

NSG 4070B APPLICATION FOR MIL-STD 461F CS 114

Test parameter

Standard:	MIL-STD 461 CS 114
Frequency range:	10 kHz to 200 MHz
Curve 1 to 5:	see diagrams
Modulation:	1 kHz pulse modulation, 50% duty cycle
Test method:	Substitution method with monitoring probe
Monitoring probe:	only for information, no limiting/control of the injected level

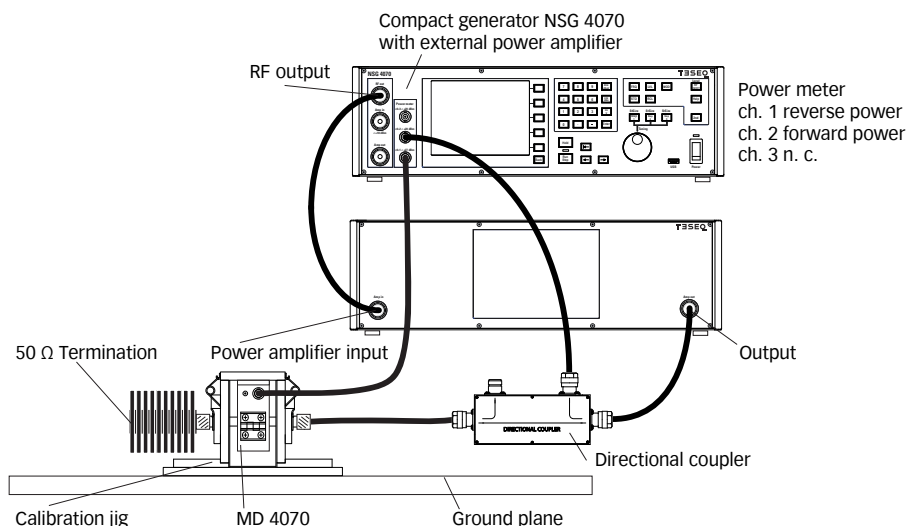
Equipment

Signal generation:	NSG 4070B-0
Modulator:	included in NSG 4070B-0
Power meter:	3x included in NSG 4070B-0
Power amplifier:	CBA 400M-110
Directional coupler:	DCP 0100A
Current injection probe:	CIP 9136A
Monitoring probe:	MD 4070
Calibration jig:	PCJ 9201B
Termination:	50 Ω 10 W
Attenuation:	26 dB 30 W, 10 dB 30 W, 20 dB 10 W
Software:	incl. in NSG 4070 or optional C5I or WIN 6000



WARNING: The power meter inputs are very sensitive. It is the user's responsibility to ensure that the selected test levels does not damage the equipment. Any hardware/setup changes should be calculated before starting the test.

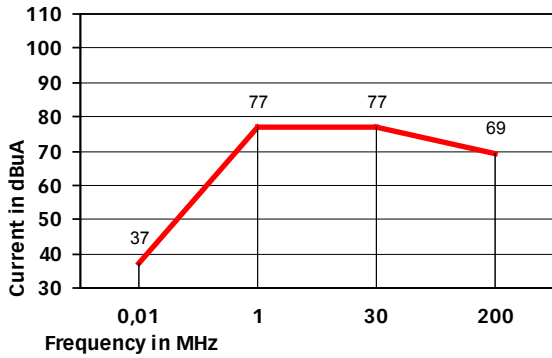
Calibration set-up for monitoring probe



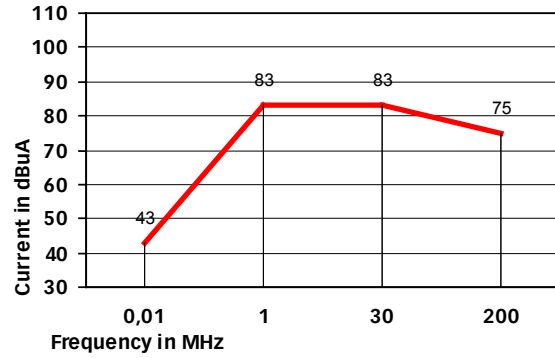
Remarks:

The monitoring probe MD 4070 needs to be calibrated in the way of its use (active, passive or with switching at a specific frequency from active to passive).

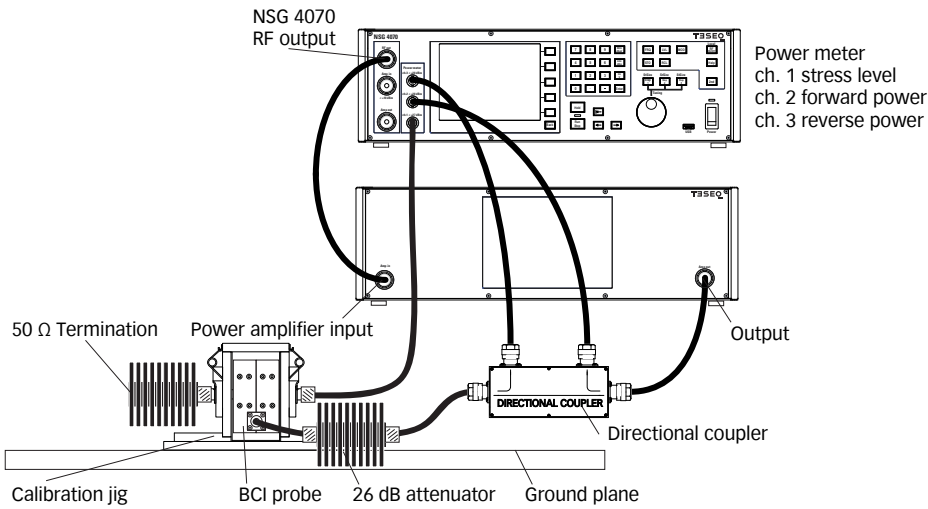
Test level — for MIL STD 461F CS114 curve #1



Test level — for MIL STD 461F CS114 curve #2



Calibration set-up (for curve #1 and #2)

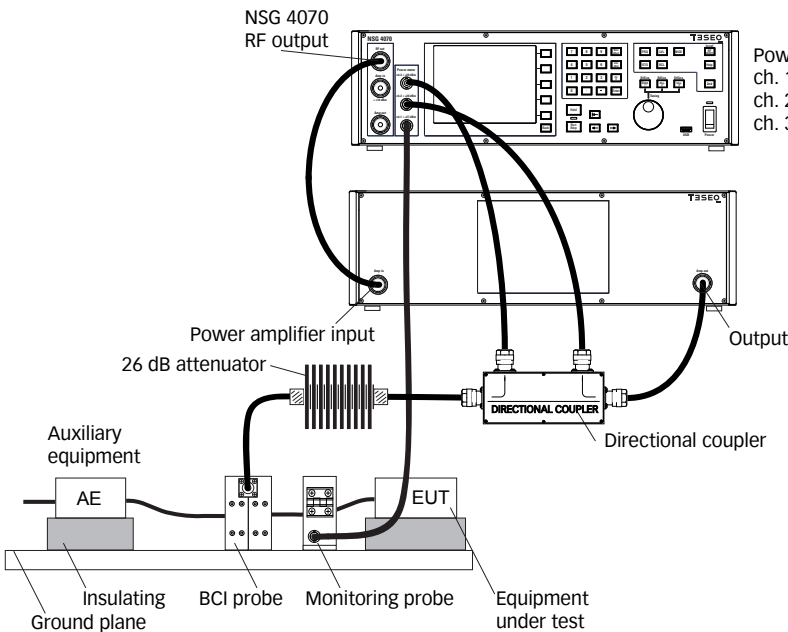


Power meter
ch. 1 stress level
ch. 2 forward power
ch. 3 reverse power

Attenuator: 26 dB 30 W
Termination: 50 Ω 10 W

Caution:
Stress levels below 69 dBuA cannot be adjusted due to the power amplifier noise floor. This requires to work with an increased test level or additional attenuator on the BCI probe.

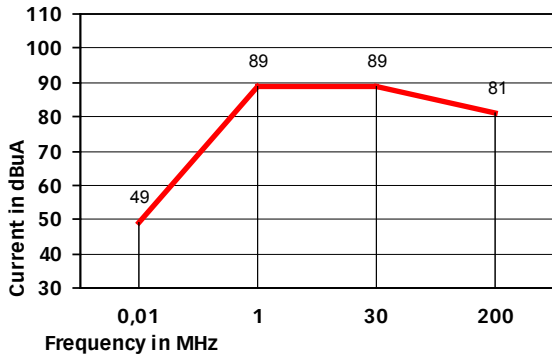
Test set-up with monitoring probe (for curve #1 and #2)



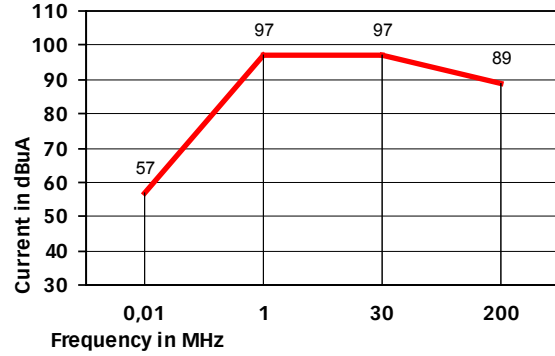
Power meter
ch. 1 level monitoring
ch. 2 forward power
ch. 3 reverse power

Attenuator: 26 dB, 30 W
Use of MD 4070 in the active mode.

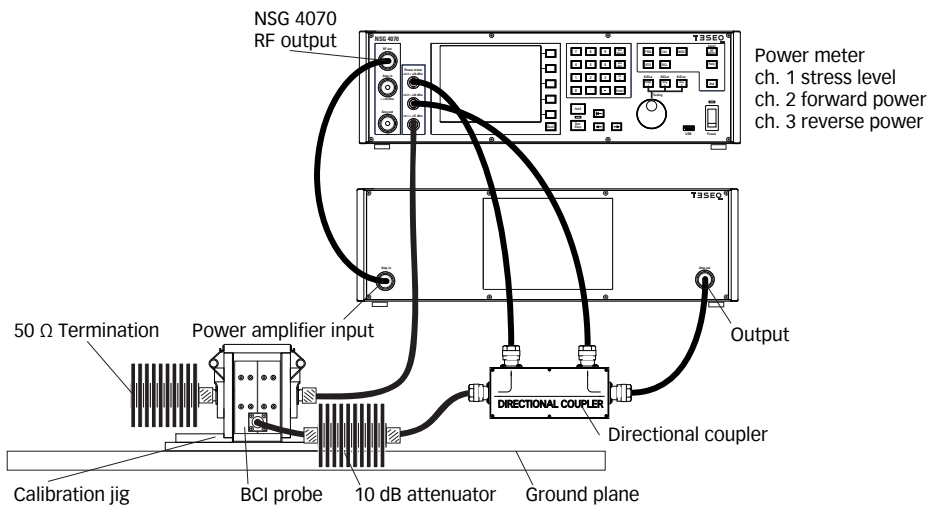
Test level — for MIL STD 461F CS114 curve #3



Test level — for MIL STD 461F CS114 curve #4



Calibration set-up (for curve #3 and #4)



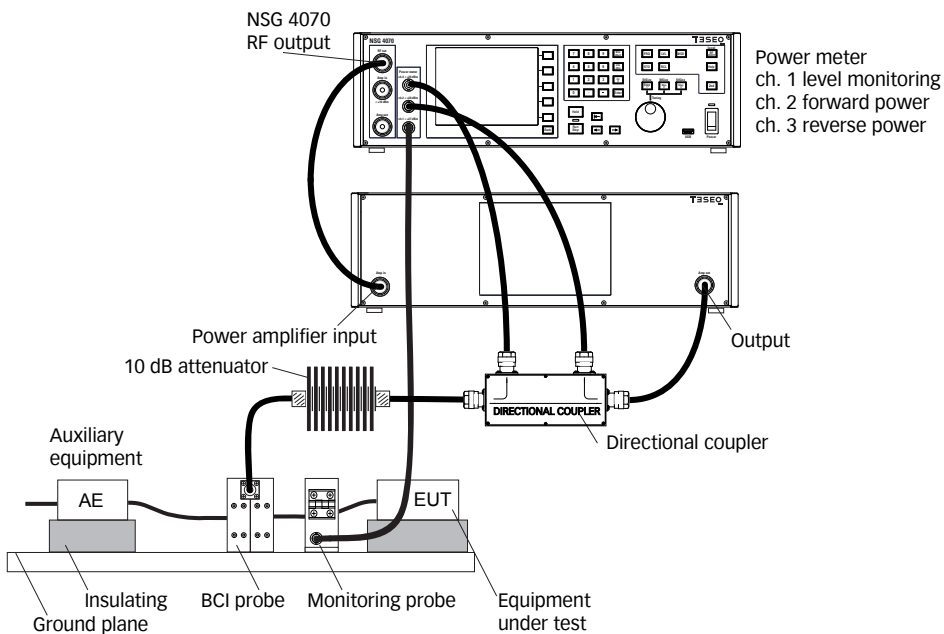
Attenuator: 10 dB 30 W

Termination: 50 Ω 10 W

Caution:

Stress levels below 69 dBuA cannot be adjusted due to the power amplifier noise floor. This requires to work with an increased test level or additional attenuator on the BCI probe.

Test set-up with monitoring probe (for curve #3 and #4)

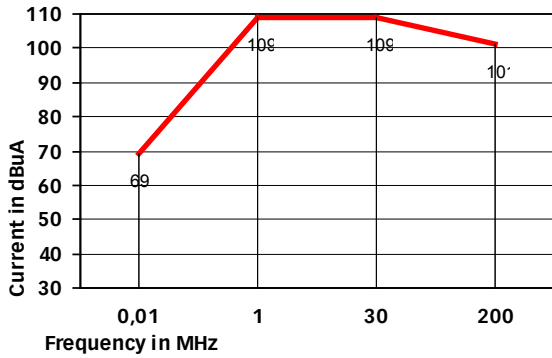


Use of MD 4070 in the active mode in the range below 50 kHz.
Use of MD 4070 in the passive mode above 50 kHz.

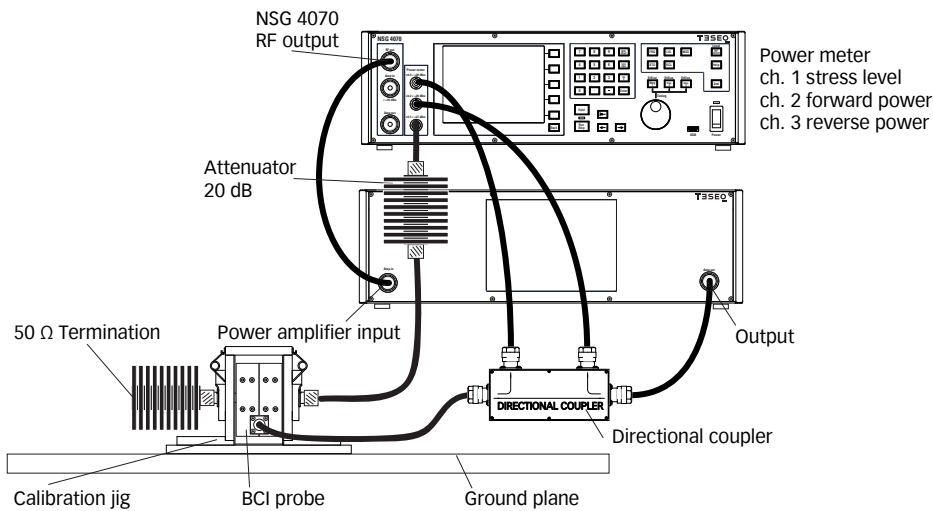
Caution:

The use of the MD 4070 in the active mode during tests with stress levels above 86 dBuA could damage power meter channel 1 of NSG 4070.

Test level — for MIL STD 461F CS114 curve #5



Calibration set-up (for curve #5)

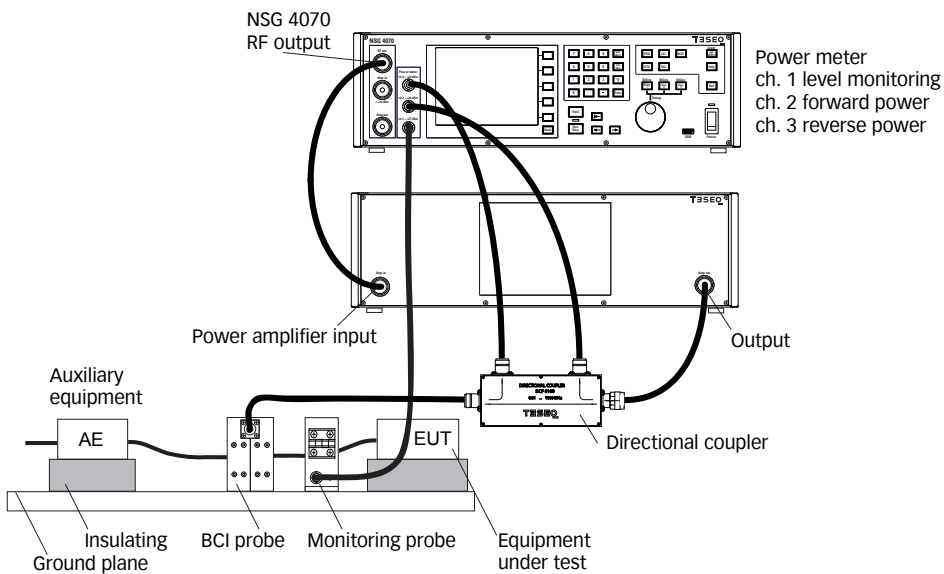


Power meter
ch. 1 stress level
ch. 2 forward power
ch. 3 reverse power

Attenuator: 20 dB, 10 W
Termination: 50 Ω 10 W

Remarks:
Power meter channel 1 needs to be protected with a 20 dB attenuator.

Test set-up with monitoring probe (for curve #5)



Power meter
ch. 1 level monitoring
ch. 2 forward power
ch. 3 reverse power

Use of MD 4070 in the passive mode.