

Diamond Knowledge Base

UAA Testing with the Calibrator data differences.

There is a known issue with the Calibrator and the UAA (Unicorn Limited, Apollo) units not displaying speeds correctly the following information explains why this is:

Consider the following two vehicles. The first is from a UAA V1.53 counter, in monitor mode, with the Basicon connected (Class), and View Dual enabled with timestamps.

1: Axle Sensor 1=(2), 9.0' F11BA7-F09D5C

1: Axle Sensor 2=(2), 9.0' F0E3A9-F0655D

1: 09:38:46 35.0mph, 2 Axles, Length= 9.0', A#2 S#5 L#2 G#2 H#2 , 9.0'

Exact same setup, except this time with a UPP V4.50 counter using two standard airswitches and an MDK board:

1: Axle Sensor 1=(2), 9.0' D46879-D4612A

1: Axle Sensor 2=(2), 9.0' D4653A-D45DEB

1: 11:49:50 35.1mph, 2 Axles, Length= 9.0', A#2 S#5 L#2 G#2 H#2 , 9.0'

Pretty much the same, except the speed is different by 0.1mph. Why?

Here is how it breaks down: The UAA uses a 184,320Hz clock. If you compare the timestamps from the first hit on each tube, you get a difference of 14,334 (F11BA7-F0E3A9=37FE). Since Rate = Distance / Time, the formula is Rate = 4.0' / (14334 / 184320), or 51.4357ft/sec. This equals 35.0698mph.

On the MDK, which uses a slower 10,695hz clock, the difference is 831 (D46879-D4653A=033F). Rate = 4.0' / (831 / 10695), or 51.4801ft/sec. This equals 35.1000mph.

Kind of interesting results. I would expect the UAA is more accurate, since it uses a faster clock. If the MDK had one more count, 832 instead of 831 difference, then the speed would be 35.0579, or almost exactly the same as the UAA counter.

Bottom line, at a 4.0 spacing the MDK has a built in error close to +/- 0.05mph.

<http://support.diamondtraffic.com/knowledgemanager/questions/111/>