



# Comparison of MS2830A/MS2840A and NF Analyzer for Noise Figure Measurements

Signal Analyzer MS2830A/MS2840A

# 1. Overview

This document describes the comparisons with Standard NF Analyzer about the noise figure measurement. The noise figure measurement option has 3 measurement modes, so this document compares each. Anritsu products are MS2840A (44.5 GHz model with Opt-017 and 069) and MS2830A (43 GHz model with Opt-017 and 068).



There is attenuator to the input port of equipment in the measurement, because we are considering the measurement uncertainty by impedance mismatching between the equipment. Therefore, it is the measurement situation using same attenuator and same DUT.

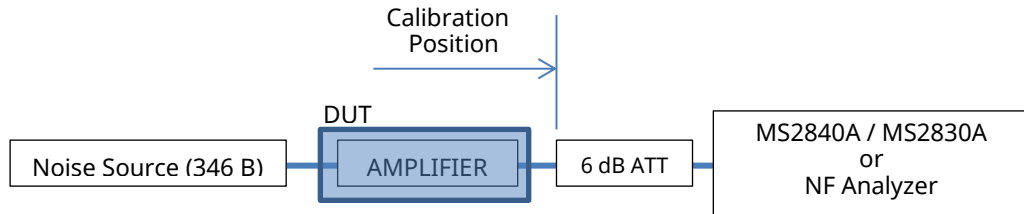
The following table shows the difference with NF Analyzer. These detailed data refer to the later pages.

*Level Difference with NF Analyzer, MS2840A and MS2830A*

	Measurement Item	Level Difference
Amplifier Mode	Noise Figure	≤0.08 dB
	Gain	≤0.16 dB
Down Converter Mode	Noise Figure	≤0.13 dB
	Gain	≤0.15 dB
Up Converter Mode	Noise Figure	≤0.16 dB
	Gain	≤0.25 dB

## 2. Amplifier Mode

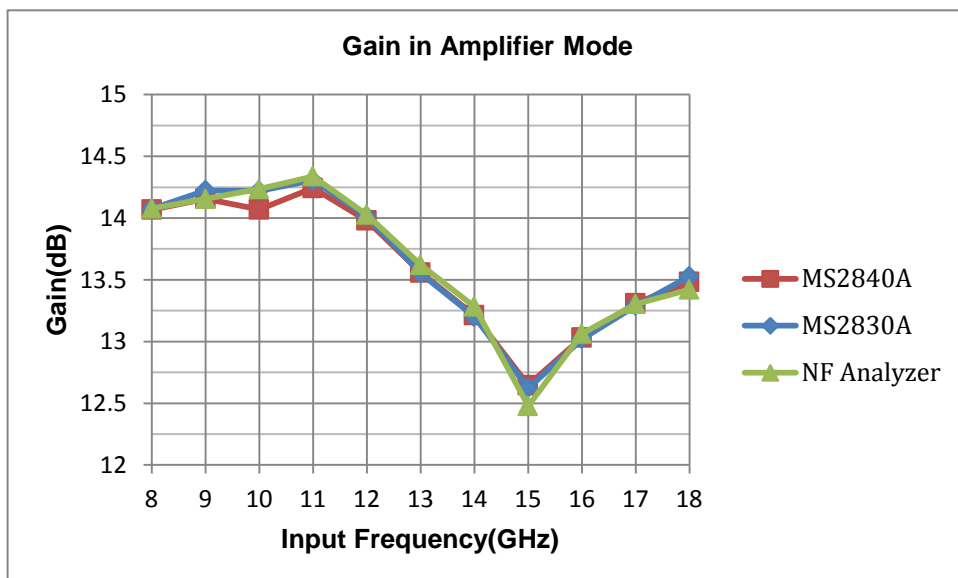
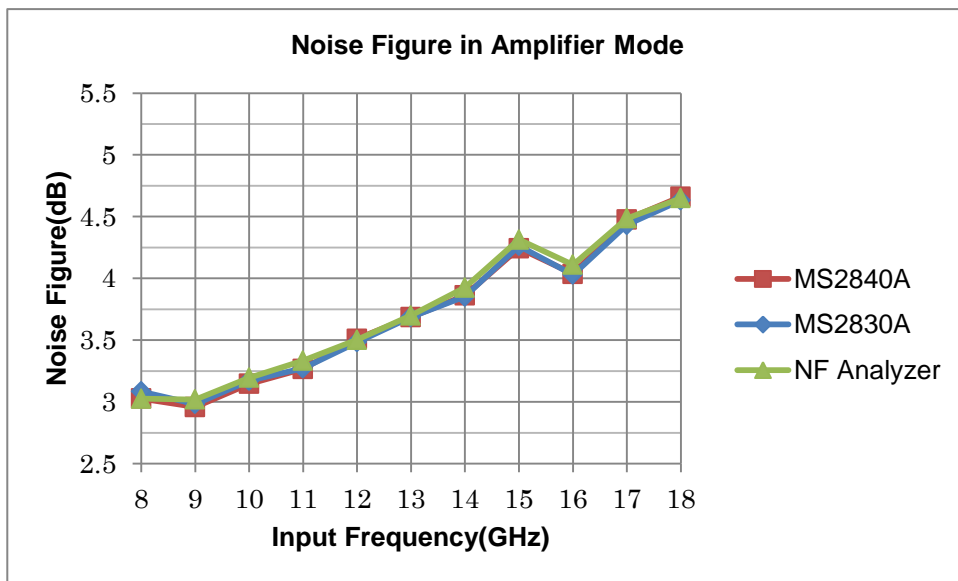
Measurement setup



DUT

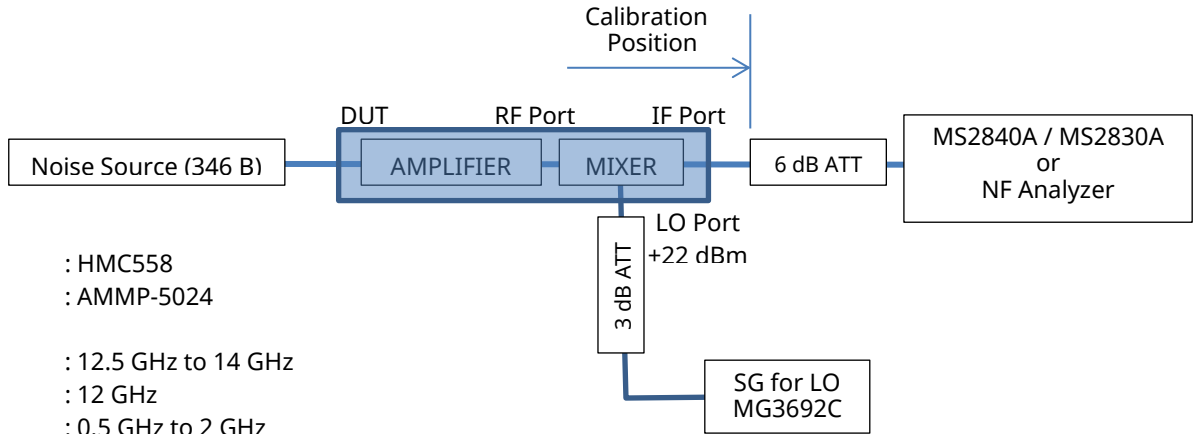
AMP : AMMP-5024

Frequency : 8 GHz to 18 GHz



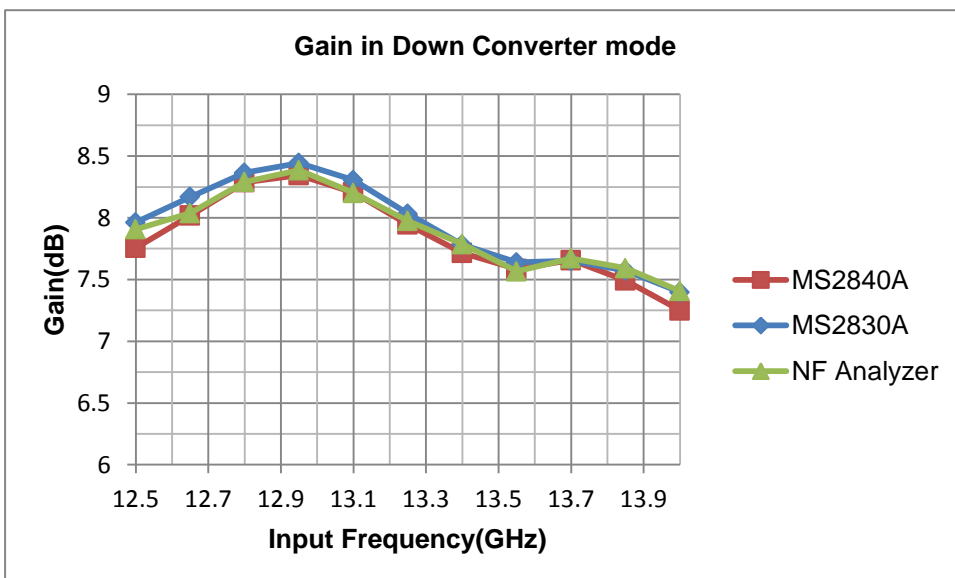
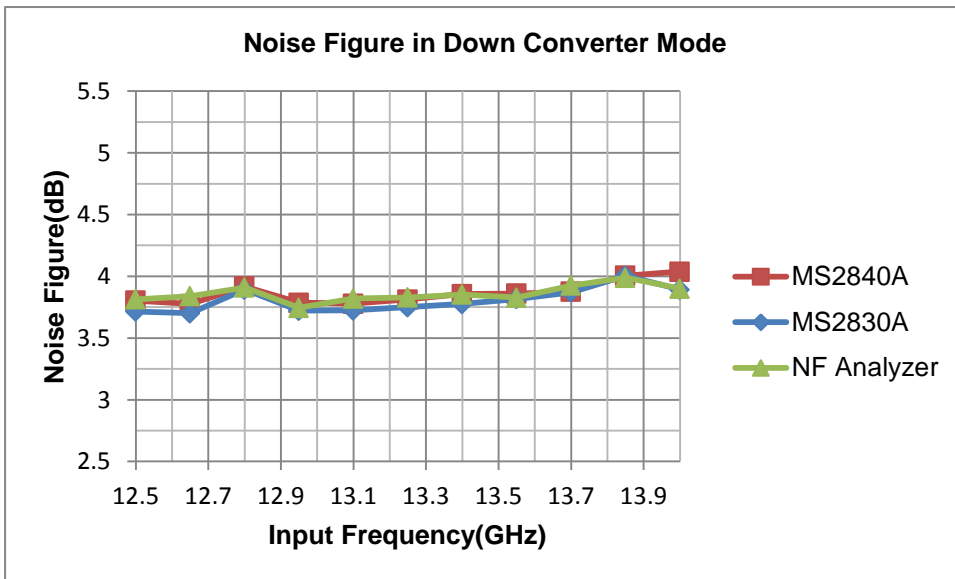
### 3. Down Converter Mode

Measurement setup



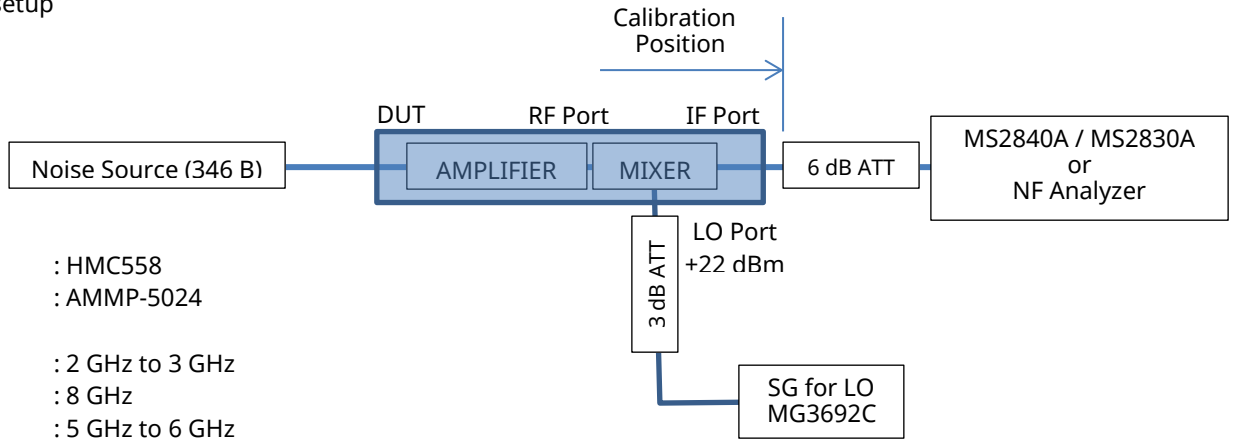
DUT  
 MIXER : HMC558  
 AMP : AMMP-5024

RF Frequency : 12.5 GHz to 14 GHz  
 LO Frequency : 12 GHz  
 IF Frequency : 0.5 GHz to 2 GHz  
 LO Level : +22 dBm



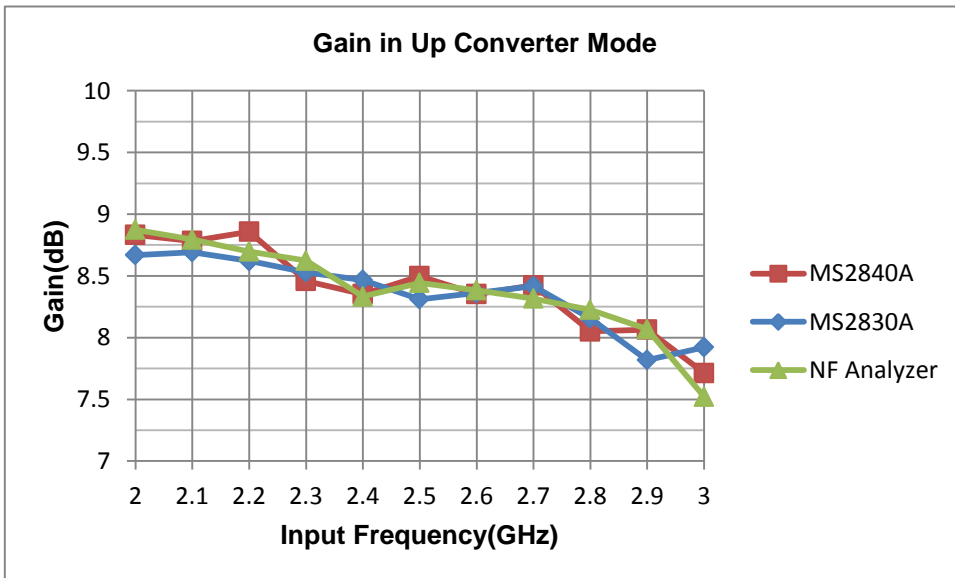
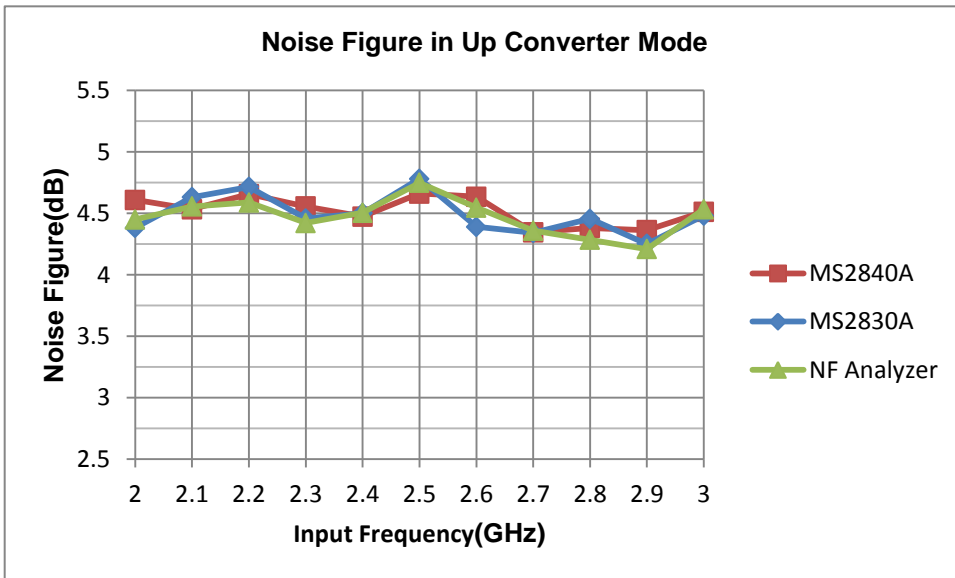
# 4. Up Converter Mode

Measurement setup



DUT  
 MIXER : HMC558  
 AMP : AMMP-5024

RF Frequency : 2 GHz to 3 GHz  
 LO Frequency : 8 GHz  
 IF Frequency : 5 GHz to 6 GHz  
 LO Level : +22 dBm



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