

PERFORMANCE TEST RESULTS
OF A LOW COST GPS
TIME AND FREQUENCY MONITOR

Ron C. Hyatt and Javad M. Ashjaee
Trimble Navigation
1077 Independence Avenue
Mountain View, CA 94043

ABSTRACT

Final prototype and pilot production performance test results will be presented on a single channel C/A code GPS receiver that has been optimized for time and frequency applications.

Timing accuracy and stability test results will be presented, as well as position determination results.

Summary of these results are as follows:

Timing accuracy:	better than 100 nsec
Timing stability:	better than 10 nsec rms for 10sec averaging
Frequency stability:	better than 1 part in to the eleventh for 10 sec averaging
Position accuracy:	better than 50 meters when GDOP less than 8 and upload less than 5 hours old
Position stability:	Better than 10 meters rms when GDOP less than 8 for two minute averaging

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QUESTIONS AND ANSWERS

DAVID ALLAN, NATIONAL BUREAU OF STANDARDS: do you know, Al, if the highest satellite lock condition can be overridden, if you wished, to lock it to a lower satellite?

MR. RISLEY: I am not familiar with the unit, but Mr. Mitchell will answer the question.

MR. MITCHELL: The answer to the question is yes. Any of the automatic features can be overridden in the manual mode. It's simply a matter of selecting one control key on the front panel unit. That outputs you into a sub-menu.

You use the satellite-select for the particular satellite that you want to view. You can also override the automatic feature for the initial search. You could go to a sky search for a satellite that you know is in view to you, rather than letting it go through its entire catalog of satellites to set time.

You can also select the satellites that you want to do the positioning on. It will automatically go to the best satellite in view if you are in the automatic mode. You can override the automatic mode, and select the four satellites that you want to do the positioning on.

MR. KLEPCZYNSKI: Will the pricing structure which was announced for the Trimble receiver also be maintained by Datum and FTS?

MR. MITCHELL: The price is somewhat higher. Datum has purchased the exclusive rights to the unit. We don't feel that the price is that much different from the Trimble offering because we have made considerable improvements over the time since Trimble initially offered them at their introductory price. Trimble never sold any of them at the introductory price, by the way.

We do not consider the software updates to be an option, so it is included in the price. That way you have software updates for the next four years to protect you from any changes that might be made in the program, as well as to get any improvements that we find are necessary in the updating of the software to improve the operation.

The new price also includes the RS 232 and some other improvements. The unit is being introduced at around 25K.

MR. BUISSON: How many receivers are in the field?

MR. MITCHELL: Of the first production run of ten, I took the first unit to ITC. The second unit is here at this show. Two of the units are at the Plans meeting in San Diego this week, and four units are being delivered to Patrick in the next two or three weeks, and one unit is being delivered to Ampex, and the last unit goes to the Coast Guard. The second production run of ten is going into test this week. I believe that five of those units are already spoken for.