

DUT	Datron-Wavetek	Calibration date	November 03 2020
Ref P/N	4910	Ambient Temperature	23.51 °C
Serial	22065-7	Relative Humidity	26.99 %
ID Number	Final transfer	Pressure	1018.58 hPa
Notes	Both REF and DUT battery operated	Test type	Front 5440A-7003 cable terminals, nulled DMM

Reference standard	Mfg	Model	Options	Serial / Unc	CEID	Calibration date	Due date
DC ZENER STANDARD	Fluke/xDevs.com	792X FX	9.99998382 VDC ±0.03 ppm	X102	CMS PJVS CAL, Report E190504A	08/08/2019	08/08/2020
DC ZENER STANDARD	Fluke/xDevs.com	792X FX	9.9999728 VDC ±0.44 ppm	X102	TMI CAL, Report A3525075	03/03/2020	03/03/2021
DC ZENER STANDARD	Fluke/xDevs.com	792X FX	9.9999718 V ±0.64 ppm	X102	Process CAL	10/13/2020	04/13/2021
DMM	Keysight	3458A	001,X02,Low noise option	2823A13345	XD2	10/13/2020	04/13/2021

Uncertainty was calculated using the expanded method and is expressed in values at approximately the 95% confidence level using a coverage factor of K=2.

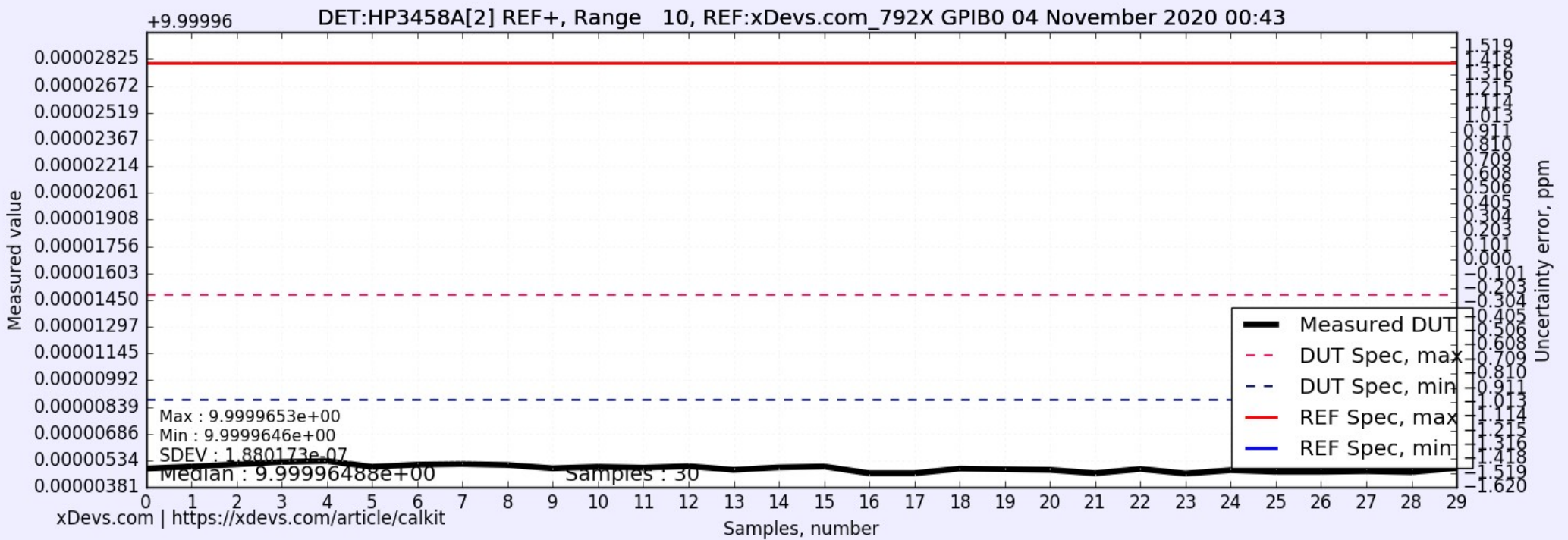
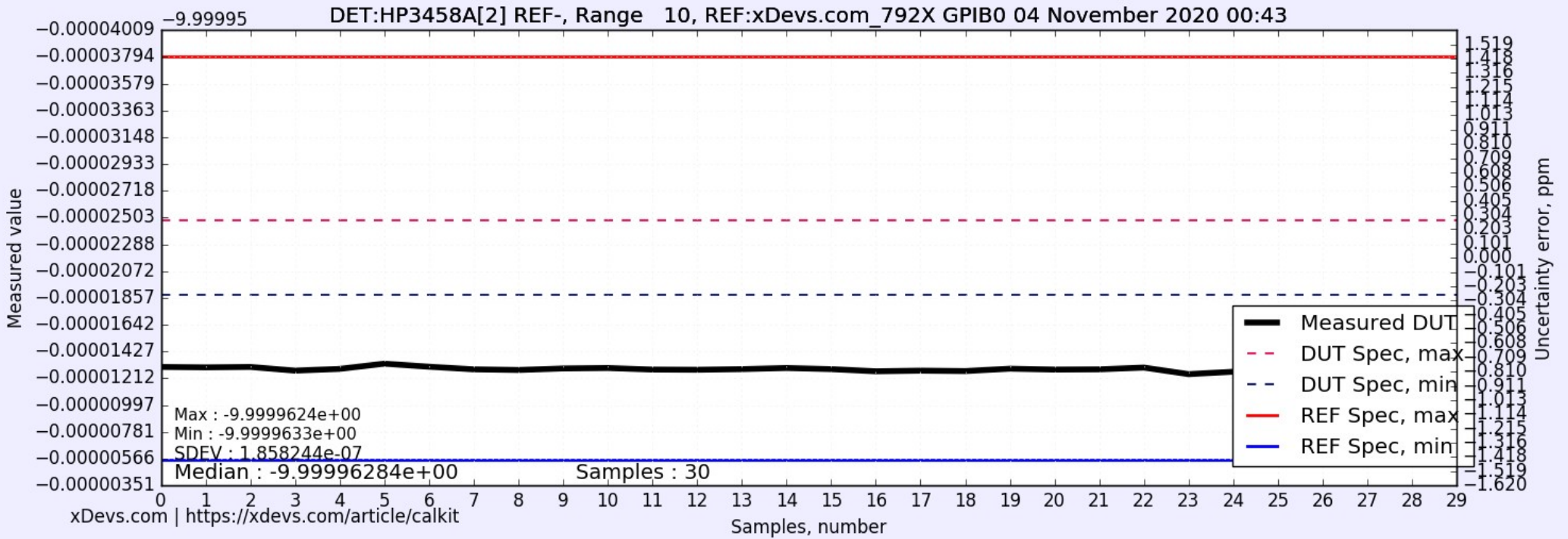
The test and measurement data here relate only to the item tested and/or measured.

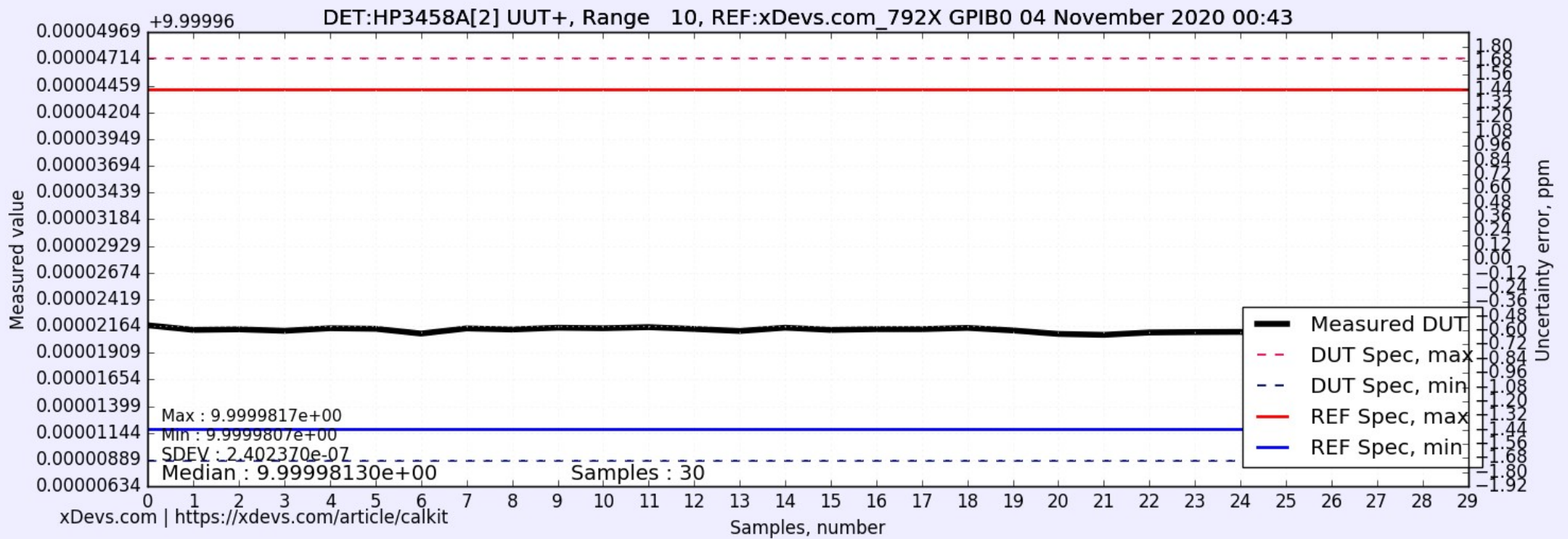
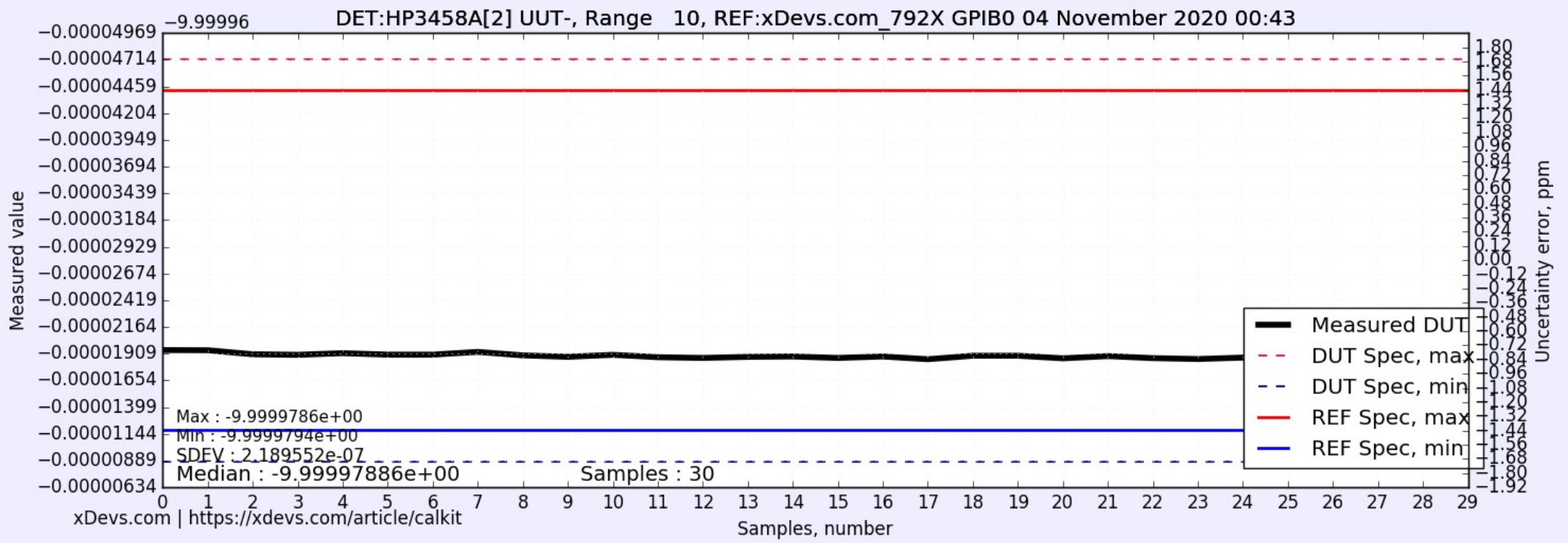
UUT output transferred by manual substitution measurement with known reference standard.

Fixed 12 VDC range is used on the Keysight 3458A/X02 comparator. The following test use 10 minute transfer specification with xDevs.com 792X output source as reference. DVM Gain and INL are verified for stability <±0.10 ppm over the test period. Detector zero offset is DUT is nulled prior to the measurement at the far end of test leads.

Configuration : Battery power STD, NPLC100, NDIG8, Guard is open. DUT Reference powered on internal battery.

	Measurement	Unit	Uncertainty	Standard Deviation	DUT Spec / Δ	Degree of freedom / Notes
Transfer reference output	9.9999718	VDC	±0.440 ppm			
Reference measured output (+)	9.9999649	VDC	±0.100 ppm	σ = 1.593964e-07 VDC	Δ = -0.694 ppm	30
Reference measured output (-)	-9.9999628	VDC	±0.100 ppm	σ = 1.890645e-07 VDC	Δ = -0.898 ppm	30
Reference calculated +/-	9.9999638	VDC	±0.100 ppm		Δ = -0.796 ppm	
Detector zero offset	0.0000006	VDC		σ = 6.882035e-08 VDC		
UUT measured output (+)	9.9999813	VDC	±0.100 ppm	σ = 2.381908e-07 VDC		30
UUT measured output (-)	-9.9999788	VDC	±0.100 ppm	σ = 1.582072e-07 VDC		30
Ratio positive polarity	1.00000164		±0.200 ppm			Inf
Ratio negative polarity	1.00000160		±0.200 ppm			Inf
UUT calculated output (+)	9.9999882	VDC	±0.640 ppm		Δ = 0.021 ppm	
UUT calculated output (-)	-9.9999878	VDC	±0.640 ppm		Δ = -0.021 ppm	
Temperature Δ	-0.308	°C	±0.60 °C		±1.0 °C	
UUT previous data	10.0000000	VDC	±0.000 ppm			Report
Deviation from previous measurement	-1.198 ppm	VDC				
UUT Expanded measurement (Linear) k=2	9.9999880	VDC	±0.640 ppm		0.1%	In spec
UUT Expanded measurement (RSS) k=2	9.9999880	VDC	±0.483 ppm		0.1%	In spec





Internal data, do not expose

RAW data	Result
Array Ref P	[9.999964874, 9.999964996, 9.999965119, 9.999965259, 9.999965312, 9.999964979, 9.999965102, 9.999965137, 9.999965084, 9.999964891, 9.999964979, 9.999964926, 9.999965014, 9.999964804, 9.999964944, 9.999964996, 9.999964611, 9.999964611, 9.999964874, 9.999964839, 9.999964804, 9.999964611, 9.999964856, 9.999964594, 9.999964786, 9.999964699, 9.999964699, 9.999964734, 9.999964681, 9.999964909]
Array Ref N	[-9.999963035, -9.999963, -9.999963035, -9.999962738, -9.999962878, -9.999963298, -9.999963053, -9.999962843, -9.99996279, -9.999962913, -9.999962948, -9.999962825, -9.999962808, -9.99996286, -9.999962948, -9.99996286, -9.999962685, -9.999962738, -9.999962703, -9.999962895, -9.999962825, -9.999962843, -9.999962983, -9.999962457, -9.99996265, -9.999962598, -9.99996244, -9.99996244, -9.99996279, -9.99996286]
Array UUT P	[9.999981719, 9.999981281, 9.999981334, 9.999981194, 9.999981439, 9.999981386, 9.999980931, 9.999981422, 9.999981316, 9.999981492, 9.999981439, 9.999981544, 9.999981369, 9.999981176, 9.999981492, 9.999981281, 9.999981351, 9.999981474, 9.999981229, 9.999980896, 9.999980809, 9.999981036, 9.999981071, 9.999981089, 9.999980721, 9.999980896, 9.999981001, 9.999981369, 9.999980966]
Array UUT N	[-9.999979443, -9.999979425, -9.99997904, -9.999978988, -9.999979145, -9.999979005, -9.999979005, -9.999979268, -9.999978935, -9.999978795, -9.999978988, -9.99997876, -9.99997869, -9.999978795, -9.99997883, -9.99997869, -9.99997883, -9.999978567, -9.9999789, -9.9999789, -9.999978655, -9.999978865, -9.999978672, -9.999978585, -9.999978725, -9.999978585, -9.999978847, -9.99997876, -9.99997897, -9.999978865]

Histogramm

