



Frequency Measuring Test — November 2010

Join the competition to be hamdom's most accurate amateur.

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Once again, the Frequency Measuring Test (FMT) returns to the airwaves on the evening of November 10, Wednesday evening at 9:30 PM Eastern Time (0230 UTC on Thursday, November 11). The FMT will be conducted by volunteer stations with exceptional frequency stability and timing accuracy. The transmissions will be made from the stations of K5CM (Oklahoma), W8KSE (Ohio), WA6ZTY (Northern California) and W6OQI (Southern California).

We will have just made the switch back to standard time, approaching the winter solstice and total darkness will have settled in over the West Coast. This should result in stable conditions all across the continent, although it's always a good bet that Messrs Doppler and Murphy will have something in their bag of tricks! FMT signals should be receivable across nearly all of the North American continent and into the Caribbean. In fact, if conditions are good, Western European stations may be able to hear the signals from W8KSE and K5CM — will we have some entries from “across the pond”?

In this day and age, is frequency measurement still an important part of Amateur Radio? Of course! Knowing one's frequency is required of all hams for both regulatory compliance (“stay in the band”) and operating convenience, particularly on the new narrow-band digital modes like PSK31.

You can use your transceiver all by itself — the frequency accuracy of most radios sold in the past decade is specified as ± 10 ppm or better. By calibrating your radio to a known frequency reference such as WWV (www.nist.gov/physlab/div847/grp40/www.cfm) or CHU ([\[inms/time-services/short-wave.html\]\(http://inms/time-services/short-wave.html\)\) and letting the radio reach an even, stable temperature, your measurements can be within 1 ppm or even better. The FMT announcement in the November 2006 issue of *QST* includes a sidebar on calibrating a receiver to an over-the-air frequency reference.¹](http://www.nrc-cnrc.gc.ca/eng/services/</p>
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Transmission Format

The format will be the same “classic” format used for the April 2010 FMT — measuring the exact frequency of an unmodulated carrier. Each transmission will begin with a 4 minute identification and general call followed by a 3 minute transmission of the carrier after which the station will identify and then change bands. There will be several minutes between each set of transmissions. The schedule is shown in Table 1.

The basic techniques for making carrier frequency measurements are the same

¹p1k.arrl.org/pubs_archive/107727

Table 1
November 2010 FMT Schedule

All times are in UTC on November 11. For example, 0230 UTC is 9:30 PM Eastern Standard Time on the evening of November 10.

Station	Test Begins	Frequency (kHz)
W8KSE	0230 UTC	7055
W8KSE	0245 UTC	3575
K5CM	0300 UTC	3578
K5CM	0315 UTC	1844
WA6ZTY	0330 UTC	7097
W6OQI	0345 UTC	7067
W6OQI	0400 UTC	3567

as described in the October 2002 FMT announcement in *QST*.² Many of the previous “how-to” FMT announcements and results are available on the ARRL's FMT Web site at www.arrl.org/frequency-measuring-test.

In April's FMT a few stations simply measured the transmissions of W8KSE then stopped. To encourage full participation, stations submitting a measurement of all seven transmissions with better than 1 Hz accuracy will receive special mention in the “Green Line” at the top of the results.

Future tests will be announced on the W1AW Frequency Measuring Test Web page. The organizers may have something “a little different” in mind for April 2011, so stay tuned.

Submitting Reports

Your report should be submitted via the online report form on the W1AW FMT Web page at www.b4h.net/fmt/index.php. Along with your call sign and e-mail address, enter your most accurate measurement on each band. There will be windows to list your equipment, describe the method you used to make the measurements and enter any Soapbox comments.

Measurement data must be entered by 10 PM EST on Sunday, November 14 (0300 UTC, November 15). Participants may input their data more than once — the final entry will be the one used for the results. Transmitted frequencies will be included with the results to allow participants to determine the accuracy of their equipment and methods. The results from the April 2010 and previous FMTs are available on the W1AW FMT Web page.

²p1k.arrl.org/pubs_archive/103316

