REPORT OF 031211

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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

Anomalous P1 gain drop that began on 2003-DEC-10 23:06:24 causes an instrument unavailability on 11-DEC-2003. Precise unavailability start time is TBC.

2.2 - Browse Visual Inspection

Antenna Pattern affected by the P1 pulse gain drop:

- Beam boundaries clearly visible on WSM browse products



Fisrt part of the antenna is affected by a gain drop of P1 cal pulses (row 1 to 16). The gain drop is row number dependent. A maximum of ~5-6dB drop has been detected for row 13 while row 3 is affected by a drop of 3dB.

3 - Module Stepping Mode

No anomalies observed on available MS products:

- ASA_MS__0PNPDK20031210_195535_000000152022_00228_09300_0067.N1 - ASA_MS__0PNPDK20031210_195655_000000152022_00228_09300_0066.N1 as they were acquired before P1 gain drop.

Polarisation	Start Time
V	20031210 195655
Н	20031210 195535

MSM in V/V polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
\boxtimes	\boxtimes
\boxtimes	\boxtimes
\boxtimes	\boxtimes
\times	\boxtimes

MSM in H/H polarisation

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

4 - Internal calibration Results

Fisrt part of the antenna is affected by a gain drop of P1 cal pulses (row 1 to 16) that began on 2003-DEC-10 23:06:24 The gain drop is row number dependent.

A maximum of ~5-6dB drop has been detected for row 13 while row 3 is affected by a drop of 3dB.

4.1 - Daily statistics



row	stat	AveP1	AveP2	AveP3	
2	mean	-4.14592	-22.4850	-8.07191	
З	stdev	0.978362	0.0890283	0.00501848	
24	mean	-5.01054	-21.1106	-8.07191	
24	stdev	0.0130568	0.0769535	0.00501848	

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4.2 - Cyclic statistics

row	stat	AveP1	AveP2	AveP3		
2	mean	-3.76031	-22.5592	-8.14793		
3	stdev	0.0394969	0.0706057	0.00499774		
0.4	mean	-5.11103	-21.2363	-8.14793		
24	stdev	0.0142689	0.0643698	0.00499774		

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4.3 - cal pulses monitoring (all rows)

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5 - RAW data statistics

No anomalies observed.

5.1 - Input mean I/Q

channel	stat	DSS-B
MEAN I	mean	0.000336846
	stdev	1.08016e-05
	mean	0.000175211
	stdev	1.08041e-05

 $\left|\right\rangle$



channel	stat	DSS-B
STDEV I	mean	0.114432
	stdev	0.00154558
STDEVO	mean	0.114687
SIDEVQ	stdev	0.00156148

 \boxtimes

5.3 - Gain imbalance I/Q

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6 - Wave Doppler Analysis

Non nominal Doppler behaviour

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
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Antenna Pattern affected by the P1 pulse gain drop: - Beam boundaries clearly visible on WSM browse products



Fisrt part of the antenna is affected by a gain drop of P1 cal pulses (row 1 to 16) that began on 2003-DEC-10 23:06:24 The gain drop is row number dependent. A maximum of ~5-6dB drop has been detected for row 13 while row 3 is affected by a drop of 3dB.







Fisrt part of the antenna is affected by a gain drop of P1 cal pulses (row 1 to 16). The gain drop is row number dependent. A maximum of ~5-6dB drop has been detected for row 13 while row 3 is affected by a drop of 3dB.



Non nominal Doppler behaviour













- No anomalies observed on available MS products: ASA_MS__0PNPDK20031210_195535_000000152022_00228_09300_0067.N1 ASA_MS__0PNPDK20031210_195655_000000152022_00228_09300_0066.N1 as they were acquired before P1 gain drop.

No anomalies observed.

Reference: 2001-02-09 13:50:42 H RxGain Test : 2003-12-10 19:55:35 H									
									$\frac{1}{2}$
									4 5
	. 7			~ -	~ 7				6
AL	AJ	RI	RO	C I	CS	DI	05	EI	ЪЗ
									11
									13
									15
									17
									19
									20
			-	~~		-			22
AZ	<u>A4</u>	-BZ-	-B4	-C2-	-C4-	-02	-04	-E2-	- E 2 5
									26 27
									26 29
									30
									32

Reference: 2003-06-12 14:08:52 H RxGain Test : 2003-12-10 19:55:35 H									
									2 3
									4 5 8
A.1	A3	B1	B3	C1	C3	D1	D3	E1	E3
									10 11
									12
									15
									17
									16 19
									20
									22
47	Δ <u>Λ</u>	R2	R4	62	64	62	64	F2	F 23
- - -		02	0.4	~~		02			25
									20
									28 29
									30
									31 32

Refere Test	nce: 20 : 21)03-06-)03-12	-12 14 -10 19	:10:32 \ :56:55	V	RxGair	1		
									2 3
									5
A1	A3	B1	B3	C1	C3	D1	D3	E1	E3
									10 11 12
									13
									15
									16
									20 21
									22 23
AZ	<u>A</u> 4	BZ	B4	C2	C4	DZ	D4	E2	E44
									26 27
									26 29
									30 31 32

Refere Test	ence: 20 : 20)01—02-)03—12	-09 13 -10 19	:50:42 1:55:35	H H	RxPho	Ise		
									2 3
									5 6 7
A1	A3	B1	B3	C1	C3	D1	03	E1	E 3
									14
									įğ
									ib
									20 21
									$\frac{\tilde{22}}{23}$
A2	A4	B2	B 4	C2	C4	D2	D4	E2	E_{25}^{4}
									26 27
									28 29
									30 31
									32

Refere Test	ence: 20 : 21)03-06)03-12	-12 14 -10 19	:08:52 9:55:35	H	RxPho	Ise		
									2
A1	A3	B1	B3	C1	C3	D1	D3	E1	E3
									10
									13
									15
									16 19
									20 21
42	44	R2	R4	<u>c2</u>	64	D2	64	F2	F 44
						-02			25 26
									27 26 29
									30

Refere Test	nce: 20 : 20)01-02·)03-12	-09 14 -10 19	:08:23 \ :56:55	V V	RxPha	se		
									2
									5
A1	A3	B1	B3	C1	C3	D1	D3	E1	E3
									13
									15
									17
									19 20
									21
A2	Α4	-B2-	B 4	C2	C4	D2	D4	E2	- E 44
									26
									27 28
									29 30
									<u>31</u> 32

Refere Test	nce: 20 : 20)03-06)03-12	-12 14 -10 19	:10:32 \ 9:56:55	V V	RxPha	se		
									2
									4 5
									6
A1	AS	RI	ື່ຄວ	C1	CS_	101	05	EI	ЪĄ
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									ŹŻ
			_	~~	~ ~				23
A.Z	<u>A4</u>	HR7-	-64-	CZ-	<u> </u>	-DZ-	-04-	- EZ-	- 24 8
									28
									27
									26
									- 28
									31
									32

Refere Test	nce: 20 : 21)01-02-)03-12	-09 13 -10 19	:50:42	H H	TxGain	I		
									2
									4 5
									8
A1	A.S	R1	-B3	C1	C3	-01	03	-E1-	ЪĄ
									10 11
									12
									14
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									20
									21
									22
42	Δ <u>4</u>	R2	R4	62	64	D2	64	F2	FŹĂ
		-02		~~		02			- 25
									26
									28
									29
									30
									32

Refere Test	ence: 20 : 21)03-06)03-12	-12 14 -10 19	:08:52	H H	TxGair	1		
									<u>2</u> 3
									4
Δ1	Δ3	R1	R 3	<u>e</u> 1	63	D1	D3	F1	FB
									10 10
									12
									13
									15
									17
									16
									20
									21
									_ 23
A2	<u>A4</u>	B2	_B4_	-C2-	-04	D2	_D4_	E2	- 24
									28
									27
									26
									30
									31

Refere Test	nce: 20 : 21)01—02·)03—12	-09 14 -10 19	:08:23 \ :56:55	V V	TxGain			
									2
									4
									5 6
Δ1	Δ3	R1	R 3	C1	03	D1	03	- F 1	FB
									11
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									21
									22
A 7	<u> </u>	D 2	D/	-0.2	<u> </u>	6.2		E 2	
- 11 .2		-DZ	-04-	- 62	- 6 4	02	04	-62-	- 25
									26
									27
									26
									30
									31
									32

Refere Test	nce: 20 : 20)03-06-)03-12	-12 14 -10 19	:10:32 \ 9:56:55	V	TxGain			
									23
									4 5 8
A1	A.3	B1	B3	C1	C3	D1	D3	E1	E3
									10
									12
									15 16
									17 15
									19 20
									21 22
A2	<u>A4</u>	B2	B 4	C2	C4	D2	D4	E2	E
									26
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									<u>- 28</u> <u>- 30</u> - 1
									32

Refere Test	ence: 20 : 20)01-02-)03-12	-09 13 -10 19	:50:42 ::55:35	H H	TxPha	se		
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									4 5 8
A1	A3	B1	B3	C1	C3	D1	D3	E1	E
									10 11
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47	Δ Δ	R2	R4	62	64	D2	64	F2	F ZÍA
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									20
									26
									<u>- 29</u> 30
									31

Refere Test	nce: 20 : 20)03-06)03-12	-12 14 -10 19	:08:52 :55:35	H H	TxPha	se		
									2 3 4 5
A1	A3	B1	B3	C1	C3	D1	03	E1	E
									10 11 12 13
									15 18 17
									19 20 21 22
A2	<u>A</u> 4	B 2	B 4	C2	C4	D2	D4	E 2	E44 25
									27 26 29 30
									31 32

Refere Test	ence: 20 : 20)01-02-)03-12	-09 14 -10 19	:08:23 \ :56:55	v V	TxPha	se		
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A1-	AS-	_R1_	<u></u>	-C1-	-05	-01-	05	<u> </u>	Ŀ
									10
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A.Z.	Δ4.	- H7-		-C2-	EC4.	- 52-).4	- 2	- 24
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Reference: 2003—06—12 14:10:32 V TxPhase Test : 2003—12—10 19:56:55 V									
									23
									5
A1	A 3	B1	B3	C1	C3	D1	D3	E1	-E3
									11 12
									13
									16
									16 19
									20 21
A 7	<u>^</u>	02	D/	02	<u>~</u> 1	62	B .4	C 2	E 1
8.2	<u> </u>	DZ	04	62	<u>.</u> 4	02	04	E2	25 26
									27 26
									29 30
									31 32

Anomalous P1 gain drop that began on 2003-DEC-10 23:06:24 causes an instrument unavailability on 11-DEC-2003. Precise unavailability start time is TBC.

