memory 2080768 bytes
Used so far 229451 bytes (11.03%)
Memory used
Note: The following are estimates only Confidence 11.03%
Estimated time to run 1004 hr
Estimated full time 10:16 Wednesday, 26 December 2007
Close

Checking memory usage

When checking a RSU's status, warning messages will be issued if the unit is more than 90% full.

RSU Status - Channel 0 Data RSU Battery Hits A Memory Total memory 2080768 bytes Used so far 2015232 bytes (96,85%)	Imm
Memory used 97% 97% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	Low memory! Object: Memory Details: Memory is more than 90% full.
Estimated full time 03:32 Friday, 16 November 2007 Close	

Memory usage warning message

Sensor Statistics

The Sensor or Hit statistics can be used as a rough guide to the quality of raw data logged by a RSU.

SU Status - Channel 0	U Status - Channel 0		
Data RSU Battery	Hits Memory		
Property	Value		
Total A Hits	47802		
Registered A Hits	47802 (100%)		
Rejected A Hits	0 (0%)		
Total B Hits	47802		
Registered B Hits	47802 (100%)		
Rejected B Hits	0 (0%)		
Total Ratio A/B	100%		
Registered Ratio A/B	100%		
Analysis			
	Sensors are matched within 5%		
•			
	Close		
	0.000		

Checking sensor hits

Parameter	Description
Totals	The sensor Total counts are the total number of hits detected by each sensor. Registered represents the actual number of hits stored in memory.
Ratios	Ratios between the number of hits on each sensor.
Analysis	Conclusions and warnings related to the sensor totals and ratios. Warnings will only be issued if there is at least 200 axle hits on both sensors.

When using a Classifier Sensor Layout, a 100% match between A and B sensor hits is ideal. In reality, there will be a slight difference due to extra or missed hits.

A variation in total counts of more than 5% will give a **Sensor Imbalance** warning, highlighting a potential sensor problem at some point during the survey. The best way to examine if a problem with data quality exists is to unload the data and examine a plot of sensor hits, to determine where the mismatch occurred. For example, if a sensor problem started late in a survey, and there is sufficient usable data at the start, then the mismatch is not an issue.

RSU Status - Channel 0		
Data RSU Battery	🕂 Hits Memo	V
Property	Value	Hmm
Total A Hits	47802	
Registered A Hits	47802 (100%)	Sensor imbalance!
Rejected A Hits	0 (0%)	
Total B Hits	45242	Serious
Registered B Hits	45242 (100%)	Details:
Rejected B Hits	0 (0%)	There may be a problem with sensor balance! Please check count details.
Total Ratio A/B	106%	
Registered Ratio A/B	106%	
Analysis		
	There is more th	an 5% mismatch between sensors
•		•
		Close

Sensor imbalance warning

A Sensor Imbalance warning may also be triggered if more than 10% of the total hits are being removed by the debounce filter. For example, this can be caused by an incorrectly installed sensor, or vehicles traversing the sensors at an angle, giving multiple, closely-spaced hits. Again, it is simply a warning that there is something unusual about the data.

U Status - Channel 0	U Status - Channel 0		
Data RSU Battery	Hits Memory		
Property	Value		
Total A Hits	47802		
Registered A Hits	47802 (100%)		
Rejected A Hits	0 (0%)		
Total B Hits	57427		
Registered B Hits	47616 (82,9%)		
Rejected B Hits	9811 (17.1%)		
Total Platic A /P	02.7%		
Pagistered Patio A/P	100%		
Thegistered Hatto A/D	100%		
Analysis			
Ø	There is more than 16% mismatch between sensors		
Ø	More than 10% of sensor hits are being removed b		
	Close		

Rejected hits warning

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