

Measurement of accurate frequency with Signal Analyzer

◇ Measurement of accurate frequency with Handheld signal analyzer MSA500 series

[~*Application*~]

Frequency counters are usually used as measuring instruments for RF signal frequency measurement. This note shows how to perform frequency measurement with the Handheld signal analyzer MSA500 series with the same accuracy as the frequency counter.

[~*Solution*~]

For accurate frequency measurement in the MSA 500 series, use the marker & peak search function in real time mode.

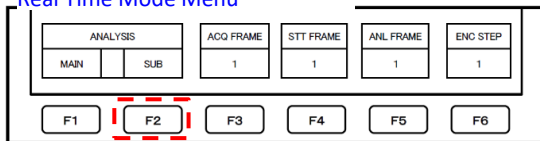
(SAVE/LOAD → F6 (PRESET) Preset signal analyzer.)

(1) OPERATION MODE Select real time mode.

(2) TRIG → F4 (SCAN) Select "CONTINUE" to repeat measurement.

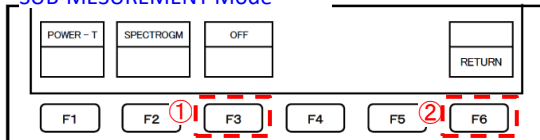
(3) OPERATION MODE Return to Real Time Mode Menu.

(4) Real Time Mode Menu



F2 Go to SUB-MESUREMENT Mode Menu

(5) SUB-MESUREMENT Mode

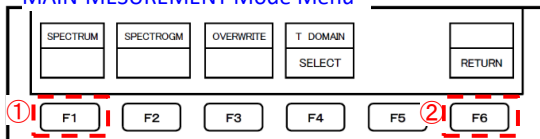


① F3 Select SUB screen OFF.

② F6 Return to Real Time Mode Menu.

(6) F1 Go to SUB-MESUREMENT Mode Menu. (See (4) for Real Time Mode Menu.)

(7) MAIN-MESUREMENT Mode Menu

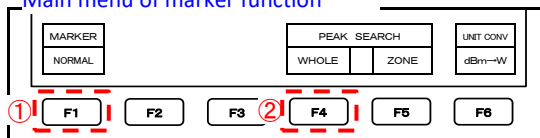


① F1 Select MAIN screen "SPECTRUM".

② F6 Return to Real Time Mode Menu.

(8) SPAN Select the narrowest possible span. HOLD/RUN Measure. MKR Go to Main menu of marker function.

(9) Main menu of marker function



① F1 Select marker "NORMAL".

② F4 Select "PEAK SEARCH WHOLE".

(10) Menu of normal peak search



F1 Perform "PEAK SEARCH" and read the frequency of the marker.

※ Marker accuracy in real time mode is determined by ① + ② of the following specifications.

① Center frequency Accuracy $\pm 0.5\text{ppm} \pm 1\text{dot}$

② Frequency span Accuracy $\pm 0.1\% \pm 1\text{dot}$
(1dot : (Frequency span) / (500dots))

Therefore, the narrower the span, the higher the marker accuracy.

For example, with a center frequency of 920 MHz and a span of 200 kHz, the marker accuracy is $\pm 1.6\text{ ppm}$ ($\pm 0.0015\text{ MHz}$).

[~*System constitution*~]

• Handheld signal analyzer MSA500 series ×1

※MICRONIX Corporation reserves the right to make changes in design, specification and other information without prior notice.

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