

INRIM TWSTFT station report

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Summary

- **Station present status**
- **New data available on the FTP server**
- **Recent data analysis**

Meeting of TWSTFT WG. METAS, Bern-Wabern (CH) 17-19 September 2007

Present configuration of IEN02 TWSTFT station at INRIM

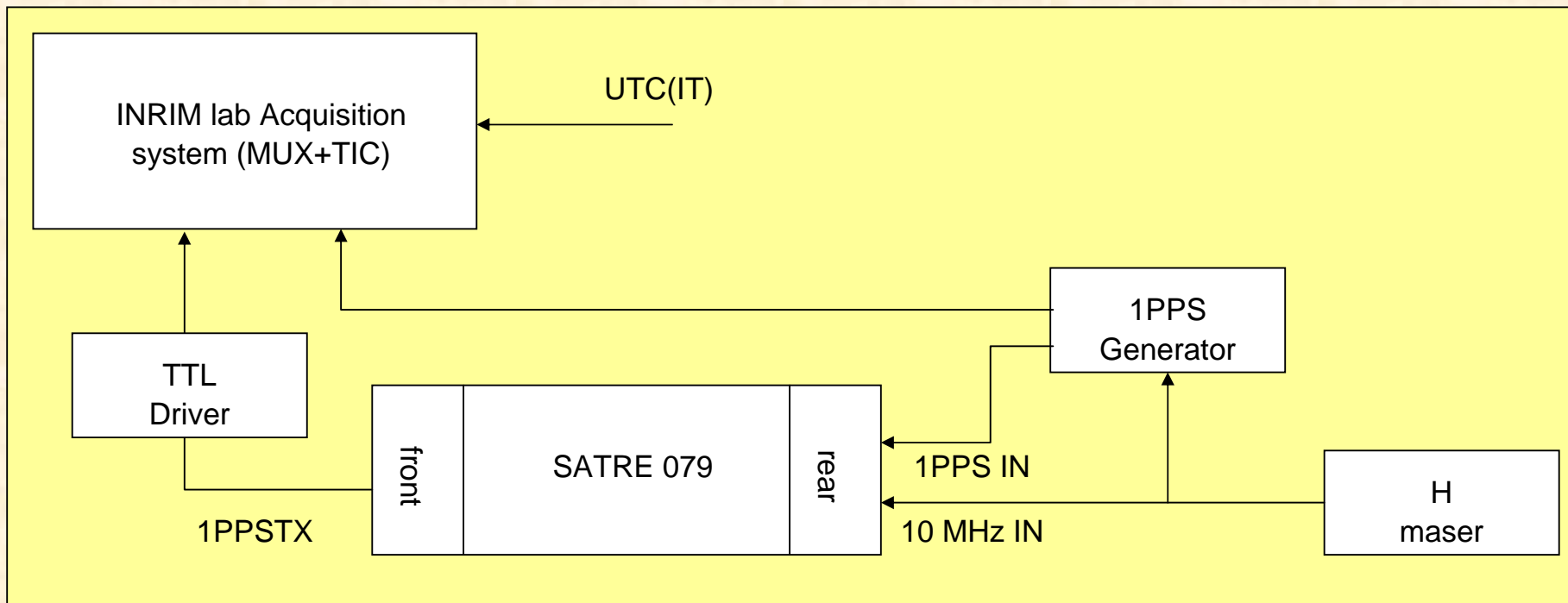
Modem: Timetech SATRE s/n 079

Transceiver: Anacom Anasat SeKU 4 W

Antenna: Prodelin model 1184 (1.8 m)

Nominal power output
EU-EU session: 28 dBm
EU-USA session: 20 dBm

Modem
Current software version 4.11.0
Time Tag Bug: V4 Type



Modem reference:

H-Maser Symmetricom (BIPM code 1401102)

Link to UTC(IEN):

REFDELAY (UTC(IEN)-1PPSTX)
measurement @ min 04 for ALL labs

TWSTFT file server at INRIM

URL: <ftp://cesio.inrim.it/twstft/>

Username : anonymous. Password: Please provide your e-mail address

ITU final files

`../aaaa/TWITmm.jdd`
`aaaa` annual directories

ITU 1s files

`../1s_files/aaa`
`a/mmjdd.zip`
Inside the .zip
archive the usual
ITU 1s files
`1mmjddhh.mml`

Clean carrier screenshots

European CCs
`../CC/aaaa/mm/Eu`
`rope/mmjdd.zip`
Transatlantic CCs
`../CC/aaaa/mm/US`
`A/mmjdd.zip`
`mm` monthly directory
Inside the .zip archive
are the session files
`mmjdd_h` `MJD_hour`

SATRE parameters

`../Parameters/aa`
`aa/Parameters_T`
`WITmm.jdd`

Nome	Dimensione	Tipo
1s_files		Cartella di file
2001		Cartella di file
2002		Cartella di file
2003		Cartella di file
2004		Cartella di file
2005		Cartella di file
2006		Cartella di file
2007		Cartella di file
calib		Cartella di file
CC		Cartella di file
Parameters		Cartella di file
readme.txt	2 KB	Documento di testo
twlog.073	9 KB	File 073

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1s ITU files

- Daily .zip archive (up to 156 files per day)
- Updated at the end of each hourly session

I54320.zip	111 KB	Cartella compressa	08/08/2007 20.59
I54321.zip	131 KB	Cartella compressa	10/08/2007 0.59
I54322.zip	68 KB	Cartella compressa	10/08/2007 12.59
I54323.zip	95 KB	Cartella compressa	11/08/2007 18.59
I54324.zip	113 KB	Cartella compressa	13/08/2007 0.59
I54325.zip	112 KB	Cartella compressa	13/08/2007 22.59
I54326.zip	121 KB	Cartella compressa	14/08/2007 22.59
I54327.zip	32 KB	Cartella compressa	15/08/2007 6.59
I54328.zip	114 KB	Cartella compressa	17/08/2007 0.59
I54329.zip	115 KB	Cartella compressa	18/08/2007 0.59
I54330.zip	114 KB	Cartella compressa	19/08/2007 0.59
I54331.zip	106 KB	Cartella compressa	20/08/2007 0.59
I54332.zip	115 KB	Cartella compressa	21/08/2007 0.59
I54333.zip	103 KB	Cartella compressa	22/08/2007 0.59
I54334.zip	115 KB	Cartella compressa	23/08/2007 0.59
I54335.zip	110 KB	Cartella compressa	24/08/2007 0.59
I54336.zip	96 KB	Cartella compressa	24/08/2007 22.59
I54337.zip	106 KB	Cartella compressa	26/08/2007 0.59

• 1s files are **NOT CORRECTED** for the SATRE time-tag bug

• This option was chosen to provide the actual SATRE output (RAW measurements) to the user that wants to perform its own data analysis

• SATRE software V4

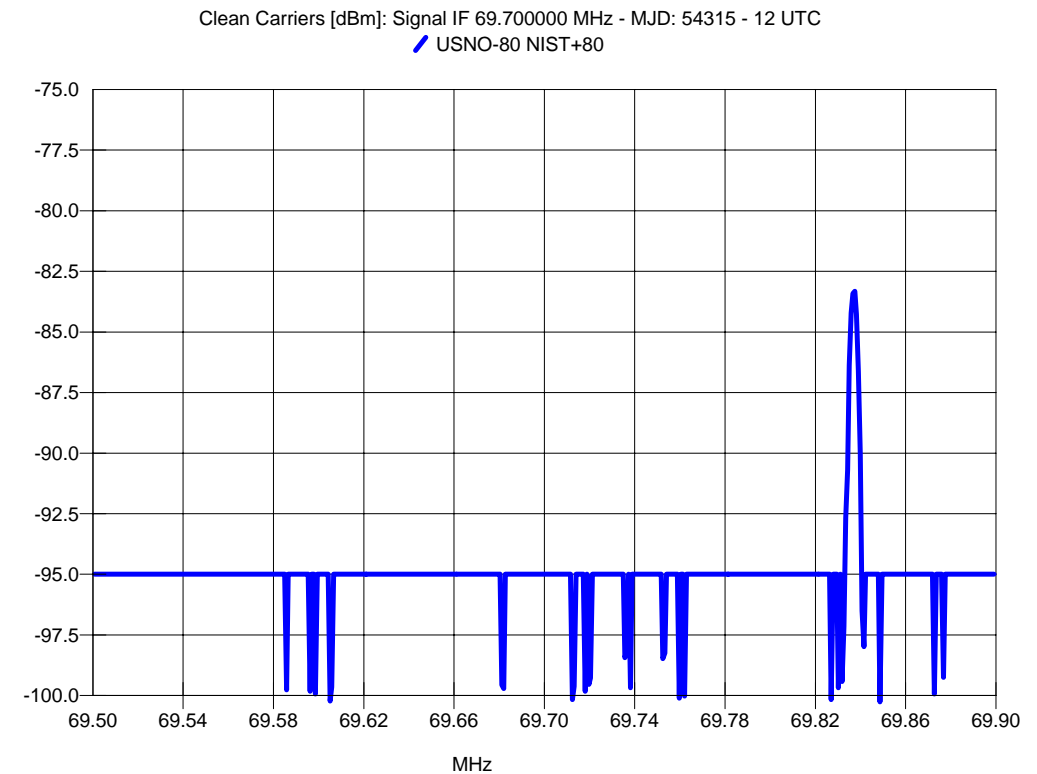
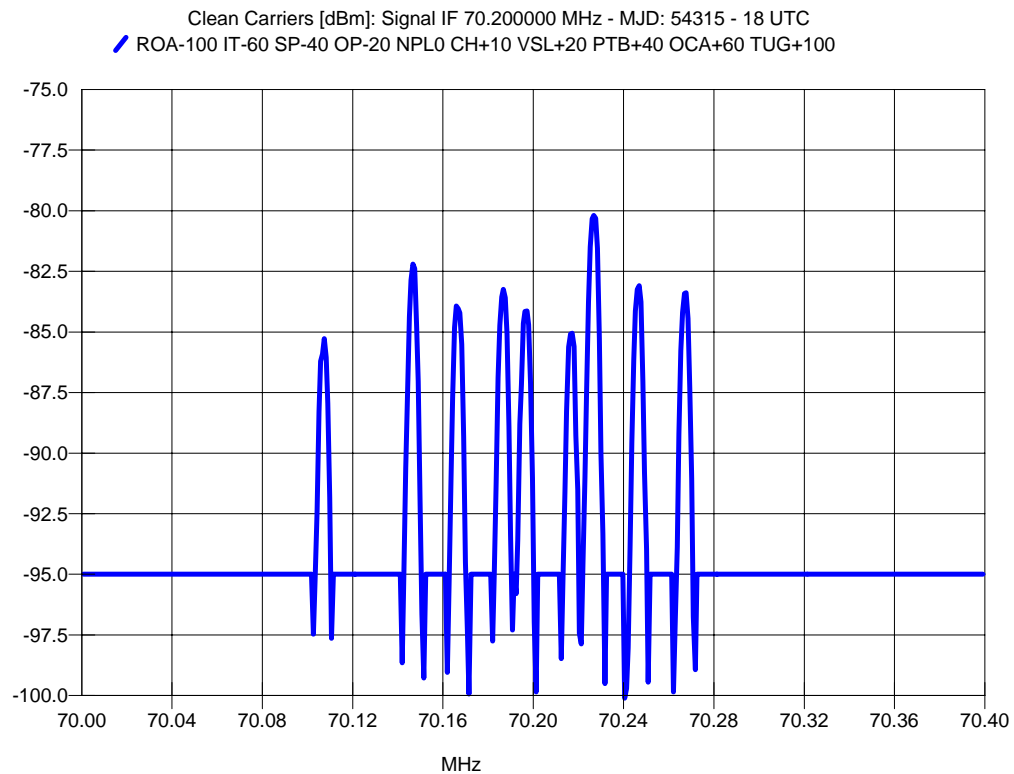
$$TimeTag(True) = TimeTag(SATRE) - 0.5s$$

```
* I5368306.13E
* UTC(IEN) - CLOCK = +0.000000000000 s
* UTC(IEN) - UTC(TW) = +0.000000076800 s 53669 130000
* UTC(TW) - 1PPSTX = +0.000004751438 s 53683 060000
* C1 Rxcodes= 4 RxFreq=70199052 RxSig=-51.9 RxC/No= 52.8
* C2 Text= 08.72 Hext= 099.90 Pres= 0999.30
* C3 IEN01 - PTB01
* DATA = 1PPSTX - 1PPSRX
53683 061300 0.271168866479
53683 061301 0.271168863542
53683 061302 0.271168861057
53683 061303 0.271168855982
53683 061304 0.271168853902
53683 061305 0.271168850228
53683 061306 0.271168847103
53683 061307 0.271168844108
53683 061308 0.271168840963
53683 061309 0.271168837373
53683 061310 0.271168834153
53683 061311 0.271168830833
53683 061312 0.271168827168
53683 061313 0.271168823733
53683 061314 0.271168820303
53683 061315 0.271168816983
53683 061316 0.271168814183
.....
```

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Clean Carrier Screenshots

- The .zip archive contains up to 12 files
- Updated at the end of each hourly session (current day files are not archived)



Europe: 54315_18.wmf

USA: 54315_12.wmf

SATRE Parameters

- SATRE parameters are acquired through SATRE data output interface

- Selected parameters are provided to the user

- RxCode

- Rx Frequency

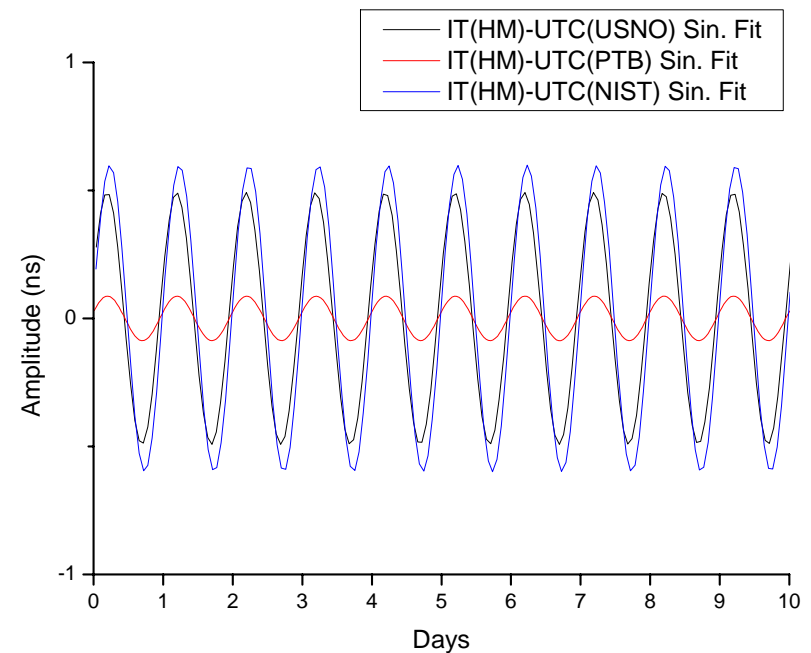
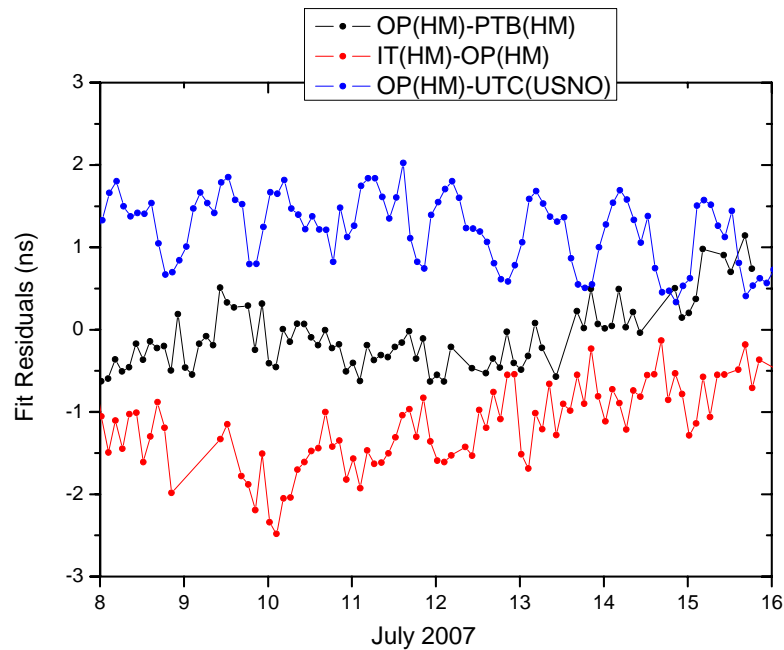
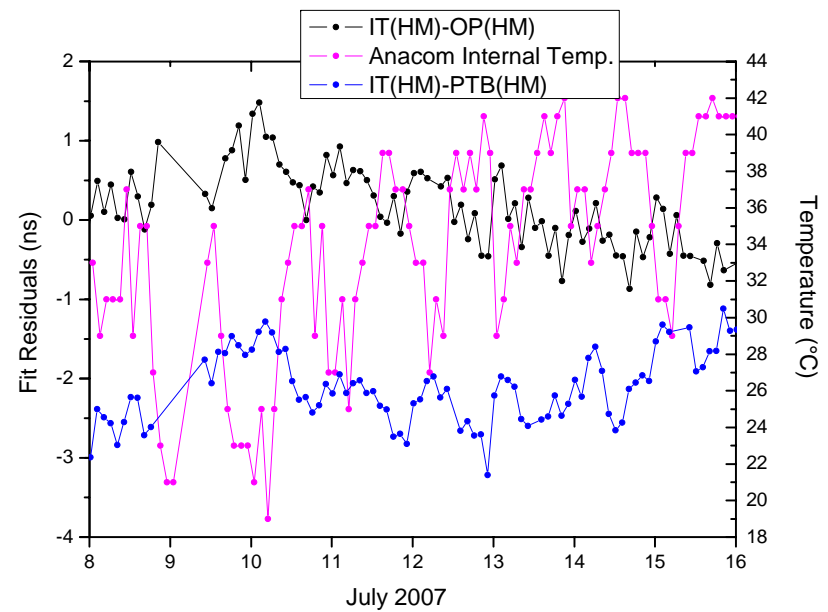
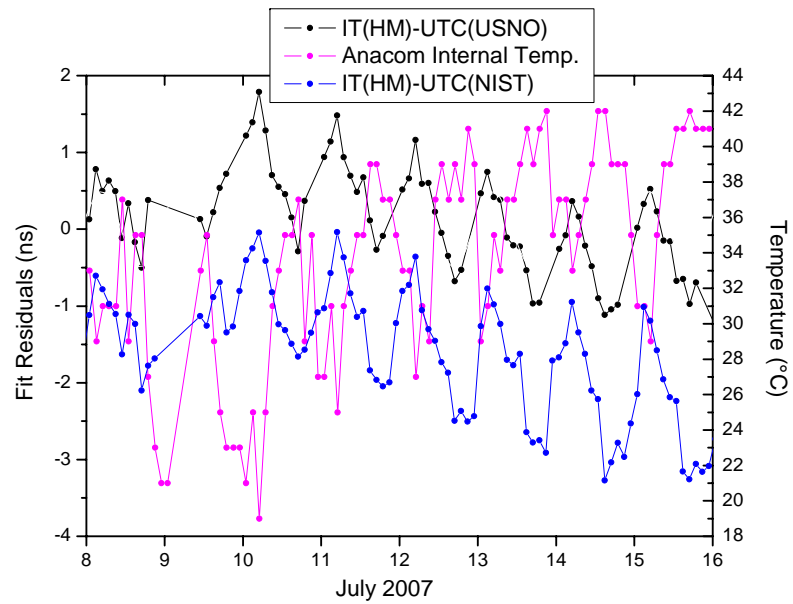
- Rx Freq [Hz]

- RxSig [dBm] (as measured by Satre – attenuators are placed at the Satre input for signal conditioning)

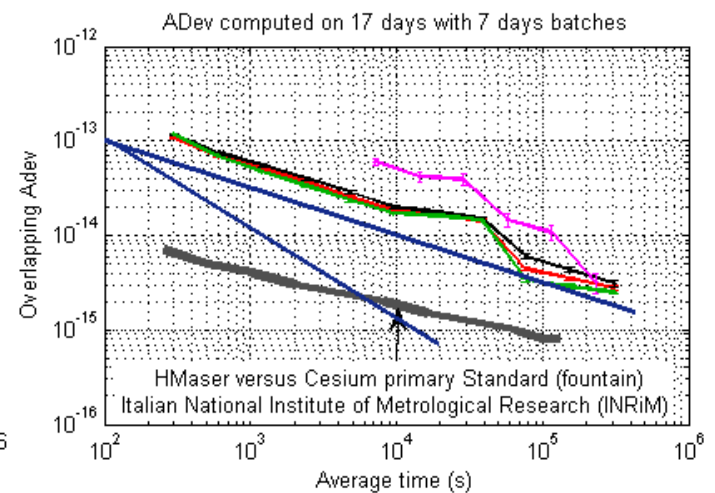
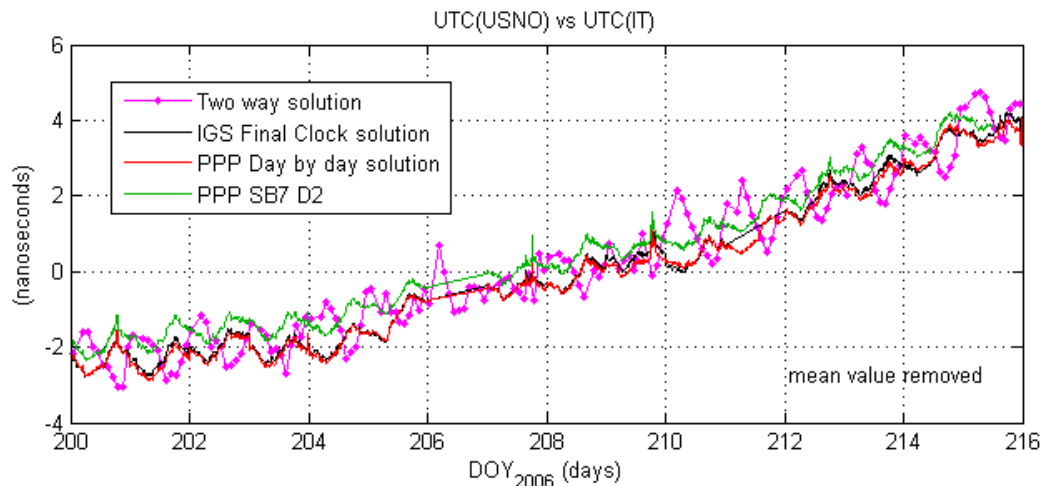
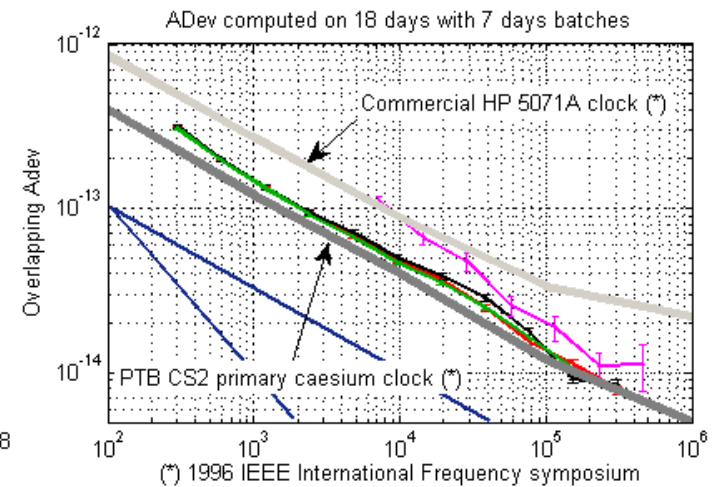
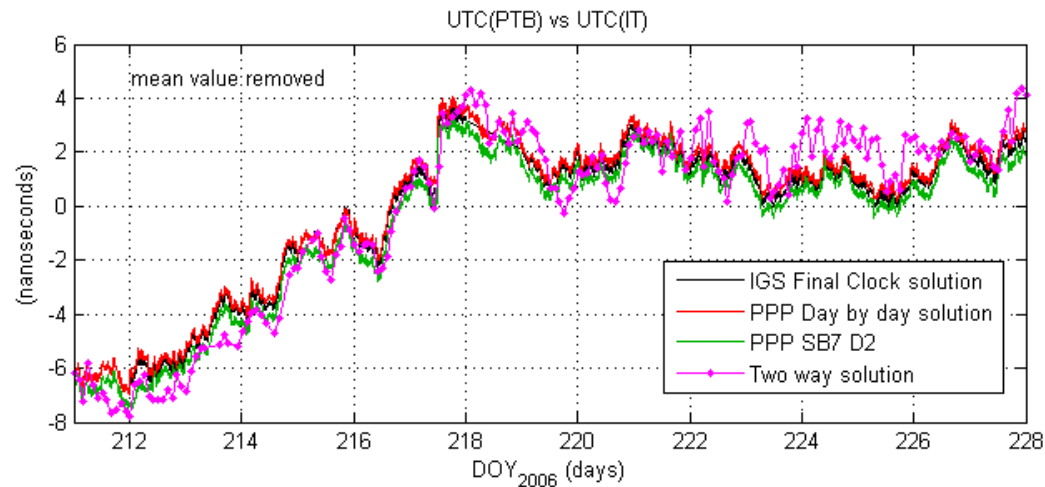
- C/No (as measured by SATRE)

```
* Parameters_TWIT54.351
IT02  OCA01  001600  Rxcodes= 5  RxFreq=70199375  RxSig=-49.1  RxC/No= 54.8
IT02  VSL01  001900  Rxcodes= 2  RxFreq=70198959  RxSig=-56.0  RxC/No= 48.1
IT02  SP01   002200  Rxcodes= 3  RxFreq=70198964  RxSig=-49.7  RxC/No= 54.7
IT02  IPQ01  003400  Rxcodes= 2  RxFreq=70198983  RxSig=-48.3  RxC/No= 55.6
IT02  USNO01 005500  Rxcodes= 7  RxFreq=69749395  RxSig=-44.6  RxC/No= 63.7
IT02  ROA01  021000  Rxcodes= 7  RxFreq=70199563  RxSig=-48.2  RxC/No= 55.6
IT02  OCA01  021600  Rxcodes= 5  RxFreq=70199432  RxSig=-48.9  RxC/No= 54.6
IT02  SP01   022200  Rxcodes= 3  RxFreq=70199024  RxSig=-49.2  RxC/No= 55.0
IT02  IPQ01  023400  Rxcodes= 2  RxFreq=70199041  RxSig=-48.7  RxC/No= 55.9
IT02  CH01   024300  Rxcodes= 1  RxFreq=70199036  RxSig=-50.1  RxC/No= 54.4
IT02  USNO01 025500  Rxcodes= 7  RxFreq=69749456  RxSig=-45.3  RxC/No= 63.9
IT02  IT02   040700  Rxcodes= 6  RxFreq=70199285  RxSig=-46.2  RxC/No= 56.7
IT02  ROA01  041000  Rxcodes= 7  RxFreq=70199701  RxSig=-47.6  RxC/No= 55.7
IT02  PTB01  041300  Rxcodes= 4  RxFreq=70198759  RxSig=-50.5  RxC/No= 53.2
IT02  OCA01  041600  Rxcodes= 5  RxFreq=70199548  RxSig=-49.1  RxC/No= 54.3
IT02  SP01   042200  Rxcodes= 3  RxFreq=70199151  RxSig=-49.9  RxC/No= 53.8
IT02  IPQ01  043400  Rxcodes= 2  RxFreq=70199161  RxSig=-48.2  RxC/No= 55.6
IT02  CH01   044300  Rxcodes= 1  RxFreq=70199149  RxSig=-49.8  RxC/No= 53.9
IT02  NIST01 045200  Rxcodes= 6  RxFreq=69749161  RxSig=-50.6  RxC/No= 58.1
IT02  USNO01 045500  Rxcodes= 7  RxFreq=69749560  RxSig=-44.4  RxC/No= 64.2
```

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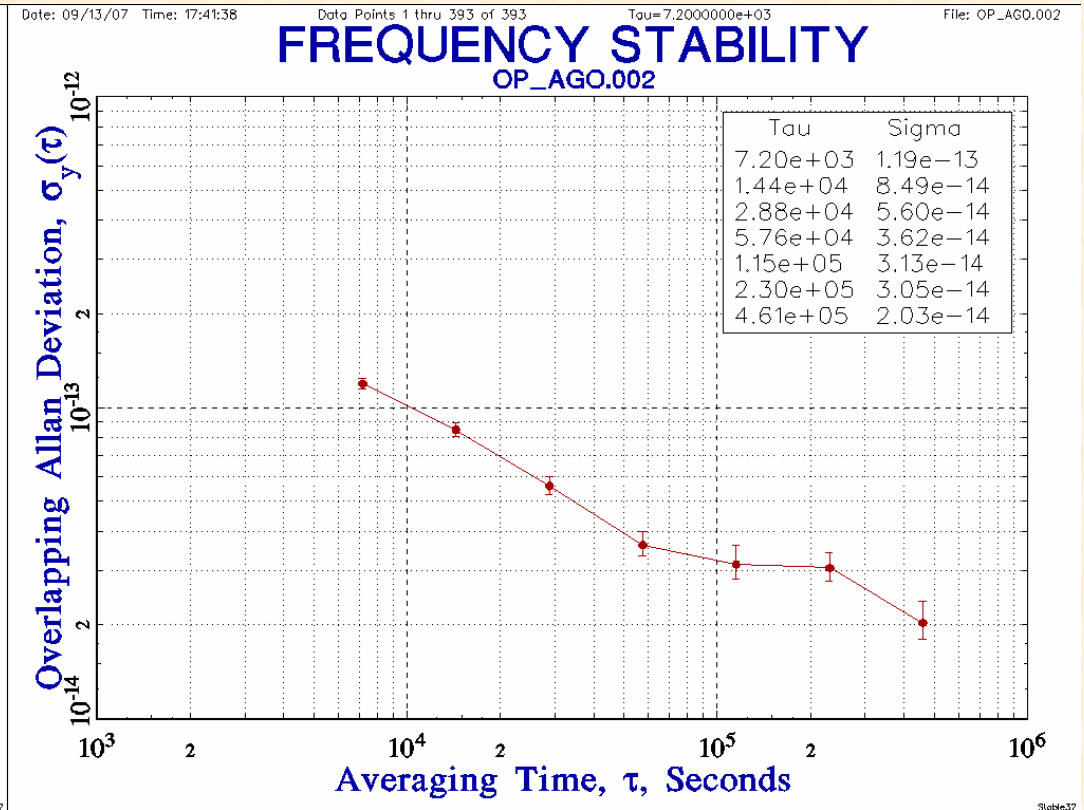
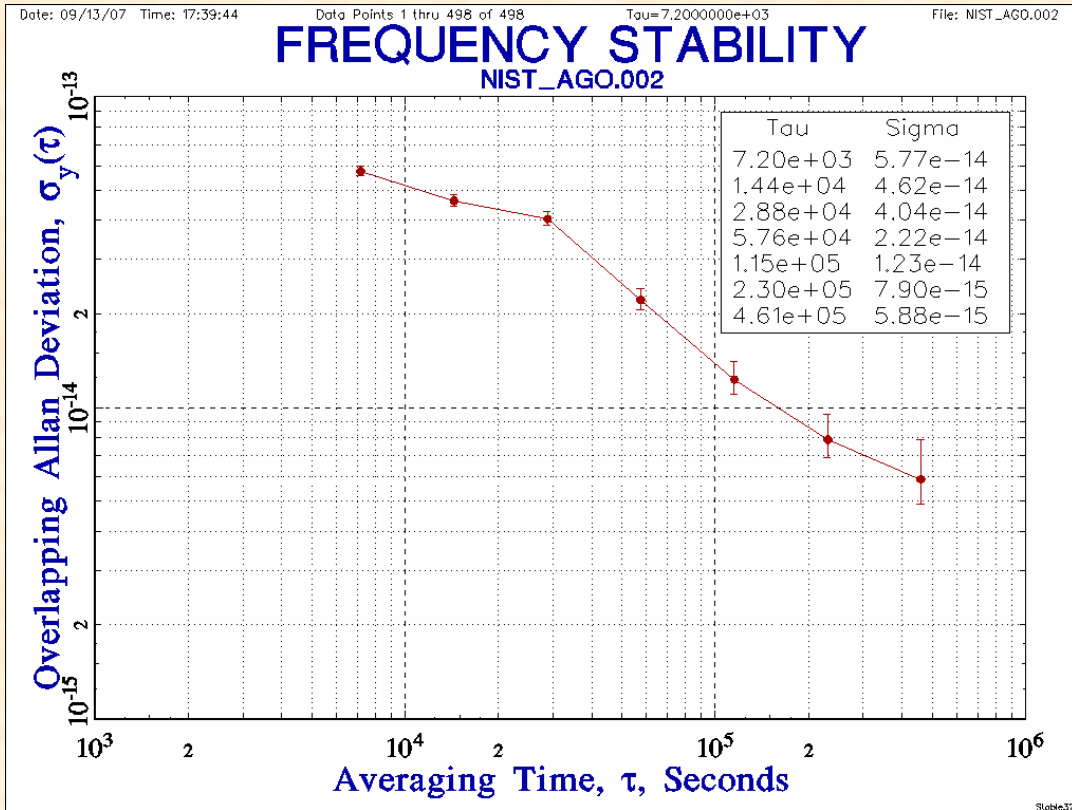
TWSTFT-PPP comparison



N. Guyennon, G. Cerretto, P. Tavella, F. Labaye

*Further Characterization of the Time Transfer Capabilities of Precise Point Positioning (PPP)
EFTF2007 Geneva*

Analysis of stability – July 2007



IEN 01 Setup

Modem Reference:

H-Maser Symmetricom (BIPM code 1401102)

Modem Type:

University of Stuttgart/MITREX 2500A (S/N Italy 1)

Link to UTC(IEN):

REFDELAY (UTC(IEN)-1PPSTX)
measurement

Min. 04 -> EU labs

Min. 50 -> USA labs

