

Application Note: ADC Configuration (Protocol S)

Scope

AT240, AT110

Overview

ADC samples can be averaged over a specified number of samples and using a specified interval between the samples. The averaged values are reported in protocol S. In addition, a report can be sent if any ADC reading changes by a given percentage of the input voltage range.

Related Documents

The following documents are recommended reading to accompany this document:

- AT240 & AT110 User Guides
- Astra Protocol S

The User Guides can be obtained from:

<http://www.gps-telematics.co.uk/downloads.htm>

The Protocol Description document is available on request by emailing support@gps-telematics.co.uk

Operation of ADC Averaging

ADC1 and ADC2 will be sampled at regular intervals. Each sample is a 12 bit value. The average over a specified number of samples will be inserted in the next protocol S report. If a sample changes by more than a specified percentage of the input voltage range from the previous reading then this will cause a report to be sent.

The format of the ADCC command is as follows:

\$ADCC,<event_threshold_%_change>,<avg_samples>,<avg_sample_interval>

Field	Description	Range
<event_threshold_%_change>	Percentage change of the analogue reading from one sample to the next that will cause a report to be sent. Percentage is the change compared to the full scale input range	0-100 0 will disable this feature
<avg_samples>	Number of most recent samples that is used to calculate the average reading	1-100
<avg_sample_interval>	Number of seconds between each sample	1-65535

The average ADC readings are reported as 12 bit values in every protocol S report.