

Manufacturer	HEWLETT-PACKARD	Calibration date	June 21 2019
Model Number	3458A	Ambient Temperature	0.00 °C
Serial	STD	Relative Humidity	0.00 %
ID Number	HP3458B	Pressure	0.00
Notes	Test front ports + booster	Test type	PostCal 732Bx-SR104-FSL935-1R

This note is test dummy text block for further use. It allow to include user information for further reference

Reference standard	Mfg	Model	Options	Serial / Unc	CEID	Calibration date	Due date
MFC	Fluke	5720A	03/HLK	E2E6	XC01	06/16/2019	12/16/2019
MFC	Fluke	5700EP	H2	E2E6	XC02	06/16/2019	12/16/2019
Amplifier	Fluke	5725A		5930005	XB01	02/09/2019	08/09/2019
AVMS	Wavetek	4920M	80	29336	XA02	07/11/2017	07/11/2018
DMM	HP	3458A	001,X02	MY45040325	XD2	06/16/2019	12/16/2019
DMM	HP	3458A	001,X02	X	XD3	06/16/2019	12/16/2019
DC STD	xDevs.com	792X[2]	9.9999854 VDC	±0.2 ppm	XD01	06/18/2019	06/18/2020
DC STD	Fluke	732A	P25	±2.2 ppm	XD01	02/16/2018	02/16/2019
DC STD	Fluke	732B	6480002	±0.02 ppm	XD01	05/30/2019	05/30/2020
DC STD	Wavetek	7000	54222	±2.2 ppm	XD01	02/16/2018	02/16/2019
Divider	Fluke	752A	4295200		XR01	02/16/2018	02/16/2019
STDR	ESI	SR104	9999.9995 KΩ	±0.15 ppm	XR04	06/03/2019	06/03/2020
STDR	xDevs.com/Fluke	SL935	1.00005942 Ω	±0.17 ppm	XR03	05/31/2018	05/31/2019
STDR	xDevs.com/Fluke	SL935	9999.9755 kΩ	±0.33 ppm	XR02	05/31/2018	05/31/2019

MFC last calibrated	1 days ago	MFC since DCV ZERO	1 days ago
MFC since WBFLAT	1 days ago	MFC since WBGAIN	1 days ago
MFC Confidence level	<b>24h 95% REL</b>	MFC Calibrate date	Debug
MFC Calibrate date Zero	Debug	Calibrate date WB Flatness	Debug
Calibrate date WB Gain	Debug	CAL CONST 6.5V reference voltage	1
CAL CONST 13V reference voltage	1	CAL CONST 22V range positive zero	1
CAL CONST 22V range negative zero	1	CAL CONST DAC Linearity	1
CAL CONST 10KOHM true output resistance	1	CAL CONST 10KOHM standard resistance	1
CAL CONST, Zero calibration temperature	1	CAL CONST, All calibration temp	1
Booster type	1	Current output posts	1
Calibrate date 5725A AMP	Debug	Calibrated days ago	Debug
CAL CONST, Amp ACAL temperature	1	CAL CONST, Amp CalCheck temperature	1

Total uncertainty of each calibration point calculated with RSS

$$U_{95\%} = \sqrt{U_{SRC}^2 * U_{DUT}^2 * 2}$$

Meter Info	1	Last calibration date	7/24/2018
CALSTR?	1	Test date	21 June 2019 09:44
DUT Internal TEMP?	1	DUT Calibrations number?	1
Self-test result?	1	ACAL ALL result?	1
Firmware	1	Options	1
CAL? 72	1	CAL? 1,1	1
CAL? 2,1	1	CAL? Res 73	1
CAL 0 TEMP	1.00	CAL 10V TEMP	1.00
CAL 10KOhm TEMP	1.00	CAL? DCI	1

Service information

[illegible]

Destructive overloads?
1
Reference
Direct H1 MFC test, verification
DUT Condition
Hulk-1

Test procedure : \$Id: hp3458a.py | Rev 1397 | 2019/06/19 20:03:05 tin\_fpga \$

Source procedure : \$Id: f5720b.py | Rev 1393 | 2019/06/18 11:58:14 clu \$

Main DC Voltage ranges performance test.

Checks zero offset and +/-FS calibration on all ranges

The following test for the offset voltage specification using MFC 0V source in 4-wire ext sense mode as reference.

DCV gain range points verify gain of the DC voltage function, using uncorrected 24-hour MFC output. DC voltage offset of DUT is nulled before FS tests.

Test Description	Expected Value	Measured Value	Measurement Uncertainty	Lower Limit	Upper Limit	Deviation	DUT Spec	Test Status
Short 0 mVDC	0.000000E+00	0.84 µV	0.75 µV	-0.910 µV	0.910 µV	N/A	0.16 µV	PASS
Short 0.0 VDC	0.000000E+00	1.03 µV	0.75 µV	-0.900 µV	0.900 µV	N/A	0.15 µV	FAIL
Short 00.0 VDC	0.000000E+00	1.84 µV	0.75 µV	-1.070 µV	1.070 µV	N/A	0.32 µV	FAIL
Short 000.0 VDC	0.000000E+00	18.39 µV	0.75 µV	-14.750 µV	14.750 µV	N/A	14.00 µV	FAIL
Short 0000.0 VDC	0.000000E+00	77.06 µV	0.75 µV	-41.750 µV	41.750 µV	N/A	41.00 µV	FAIL
DCV Test	0.1V-1000V	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
0.019 VDC (0.10 Range)	0.0190000	0.019000034	7.27 ppm	0.018999514	0.019000486	1.808 ppm	18.29 ppm	PASS 4.59 %
0.1 VDC (0.10 Range)	0.1000000	0.10000001	7.27 ppm	0.099998723	0.10000128	0.119 ppm	5.50 ppm	PASS 0.66 %
0.11 VDC (0.10 Range)	0.1100000	0.11000001	7.27 ppm	0.10999863	0.11000137	0.051 ppm	5.23 ppm	PASS 0.28 %
-0.019 VDC (0.10 Range)	-0.0190000	-0.019000054	7.27 ppm	-0.019000486	-0.018999514	2.847 ppm	18.29 ppm	PASS 7.23 %
-0.1 VDC (0.10 Range)	-0.1000000	-0.10000007	7.27 ppm	-0.10000128	-0.099998723	0.681 ppm	5.50 ppm	PASS 3.74 %
-0.11 VDC (0.10 Range)	-0.1100000	-0.11000007	7.27 ppm	-0.11000137	-0.10999863	0.674 ppm	5.23 ppm	PASS 3.76 %
0.19 VDC (1.00 Range)	0.1900000	0.19000022	2.45 ppm	0.18999895	0.19000105	1.140 ppm	3.08 ppm	PASS 14.49 %
1.0 VDC (1.00 Range)	1.0000000	1.0000004	2.45 ppm	0.99999575	1.0000042	0.422 ppm	1.80 ppm	PASS 6.94 %
1.1 VDC (1.00 Range)	1.1000000	1.1000006	2.45 ppm	1.0999954	1.1000046	0.527 ppm	1.77 ppm	PASS 8.72 %
-0.19 VDC (1.00 Range)	-0.1900000	-0.18999992	2.45 ppm	-0.19000105	-0.18999895	-0.431 ppm	3.08 ppm	PASS 5.48 %
-1.0 VDC (1.00 Range)	-1.0000000	-1.0000008	2.45 ppm	-1.0000042	-0.99999575	0.775 ppm	1.80 ppm	PASS 12.75 %
-1.1 VDC (1.00 Range)	-1.1000000	-1.1000007	2.45 ppm	-1.1000046	-1.0999954	0.634 ppm	1.77 ppm	PASS 10.48 %
1.9 VDC (10.00 Range)	1.9000000	1.9000013	1.47 ppm	1.8999958	1.9000042	0.696 ppm	0.76 ppm	PASS 21.02 %
10.0 VDC (10.00 Range)	10.0000000	10.000002	1.47 ppm	9.9999798	10.00002	0.225 ppm	0.55 ppm	PASS 7.17 %
11.0 VDC (10.00 Range)	11.0000000	11.000002	1.47 ppm	10.999978	11.000022	0.148 ppm	0.55 ppm	PASS 4.73 %
-1.9 VDC (10.00 Range)	-1.9000000	-1.9000004	1.47 ppm	-1.9000042	-1.8999958	0.201 ppm	0.76 ppm	PASS 6.07 %
-10.0 VDC (10.00 Range)	-10.0000000	-9.9999989	1.47 ppm	-10.00002	-9.9999798	-0.107 ppm	0.55 ppm	PASS 3.42 %
-11.0 VDC (10.00 Range)	-11.0000000	-10.999998	1.47 ppm	-11.000022	-10.999978	-0.164 ppm	0.55 ppm	PASS 5.22 %
19 VDC (100.00 Range)	19.0000000	19.000046	2.36 ppm	18.999878	19.000122	2.415 ppm	4.08 ppm	PASS 25.62 %
100 VDC (100.00 Range)	100.0000000	100.00005	2.36 ppm	99.999484	100.00052	0.477 ppm	2.80 ppm	PASS 6.51 %
110 VDC (100.00 Range)	110.0000000	110.00003	2.36 ppm	109.99944	110.00056	0.251 ppm	2.77 ppm	PASS 3.45 %
-19 VDC (100.00 Range)	-19.0000000	-18.99997	2.36 ppm	-19.000122	-18.999878	-1.567 ppm	4.08 ppm	PASS 16.63 %
-100 VDC (100.00 Range)	-100.0000000	-99.999961	2.36 ppm	-100.00052	-99.999484	-0.393 ppm	2.80 ppm	PASS 5.36 %
-110 VDC (100.00 Range)	-110.0000000	-109.99995	2.36 ppm	-110.00056	-109.99944	-0.440 ppm	2.77 ppm	PASS 6.04 %
190 VDC (1000.00 Range)	190.0000000	190.00001	2.85 ppm	189.99888	190.00112	0.051 ppm	3.03 ppm	PASS 0.61 %
500 VDC (1000.00 Range)	500.0000000	500.00062	2.85 ppm	499.99723	500.00277	1.244 ppm	2.70 ppm	PASS 21.83 %
1000 VDC (1000.00 Range)	1000.0000000	1000.0026	2.85 ppm	999.98255	1000.0174	2.557 ppm	2.60 ppm	PASS 10.37 %
-190 VDC (1000.00 Range)	-190.0000000	-190.00012	2.85 ppm	-190.00112	-189.99888	0.654 ppm	3.03 ppm	PASS 7.87 %
-500 VDC (1000.00 Range)	-500.0000000	-500.00058	2.85 ppm	-500.00277	-499.99723	1.169 ppm	2.70 ppm	PASS 4.74 %
-1000 VDC (1000.00 Range)	-1000.0000000	-1000.0028	2.85 ppm	-1000.0174	-999.98255	2.802 ppm	2.60 ppm	PASS 11.36 %

4W test procedure for all test points that verify Gain of the OHMF function. 4-wire kelvin connection is used between DMM and MFC.  
1GΩ resistance range is tested using the external standard, as MFC unable to provide this range value.

OHM Test	Reference	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
1 Ω	0.9997898 Ω	<b>0.99976962 Ω</b>	27.0 ppm	9.9972781E-01	9.9985179E-01	-20.182 ppm	35.01 ppm	PASS, 22.83 % of 88.42 ppm
1.9 Ω	1.8998293 Ω	<b>1.899791 Ω</b>	20.0 ppm	1.8997518E+00	1.8999068E+00	-20.173 ppm	20.79 ppm	PASS, 34.96 % of 57.70 ppm
10 Ω	10.000594 Ω	<b>10.000569 Ω</b>	4.0 ppm	1.0000474E+01	1.0000714E+01	-2.470 ppm	8.00 ppm	PASS, 13.81 % of 17.89 ppm
19 Ω	19.000319 Ω	<b>19.000305 Ω</b>	3.5 ppm	1.8999895E+01	1.9000743E+01	-0.759 ppm	18.79 ppm	PASS, 1.99 % of 38.22 ppm
100 Ω	99.99686 Ω	<b>99.996905 Ω</b>	1.6 ppm	9.9996100E+01	9.9997620E+01	0.445 ppm	6.00 ppm	PASS, 3.59 % of 12.42 ppm
190 Ω	189.99536 Ω	<b>189.99542 Ω</b>	1.6 ppm	1.8999448E+02	1.8999624E+02	0.295 ppm	3.05 ppm	PASS, 4.28 % of 6.89 ppm
1.0 kΩ	1000.0281 kΩ	<b>1000.0272 kΩ</b>	1.6 ppm	1.0000243E+03	1.0000319E+03	-0.905 ppm	2.20 ppm	PASS, 16.64 % of 5.44 ppm
1.9 kΩ	1899.9124 kΩ	<b>1899.9115 kΩ</b>	1.6 ppm	1.8999036E+03	1.8999212E+03	-0.453 ppm	3.05 ppm	PASS, 6.57 % of 6.89 ppm
10 kΩ	9999.805 kΩ	<b>9999.7959 kΩ</b>	1.6 ppm	9.9997670E+03	9.9998430E+03	-0.910 ppm	2.20 ppm	PASS, 16.73 % of 5.44 ppm
19 kΩ	18999.301 kΩ	<b>18999.263 kΩ</b>	1.6 ppm	1.8999213E+04	1.8999389E+04	-2.026 ppm	3.05 ppm	PASS, 29.40 % of 6.89 ppm
100 kΩ	99994.82 kΩ	<b>99993.769 kΩ</b>	1.6 ppm	9.9994440E+04	9.9995200E+04	-10.510 ppm	2.20 ppm	FAIL, 193.18 % of 5.44 ppm
190 kΩ	189989.22 kΩ	<b>189987.92 kΩ</b>	1.6 ppm	1.8998602E+05	1.8999242E+05	-6.836 ppm	15.26 ppm	PASS, 22.27 % of 30.69 ppm
1.0 MΩ	999982.8 MΩ	<b>999969.32 MΩ</b>	2.0 ppm	9.9996980E+05	9.9999580E+05	-13.479 ppm	11.00 ppm	PASS, 60.28 % of 22.36 ppm
1.9 MΩ	1899979.4 MΩ	<b>1899882.6 MΩ</b>	2.5 ppm	1.8998297E+06	1.9001291E+06	-50.946 ppm	76.32 ppm	PASS, 33.36 % of 152.71 ppm
10 MΩ	9999069	<b>9998142.2</b>	8.00 ppm	9.9984391E+06	9.9996989E+06	-92.689 ppm	55.0 ppm	PASS, 83.38 % of 111.16 ppm
19 MΩ	18998642 MΩ	<b>18998796 MΩ</b>	16.0 ppm	1.8987839E+07	1.9009445E+07	8.130 ppm	552.64 ppm	PASS, 0.74 % of 1105.73 ppm
100 MΩ	1.0000493E+08 MΩ	<b>99996772 MΩ</b>	40.0 ppm	9.9949927E+07	1.0005993E+08	-81.579 ppm	510.00 ppm	PASS, 7.97 % of 1023.13 ppm



4W and 2W Zero test procedure for all test points that verify Zero offset of the OHMF function. 4-wire kelvin connection is used between DMM and MFC. 1GΩ resistance range is tested using the external standard, as MFC unable to provide this range value.

OHM ZERO 4W	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
10 Ω	Range -0.0000046 Ω	5.000e-05 Ω	-5e-05	5e-05	N/A	8.0000e-06 Ω	PASS
100 Ω	Range 0.0000245 Ω	5.500e-04 Ω	-0.00055	0.00055	N/A	2.2000e-06 Ω	PASS
1.0 kΩ	Range -0.0000252 Ω	5.500e-03 Ω	-0.0055	0.0055	N/A	2.2000e-06 Ω	PASS
10 kΩ	Range 0.0000539 Ω	5.500e-02 Ω	-0.055	0.055	N/A	2.2000e-06 Ω	PASS
100 kΩ	Range -0.0014372 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 MΩ	Range 0.1329560 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.2000e-06 Ω	PASS
10 MΩ	Range 2.0480978 Ω	5.500e+01 Ω	-55	55	N/A	2.2000e-06 Ω	PASS
100 MΩ	Range 1.7247142 Ω	5.500e+02 Ω	-550	550	N/A	2.2000e-06 Ω	PASS
1 GΩ	Range 1.2935356 Ω	5.500e+03 Ω	-5500	5500	N/A	2.2000e-06 Ω	PASS
OHM ZERO 2W	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
10 Ω	Range 0.3271329 Ω	5.500e-01 Ω	-0.55	0.55	N/A	8.0000e-06 Ω	PASS
100 Ω	Range 0.3146908 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 kΩ	Range 0.3064122 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
10 kΩ	Range 0.3123413 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
100 kΩ	Range 0.3100700 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 MΩ	Range 0.6827526 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.2000e-06 Ω	PASS
10 MΩ	Range 3.6652354 Ω	5.500e+01 Ω	-55	55	N/A	2.2000e-06 Ω	PASS
100 MΩ	Range 3.0902975 Ω	5.500e+02 Ω	-550	550	N/A	2.2000e-06 Ω	PASS
1 GΩ	Range 3.0902975 Ω	5.500e+03 Ω	-5500	5500	N/A	2.2000e-06 Ω	PASS

Procedure for all test points in the AC performance verification for ANAlog mode. AC-measurements does not suffer from TEMF offsets, test connection can be made using shielded leads terminated with dual banana plugs. MFC main AC output is used as reference source

ACV ANA Test	1V-10V	DUT	w/Guardband	Low Limit	Hi limit	Units	Measured	24h spec	Result
1.0 VAC @ 50.0 kHz	1.0	1.0001106	129.09	0.99956891	1.00043109	VAC	110.649 ppm	302.0 ppm	PASS 25.67 %
1.0 VAC @ 1.0 MHz	1.0	1.0133449	0.2500 %	0.98749	1.01251	VAC	1.3345 %	1.0010 %	FAIL 106.67 %
10 VAC @ 40 Hz	10	9.9987543	0.2085 %	9.86915	10.13085	VAC	-0.0125 %	1.1000 %	PASS 0.95 %
10 VAC @ 200 Hz	10	10.000453	73.18	9.9965682	10.0034318	VAC	45.268 ppm	270.0 ppm	PASS 13.19 %
10 VAC @ 500 Hz	10	10.000428	73.18	9.9965682	10.0034318	VAC	42.768 ppm	270.0 ppm	PASS 12.46 %
10 VAC @ 50.0 kHz	10	10.000245	129.09	9.9937091	10.0062909	VAC	24.506 ppm	500.0 ppm	PASS 3.90 %
10 VAC @ 1.0 MHz	10	10.115571	0.3000 %	9.86	10.14	VAC	1.1557 %	1.1000 %	PASS 82.55 %

Procedure for all test points in the AC performance verification for SYNChronous mode. This is highest AC accuracy test. AC-measurements does not suffer from TEMF offsets, test connection can be made using shielded leads terminated with dual banana plugs. MFC main AC output is used as reference source

ACV SYNC Test	DUT	w/Guardband	Low Limit	Hi limit	Measured	24h spec	Result, % spec
0.01 V AC+DC @ 10 Hz	0.0099979192	0.0312 %	0.009991	0.010009	-0.0208 %	0.0600 %	PASS 15.38 %
0.01 V AC+DC @ 20 Hz	0.0099979204	0.0312 %	0.009991	0.010009	-0.0208 %	0.0600 %	PASS 15.37 %
0.01 V AC+DC @ 40 Hz	0.0099978697	0.0312 %	0.009991	0.010009	-0.0213 %	0.0600 %	PASS 15.75 %
0.01 V AC+DC @ 100 Hz	0.0099978581	0.0312 %	0.009994	0.010006	-0.0214 %	0.0310 %	PASS 24.34 %
0.01 V AC+DC @ 1.0 kHz	0.009997798	0.0312 %	0.009994	0.010006	-0.0220 %	0.0310 %	PASS 25.02 %
0.01 V AC+DC @ 10.0 kHz	0.009999421	0.0312 %	0.009993	0.010007	-0.0058 %	0.0410 %	PASS 5.62 %
0.01 V AC+DC @ 20.0 kHz	0.0099982465	0.0312 %	0.009993	0.010007	-0.0175 %	0.0410 %	PASS 17.01 %
0.01 V AC+DC @ 50.0 kHz	0.0099964399	0.0447 %	0.009984	0.010016	-0.0356 %	0.1110 %	PASS 14.87 %
0.01 V AC+DC @ 100.0 kHz	0.0099781742	0.0773 %	0.009941	0.010059	-0.2183 %	0.5110 %	PASS 21.12 %
0.01 V AC+DC @ 300.0 kHz	0.0098348991	0.1500 %	0.009583	0.010417	-1.6510 %	4.0200 %	PASS 20.52 %
0.01 V AC+DC @ 500.0 kHz	0.0096153439	0.2500 %	0.009150	0.010850	-3.8466 %	8.2500 %	PASS 23.30 %
0.01 V AC+DC @ 1.0 MHz	0.0087635734	0.4000 %	0.009135	0.010865	-12.3643 %	8.2500 %	PASS 74.85 %
0.03 V AC+DC @ 10 Hz	0.030000448	0.0121 %	0.029990	0.030010	0.0015 %	0.0203 %	PASS 3.16 %
0.03 V AC+DC @ 20 Hz	0.029999494	0.0121 %	0.029990	0.030010	-0.0017 %	0.0203 %	PASS 3.56 %
0.03 V AC+DC @ 40 Hz	0.029999187	0.0121 %	0.029990	0.030010	-0.0027 %	0.0203 %	PASS 5.72 %
0.03 V AC+DC @ 100 Hz	0.029999047	0.0121 %	0.029992	0.030008	-0.0032 %	0.0137 %	PASS 8.69 %
0.03 V AC+DC @ 1.0 kHz	0.029999844	0.0121 %	0.029992	0.030008	-0.0005 %	0.0137 %	PASS 1.42 %
0.03 V AC+DC @ 10.0 kHz	0.029999922	0.0121 %	0.029990	0.030010	-0.0003 %	0.0207 %	PASS 0.55 %
0.03 V AC+DC @ 20.0 kHz	0.029998616	0.0121 %	0.029990	0.030010	-0.0046 %	0.0207 %	PASS 9.62 %
0.03 V AC+DC @ 50.0 kHz	0.029999124	0.0256 %	0.029981	0.030019	-0.0029 %	0.0367 %	PASS 3.26 %
0.03 V AC+DC @ 100.0 kHz	0.029989808	0.0591 %	0.029956	0.030044	-0.0340 %	0.0867 %	PASS 16.19 %
0.03 V AC+DC @ 300.0 kHz	0.029934519	0.0964 %	0.029871	0.030129	-0.2183 %	0.3333 %	PASS 31.45 %
0.03 V AC+DC @ 500.0 kHz	0.029888154	0.1500 %	0.029645	0.030355	-0.3728 %	1.0333 %	PASS 17.85 %
0.03 V AC+DC @ 1.0 MHz	0.029882284	0.3000 %	0.029600	0.030400	-0.3924 %	1.0333 %	PASS 18.23 %
0.1 V AC+DC @ 10 Hz	0.099995859	0.0121 %	0.099977	0.100023	-0.0041 %	0.0110 %	PASS 12.64 %
0.1 V AC+DC @ 20 Hz	0.099993777	0.0121 %	0.099977	0.100023	-0.0062 %	0.0110 %	PASS 19.00 %
0.1 V AC+DC @ 40 Hz	0.099993342	0.0121 %	0.099977	0.100023	-0.0067 %	0.0110 %	PASS 20.32 %
0.1 V AC+DC @ 100 Hz	0.099992871	0.0121 %	0.099979	0.100021	-0.0071 %	0.0090 %	PASS 23.59 %
0.1 V AC+DC @ 1.0 kHz	0.099994904	0.0121 %	0.099979	0.100021	-0.0051 %	0.0090 %	PASS 16.87 %
0.1 V AC+DC @ 10.0 kHz	0.099995617	0.0121 %	0.099972	0.100028	-0.0044 %	0.0160 %	PASS 10.91 %
0.1 V AC+DC @ 20.0 kHz	0.099991862	0.0121 %	0.099972	0.100028	-0.0081 %	0.0160 %	PASS 20.26 %
0.1 V AC+DC @ 50.0 kHz	0.099990142	0.0256 %	0.099942	0.100058	-0.0099 %	0.0320 %	PASS 12.02 %
0.1 V AC+DC @ 100.0 kHz	0.099956417	0.0591 %	0.099859	0.100141	-0.0436 %	0.0820 %	PASS 21.56 %
0.1 V AC+DC @ 300.0 kHz	0.099770406	0.0964 %	0.099594	0.100406	-0.2296 %	0.3100 %	PASS 35.36 %
0.1 V AC+DC @ 500.0 kHz	0.099622397	0.1500 %	0.098840	0.101160	-0.3776 %	1.0100 %	PASS 18.49 %
0.1 V AC+DC @ 1.0 MHz	0.099585043	0.3000 %	0.098690	0.101310	-0.4150 %	1.0100 %	PASS 19.69 %
0.3 V AC+DC @ 10 Hz	0.30001232	0.0050 %	0.299924	0.300076	0.0041 %	0.0203 %	PASS 9.81 %
0.3 V AC+DC @ 20 Hz	0.30000682	0.0050 %	0.299924	0.300076	0.0023 %	0.0203 %	PASS 5.43 %
0.3 V AC+DC @ 40 Hz	0.30000338	0.0050 %	0.299924	0.300076	0.0011 %	0.0203 %	PASS 2.69 %
0.3 V AC+DC @ 100 Hz	0.30000292	0.0050 %	0.299944	0.300056	0.0010 %	0.0137 %	PASS 3.35 %
0.3 V AC+DC @ 1.0 kHz	0.30000817	0.0050 %	0.299944	0.300056	0.0027 %	0.0137 %	PASS 9.36 %
0.3 V AC+DC @ 10.0 kHz	0.29999595	0.0050 %	0.299923	0.300077	-0.0014 %	0.0207 %	PASS 3.18 %
0.3 V AC+DC @ 20.0 kHz	0.29997847	0.0050 %	0.299923	0.300077	-0.0072 %	0.0207 %	PASS 16.88 %
0.3 V AC+DC @ 50.0 kHz	0.3000102	0.0085 %	0.299864	0.300136	0.0034 %	0.0367 %	PASS 4.51 %
0.3 V AC+DC @ 100.0 kHz	0.30004362	0.0138 %	0.299699	0.300301	0.0145 %	0.0867 %	PASS 8.28 %
0.3 V AC+DC @ 300.0 kHz	0.30034764	0.0425 %	0.298872	0.301128	0.1159 %	0.3333 %	PASS 17.24 %
0.3 V AC+DC @ 500.0 kHz	0.30091194	0.1100 %	0.296570	0.303430	0.3040 %	1.0333 %	PASS 14.63 %
0.3 V AC+DC @ 1.0 MHz	0.30242234	0.1800 %	0.296360	0.303640	0.8074 %	1.0333 %	PASS 38.49 %
1.0 V AC+DC @ 10 Hz	1.0000226	0.0050 %	0.999840	1.000160	0.0023 %	0.0110 %	PASS 9.37 %
1.0 V AC+DC @ 20 Hz	1.0000024	0.0050 %	0.999840	1.000160	0.0002 %	0.0110 %	PASS 1.00 %
1.0 V AC+DC @ 40 Hz	0.99999709	0.0050 %	0.999840	1.000160	-0.0003 %	0.0110 %	PASS 1.21 %
1.0 V AC+DC @ 100 Hz	0.99999306	0.0050 %	0.999860	1.000140	-0.0007 %	0.0090 %	PASS 3.38 %
1.0 V AC+DC @ 1.0 kHz	1.0000087	0.0050 %	0.999860	1.000140	0.0009 %	0.0090 %	PASS 4.23 %
1.0 V AC+DC @ 10.0 kHz	0.99995267	0.0050 %	0.999790	1.000210	-0.0047 %	0.0160 %	PASS 14.13 %
1.0 V AC+DC @ 20.0 kHz	0.99992177	0.0050 %	0.999790	1.000210	-0.0078 %	0.0160 %	PASS 23.35 %
1.0 V AC+DC @ 50.0 kHz	0.99999625	0.0085 %	0.999595	1.000405	-0.0004 %	0.0320 %	PASS 0.57 %
1.0 V AC+DC @ 100.0 kHz	1.0000614	0.0138 %	0.999042	1.000958	0.0061 %	0.0820 %	PASS 3.69 %
1.0 V AC+DC @ 300.0 kHz	1.0011452	0.0425 %	0.996475	1.003525	0.1145 %	0.3100 %	PASS 18.30 %
1.0 V AC+DC @ 500.0 kHz	1.0030095	0.1100 %	0.988800	1.011200	0.3010 %	1.0100 %	PASS 14.81 %
1.0 V AC+DC @ 1.0 MHz	1.0082209	0.1800 %	0.988100	1.011900	0.8221 %	1.0100 %	PASS 40.07 %
3.0 V AC+DC @ 10 Hz	3.000152	0.0048 %	2.999245	3.000755	0.0051 %	0.0203 %	PASS 12.13 %
3.0 V AC+DC @ 20 Hz	3.0000817	0.0048 %	2.999245	3.000755	0.0027 %	0.0203 %	PASS 6.51 %
3.0 V AC+DC @ 40 Hz	3.0000708	0.0048 %	2.999245	3.000755	0.0024 %	0.0203 %	PASS 5.64 %
3.0 V AC+DC @ 100 Hz	3.0000573	0.0048 %	2.999445	3.000555	0.0019 %	0.0137 %	PASS 6.59 %
3.0 V AC+DC @ 1.0 kHz	3.0000986	0.0048 %	2.999445	3.000555	0.0033 %	0.0137 %	PASS 11.33 %
3.0 V AC+DC @ 10.0 kHz	2.9999433	0.0048 %	2.999235	3.000765	-0.0019 %	0.0207 %	PASS 4.45 %
3.0 V AC+DC @ 20.0 kHz	2.9999213	0.0048 %	2.999235	3.000765	-0.0026 %	0.0207 %	PASS 6.18 %
3.0 V AC+DC @ 50.0 kHz	2.9999463	0.0085 %	2.998644	3.001356	-0.0018 %	0.0367 %	PASS 2.38 %
3.0 V AC+DC @ 100.0 kHz	2.9992432	0.0121 %	2.997036	3.002964	-0.0252 %	0.0867 %	PASS 14.41 %
3.0 V AC+DC @ 300.0 kHz	2.9963534	0.0336 %	2.988991	3.011009	-0.1216 %	0.3333 %	PASS 18.14 %
3.0 V AC+DC @ 500.0 kHz	2.9999893	0.1100 %	2.965700	3.034300	-0.0004 %	1.0333 %	PASS 0.02 %

3.0 V AC+DC @ 1.0 MHz	3.0207292	0.1700 %	2.963900	3.036100	0.6910 %	1.0333 %	PASS 32.99 %
10.0 V AC+DC @ 10 Hz	10.000224	0.0048 %	9.998418	10.001582	0.0022 %	0.0110 %	PASS 9.34 %
10.0 V AC+DC @ 20 Hz	10.000095	0.0048 %	9.998418	10.001582	0.0010 %	0.0110 %	PASS 3.98 %
10.0 V AC+DC @ 40 Hz	10.000038	0.0048 %	9.998418	10.001582	0.0004 %	0.0110 %	PASS 1.58 %
10.0 V AC+DC @ 100 Hz	10.000001	0.0048 %	9.998618	10.001382	0.0000 %	0.0090 %	PASS 0.07 %
10.0 V AC+DC @ 1.0 kHz	10.000152	0.0048 %	9.998618	10.001382	0.0015 %	0.0090 %	PASS 7.42 %
10.0 V AC+DC @ 10.0 kHz	9.9996231	0.0048 %	9.997918	10.002082	-0.0038 %	0.0160 %	PASS 11.28 %
10.0 V AC+DC @ 20.0 kHz	9.9995522	0.0048 %	9.997918	10.002082	-0.0045 %	0.0160 %	PASS 13.40 %
10.0 V AC+DC @ 50.0 kHz	9.9994253	0.0085 %	9.995946	10.004054	-0.0057 %	0.0320 %	PASS 8.68 %
10.0 V AC+DC @ 100.0 kHz	9.9966213	0.0121 %	9.990586	10.009414	-0.0338 %	0.0820 %	PASS 20.38 %
10.0 V AC+DC @ 300.0 kHz	9.9875942	0.0336 %	9.965636	10.034364	-0.1241 %	0.3100 %	PASS 19.89 %
10.0 V AC+DC @ 500.0 kHz	9.9994544	0.1100 %	9.888000	10.112000	-0.0055 %	1.0100 %	PASS 0.27 %
10.0 V AC+DC @ 1.0 MHz	10.070096	0.1700 %	9.882000	10.118000	0.7010 %	1.0100 %	PASS 34.22 %
30 V AC+DC @ 10 Hz	30.000355	0.0060 %	29.988195	30.011805	0.0012 %	0.0333 %	PASS 1.75 %
30 V AC+DC @ 20 Hz	29.999842	0.0060 %	29.988195	30.011805	-0.0005 %	0.0333 %	PASS 0.78 %
30 V AC+DC @ 40 Hz	29.99964	0.0060 %	29.988195	30.011805	-0.0012 %	0.0333 %	PASS 1.77 %
30 V AC+DC @ 100 Hz	29.999525	0.0060 %	29.990195	30.009805	-0.0016 %	0.0267 %	PASS 2.89 %
30 V AC+DC @ 1.0 kHz	29.999988	0.0060 %	29.990195	30.009805	-0.0000 %	0.0267 %	PASS 0.08 %
30 V AC+DC @ 10.0 kHz	29.998919	0.0060 %	29.990195	30.009805	-0.0036 %	0.0267 %	PASS 6.59 %
30 V AC+DC @ 20.0 kHz	29.998204	0.0060 %	29.990195	30.009805	-0.0060 %	0.0267 %	PASS 10.95 %
30 V AC+DC @ 50.0 kHz	29.999405	0.0060 %	29.985695	30.014305	-0.0020 %	0.0417 %	PASS 2.35 %
30 V AC+DC @ 100.0 kHz	29.9946	0.0174 %	29.956791	30.043209	-0.0180 %	0.1267 %	PASS 7.04 %
30 V AC+DC @ 300.0 kHz	29.993319	0.0991 %	29.840273	30.159727	-0.0223 %	0.4333 %	PASS 2.51 %
30 V AC+DC @ 500.0 kHz	30.032451	0.5200 %	29.384000	30.616000	0.1082 %	1.5333 %	PASS 3.34 %
100.0 V AC+DC @ 10 Hz	99.999231	0.0060 %	99.969982	100.030018	-0.0008 %	0.0240 %	PASS 1.55 %
100.0 V AC+DC @ 20 Hz	99.997411	0.0060 %	99.969982	100.030018	-0.0026 %	0.0240 %	PASS 5.23 %
100.0 V AC+DC @ 40 Hz	99.996854	0.0060 %	99.969982	100.030018	-0.0031 %	0.0240 %	PASS 6.36 %
100.0 V AC+DC @ 100 Hz	99.996365	0.0060 %	99.971982	100.028018	-0.0036 %	0.0220 %	PASS 7.97 %
100.0 V AC+DC @ 1.0 kHz	99.998181	0.0060 %	99.971982	100.028018	-0.0018 %	0.0220 %	PASS 3.99 %
100.0 V AC+DC @ 10.0 kHz	99.996228	0.0060 %	99.971982	100.028018	-0.0038 %	0.0220 %	PASS 8.27 %
100.0 V AC+DC @ 20.0 kHz	99.993637	0.0060 %	99.971982	100.028018	-0.0064 %	0.0220 %	PASS 13.95 %
100.0 V AC+DC @ 50.0 kHz	99.995882	0.0095 %	99.953455	100.046545	-0.0041 %	0.0370 %	PASS 5.39 %
100.0 V AC+DC @ 100.0 kHz	99.975087	0.0174 %	99.860636	100.139364	-0.0249 %	0.1220 %	PASS 10.11 %
300.0 V AC+DC @ 40 Hz	300.00539	0.0079 %	299.056408	300.943592	0.0018 %	0.3067 %	PASS 0.29 %
300.0 V AC+DC @ 100 Hz	300.0047	0.0079 %	299.836408	300.163592	0.0016 %	0.0467 %	PASS 1.65 %
300.0 V AC+DC @ 1.0 kHz	300.00761	0.0079 %	299.836408	300.163592	0.0025 %	0.0467 %	PASS 2.68 %
300.0 V AC+DC @ 10.0 kHz	299.99948	0.0110 %	299.766865	300.233135	-0.0002 %	0.0667 %	PASS 0.13 %
300.0 V AC+DC @ 20.0 kHz	299.98731	0.0110 %	299.766865	300.233135	-0.0042 %	0.0667 %	PASS 3.13 %
300.0 V AC+DC @ 50.0 kHz	300.105	0.0245 %	299.546599	300.453401	0.0350 %	0.1267 %	PASS 13.57 %
300.0 V AC+DC @ 100.0 kHz	300.36258	0.0660 %	298.882000	301.118000	0.1209 %	0.3067 %	PASS 19.26 %
750.0 V AC+DC @ 40 Hz	750.05231	0.0079 %	747.671020	752.328980	0.0070 %	0.3027 %	PASS 1.15 %
750.0 V AC+DC @ 100 Hz	750.04602	0.0079 %	749.621020	750.378980	0.0061 %	0.0427 %	PASS 7.07 %
750.0 V AC+DC @ 1.0 kHz	750.05363	0.0079 %	749.621020	750.378980	0.0072 %	0.0427 %	PASS 8.24 %
750.0 V AC+DC @ 10.0 kHz	750.00095	0.0110 %	749.447162	750.552838	0.0001 %	0.0627 %	PASS 0.10 %
750.0 V AC+DC @ 20.0 kHz	749.94541	0.0110 %	749.447162	750.552838	-0.0073 %	0.0627 %	PASS 5.72 %
750.0 V AC+DC @ 50.0 kHz	750.20102	0.0245 %	748.896498	751.103503	0.0268 %	0.1227 %	PASS 10.71 %
750.0 V AC+DC @ 50.0 kHz	750.19704	0.0660 %	748.585000	751.415000	0.0263 %	0.1227 %	PASS 9.43 %

Procedure for all test points that verify Gain of the DC current DCI function. Both +/-FS points are tested.  
2-wire connection at LO and DCI is used between DMM and MFC.  
DCI gain range points verify gain of the DC current function, using corrected 24-hour MFC output.

DCI Test	100nA-1A	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
Zero µADC	0	4.6090305E-12						INFO
50 nADC	5E-08	4.9949029E-08						INFO
100 nADC	1E-07	9.994585E-08	71.82 ppm	9.995182E-08	1.000482E-07	-541.506 ppm	410 ppm	PASS 65.05 %
-100 nADC	-1E-07	-9.997309E-08	71.82 ppm	-1.000482E-07	-9.995182E-08	-269.098 ppm	410 ppm	PASS 32.32 %
-50 nADC	-5E-08	-5.0002008E-08						INFO
Zero µADC	0	2.1805925E-11						INFO
0.5 µADC	5E-07	5.0000955E-07	71.82 ppm	4.999191E-07	5.000809E-07	19.099 ppm	90 ppm	PASS 8.29 %
1.0 µADC	1E-06	1.0000418E-06	71.82 ppm	9.998782E-07	1.000122E-06	41.799 ppm	50 ppm	PASS 23.88 %
-1.0 µADC	-1E-06	-9.9996378E-07	71.82 ppm	-1.000122E-06	-9.998782E-07	-36.221 ppm	50 ppm	PASS 20.70 %
-0.5 µADC	-5E-07	-4.9997353E-07	71.82 ppm	-5.000809E-07	-4.999191E-07	-52.940 ppm	90 ppm	PASS 22.99 %
Zero 00 µADC	0	1.3663571E-11						INFO
5 µADC	5E-06	4.9999387E-06	71.82 ppm	4.999521E-06	5.000479E-06	-12.266 ppm	24 ppm	PASS 8.10 %
10 µADC	1E-05	9.9999102E-06	71.82 ppm	9.999112E-06	1.000089E-05	-8.983 ppm	17 ppm	PASS 6.09 %
-10 µADC	-1E-05	-1.0000031E-05	71.82 ppm	-1.000089E-05	-9.999112E-06	3.083 ppm	17 ppm	PASS 2.09 %
-5 µADC	-5E-06	-4.9999989E-06	71.82 ppm	-5.000479E-06	-4.999521E-06	-0.223 ppm	24 ppm	PASS 0.15 %
Zero 000 µADC	0	-7.6992453E-11						INFO
50 µADC	5E-05	4.9999966E-05	71.82 ppm	4.999531E-05	5.000469E-05	-0.680 ppm	22 ppm	PASS 0.45 %
100 µADC	0.0001	0.00010000002	71.82 ppm	9.999122E-05	0.0001000088	0.246 ppm	16 ppm	PASS 0.17 %
-100 µADC	-0.0001	-0.00010000016	71.82 ppm	-0.0001000088	-9.999122E-05	1.643 ppm	16 ppm	PASS 1.12 %
-50 µADC	-5E-05	-5.0000031E-05	71.82 ppm	-5.000469E-05	-4.999531E-05	0.630 ppm	22 ppm	PASS 0.42 %
Zero mADC	0	-4.0227619E-11						INFO
0.5 mADC	0.0005	0.00049999943	33.64 ppm	0.0004999742	0.0005000258	-1.132 ppm	18 ppm	PASS 1.48 %
1.0 mADC	0.001	0.00099999848	33.64 ppm	0.0009999524	0.001000048	-1.518 ppm	14 ppm	PASS 2.08 %
-1.0 mADC	-0.001	-0.00099999693	33.64 ppm	-0.001000048	-0.0009999524	-3.073 ppm	14 ppm	PASS 4.22 %
-0.5 mADC	-0.0005	-0.00049999741	33.64 ppm	-0.0005000258	-0.0004999742	-5.179 ppm	18 ppm	PASS 6.79 %
Zero 00 mADC	0	-6.10925E-11						INFO
5 mADC	0.005	0.0049999897	32.27 ppm	0.004999749	0.005000251	-2.059 ppm	18 ppm	PASS 2.79 %
10 mADC	0.01	0.0099999734	32.27 ppm	0.009999537	0.01000046	-2.663 ppm	14 ppm	PASS 3.79 %
-10 mADC	-0.01	-0.009999967	32.27 ppm	-0.01000046	-0.009999537	-3.302 ppm	14 ppm	PASS 4.69 %
-5 mADC	-0.005	-0.004999979	32.27 ppm	-0.005000251	-0.004999749	-4.201 ppm	18 ppm	PASS 5.68 %
Zero 000 mADC	0	-9.5362846E-11						INFO
50 mADC	0.05	0.050000443	53.32 ppm	0.04999568	0.05000432	8.862 ppm	33 ppm	PASS 7.07 %
100 mADC	0.1	0.0999999007	53.32 ppm	0.09999177	0.1000082	-9.932 ppm	29 ppm	PASS 8.18 %
-100 mADC	-0.1	-0.0999999279	53.32 ppm	-0.1000082	-0.09999177	-7.211 ppm	29 ppm	PASS 5.94 %
-50 mADC	-0.05	-0.0500000061	53.32 ppm	-0.05000432	-0.04999568	1.213 ppm	33 ppm	PASS 0.97 %
Zero ADC	0	4.8559143E-11						INFO
0.5 ADC	0.5	0.49999918	115.22 ppm	0.4998824	0.5001176	-1.632 ppm	120 ppm	PASS 0.49 %
1.0 ADC	1	0.99999473	115.22 ppm	0.9997748	1.000225	-5.269 ppm	110 ppm	PASS 1.65 %
-1.0 ADC	-1	-0.99998514	115.22 ppm	-1.000225	-0.9997748	-14.864 ppm	110 ppm	PASS 4.67 %
-0.5 ADC	-0.5	-0.49999031	115.22 ppm	-0.5001176	-0.4998824	-19.382 ppm	120 ppm	PASS 5.83 %

Procedure for all test points that verify Gain of the AC Current ACI function. Three frequency band points are tested, 50 Hz, 60 Hz and 1 kHz. 2-wire connection at LO and DCI is used between DMM and MFC.

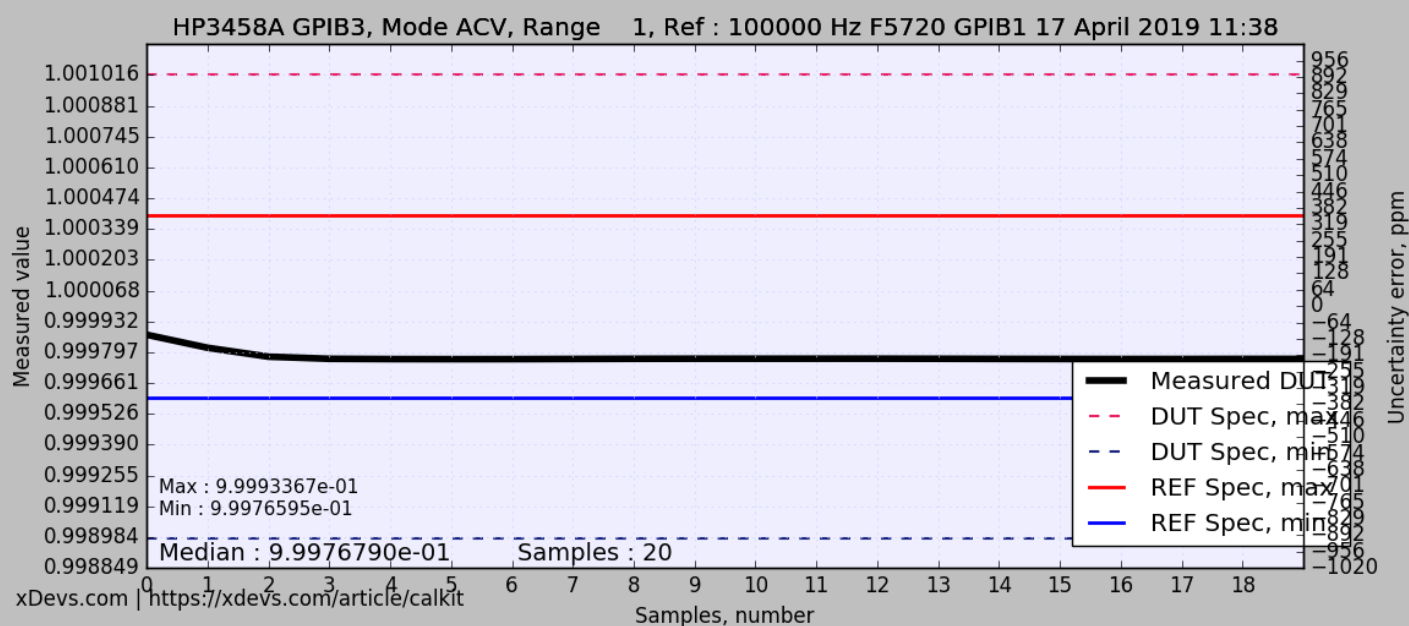
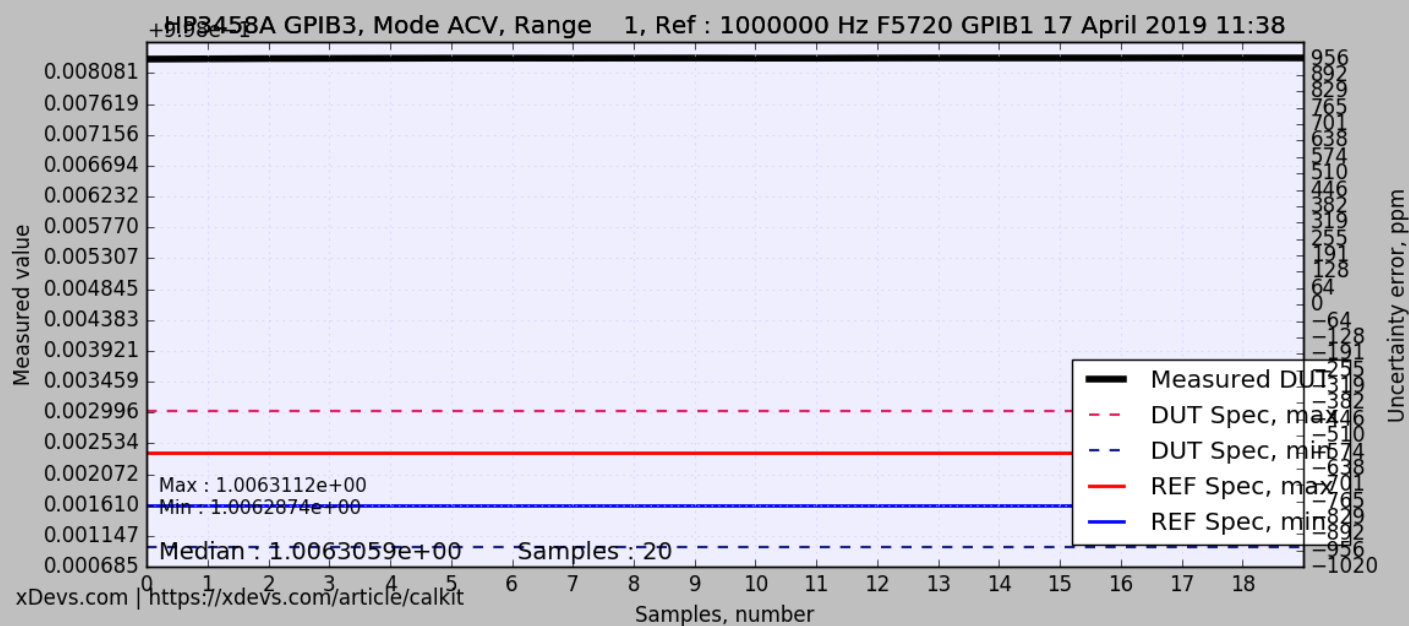
ACI Test	200µA-2A	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result, % spec
10 µA AC @ 50 Hz	1e-05	1.0011237E-05	0.0165 %	-0.0002900076545	0.0003100076545	0.1124 %	3000.0600 %	INFO
100 µA AC @ 50 Hz	0.0001	9.9985235E-05	0.0165 %	-0.000200076545	0.000400076545	-0.0148 %	300.0600 %	PASS 0.00 %
1.0 mA AC @ 50 Hz	0.001	0.00099998419	0.0165 %	0.00099921455	0.00100078545	-15.810 ppm	0.0620 %	PASS 1.23 %
10 mA AC @ 50 Hz	0.01	0.00999988	0.0165 %	0.0099921455	0.0100078545	-11.996 ppm	0.0620 %	PASS 0.93 %
100 mA AC @ 50 Hz	0.1	0.10000286	0.0138 %	0.099924182	0.100075818	28.616 ppm	0.0620 %	PASS 2.25 %
1.0 A AC @ 50 Hz	1.0	0.99997866	0.0138 %	0.99904182	1.00095818	-21.335 ppm	0.0820 %	PASS 1.28 %
10 µA AC @ 60 Hz	1e-05	1.0011132E-05	0.0138 %	-0.0002900073818	0.0003100073818	0.1113 %	3000.0600 %	INFO
100 µA AC @ 60 Hz	0.0001	9.998842E-05	0.0138 %	-0.000200073818	0.000400073818	-0.0116 %	300.0600 %	PASS 0.00 %
1.0 mA AC @ 60 Hz	0.001	0.001000013	0.0134 %	0.00099924636	0.00100075364	13.016 ppm	0.0620 %	PASS 1.03 %
10 mA AC @ 60 Hz	0.01	0.010000194	0.0134 %	0.0099924636	0.0100075364	19.423 ppm	0.0620 %	PASS 1.53 %
100 mA AC @ 60 Hz	0.1	0.10000689	0.0308 %	0.099907182	0.100092818	68.925 ppm	0.0620 %	PASS 4.98 %
1.0 A AC @ 60 Hz	1.0	1.0000098	0.0308 %	0.99887182	1.00112818	9.793 ppm	0.0820 %	PASS 0.56 %
10 µA AC @ 1.0 kHz	1e-05	1.0010896E-05	0.0165 %	-0.0002900076545	0.0003100076545	0.1090 %	3000.0600 %	INFO
100 µA AC @ 1.0 kHz	0.0001	9.997842E-05	0.0165 %	-0.000200076545	0.000400076545	-0.0216 %	300.0600 %	PASS 0.00 %
1.0 mA AC @ 1.0 kHz	0.001	0.0010000601	0.0165 %	0.00099951455	0.00100048545	60.144 ppm	0.0320 %	PASS 8.35 %
10 mA AC @ 1.0 kHz	0.01	0.010000613	0.0165 %	0.0099951455	0.0100048545	61.255 ppm	0.0320 %	PASS 8.50 %
100 mA AC @ 1.0 kHz	0.1	0.10001192	0.0138 %	0.099954182	0.100045818	119.171 ppm	0.0320 %	PASS 17.09 %
1.0 A AC @ 1.0 kHz	1.0	1.0001098	0.0138 %	0.99884182	1.00115818	0.0110 %	0.1020 %	PASS 5.33 %

Test date	21 June 2019 09:44
UUT Internal TEMP?	1
Destructive overloads?	1

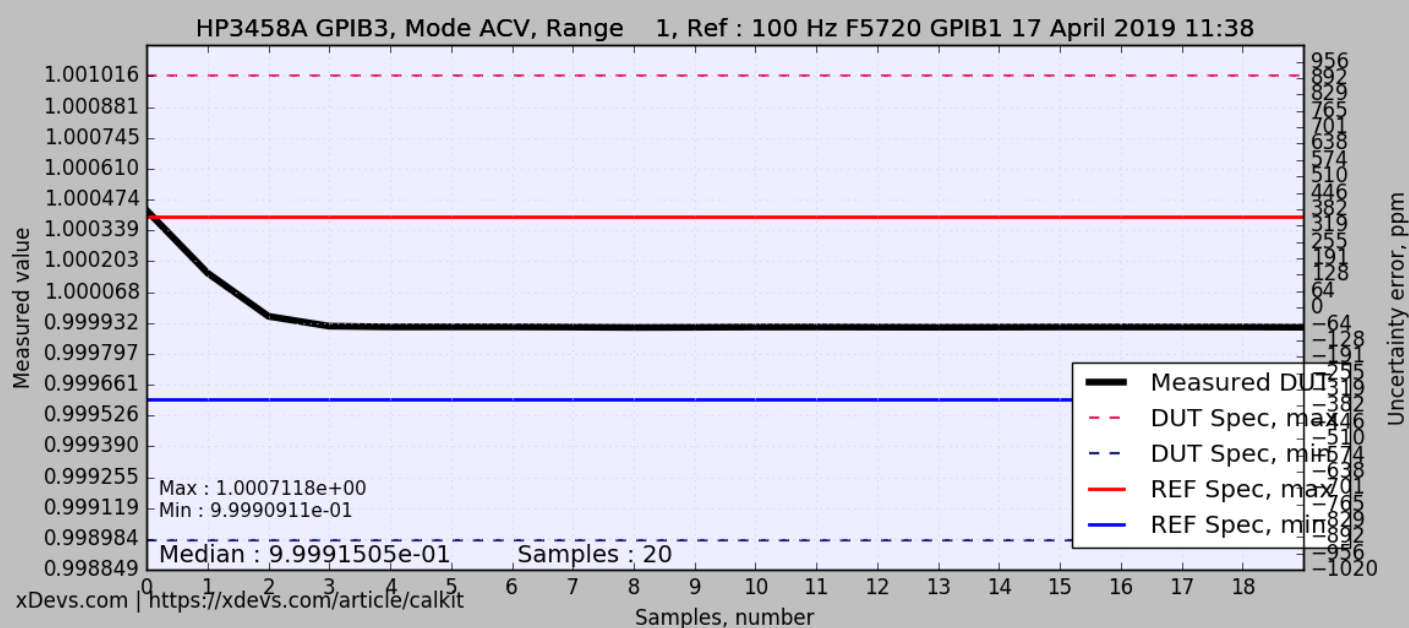
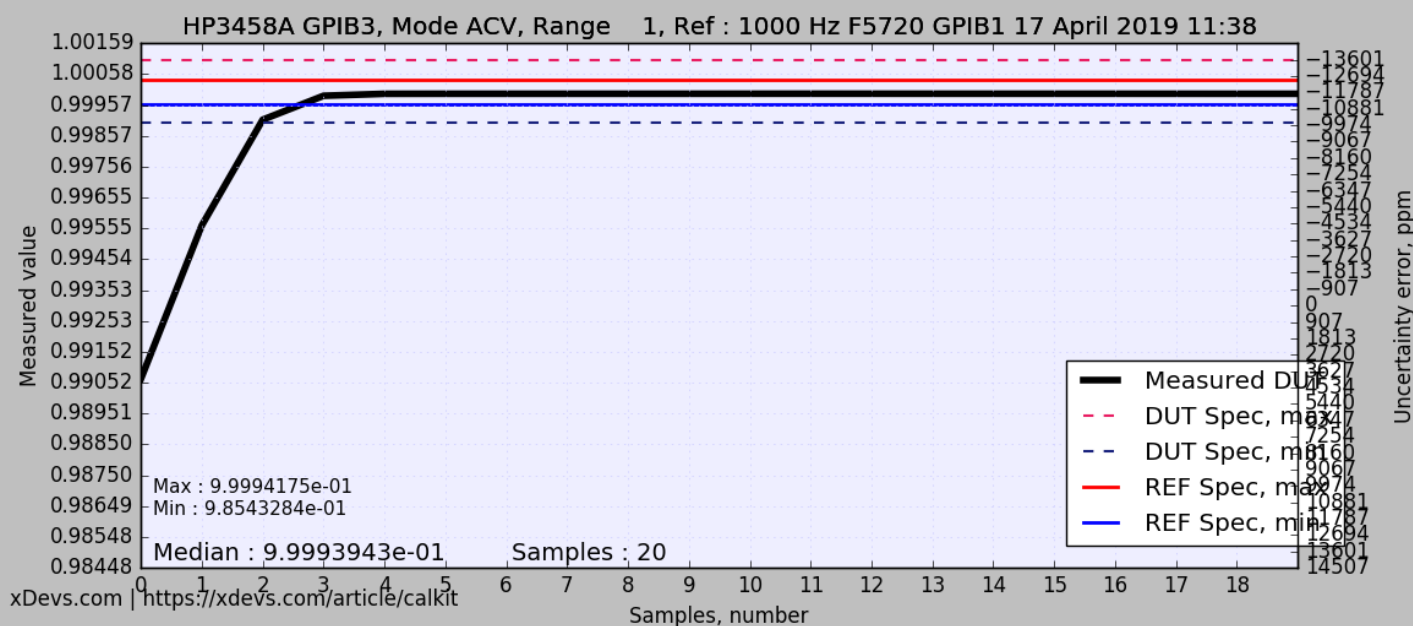
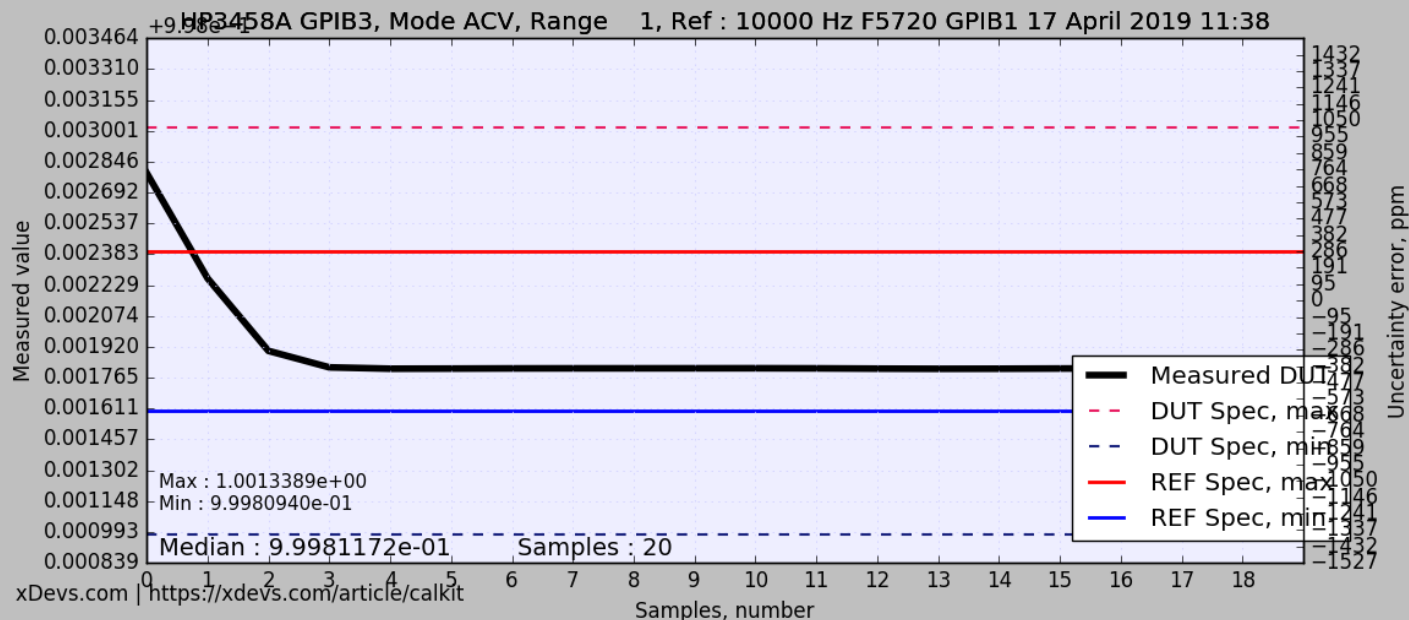
Lab temperature maintained +24°C ±2°C

Internal use only

Not validated

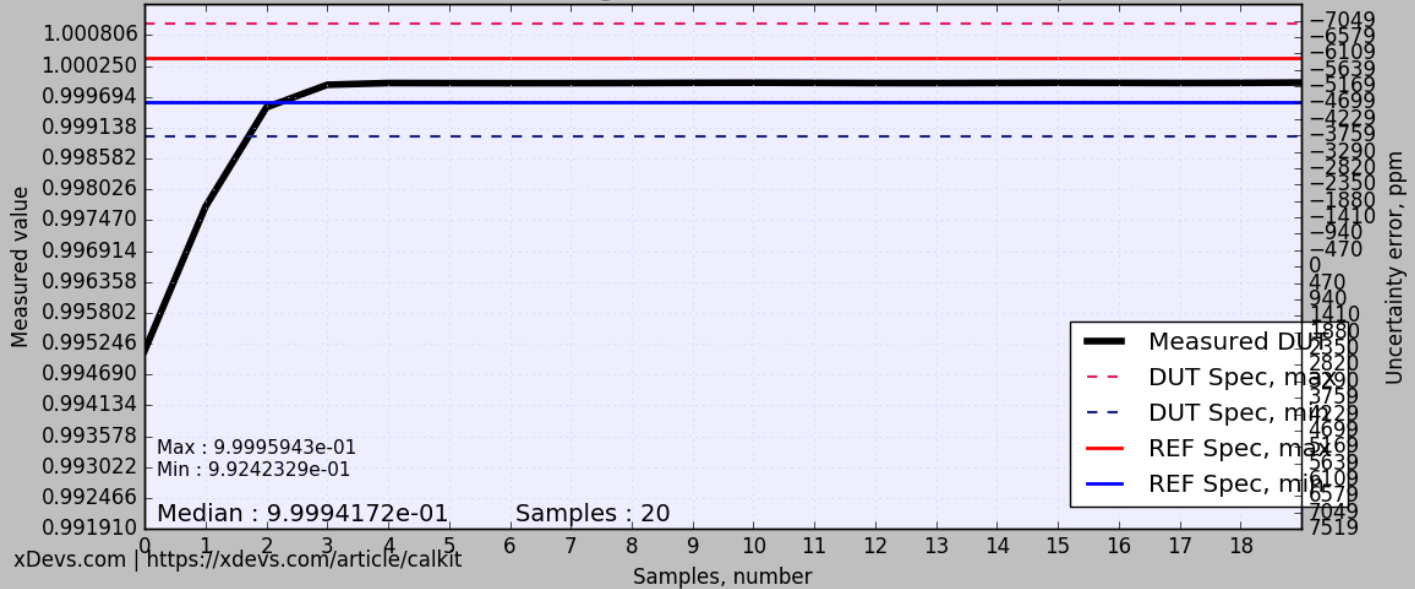




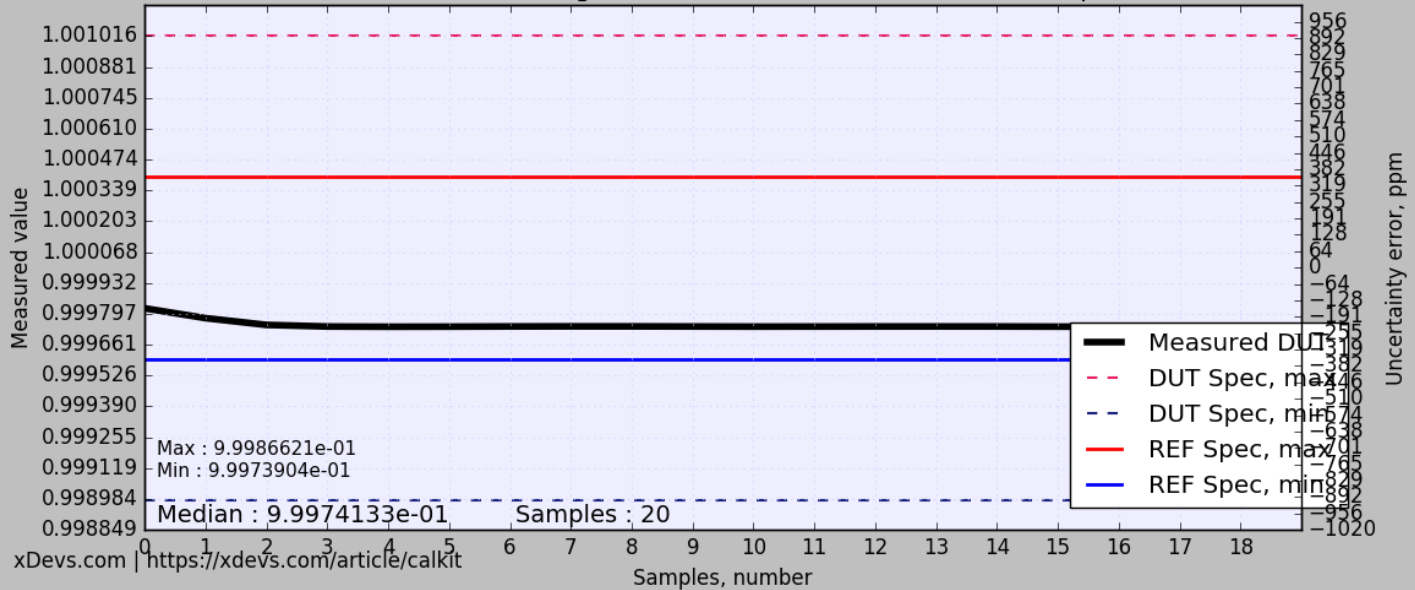




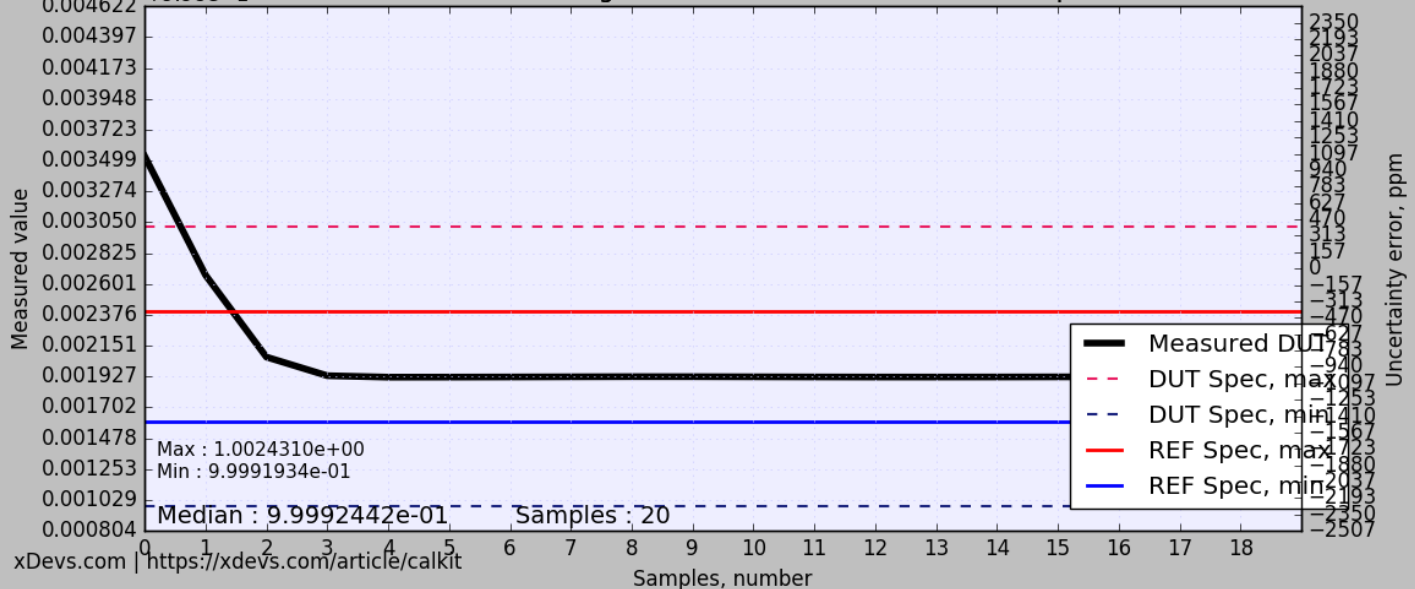
HP3458A GPIB3, Mode ACV, Range 1, Ref : 10 Hz F5720 GPIB1 17 April 2019 11:38

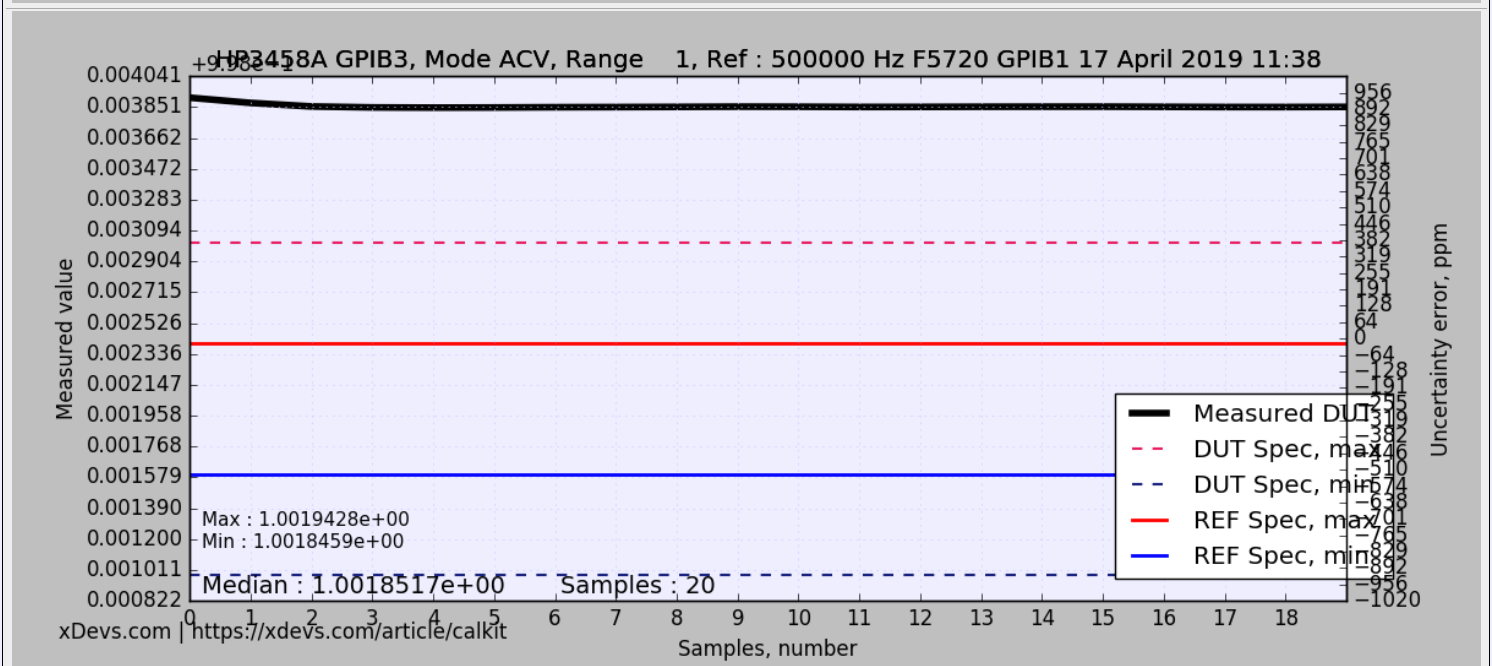
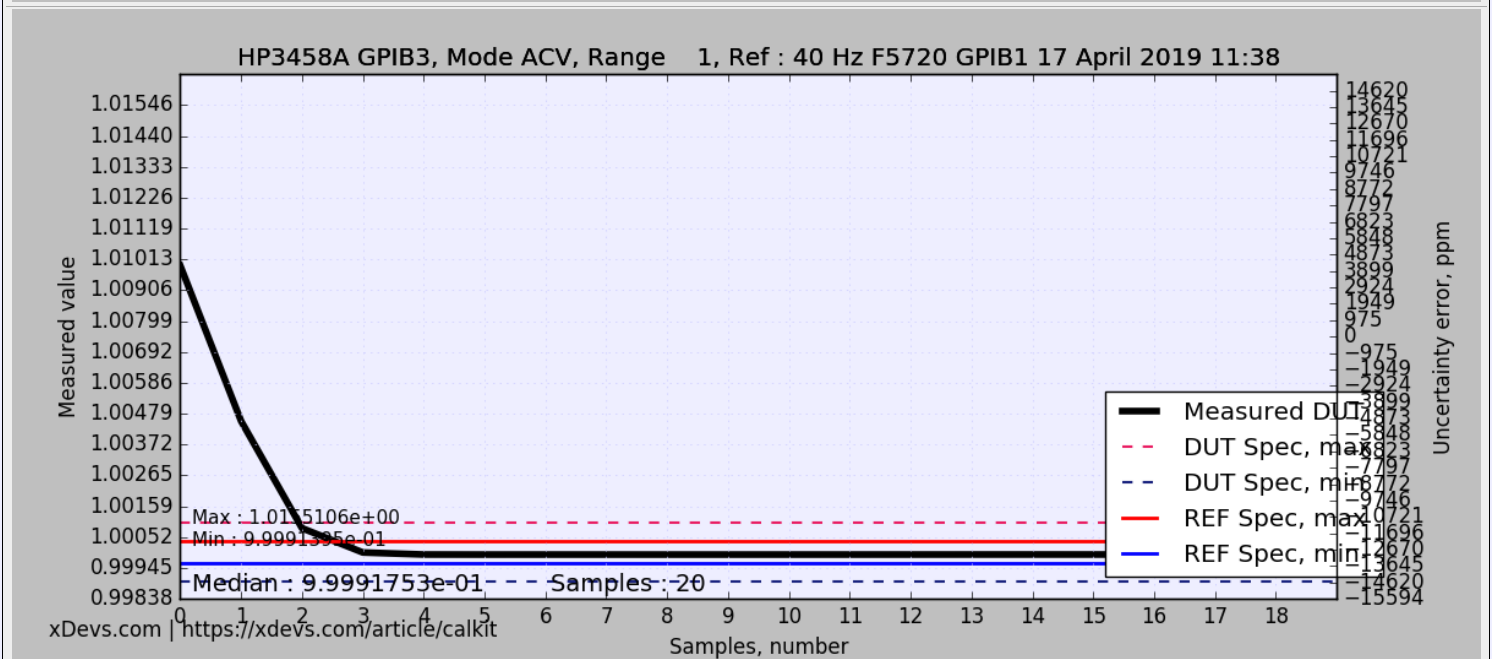
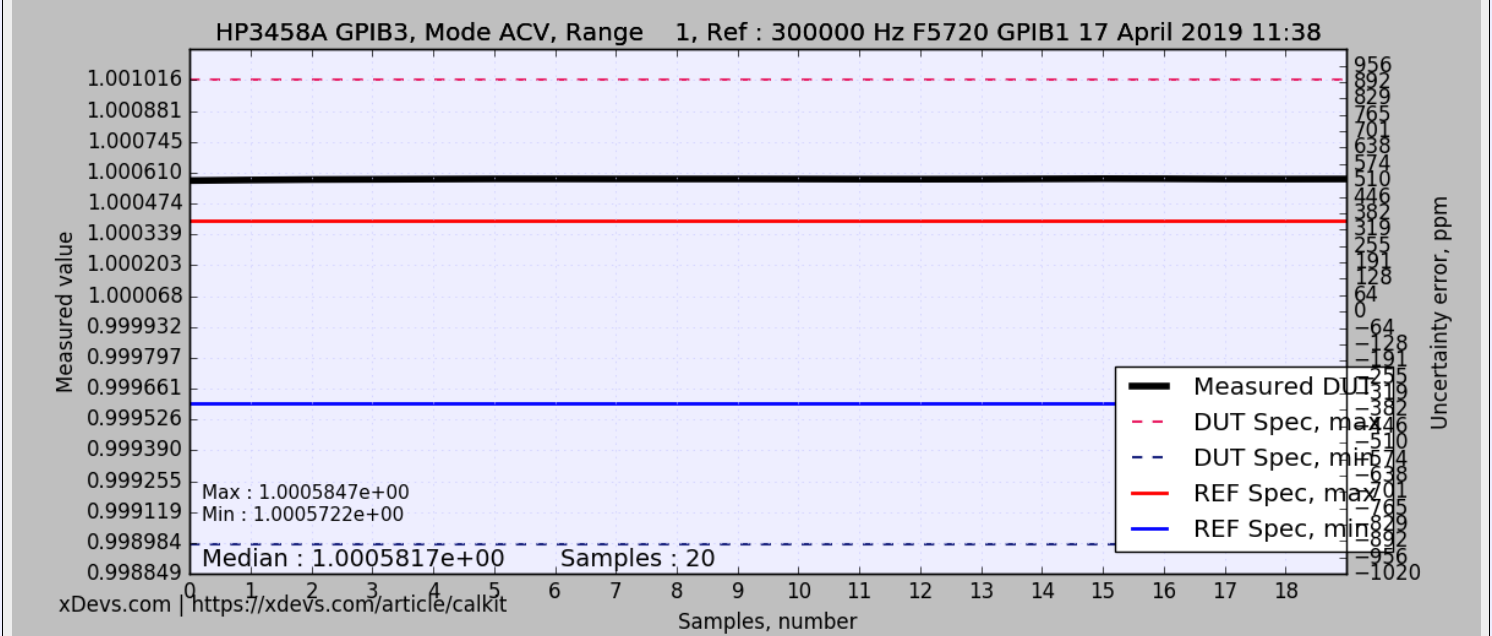


HP3458A GPIB3, Mode ACV, Range 1, Ref : 20000 Hz F5720 GPIB1 17 April 2019 11:38

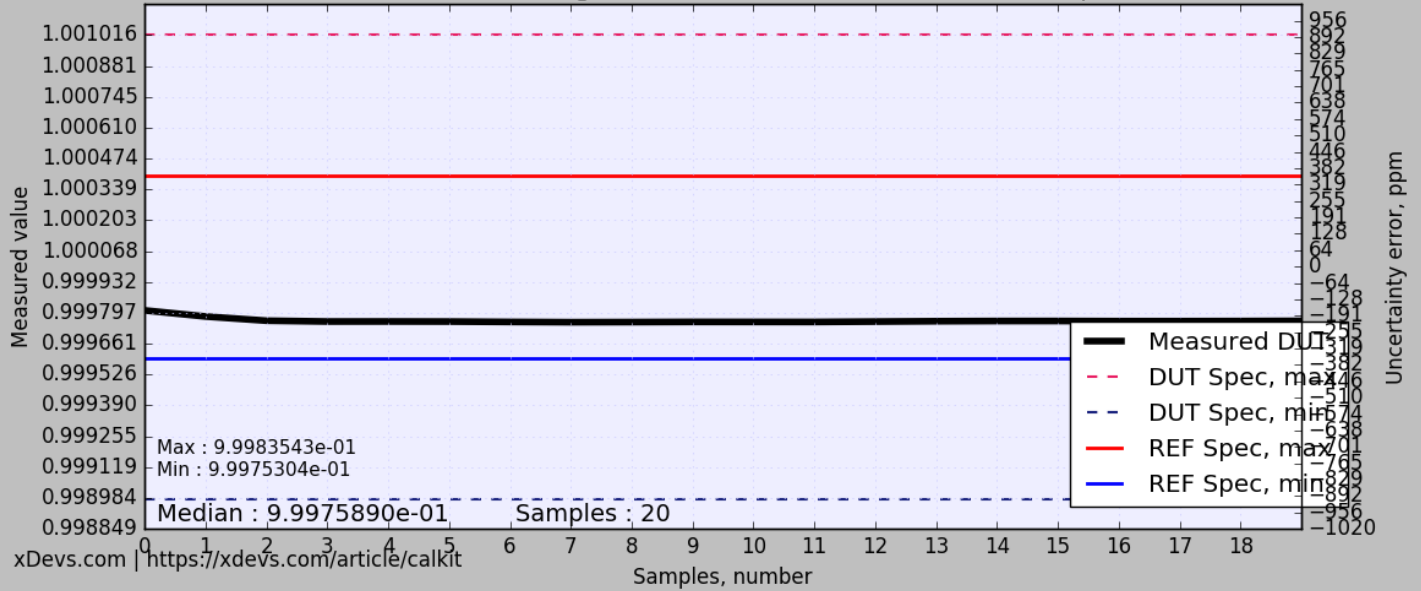


HP3458A GPIB3, Mode ACV, Range 1, Ref : 20 Hz F5720 GPIB1 17 April 2019 11:38

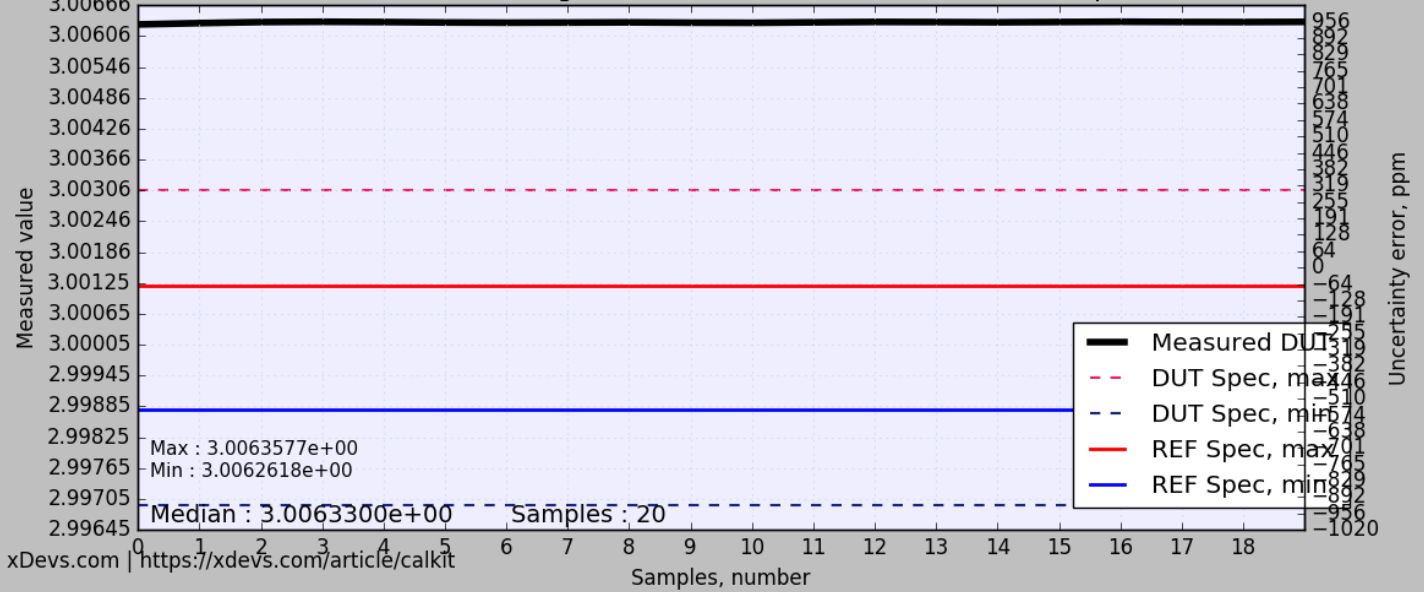




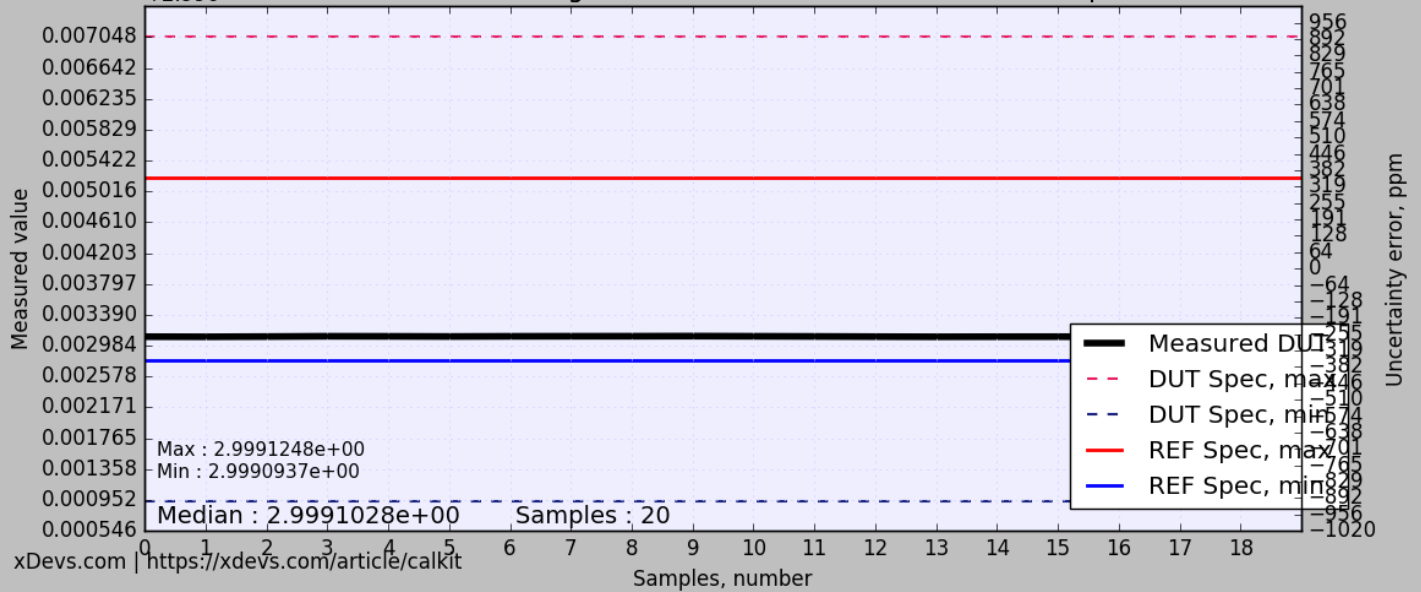
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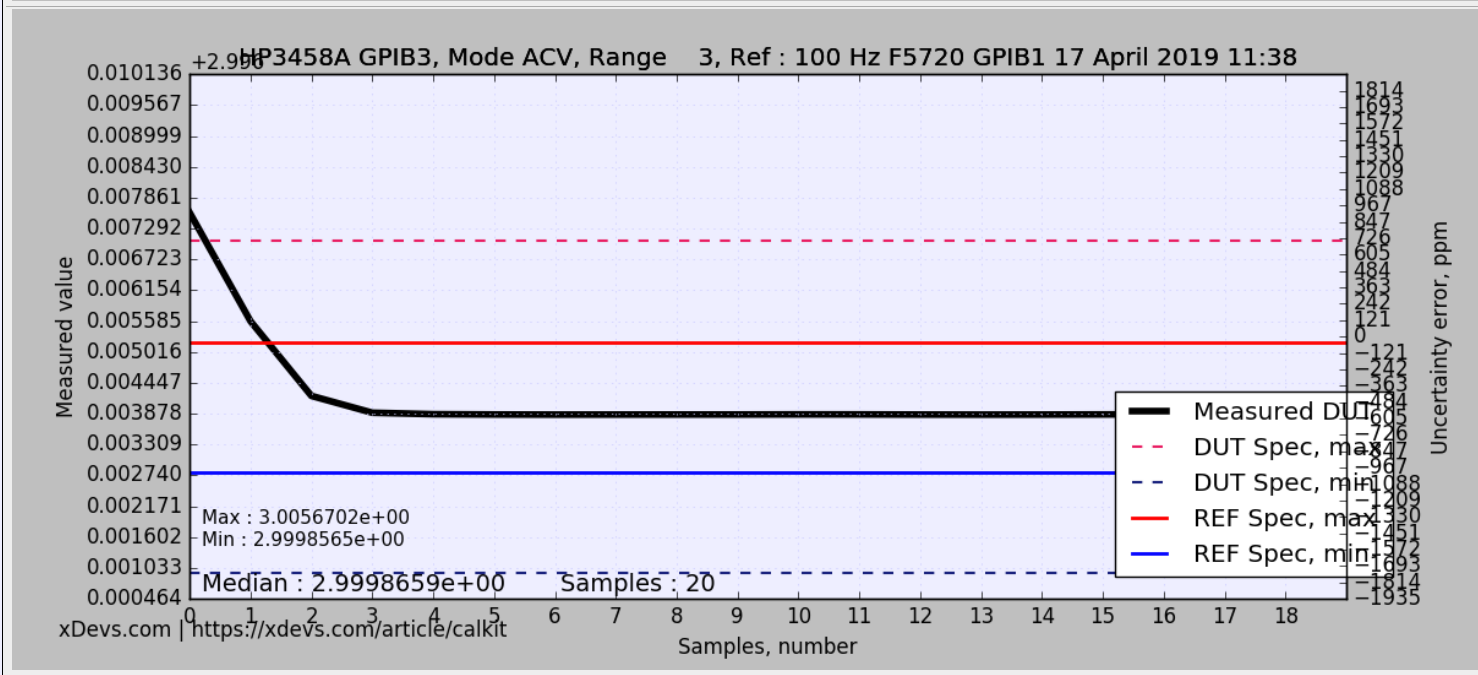
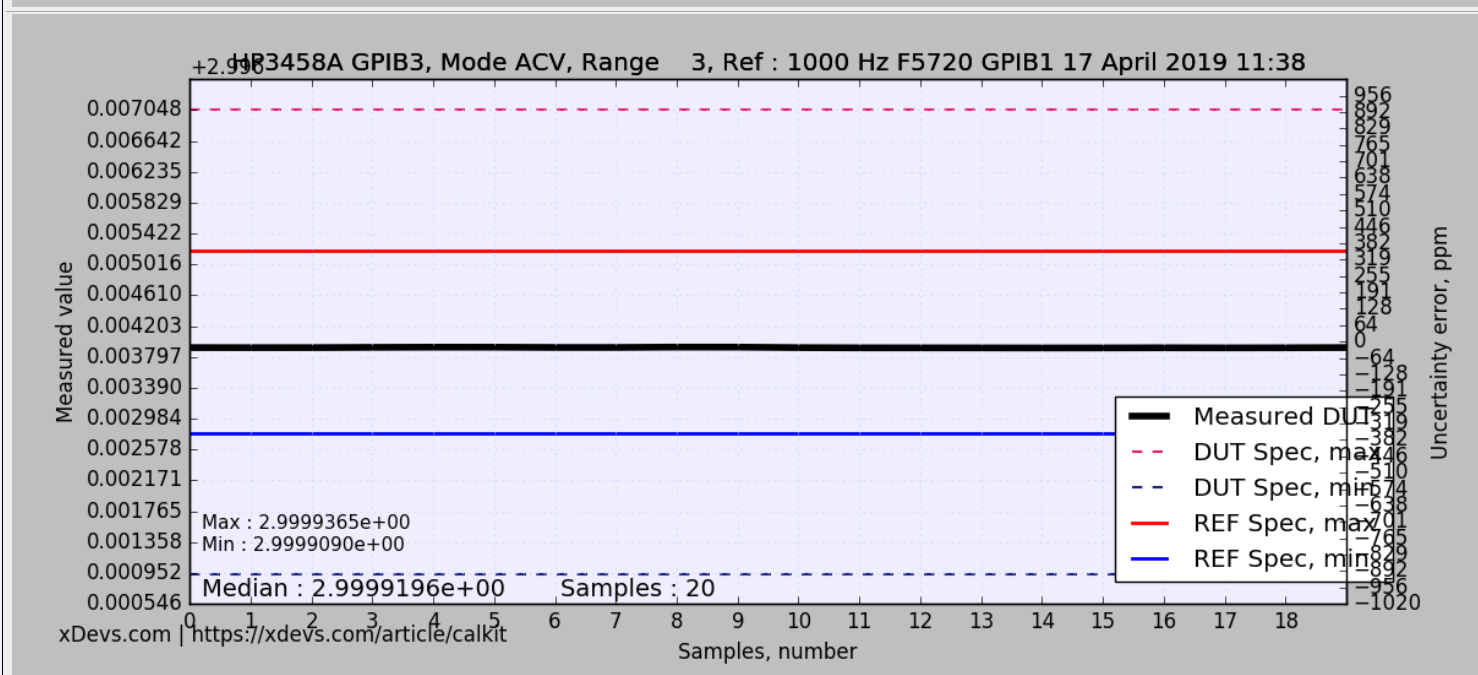
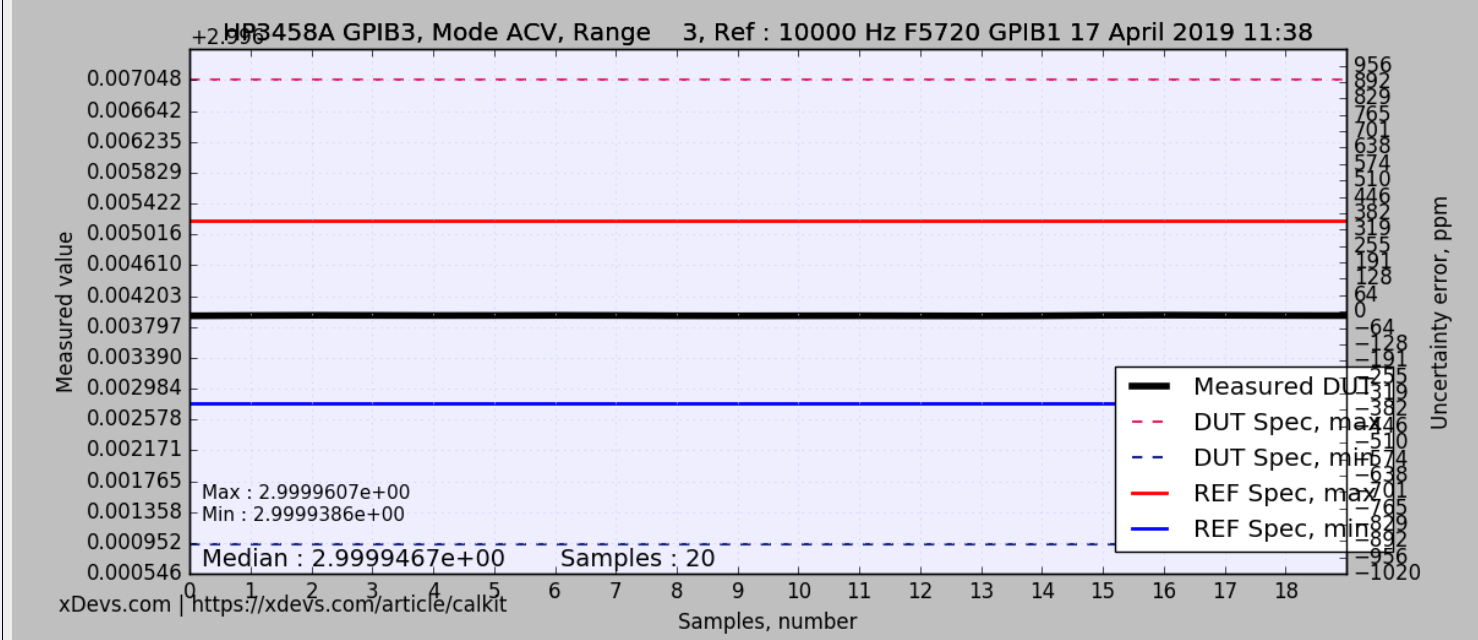


HP3458A GPIB3, Mode ACV, Range 3, Ref : 1000000 Hz F5720 GPIB1 17 April 2019 11:38



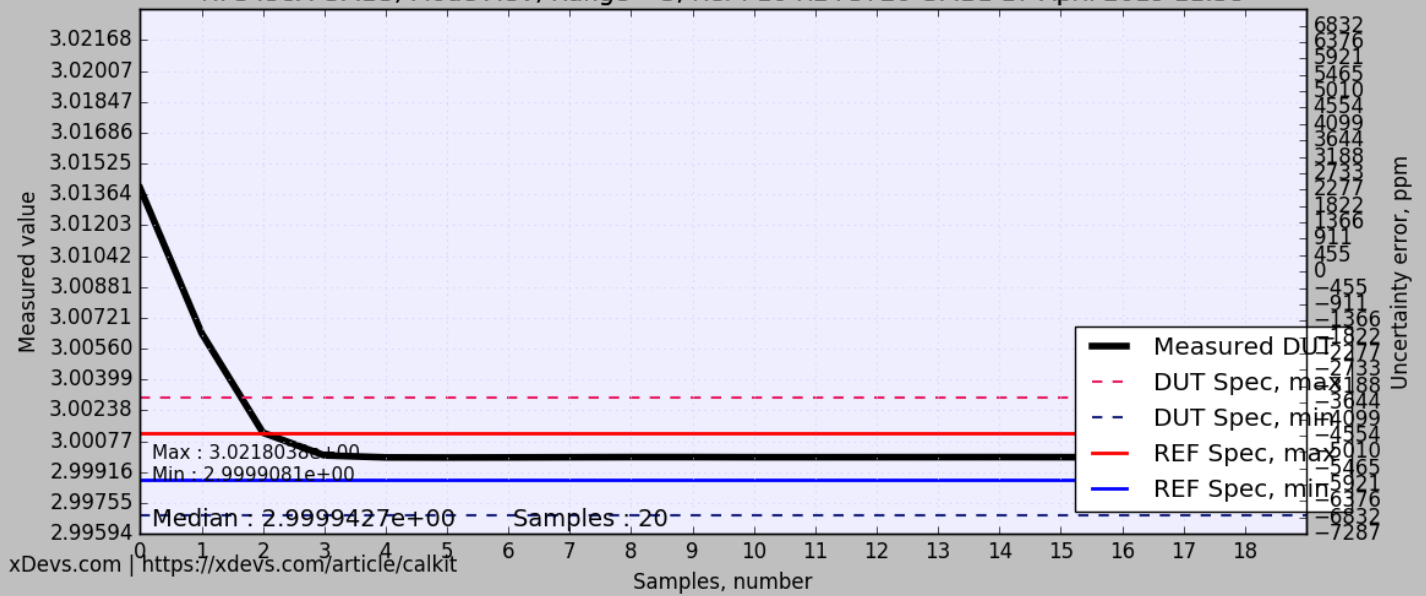
HP3458A GPIB3, Mode ACV, Range 3, Ref : 1000000 Hz F5720 GPIB1 17 April 2019 11:38



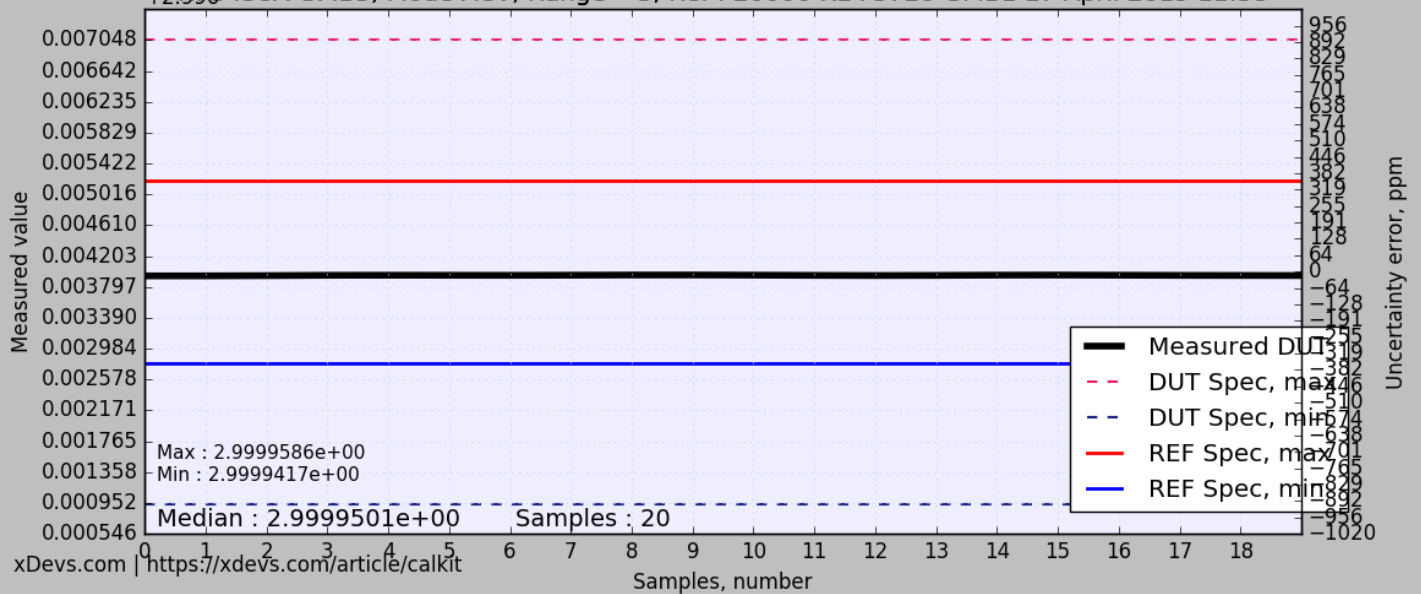




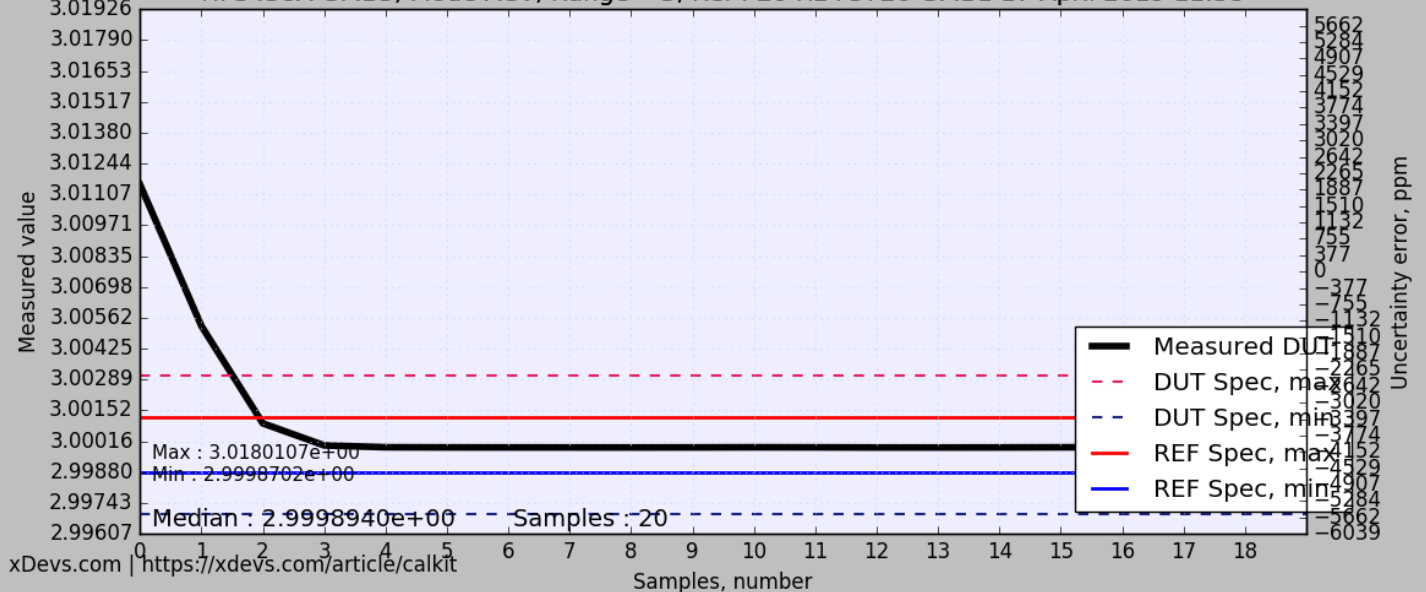
HP3458A GPIB3, Mode ACV, Range 3, Ref : 10 Hz F5720 GPIB1 17 April 2019 11:38

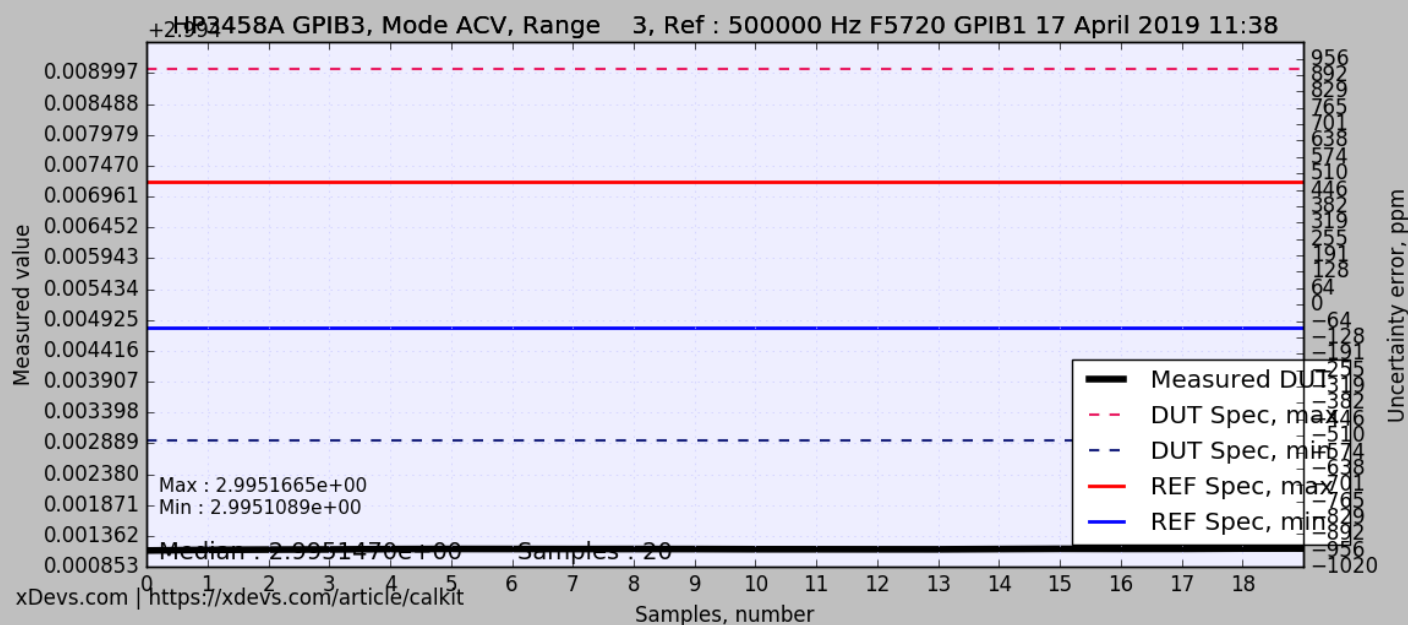
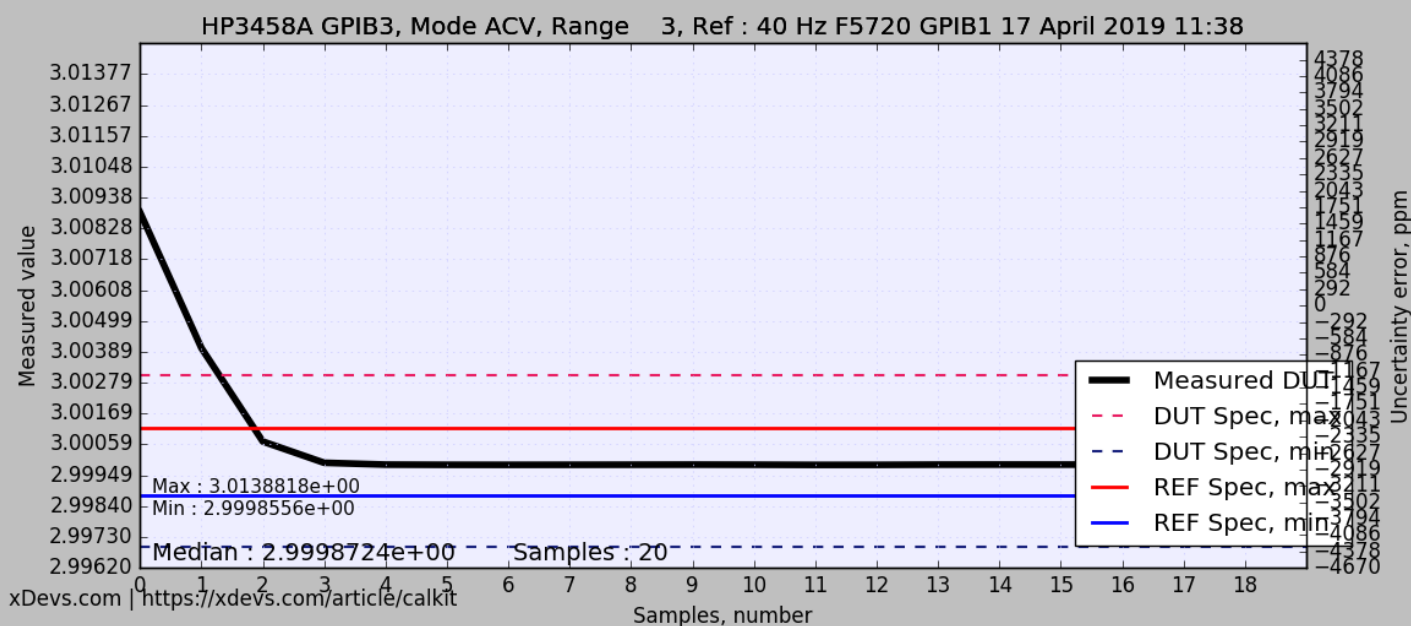
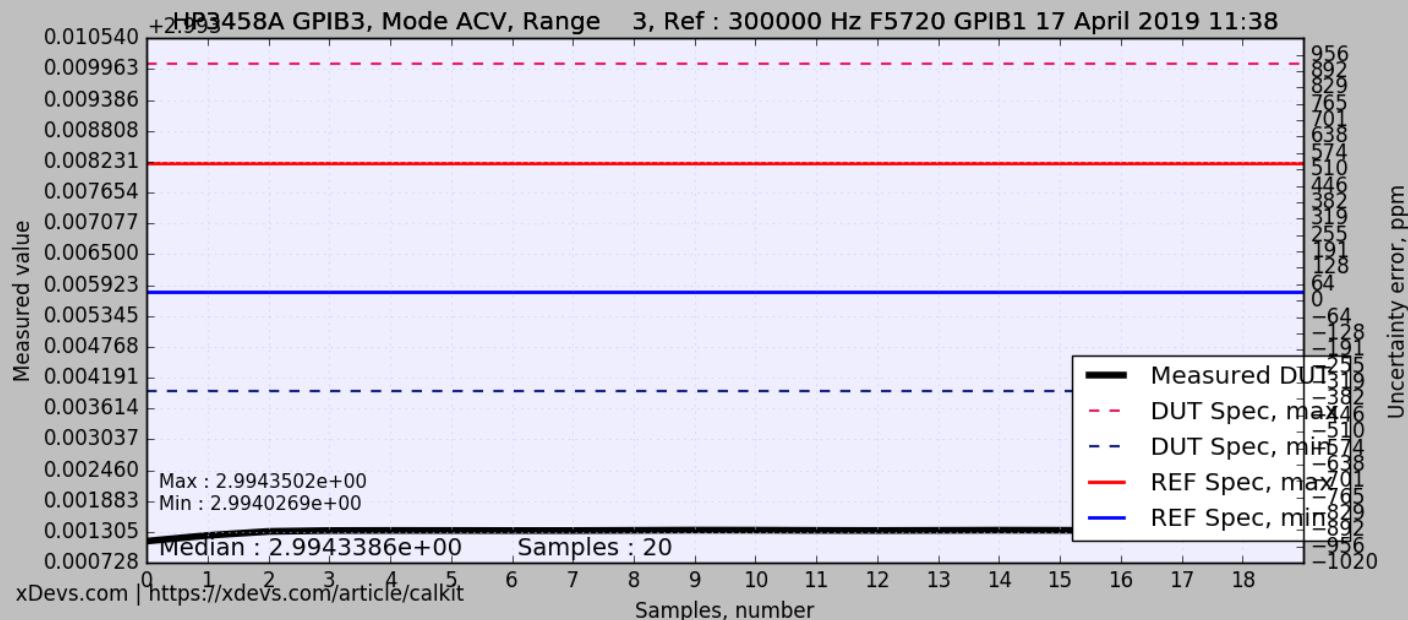


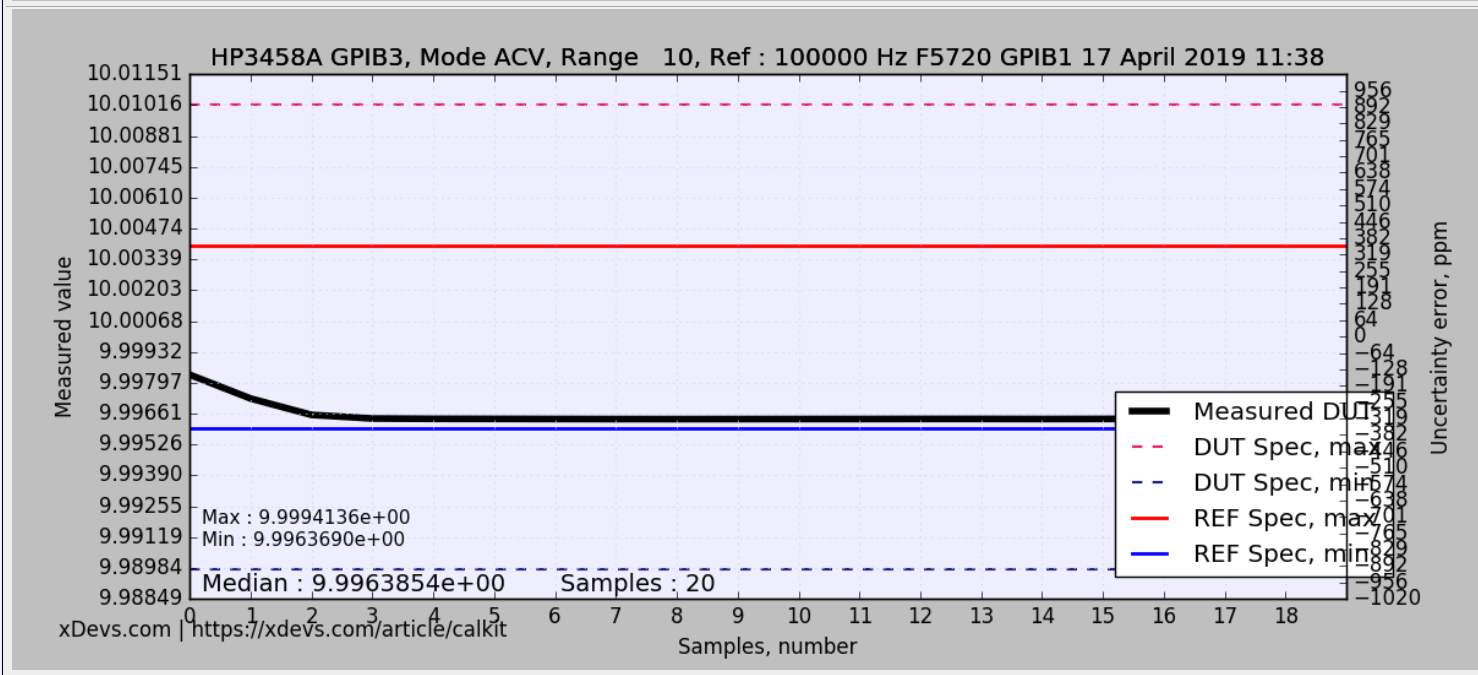
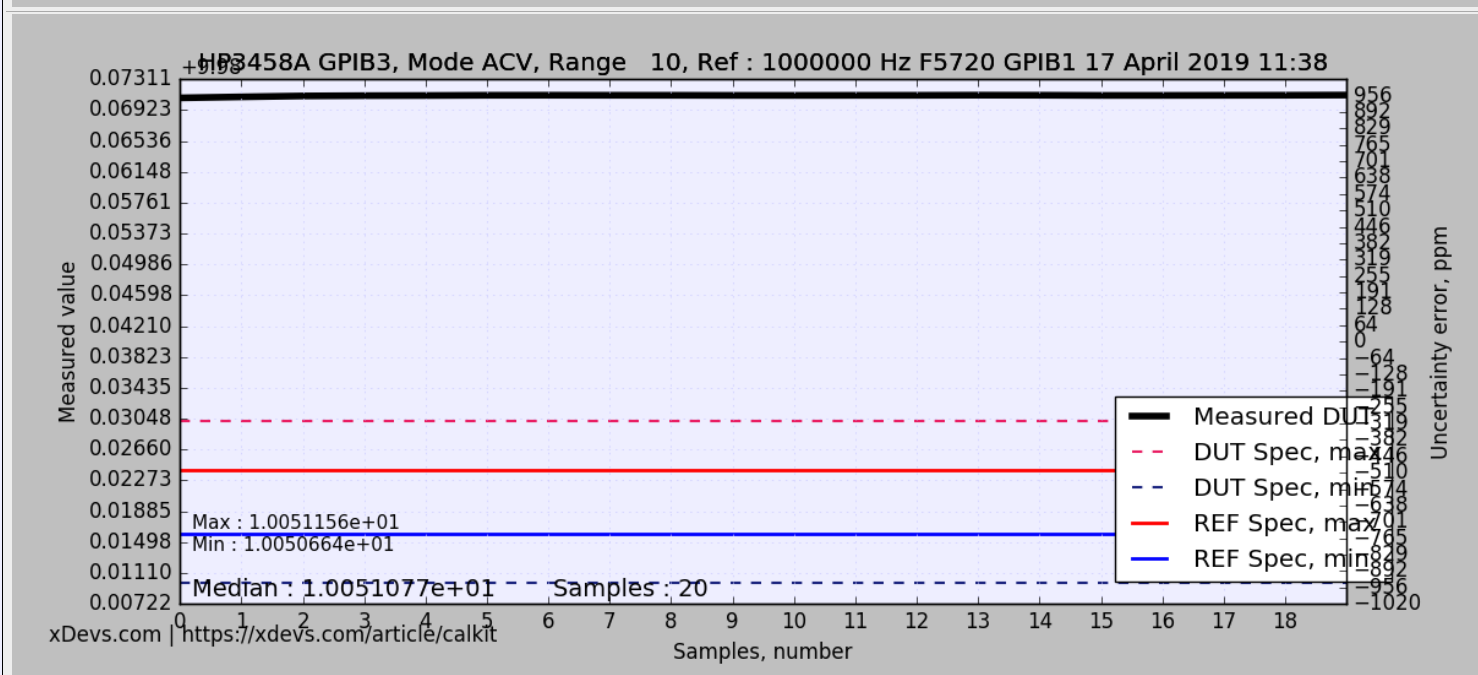
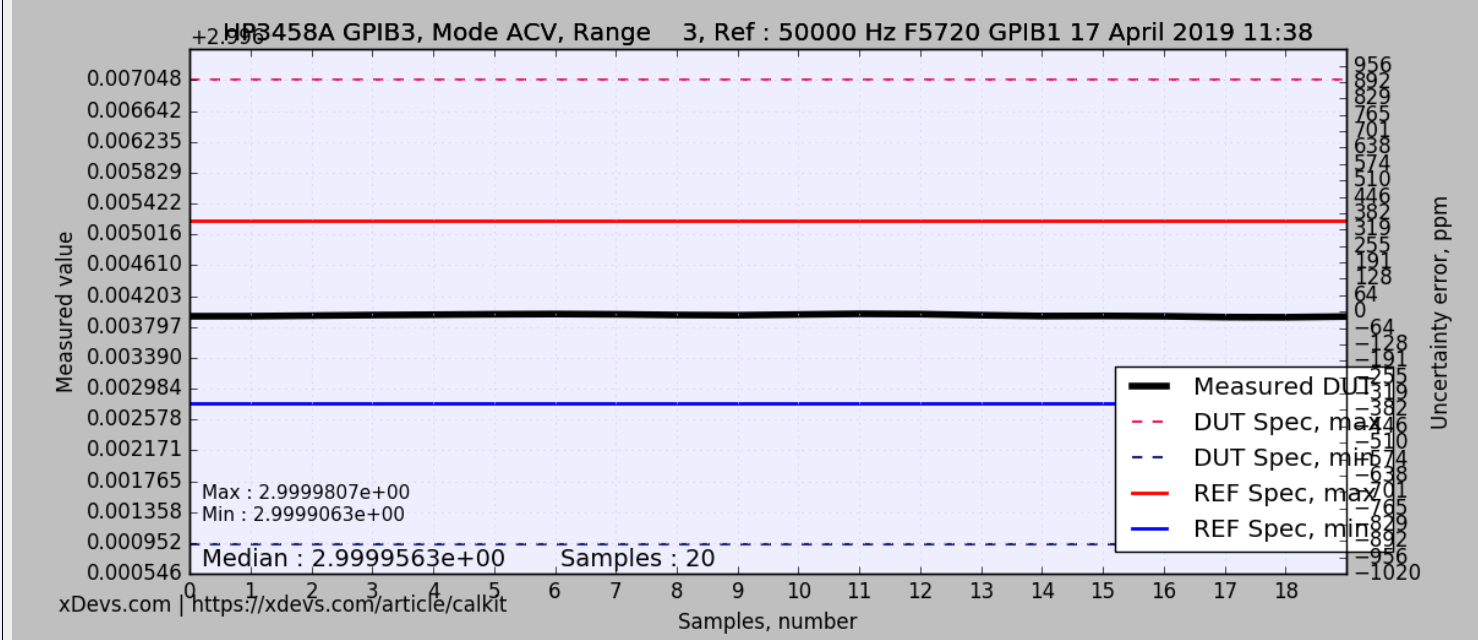
HP3458A GPIB3, Mode ACV, Range 3, Ref : 20000 Hz F5720 GPIB1 17 April 2019 11:38

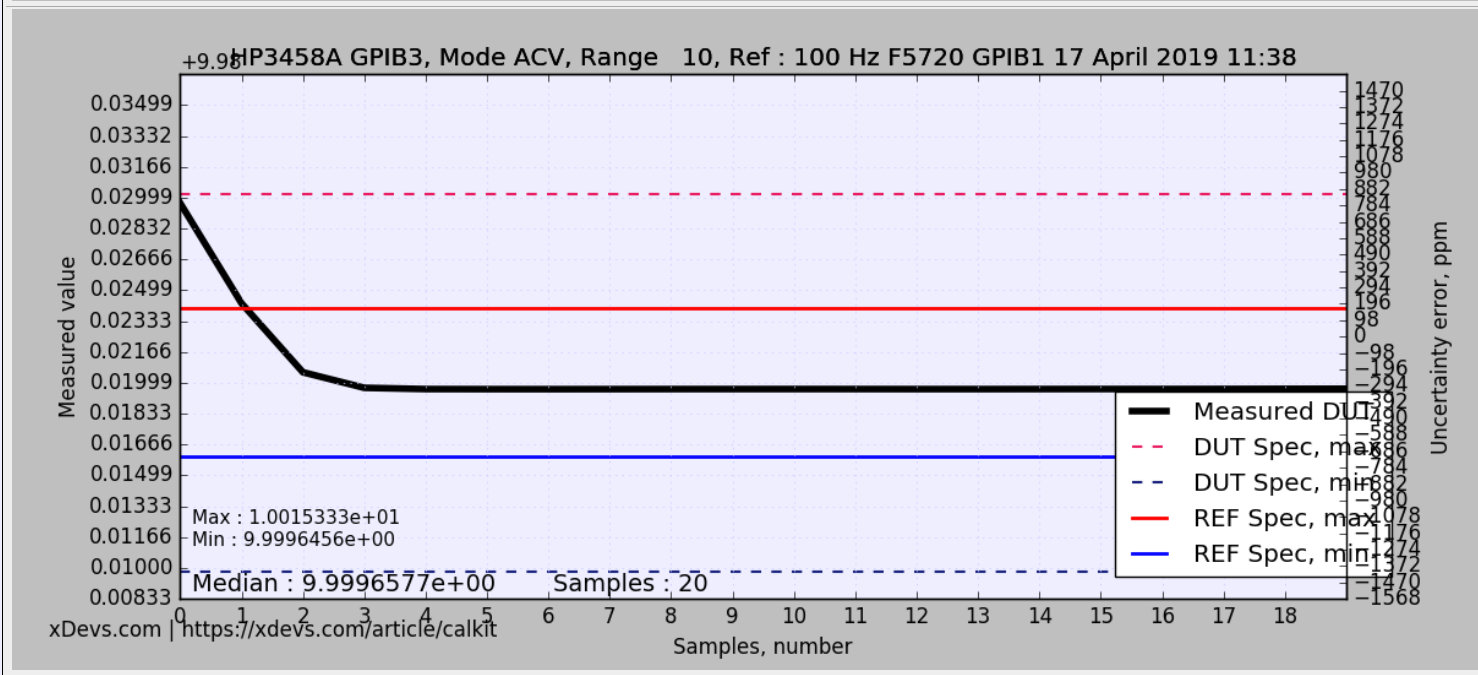
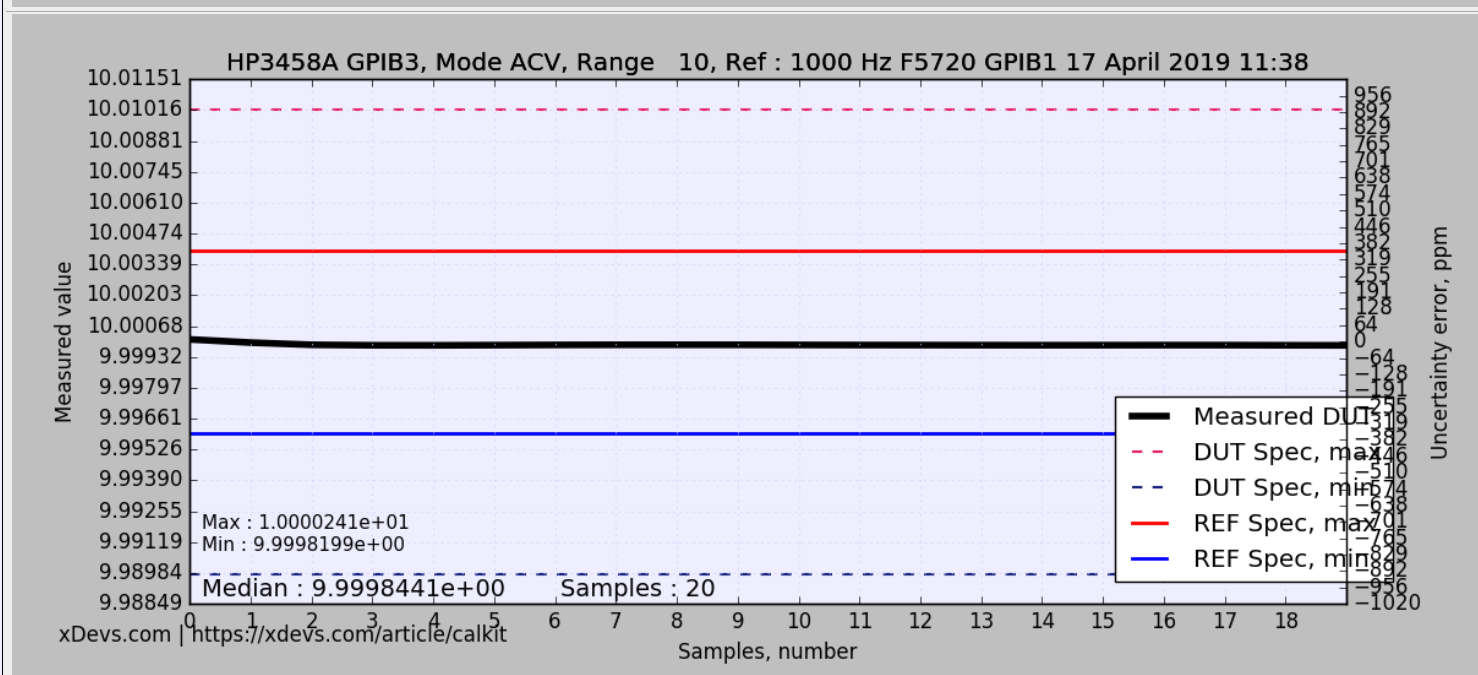
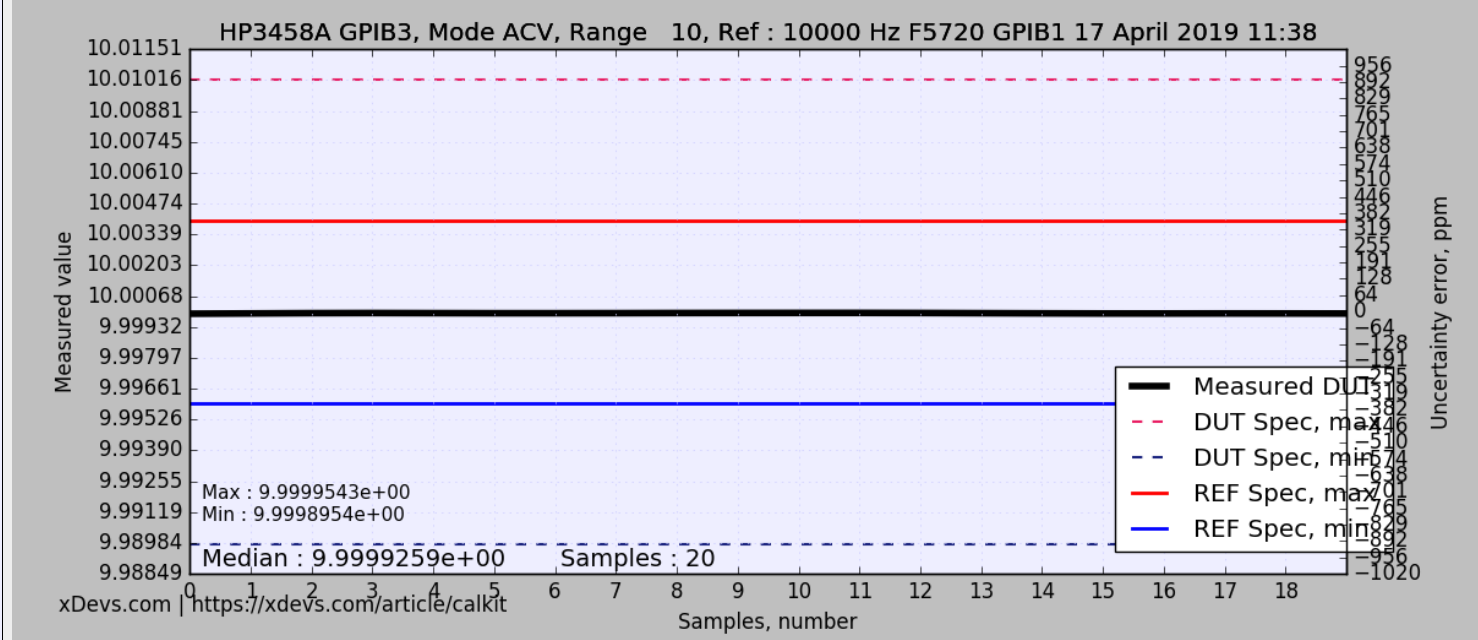


HP3458A GPIB3, Mode ACV, Range 3, Ref : 20 Hz F5720 GPIB1 17 April 2019 11:38



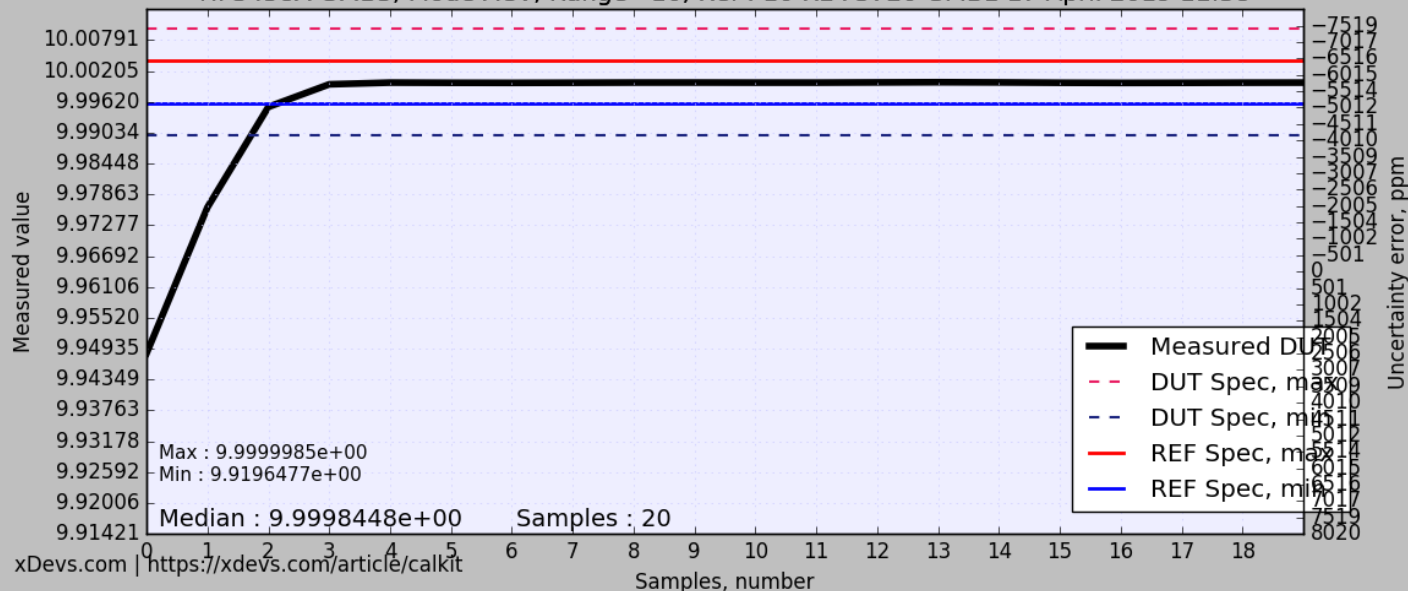




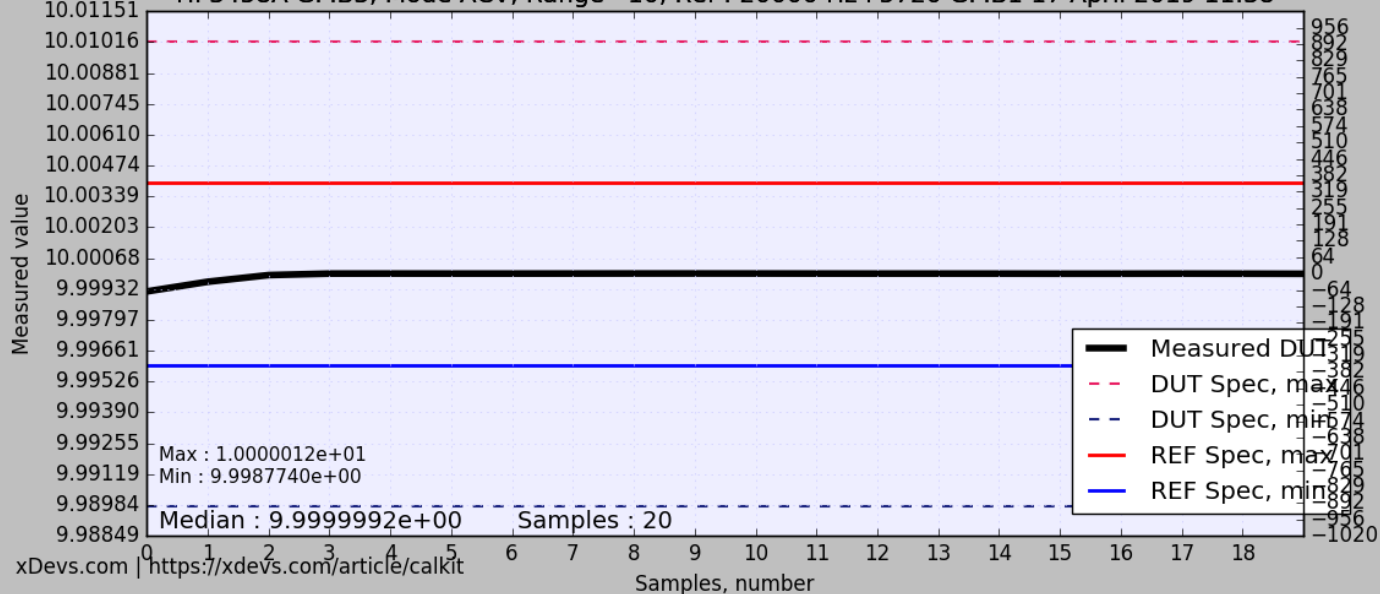




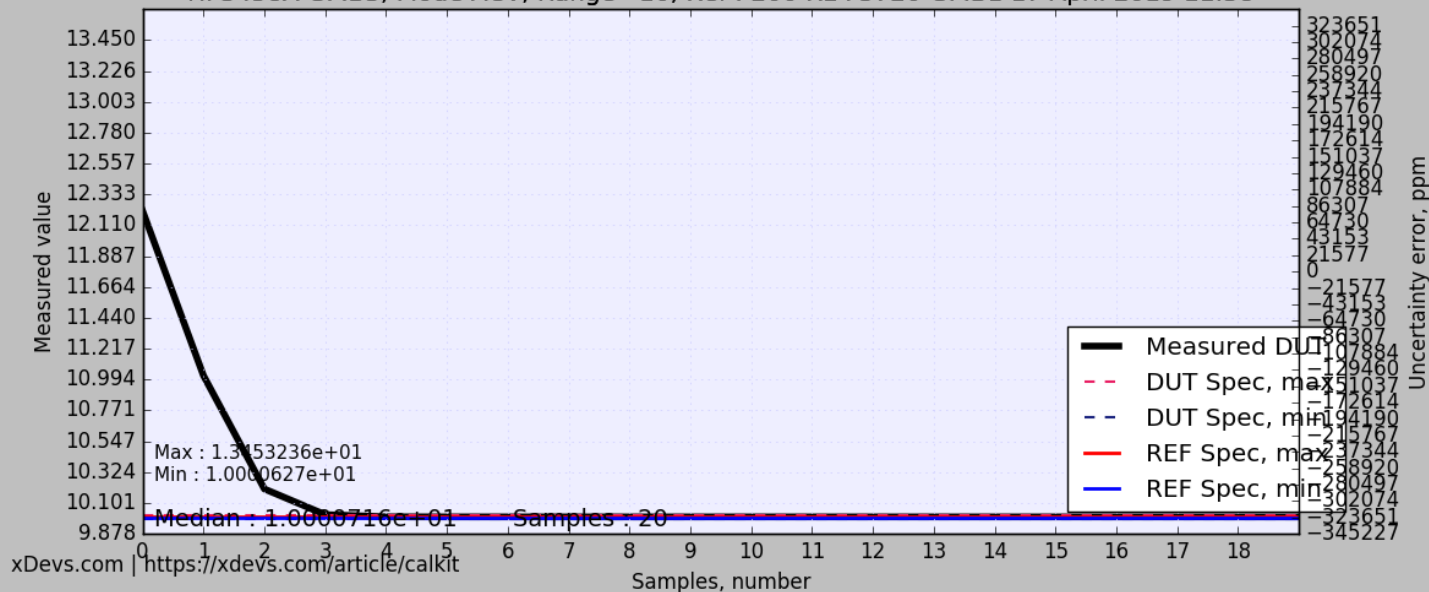
HP3458A GPIB3, Mode ACV, Range 10, Ref : 10 Hz F5720 GPIB1 17 April 2019 11:38

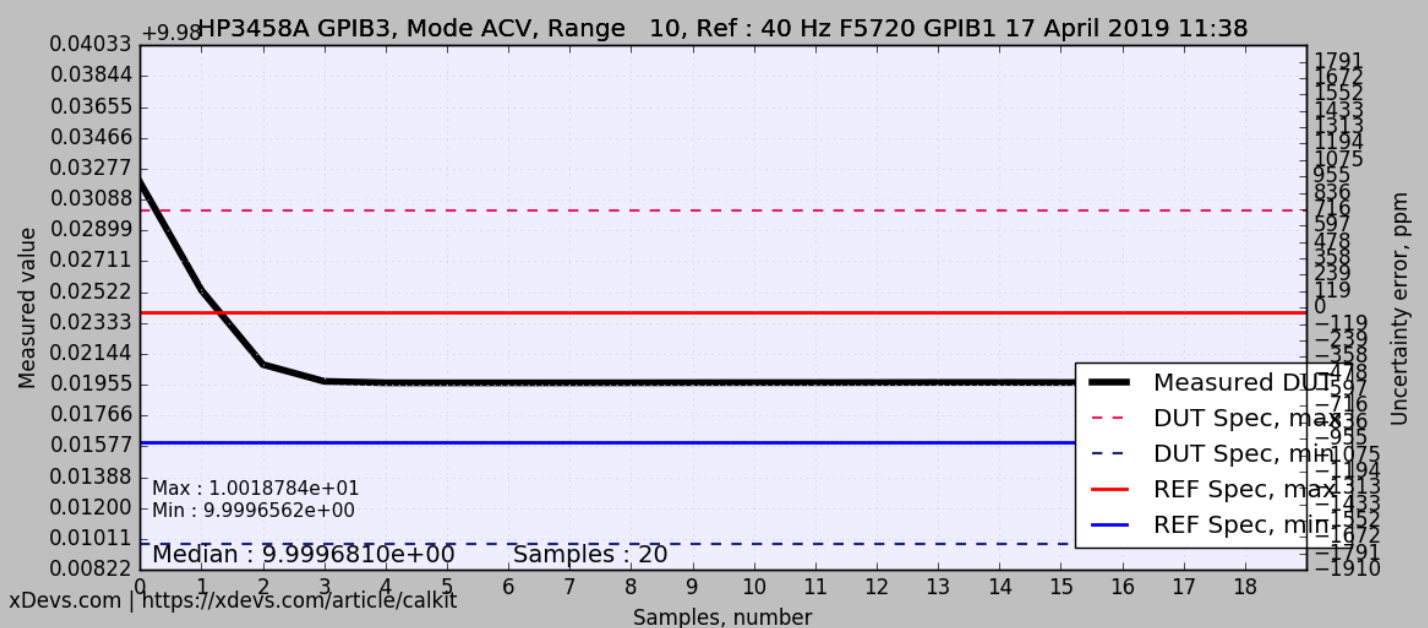
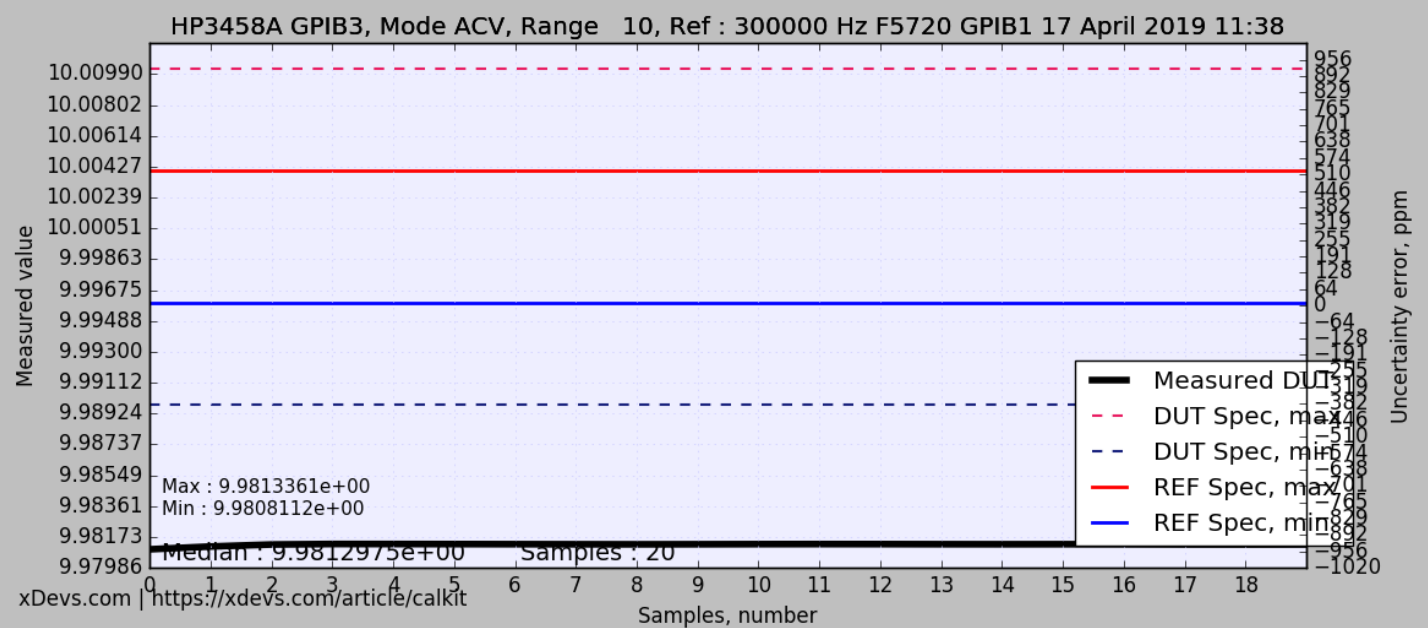
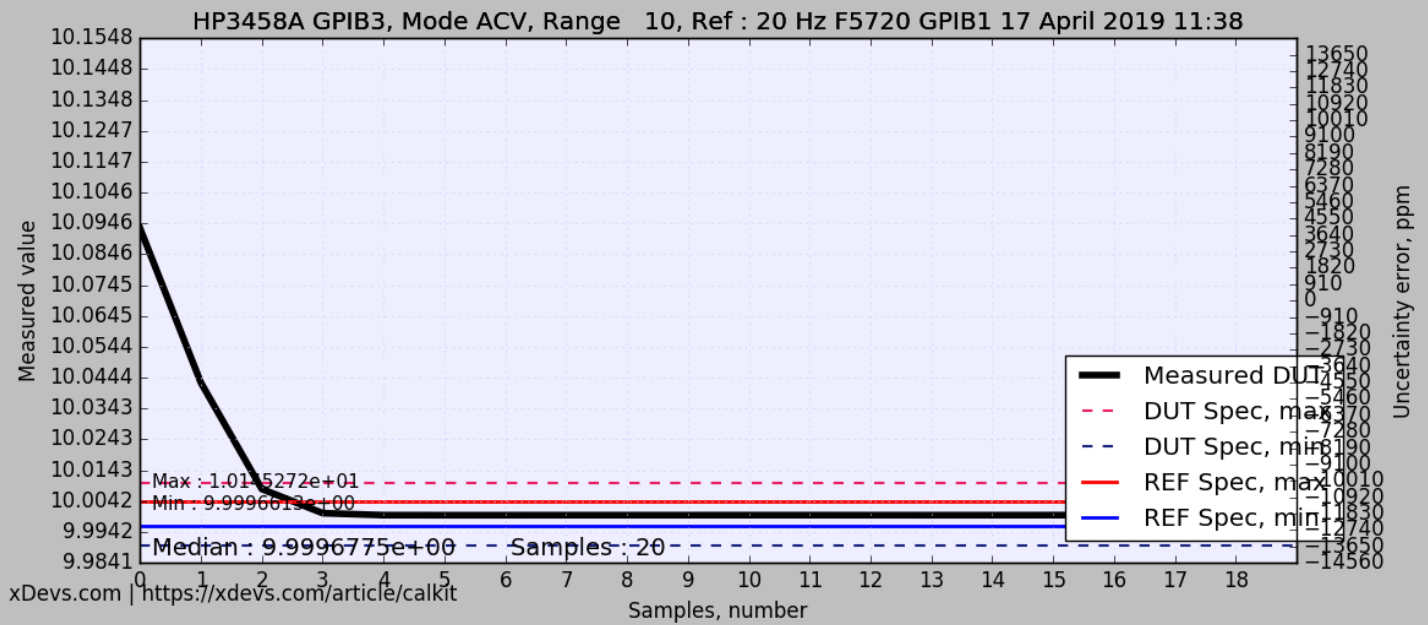


HP3458A GPIB3, Mode ACV, Range 10, Ref : 20000 Hz F5720 GPIB1 17 April 2019 11:38

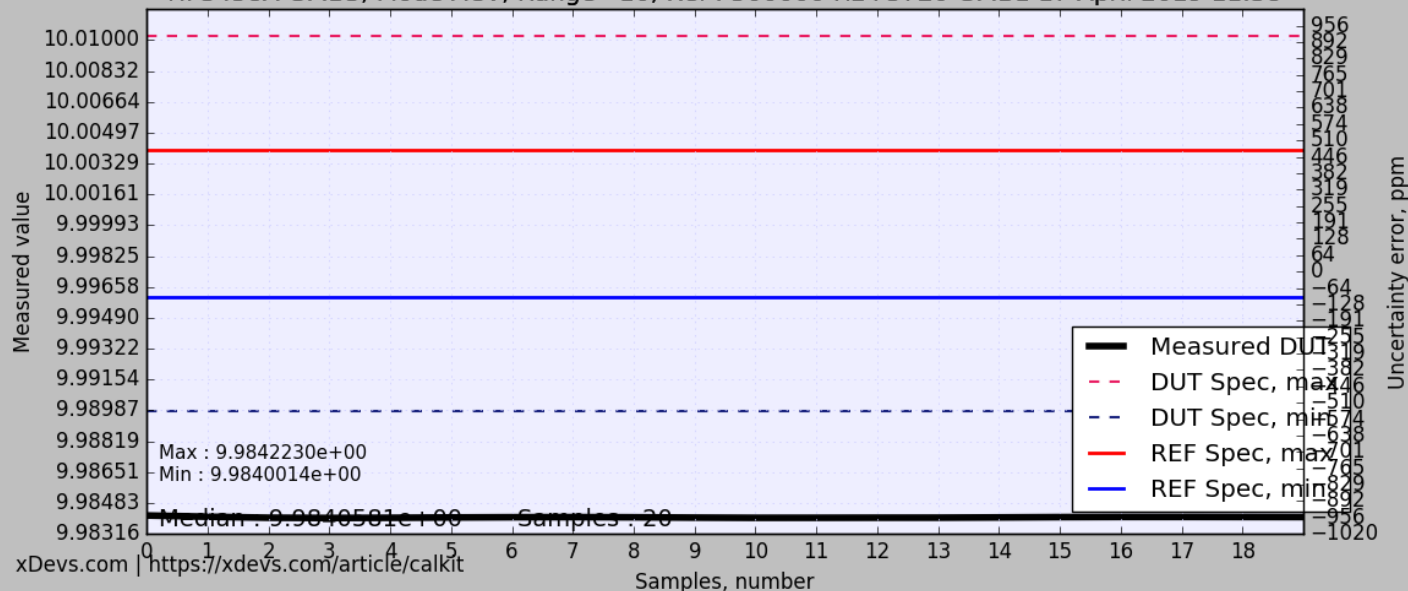


HP3458A GPIB3, Mode ACV, Range 10, Ref : 200 Hz F5720 GPIB1 17 April 2019 11:38

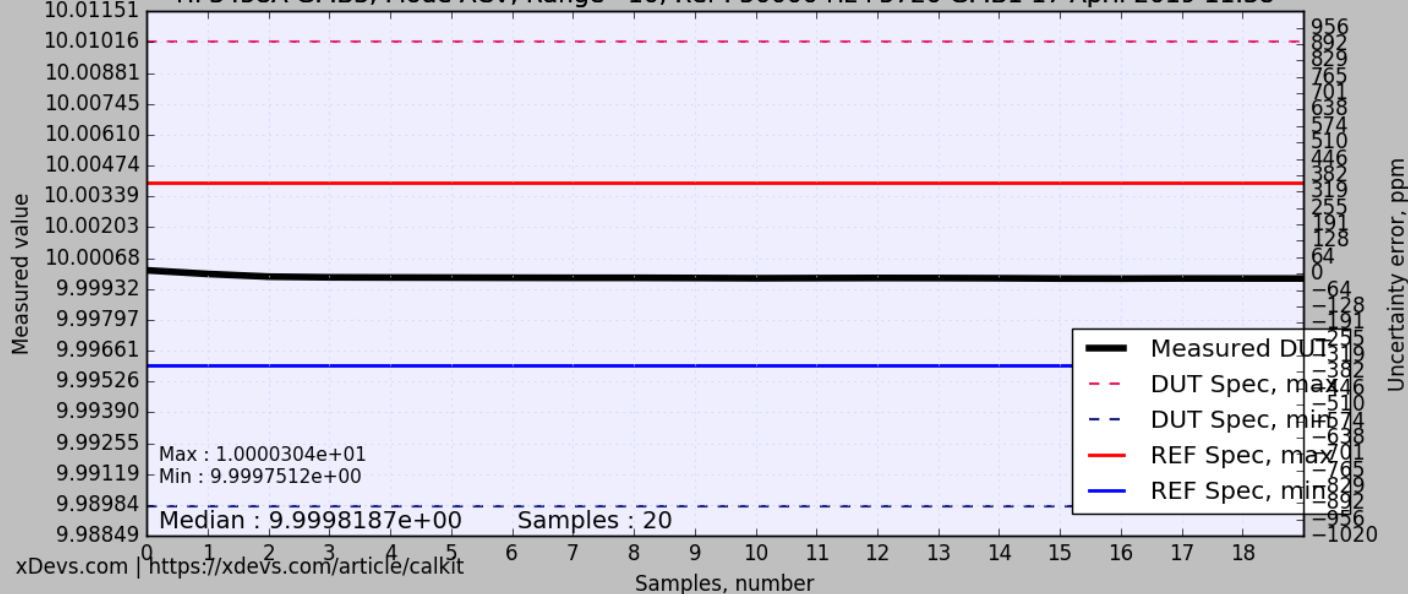




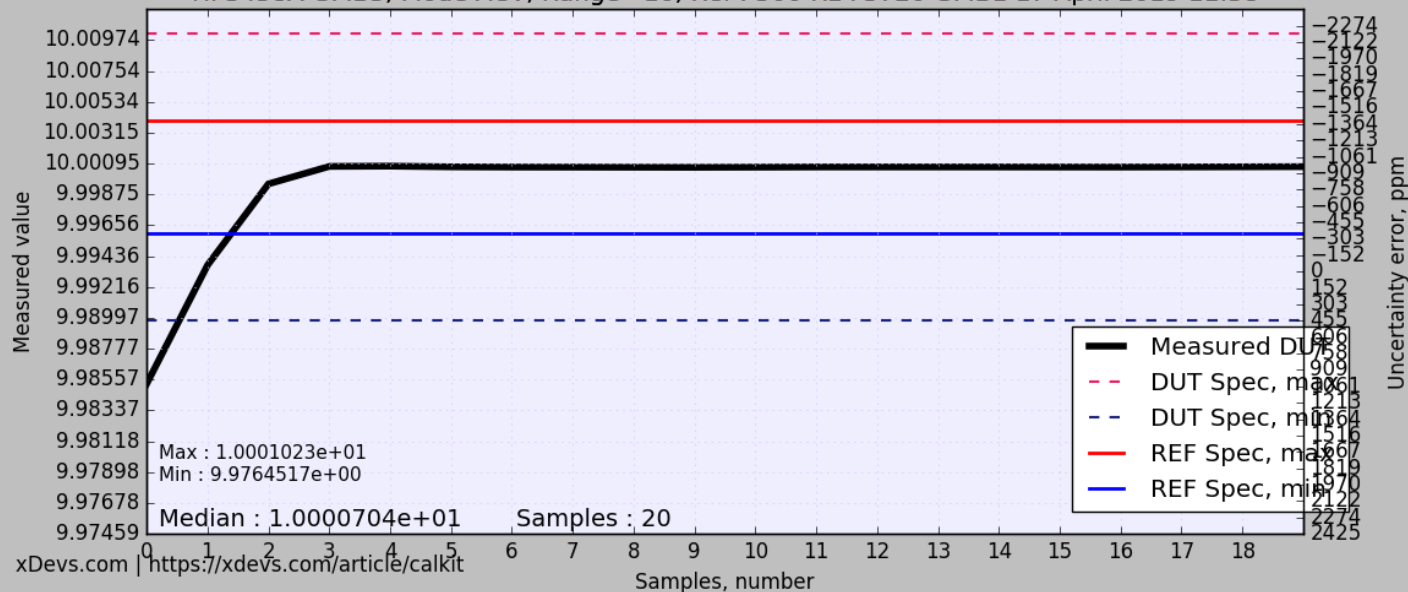
HP3458A GPIB3, Mode ACV, Range 10, Ref : 500000 Hz F5720 GPIB1 17 April 2019 11:38

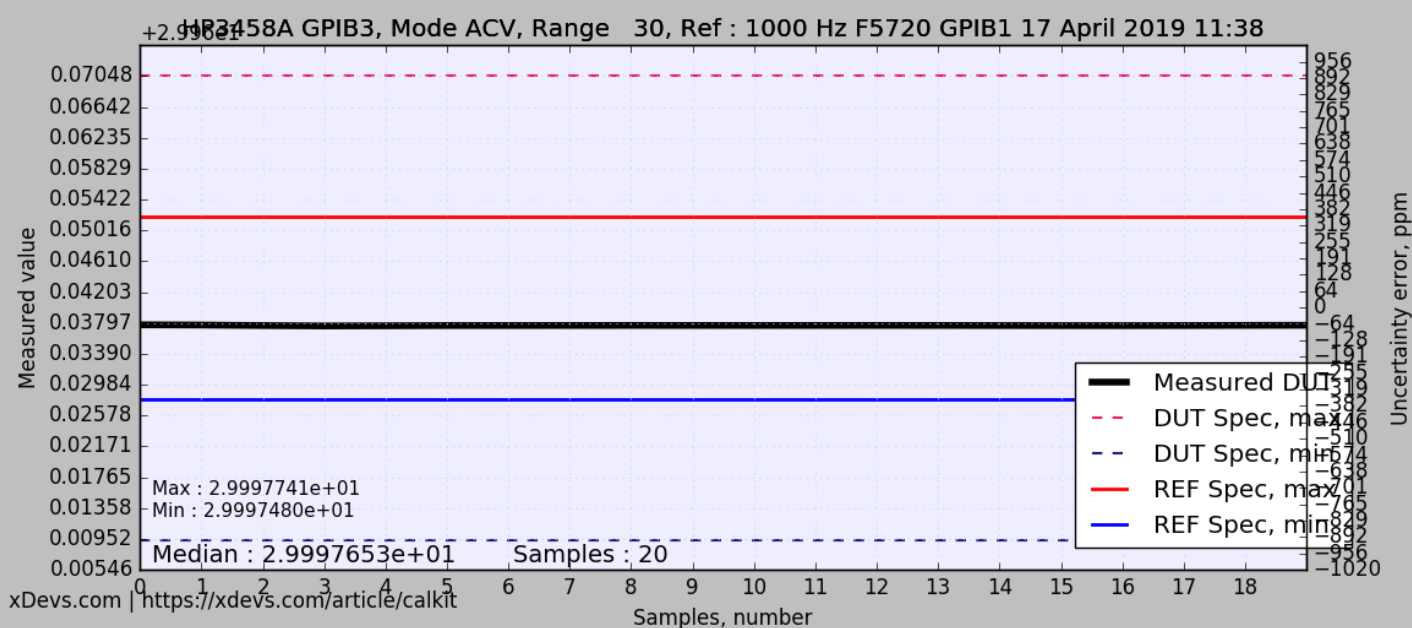
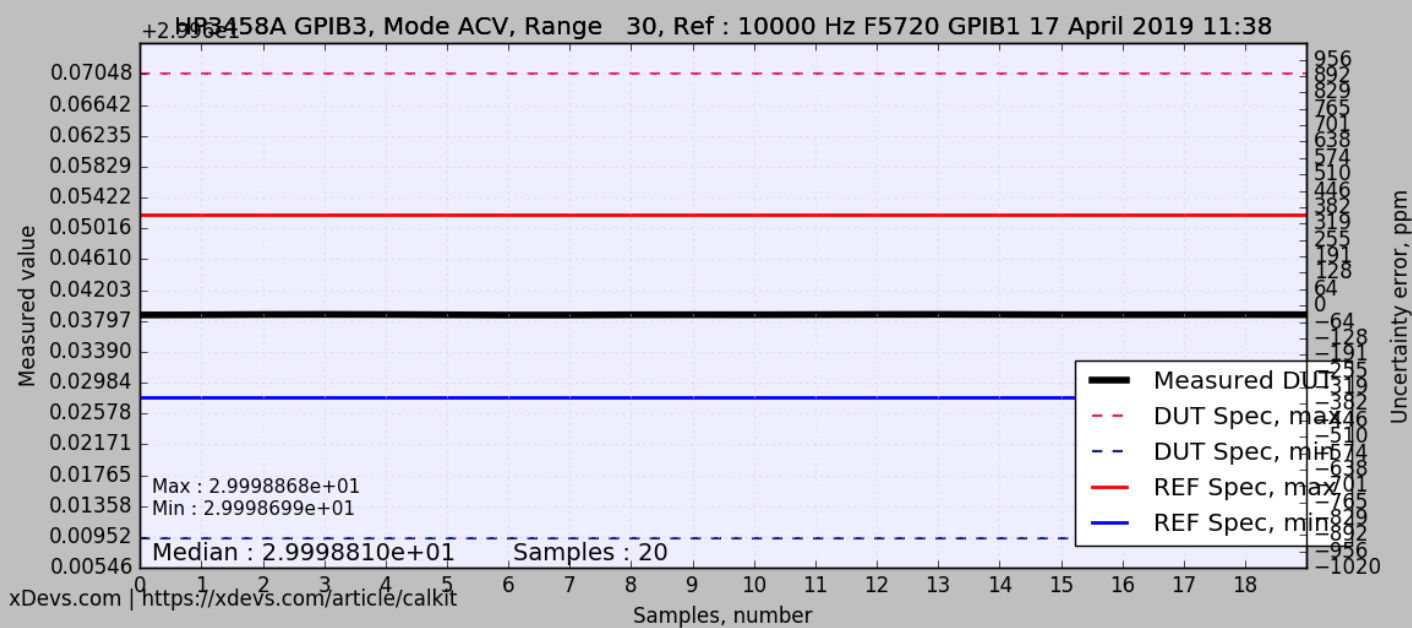
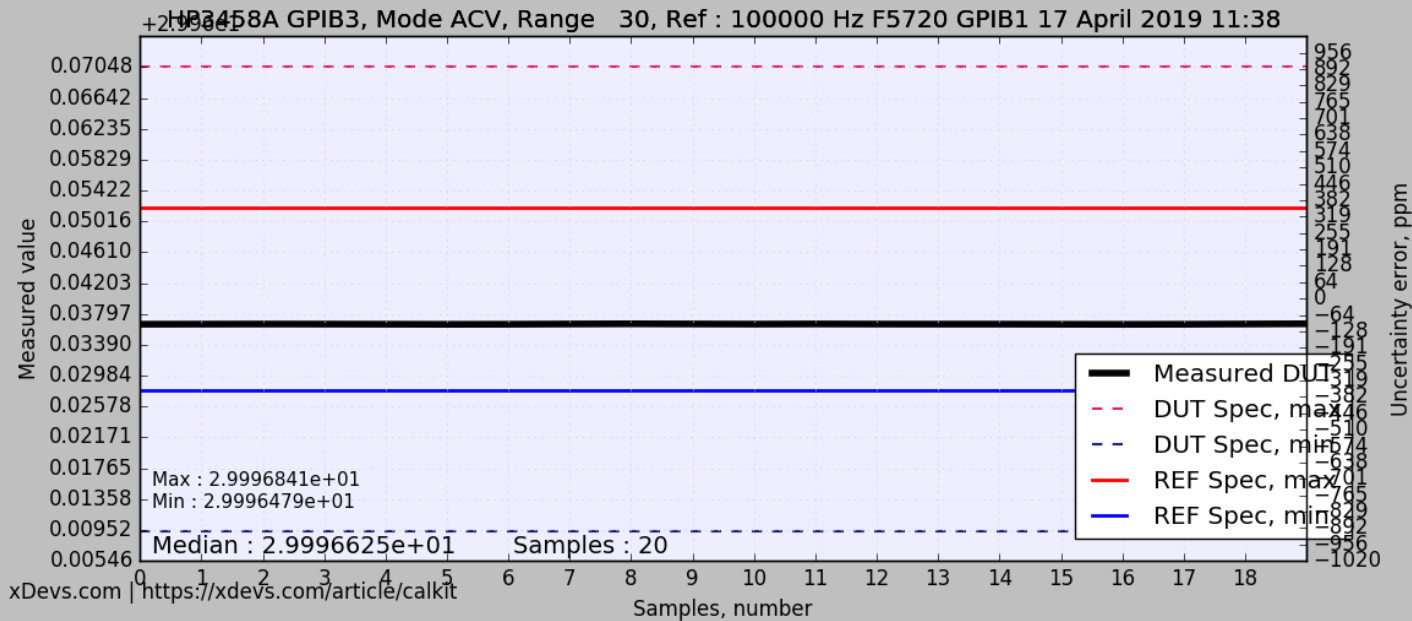


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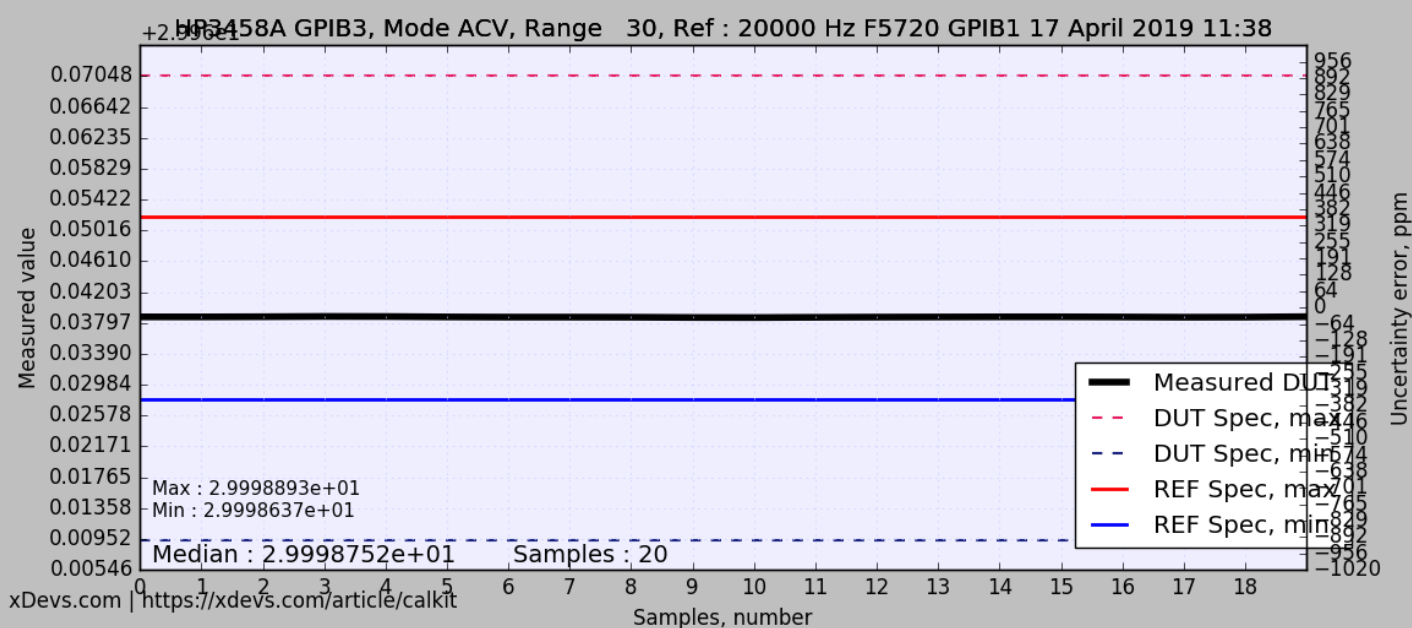
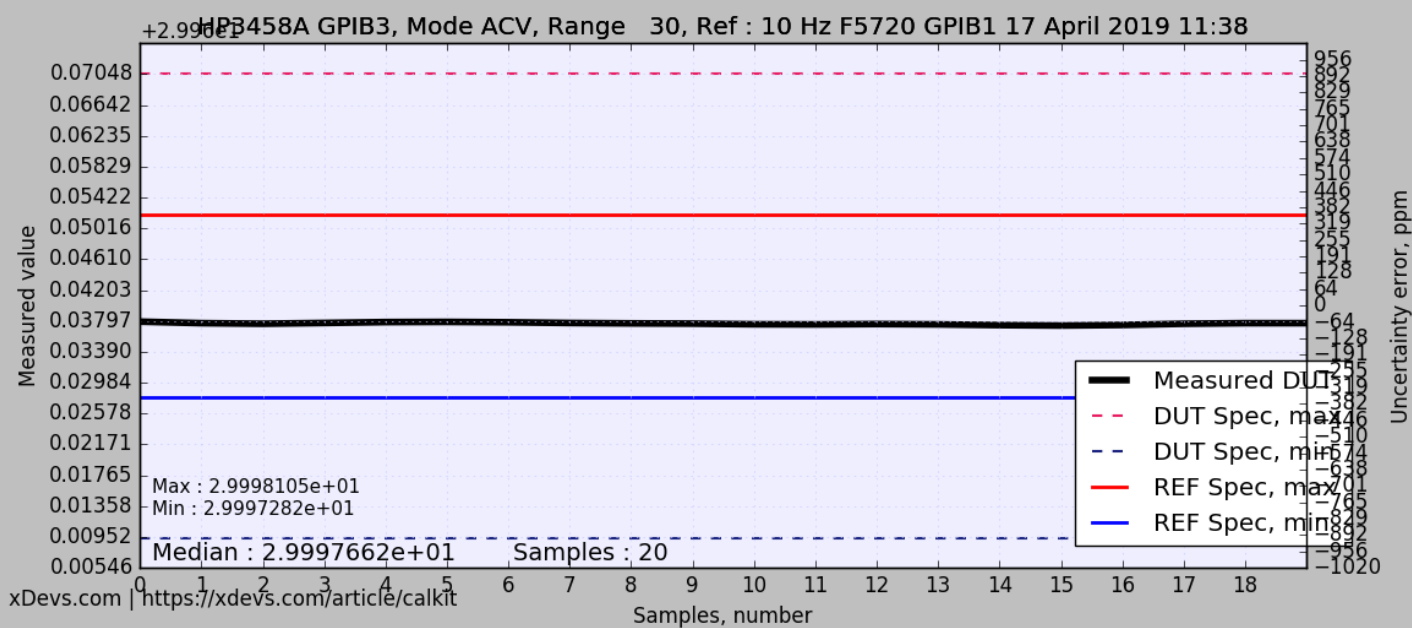
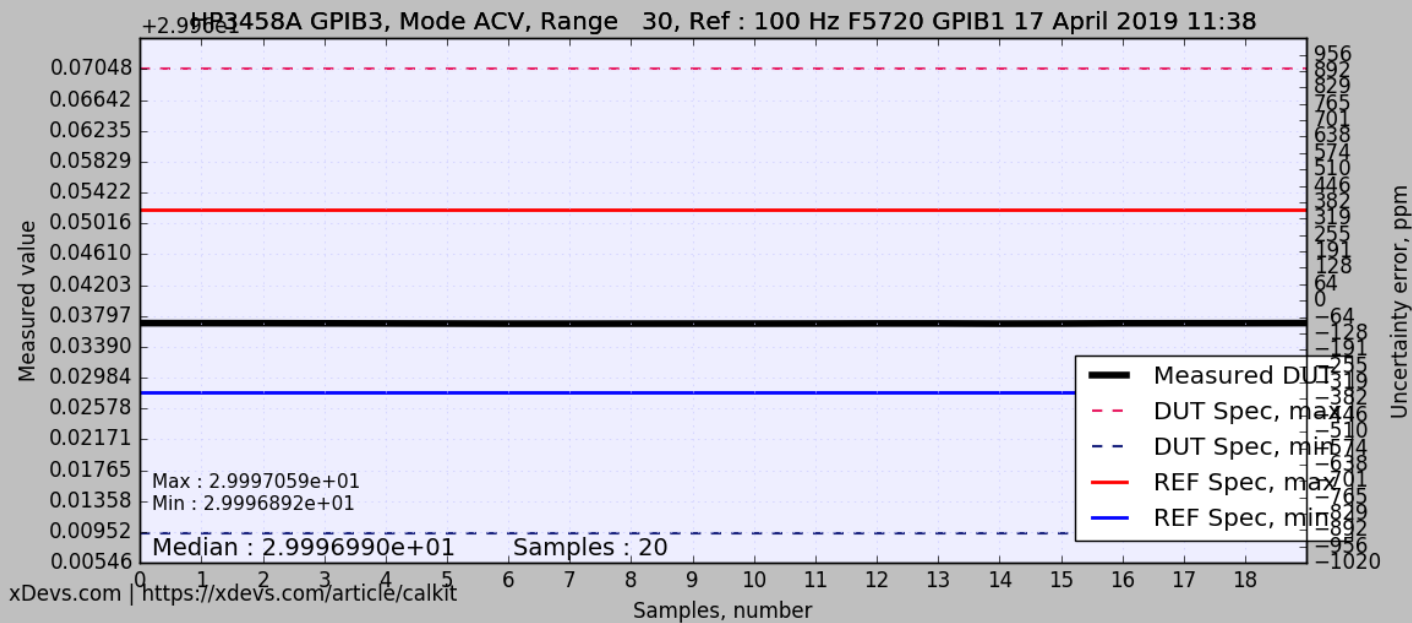


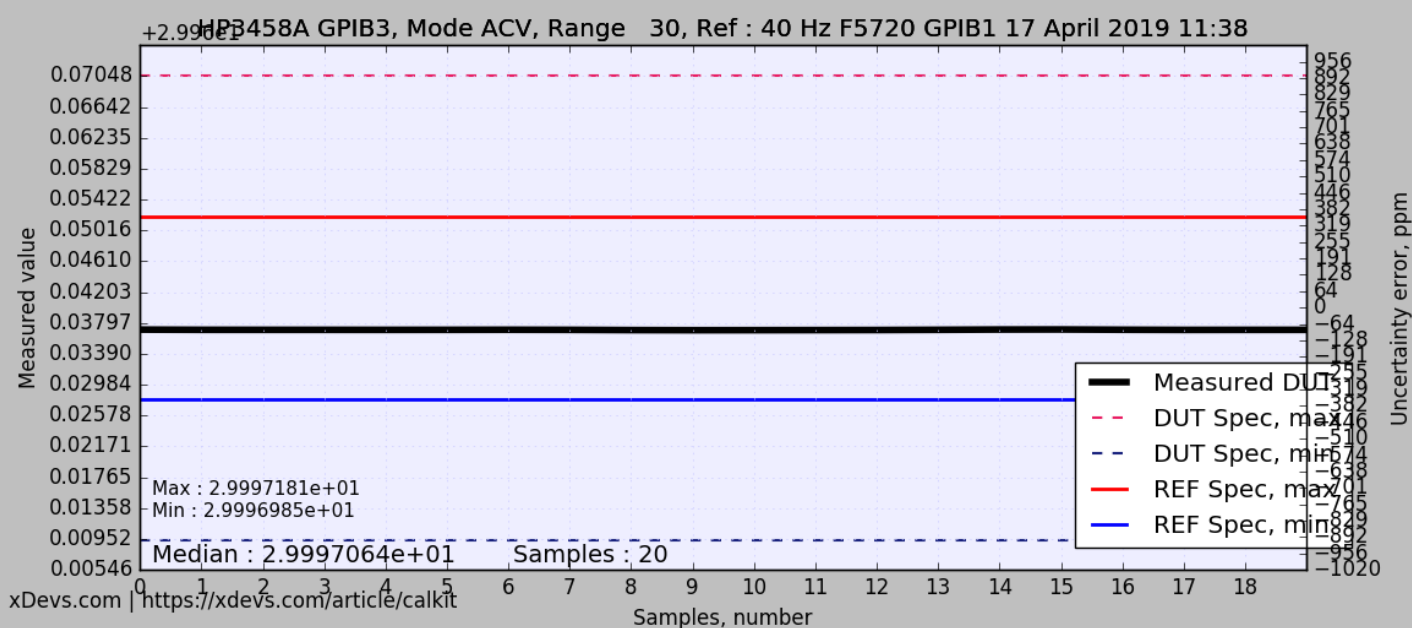
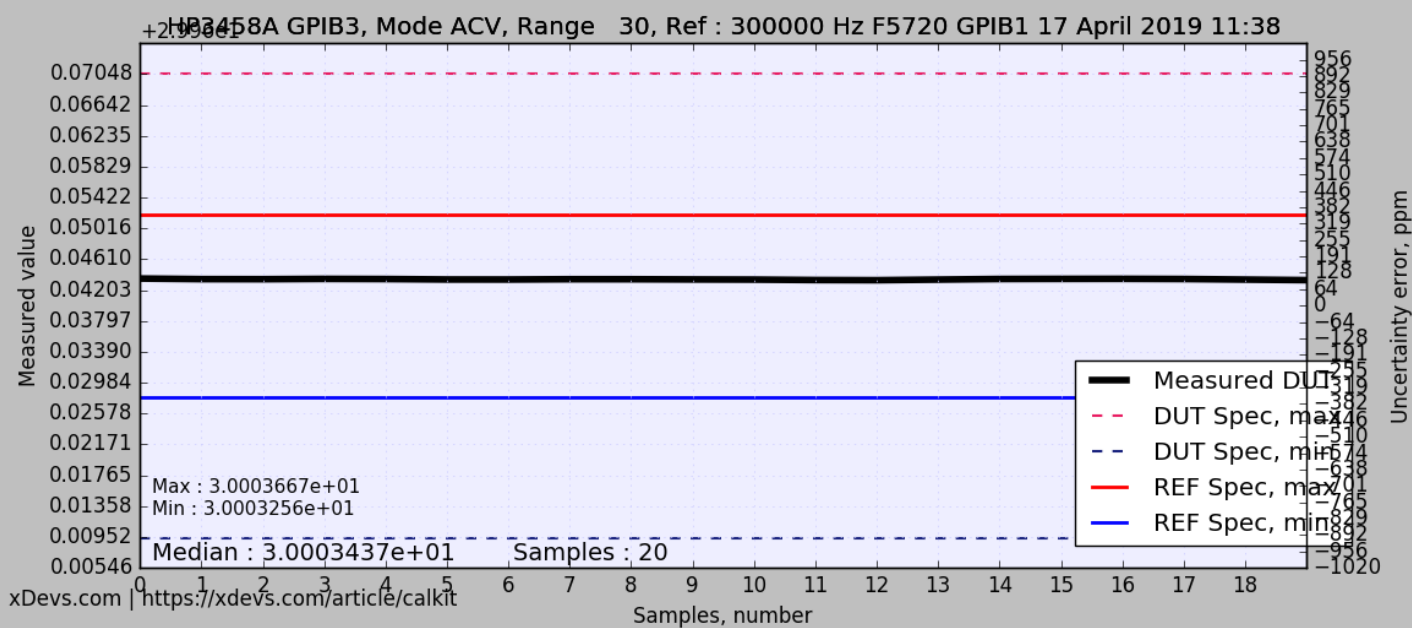
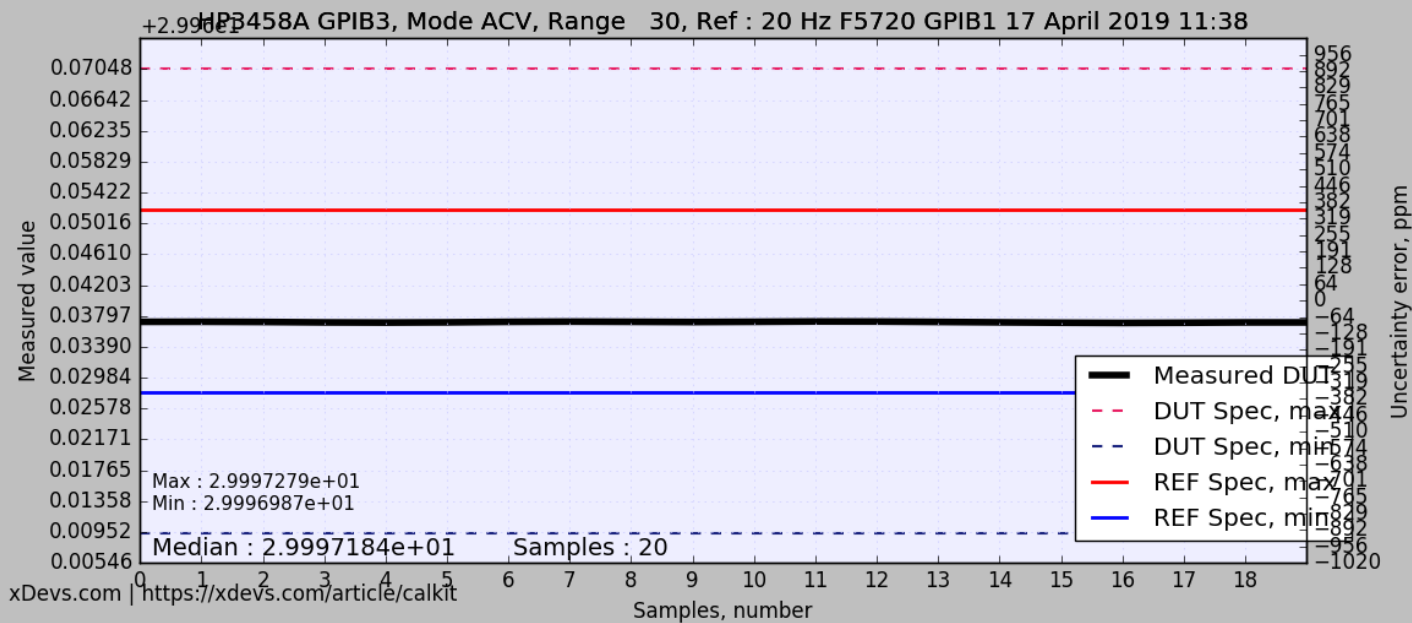
HP3458A GPIB3, Mode ACV, Range 10, Ref : 500 Hz F5720 GPIB1 17 April 2019 11:38

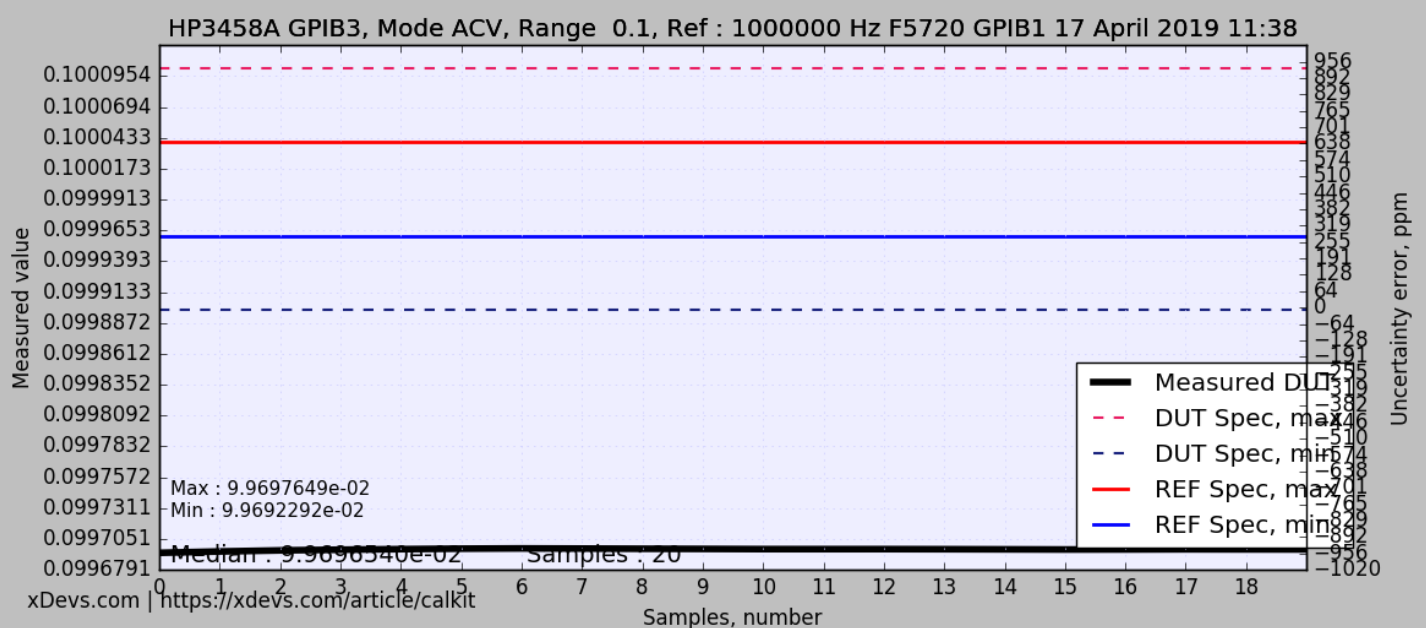
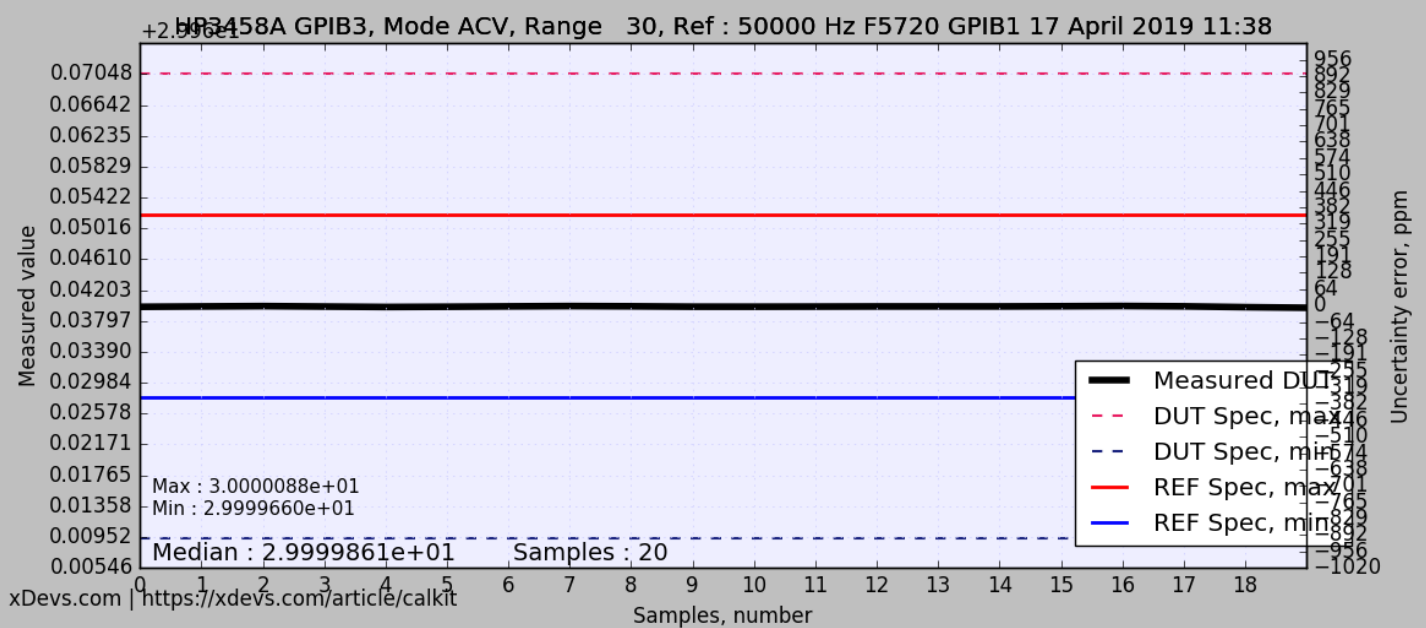
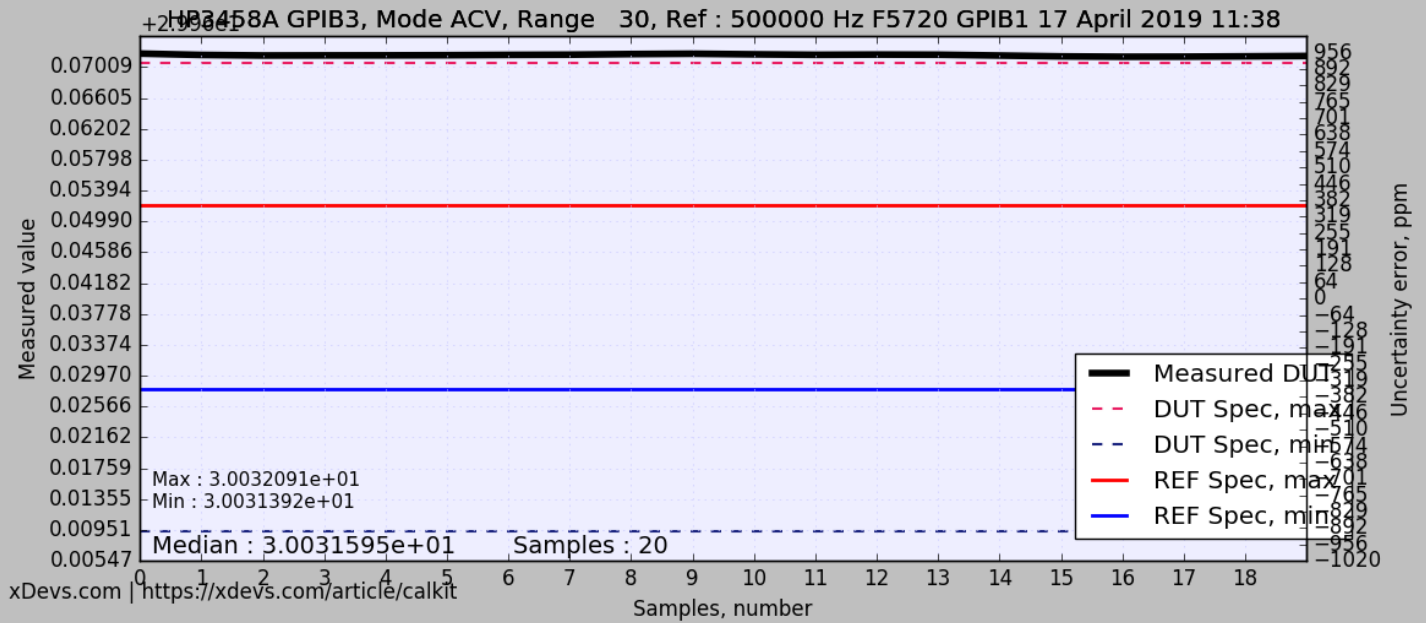




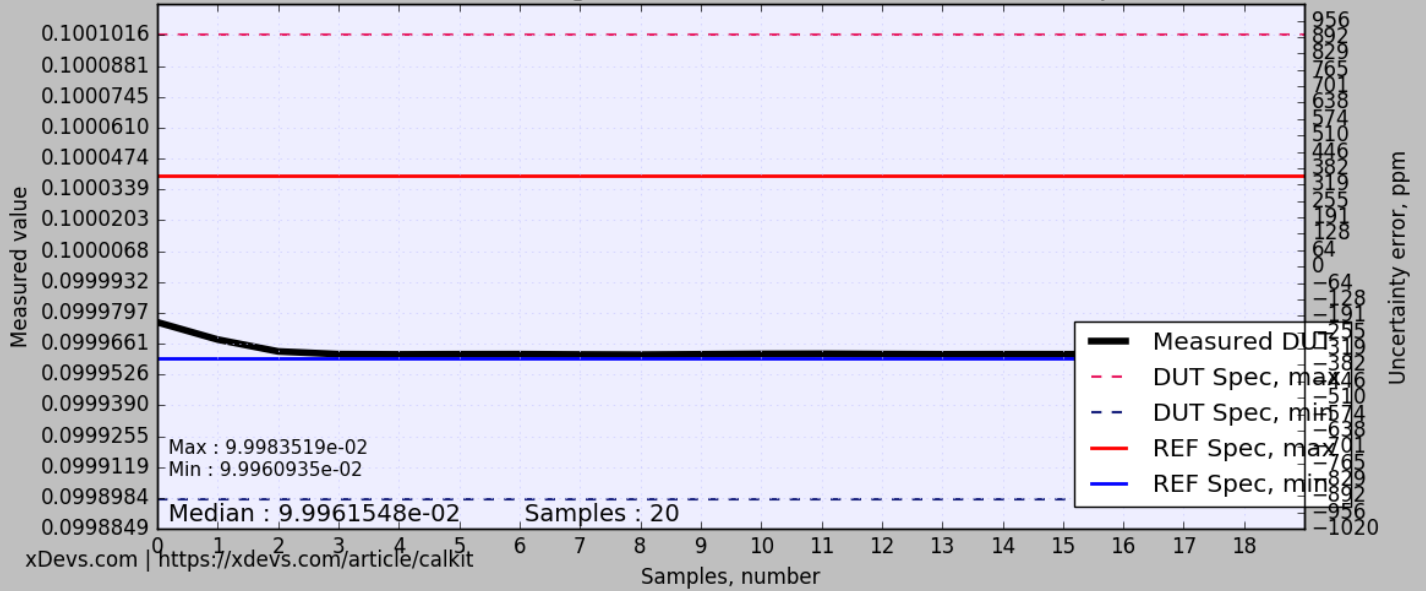




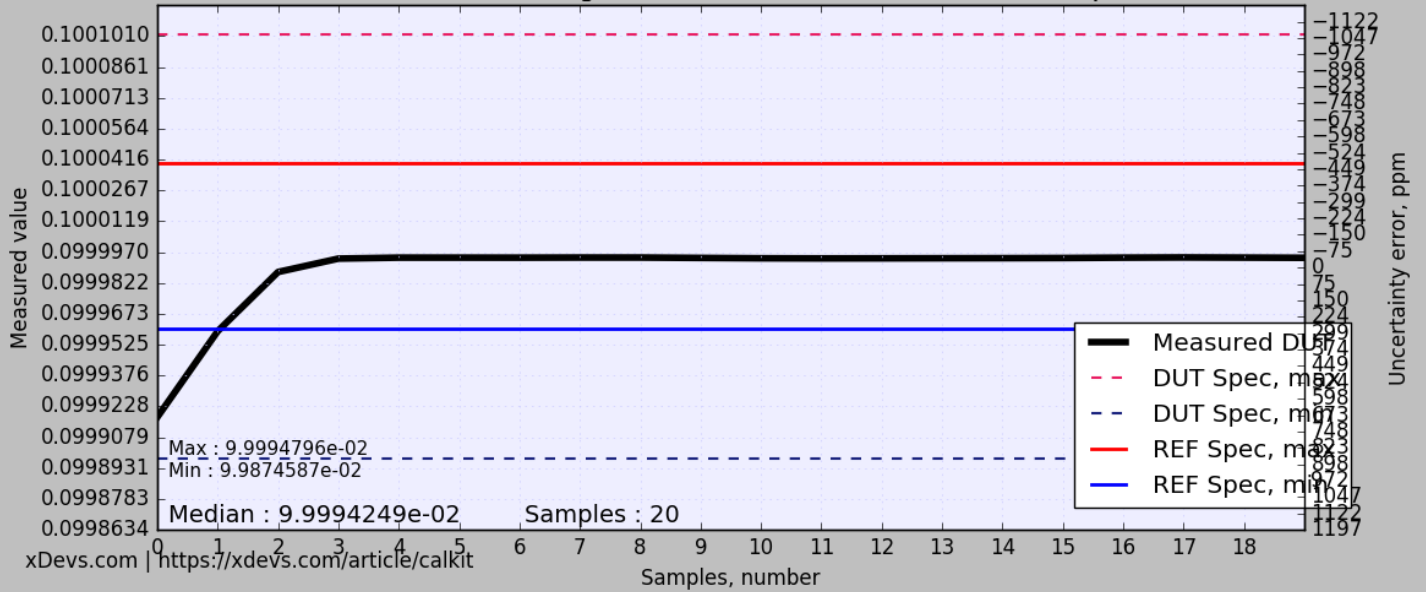




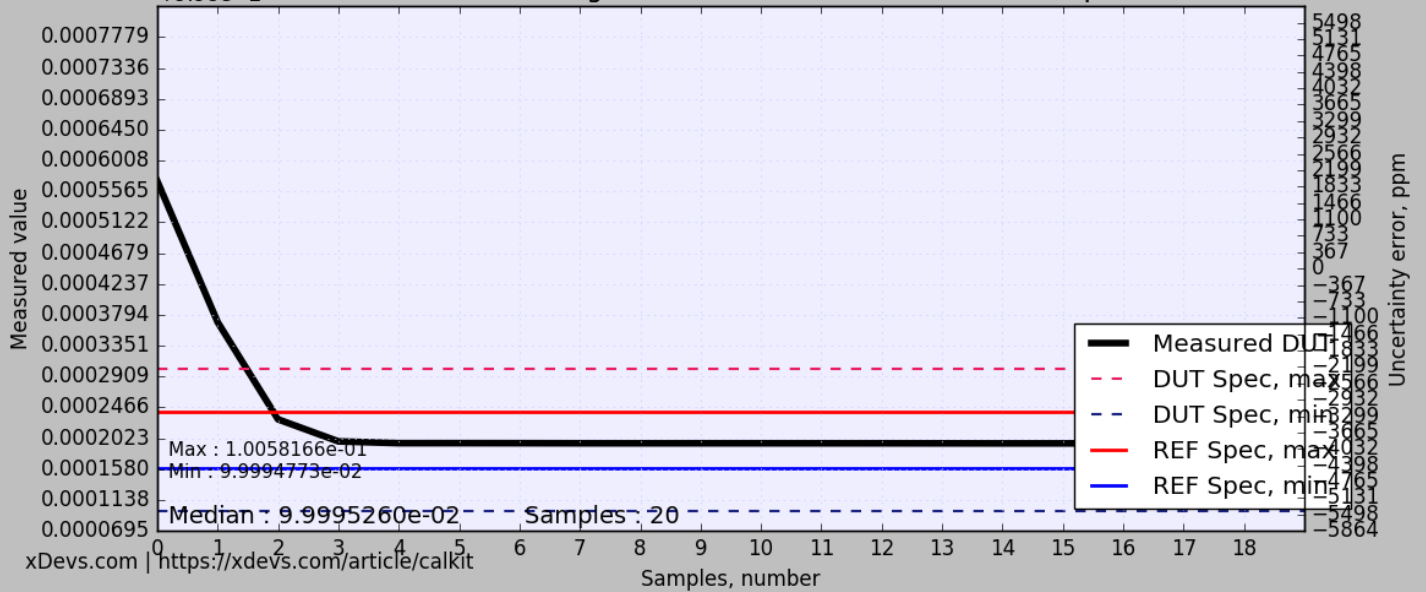
HP3458A GPIB3, Mode ACV, Range 0.1, Ref : 100000 Hz F5720 GPIB1 17 April 2019 11:38



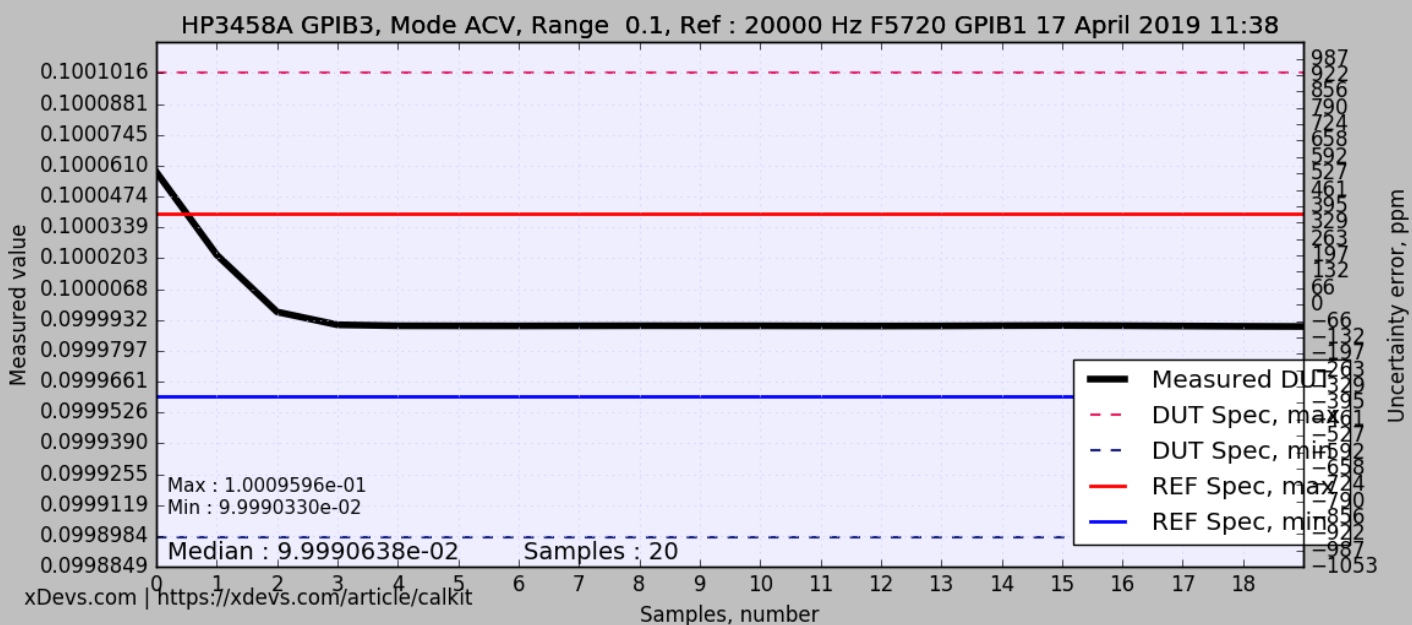
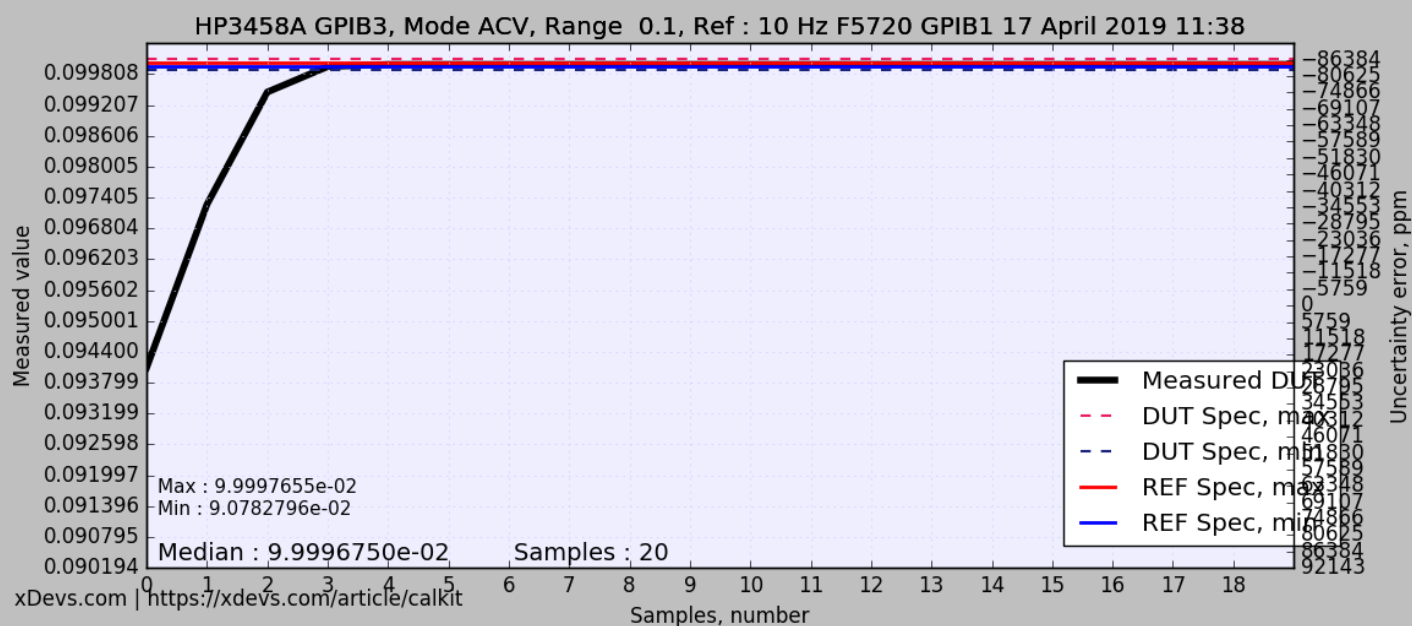
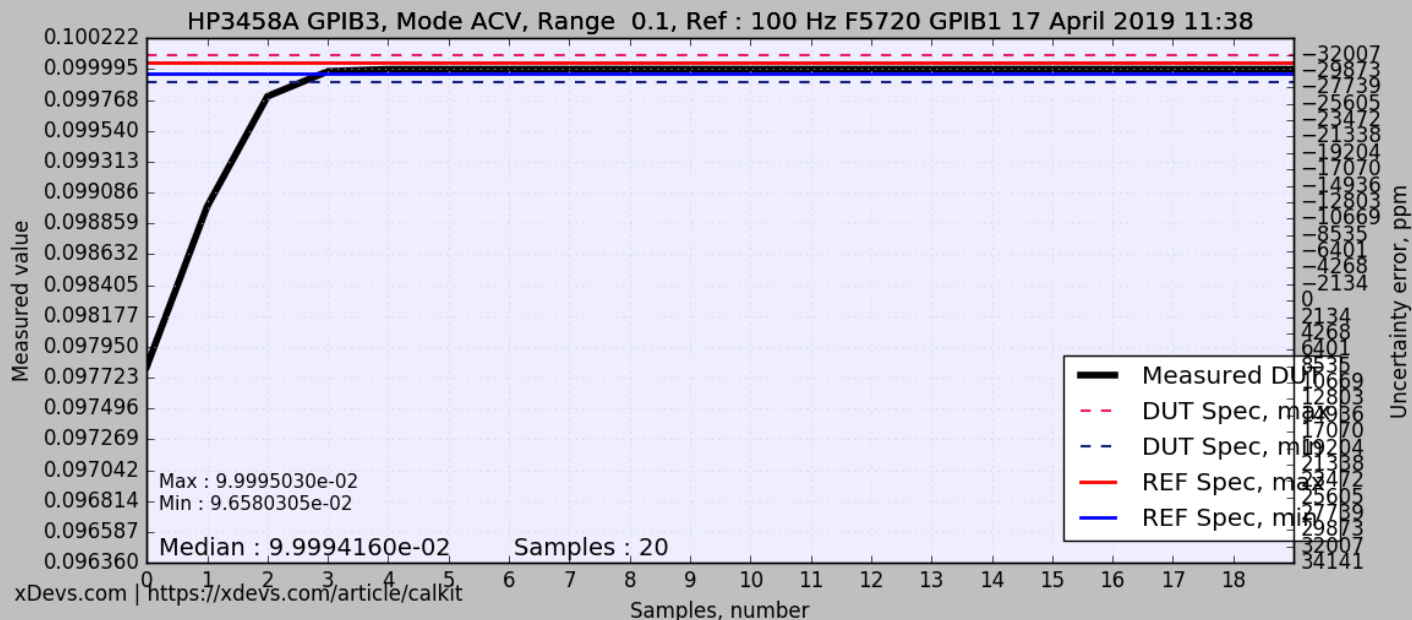
HP3458A GPIB3, Mode ACV, Range 0.1, Ref : 10000 Hz F5720 GPIB1 17 April 2019 11:38



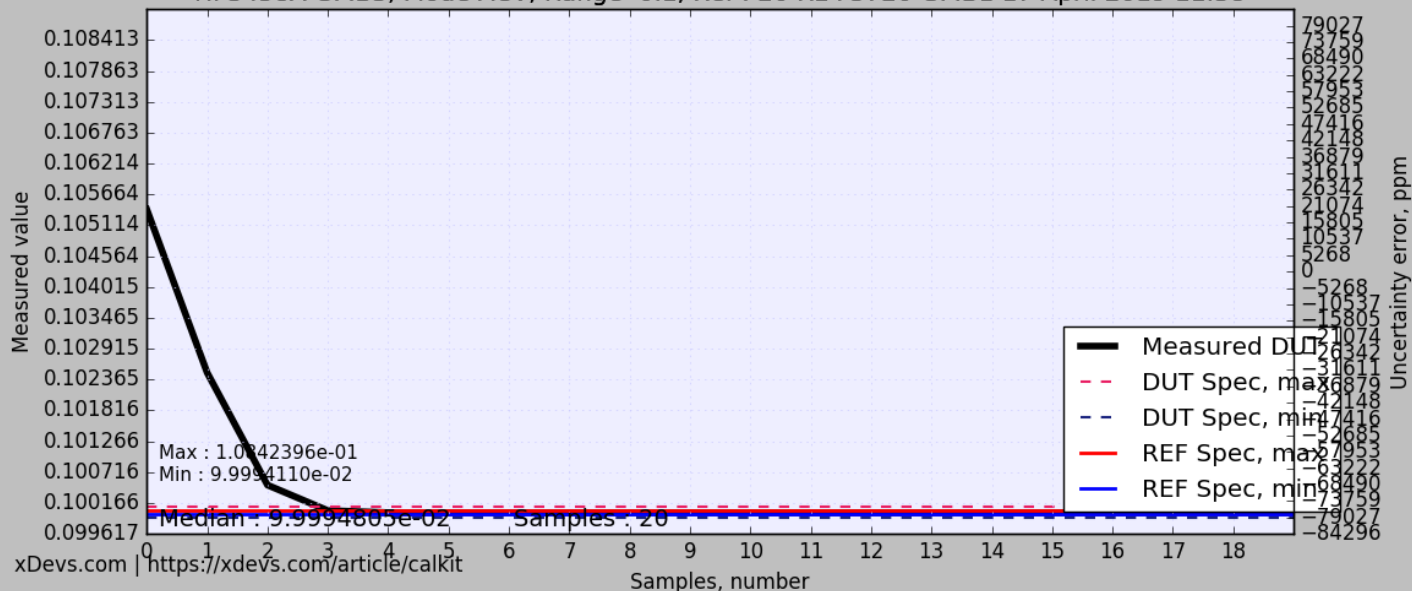
HP3458A GPIB3, Mode ACV, Range 0.1, Ref : 1000 Hz F5720 GPIB1 17 April 2019 11:38



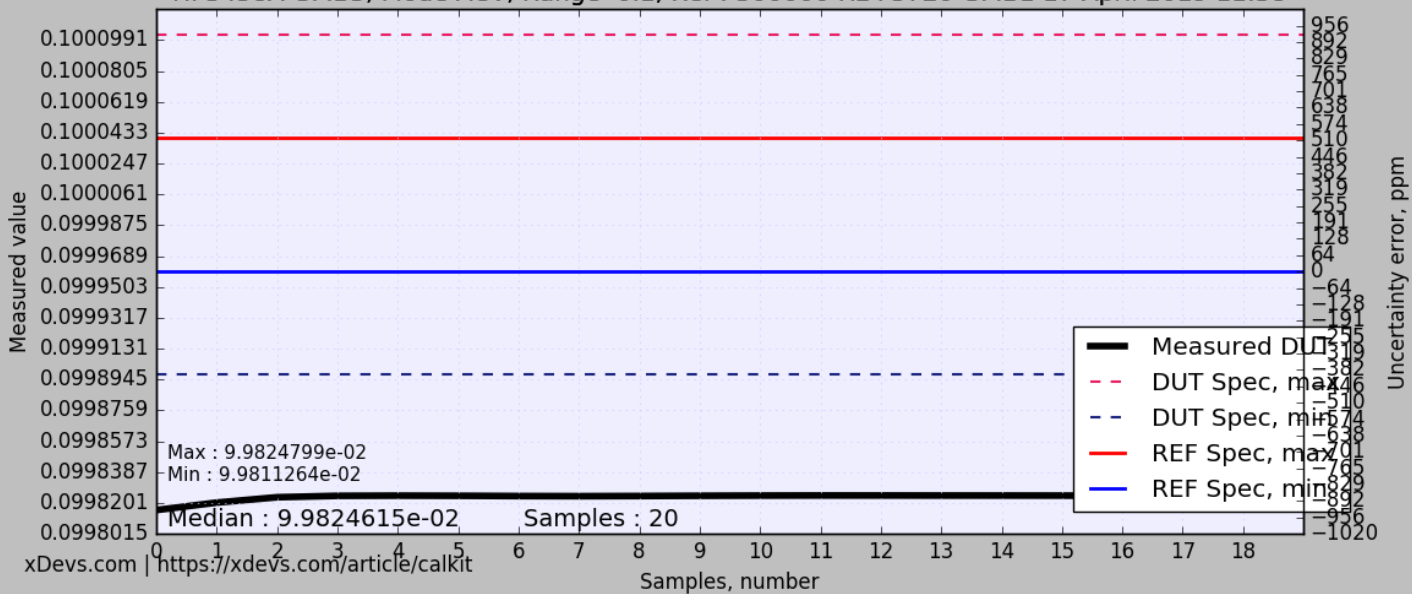




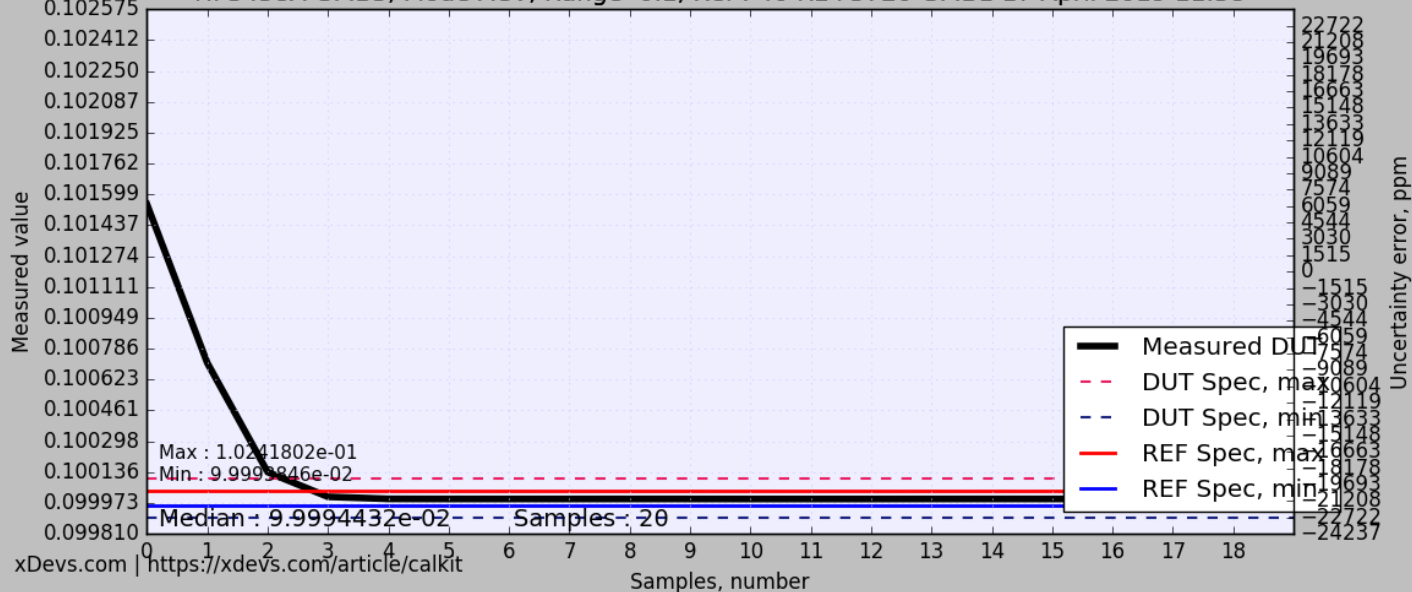
HP3458A GPIB3, Mode ACV, Range 0.1, Ref : 20 Hz F5720 GPIB1 17 April 2019 11:38

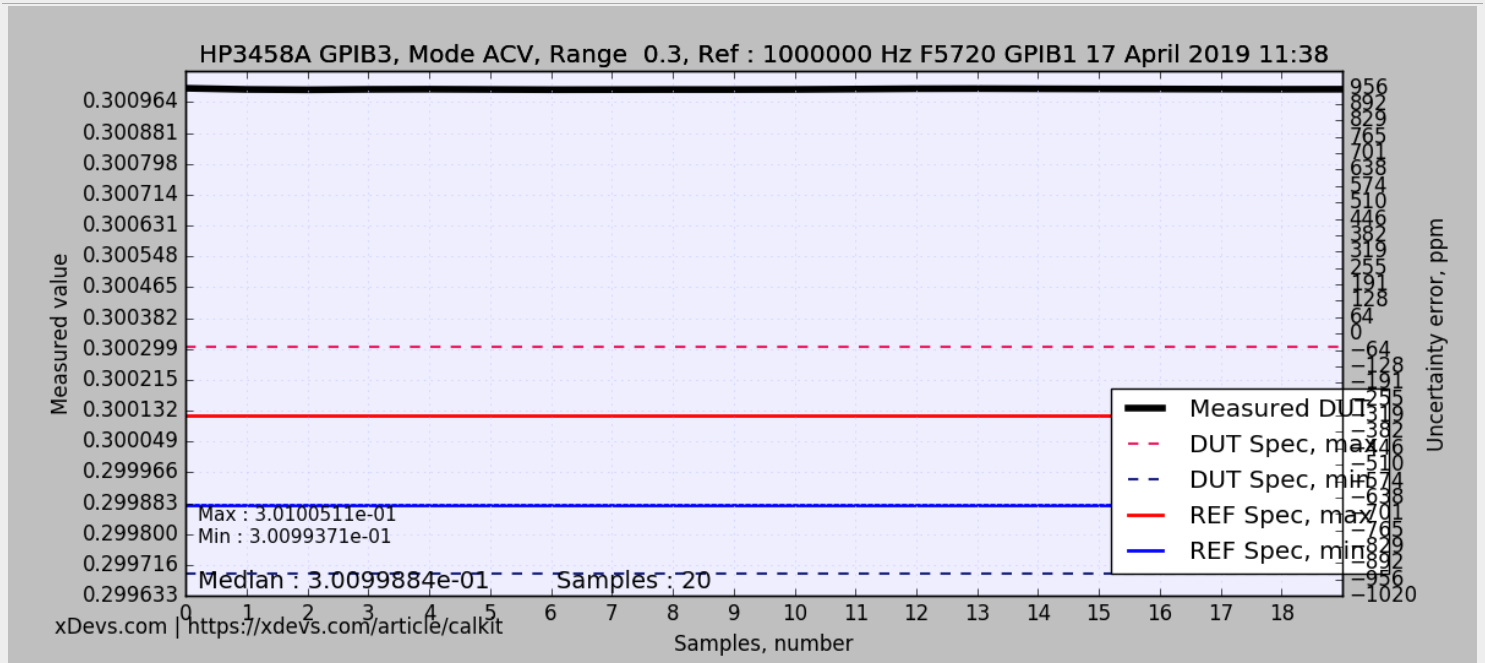
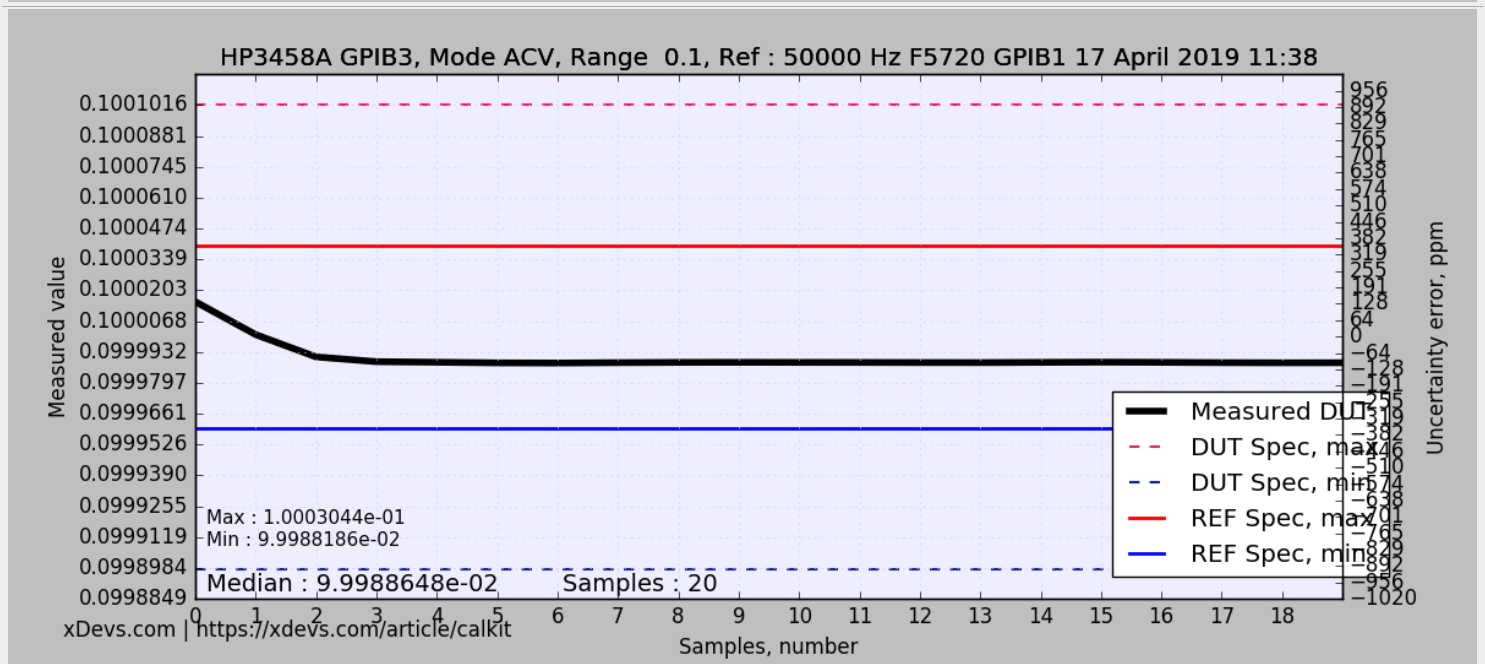
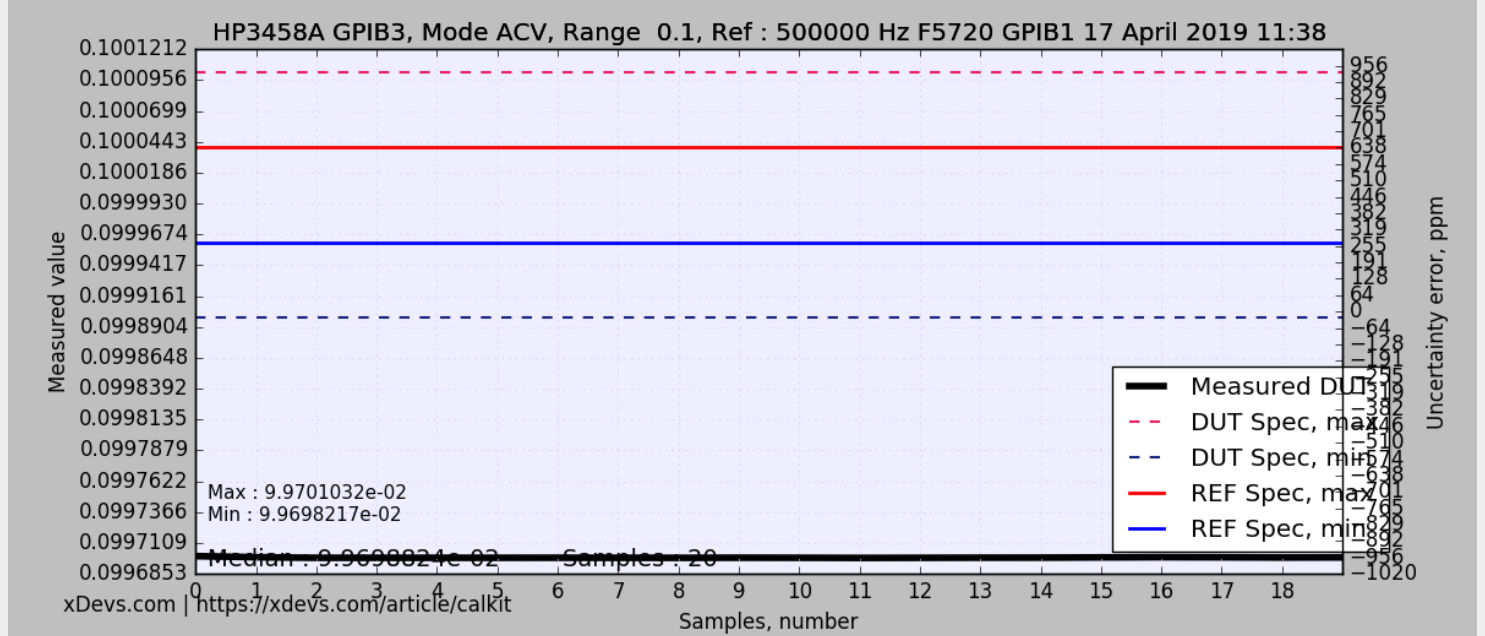


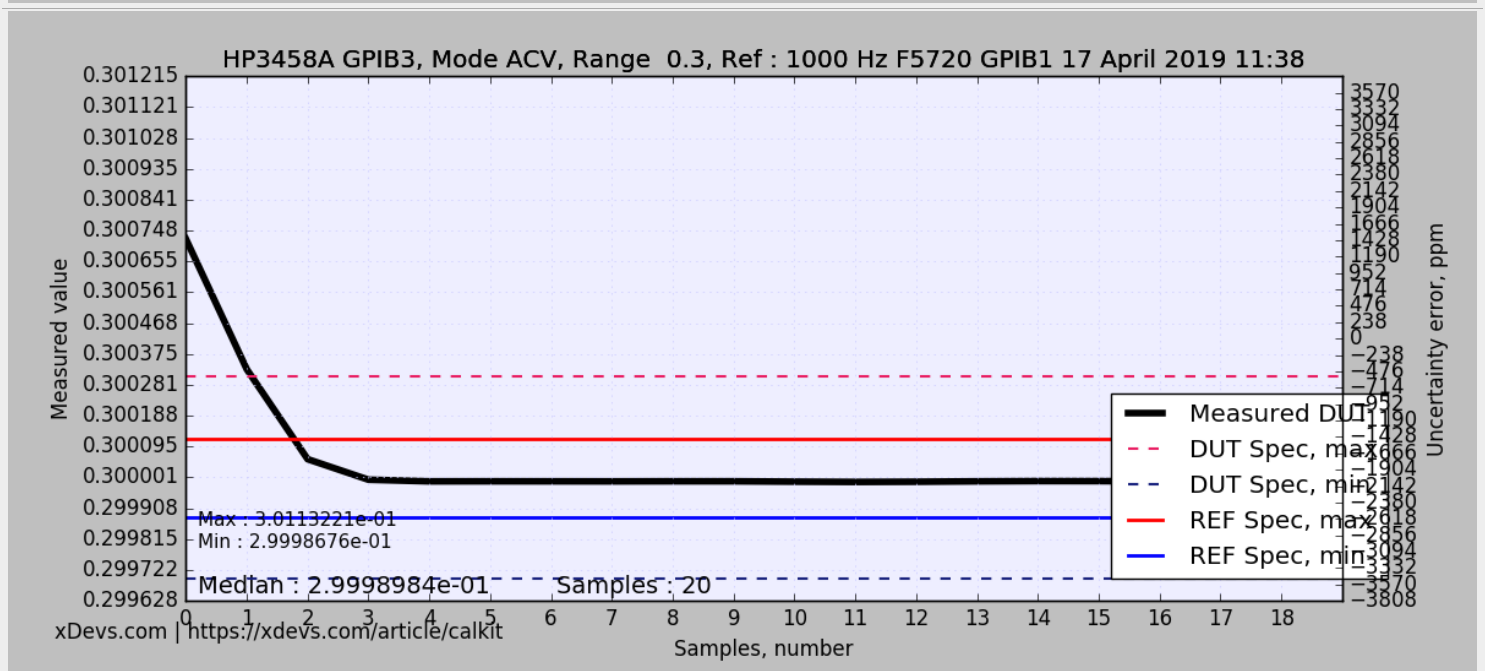
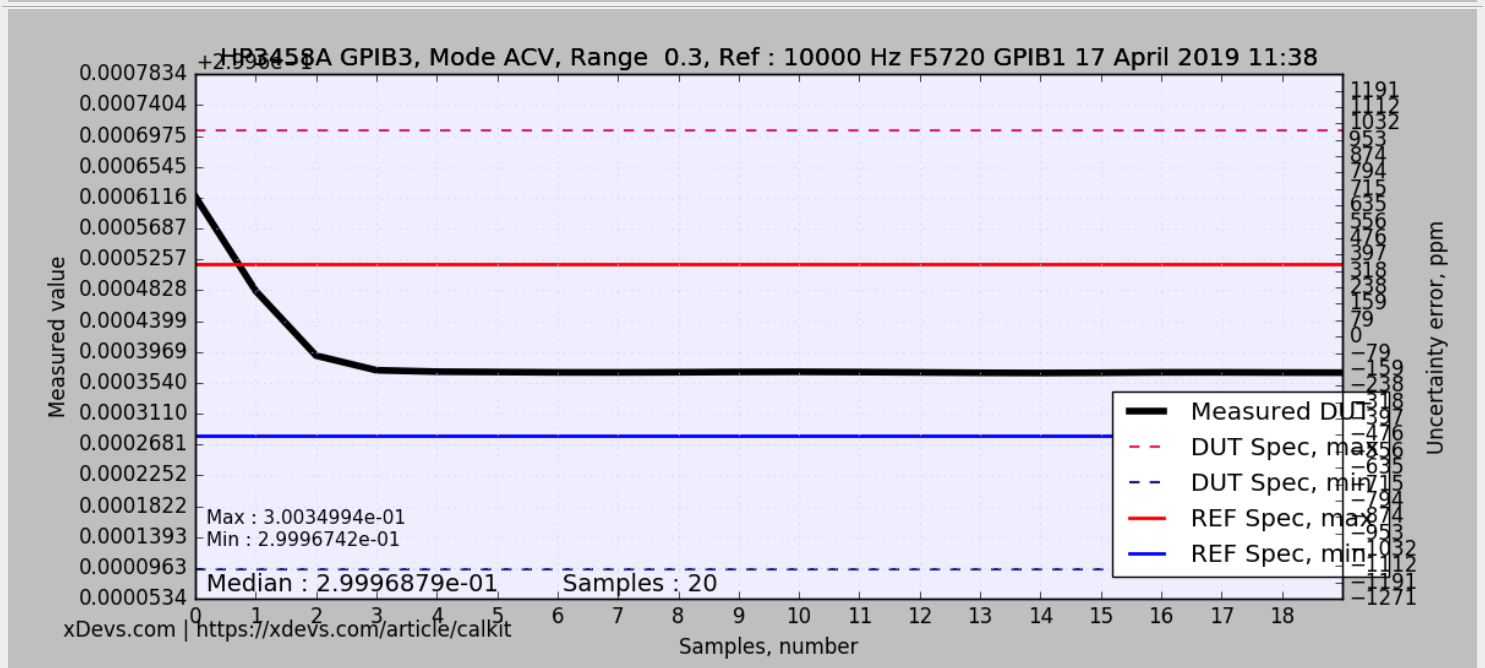
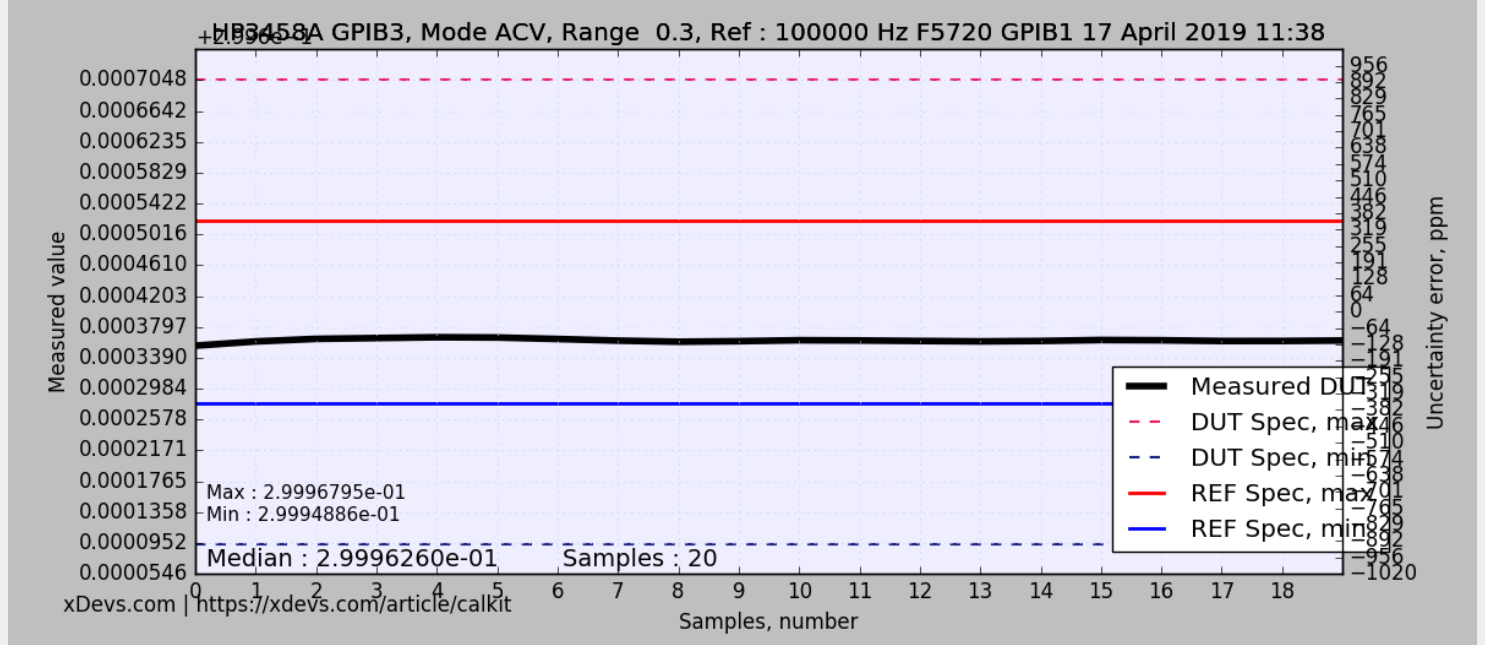
HP3458A GPIB3, Mode ACV, Range 0.1, Ref : 300000 Hz F5720 GPIB1 17 April 2019 11:38



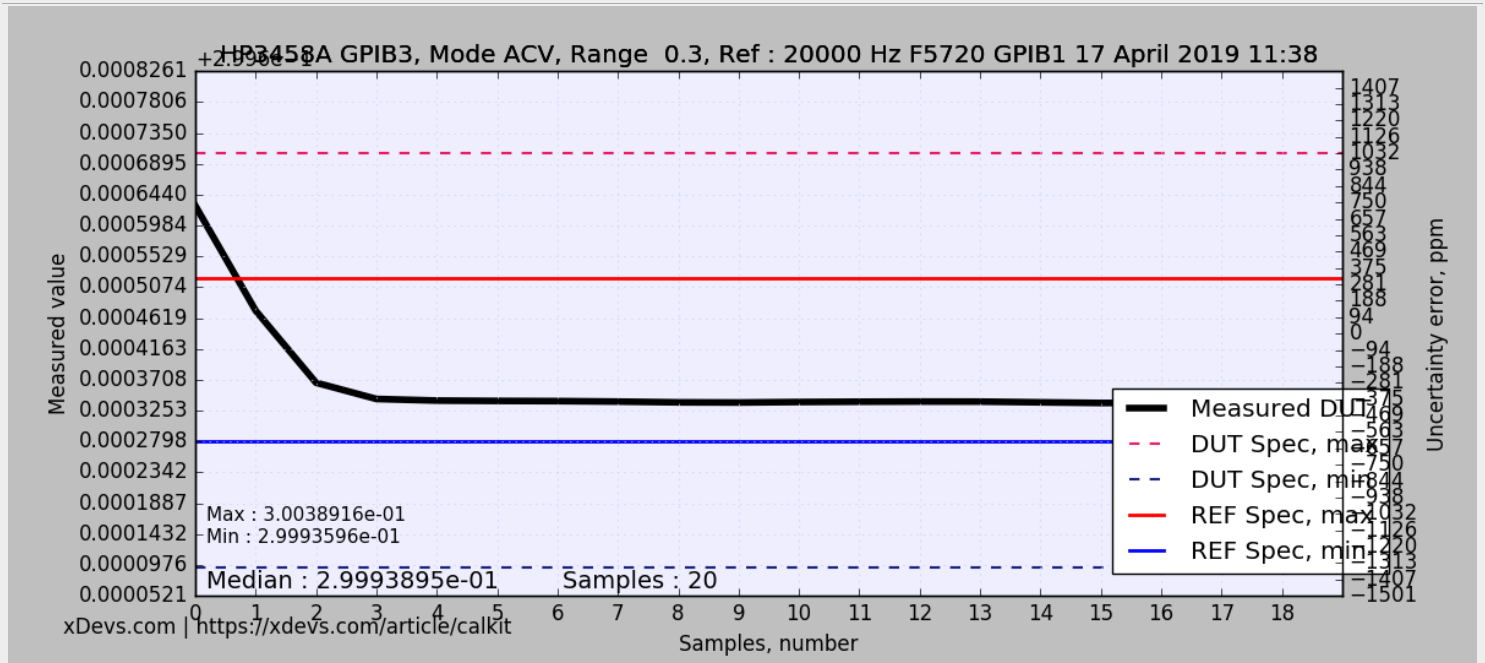
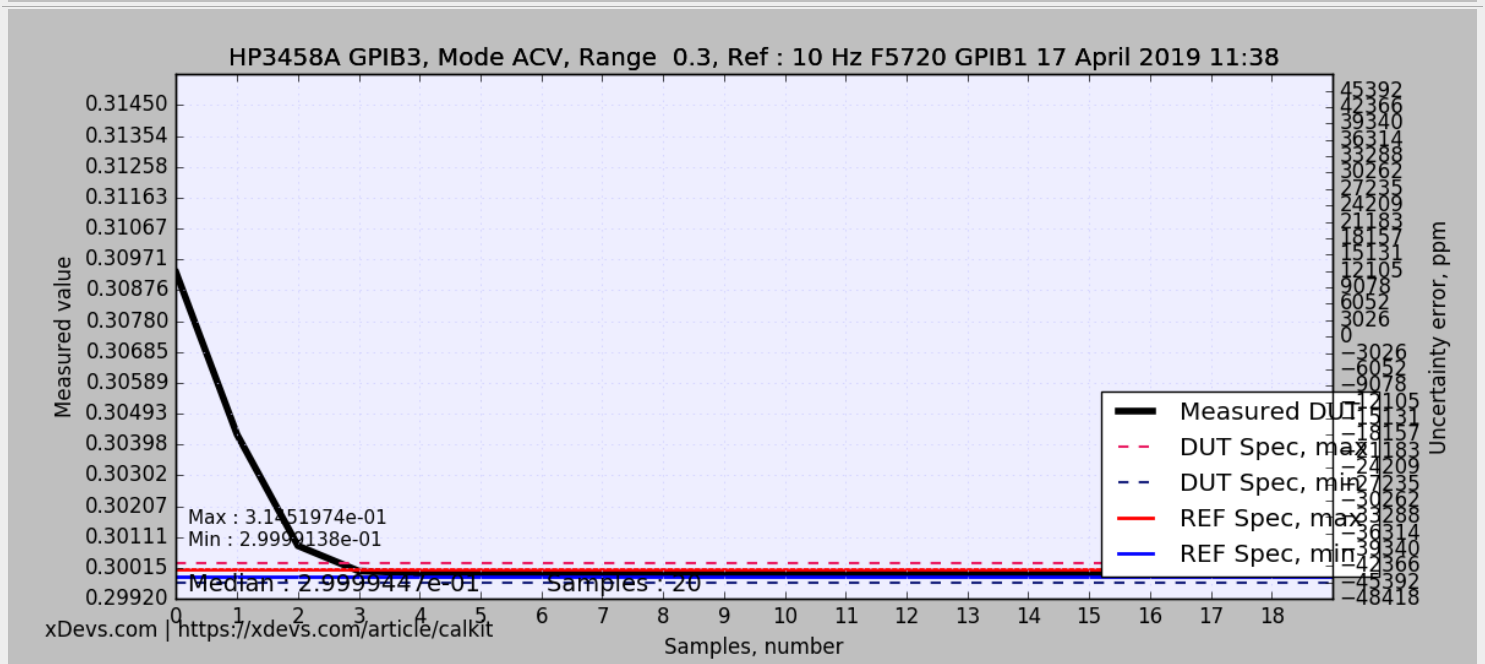
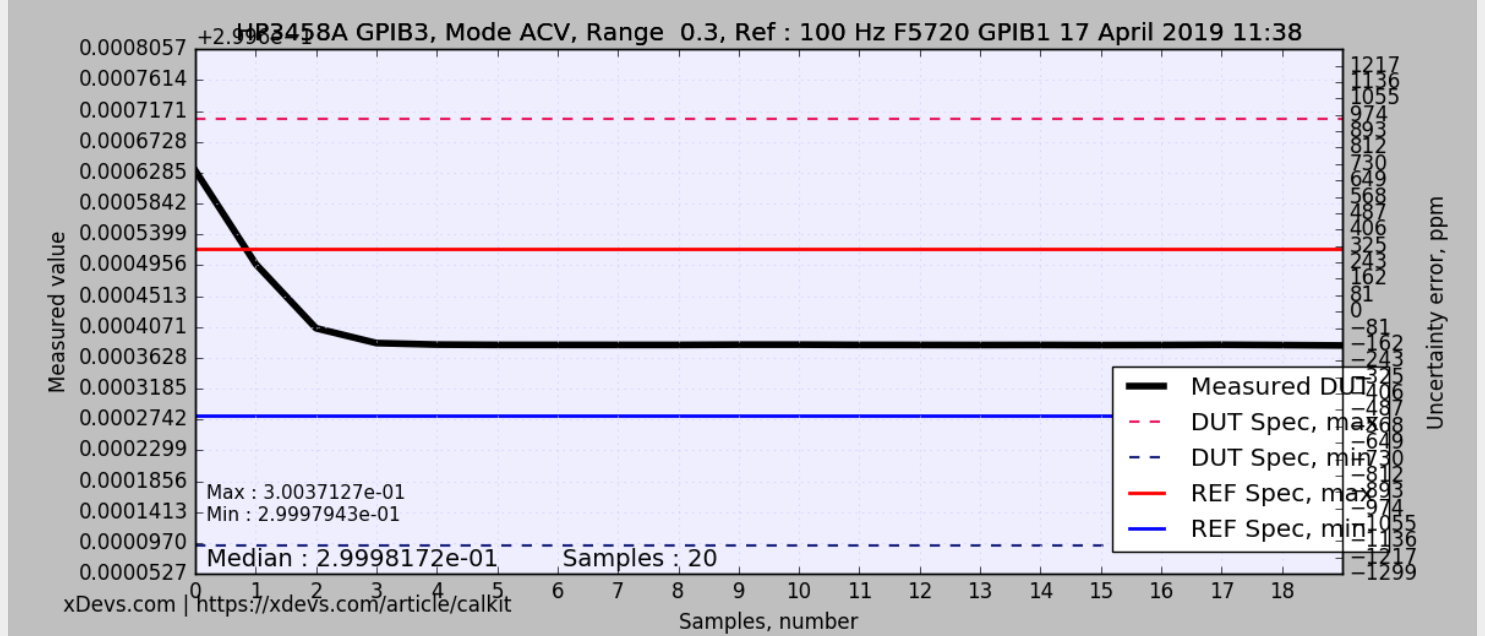
HP3458A GPIB3, Mode ACV, Range 0.1, Ref : 40 Hz F5720 GPIB1 17 April 2019 11:38

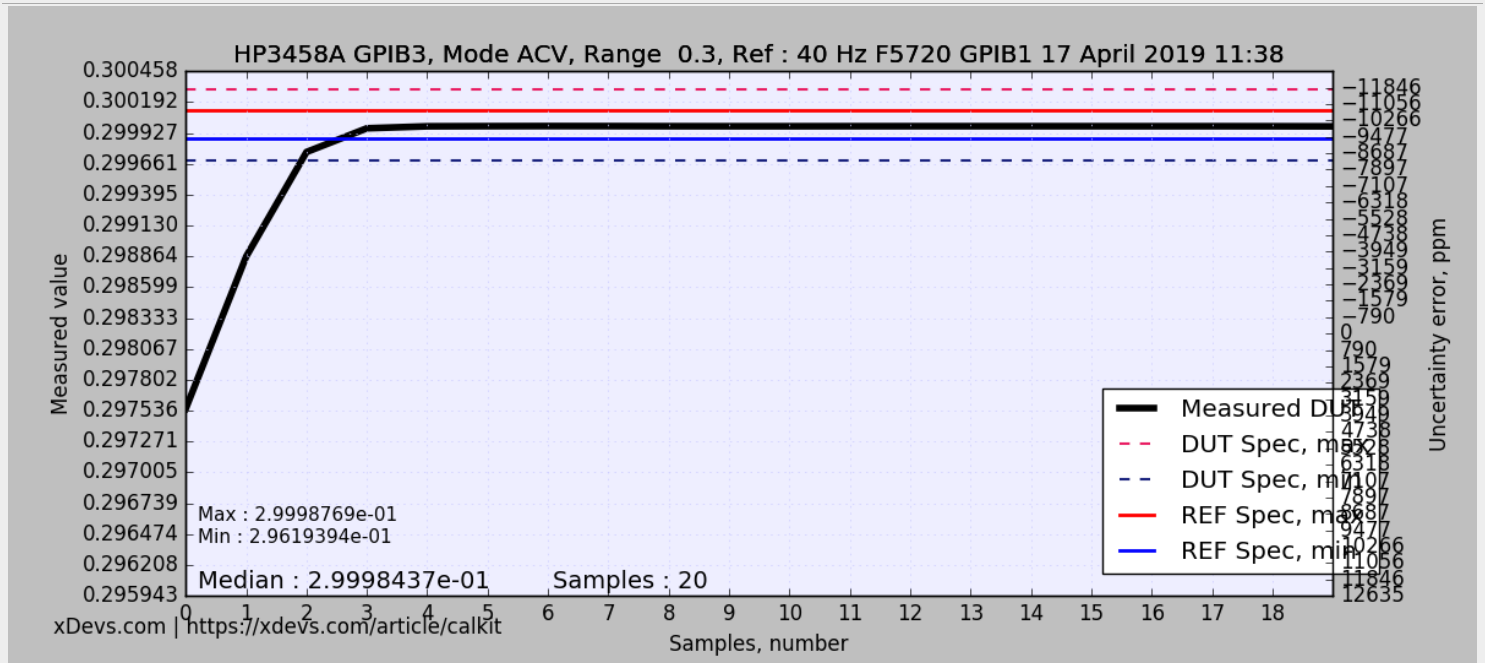
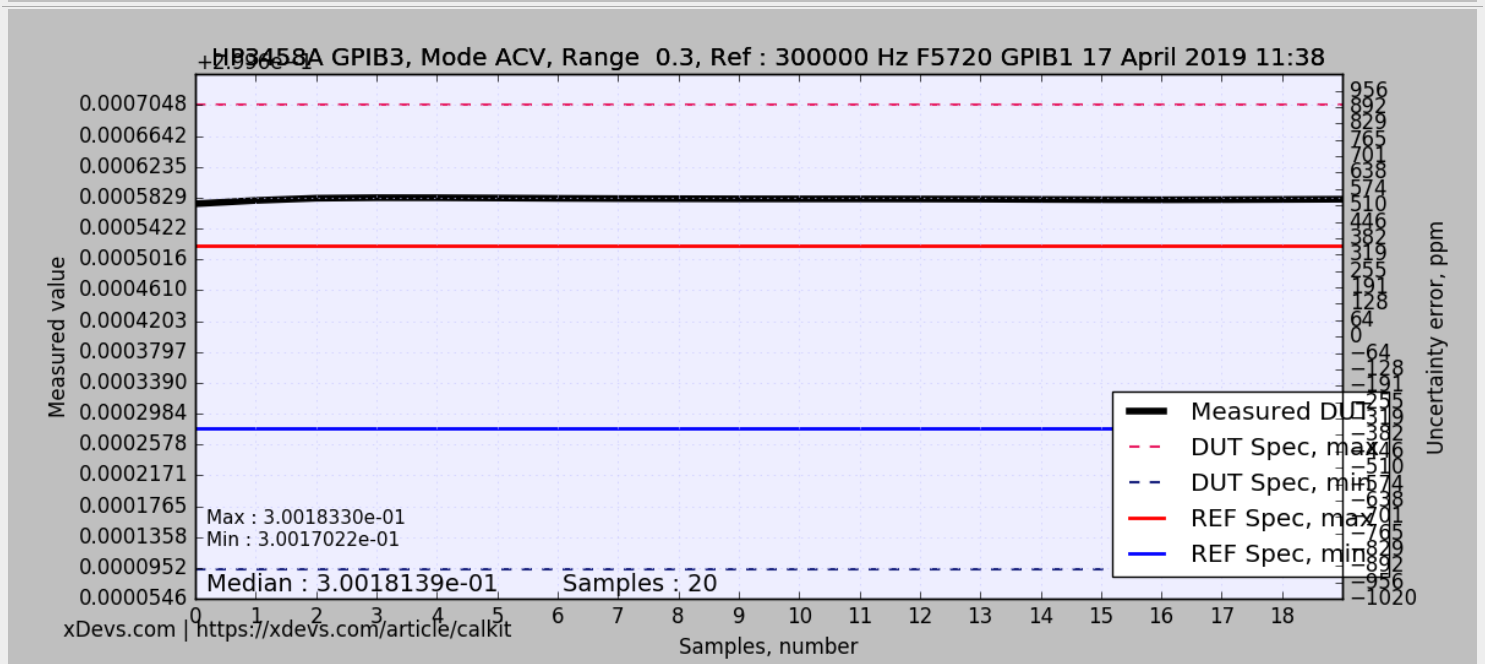
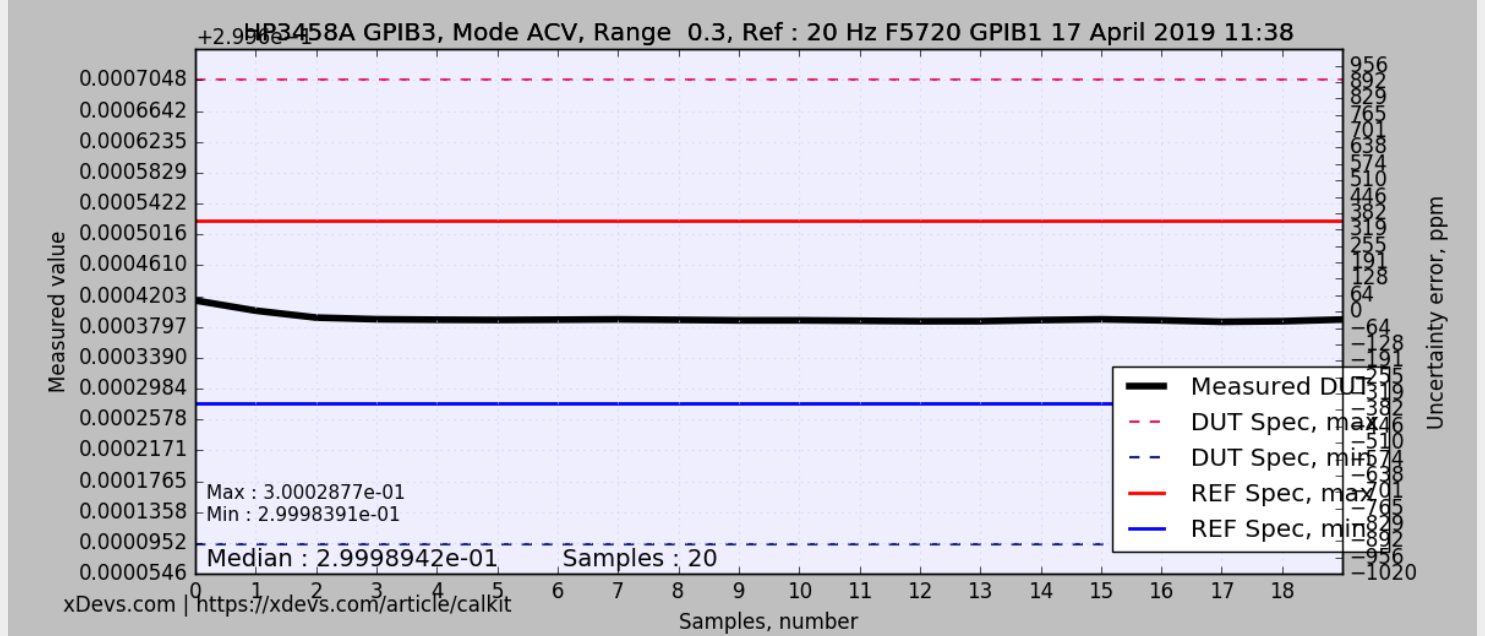


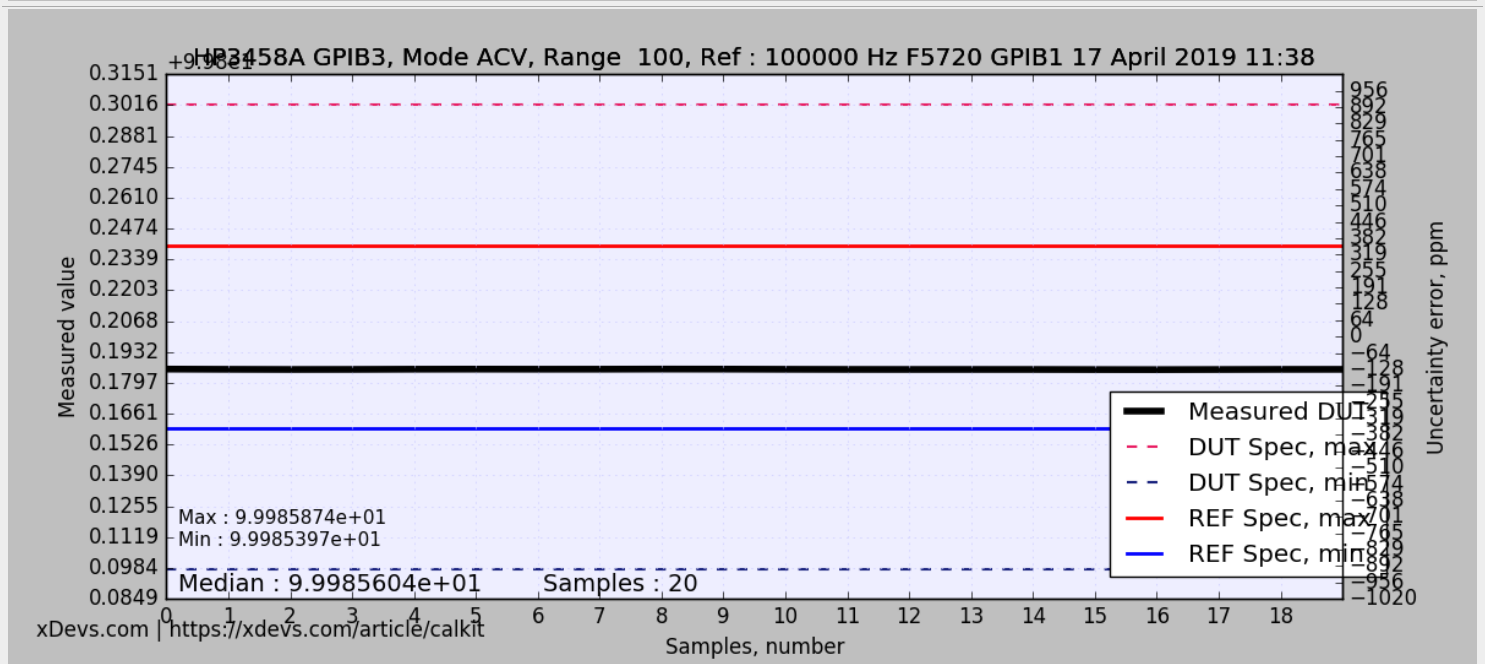
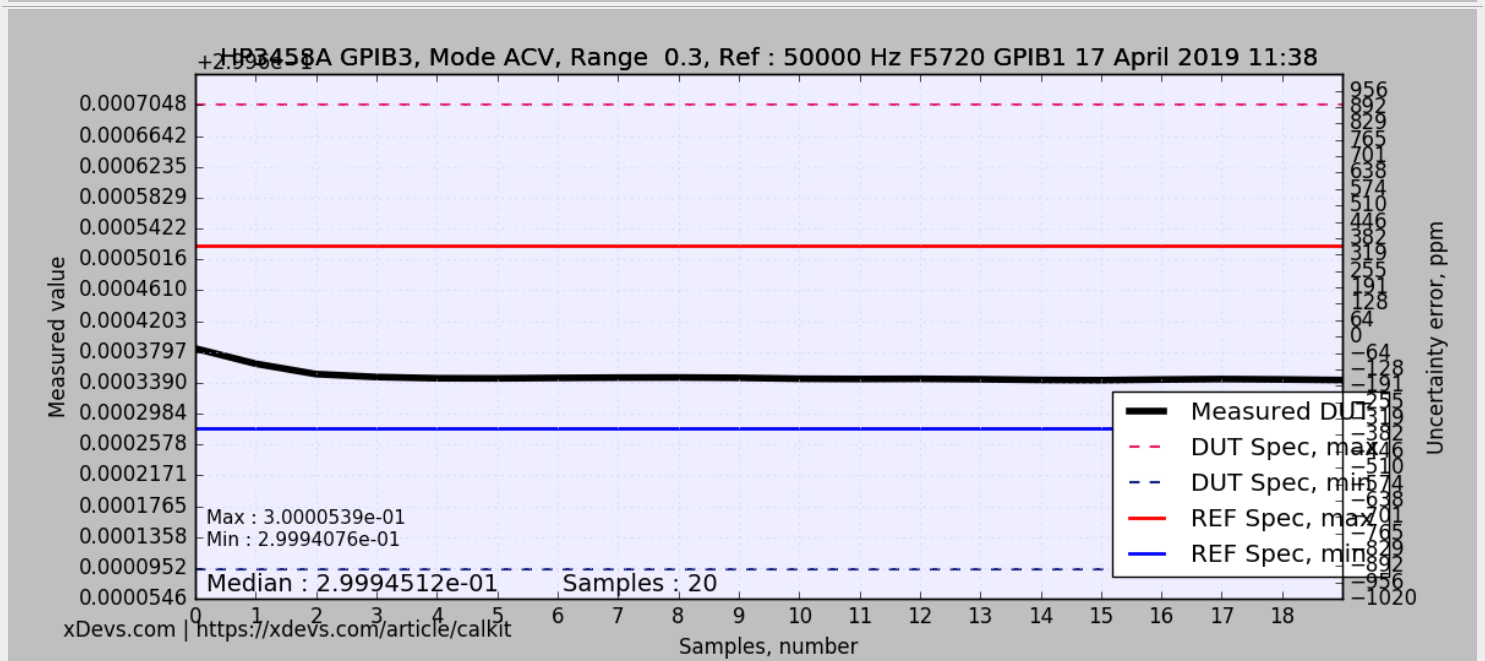
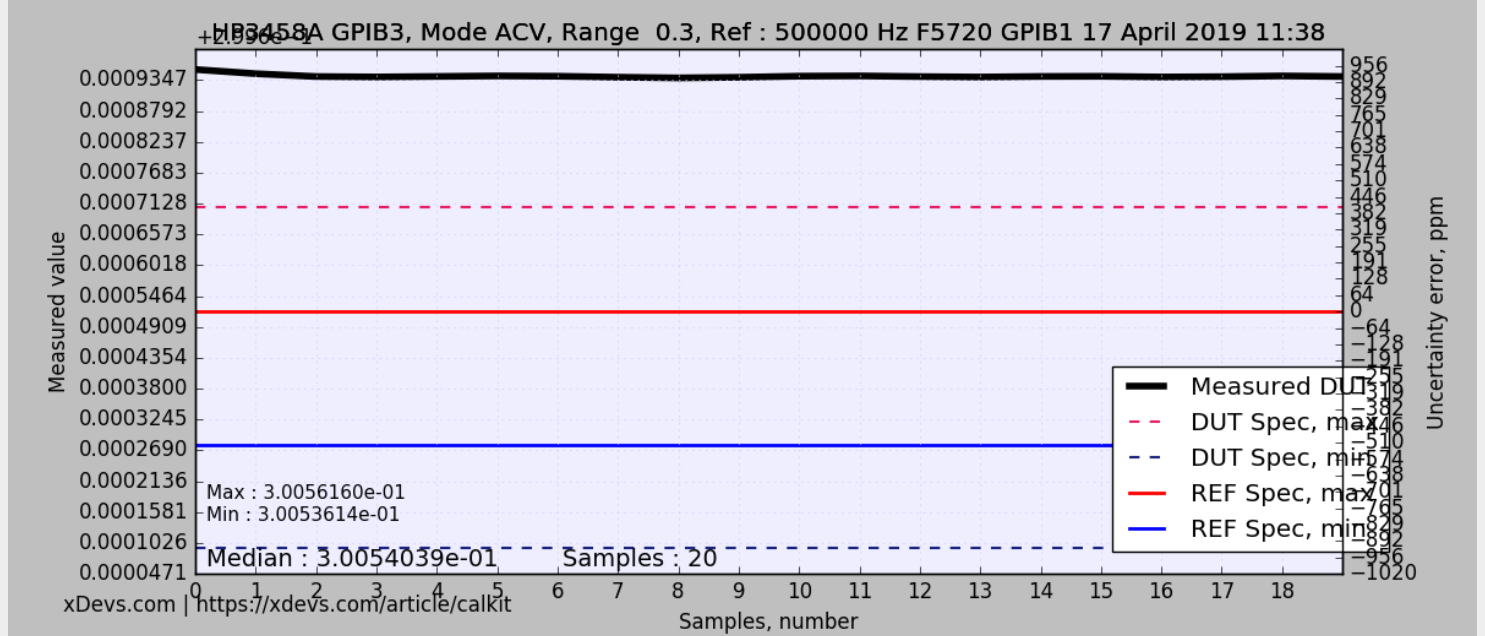


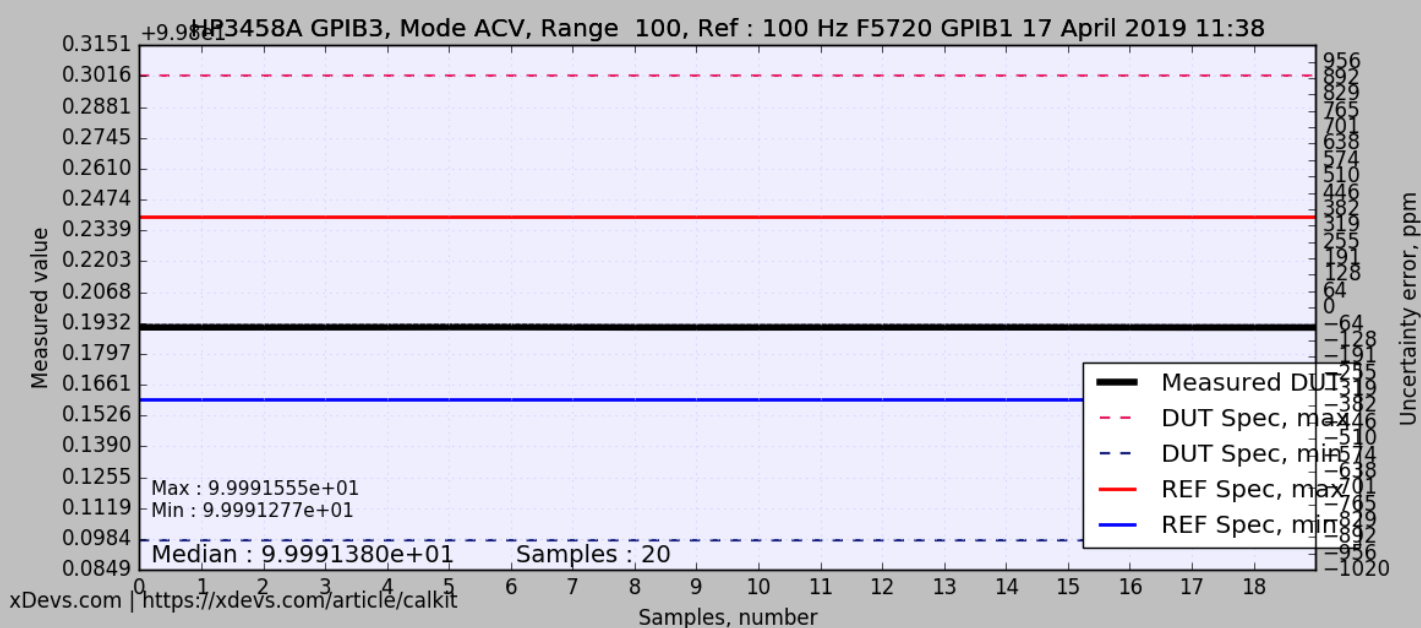
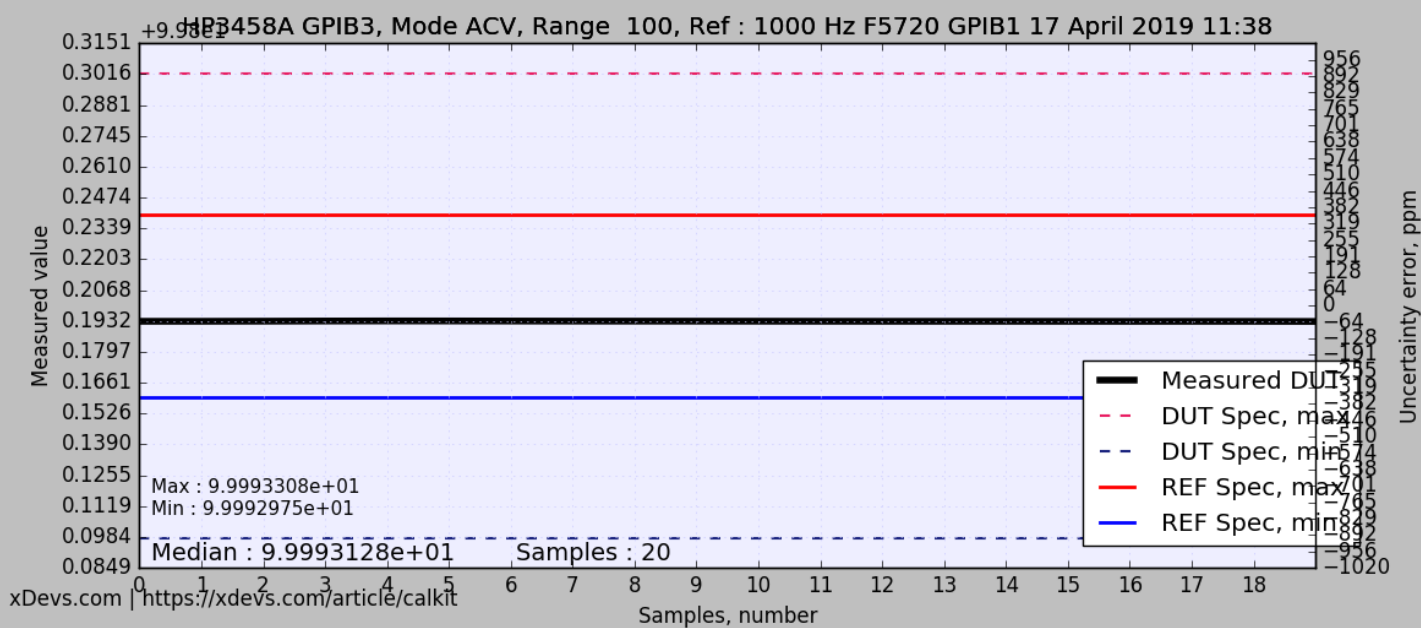
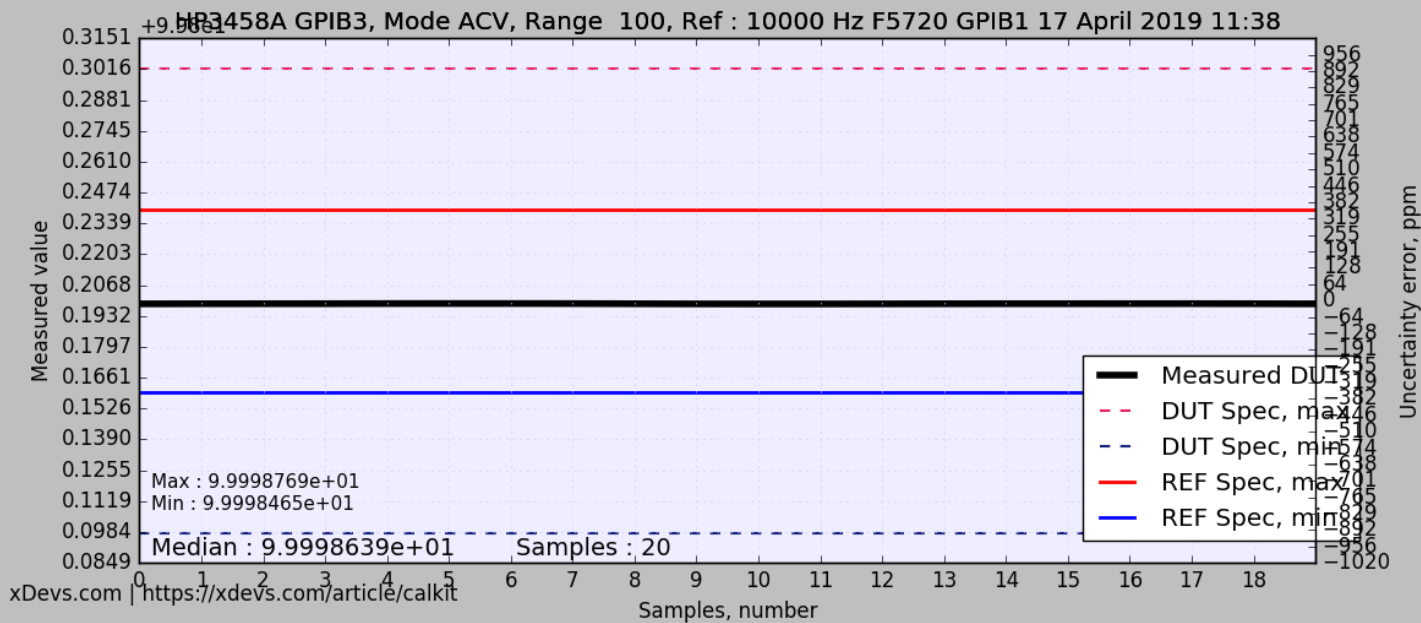




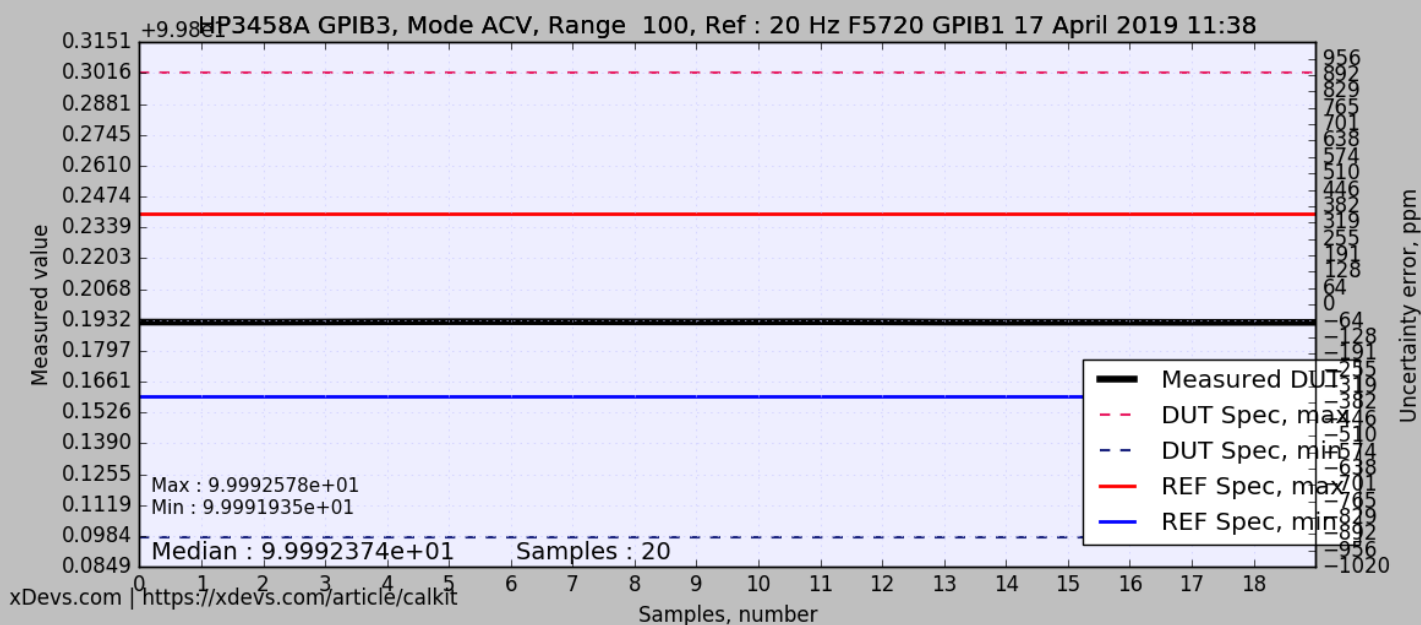
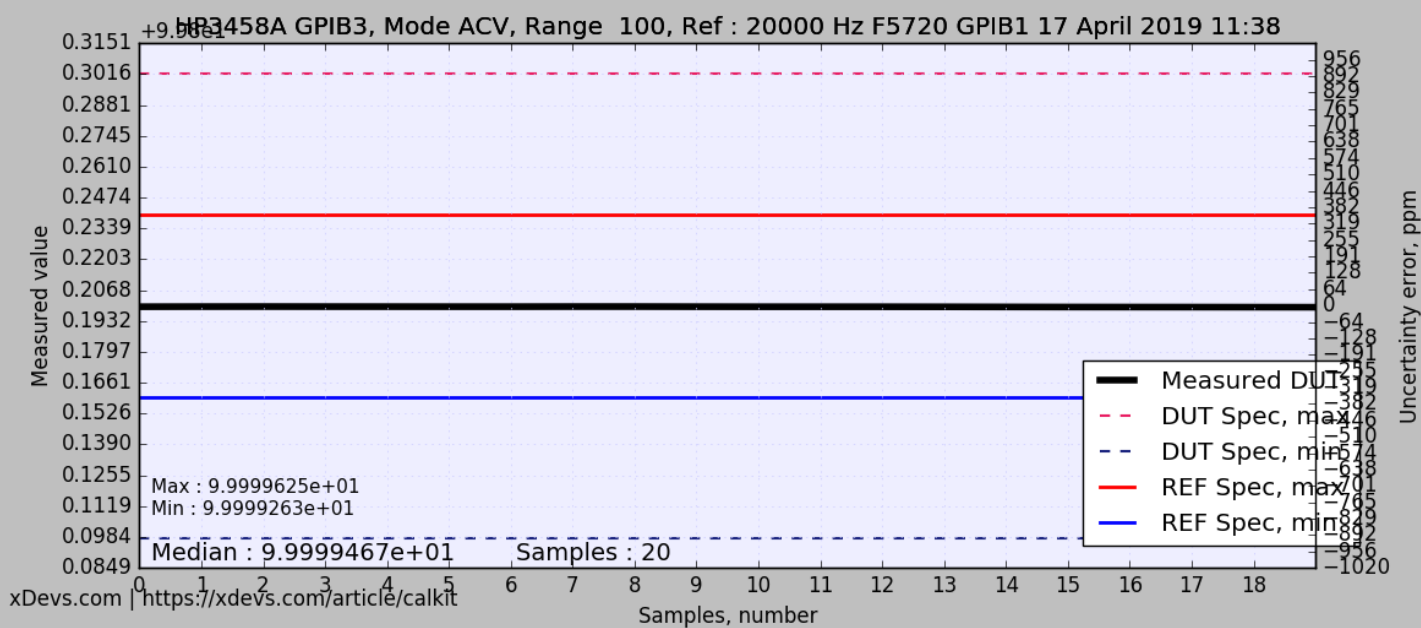
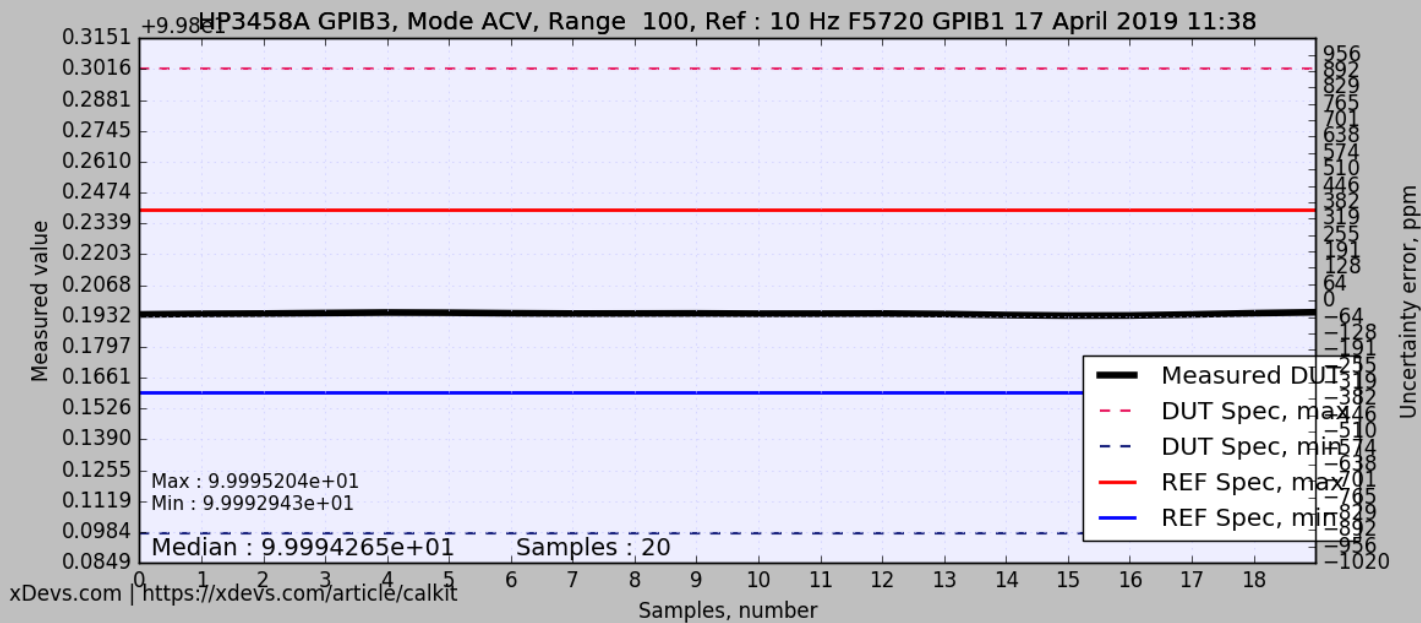


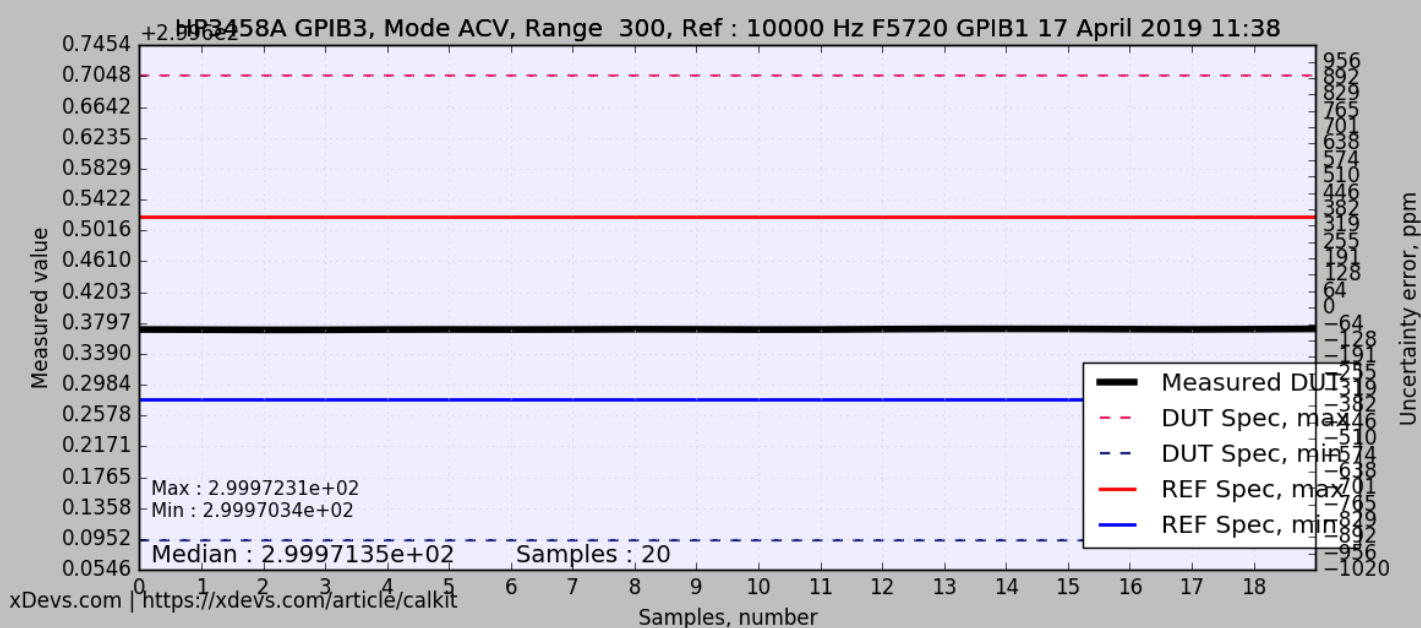
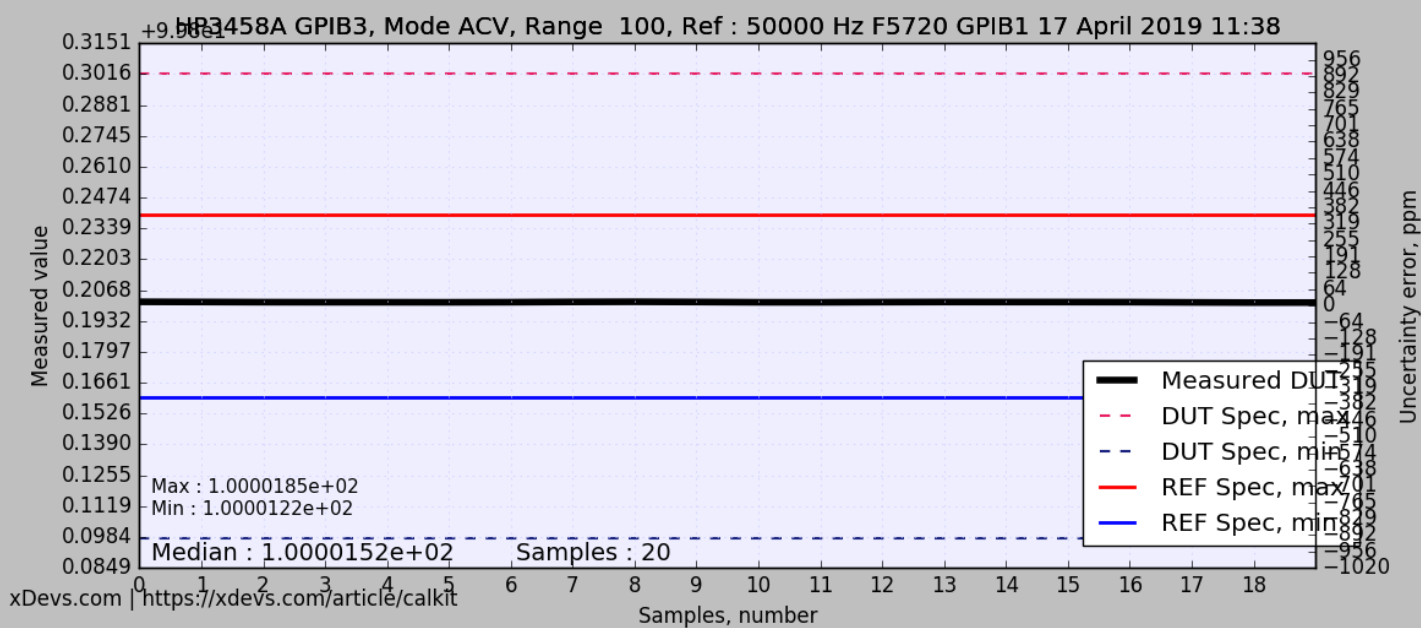
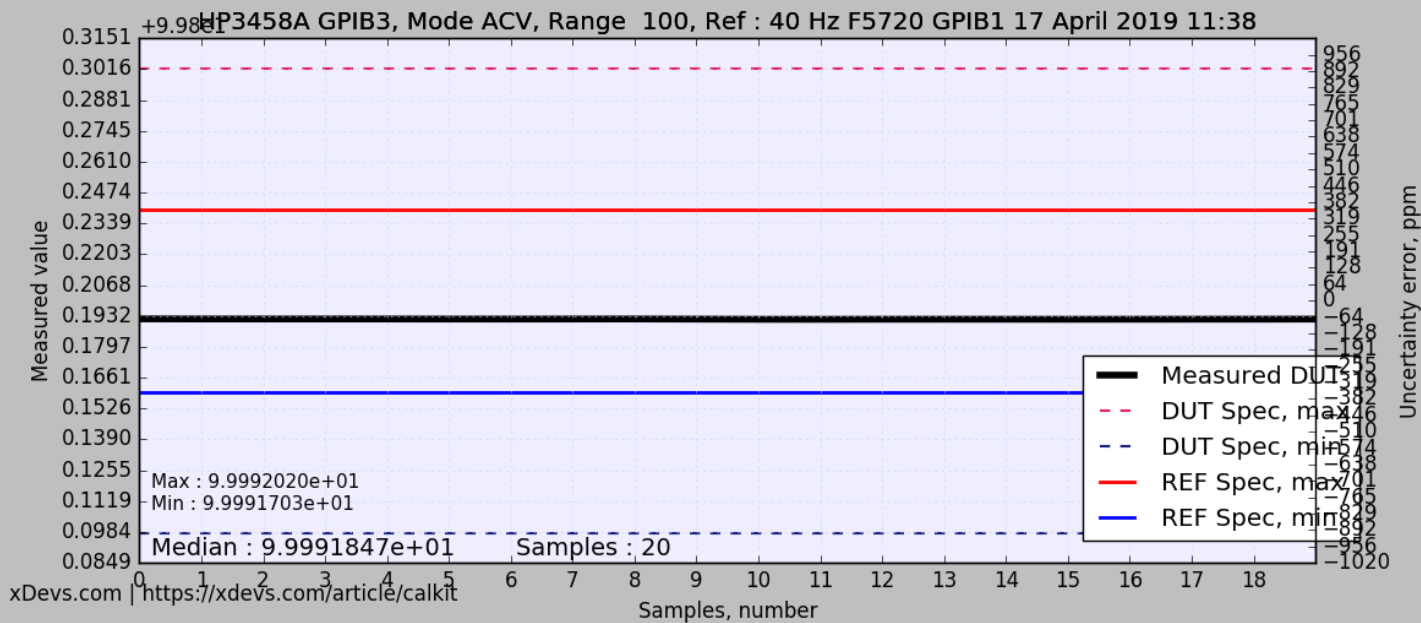


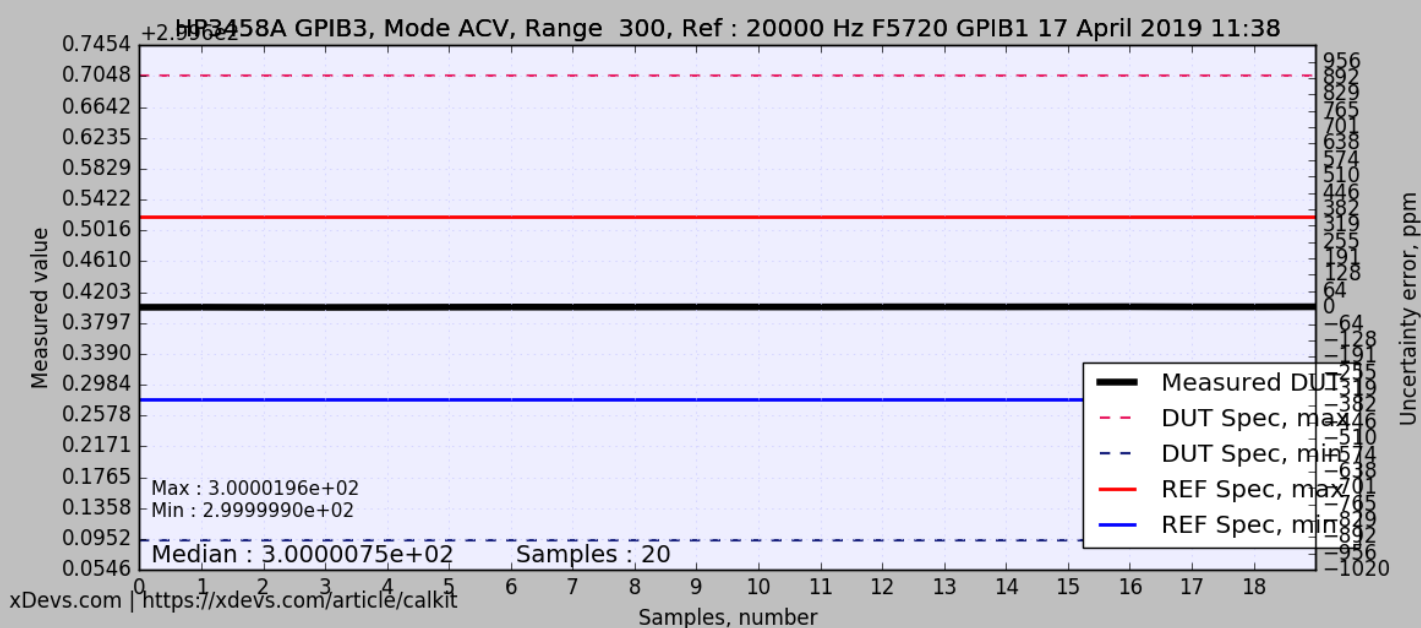
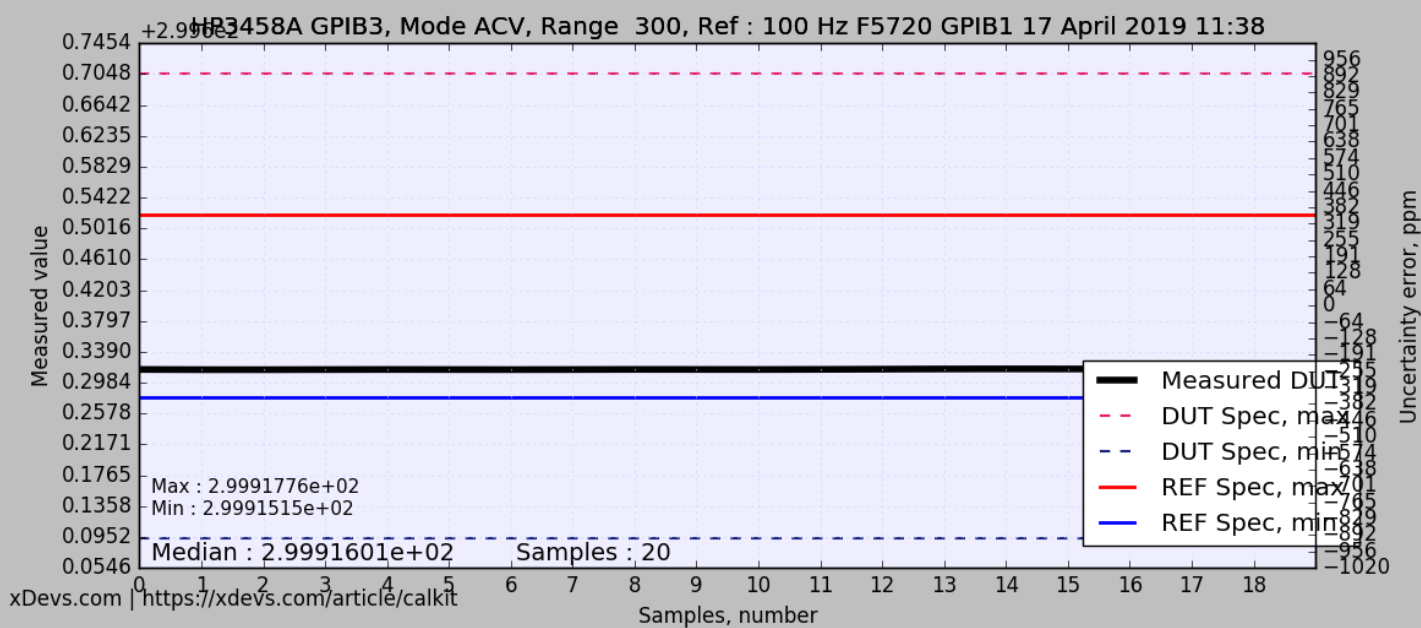
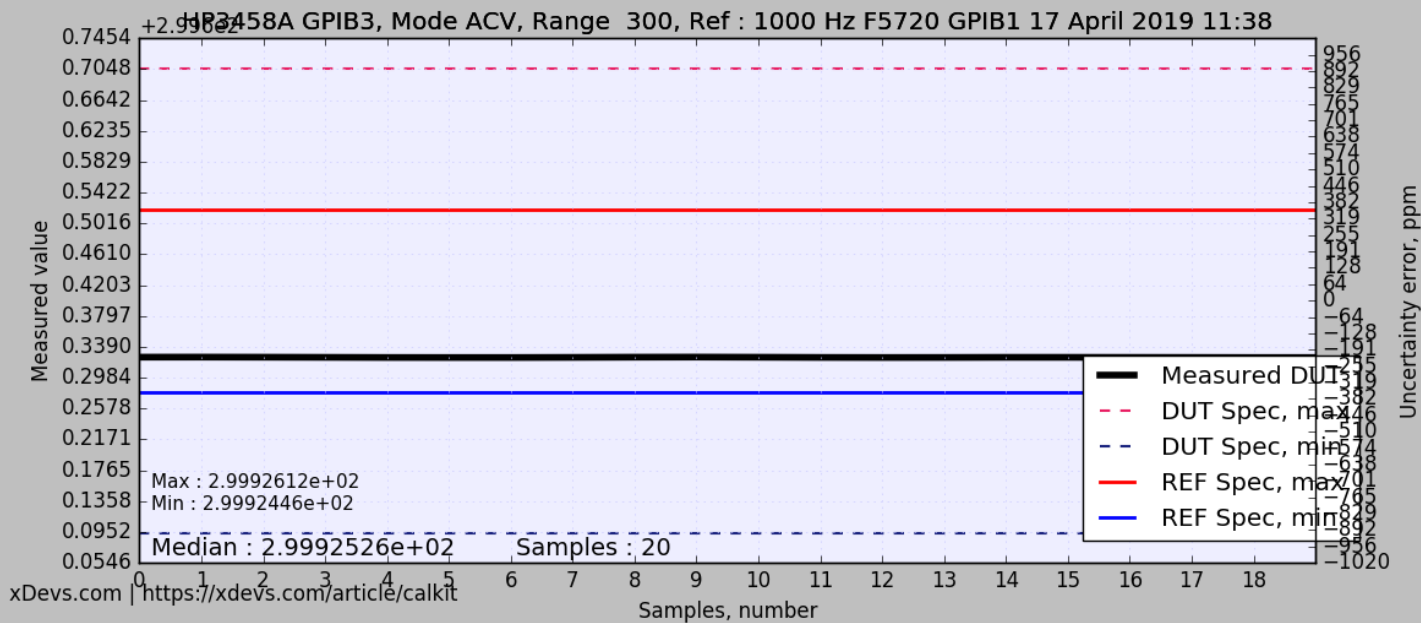




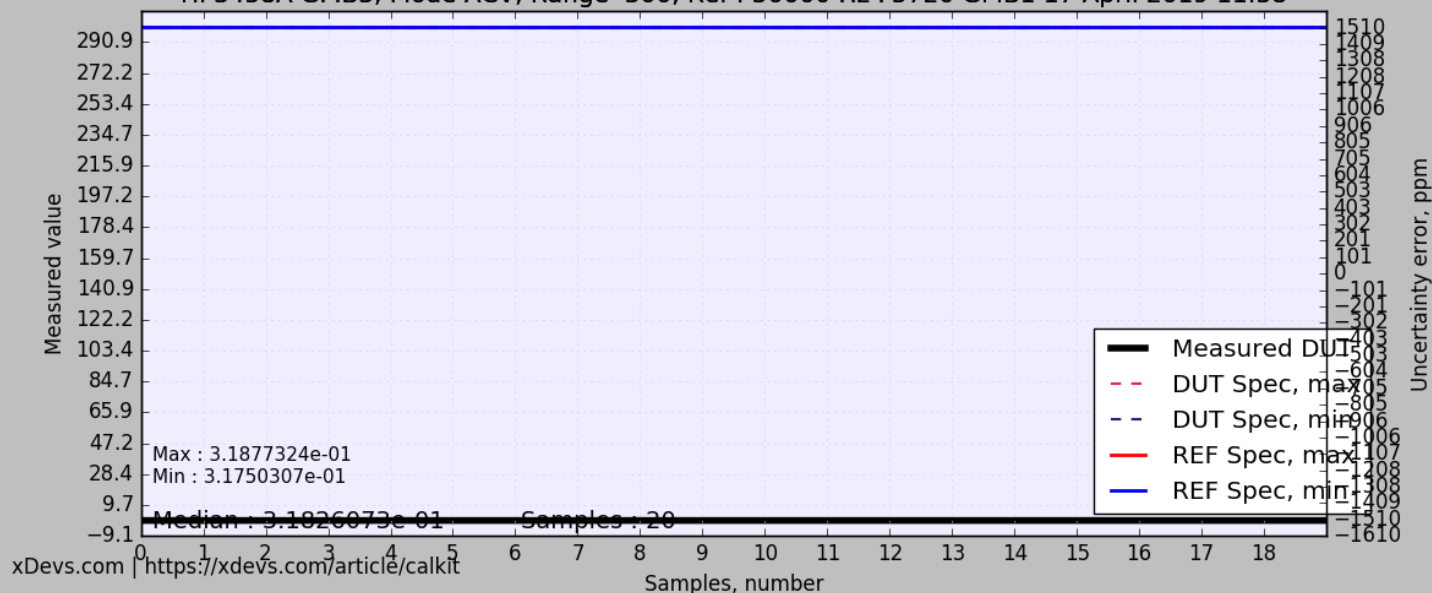




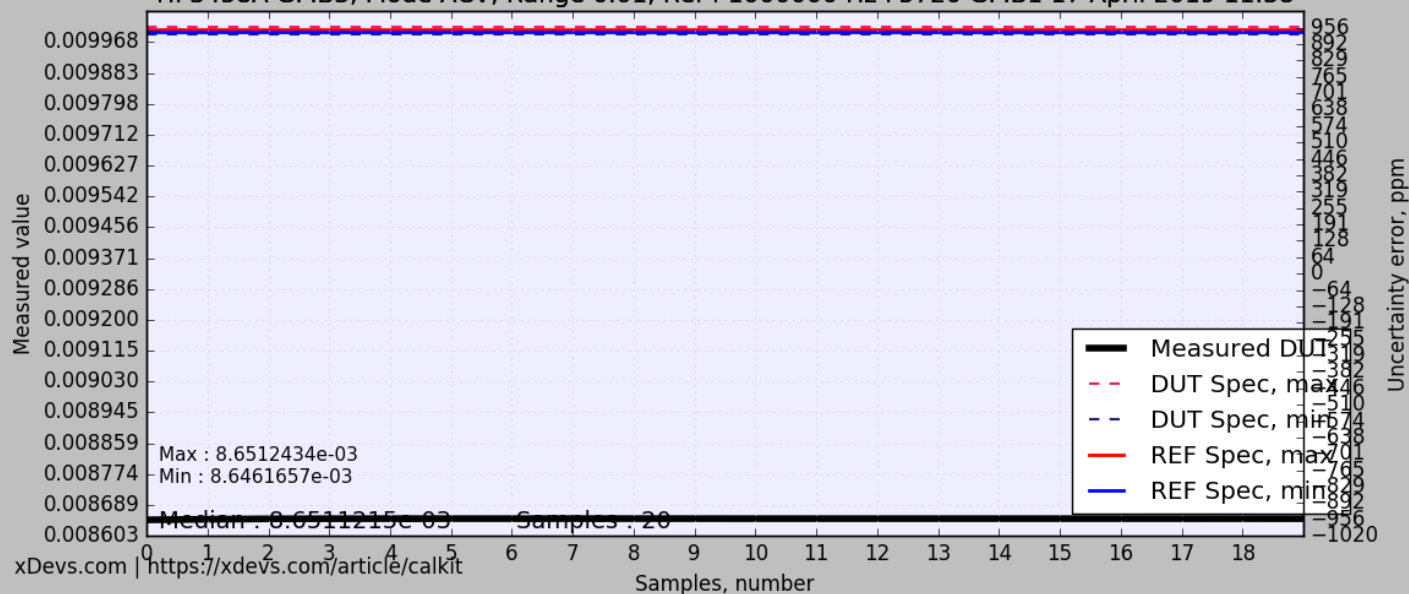




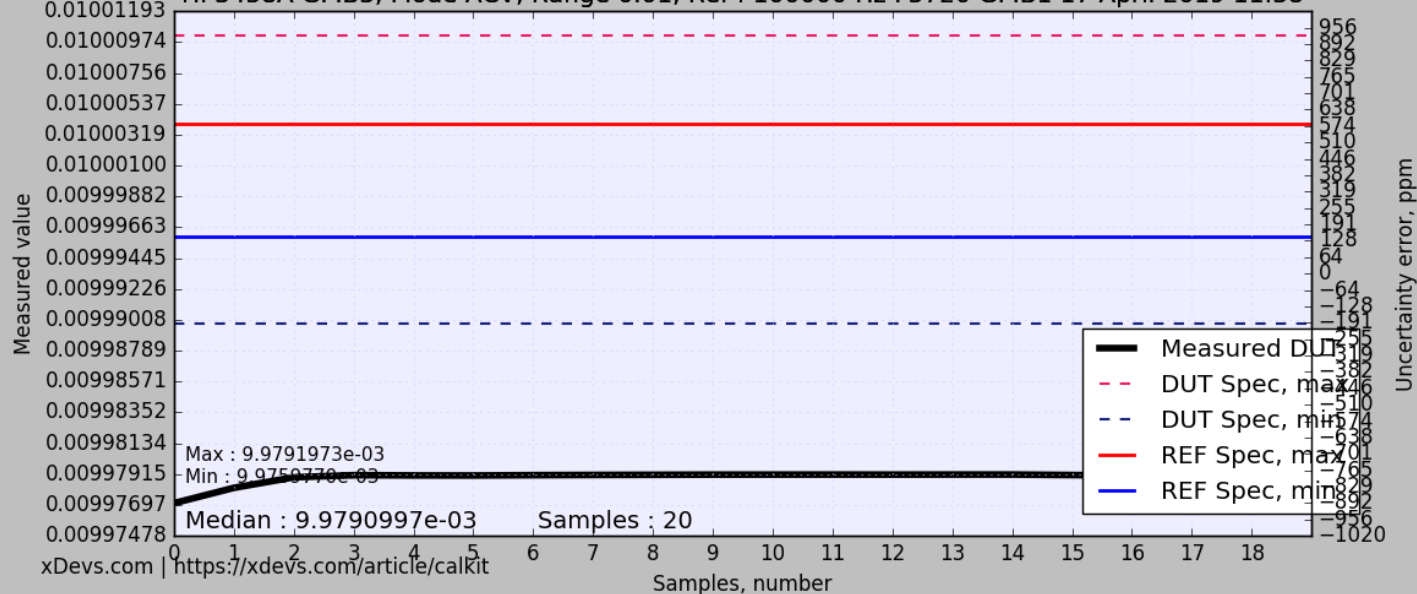
HP3458A GPIB3, Mode ACV, Range 300, Ref : 50000 Hz F5720 GPIB1 17 April 2019 11:38



HP3458A GPIB3, Mode ACV, Range 0.01, Ref : 1000000 Hz F5720 GPIB1 17 April 2019 11:38

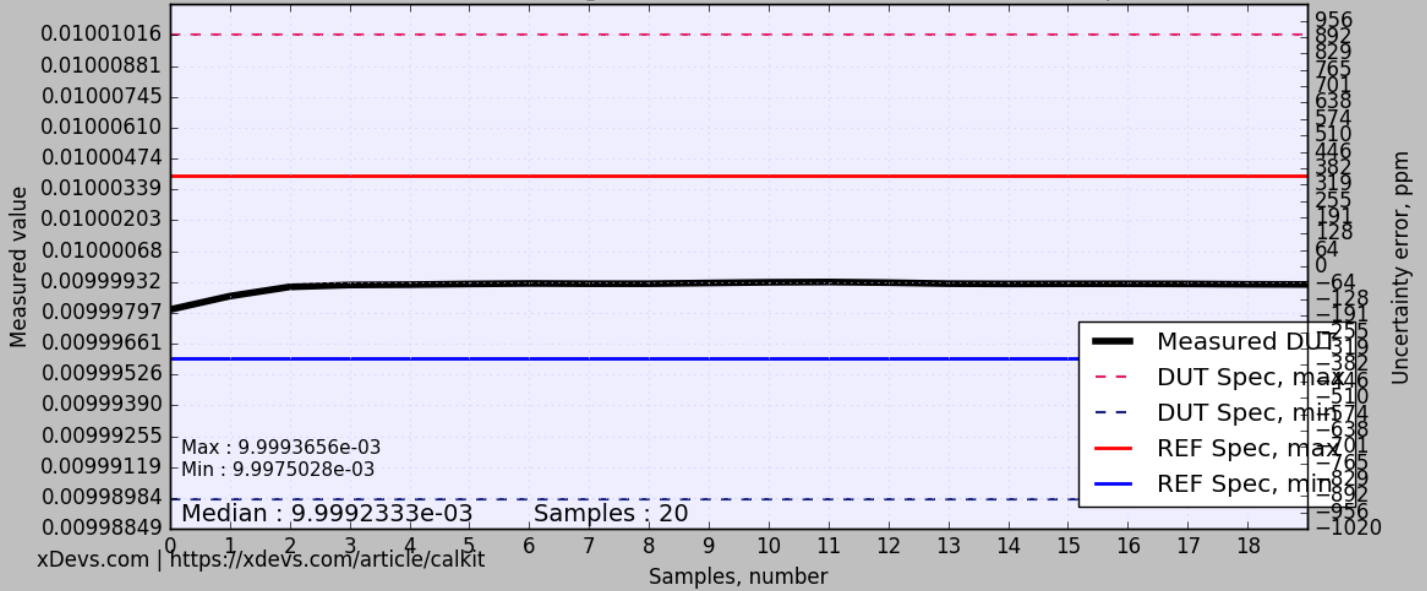


HP3458A GPIB3, Mode ACV, Range 0.01, Ref : 100000 Hz F5720 GPIB1 17 April 2019 11:38

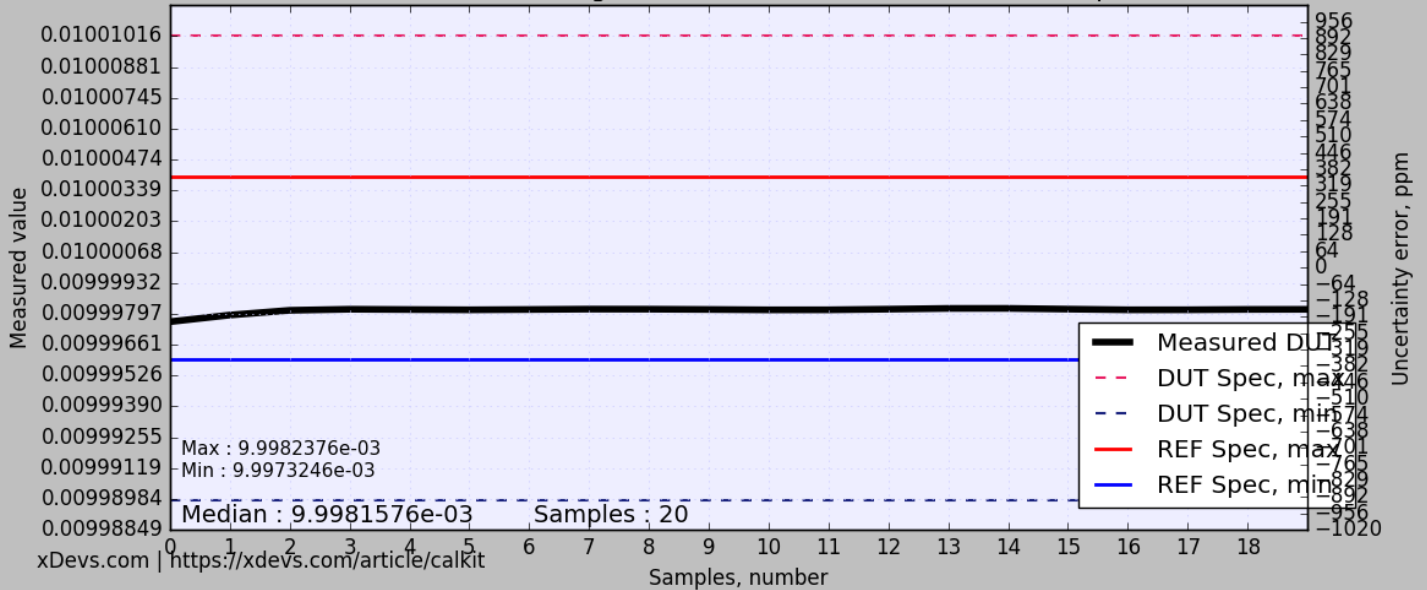




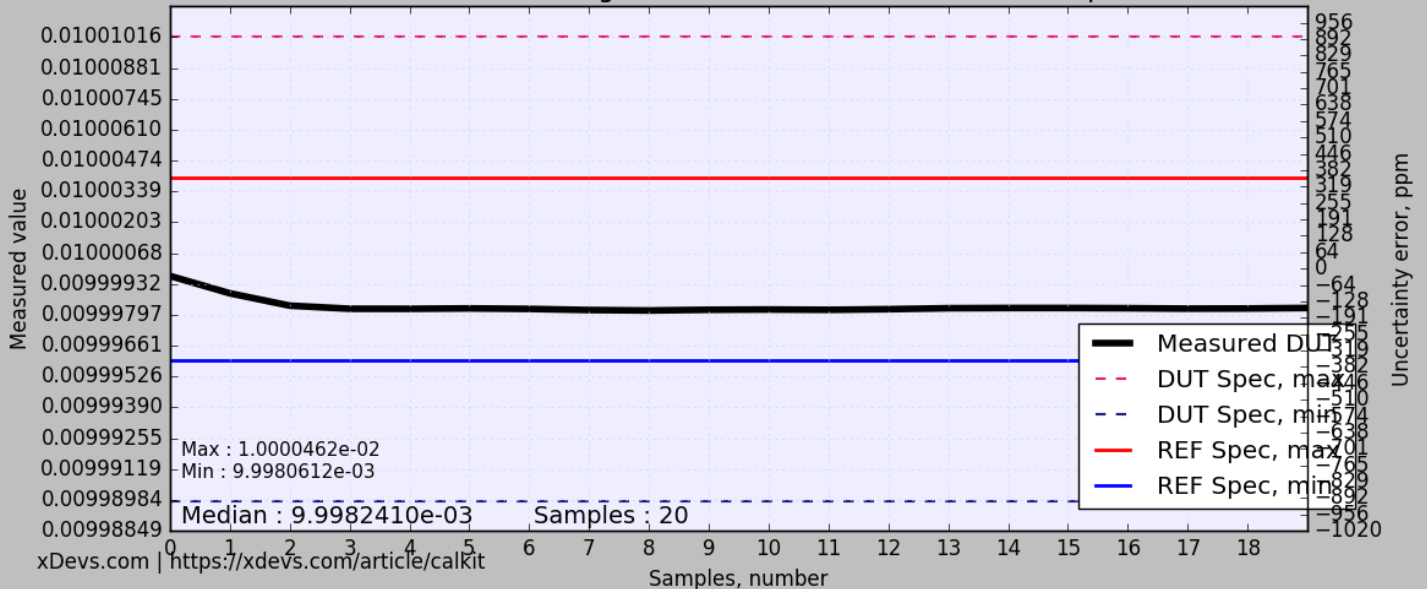
HP3458A GPIB3, Mode ACV, Range 0.01, Ref : 10000 Hz F5720 GPIB1 17 April 2019 11:38

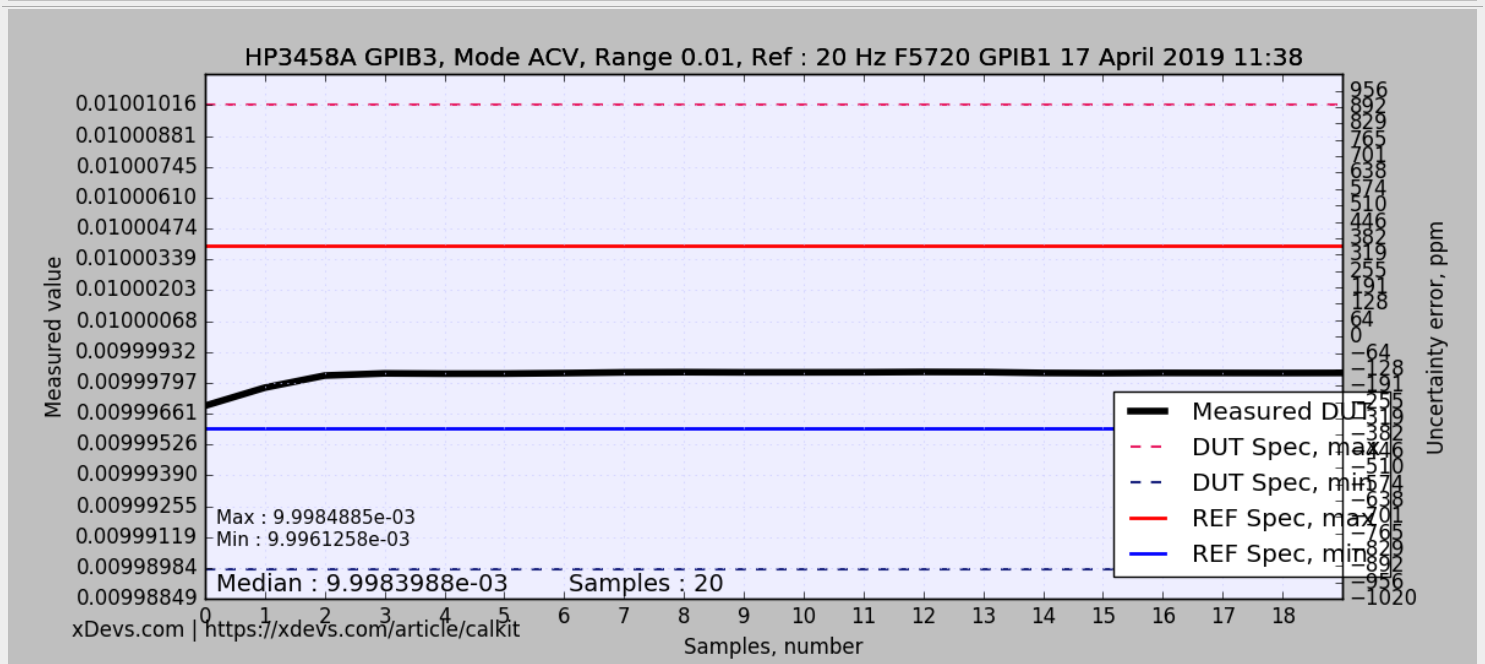
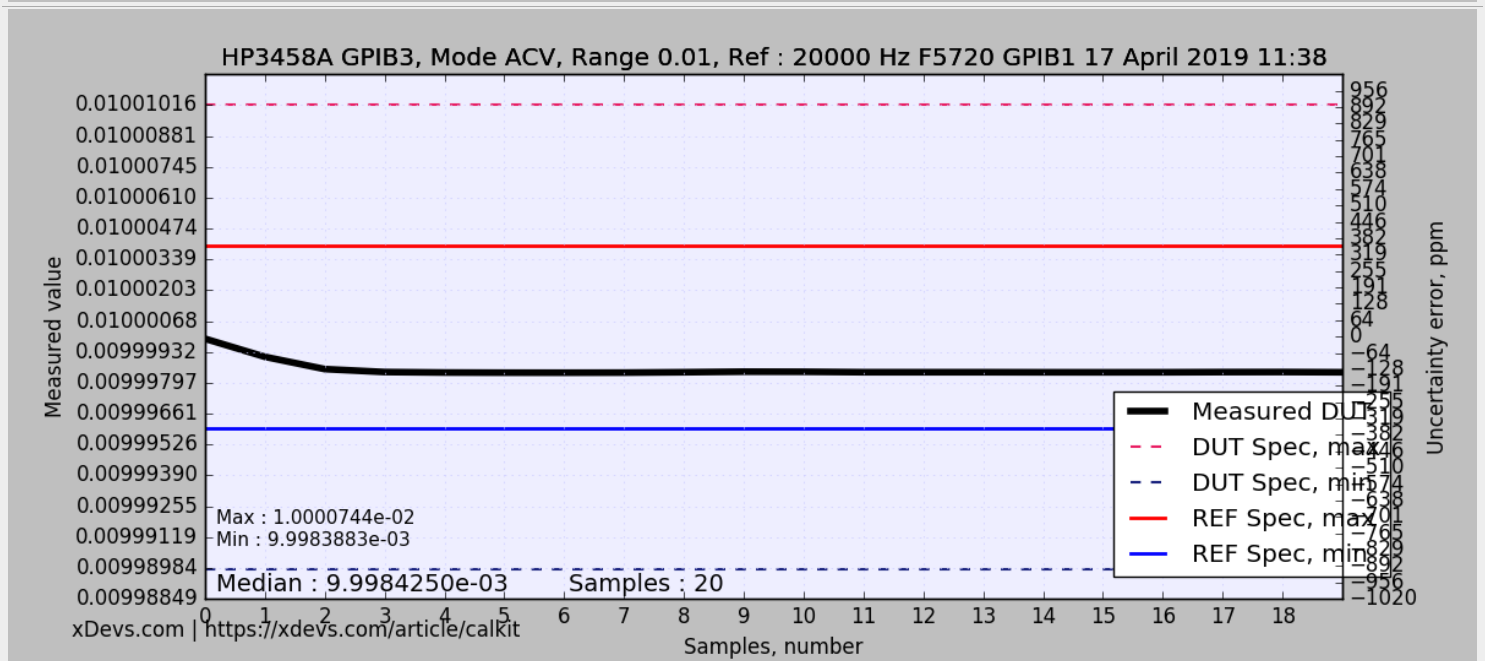
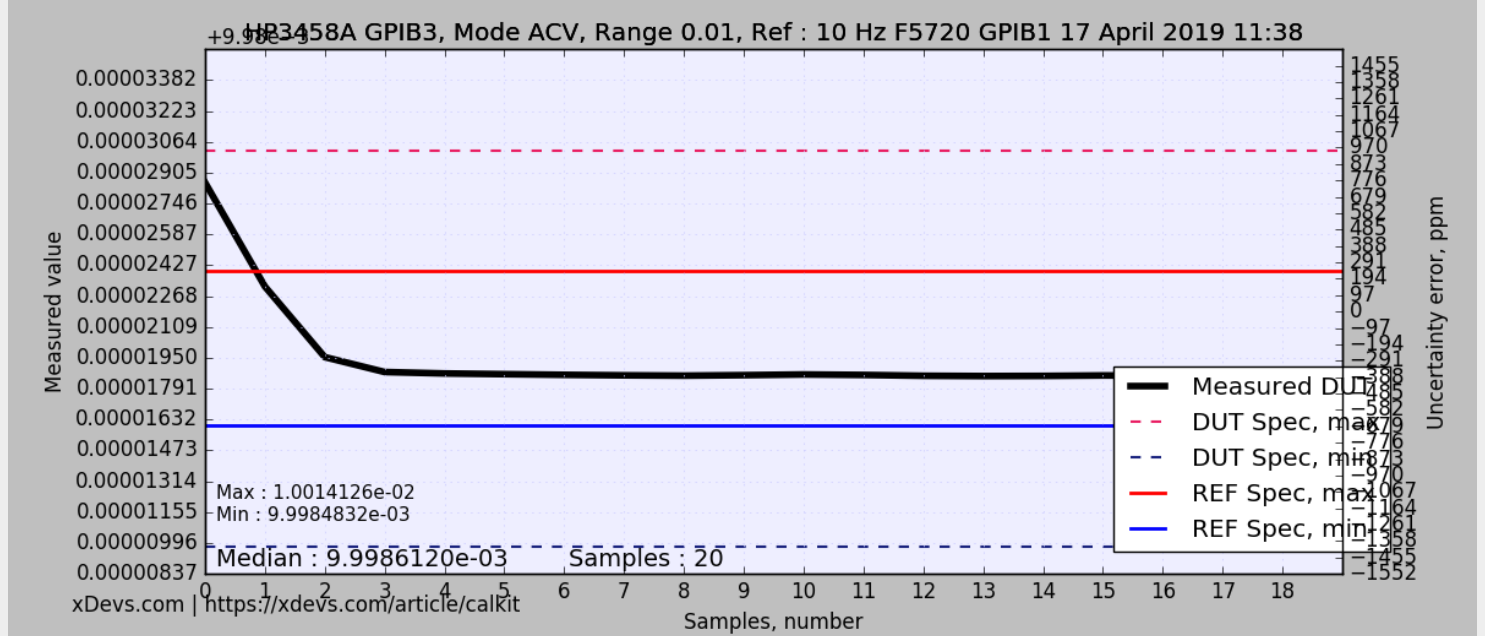


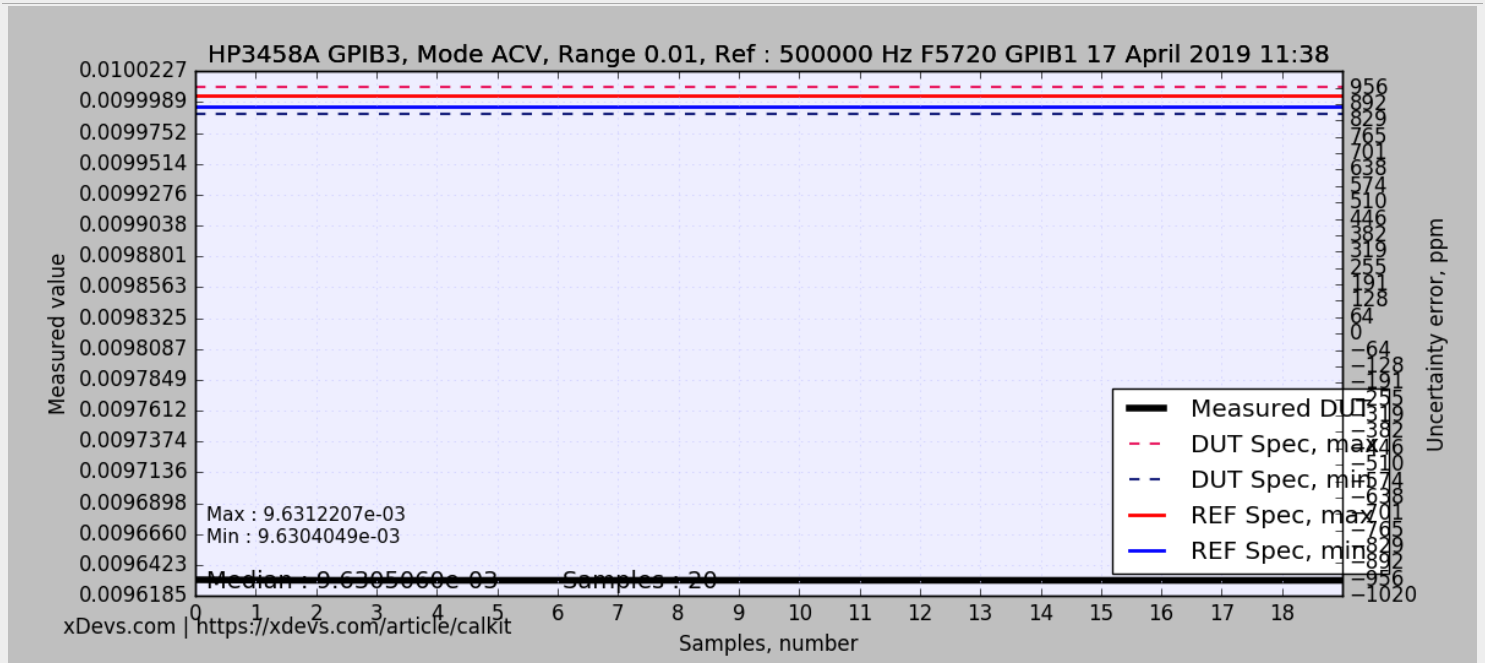
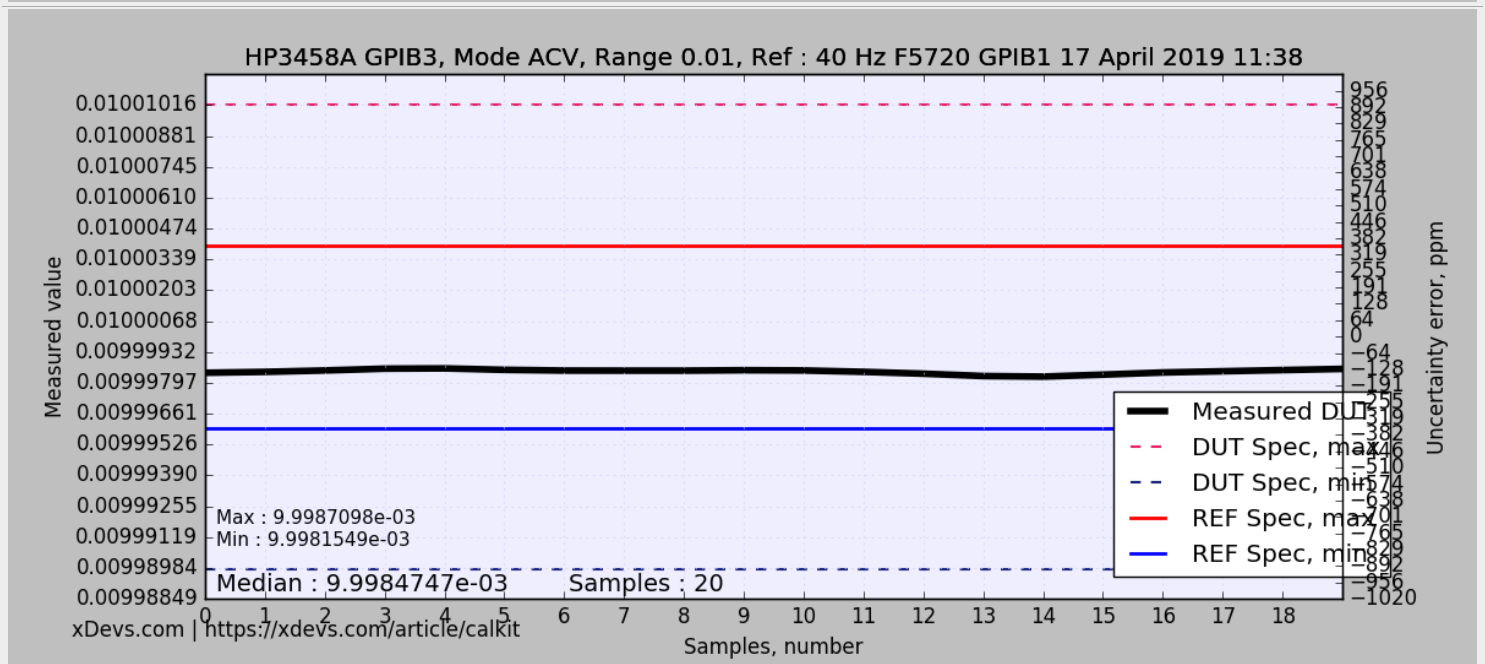
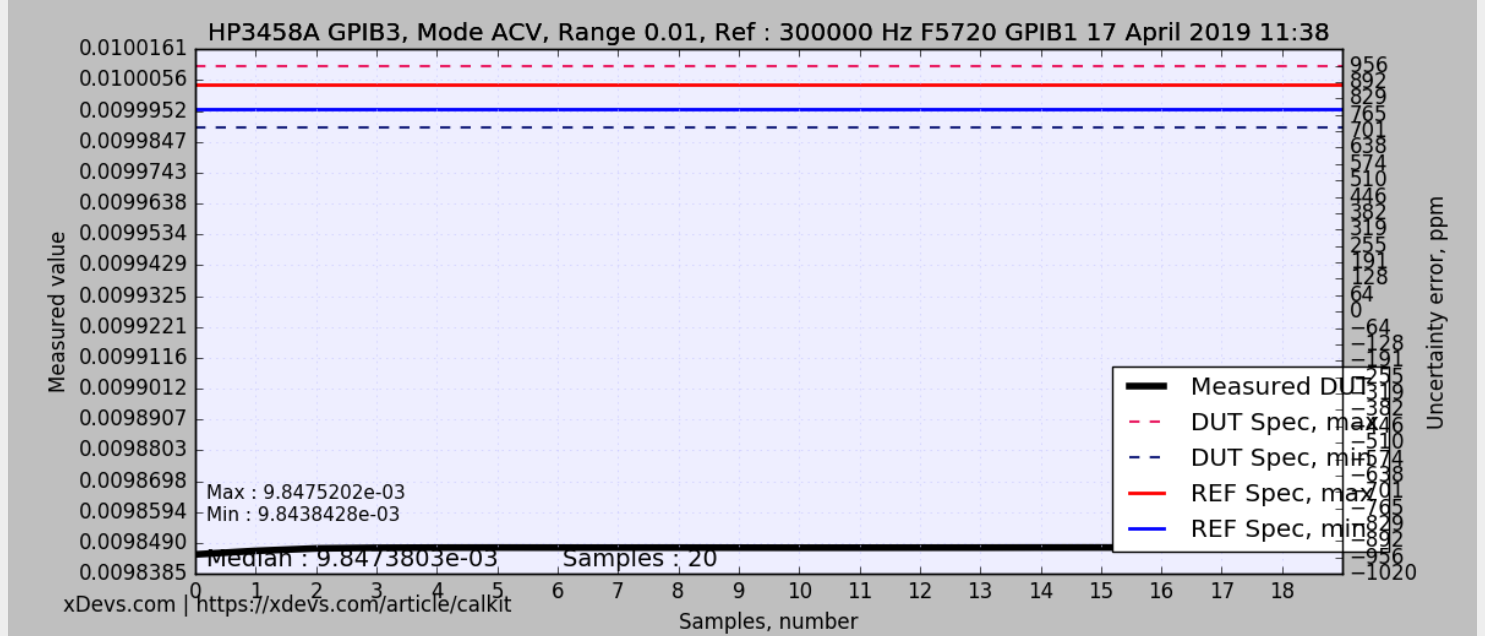
HP3458A GPIB3, Mode ACV, Range 0.01, Ref : 1000 Hz F5720 GPIB1 17 April 2019 11:38

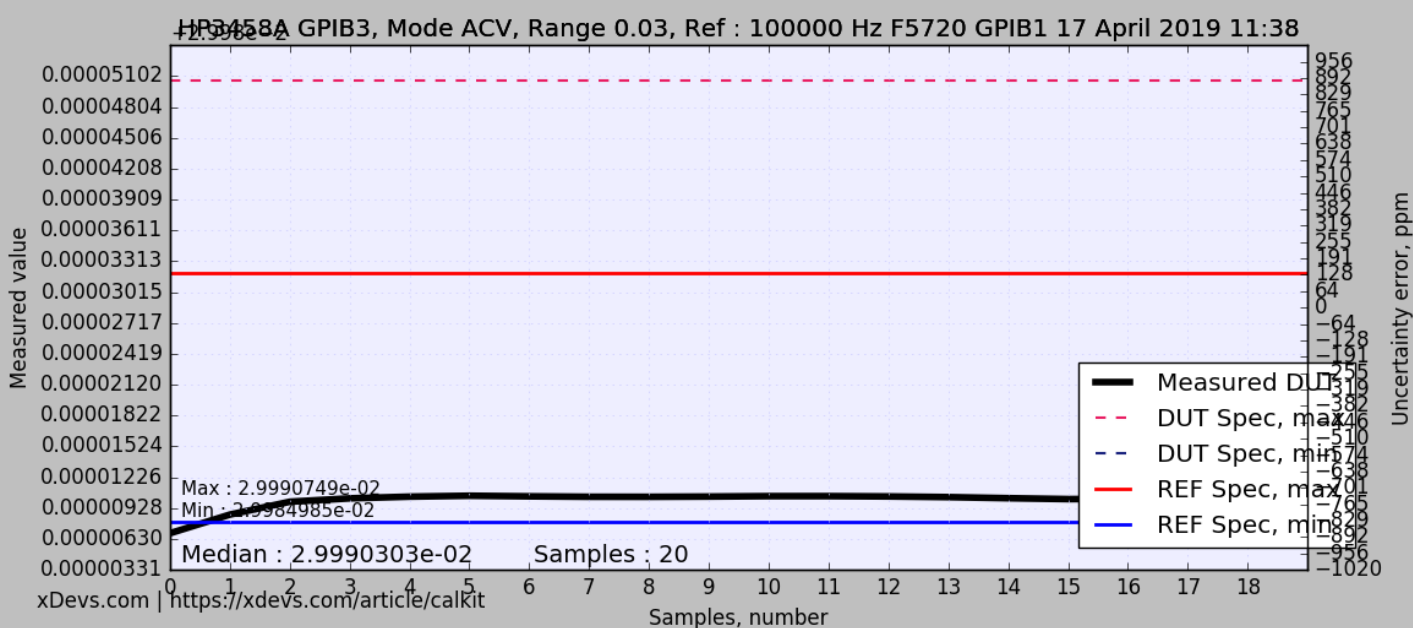
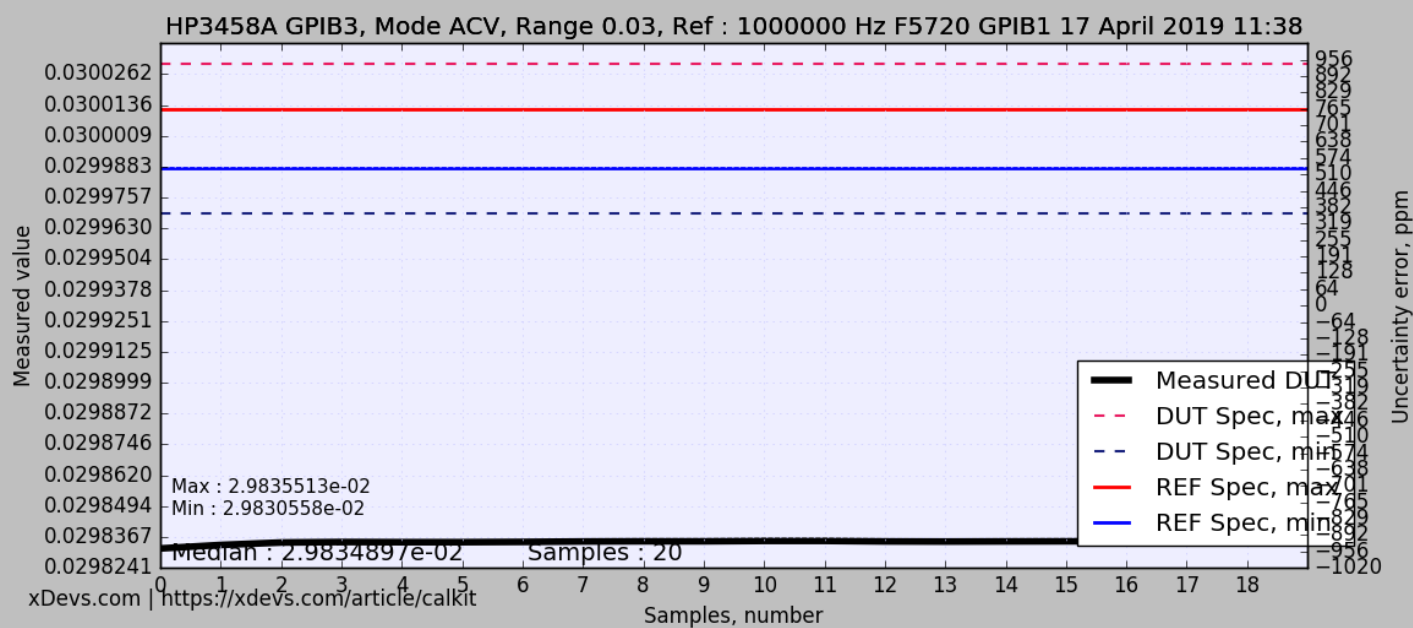
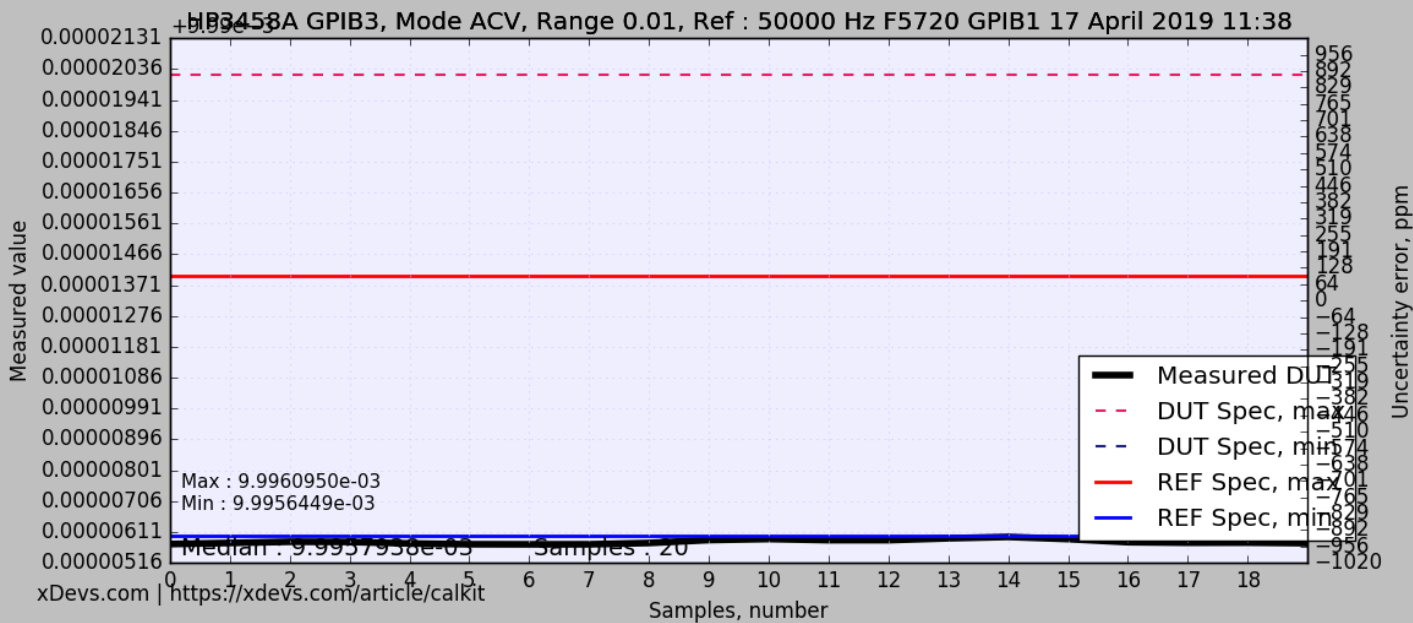


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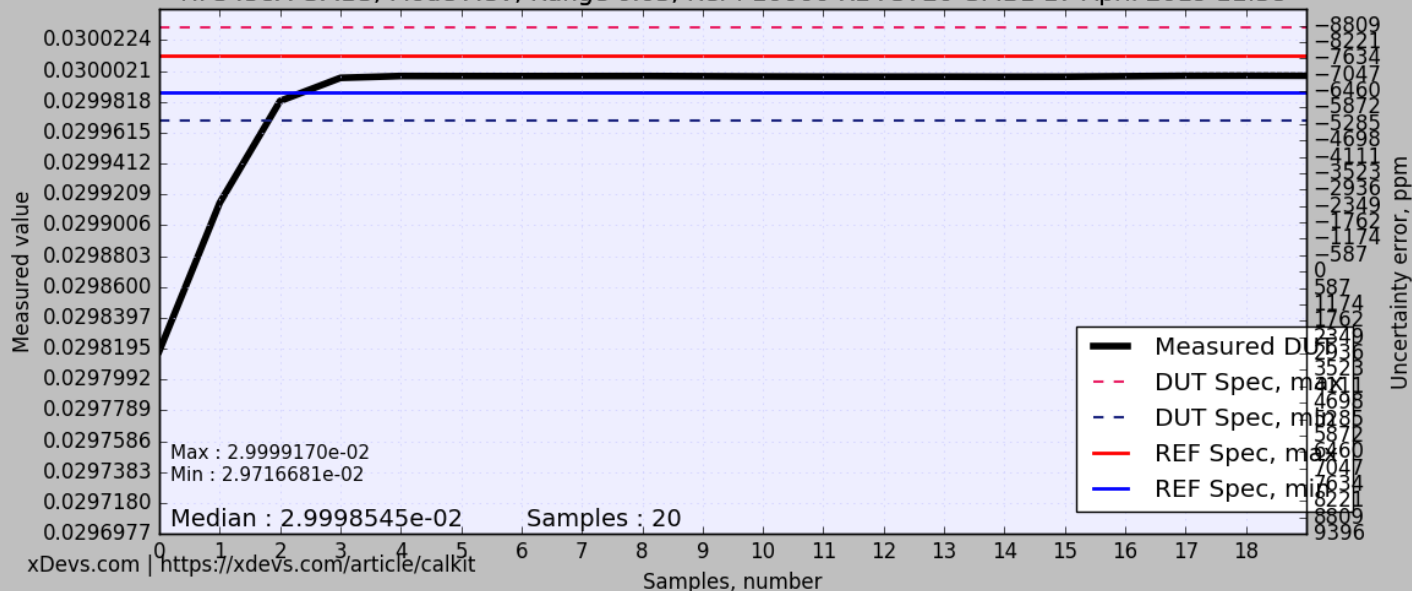




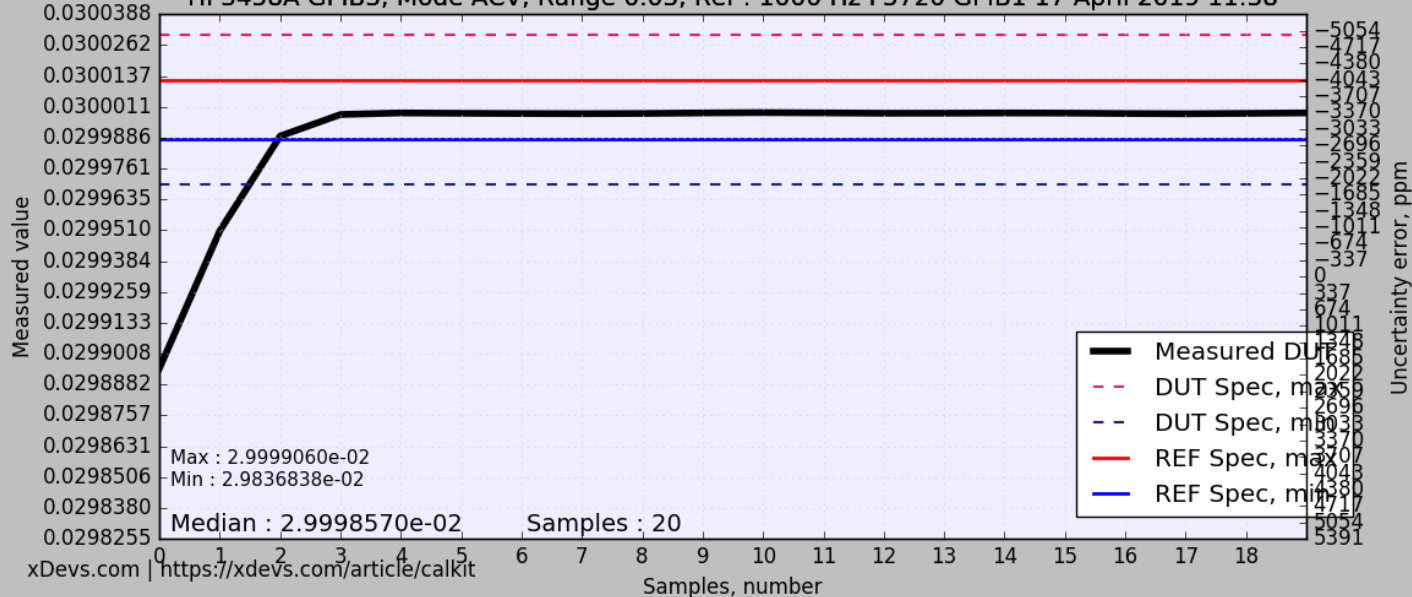




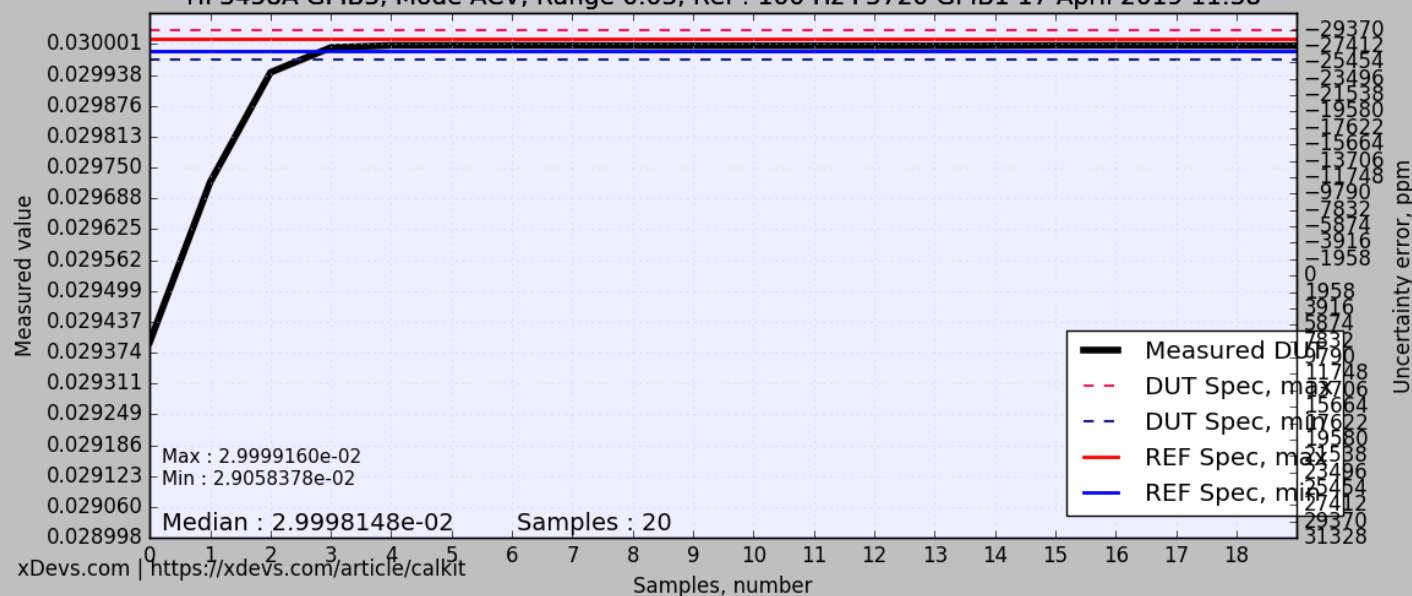
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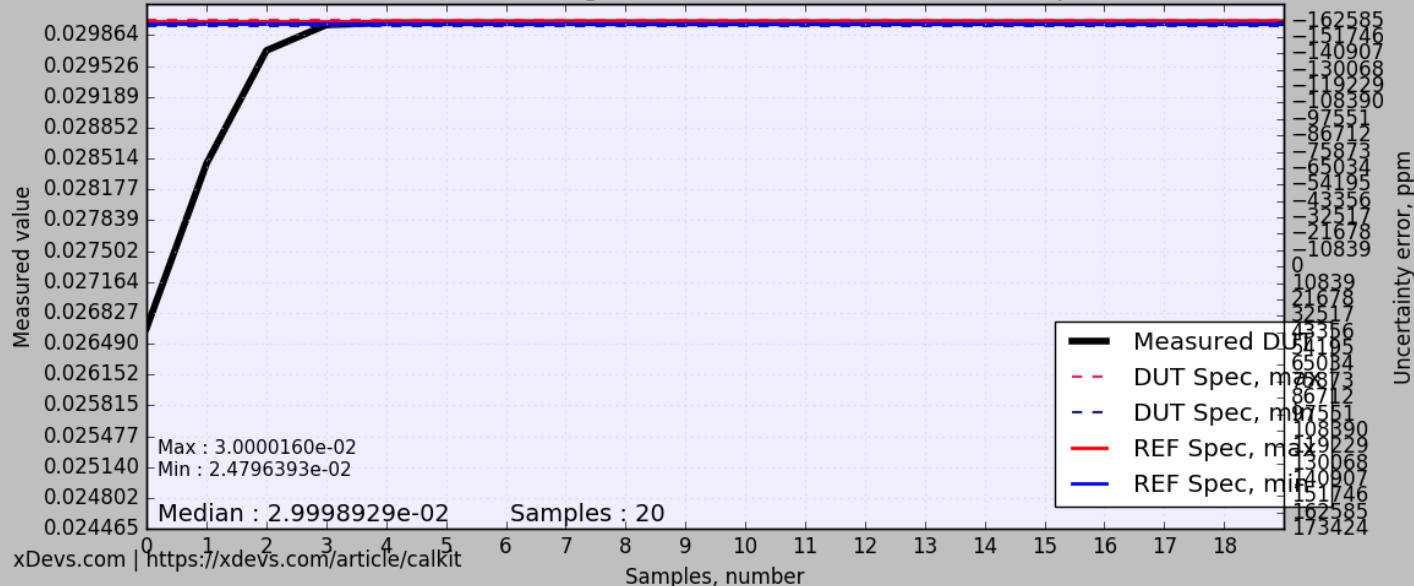
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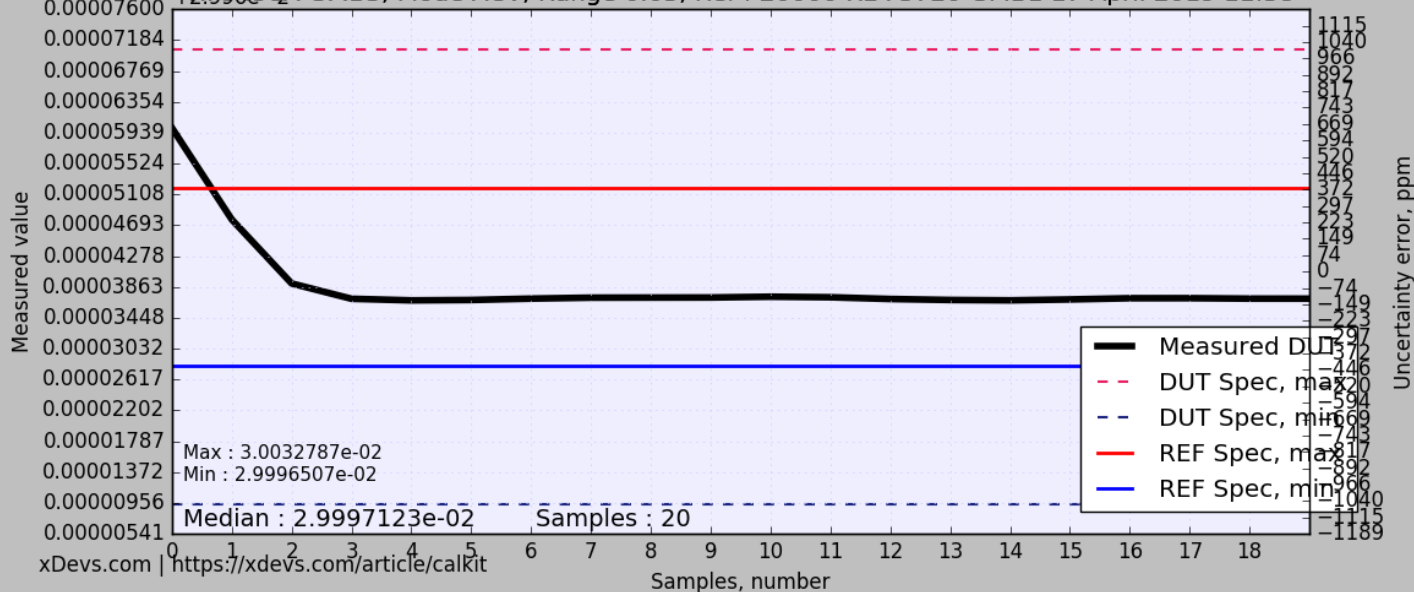
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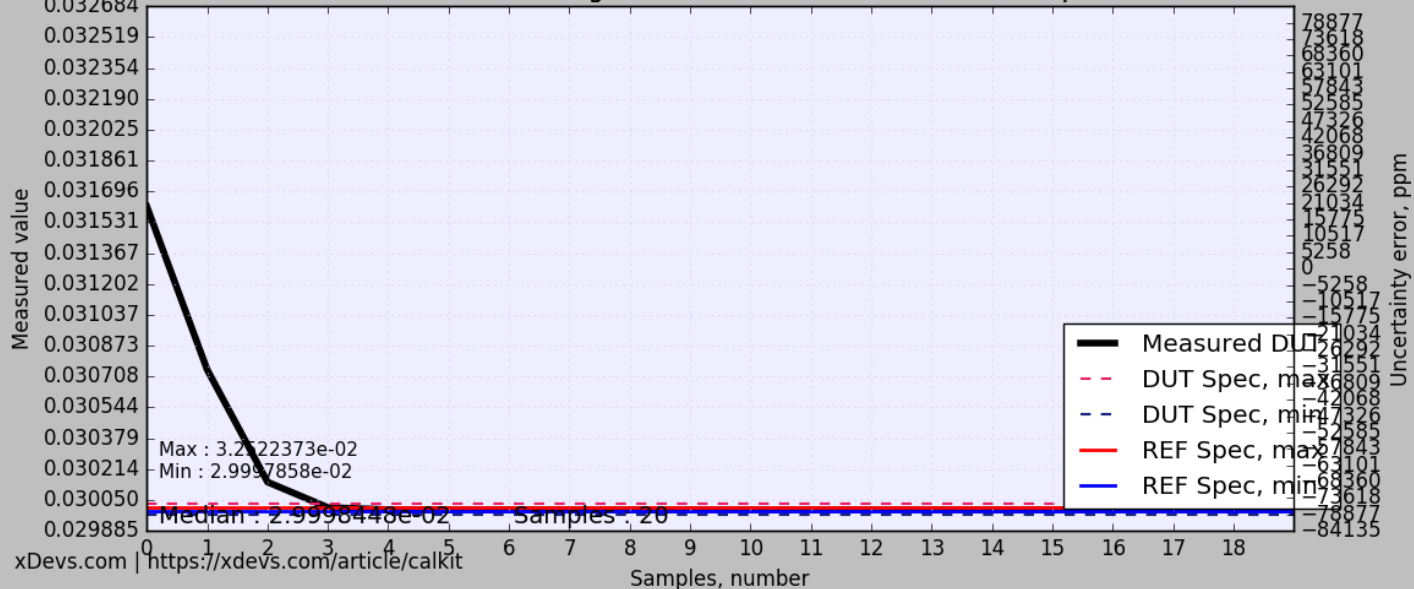
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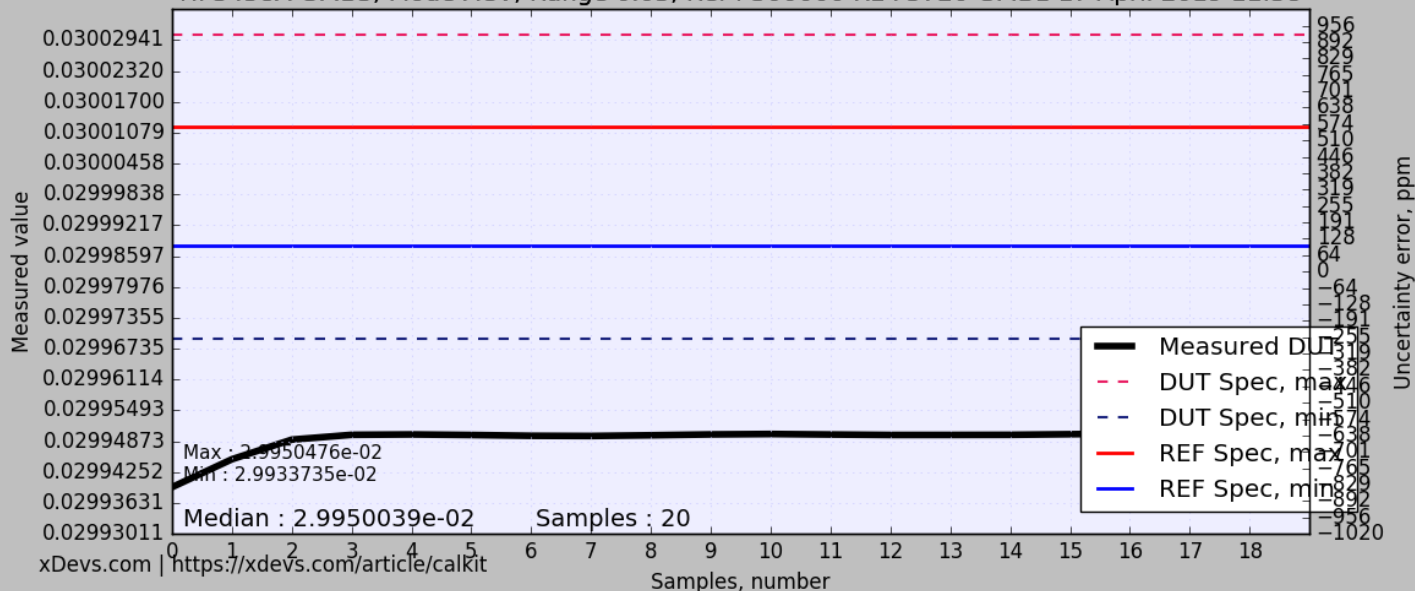
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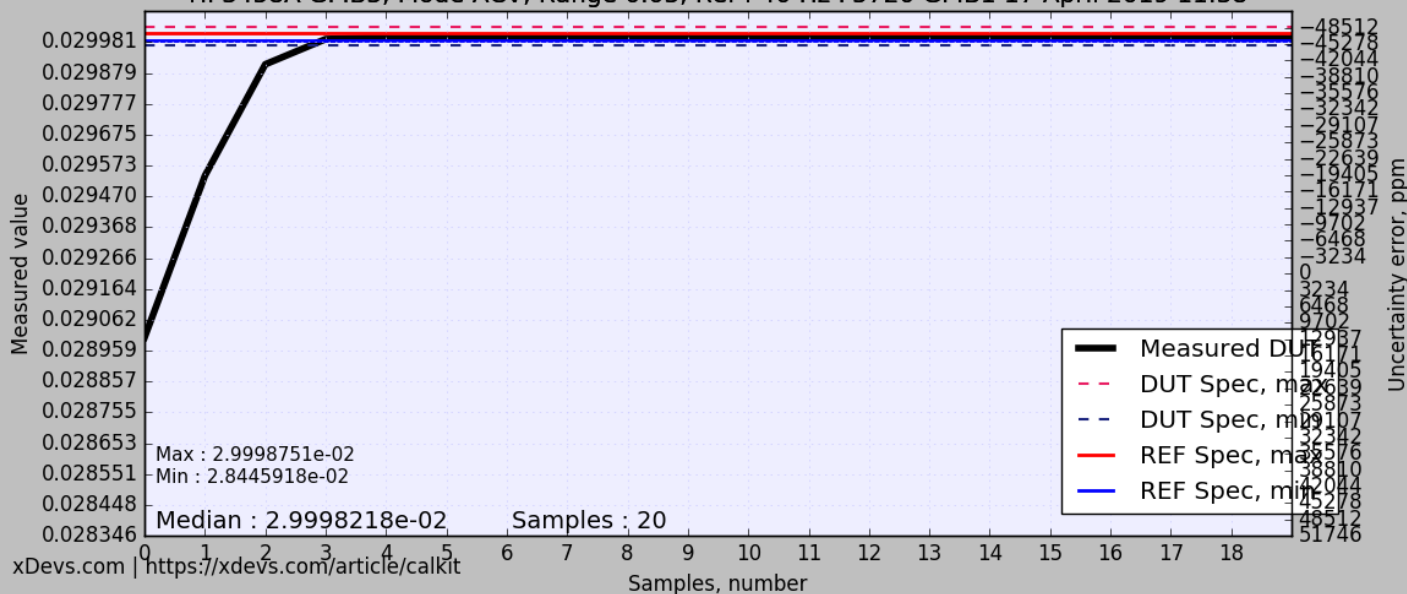
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HP3458A GPIB3, Mode ACV, Range 0.03, Ref : 40 Hz F5720 GPIB1 17 April 2019 11:38



HP3458A GPIB3, Mode ACV, Range 0.03, Ref : 500000 Hz F5720 GPIB1 17 April 2019 11:38

