

Dynamic range expansion method for spectrum analyzer with tracking

◇The dynamic range expansion method of the spectrum analyzer with tracking generator (TG) by utilizing a low-noise amplifier.

[~*Application*~]

The dynamic range of spectrum analyzer with tracking generator is limited by the TG output level. The dynamic range might be insufficient in the case of the measurement which require a large TG output power, such as the measurement of RF shielding.

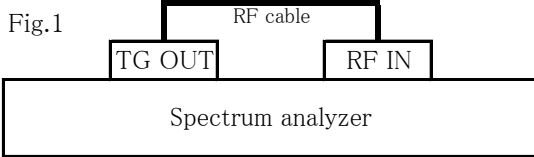
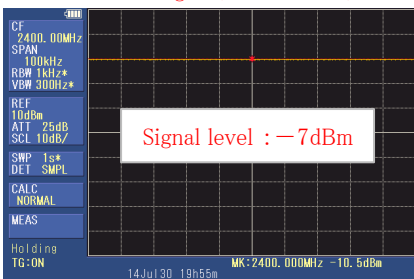
[~*Solution*~]

Utilizing a low-noise amplifier, the dynamic range of the spectrum analyzer with TG can be expanded.

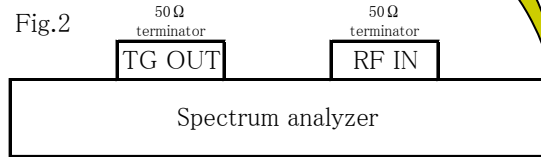
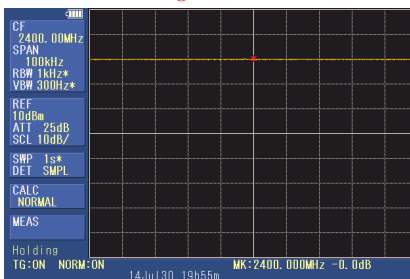
This is an example of dynamic range expansion of the signal analyzer (real-time spectrum analyzer) MSA538TG by utilizing the low-noise amplifier MAP302.

w/o Low-noise amplifier

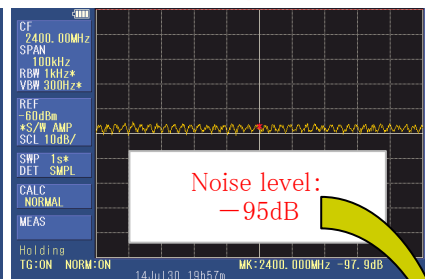
Connection of Fig. 1 (NORM OFF)



Connection of Fig. 1 (NORM ON)

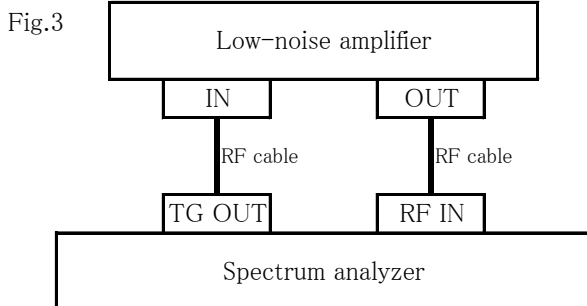
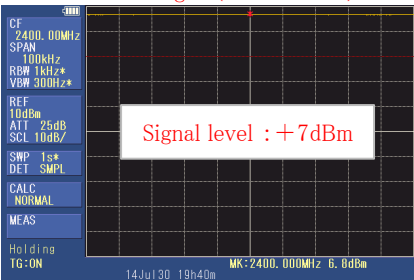


Connection of Fig. 2 (keep Fig. 1 NORM ON)

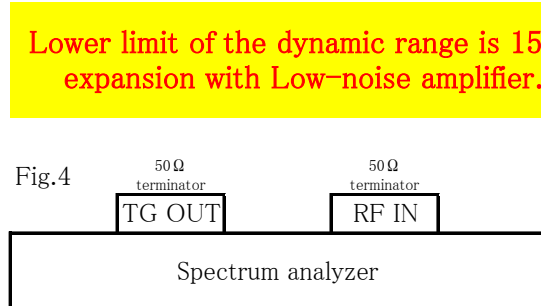
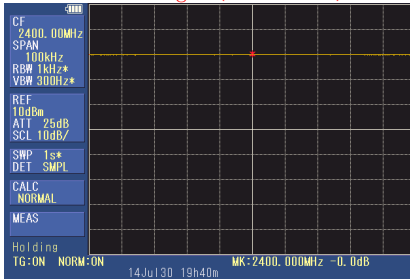


with Low-noise amplifier

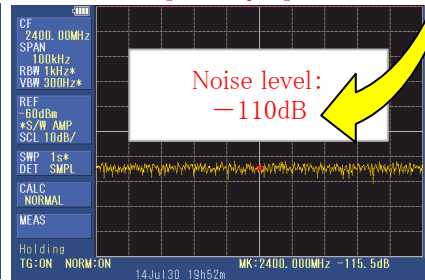
Connection of Fig. 3 (NORM OFF)



Connection of Fig. 3 (NORM ON)



Connection of Fig. 4 (keep Fig. 3 NORM ON)



Lower limit of the dynamic range is 15dB expansion with Low-noise amplifier.

[~*System constitution*~]

- Signal analyzer (MSA538TG), Spectrum analyzer (MSA438TG, MSA338TG) × 1
- Low-noise amplifier (MAP302) × 1

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