RBSP EFW
Test Plan Inputs for S/C Integration and S/C Environmental Testing

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Rev E

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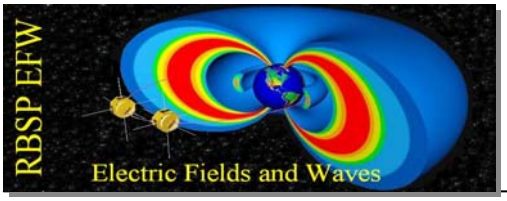

Document Revision Record

Rev.	Date	Description of Change	Approved By
-		Draft Released	-
A	June 5 2009	Updated with team comments	-
B	June 8 2009	Added PT comments	
C	Sept 13th 2009	Updated with comments from APL	
E	June 27th 2011	Update	

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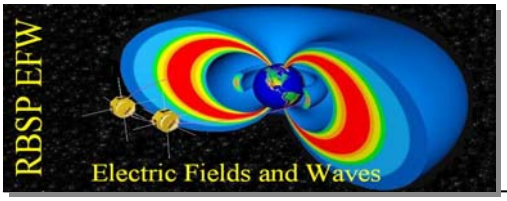
TBD List

Identifier	Description



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This plan is based on a template provided by APL, file DID_TE-004_Guide_v1.doc, and filled out by the EFW team.

1. Bench Testing

(continuity, isolation, resistance checks, any other post ship checkout needed before install to s/c)

Item	*Yes*	*No*	*Description*
Special Handling (i.e. purge)		**X**	
Special Facilities Needed (i.e. laminar air flow bench		**X**	
Other	**X**		Two ESD benches in a class 100K or better clean facility, clean room attire, gloves, IPA, wipes, plus a third bench for EGSE including 110VAC power, and internet connections within TBD meters of the other benches.

2. Initial Integration

(mechanical install, harness safe to mates, initial electrical checkout – includes functional test)

Item	*Yes*	*No*	*Description*
Special Handling (i.e. purge)		**X**	
GSE Needed – (time to configure, setup)	**X**		MGSE: AXB lifting fixture EGSE: SOC ~2 hours to configure and setup Boom deployment simulators: 5 minutes to connect (per boom pair)
Initial Functional checkout test duration	**X**		1 hour. Need coordination with EMFISIS to verify interface signals.
Special spacecraft configuration needed for mechanical install	**X**		- To install the IDPU and harnesses we need access to the inside of the spacecraft (panels open). - To install AXB the spacecraft should be oriented with the +Z deck up, and the AXB will be lowered by crane into the spacecraft using an EFW-provided lifting bridle or bracket. We require access to the top and bottom of the spacecraft to install fasteners and mate harnesses.
Special spacecraft configuration needed during functional check (i.e. data downlink)	**X**		- Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC. - EMFISIS must be powered, operational, and have command/telemetry capability to its SOC during some part of the test to verify the inter-instrument interfaces.
Network configurations needed (i.e. for test SOC)	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, probably does not need to command (though this might be an opportunity to test that capability).
Intra-instrument harnessing required	**X**		IDPU to SPB, AXB and EMFISIS harnesses should be in place and connected before the start of functional testing.
Operational Constraints (i.e. HV ops)	**X**		No boom deployment. Will attach boom simulators to test/enable ports on the boom units to verify deployment circuits.
Other	**X**		Need access to test/enable connectors on SPB and AXB to connect deployment simulators during functional test. Two simulators will be attached to boom pairs one axis at a time. Spacecraft boom deployment power service will need to be on for this test.

2.1 Simplified EFW Fields Timing and Phasing Test

Preview of Fields Timing and Phasing test (without SPB deploy).

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		2 hours. Need coordination with EMFISIS to verify interface signals.
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required	**X**		Stimulus GSE Rack attached to EFW boom units and EMFISIS sensors.
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment.
Thermal Blanketing needed – (flight, test)		**X**	
Network connections needed	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		- Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC. - EMFISIS must be powered, operational, and have command/telemetry capability to its SOC during some part of the test to verify the inter-instrument interfaces.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other	**X**		Need access to test/enable connectors on SPB and AXB to connect GSE stimulus rack prior to test. EFW has no disable plug, absence of enable plug prevents deployment. GSE rack will also connect to EMFISIS sensors (TBD-EMFISIS). GSE rack located in the cleanroom will need to be within TBD meters from the spacecraft. EFW/EMFISIS personnel at the GSE rack will need to be in regular voice communication with EFW/EMFISIS SOC operators. GSE Rack connection to EFW GSE Computer is TBD.

3. Normal Operations

Item	*Yes*	*No*	*Description*
Special Handling (i.e. purge)		**X**	
GSE Needed – (time to configure, setup)		**X**	
Network configurations needed (i.e. for test SOC)	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Operational Constraints (i.e. HV ops)	**X**		No boom deployment.
other		**X**	

4. Spacecraft Level Testing

4.1 Functional

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		30 minutes.
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required		**X**	
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment. Will attach boom simulators to test/enable ports on the boom units to verify deployment circuits. Boom deployment enable plugs will typically not be installed.
Thermal Blanketing needed – (flight, test)		**X**	
Network connections needed	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other	**X**		Need access to test/enable connectors on SPB and AXB to connect deployment simulators during functional test. Test/Enable plug allows simulated deployment and access to sensor test input. Spacecraft boom deployment power service will need to be on for this test. NOTE for functional tests when stacked, we will not be able to connect to the AXB test/enable plug, so no AXB deployment simulation in that configuration.
Any special needs for dynamic orbit sim (such as eclipse, maneuver, anything different needed through orbit such as at perigee vs apogee)?		**X**	

Exceptions to Test As you Fly	**X**		Boom Deployment is simulated
Trending Parameters	**X**		Instrument Current, Secondary Voltages, Bias, Usher, Guard Levels.

4.2 Aliveness

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		15 minutes.
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required		**X**	
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment.
Thermal Blanketing needed – (flight, test)		**X**	
Network connections needed	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other		**X**	
Exceptions to Test As you Fly	**X**		Booms are stowed
Trending Parameters	**X**		Instrument Current, Secondary Voltages, Bias, Usher, Guard Levels.

4.3 CPTs

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		1 hour. Need coordination with EMFISIS to verify interface signals.
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required	**X**		Boom deployment simulators: 5 minutes to connect (per boom pair)
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment. Will attach boom simulators to test/enable ports on the boom units to verify deployment circuits. Boom deployment enable plugs will typically not be installed.
Thermal Blanketing needed – (flight, test)		**X**	
Network connections needed	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		- Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC. - EMFISIS must be powered, operational, and have command/telemetry capability to its SOC during some part of the test to verify the inter-instrument interfaces.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other	**X**		Need access to test/enable connectors on SPB and AXB to connect deployment simulators during functional test. Test/Enable plug allows simulated deployment and access to sensor test input. Spacecraft boom power should be on for this test to allow for simulated deployment.
Exceptions to Test As you Fly	**X**		Boom Deployment is simulated
Trending Parameters	**X**		Instrument Current, Secondary Voltages, Bias, Usher, Guard Levels.

4.4 Observatory Self Compatibility

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		15 minutes to set up. TBD duration.
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required		**X**	
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment.
Thermal Blanketing needed – (flight, test)		**X**	
Network connections needed	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other		**X**	
Exceptions to Test As you Fly		**X**	
Trending Parameters	**X**		Instrument Current, Secondary Voltages, Bias, Usher, Guard Levels.

4.5 EMI/EMC

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		1 hour to deploy SPB in preparation for this test.
Special Handling Constraints (i.e. contam/purge, thermal/coatings)	X		Only EFW personnel should touch the SPB Sensor, fine wire or deployment wire or set up. EFW will provide faraday cages and deployment tracks for wire to sit in. Area will need to be roped off to prevent personnel do not walk into wires.
MGSE Needed (time to configure, setup) – special access required	**X**		SPB sensor holding stand a few m from spacecraft.
EGSE Needed (i.e. Stimulators, test cables) – special access required	**X**		The deployed SPB sensors will be exposed for part of the test (RE) and contained in faraday cages for part of the test (CE).
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required	**X**		• Spacecraft must be +Z up orientation for SPB deployment and during test. • A table is required approximately 2m from the spacecraft at each of the four orthogonal SPB locations to support the .5x1m Faraday Boxes
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)		**X**	
Thermal Blanketing needed – (flight, test)	X		Flight blankets or flight-like blankets installed around SPBs would allow for interference check but this is not mandatory. A visual check would be necessary later on when the flight blankets are finally installed before launch.
Network connections needed	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC.
EMC Covers on all unused connectors	**X**		
Launch preps needed		**X**	
Other	**X**		- For the deployment, Deployment Enable plugs must be installed on SPB units. Spacecraft boom deployment service should be on. - After Self-Compatibility, should take advantage of deployed SPB to do Fields Timing and Phasing test - After the test the SPB units need to be removed from the spacecraft for re-stowing by EFW

			personnel.
Exceptions to Test As you Fly	**X**		- Only SPBs deployed.
Trending Parameters	**X**		- Instrument Current, Secondary Voltages, Bias, Usher, Guard Levels.

4.6 EFW Fields Timing and Phasing Test

This test is like the Simplified version in 2.1, but taking advantage of the deployed SPB sensors – it should be run right after the EMC test when the SPB are deployed, and just before the SPB are removed for re-stowing. A quick test of the SPB guard and stub voltages (which can only be checked when the booms are deployed) will be included.

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		2-3 hours. Need coordination with EMFISIS to verify interface signals.
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required	**X**		Stimulus GSE Rack attached to EFW boom units and EMFISIS sensors. Faraday cages for EFW SPB sensors. DVM for guard and stub voltage test.
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment (SPB already deployed)
Thermal Blanketing needed – (flight, test)		**X**	
Network connections needed	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		- Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC. - EMFISIS must be powered, operational, and have command/telemetry capability to its SOC during some part of the test to verify the inter-instrument interfaces.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other	**X**		Need access to test/enable connectors on AXB to connect GSE stimulus rack prior to test. Test/Enable plug allows access to sensor test input. EFW has no disable plug, absence of enable plug prevents deployment. GSE rack will also connect to SPB and EMFISIS sensors (TBD-EMFISIS). GSE rack in the cleanroom will need to be within TBD meters from the spacecraft. EFW/EMFISIS personnel at the GSE rack will need to be in regular voice communication with EFW/EMFISIS SOC operators. GSE rack

			communication with GSE computer is TBD. For the SPB guard and stub voltage test appended to this test, EFW will be configured by command, and then EFW personnel will use a DVM to measure voltages on the guard and stub surfaces.
Exceptions to Test As you Fly	**X**		Only SPBs are deployed in full test. Not in simplified version of test.
Trending Parameters	**X**		Instrument Current, Secondary Voltages, Bias, Usher, Guard Levels.

4.7 Acoustic, Vibration, Spin Balance

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		N/A
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required		**X**	
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment.
Thermal Blanketing needed – (flight, test)	**X**		Noted that S/C Thermal blankets are installed for this test.
Network connections needed		**X**	
Special configuration for downlink data		**X**	
EMC Covers on all unused connectors	**X**		
Launch preps needed	**X**		Remove red-tag covers from SPB, AXB
Other		**X**	
Exceptions to Test As you Fly		**X**	
Trending Parameters		**X**	Instrument not powered

4.8 EFW Whip Deployment

A quick test of the AXB guard and stub voltages (which can only be checked when the booms are deployed) will be included.

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		1 hour (once spacecraft is powered up and configured)
Special Handling Constraints (i.e. contam/purge, thermal/coatings)	**X**		EFW personnel will need to restow the AXB whips after deployment. Only EFW personnel should handle the AXB sensors.
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required		**X**	
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required	**X**		Spacecraft must be oriented with the Z axis horizontal and rotated such that the AXB whip being deployed swings horizontally. May require a rotation between deployments of AXB5 and AXB6. Also the AXB whip deployment area must be clear of obstructions.
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No SPB deployment.
Thermal Blanketing needed – (flight, test)	**X**		This would be a good opportunity to look at interference of flight or flight-like blankets with AXB deployment mechanism if they were available. A visual check would be necessary once flight blankets are installed before launch.
Network connections needed	**X**		EFW SOC at APL needs to have network access to the I&T MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other	**X**		Deployment enable plugs on AXB units need to be on for this test. AXB red-tag cover will be removed. For the AXB guard and stub voltage test appended to this test, EFW will be configured by command, and then EFW personnel will use a DVM to measure voltages on the guard and stub surfaces.
Exceptions to Test As you Fly	**X**		SPBs not deployed. AXB Whip only deployed (not stacer)

Trending Parameters	**X**		Instrument Current, Secondary Voltages, Deployment Current

4.9 Thermal Vacuum (CPT)

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		1 hour. Need coordination with EMFISIS to verify interface signals.
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required	**X**		Boom deployment simulators: 5 minutes to connect (per boom pair)
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment. Will attach boom simulators to test/enable ports on the boom units to verify deployment circuits. Boom deployment enable plugs will typically not be installed.
Thermal Blanketing needed – (flight, test)	**X**		
Network connections needed	**X**		EFW SOC at APL needs to have network access to the MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		- Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to I&T MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to I&T MOC to SOC. - EMFISIS must be powered, operational, and have command/telemetry capability to its SOC during some part of the test to verify the inter-instrument interfaces.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other	**X**		Will connect harnesses from SPB and AXB test/enable connectors to external connectors through the chamber wall prior to pump-down. Test/Enable plug allows simulated deployment and access to sensor test input. Need access to these external connectors during functional test. Spacecraft boom power will need to be on for this test to allow for simulated deployment.
Exceptions to Test As you Fly	**X**		Boom Deployment Simualated

Trending Parameters	**X**		Instrument Current, Secondary Voltages, Temperatures, Bias, Usher and Guard Voltages

4.10 Mission Sims

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		2+ hours for MSIM2 (commissioning, boom deploys) 2+ days for MSIM3 (week in the life, test running burst system with SOC interaction)
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required		**X**	
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment. Will attach boom simulators to test/enable ports on the boom units to verify deployment circuits for MSIM2. Boom deployment enable plugs will typically not be installed.
Thermal Blanketing needed – (flight, test)		**X**	
Network connections needed	**X**		EFW SOC at APL needs to have network access to the MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to MOC to SOC.
EMC Covers on all unused connectors		**X**	
Launch preps needed		**X**	
Other	**X**		Need access to test/enable connectors on SPB and AXB to connect deployment simulators during MSIM2. Test/Enable plug allows simulated deployment and access to sensor test input. Spacecraft boom deployment power service will need to be on for this test.
Exceptions to Test As you Fly	**X**		Boom Deployments Simulated
Trending Parameters	**X**		Instrument Current, Secondary Voltages, Bias, Usher, Guard Levels.

4.11 Launch

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		N/A
Special Handling Constraints (i.e. contam/purge, thermal/coatings)		**X**	
MGSE Needed (time to configure, setup) – special access required		**X**	
EGSE Needed (i.e. Stimulators, test cables) – special access required		**X**	
Radiation Sources needed - special positioning required		**X**	
Special spacecraft orientation required		**X**	
Optical Cubes needed		**X**	
Operational Constraints (i.e. HV ops)	**X**		No boom deployment. Care must be taken since enable plugs will be in place.
Thermal Blanketing needed – (flight, test)	**X**		
Network connections needed		**X**	
Special configuration for downlink data		**X**	
EMC Covers on all unused connectors	**X**		
Launch preps needed	**X**		Remove red-tag covers from SPB, AXB, install Deployment enable plugs in SPB and AXB. Remove AXB Whip Red Tag item. Remove SPB Red Tag Door Protection.
Other		**X**	
Exceptions to Test As you Fly		**X**	
Trending Parameters		**X**	Instrument not powered

4.12 Post-Launch

Commissioning phase (boom deployment)

Item	*Yes*	*No*	*Description*
Test Time Needed / Can other activity occur at same time	**X**		TBD.
Operational Constraints (i.e. HV ops)	**X**		Coordination of MOC and SOC activities for boom deployment (MOC enables deployment service, SOC starts deployment, MOC shuts off deployment service)
Network connections needed	**X**		EFW SOC at APL needs to have network access to the MOC to receive data and send commands. Remote EFW SOC (at SSL) should also be able to receive data in parallel, may need to command. EFW is aware that only a single SOC can be configured for commanding at a given time.
Special configuration for downlink data	**X**		Spacecraft must be powered and operational and capable of powering the instrument, commanding the instrument from the SOC to MOC to spacecraft to instrument, and transferring telemetry from the instrument to spacecraft to MOC to SOC.
Other		**X**	

5. Red/Green Tag Configuration Sheet

Electrical Configuration (Red/Green Tag)	**Item 1 Deployment Enable Plugs On SPB, AXB**	**Item 2 AXB Red-tag Cover**	**Item 3 SPB Red-Tag Cover**
	On/Off	On/Off	On/Off
Test Phase			
Bench Testing	Boom Simulators	On	On
Initial Integration	Boom Simulators	On	On
Normal Operations	Off	On	On
Aliveness Testing	Off	On	On
Functional Testing	Off	On	On
Performance Testing	Boom Simulators	On	On
Acoustics	Off	Off	Off
Vibration	Off	Off	Off
Spin Balance at APL	Off	Off	Off
Magnetic Swing	Off	On?	On?
EMI/EMC	Off (On for partial SPB deployment)	Off	Off
Thermal Balance	Off	Off	Off
Thermal Vacuum	Boom Simulators	Off	Off
Shipping	Off	On	On
Spin Balance at ASO HPF	On/TBR	Off	Off
Transport to Pad	On	Off	Off
Launch	On	Off	Off