

NSI-RF-5940

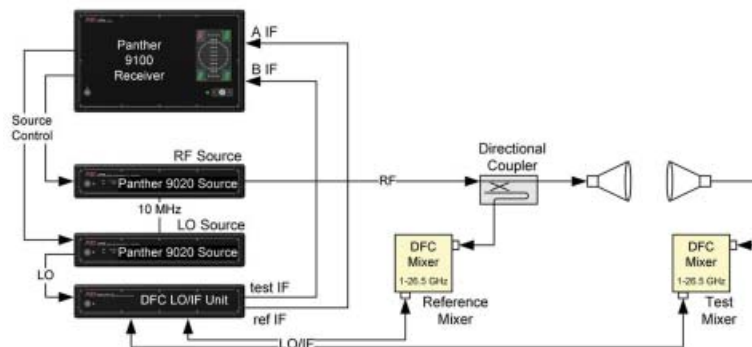
Distributed Frequency Converter



DESCRIPTION

The Distributed Frequency Converter (DFC) is designed to provide down-conversion of a test and a reference RF signal to a fixed 20 MHz or other IF signal, using remote mixer modules.

BLOCK DIAGRAM



FEATURES

- Compatible with NSI Panther, Agilent 8530A and PNA receivers
- Microwave Mixer Module covers 1 GHz to 26.5 GHz
- Optional Mixer Modules provide frequency coverage as low as 100 MHz and as high as 50 GHz
- Supports LO cable lengths up to 120 feet
- Fundamental mixing up to 20 GHz
- Test and reference mixer modules are identical and connect to LO/IF unit with a single cable
- Test and reference LO cables do not have to be of the same length
- Field-replaceable RF input connector

DFC Model		NSI-RF-5940		
Frequency Range	1 to 26.5 GHz			
Nominal IF Frequency	8 - 20 MHz			
Nominal LO Input Power	5 dBm			
Maximum LO cable loss	35 dB			
Specifications for Fundamental Mixing (@2500 measurements per second)	Using Agilent 8530A receiver	Using NSI Panther receiver 9000 receiver	Using Agilent PNA (20MHz IF)	Using Agilent PNA (8.33 MHz IF)
Frequency Range	1 to 20 GHz	1 to 20 GHz	1 to 20 GHz	1 to 20 GHz
Maximum Test and Reference RF In Power (0.1 dB Compression)	> -25 dBm	> -28 dBm	> -29 dBm	> -22 dBm (with 20 dB IF attenuators)
Conversion Efficiency, RF In to IF Out	> 10 dB	> 10 dB	> 10 dB	> 10 dB
Sensitivity, S/N = 1	< -110 dBm	< -117 dBm	< -110 dBm	< -110 dBm
Dynamic Range	> 85 dB	> 89 dB	> 81 dB	> 88 dB
Isolation, Reference to Test Channel	> 100 dB	> 100 dB	> 100 dB	> 100 dB
Specifications for Third Harmonic Mixing (@2500 measurements per second)	Using Agilent 8530A receiver	Using NSI Panther receiver	Using Agilent PNA (20 MHz IF)	Using Agilent PNA (8.33 MHz IF)
Frequency Range	6 to 26.5 GHz	6 to 26.5 GHz	6 to 26.5 GHz	6 to 26.5 GHz
Maximum Test and Reference RF In Power (0.1 dB Compression)	> -16 dBm	> -19 dBm	> -20 dBm	> -15 dBm (with 20 dB IF attenuators)
Conversion Efficiency, RF In to IF Out	> -3 dB	> -3 dB	> -3 dB	> -3 dB
Sensitivity, S/N = 1	< -97 dBm	< -104 dBm	< -97 dBm	< -97 dBm
Dynamic Range	> 81 dB	> 85 dB	> 77 dB	> 82 dB
Isolation, Reference to Test Channel	> 100 dB	> 100 dB	> 100 dB	> 100 dB
Physical Characteristics - LO/IF Unit				
Height	3.5" (2 EIA Units)			
Width	17" (excluding rack adapter)			
Depth	16" (excluding handles)			
Power	100 - 240 V, 50/60 Hz, 35 W			
Physical Characteristics - Mixer Module				
Height	5" (excluding connector)			
Width	5" (excluding connector)			
Depth	1.7"			
Indicators	LO power OK/ Too Low LED			
Connectors	RF: 3.5 mm (f) standard, replaceable with other types LO: N(f)			
Ordering Information				
NSI Part Number	Description			
NSI-RF-5940	Distributed Frequency Converter Set, 1 to 26.5 GHz. Consists of LO/IF Unit and two 1 to 26.5 GHz Mixer Modules			
NSI-RF-5941	Distributed Frequency Converter Set, 0.01 to 6 GHz. Consists of LO/IF Unit and two 0.01 to 6 GHz Mixer Modules			
NSI-RF-5943	Distributed Frequency Converter Set, 1 to 50 GHz. Consists of LO/IF Unit and two 1 to 50 GHz Mixer Modules			
NSI-RF-5945	DFC, LO/IF Unit			
NSI-RF-5946	DFC, 1 to 26.5 GHz Mixer Module			
NSI-RF-5947	DFC, 0.1 to 6 GHz Mixer Module			
NSI-RF-5950	DFC, 1 to 50 GHz Mixer Module			
Comparison between DFC and Agilent 85309A with 85320A/B mixers				
Specification	Agilent 85309A with 85320A/B		NSI DFC	
Frequency Range	2 to 26.5 GHz (usable to 1 GHz)		1 to 26.5 GHz	
Maximum LO frequency	18 GHz		20 GHz	
Maximum LO/IF Output Power	+23 dBm		+15 dBm	
Minimum Mixer LO Power	+8 dBm		-20 dBm	
Maximum allowable LO cable loss	15 dB		35 dB	

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