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Operational Manual

Spectrum and Signal Analyser Frequency Extenders (SAE)

QUALITY
ISO 9001:2015
NSAI Certified

2.1 Whats in the box

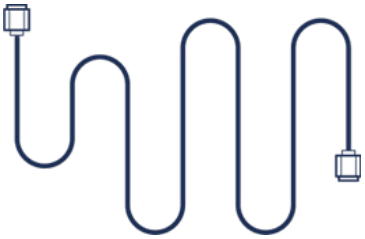
This sub-section (page 3), introduces the various components and accessories that comes with the SAE-XX. Be sure to familiarise yourself with them before using the system.

1x

1x

LO SMA Cable

1x



IF SMA Cable

1x

DC Power Supply

1x

Ruggedized Waveguide

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7. Technical Specifications

Table 1. SAE-XX Specifications

Model	Parameters																			
	Operating Frequency (GHz)		IF Input/ Output Frequency (MHz)		LO Frequency LO(L) (GHz)		LO(L) xN	LO Frequency LO(H) (GHz)		LO(H) xN	Mixer Conv. Loss SSB (dB)	System Conv. Loss SSB (dB)		LO Input Power (dBm)	RF CW Input Level (dBm)	RF CW Input D. Level (dBm)	LO/IF Port Interface (GHz)	DC Input Power (V/A)	Wght. (kg)	Dim. (mm)	RF Test Port Interface (UG-383/U compatible)
	min	max	min	max	min	max	nom	min	max	nom	typ	typ	max	typ	max	min	typ	nom	typ	typ	typ
SAE-15-0001	50	75	10	2200	4.16	6.25	12	8.33	12.5	6	6	8	15	+13	-10	0	SMA(F)	+12V@1.5A	1.75	230x105x60	WR-15, IEEE 1785.2a
SAE-10-0001	75	110	10	2200	4.687	6.875	16	9.375	13.75	8	7	9	16	+13	-10	0	SMA(F)	+12V@1.5A	1.75	230x105x60	WR-10, IEEE 1785.2a
SAE-08-0001	90	140	10	2200	4.625	8.75	16	11.25	17.5	8	10	12	17	+15	-10	0	SMA(F)	+12V@1.5A	1.75	230x105x60	WR-08, IEEE 1785.2a
SAE-06-0001	110	170	10	2200	4.58	7.08	24	9.16	14.17	12	11	13	17	+15	-10	0	SMA(F)	+12V@1.5A	1.75	230x105x60	WR-06, IEEE 1785.2a

Specification Definitions

Nominal value (nom.) – ensured by design, not tested. **Measured value (min, max)** – expected and warranted product performance obtained from the actual measurements of product sample. **Non-traceable measured value (n. trc. meas.)** – expected product performance obtained from the actual measurements of a product sample by means of using Farran's own equipment and methods. Traceable only to Farran laboratory equipment. **Typical data (typ.)** – value that represents the product specification met over 90% of bandwidth or a mean value. **Specifications without limits** – represent the warranted product performance; with values of no or a negligible deviation from the given value and as such have a secondary impact on the product performance.

8. Typical Performance

SAE-XX conversion loss vs frequency perfomance plots are provided in this section. Unless otherwise stated, all perfomance data furnished here has been obtained from in-house measurements at standard temperature and pressure. The conversion loss measurement uncertainty is ± 0.1 dB. Test results were obtained after 1 hour warm-up time.

8.1 SAE-15-0001

CL Plots for LO(L)

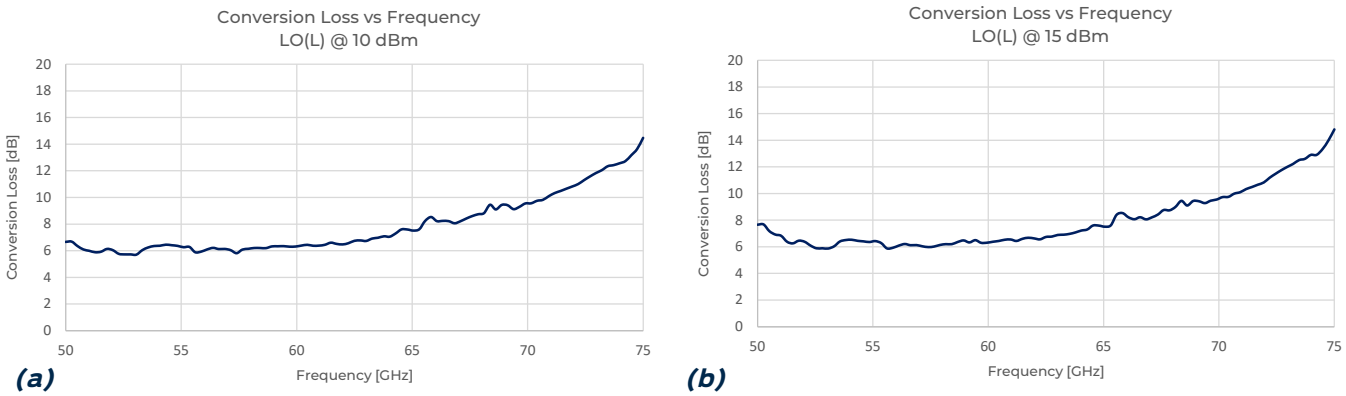

Figure 8.1: Typical conversion loss plots for SAE-15-0001: (a) CL vs Frequency @ 10 dBm (b) CL vs Frequency @ 15 dBm

CL Plots for LO(H)

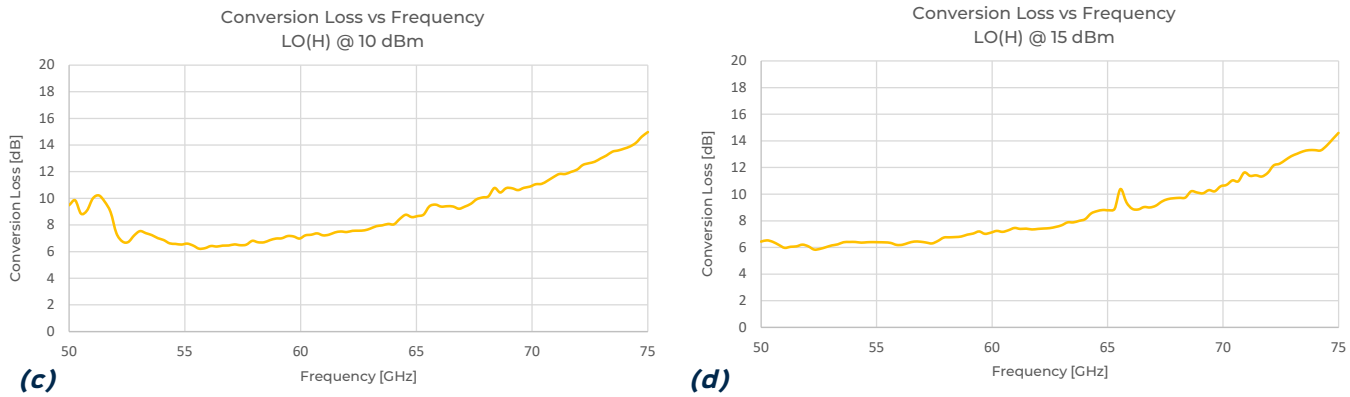

Figure 8.1: Typical conversion loss plots for SAE-15-0001: (c) CL vs Frequency @ 10 dBm (d) CL vs Frequency @ 15 dBm

8. Typical Performance

8.2 SAE-10-0001

CL Plots for LO(L)

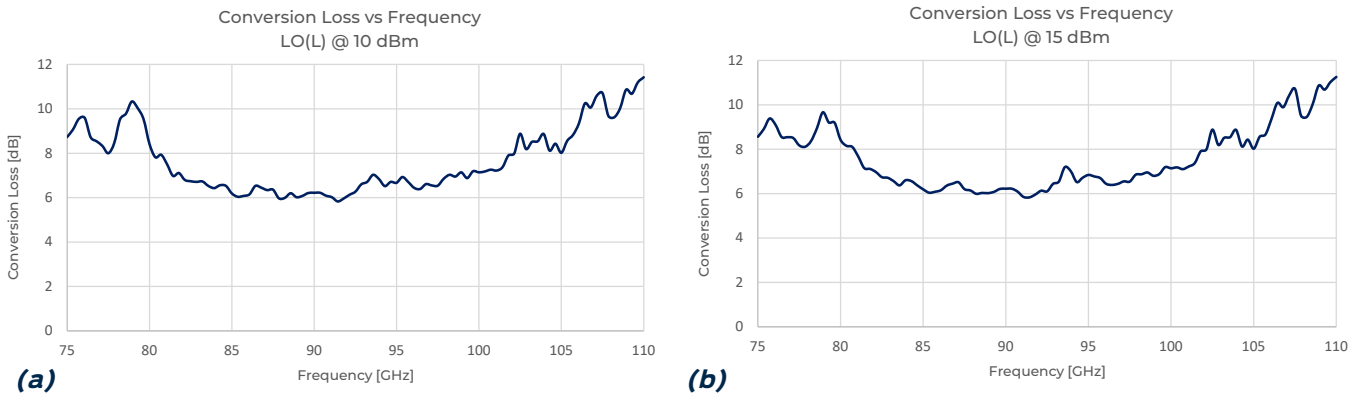

Figure 8.2: Typical conversion loss plots for SAE-10-0001: (a) CL vs Frequency @ 10 dBm (b) CL vs Frequency @ 15 dBm

CL Plots for LO(H)

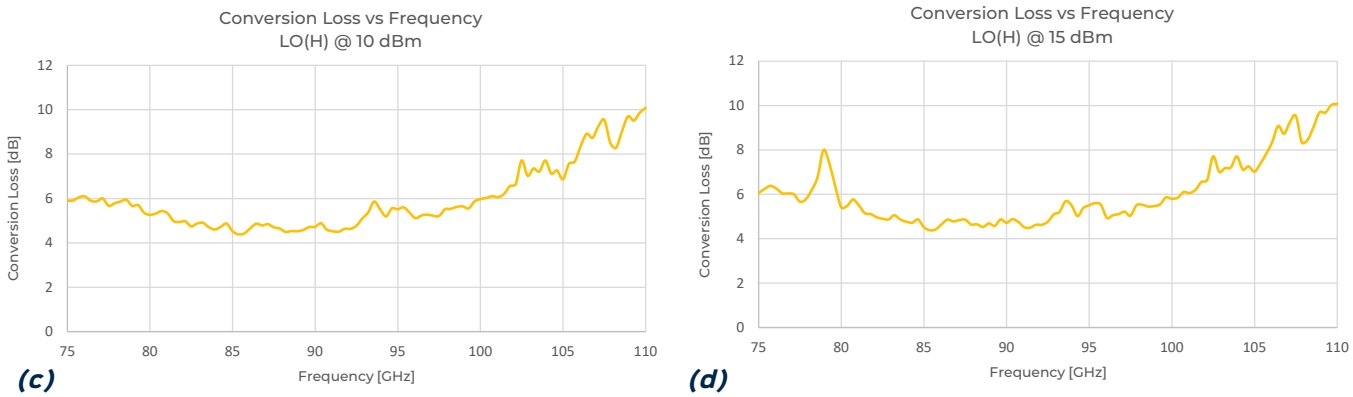

Figure 8.2: Typical conversion loss plots for SAE-10-0001: (c) CL vs Frequency @ 10 dBm (d) CL vs Frequency @ 15 dBm

8. Typical Performance

8.3 SAE-08-0001

CL Plots for LO(L)

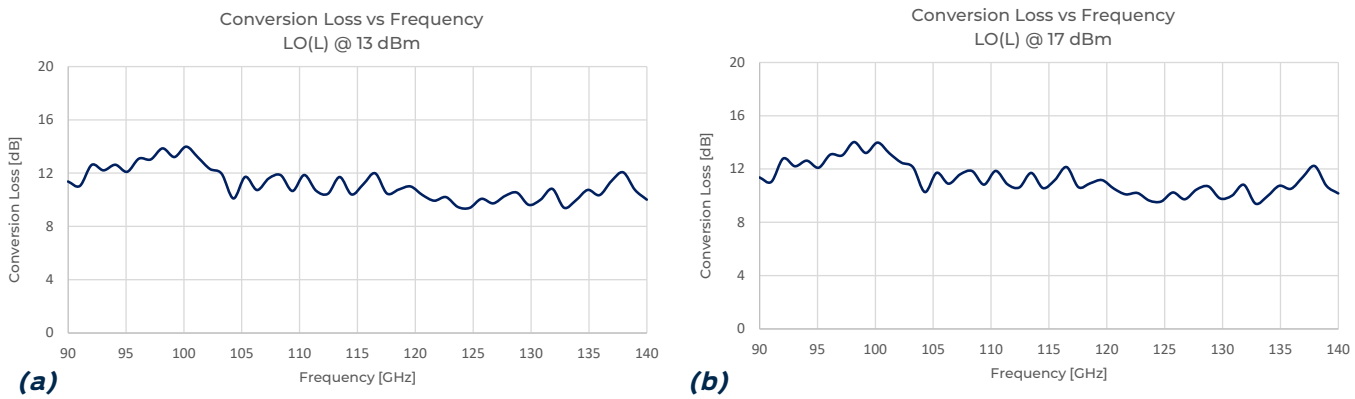

Figure 8.3: Typical conversion loss plots for SAE-08-0001: (a) CL vs Frequency @ 13 dBm (b) CL vs Frequency @ 17 dBm

CL Plots for LO(H)

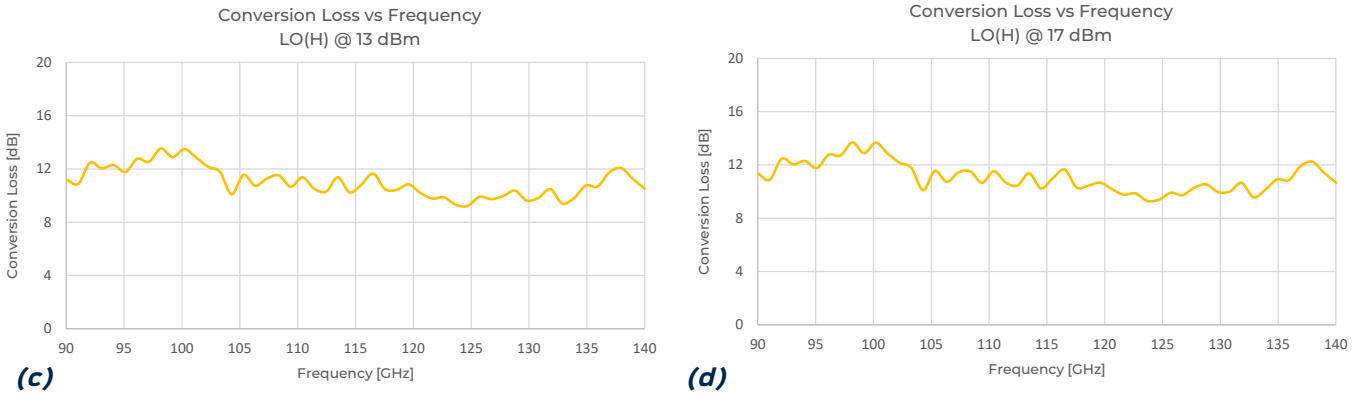

Figure 8.3: Typical conversion loss plots for SAE-08-0001: (c) CL vs Frequency @ 13 dBm (d) CL vs Frequency @ 17 dBm

8. Typical Performance

8.4 SAE-06-0001

CL Plots for LO(L)

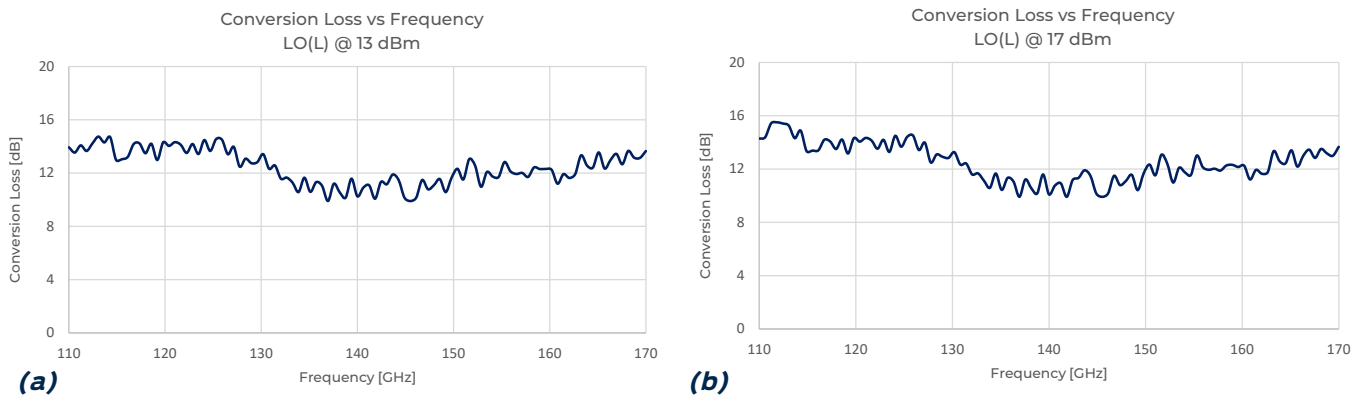

Figure 8.4: Typical conversion loss plots for SAE-06-0001: (a) CL vs Frequency @ 13 dBm (b) CL vs Frequency @ 17 dBm

CL Plots for LO(H)

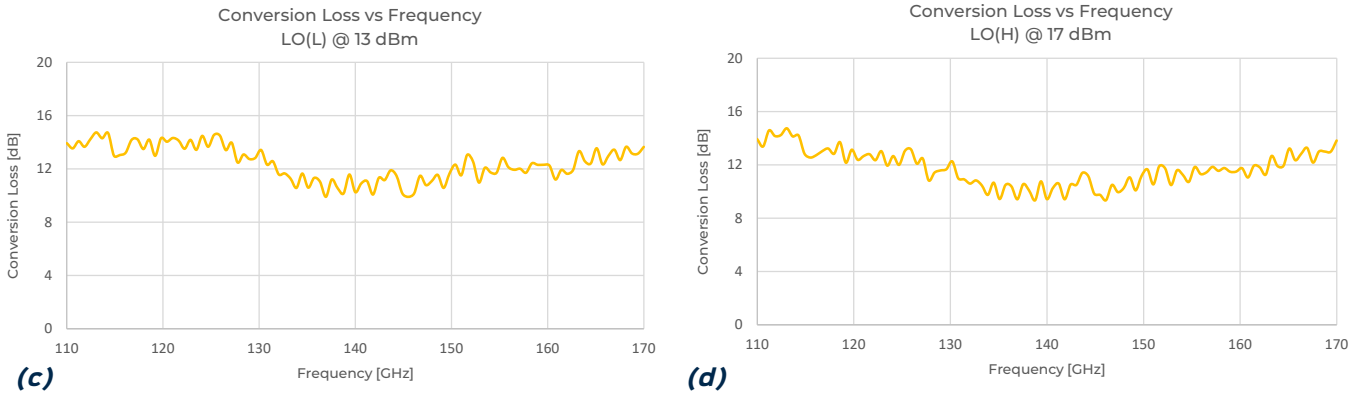

Figure 8.4: Typical conversion loss plots for SAE-06-0001: (c) CL vs Frequency @ 13 dBm (d) CL vs Frequency @ 17 dBm

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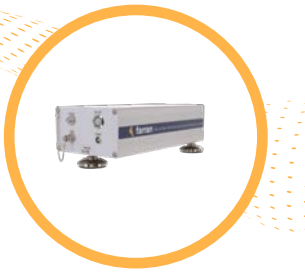

12. Appendices

12.1 Drawings

SAE-15-0001