REPORT OF 040204

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1 - Introduction

This report is based on the analysis of wave mode level-1 cross spectra (ASA_WVS_1P) products, which are the available few hours after the acquisition, on the high rate browse (BP) products and on the Module Stepping (MS) product.

2 - Summary

2.1 - Instrument Unavailability

ASAR was unavailable from 02-Feb-2004 09:23:02.000 to 02-Feb-2004 10:50:22.000.

2.2 - Browse Visual Inspection

No anomalies observed on available browse products.

2.3 - Data Analysis

-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.

-Nominal Doppler behavior.

3 - Module Stepping Mode

The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
No MS product is available for 03-Feb-2004.
The results below are referred to data acquired on 02-Feb-2004:
-ASA_MS__0PNPDK20040202_195826_000000152023_00500_10073_0190.N1
-ASA_MS__0PNPDK20040202_195946_000000152023_00500_10073_0192.N1

Polarisation	Start Time
V	20040202 195946
H	20040202 195826

MSM in V/V polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒
☒	☒

MSM in H/H polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒
☒	☒

4 - Internal calibration Results

No anomalies observed.

4.1 - Daily statistics

row	stat	AveP1	AveP2	AveP3

3	mean	-3.65625	-22.4444	-8.14129
	stdev	0.00623634	0.0761884	0.00290667
24	mean	-5.10792	-21.1092	-8.14129
	stdev	0.0142652	0.0719167	0.00290667

4.2 - Cyclic statistics

row	stat	AveP1	AveP2	AveP3
3	mean	-3.68598	-22.4884	-8.15029
	stdev	0.00699966	0.0713316	0.00318265
24	mean	-5.23470	-21.1246	-8.15029
	stdev	0.555501	0.0653452	0.00318265

4.3 - cal pulses monitoring (all rows)

5 - RAW data statistics

No anomalies observed.

5.1 - Input mean I/Q

channel	stat	DSS-B
MEAN I	mean	0.000424830
	stdev	2.93158e-07
MEAN Q	mean	0.000339954
	stdev	3.42065e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B

STDEV I	mean	0.117442
	stdev	0.00137012
STDEV Q	mean	0.117672
	stdev	0.00138459

5.3 - Gain imbalance I/Q

6 - Wave Doppler Analysis

No anomalies observed in Doppler evolution.
The discontinuity visible in the doppler evolution versus ANX is probably due to a manoeuvre occurred on 04-Feb-2004.
Doppler analysis performed over the last 35 days.

6.1 - Unbiased Doppler Error

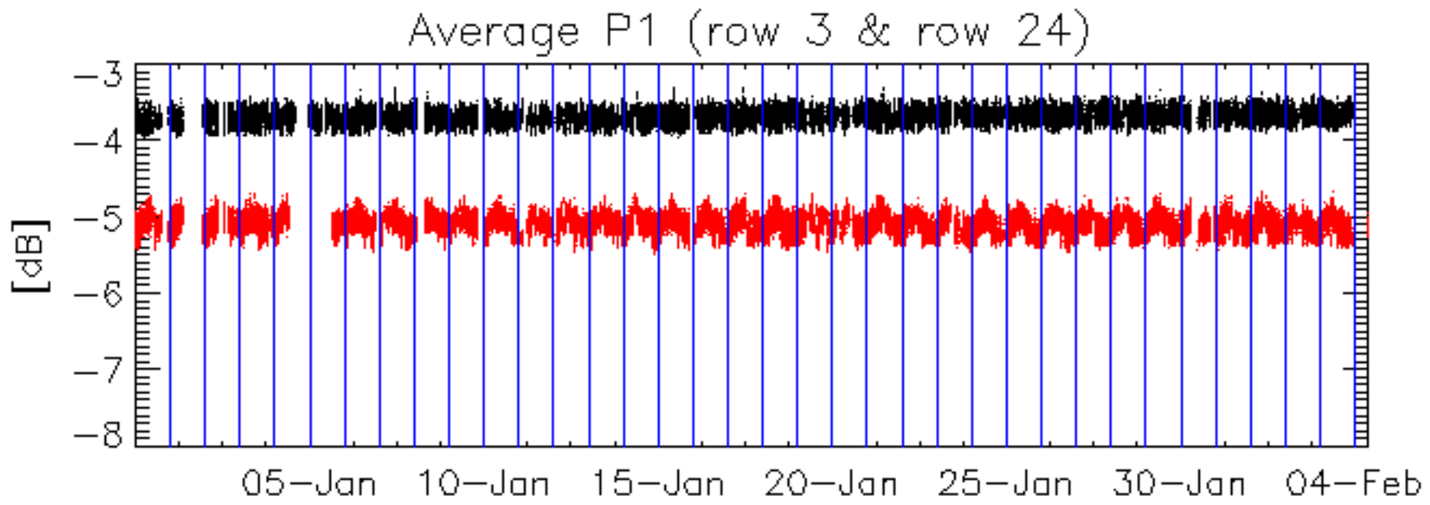
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

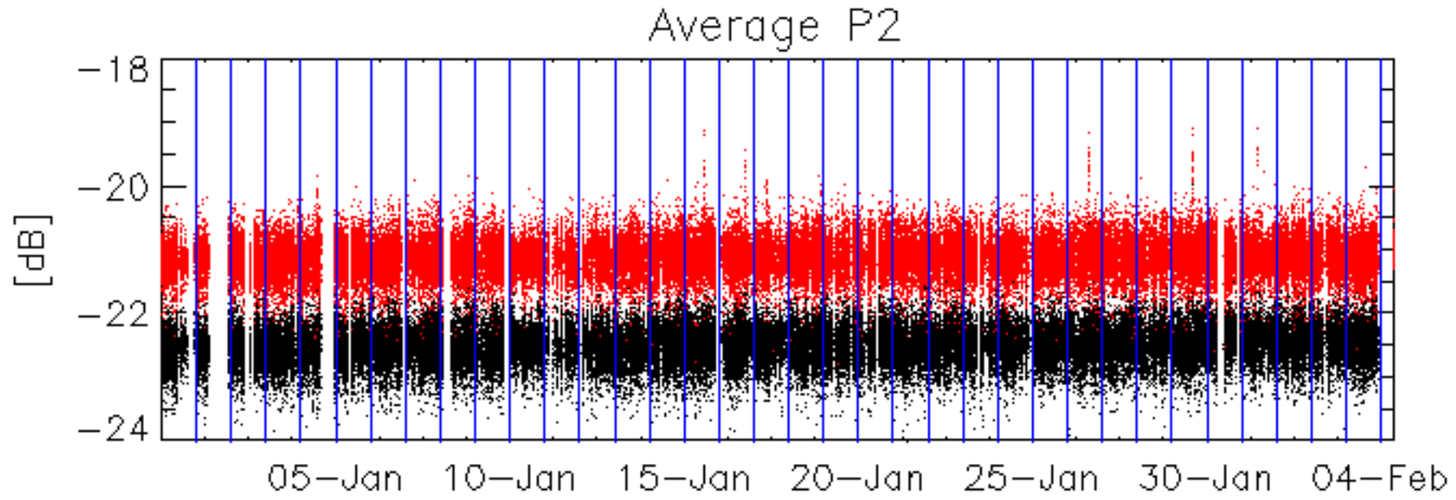
6.2 - Absolute Doppler

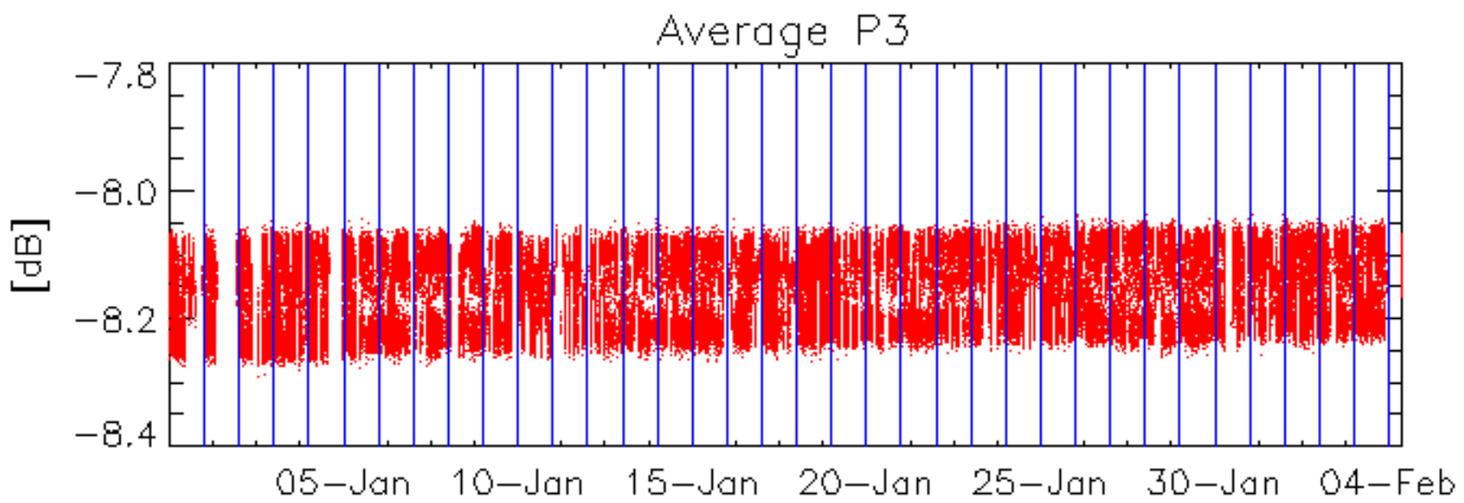
Evolution of Absolute Doppler
Acsending
Descending

6.3 - Doppler evolution versus ANX

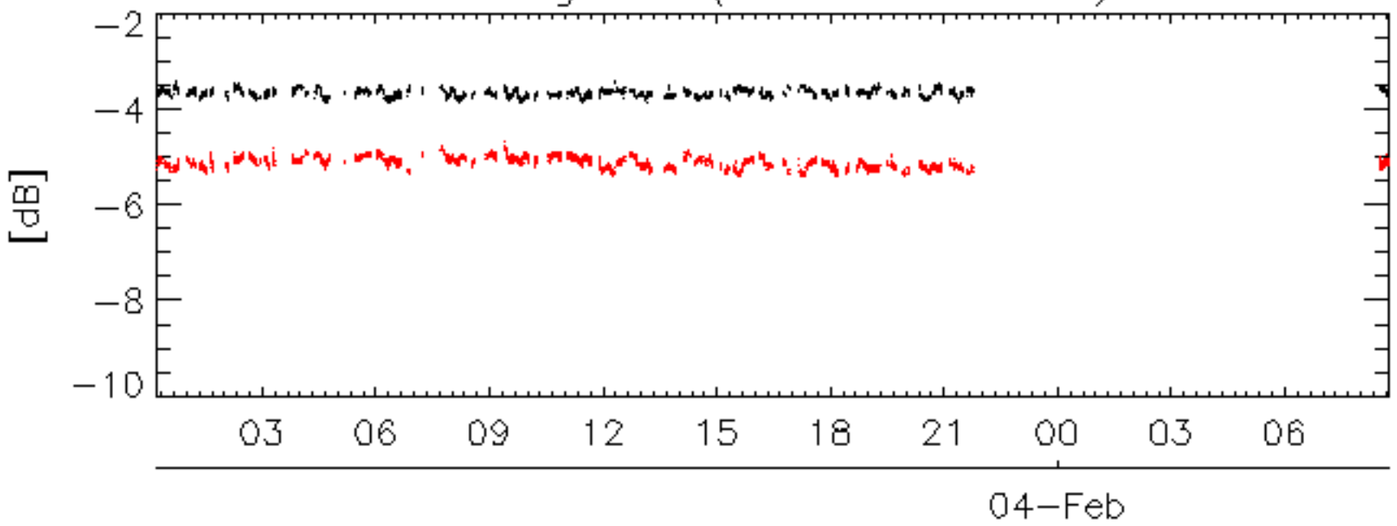
Evolution Doppler error versus ANX


Average P1 (row 3 & row 24)
[dB]
−3
−4
−5
−6
−7
−8
05−Jan
10−Jan
15−Jan
20−Jan
25−Jan
30−Jan
04−Feb

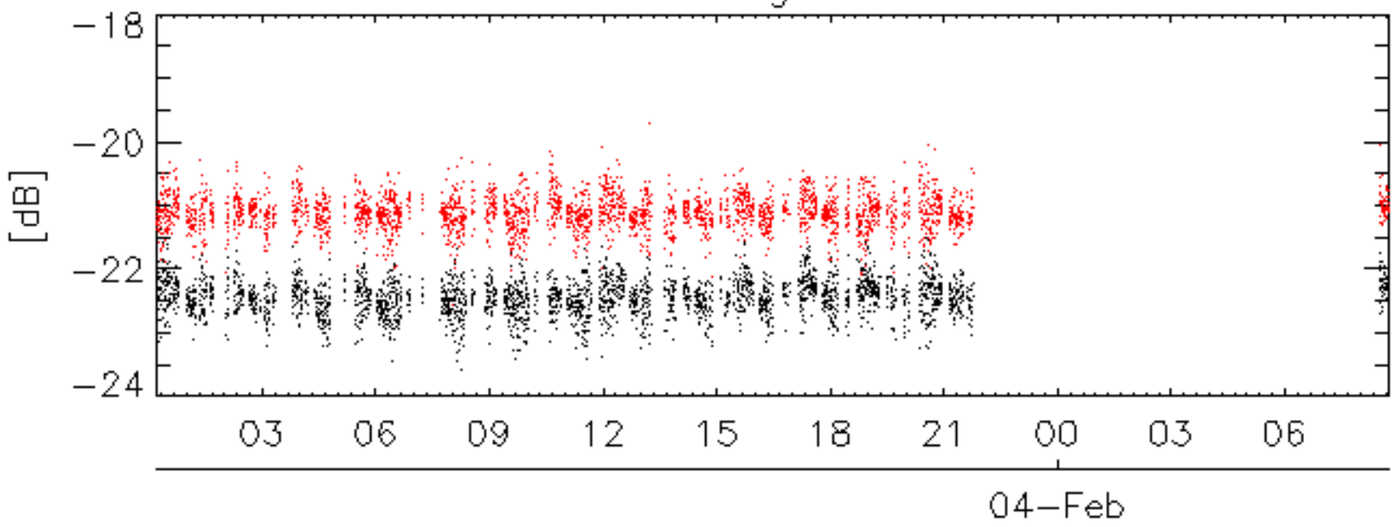

Average P2
[dB]
−18
−20
−22
−24
05−Jan
10−Jan
15−Jan
20−Jan
25−Jan
30−Jan
04−Feb


Average P3
[dB]
−7.8
−8.0
−8.2
−8.4
05−Jan
10−Jan
15−Jan
20−Jan
25−Jan
30−Jan
04−Feb

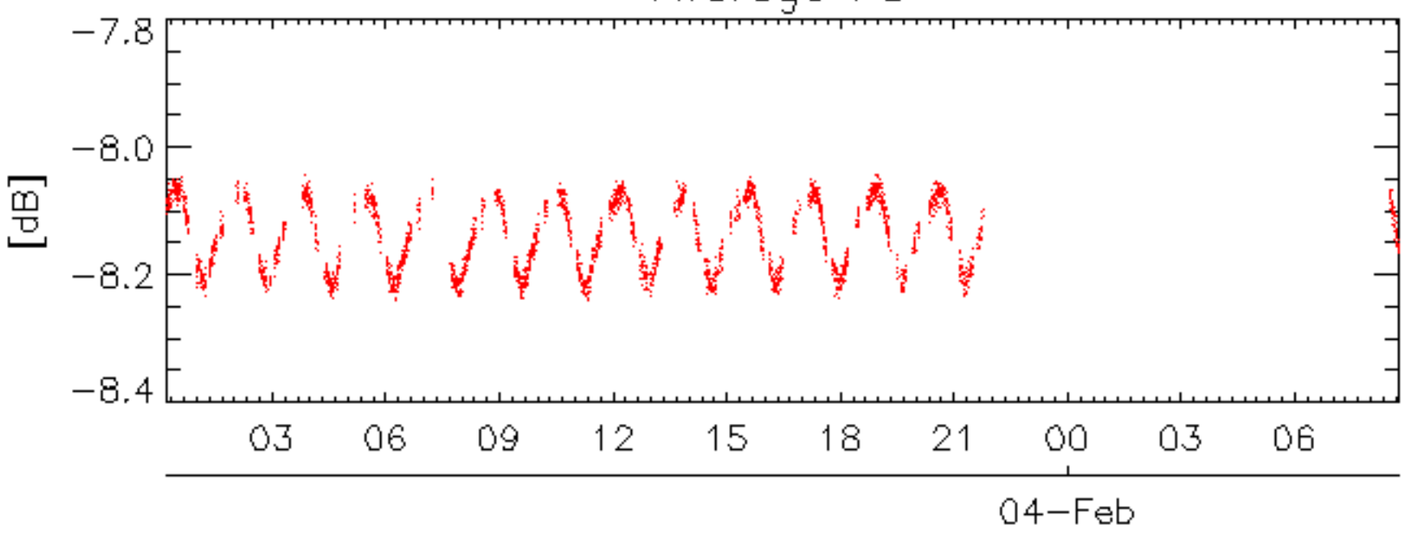
Average P1 (row 3 & row 24)



Average P2

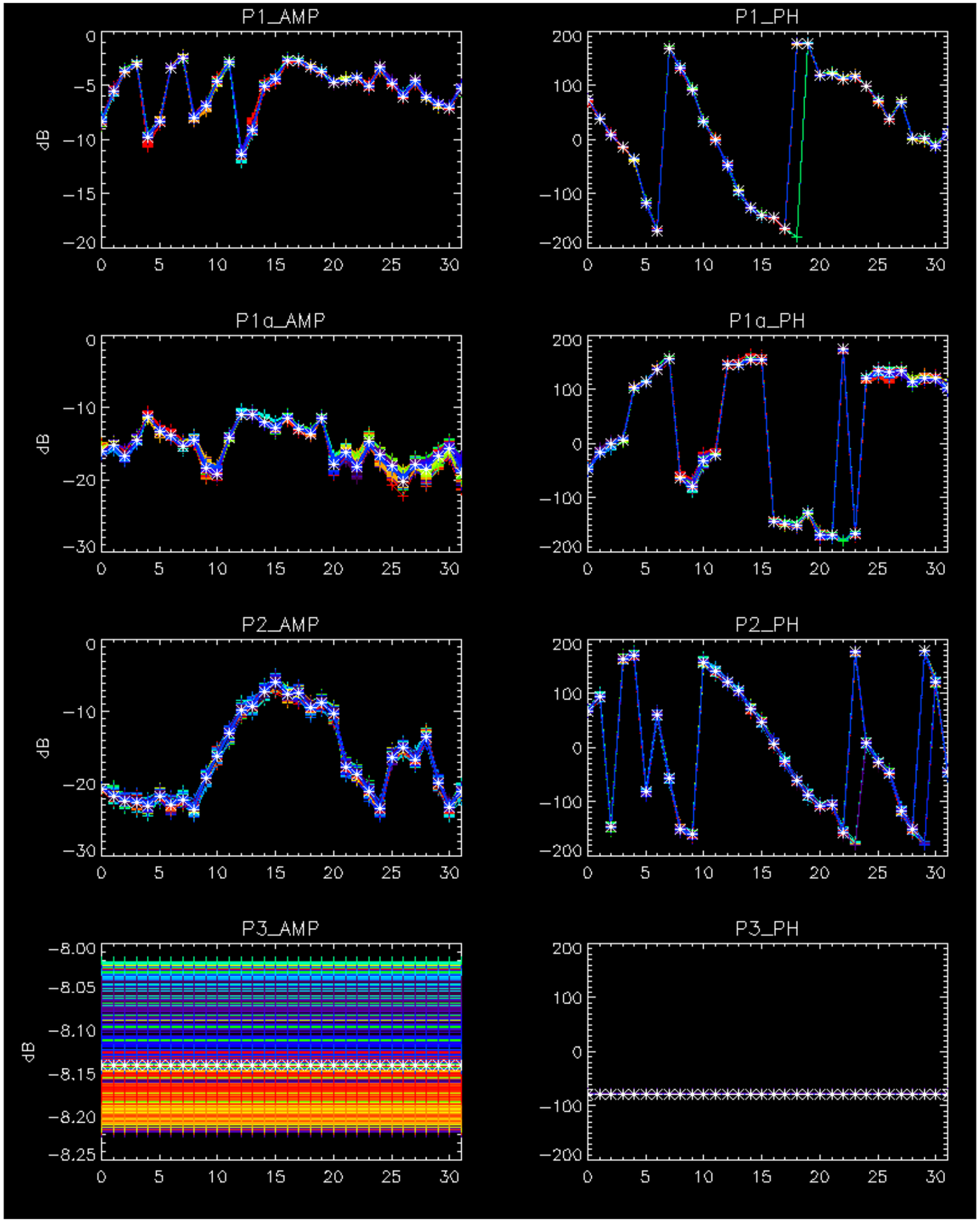


Average P3



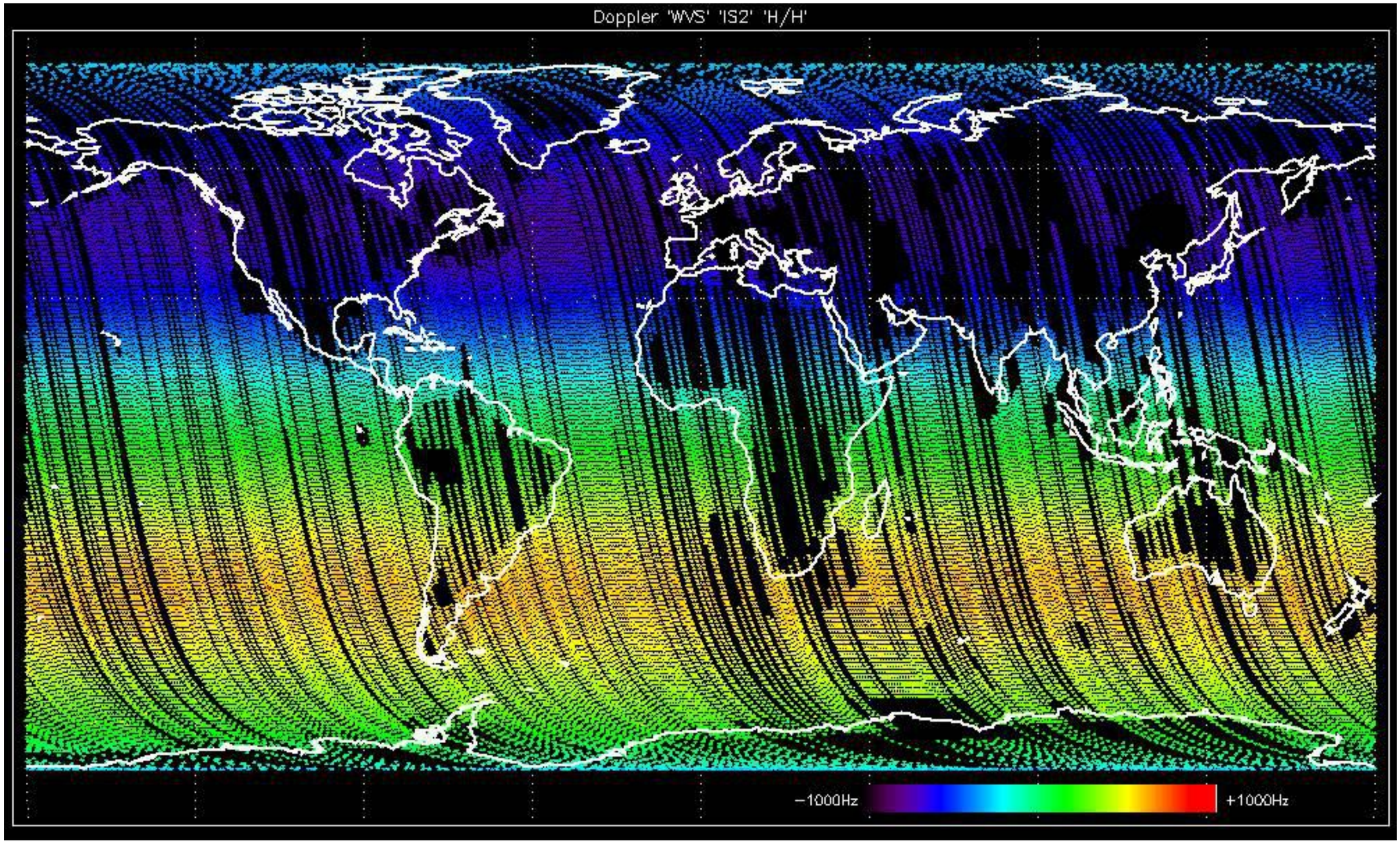
No anomalies observed on available browse products.

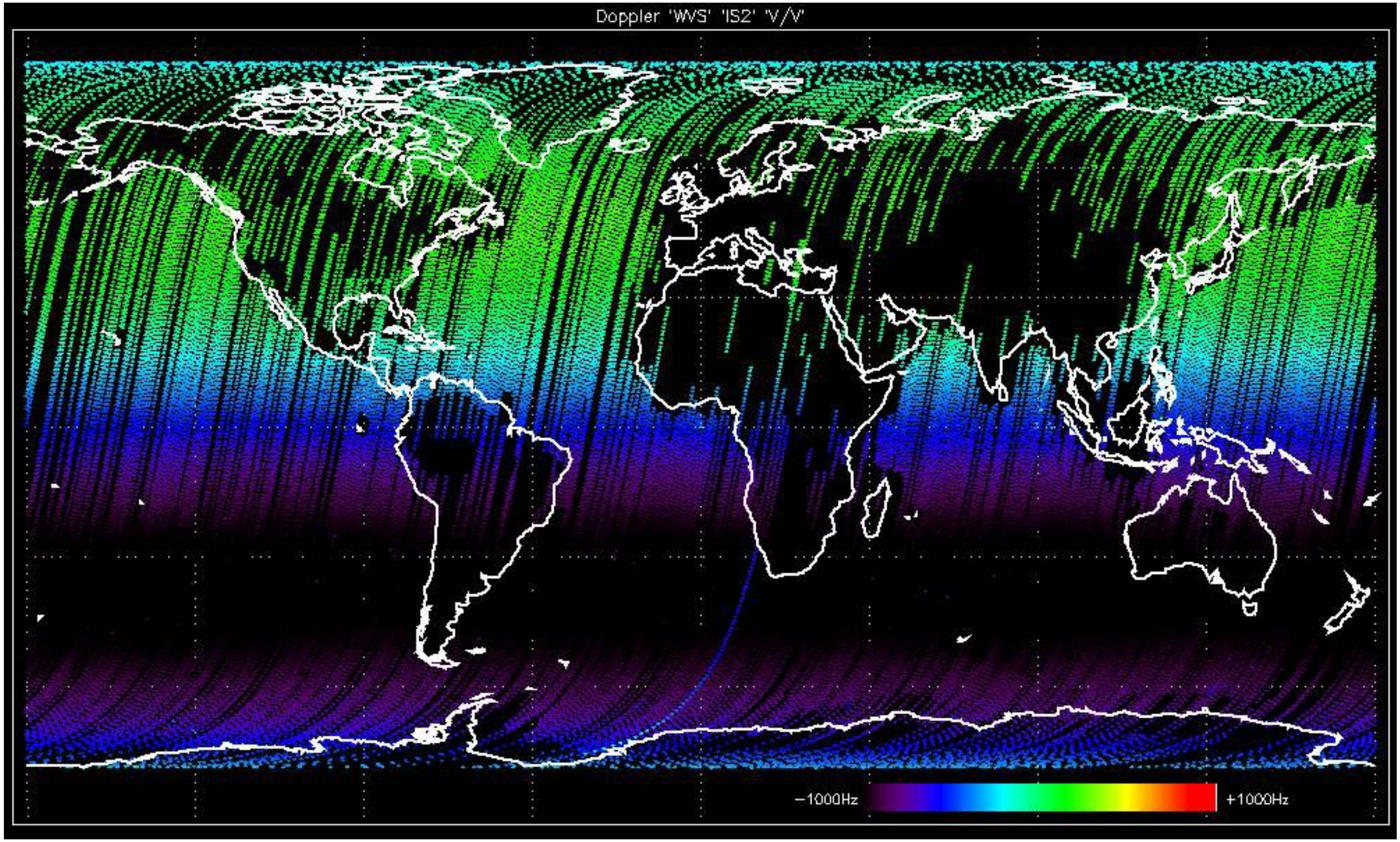
No anomalies observed.

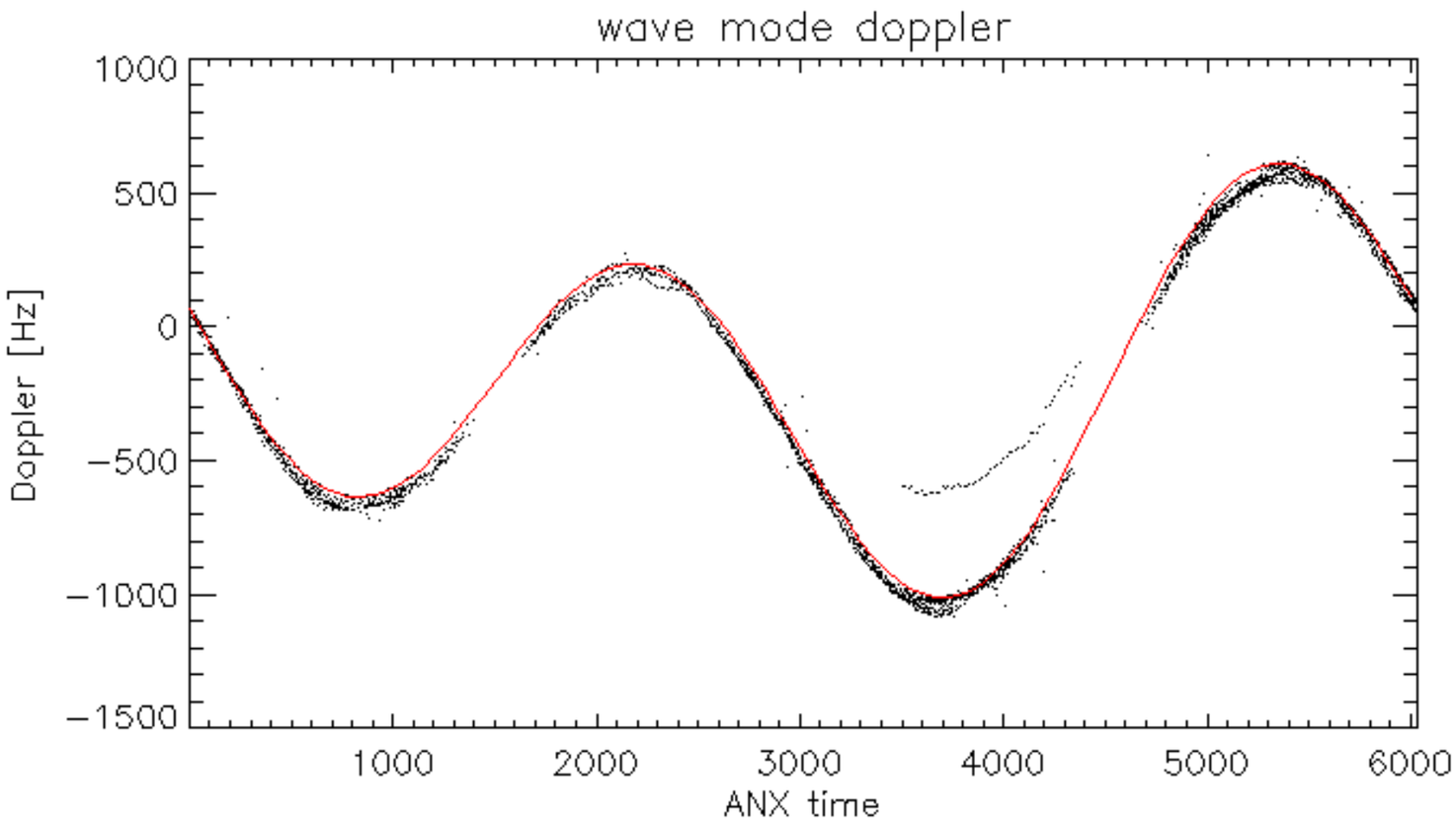

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.00
−8.05
−8.10
−8.15
−8.20
−8.25
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

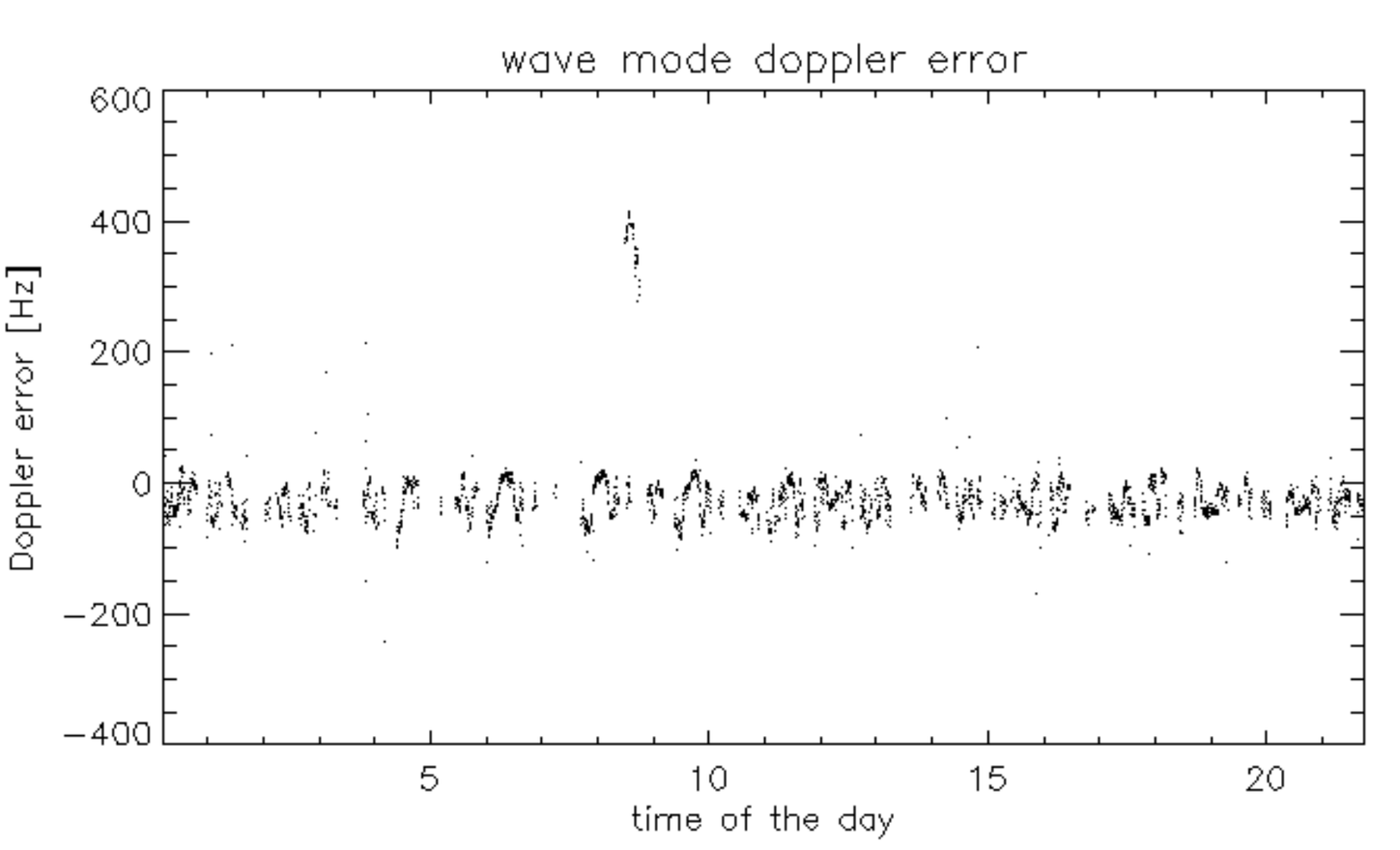
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

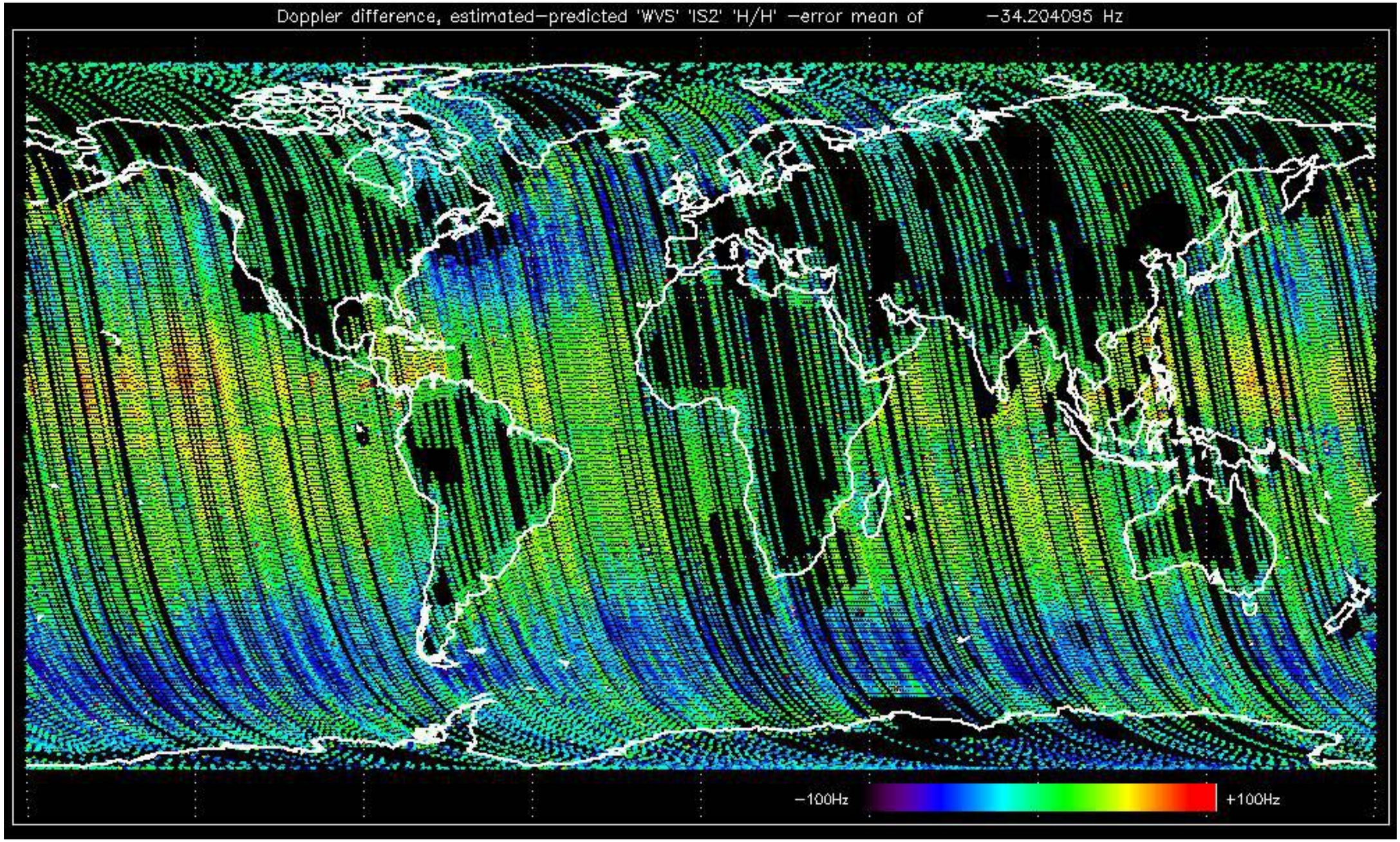
No anomalies observed in Doppler evolution.
The discontinuity visible in the doppler evolution versus ANX is probably due to a manoeuvre occurred on 04-Feb-2004.
Doppler analysis performed over the last 35 days.

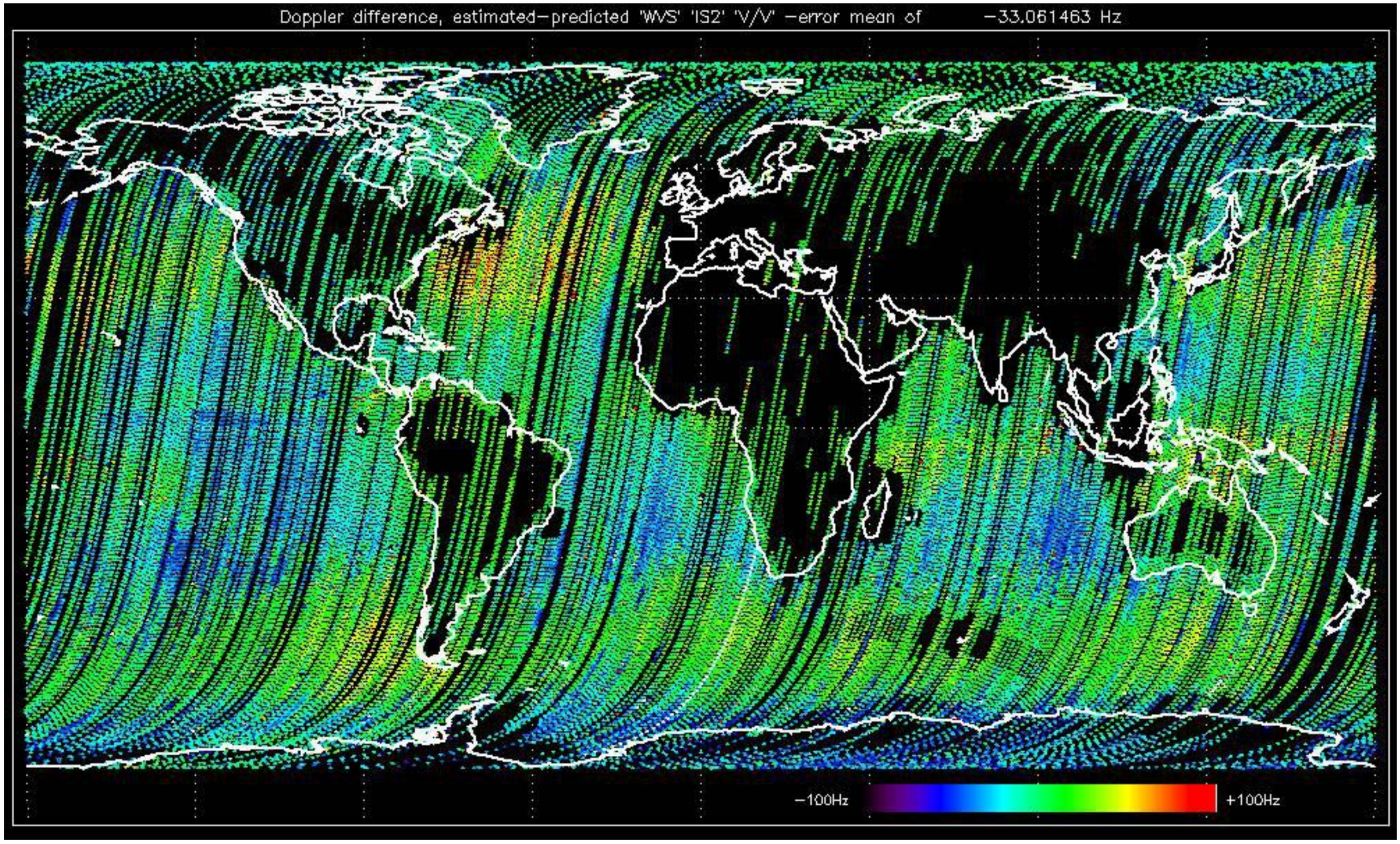

Doppler 'WVS' 'IS2' 'H/H'
−1000Hz
+1000Hz


Doppler 'WVS' 'IS2' 'V/V'
−1000Hz
+1000Hz


wave mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
1000
2000
3000
4000
5000
6000
ANX time


wave mode doppler error
Doppler error [Hz]
600
400
200
0
−200
−400
5
10
15
20
time of the day


Doppler difference, estimated−predicted 'WVS' 'IS2' 'H/H' −error mean of −34.204095 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' 'V/V' −error mean of −33.061463 Hz
−100Hz
+100Hz

The MS mode provides an internal health check on an individual module basis.
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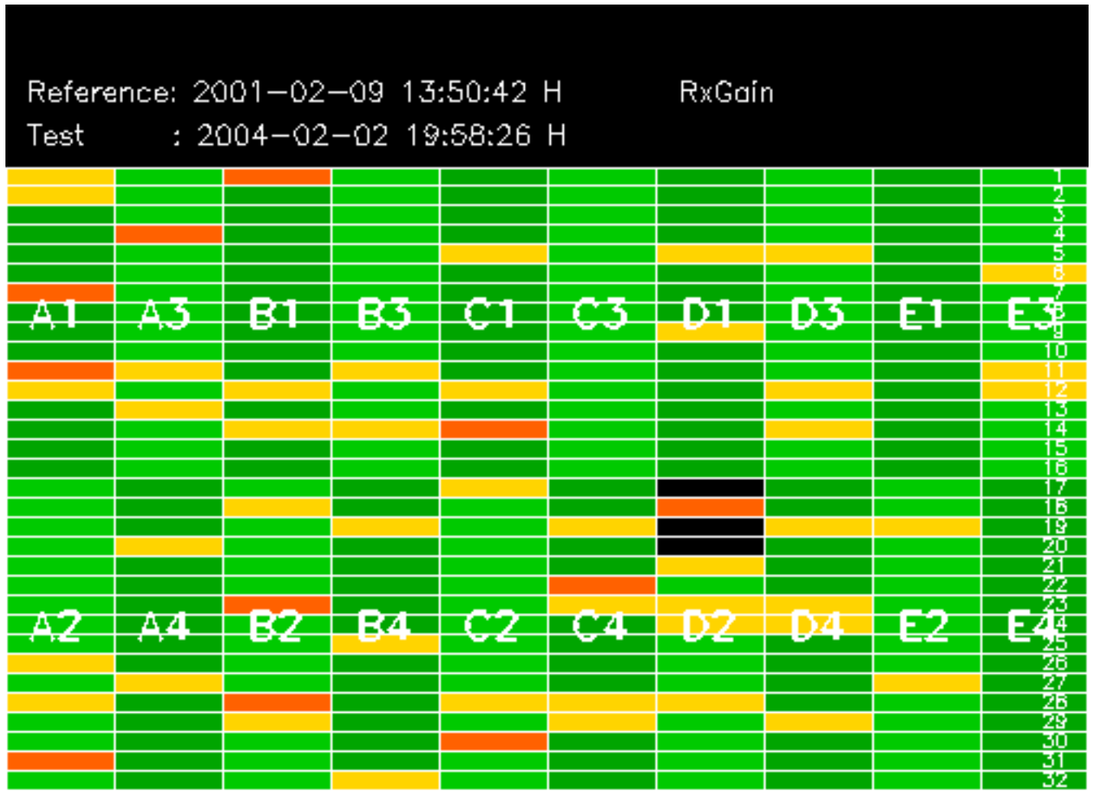
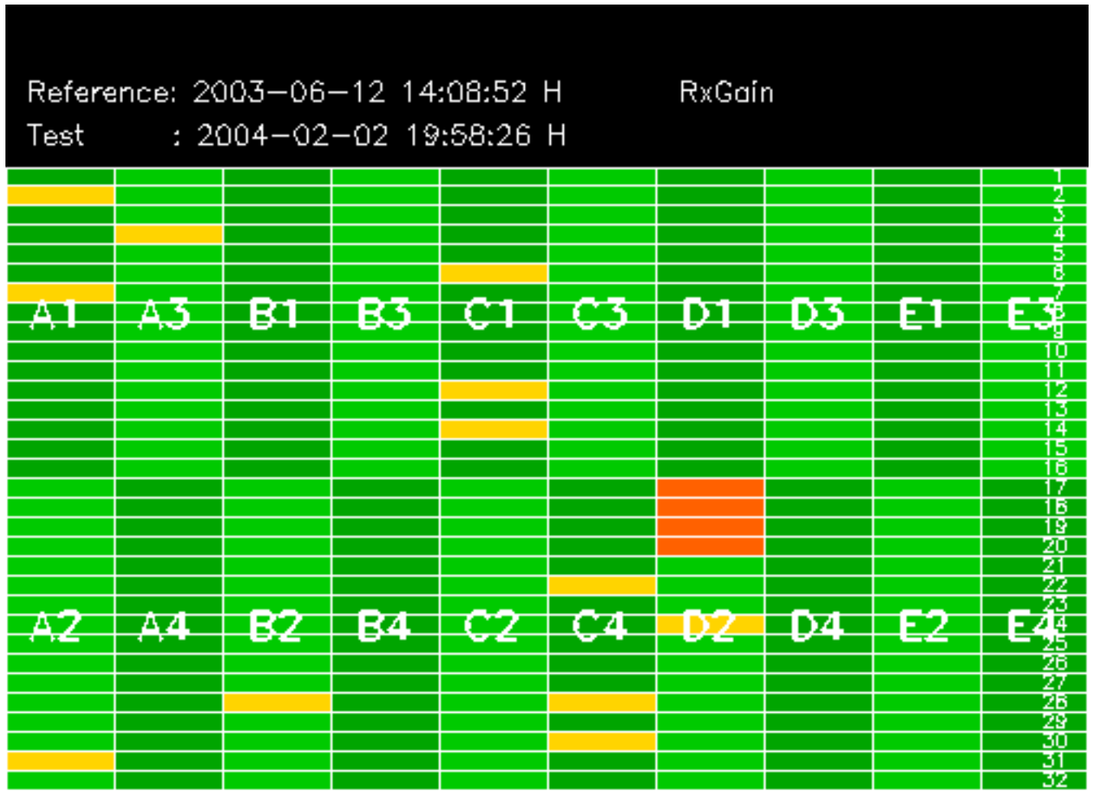
to identify modules for which calibration offsets are to be applied.
No MS product is available for 03-Feb-2004.
The results below are referred to data acquired on 02-Feb-2004:
-ASA_MS__0PNPDK20040202_195826_000000152023_00500_10073_0190.N1
-ASA_MS__0PNPDK20040202_195946_000000152023_00500_10073_0192.N1

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2004-02-02 19:58:26 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-02-02 19:58:26 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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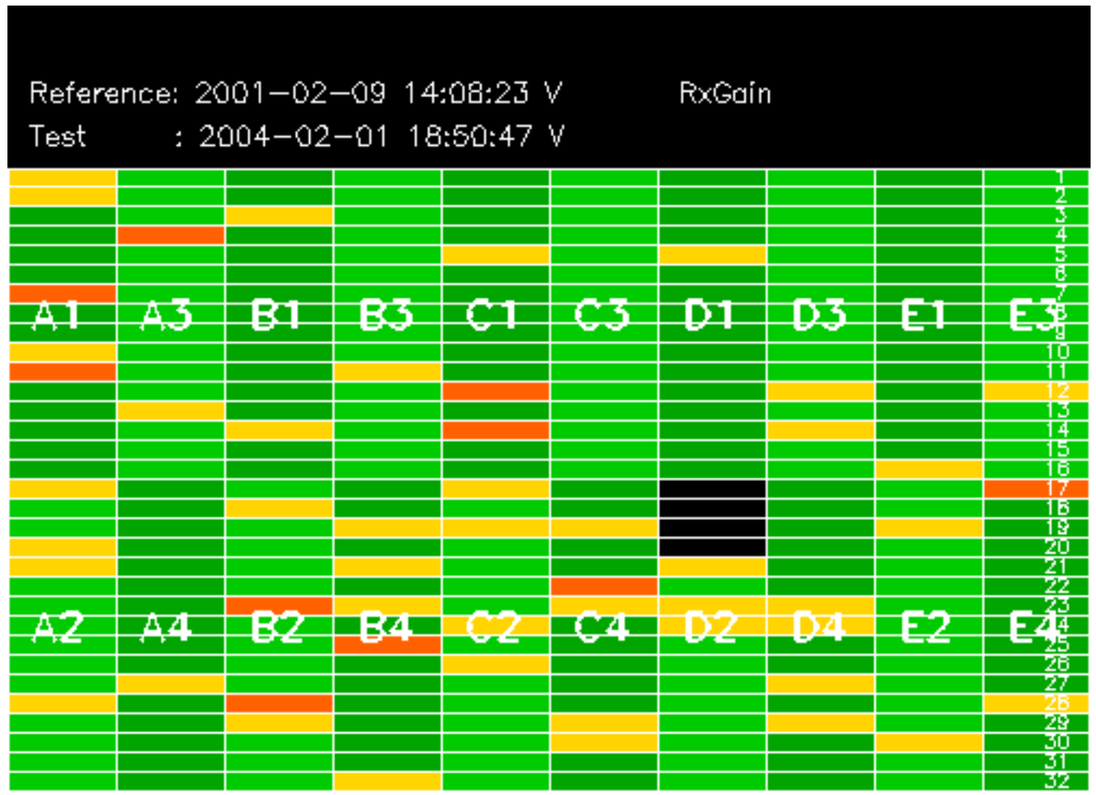
Reference: 2001-02-09 14:08:23 V
Test : 2004-02-01 18:50:47 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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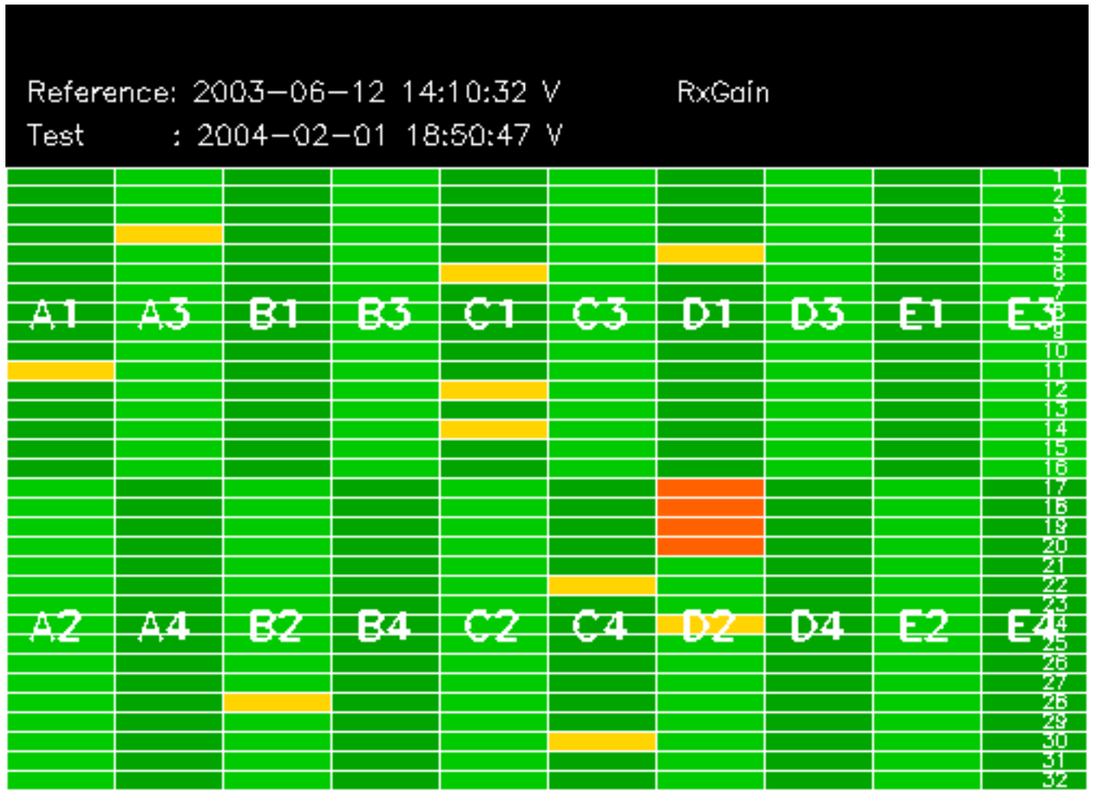
Reference: 2003-06-12 14:10:32 V
Test : 2004-02-01 18:50:47 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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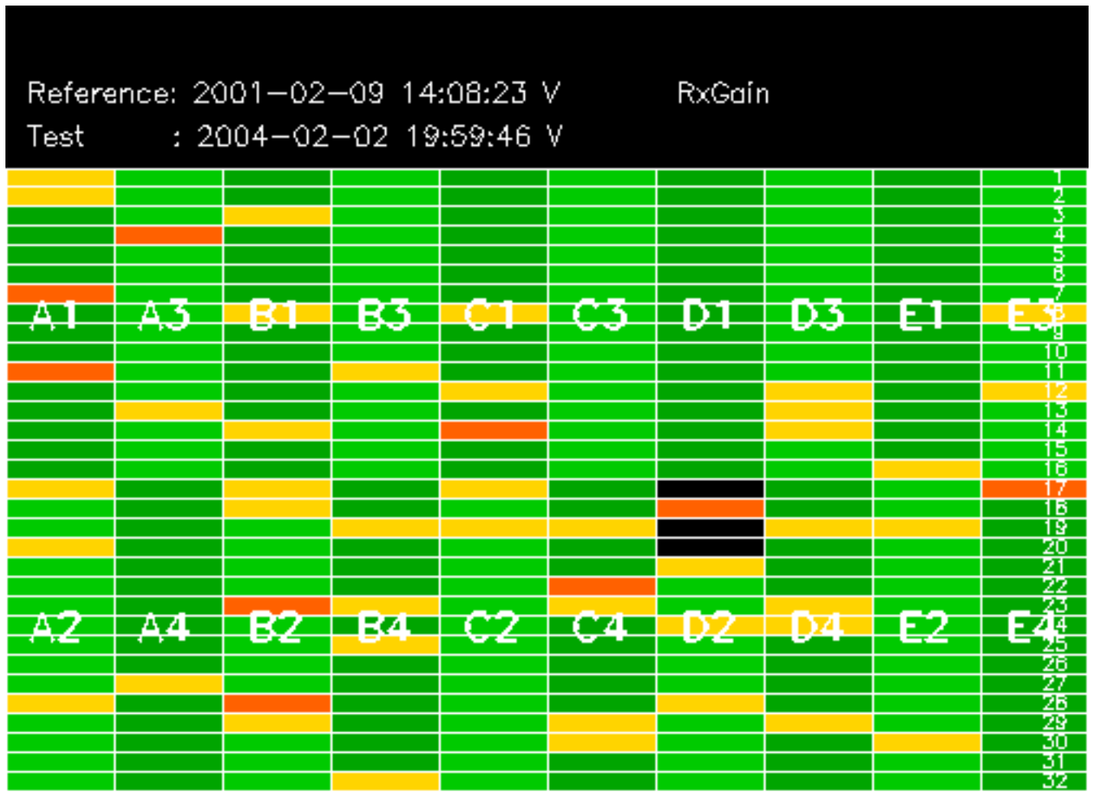
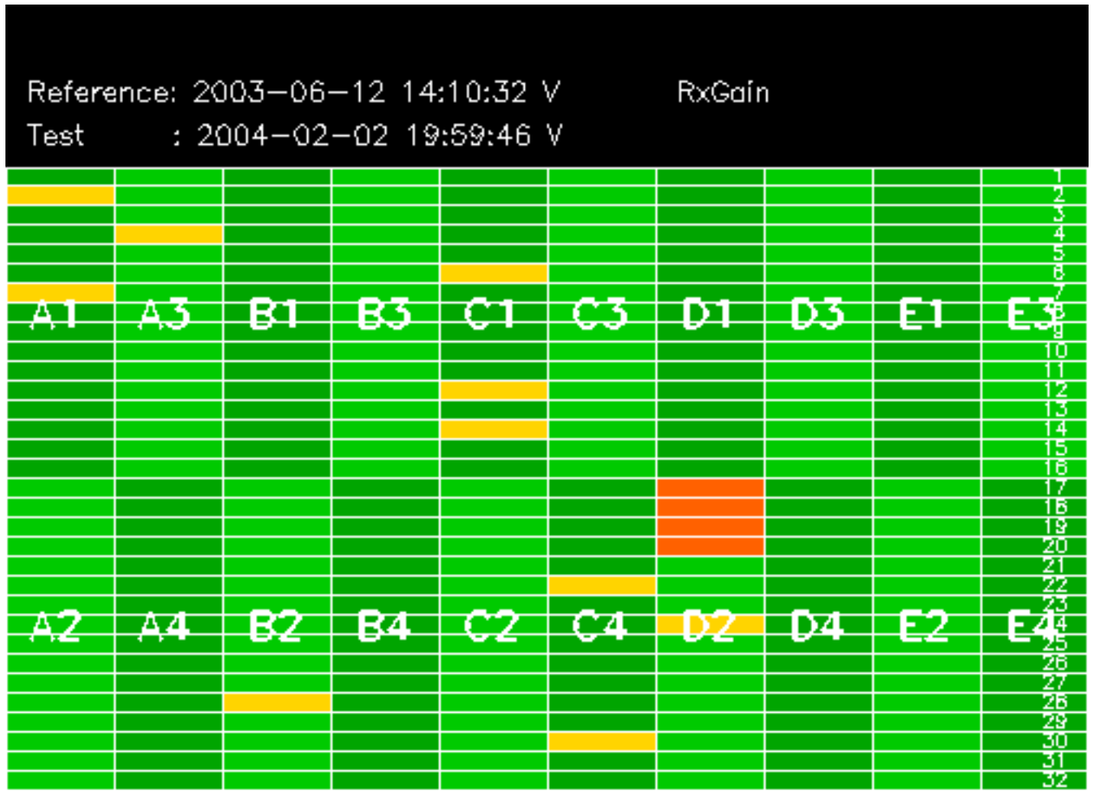

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2004-02-02 19:59:46 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-02-02 19:59:46 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
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E4
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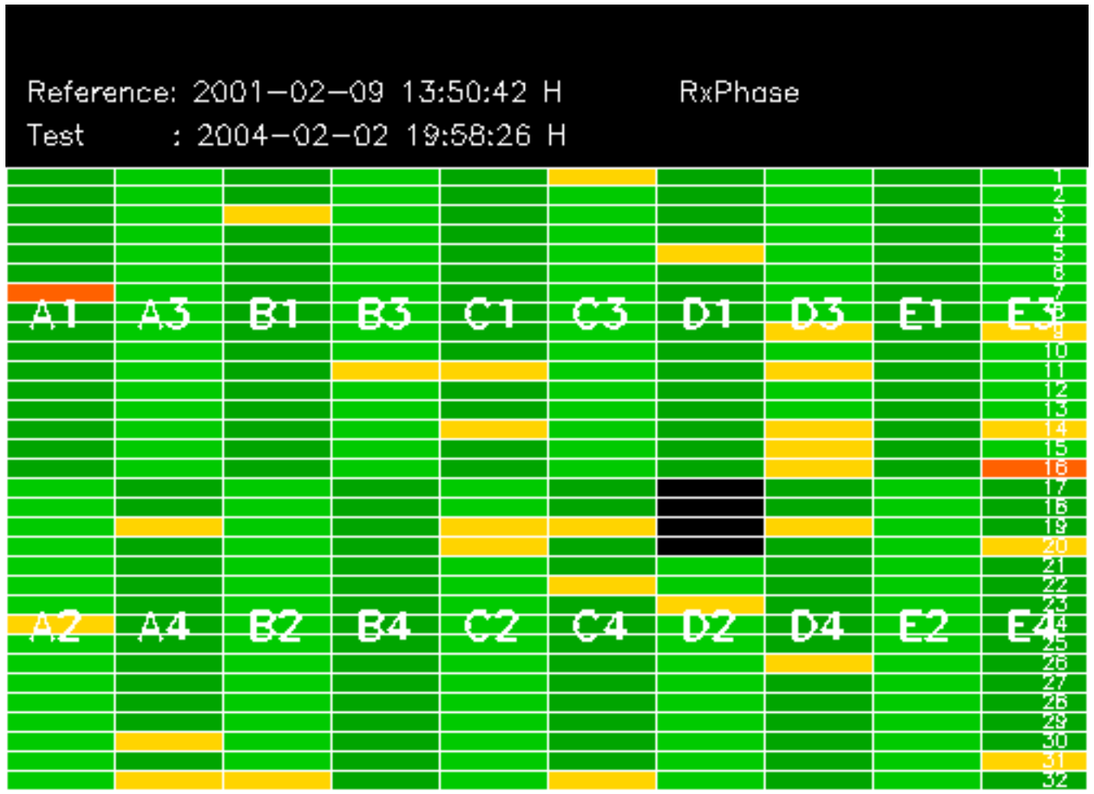
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-02-02 19:58:26 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
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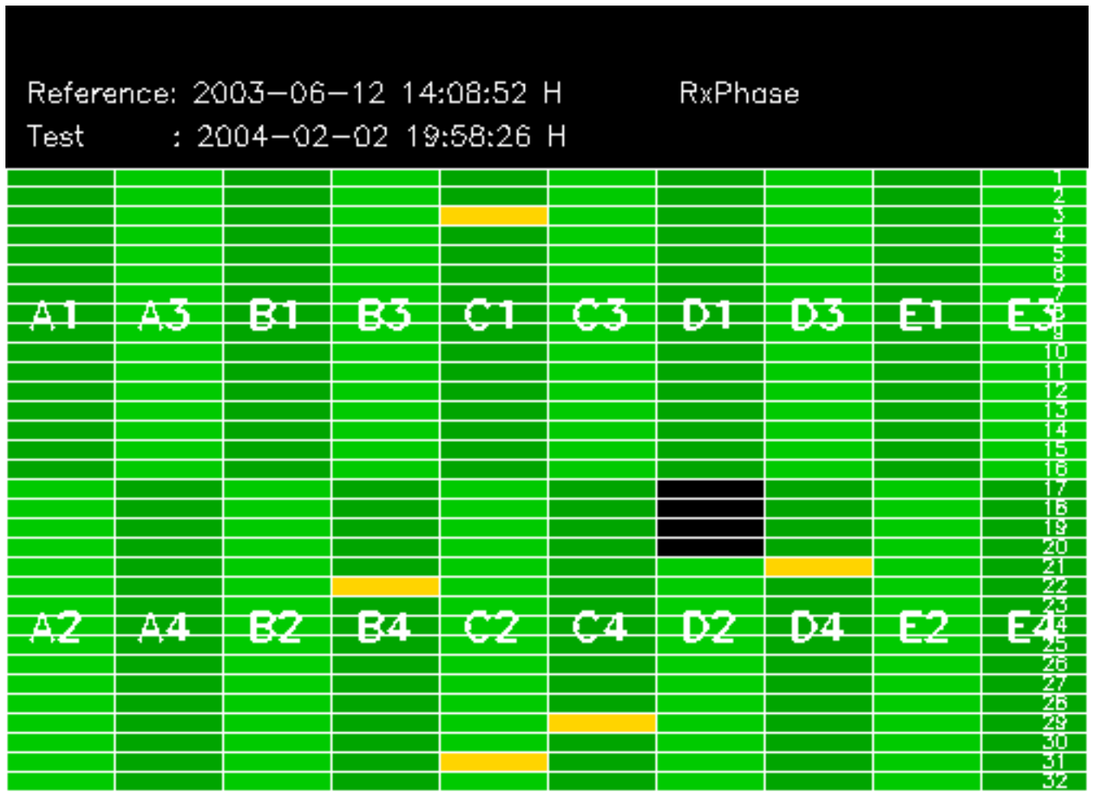
Reference: 2003-06-12 14:08:52 H
Test : 2004-02-02 19:58:26 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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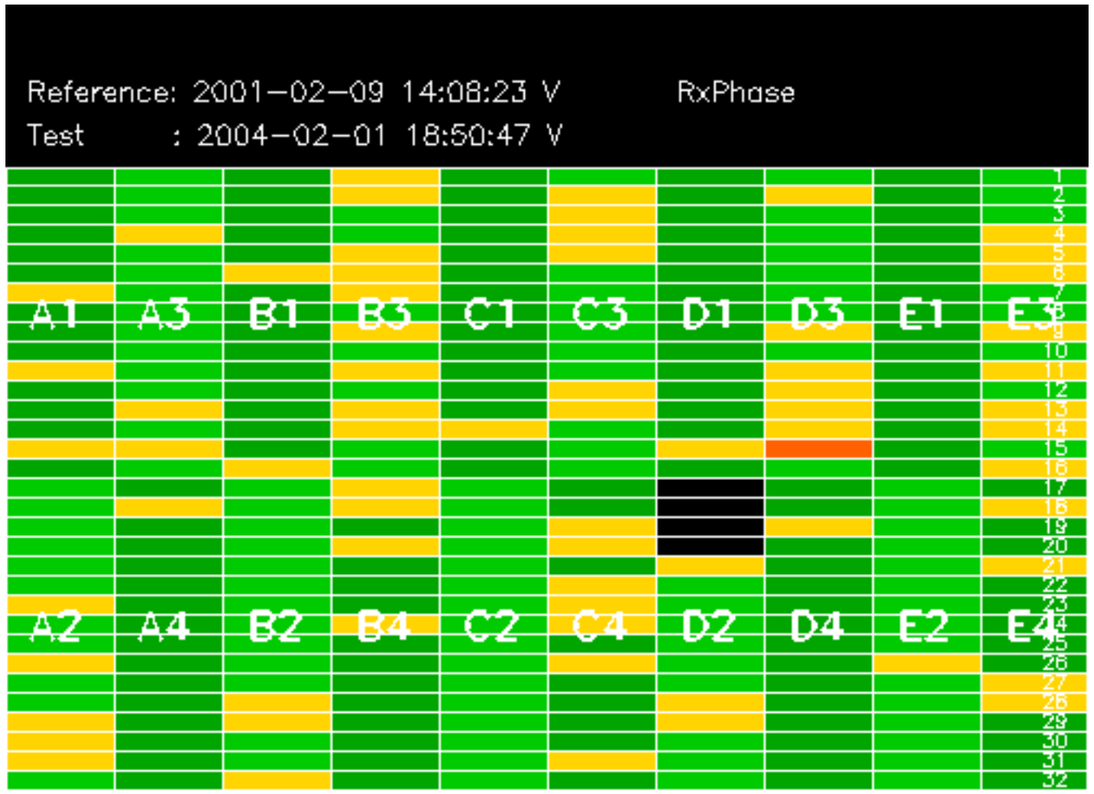
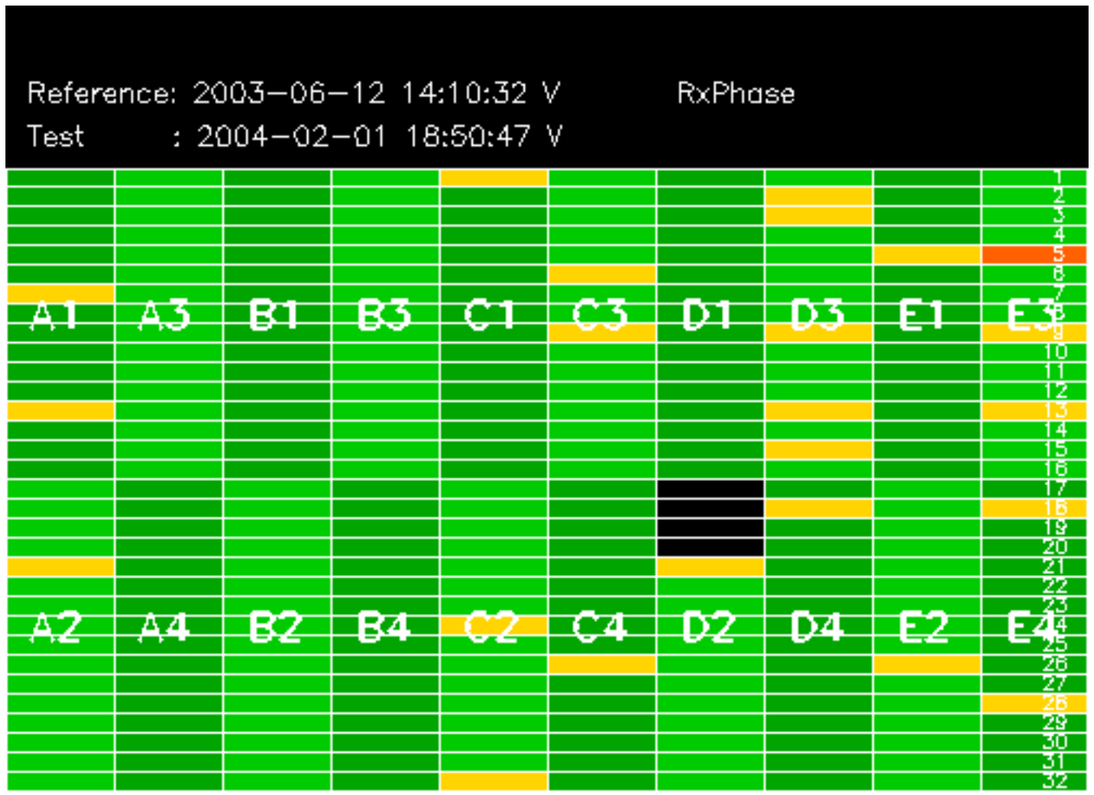

Reference: 2001-02-09 14:08:23 V
Test : 2004-02-01 18:50:47 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-02-01 18:50:47 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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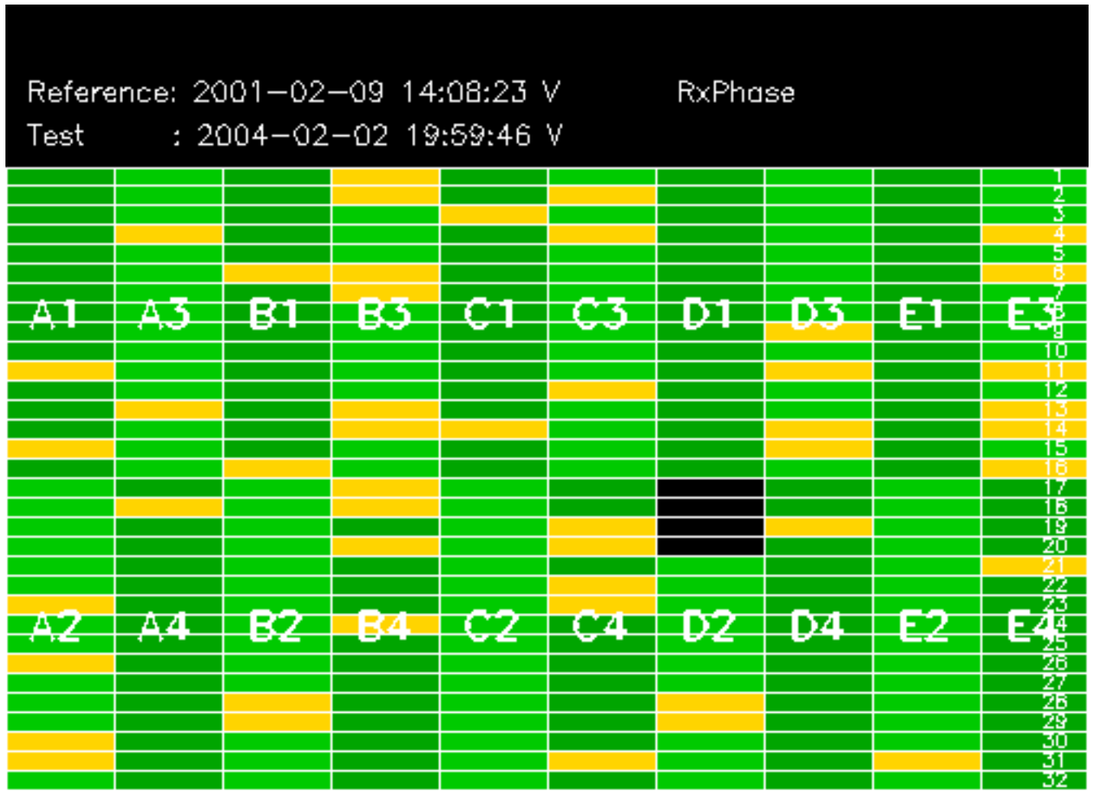
Reference: 2001-02-09 14:08:23 V
Test : 2004-02-02 19:59:46 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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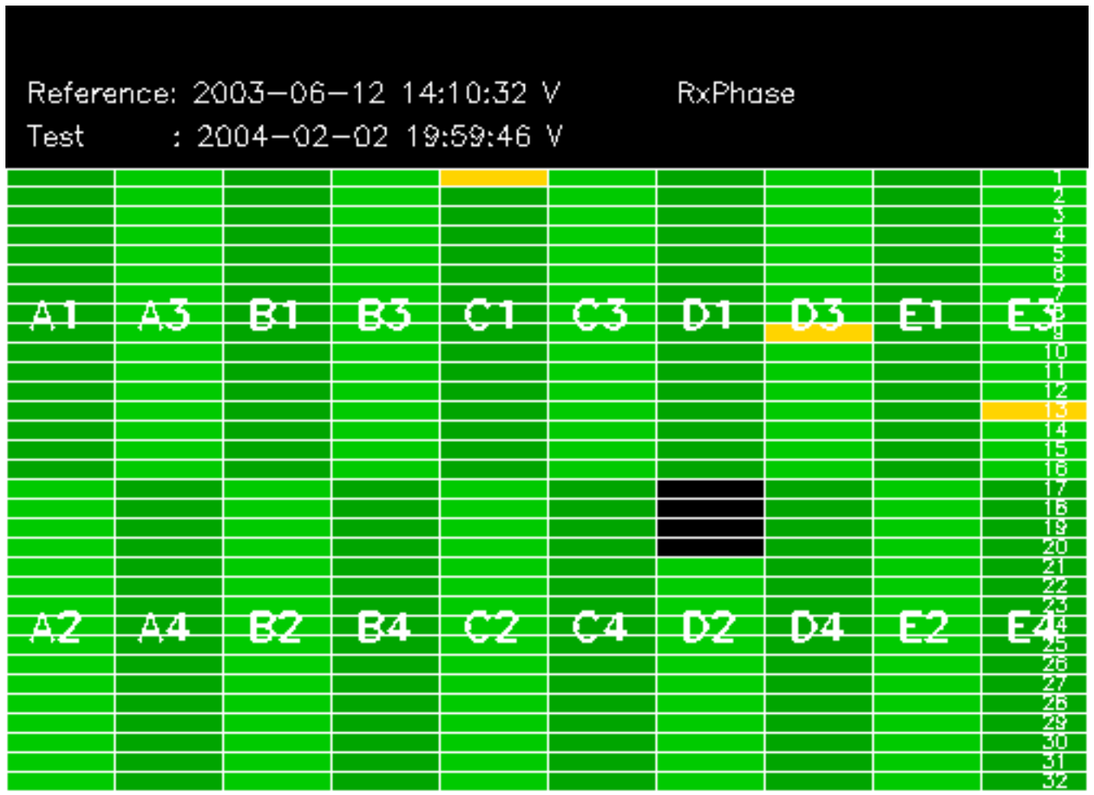
Reference: 2003-06-12 14:10:32 V
Test : 2004-02-02 19:59:46 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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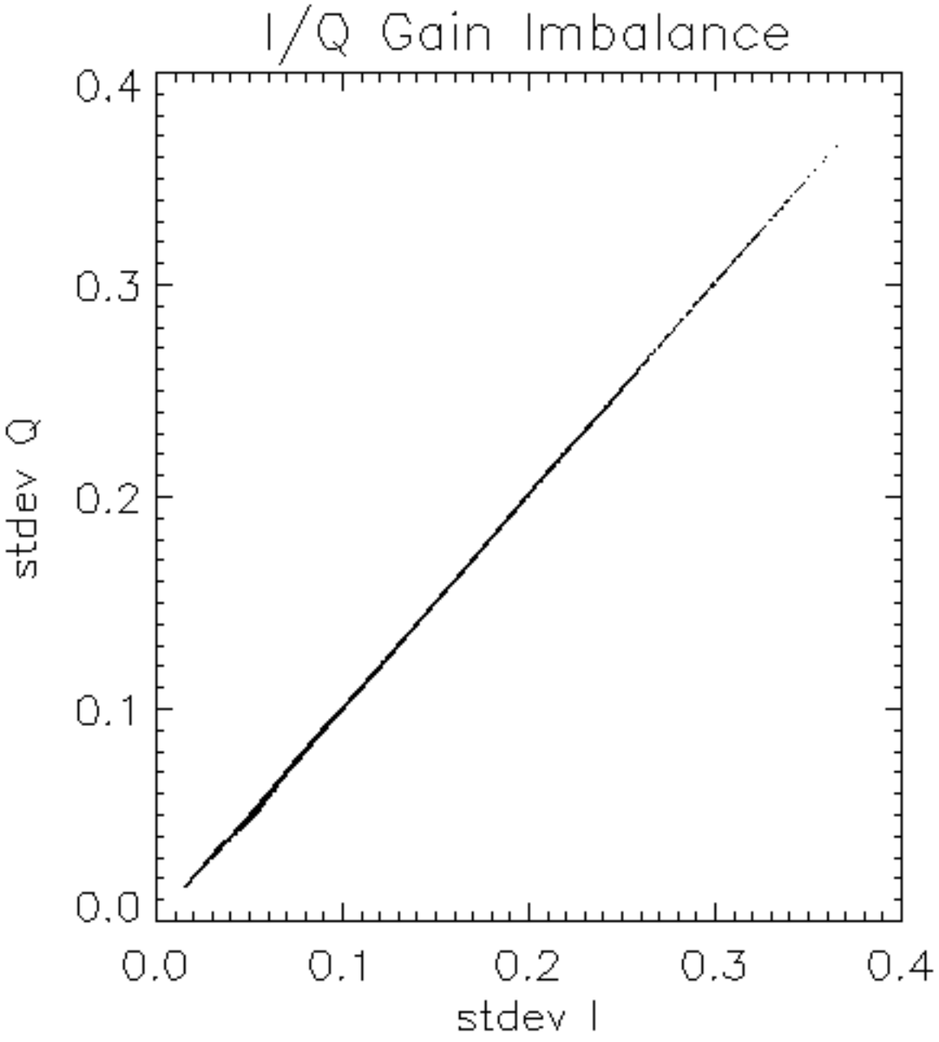
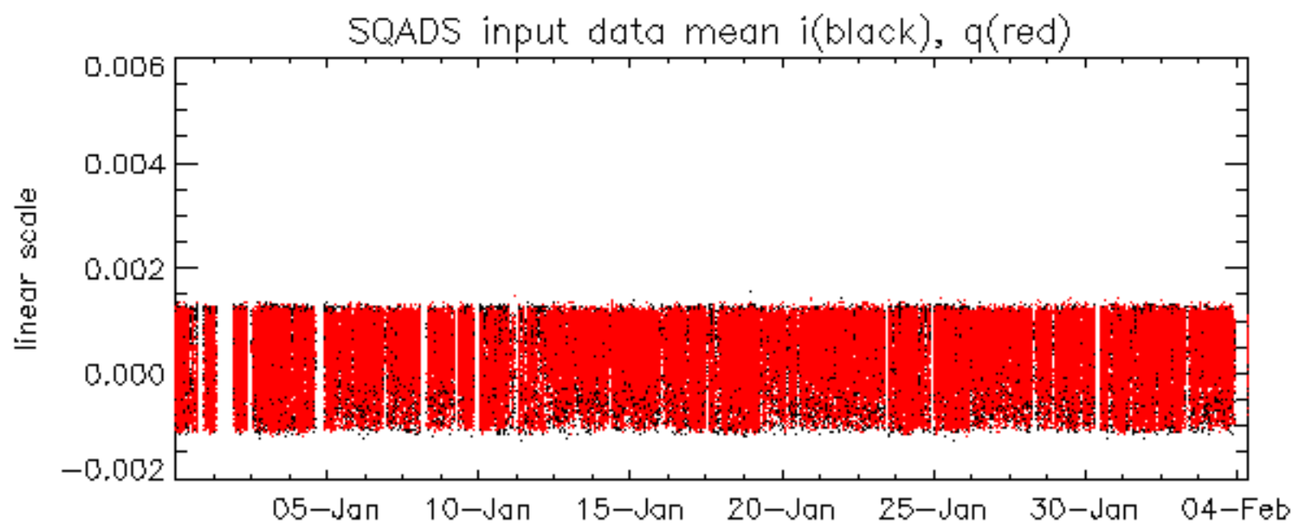
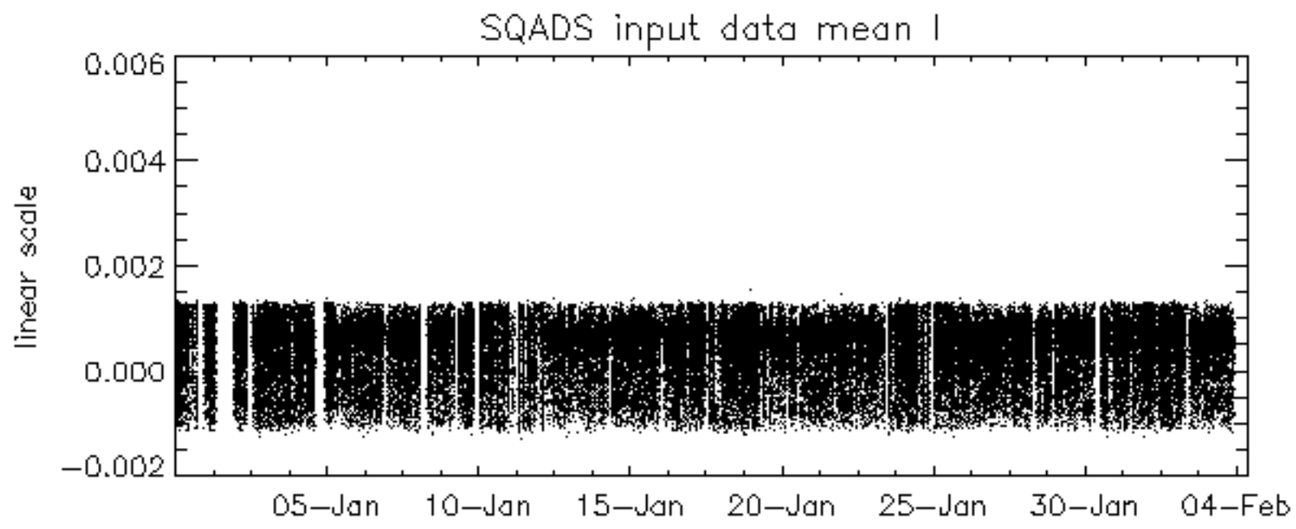
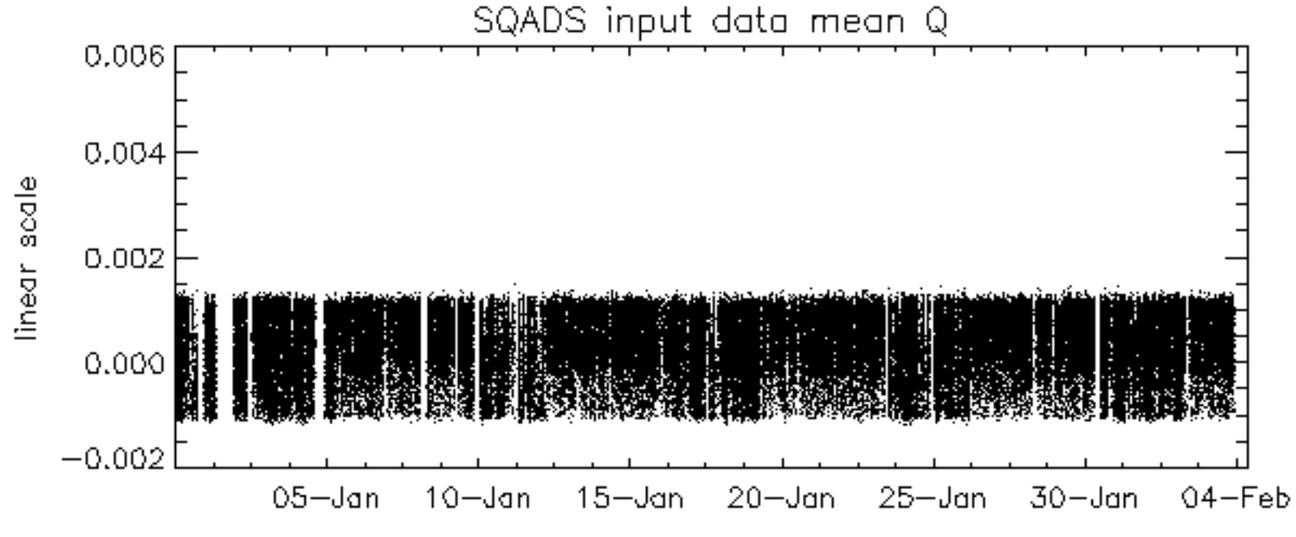
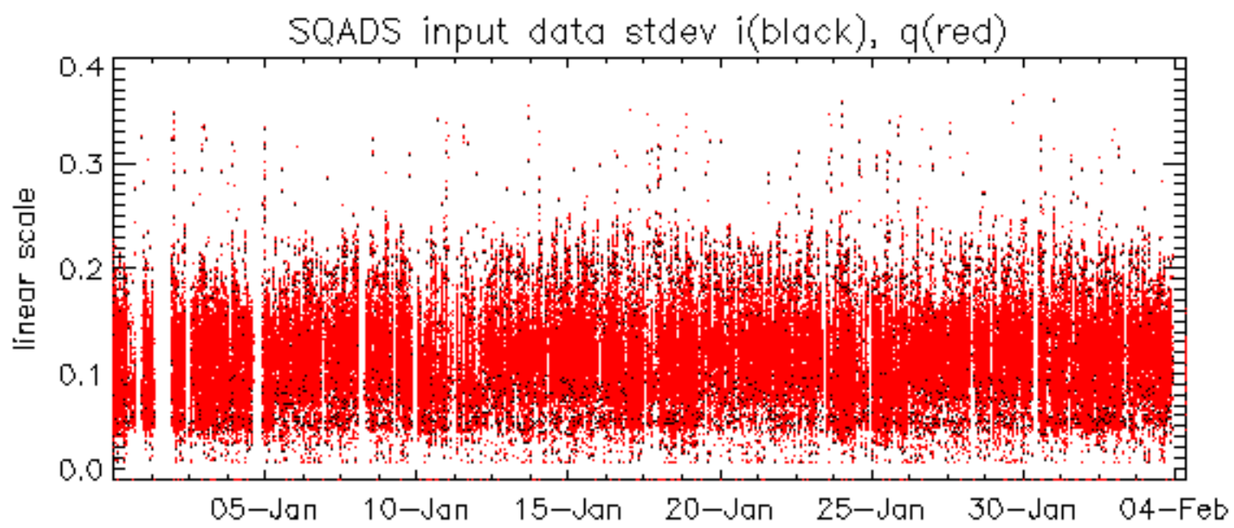
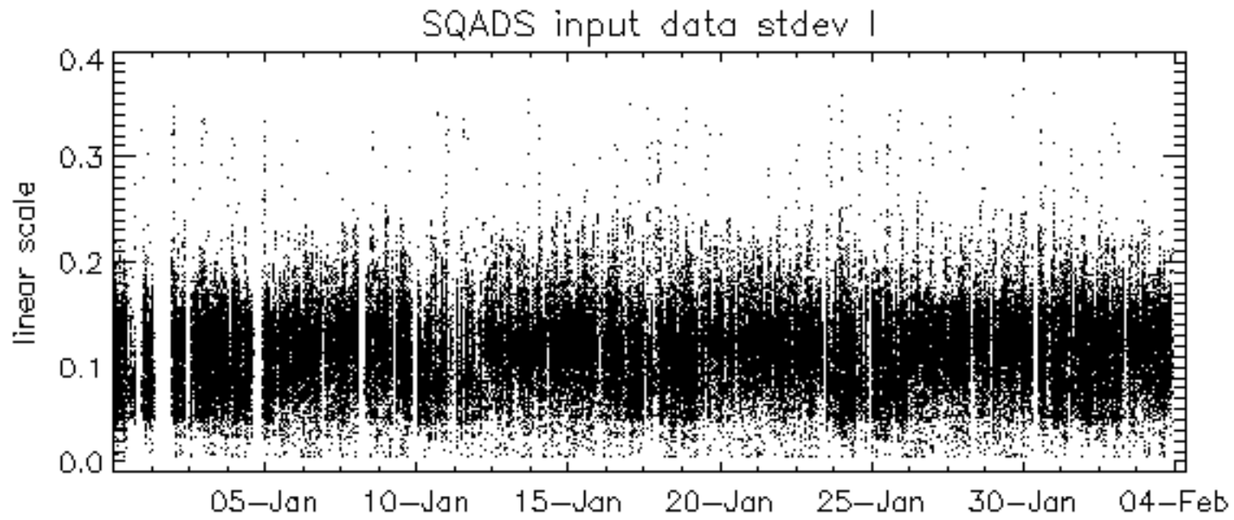

I/Q Gain Imbalance
stdev Q
stdev I
0.0
0.1
0.2
0.3
0.4

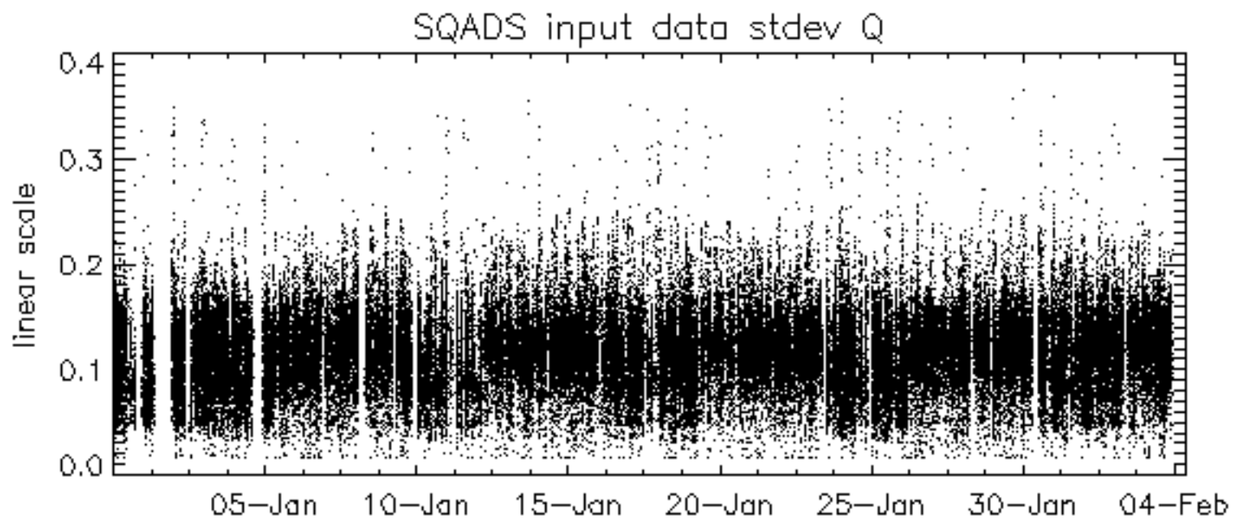

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
05−Jan
10−Jan
15−Jan
20−Jan
25−Jan
30−Jan
04−Feb

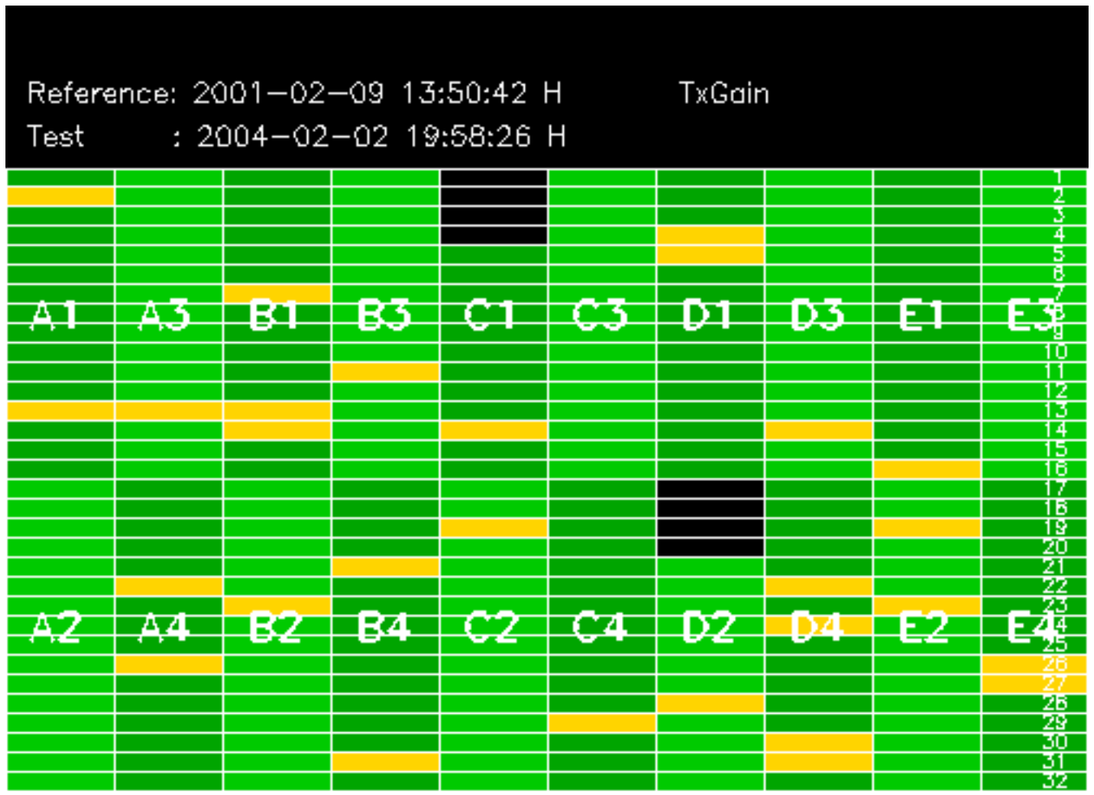

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
05−Jan
10−Jan
15−Jan
20−Jan
25−Jan
30−Jan
04−Feb

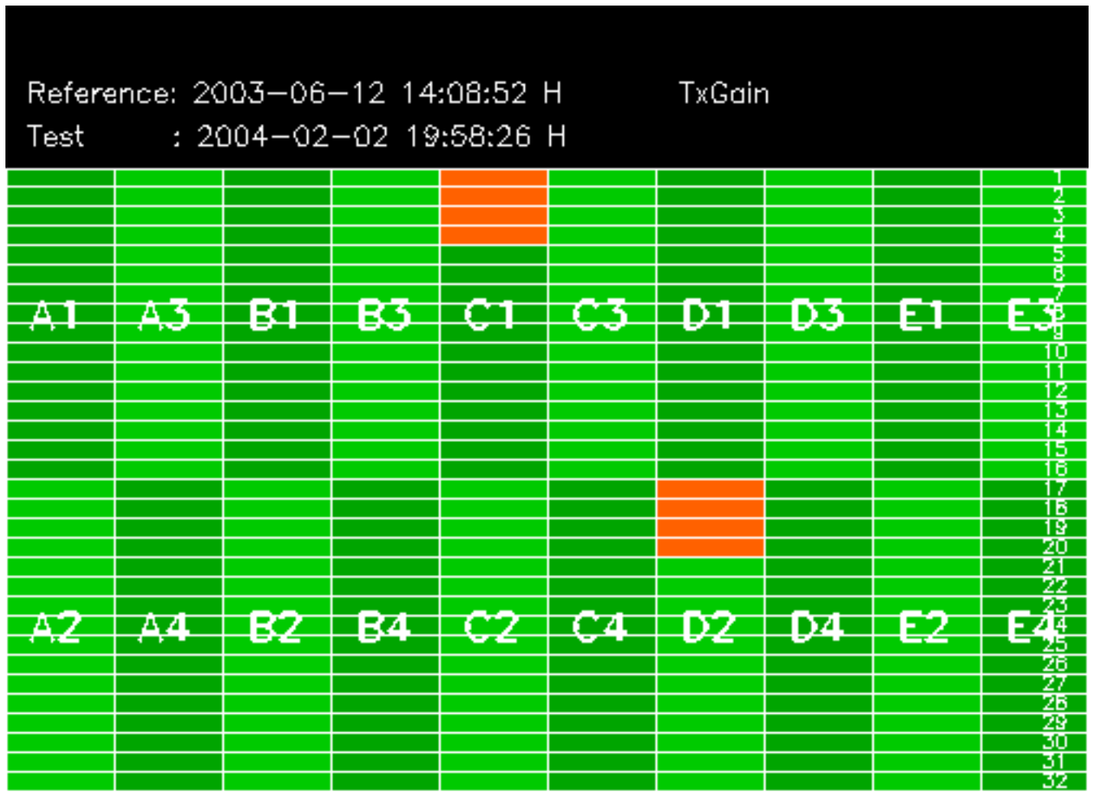

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
05−Jan
10−Jan
15−Jan
20−Jan
25−Jan
30−Jan
04−Feb


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
05–Jan
10–Jan
15–Jan
20–Jan
25–Jan
30–Jan
04–Feb


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
05–Jan
10–Jan
15–Jan
20–Jan
25–Jan
30–Jan
04–Feb


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
05–Jan
10–Jan
15–Jan
20–Jan
25–Jan
30–Jan
04–Feb


Reference: 2001-02-09 13:50:42 H
Test : 2004-02-02 19:58:26 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-02-02 19:58:26 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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E4
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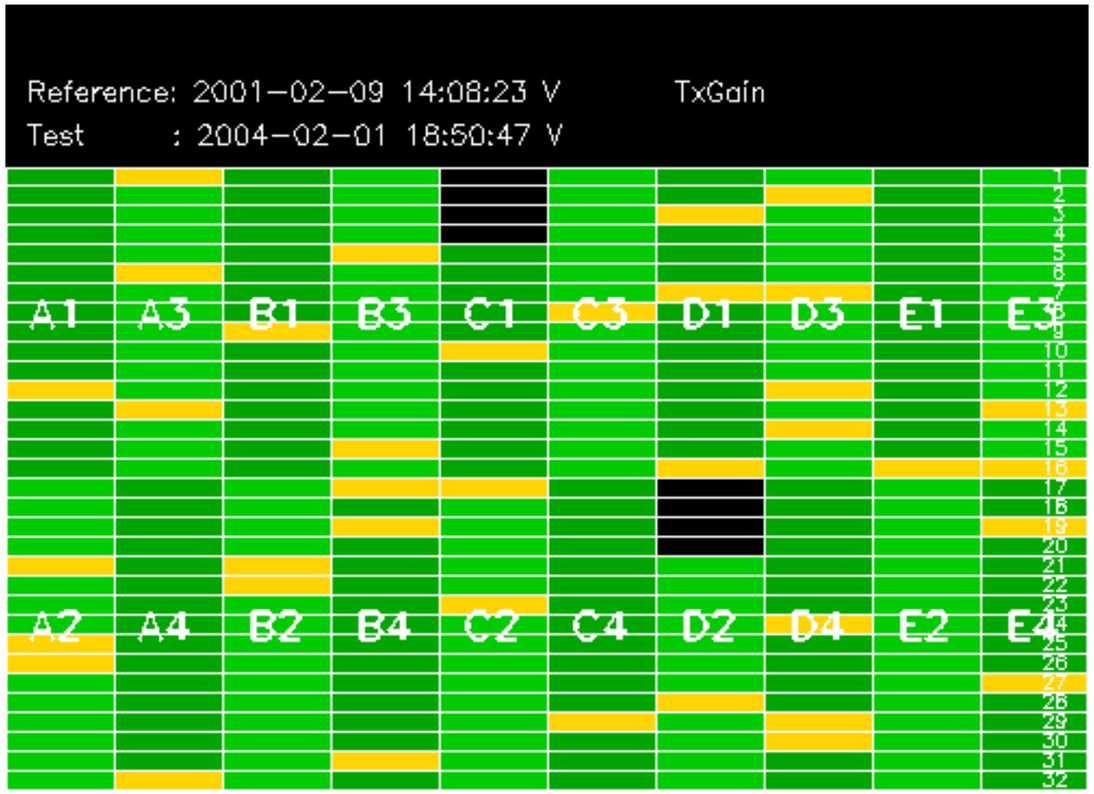
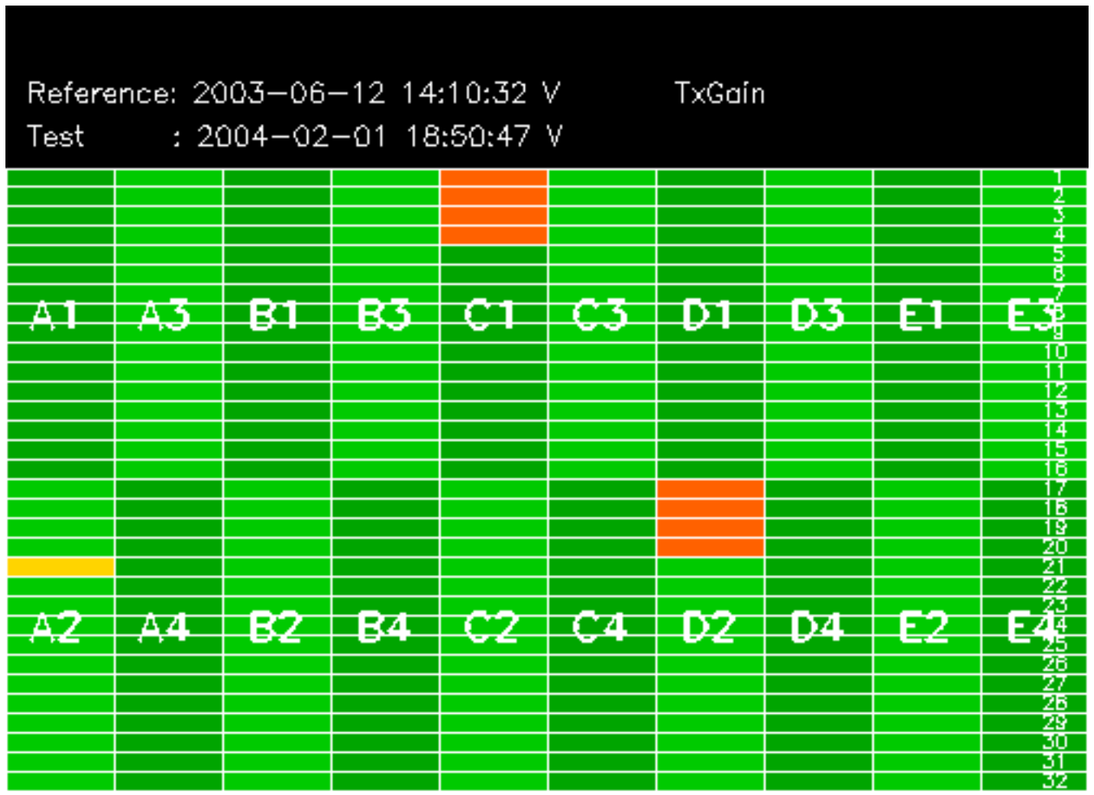

Reference: 2001-02-09 14:08:23 V
Test : 2004-02-01 18:50:47 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-02-01 18:50:47 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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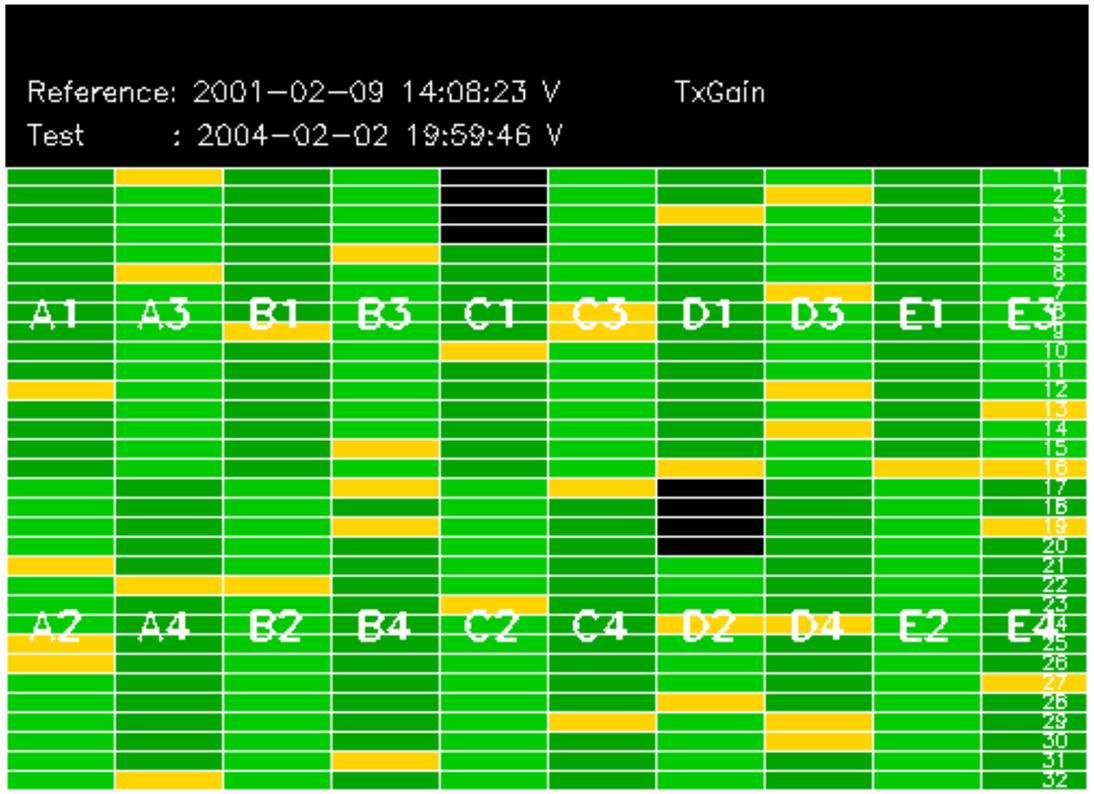
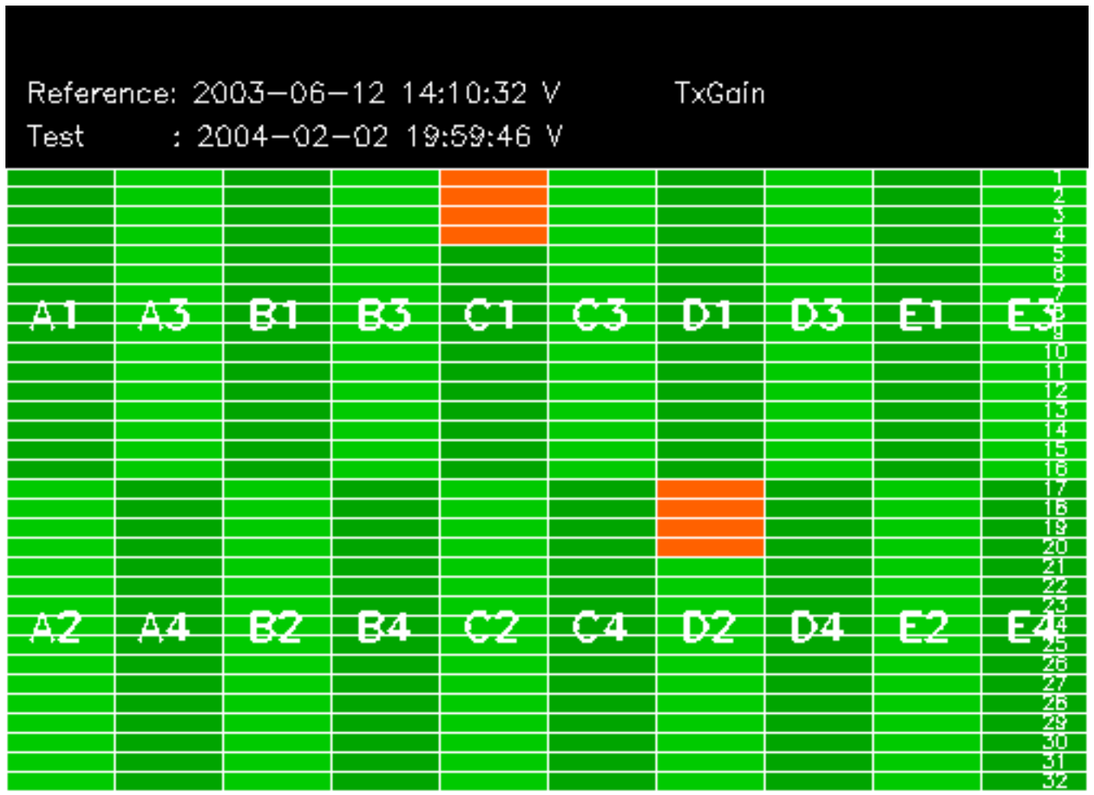

Reference: 2001-02-09 14:08:23 V
Test : 2004-02-02 19:59:46 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-02-02 19:59:46 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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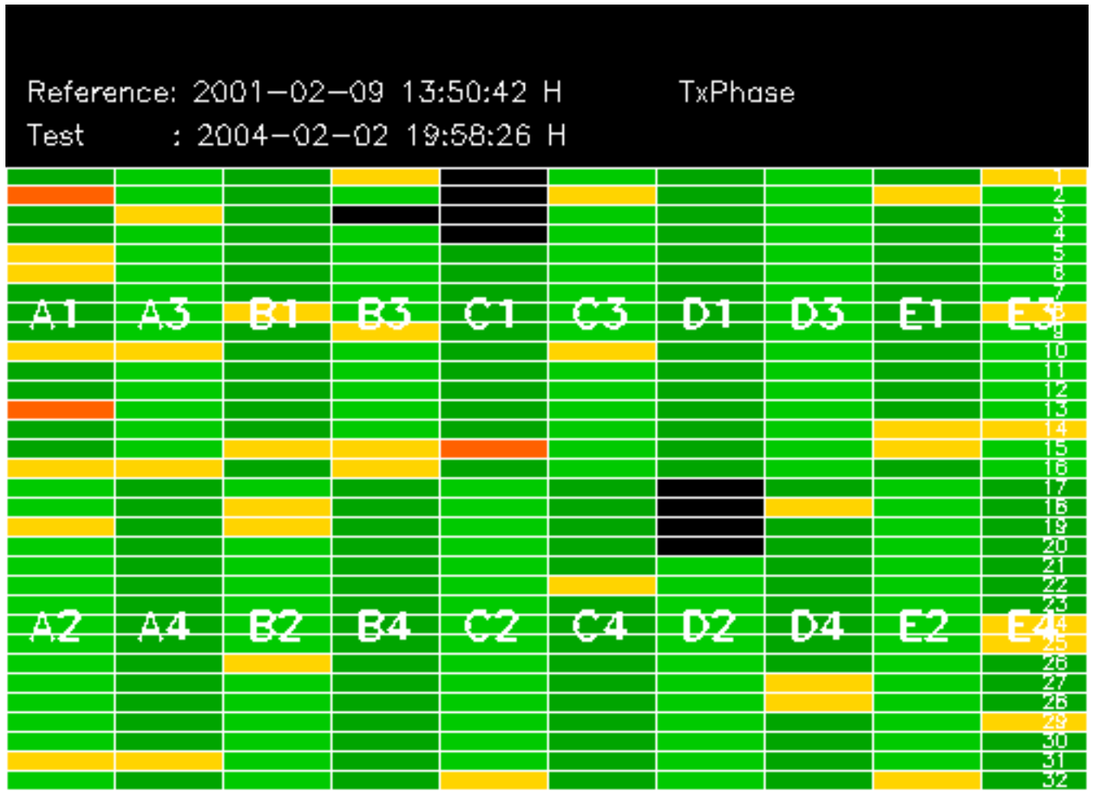
Reference: 2001-02-09 13:50:42 H
Test : 2004-02-02 19:58:26 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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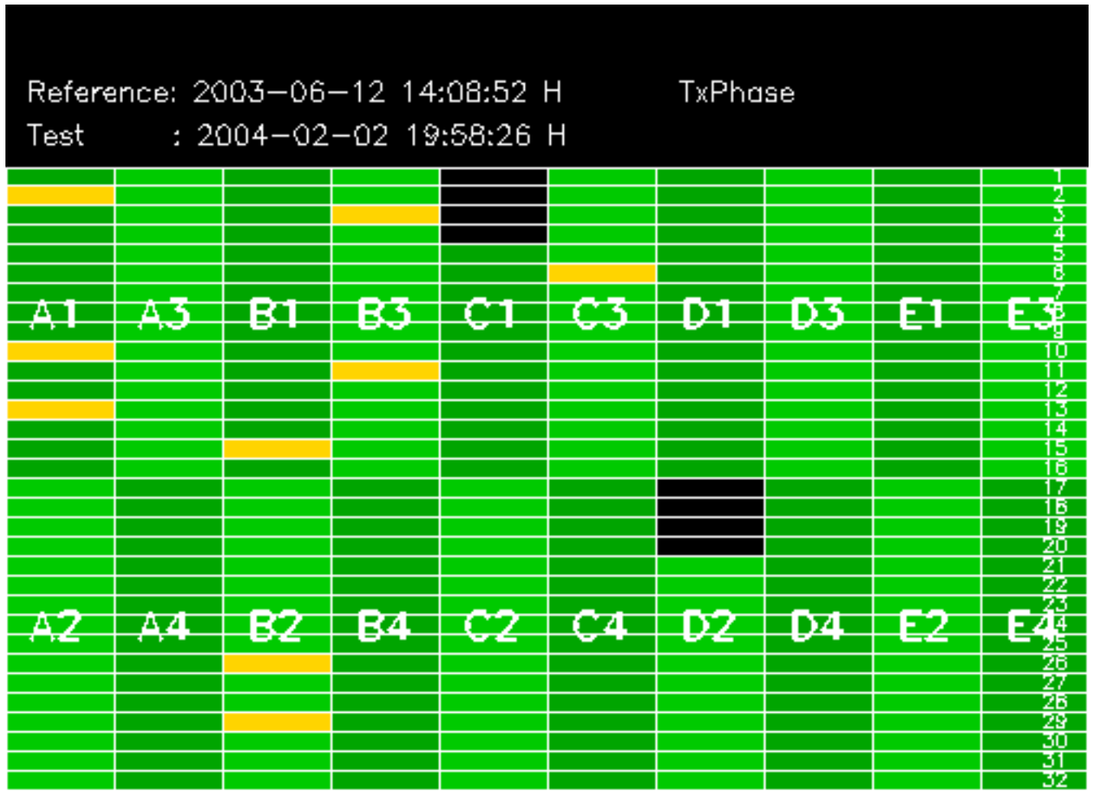
Reference: 2003-06-12 14:08:52 H
Test : 2004-02-02 19:58:26 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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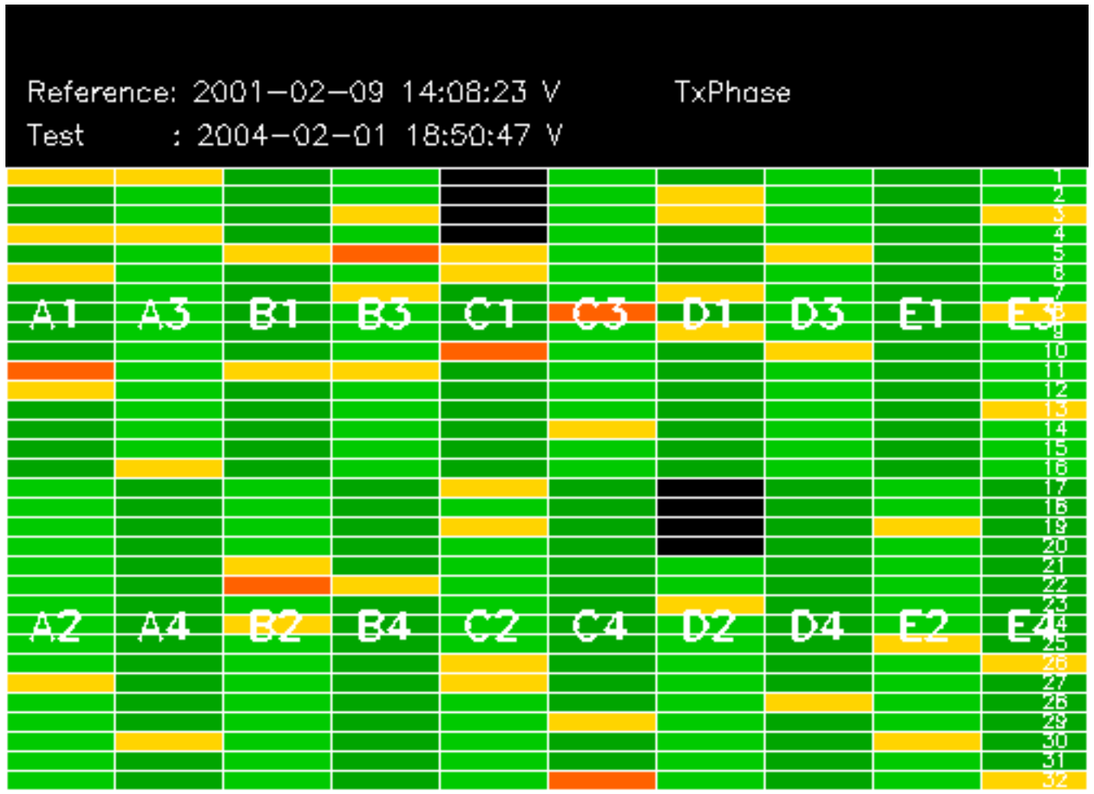
Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2004-02-01 18:50:47 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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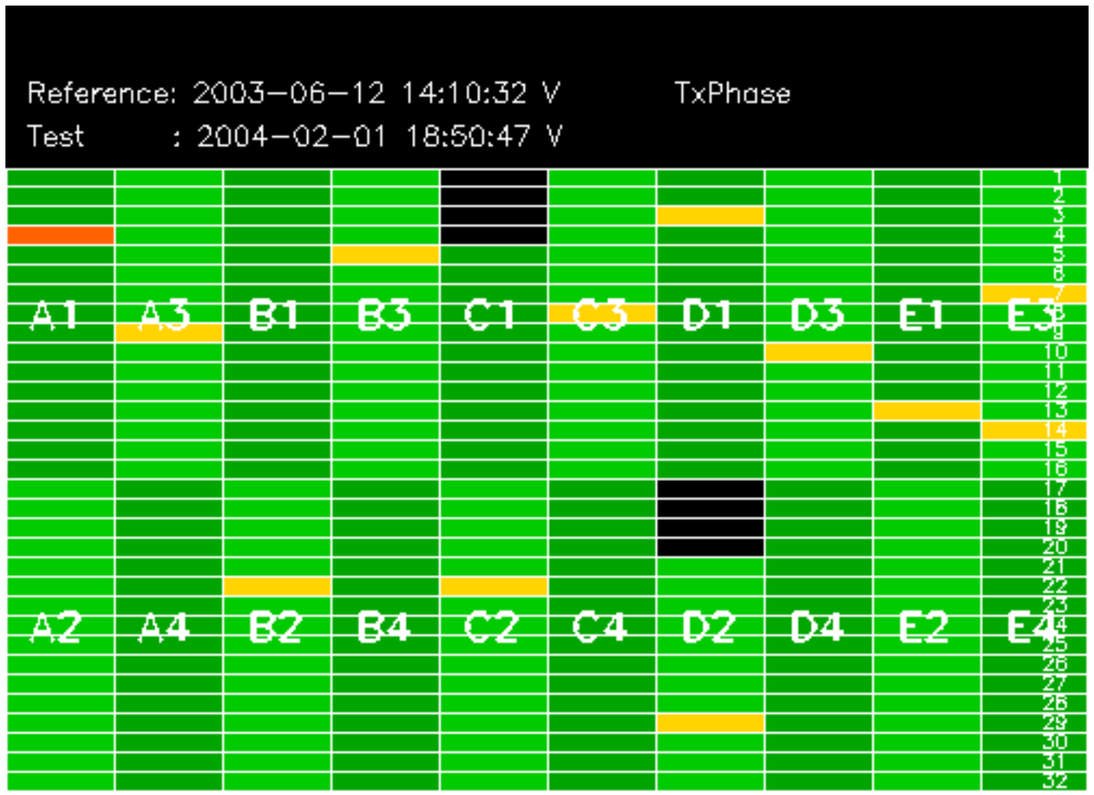
Reference: 2003-06-12 14:10:32 V
Test : 2004-02-01 18:50:47 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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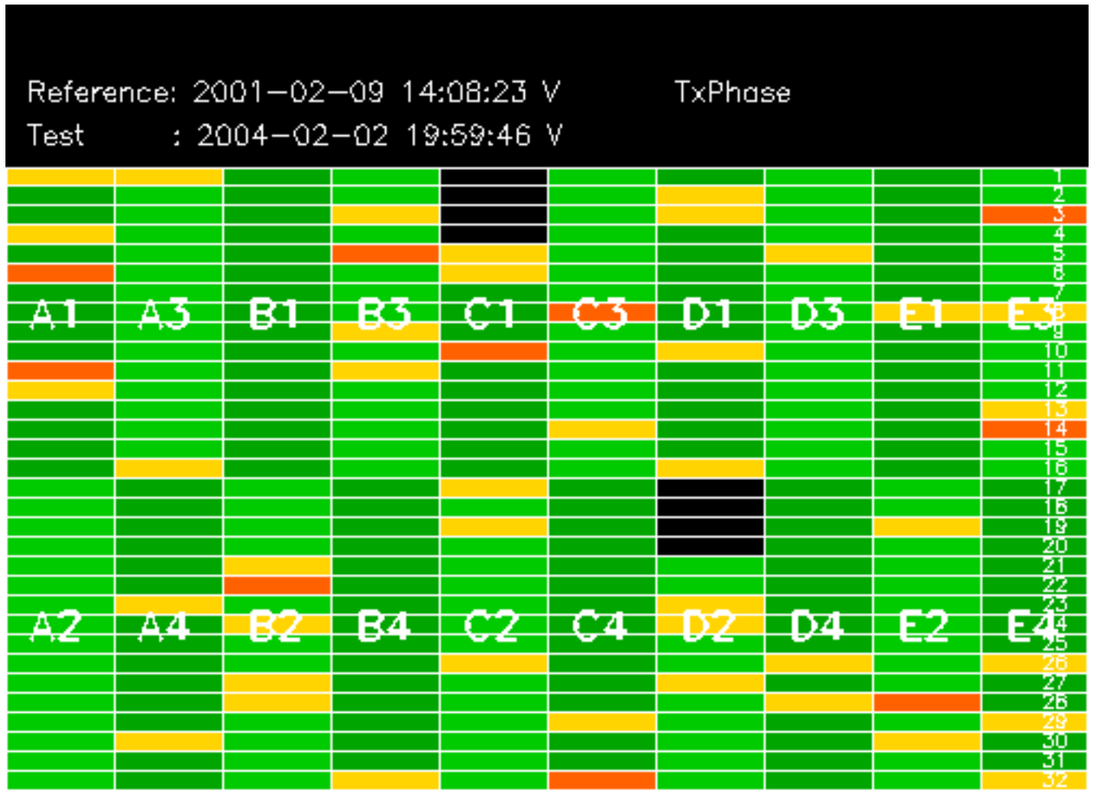
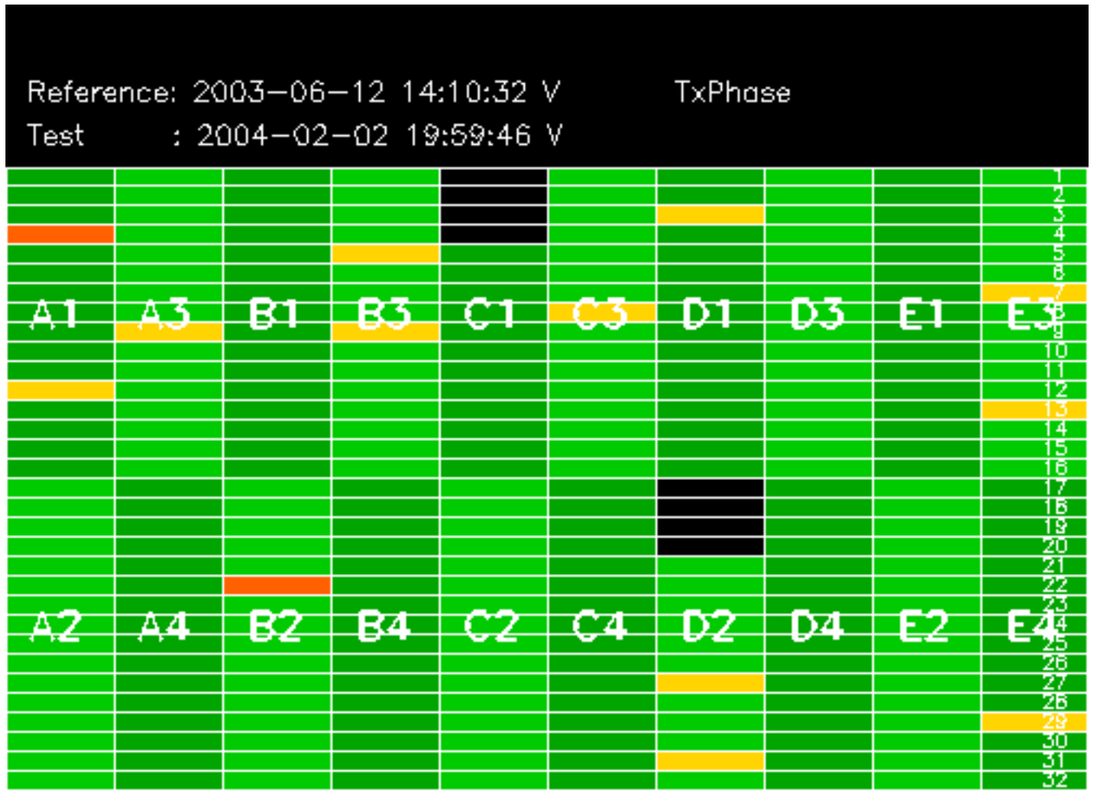

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2004-02-02 19:59:46 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-02-02 19:59:46 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

ASAR was unavailable from 02-Feb-2004 09:23:02.000 to 02-Feb-2004 10:50:22.000.