

DUT	Datron-Wavetek	Calibration date	November 03 2020
Ref P/N	4910	Ambient Temperature	23.54 °C
Serial	22065-7	Relative Humidity	26.40 %
ID Number	Final transfer	Pressure	1018.80 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.

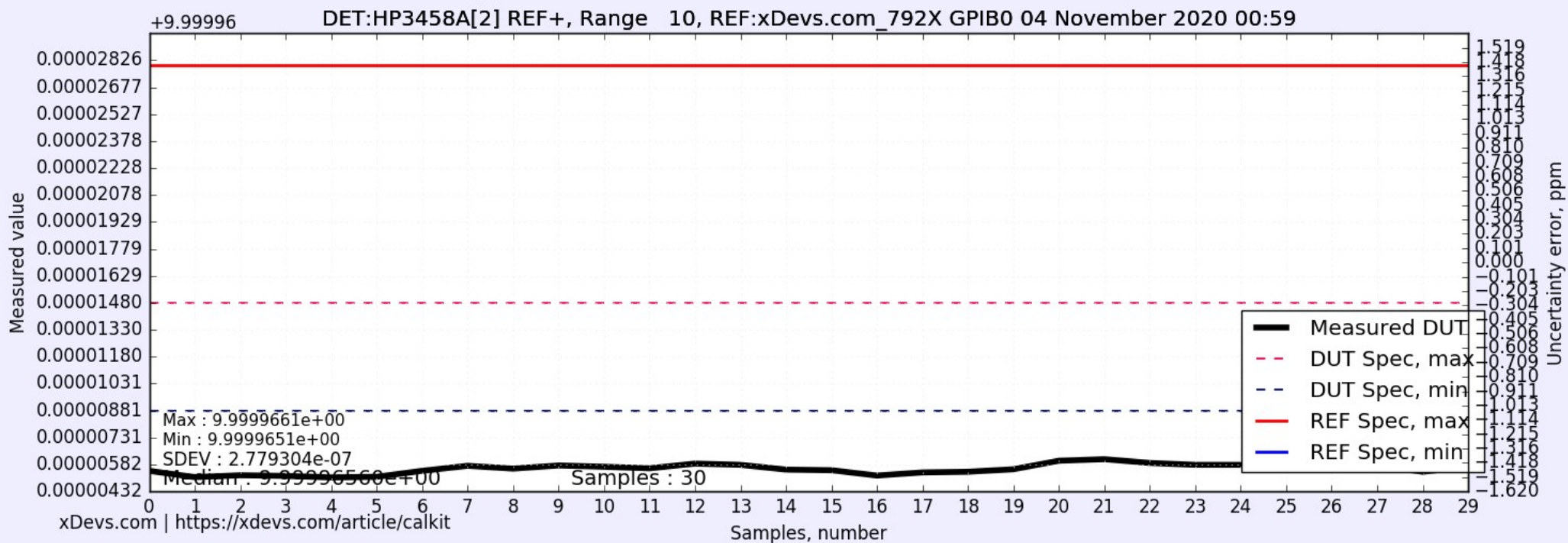
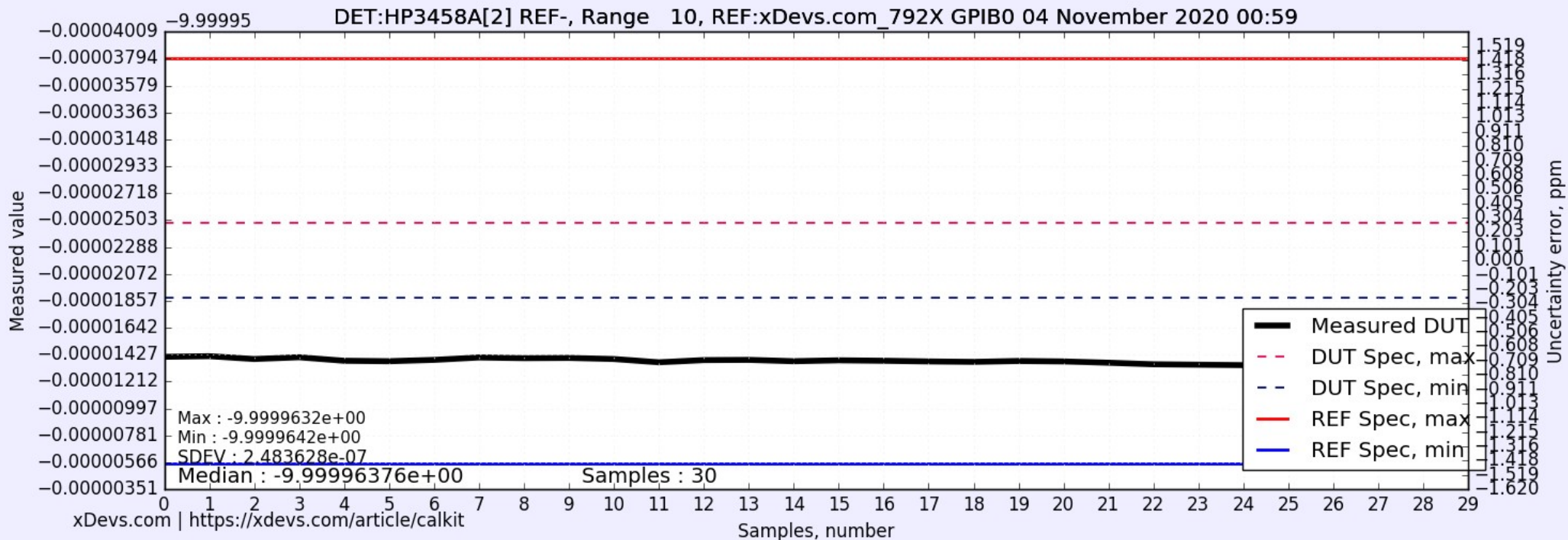
The test and measurement data here relate only to the item tested and/or measured.

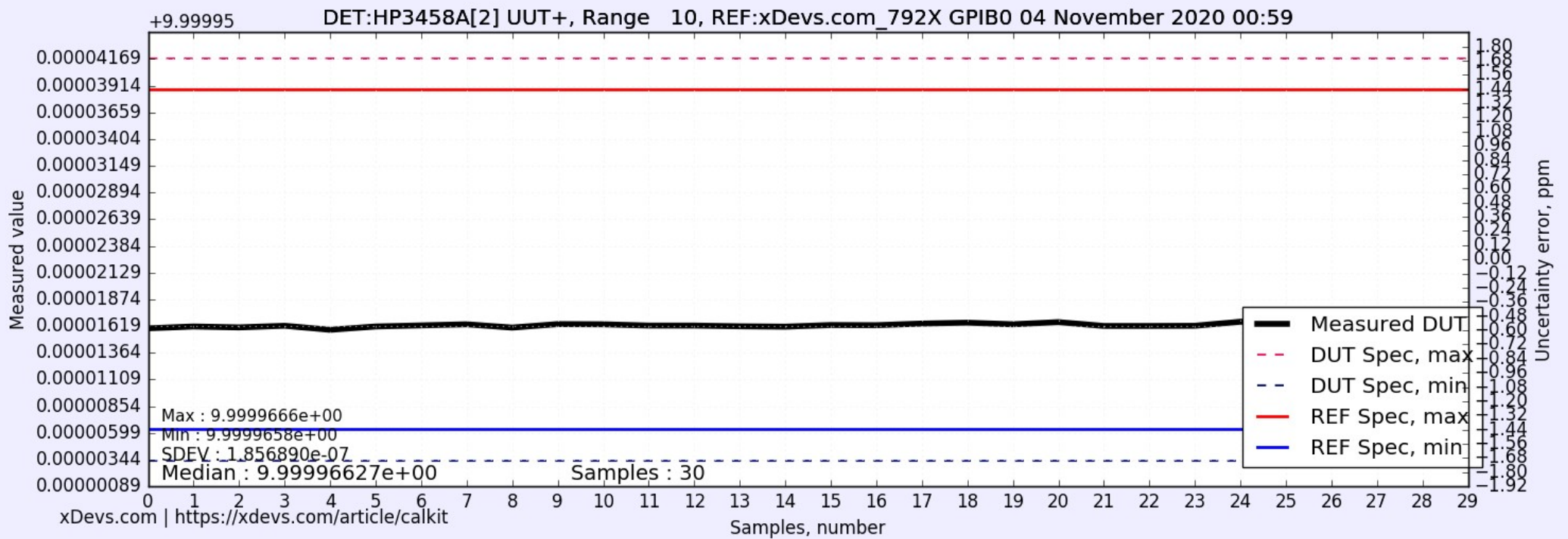
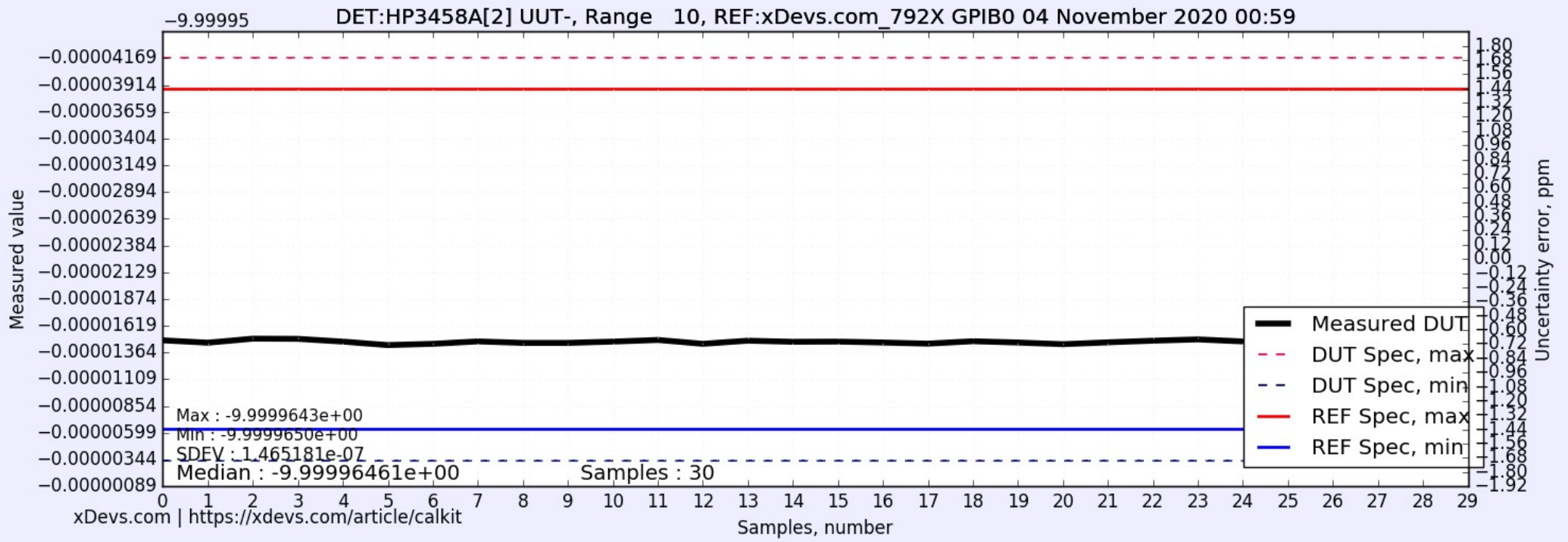
UUT output transferred by manual substitution measurement with known reference standard.

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
<b>Transfer reference output</b>	<b>9.9999718</b>	<b>VDC</b>	<b>±0.440 ppm</b>			
Reference measured output (+)	9.9999657	VDC	±0.100 ppm	σ = 2.382221e-07 VDC	Δ = -0.610 ppm	30
Reference measured output (-)	-9.9999637	VDC	±0.100 ppm	σ = 2.292711e-07 VDC	Δ = -0.806 ppm	30
Reference calculated +/-	9.9999647	VDC	±0.100 ppm		Δ = -0.708 ppm	
Detector zero offset	0.0000006	VDC		σ = 6.099755e-08 VDC		
UUT measured output (+)	9.9999664	VDC	±0.100 ppm	σ = 1.533931e-07 VDC		30
UUT measured output (-)	-9.9999646	VDC	±0.100 ppm	σ = 1.262518e-07 VDC		30
Ratio positive polarity	1.00000007		±0.200 ppm			Inf
Ratio negative polarity	1.00000009		±0.200 ppm			Inf
UUT calculated output (+)	9.9999725	VDC	±0.640 ppm		Δ = -0.010 ppm	
UUT calculated output (-)	-9.9999727	VDC	±0.640 ppm		Δ = 0.010 ppm	
Temperature Δ	-0.397	°C	±0.60 °C		±1.0 °C	
UUT previous data	10.0000000	VDC	±0.000 ppm			Report
Deviation from previous measurement	<b>-2.744 ppm</b>	VDC				
<b>UUT Expanded measurement (Linear) k=2</b>	<b>9.9999726</b>	<b>VDC</b>	<b>±0.640 ppm</b>		0.1%	In spec
<b>UUT Expanded measurement (RSS) k=2</b>	<b>9.9999726</b>	<b>VDC</b>	<b>±0.483 ppm</b>		0.1%	In spec





Internal data, do not expose

RAW data	Result
Array Ref P	[9.999965469, 9.999965119, 9.999965224, 9.999965189, 9.999965102, 9.999965137, 9.999965469, 9.999965749, 9.999965592, 9.999965767, 9.999965697, 9.999965609, 9.999965872, 9.999965802, 9.999965539, 9.999965504, 9.999965207, 9.999965382, 9.999965417, 9.999965557, 9.99996603, 9.999966117, 9.999965907, 9.999965802, 9.999965802, 9.999965732, 9.999965977, 9.999965767, 9.999965417, 9.999965697]
Array Ref N	[-9.999964103, -9.999964156, -9.999963928, -9.999964068, -9.999963788, -9.999963753, -9.999963858, -9.999964051, -9.999963998, -9.999964016, -9.999963928, -9.999963666, -9.999963841, -9.999963858, -9.999963753, -9.999963823, -9.999963788, -9.999963736, -9.999963701, -9.999963771, -9.999963736, -9.999963631, -9.999963508, -9.999963473, -9.999963438, -9.99996335, -9.99996335, -9.99996321, -9.999963298, -9.999963491]
Array UUT P	[9.999965977, 9.999966152, 9.999966065, 9.999966222, 9.999965837, 9.999966152, 9.999966257, 9.999966362, 9.999966047, 9.99996638, 9.999966362, 9.99996624, 9.99996624, 9.99996617, 9.999966135, 9.999966292, 9.999966275, 9.999966432, 9.99996652, 9.999966362, 9.999966572, 9.999966205, 9.999966205, 9.999966222, 9.999966607, 9.999966572, 9.999966485, 9.999966502, 9.999966467, 9.999966502]
Array UUT N	[-9.999964804, -9.999964576, -9.999964961, -9.999964944, -9.999964681, -9.999964349, -9.999964471, -9.999964699, -9.999964559, -9.999964559, -9.999964681, -9.999964839, -9.999964471, -9.999964769, -9.999964664, -9.999964681, -9.999964594, -9.999964489, -9.999964716, -9.999964594, -9.999964436, -9.999964611, -9.999964769, -9.999964891, -9.999964699, -9.999964576, -9.999964559, -9.999964541, -9.999964611, -9.999964506]

Histogramm

