

How do I find the Spurious Free Dynamic Range (SFDR) for an SDG function generator?

May 21, 2021

If the SFDR is not listed directly in the specifications, you can find it by selecting the largest value between the harmonic and non-harmonic spurious data from the specification sheet at the frequency of interest.

For example, here is the SDG6X generator specs for harmonic and non-harmonic distortion:

<u>Harmonic distortion</u>		-65	dBc	0 dBm, 0~1 MHz (included)
		-60	dBc	0 dBm, 1~60 MHz (included)
		-50	dBc	0 dBm, 60~100 MHz (included)
		-40	dBc	0 dBm, 100~200 MHz (included)
		-30	dBc	0 dBm, 200~300 MHz (included)
		-28	dBc	0 dBm, above 300 MHz
Total Harmonic Distortion		0.075	%	0 dBm, 10 Hz ~ 20 kHz
<u>Non-harmonic spurious</u>		-60	dBc	0 dBm, ≤350 MHz
		-55	dBc	0 dBm, >350 MHz

If the signal of interest was 500 kHz, then the Non-Harmonic spur spec of - 60dBc (which is the worst) would be the reported SFDR.

If the signal was 100 MHz, then it would be the harmonic distortion spec of -50dBc, which is the worst.



North American Headquarters

SIGLENT Technologies America, Inc
6557 Cochran Rd Solon, Ohio 44139
Tel: 440-398-5800
Toll Free: 877-515-5551
Fax: 440-399-1211
info@siglent.com
www.siglentamerica.com/

European Sales Offices

SIGLENT TECHNOLOGIES EUROPE GmbH
Staetzlinger Str. 70
86165 Augsburg, Germany
Tel: +49(0)-821-666 0 111 0
Fax: +49(0)-821-666 0 111 22
info-eu@siglent.com
www.siglenteu.com

Asian Headquarters

SIGLENT TECHNOLOGIES CO., LTD.
Blog No.4 & No.5, Antongda Industrial Zone,
3rd Liuxian Road, Bao'an District,
Shenzhen, 518101, China.
Tel: + 86 755 3661 5186
Fax: + 86 755 3359 1582
sales@siglent.com
www.siglent.com/ens