Fluke 732B - Fluke 732A

Reference	Fluke	Calibration date	October 04 2020
Ref P/N	732A	Ambient Temperature	24.63 °C
Serial	XFER	Relative Humidity	51.12 %
ID Number	Calibration test, as received;	Pressure	1020.65 hPa
Notes	Test as received, 5h warmup	Test type	Front PTFE cable terminals

Reference standard	Mfg	Model	Options	Serial / Unc	CEID	Calibration date	Due date
DCV REFERENCE	Fluke	732B	10.00000592 ?	7350002	None	Invalid	Invalid
DMM	HP	3458A		FF-4		None	None

REDACTED. Actual measurement uncertainty available upon request was calculated using the expanded method and is expressed in values at approximately the 95% confidence level using a coverage factor of K= 2.

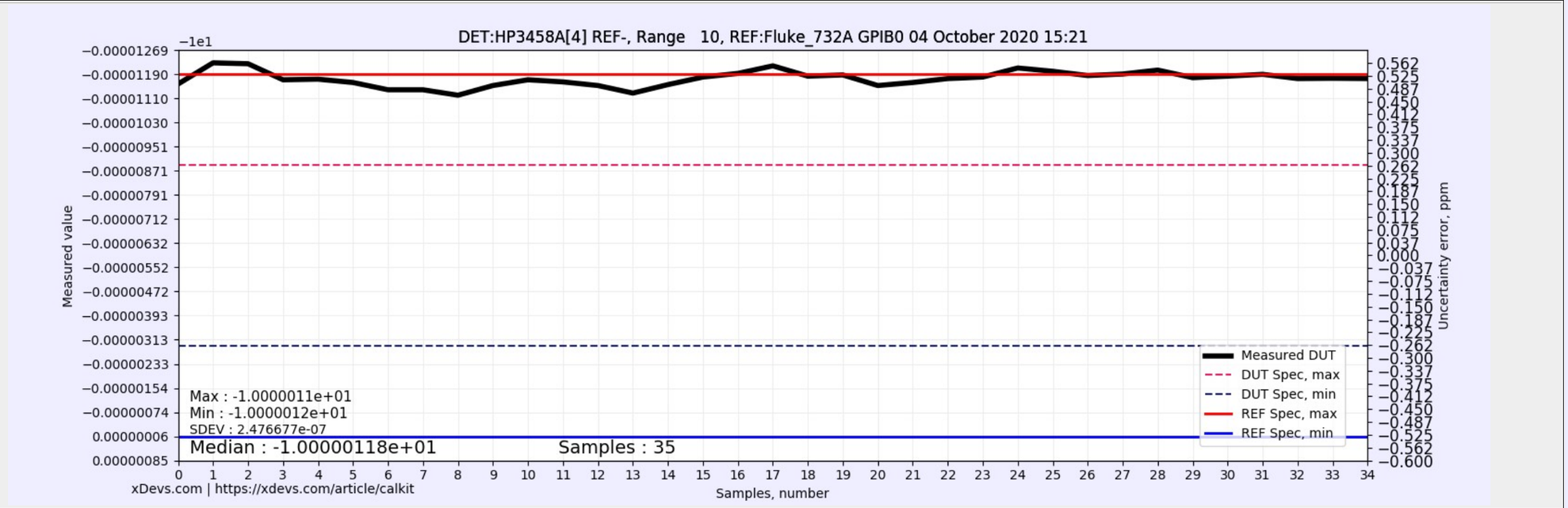
Certificate statements are based on test results within specified limits without reduction of the uncertainty of the test and/or measurement. The test and measurement data here relate only to the item tested and/or measured. Unit acceptance of failure includes uncertainty data compilation. Calibration due date that appears on the Certificate of Calibration and labels are determined by the customer and does not imply conformance to a standard.

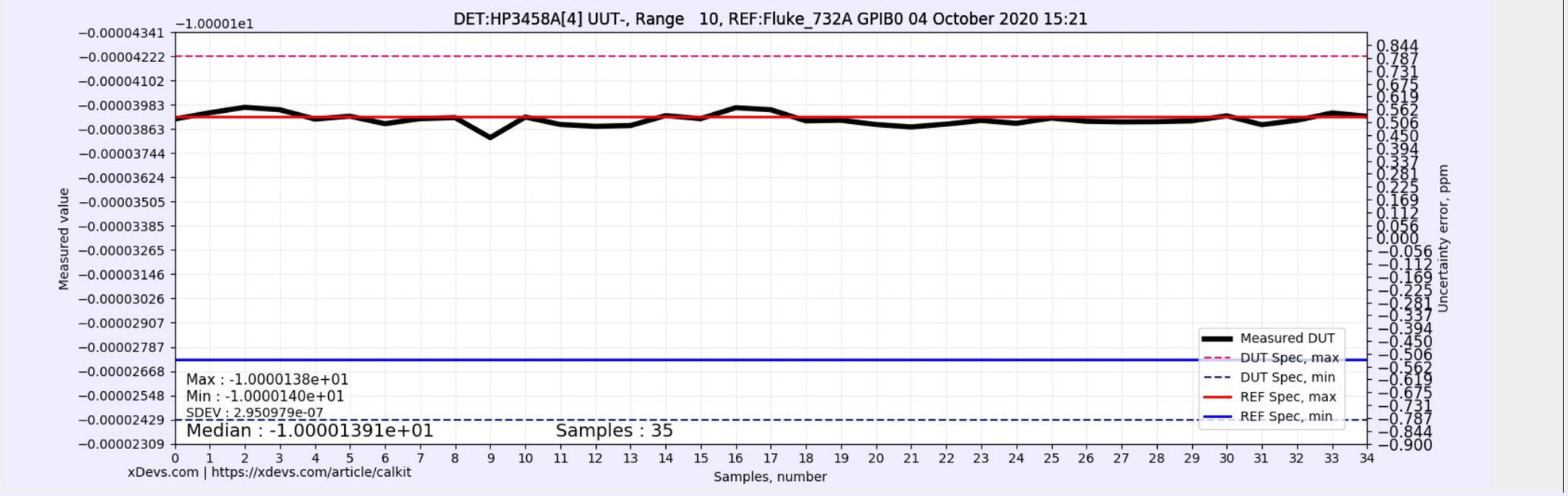
UUT output transferred by manual ratiometric measurement with reference standard.
Fixed 1.000e+01 range is used on the Keysight 3458A/X02 detector. The following test use 10 minute transfer specification with Fluke 732A output source as reference. Gain verified for stability ±0.10 ppm over the test period. Detector zero offset is DUT is nulled prior to the measurement.

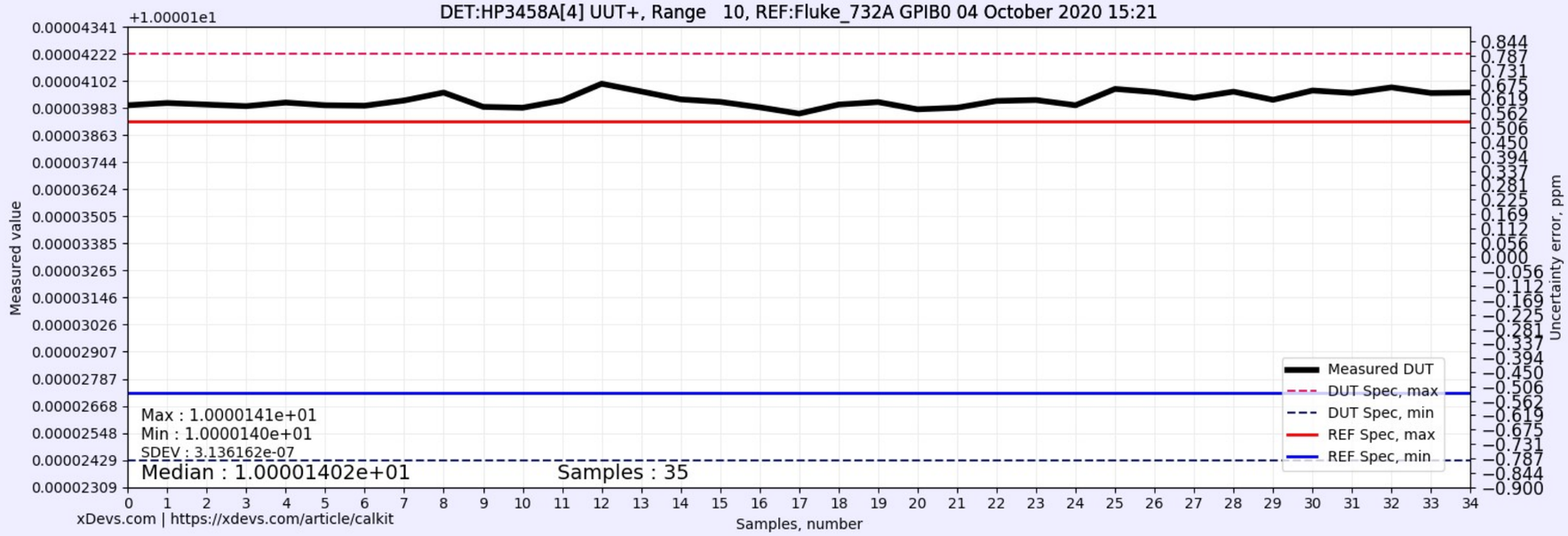
Configuration : Battery power STD, NPLC100, NDIG8, Guard is open.

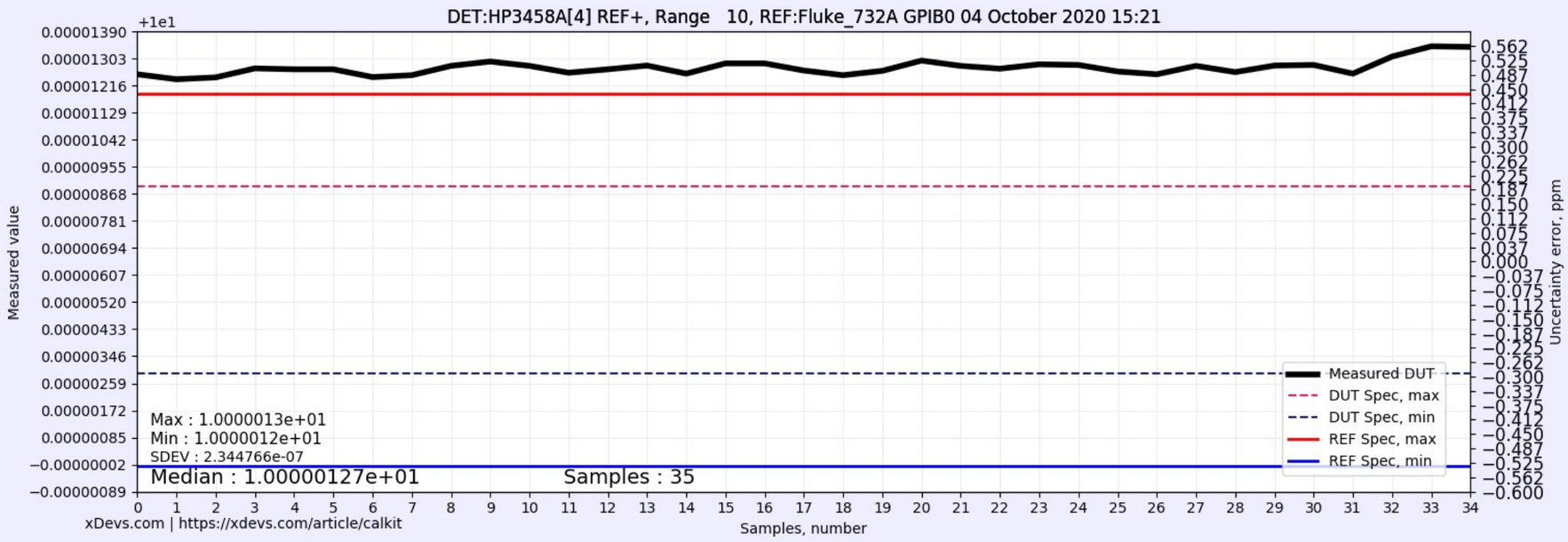
	Measurement	Unit	Uncertainty	Standard Deviation	DUT Spec / Δ	Degree of freedom / Notes
Transfer reference output	**10.0000059**	**VDC**	**±0.100 ppm**			
Reference measured output (+)	10.0000128	VDC	±0.100 ppm	σ = 2.317779e-07 VDC	Δ = 0.688 ppm	35
Reference measured output (-)	-10.0000118	VDC	±0.100 ppm	σ = 2.295406e-07 VDC	Δ = 0.584 ppm	35
Reference calculated +/-	10.0000123	VDC	±0.100 ppm		Δ = 0.636 ppm	
Detector zero offset	-0.0000000	VDC		σ = 0.000000e+00 VDC		
UUT measured output (+)	10.0001402	VDC	±0.100 ppm	σ = 3.265449e-07 VDC		35
UUT measured output (-)	-10.0001391	VDC	±0.100 ppm	σ = 0.2755 µVDC		35
Ratio positive polarity	1.00001274		±0.200 ppm			Inf
Ratio negative polarity	1.00001273		±0.200 ppm			Inf
UUT calculated output (+)	10.0001333	VDC	±0.300 ppm		Δ = 0.005 ppm	
UUT calculated output (-)	-10.0001332	VDC	±0.300 ppm		Δ = -0.005 ppm	
Temperature Δ	-0.537	°C	±1.00 %		±1.0 °C	
UUT transfer result (Linear)	**10.0001333**	**VDC**	**±0.300 ppm**		0.1%	In spec
UUT transfer result (RSS)	**10.0001333**	**VDC**	**±0.224 ppm**		0.1%	In spec

Statistics image data


DET:HP3458A[4] REF-, Range 10, REF:Fluke_732A GPIB0 04 October 2020 15:21
−1e1
Measured value
Uncertainty error, ppm
Samples, number
Max : -1.0000011e+01
Min : -1.0000012e+01
SDEV : 2.476677e-07
Median : -1.00000118e+01
Samples : 35
Measured DUT
DUT Spec, max
DUT Spec, min
REF Spec, max
REF Spec, min
xDevs.com | https://xdevs.com/article/calkit


DET:HP3458A[4] UUT-, Range 10, REF:Fluke_732A GPIB0 04 October 2020 15:21
−1.00001e1
Measured value
Uncertainty error, ppm
Samples, number
Max : -1.0000138e+01
Min : -1.0000140e+01
SDEV : 2.950979e-07
Median : -1.00001391e+01
Samples : 35
Measured DUT
DUT Spec, max
DUT Spec, min
REF Spec, max
REF Spec, min
xDevs.com | https://xdevs.com/article/calkit





Test procedure : Id

Lab temperature maintained +23°C ±1°C

RAW data	Result
Array Ref P	[10.00001253, 10.00001237, 10.00001243, 10.00001272, 10.00001269, 10.00001269, 10.00001244, 10.0000125, 10.0000128, 10.00001294, 10.0000128, 10.00001258, 10.00001269, 10.00001281, 10.00001255, 10.00001288, 10.00001288, 10.00001265, 10.0000125, 10.00001264, 10.00001297, 10.0000128, 10.00001271, 10.00001285, 10.00001283, 10.00001262, 10.00001253, 10.0000128, 10.0000126, 10.00001281, 10.00001283, 10.00001255, 10.0000131, 10.00001343, 10.00001341]
Array Ref N	[-10.00001158, -10.00001228, -10.00001225, -10.00001172, -10.00001174, -10.00001163, -10.00001139, -10.00001139, -10.00001121, -10.00001153, -10.00001172, -10.00001165, -10.00001153, -10.00001128, -10.00001156, -10.00001181, -10.00001193, -10.00001218, -10.00001184, -10.00001188, -10.00001153, -10.00001163, -10.00001176, -10.00001181, -10.00001211, -10.000012, -10.00001186, -10.00001191, -10.00001204, -10.00001179, -10.00001184, -10.0000119, -10.00001176, -10.00001177, -10.00001176]
Array UUT P	[10.00013996, 10.00014006, 10.00013999, 10.00013992, 10.00014008, 10.00013996, 10.00013994, 10.00014017, 10.00014052, 10.00013989, 10.00013985, 10.00014017, 10.00014091, 10.00014057, 10.00014022, 10.00014011, 10.00013987, 10.00013959, 10.00013999, 10.0001401, 10.00013978, 10.00013985, 10.00014015, 10.00014019, 10.00013996, 10.00014068, 10.00014054, 10.00014029, 10.00014056, 10.0001402, 10.00014061, 10.0001405, 10.00014075, 10.0001405, 10.00014052]
Array UUT N	[-10.00013913, -10.00013944, -10.00013971, -10.00013959, -10.00013913, -10.00013927, -10.0001389, -10.00013915, -10.0001392, -10.00013821, -10.00013923, -10.00013886, -10.00013877, -10.00013881, -10.0001393, -10.00013915, -10.00013969, -10.00013959, -10.00013904, -10.00013907, -10.00013886, -10.00013874, -10.00013888, -10.00013906, -10.00013892, -10.00013918, -10.00013902, -10.00013899, -10.000139, -10.00013904, -10.00013929, -10.00013885, -10.00013907, -10.00013943, -10.00013927]

Histogramm