### MOBILE – EXTERNAL POWER (*NOTE RECORD TIME ON FLIGHT CARD*)

***AIRMSPI***

1. N1, N3, N4, N5 OFF Confirm OFF with panel check
2. N2 ON Confirm ON with panel check
3. Master PWR ON N2-ON will go out
4. Nose Power ON N2-ON will come on solid when ready (about 4 min)

*During startup N2-ON will flash steady while doing automatic ramp checks, then go solid when ready. If N2-ON gives a triple-flash indication or fails to go steady after about 4 min, perform shutdown sequence (N1-ON), then cycle Nose Power.*

***eMAS - After signal from eMAS POC***

1. Left Wing ON
2. L2 ON

*Wait for L2 FL to stop flashing (up to 4 mins)*

1. L3 ON Leave L3 on for 3 minutes minimum
2. L3 OFF

***RSP DOOR check***

1. Right Wing ON
2. R1 ON RSP, R1-FL should go out within ~1 min
3. R2 ON RSP Viewing Door Open
4. R2 OFF RSP Viewing Door Closed
5. R1 OFF RSP
6. Right Wing OFF

**JUST PRIOR TO ENGINE START**

1. L2 OFF eMAS
2. Left Wing OFF

**AFTER POWER TRANSFER:**

1. INMARSAT ON
2. Left Wing ON
3. Left HTR HTR & BLO
4. L2 ON

*Wait for L2 FL to stop flashing (up to 4 mins)*

1. L3 ON
2. Right Wing ON RSP
3. R1 ON R1-FL should go out within ~1 min

**NOTE: R1 should stay on for the duration of the flight**

*Perform the next 4 steps in sequence, do not delay between steps*.

1. Lower Q-Bay ON HSRL-2 Environmental systems power
2. Q10 ON FL will illuminate during power-up.
3. Upper Q-Bay ON HSRL-2 main power. (plus SSFR & APS)
4. Q6 ON Q6 FL and Q10 FL should go out within 20sec.

*If the Q6 or Q10 Fail Light stays illuminated for more than 1 minute, contact instrument PI.*

1. Coolant Pump ON
2. Q1 ON SSFR

**PRIOR TO TAKE OFF:**

1. Tracker HTR HTR & BLOAirMSPI

# AFTER TAKEOFF

# *During ascent, ignore fail lamps on Q6 and Q10.*

**ABOVE 55K FT:**

1. TACAN Rec (eMAS REQUEST)

*Note: Due to potential binding from ice, do not turn R2 on (open RSP viewing door) if the aircraft got wet before or during ascent.*

1. R2 ON RSP Viewing Door Open

**AT ALTITUDE:** **(ABOVE 62,800 FT)**

1. Q7 ON HSRL-2 Laser activation. FL will not illuminate.

*When over open ocean:*

1. Q4 ON Open APS (Fail light will be on while opening, then off within 15 sec)
2. Q5 ON Open APS (Fail light will be on while opening, then off within 15 sec)

Note APS open time on flight card

**AIRMSPI DATA: When abeam of way point for each flight segment**

1. N3 (or N4 or N5) ON N2 flash, Solid when complete

If N3 (or N4 or N5) Fail ON and N2 flashing, ignore N3 (or N4 or N5) Fail light

***After Data Run***

1. N3 (or N4 or N5) OFF (when complete)

If reach end of leg before data run completes and next data run is close, N3 (or N4 or N5) off to cancel data run, wait until N2 solid, before next use (< 30 secs).

**APS: When going over land or flying through moisture/dust:**

1. Q4 OFF Close APS
2. Q5 OFF Close APS

Note APS close time on flight card

**BEFORE DESCENT:**

1. L3 OFF eMAS end data record
2. R2 OFF RSP Viewing Door Close
3. Q7 OFF HSRL-2 Laser off
4. Q4 OFF Close APS
5. Q5 OFF Close APS

**ON FINAL DESCENT TO RTB, AT (OR BELOW) 45K FT:**

1. L4 ON eMAS Descent Heater (L3 and L4 should never be on concurrently)

**DURING DESCENT AT ~10,000 FT**

Q6 FL and Q10 FL will illuminate as part of HSRL-2 automated shutdown sequence and remain illuminated throughout rest of flight. If not, report to experimenter after landing.

**AFTER LANDING:**

1. N1 ON AirMSPI shutdown sequence, N1-FL is normal during shutdown
2. Tracker HTR OFF AirMSPI
3. Q1 OFF SSFR
4. Coolant Pump OFF HSRL-2
5. Q6 OFF HSRL-2

*Wait 1 minute only if HSRL-2 instrument did not shutdown automatically during descent below ~10,000 FT. Otherwise no delay required between steps 5 & 6.*

1. Upper Q-Bay OFF HSRL-2, SSFR, APS
2. Q10 OFF HSRL-2
3. Lower Q-Bay OFF HSRL-2

**AFTER PARKED:**

1. N1 OFF AirMSPI
2. Nose Power OFF

1. L4 OFF eMAS Descent Heater
2. L2 OFF eMAS Power
3. Left HTR OFF

*After being stationary at least two minutes:*

1. Left Wing OFF
2. R1 OFF RSP
3. Right Wing OFF
4. INMARSAT OFF
5. Master PWR OFF N2-ON will come ON

**Failure Checklist**

**AIRMSPI Data Run Fail:** If N2 does not flash after initiating N3 (or N4 or N5):

1. N3 (or N4 or N5) OFF
 Wait 10 seconds
2. N3 (or N4 or N5) ON

 If fail continues, repeat once more.

 If continues, proceed with **AIRMSPI SHUTDOWN & RESTART**

**AIRMSPI N3 or N4 or N5 Fail:** If N3 (or N4 or N5) Fail ON and N2 flashing

1. Ignore N3 (or N4 or N5) Fail light

**AIRMSPI SHUTDOWN & RESTART**

1. N1 ON Shutdown sequence, N1-FL is normal during shutdown
 Wait 2 min.
2. N1 OFF
3. Nose Power OFF
 Wait 30 sec.
4. Nose Power ON

 Instrument ready when N2-ON Solid, approx 2-3 min.
 Repeat Data Run.

**AIRMSPI no N2-ON indicator:** If N2-ON is off for more than one minute,

1. N2 ON (N2-ON will either flash or be solid)

**AIRMSPI N2 TRIPLE FLASH INDICATION**

1. Proceed with **AIRMSPI SHUTDOWN & RESTART**
2. If continues, repeat two times
3. If continues, leave Nose Power and Nose Heater ON

**SSFR: Q1 Fail**

1. Q1 OFF

*Wait 2 minutes*

1. Q1 ON

If failure continues, repeat up to 3 times.

**APS: Q4 or Q5 Fail (fail light does not go out @ 15 seconds)**

1. Q4 or Q5 OFF

*Wait 30 seconds*

1. Q4 or Q5 ON

If Q4 or Q5 Fail does not clear, turn Q4 or Q5 OFF for remainder of flight

**RSP: R1 Fail**

1. R1 OFF

*Wait 30 seconds*

1. R1 ON

*Wait up to 60 seconds for R1 Fail to clear*

If failure continues, repeat up to 3 times.

If R1 Fail still on, **leave R1 ON**

1. R2 OFF (unless RSP POC provides other guidance)

|  |
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| **WARNING:** **R1 should always be ON at completion of any other actions.** Failure to do so causes inactive heaters and **instrument damage or destruction.** |

**RSP: R2 Fail**

1. Ignore

**HSRL-2: Q6 and/or Q10 FAIL (AFTER POWER TRANSFER)**

 **Contact and consult with HSRL-2 POC**. If contact not possible for 1hour and fail lights remain lit, follow checklist below:

1. Q6 OFF

*Wait 1 Minute*

1. Q10 OFF

*Wait 1 Minute*

1. Q10 ON
2. Q6 ON

AFTER POWER TRANSFER ONLY

If fail lights do not turn off within 1 minute, contact HSRL-2 POC. If contact still not possible, then leave HSRL2 instrument on and running and wait until after landing to power down. This will allow the environmental control systems to stay active during return to base and diagnostic data to be saved.

**eMAS: L2 Fail**

1. L2 OFF

*Wait 30 seconds*

1. L2 ON

If failure continues, repeat up to 2 times.

If L2 Fail still on, leave L2 ON, finish flight.

**COMPLETE Q-BAY POWER CYCLE**

1. Q1 OFF
2. Q7 OFF
3. Q4 OFF
4. Q5 OFF
5. Q6 OFF

*Wait 1 Minute*

1. Q10 OFF
2. Upper Q-Bay OFF
3. Lower Q-Bay OFF

*Wait 2 Minutes*

1. Lower Q-Bay ON
2. Upper Q-Bay ON
3. Q10 ON
4. Q6 ON
5. Q1 ON
6. Q7 ON (If above 62,800ft)
7. Q4 ON Open APS(If above 62,800ft, and over open ocean)
8. Q5 ON Open APS(If above 62,800ft, and over open ocean)