

DUT	Datron-Wavetek	Calibration date	November 03 2020
Ref P/N	4910	Ambient Temperature	23.66 °C
Serial	22065-7	Relative Humidity	26.43 %
ID Number	Final transfer	Pressure	1019.59 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	11/03/2020	11/03/2020

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.

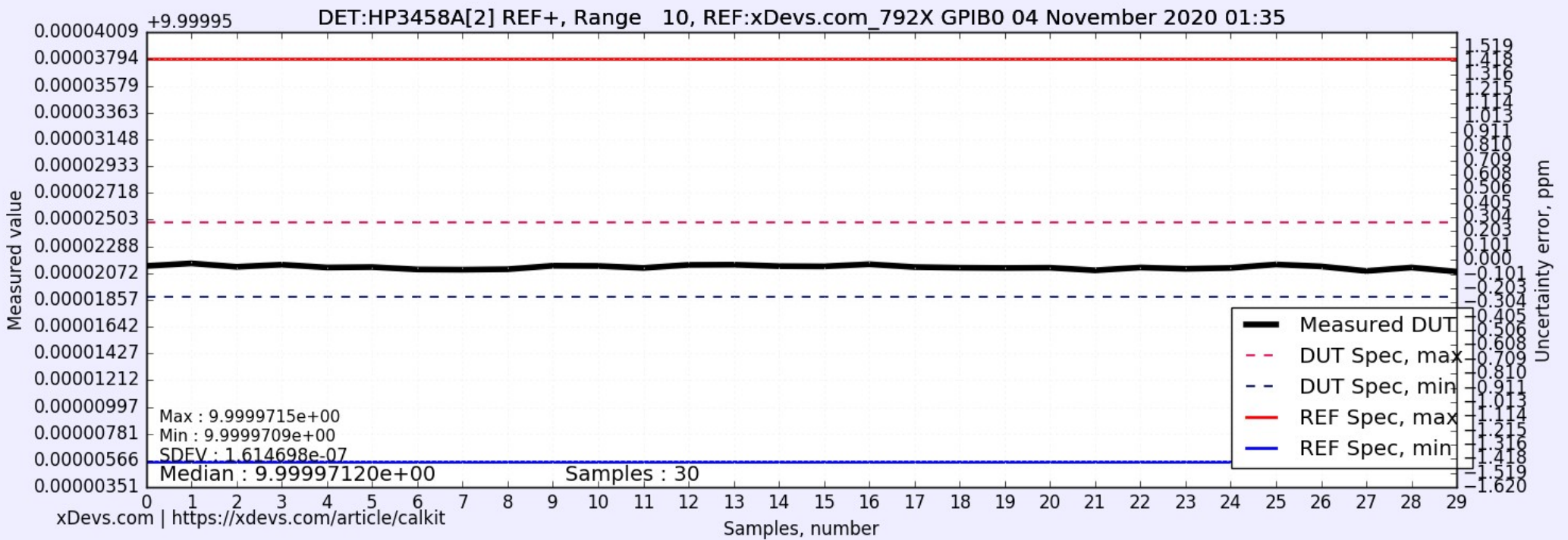
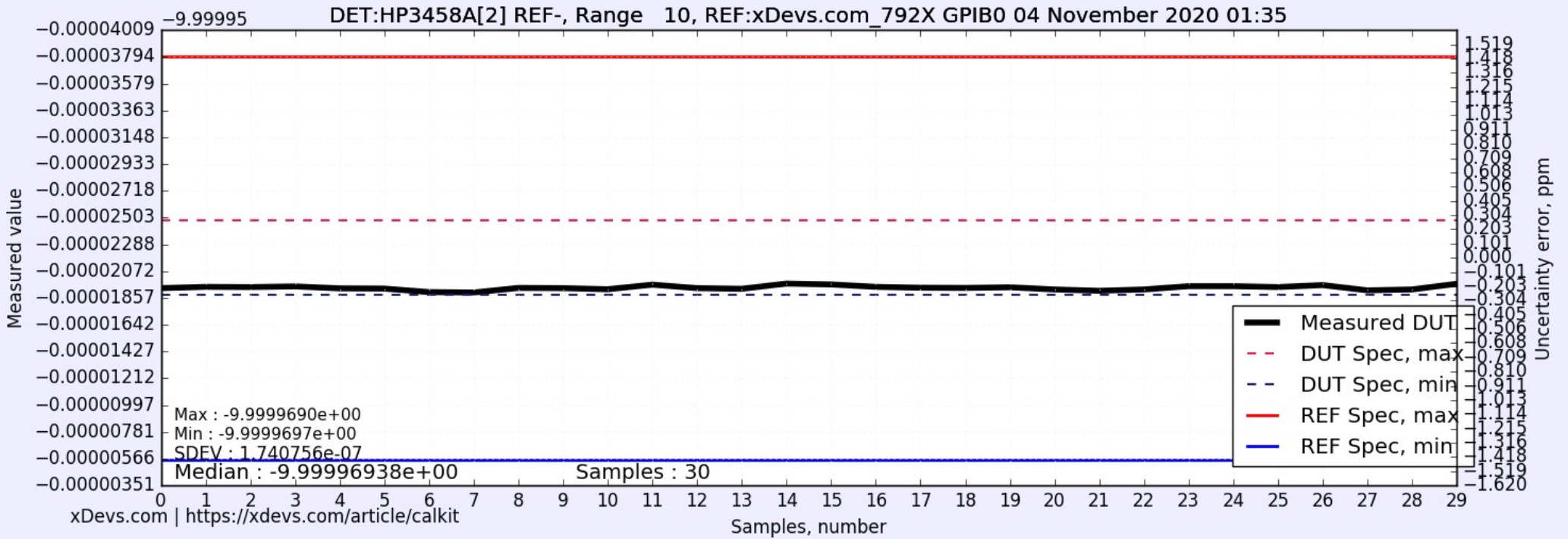
The test and measurement data here relate only to the item tested and/or measured.

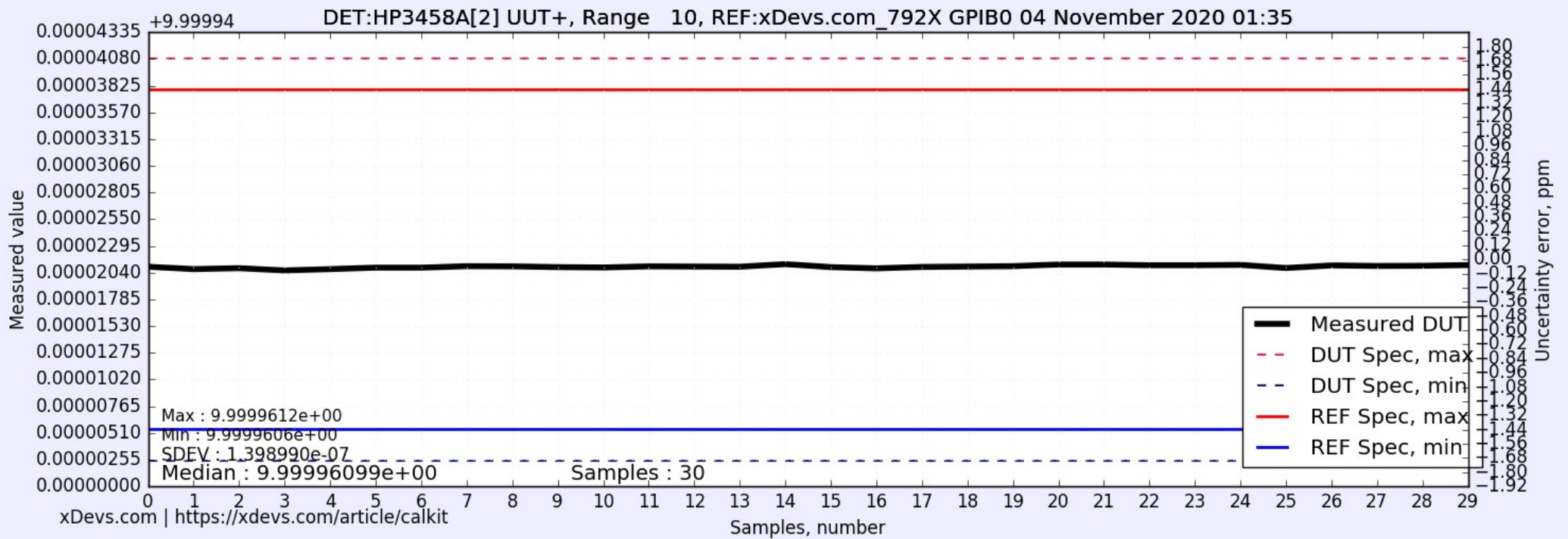
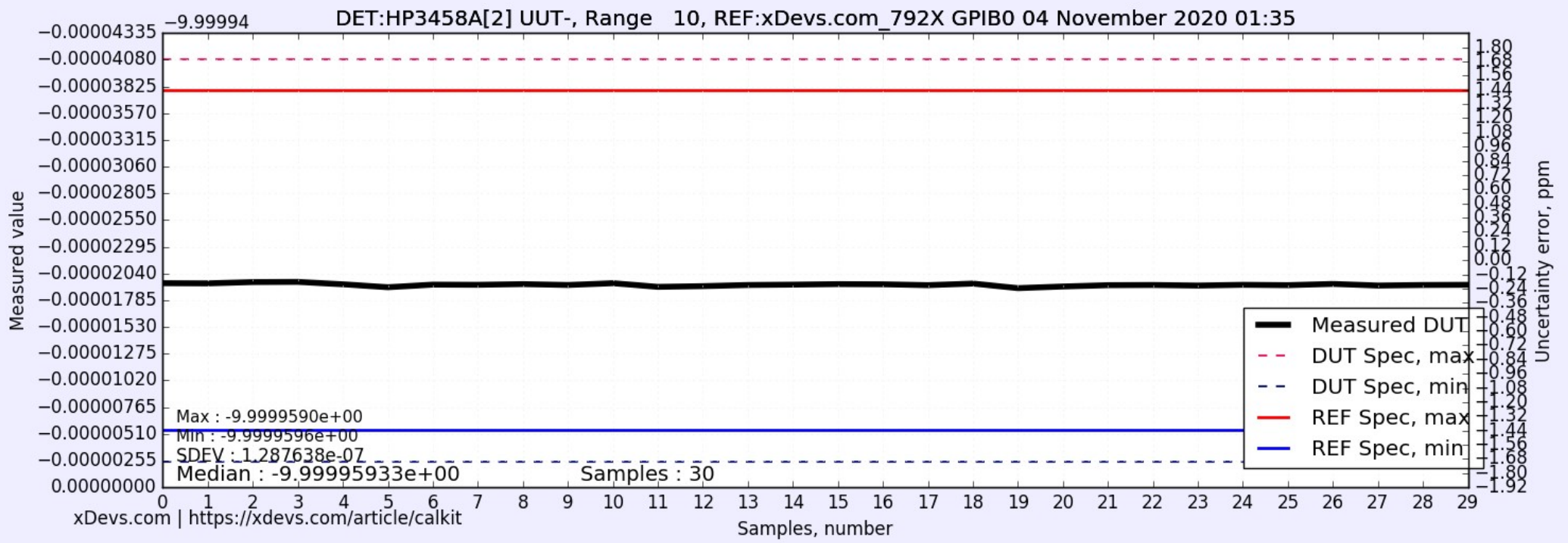
UUT output transferred by manual substitution measurement with known reference standard.

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 (+)	9.9999712	VDC	±0.100 ppm	σ = 1.574503e-07 VDC	Δ = -0.062 ppm	30
Reference measured output (-)	-9.9999694	VDC	±0.100 ppm	σ = 1.881108e-07 VDC	Δ = -0.242 ppm	30
Reference calculated +/-	9.9999703	VDC	±0.100 ppm		Δ = -0.152 ppm	
Detector zero offset	0.0000007	VDC		σ = 7.137495e-08 VDC		
UUT measured output (+)	9.9999610	VDC	±0.100 ppm	σ = 1.075053e-07 VDC		30
UUT measured output (-)	-9.9999593	VDC	±0.100 ppm	σ = 1.062177e-07 VDC		30
Ratio positive polarity	0.99999898		±0.200 ppm			Inf
Ratio negative polarity	0.99999899		±0.200 ppm			Inf
UUT calculated output (+)	9.9999616	VDC	±0.640 ppm		Δ = -0.005 ppm	
UUT calculated output (-)	-9.9999617	VDC	±0.640 ppm		Δ = 0.005 ppm	
Temperature Δ	-0.162	°C	±0.60 °C		±1.0 °C	
UUT previous data	10.0000000	VDC	±0.000 ppm			Report
Deviation from previous measurement	-3.832 ppm	VDC				
UUT Expanded measurement (Linear) k=2	9.9999617	VDC	±0.640 ppm		0.1%	In spec
UUT Expanded measurement (RSS) k=2	9.9999617	VDC	±0.483 ppm		0.1%	In spec





Internal data, do not expose

RAW data	Result
Array Ref P	[9.999971306, 9.999971516, 9.999971236, 9.999971411, 9.999971183, 9.999971218, 9.999971026, 9.999971008, 9.999971043, 9.999971323, 9.999971306, 9.999971148, 9.999971393, 9.999971411, 9.999971288, 9.999971271, 9.999971446, 9.999971218, 9.999971166, 9.999971148, 9.999971166, 9.999970956, 9.999971183, 9.999971078, 9.999971148, 9.999971429, 9.999971271, 9.999970903, 9.999971183, 9.999970851]
Array Ref N	[-9.999969362, -9.999969467, -9.99996945, -9.999969502, -9.999969345, -9.999969327, -9.999969047, -9.999969012, -9.99996938, -9.999969362, -9.999969275, -9.999969642, -9.999969362, -9.99996931, -9.99996973, -9.99996966, -9.999969467, -9.999969397, -9.99996938, -9.999969432, -9.999969257, -9.999969152, -9.999969257, -9.99996952, -9.99996952, -9.99996945, -9.999969607, -9.999969187, -9.999969257, -9.999969712]
Array UUT P	[9.999960975, 9.999960747, 9.999960835, 9.999960624, 9.999960747, 9.999960887, 9.999960887, 9.999961027, 9.99996101, 9.99996094, 9.999960905, 9.99996101, 9.999960992, 9.999960975, 9.999960975, 9.99996122, 9.99996094, 9.999960817, 9.999960957, 9.999960992, 9.999961027, 9.999961185, 9.999961185, 9.99996115, 9.99996115, 9.99996115, 9.999960852, 9.999961097, 9.999961045, 9.999961062, 9.999961132]
Array UUT N	[-9.999959486, -9.999959469, -9.999959591, -9.999959609, -9.999959381, -9.999959101, -9.999959346, -9.999959329, -9.999959399, -9.999959311, -9.999959486, -9.999959136, -9.999959206, -9.999959311, -9.999959346, -9.999959399, -9.999959381, -9.999959294, -9.999959451, -9.999959013, -9.999959171, -9.999959294, -9.999959311, -9.999959259, -9.999959329, -9.999959294, -9.999959416, -9.999959259, -9.999959311, -9.999959329]

Histogramm

