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NASA PROGRAM APOLLO WORKING PAPER 1141

APOLLO SC MEASUREMENT REQUIREMENTS

APOLLO MISSION A-202

SPACECRAFT 011

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HOUSTON, TEXAS
NOV 11, 1964

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APOLLO MISSION A-202
SPACECRAFT 011

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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1.0 INTRODUCTION

This report is a compilation of all official measurements for Apollo Mission A-202, reflecting the official measurement parameters as approved by the Instrumentation Requirements Group (IRG) at MSC-ASPO, Houston and will be revised periodically to ensure the availability of current information.

Mission A-202 will consist of a Saturn 1-B launch vehicle/ spacecraft 011 configuration and will accomplish an unmanned, long lob, super circular, high-heat-load entry mission.

2.0 MEASUREMENT SYSTEMS

On Apollo Block I flight vehicles, there are normally two basic telemetry systems, (or classifications); one for operational measurements and one for flight qualification measurements. These two classifications are sub-divided into categories and the measurements appearing in the measurements requirements list are coded (See Section 3.8) in accordance with the following:

Apollo Spacecraft Measurement Classification/Categories

Class	Category	Primary Usage
FIXED REQUIREMENTS		
Operational	1	Spacecraft Management
	2	Spacecraft Performance Mission Evaluation
	3	Preflight Ground Checkout
VARIABLE REQUIREMENTS		
Flight Qualification	4	System Qualification and Verification

3.0 MEASUREMENT LIST FORMAT AND NOMENCLATURE

The measurement requirement list contains all of the existing flight and some of the GSE measurement parameters. These parameters are grouped by spacecraft systems.

The format and nomenclature are as follows:

3.1 Measurement Identification

The measurement identification number consists of seven alphanumeric characters (letters and numbers).

Module Code - The first character, alphanumeric, designates the measurement location by module:

A	Adapter
B	Launch Vehicle
C	Command Module
L	Launch Escape Tower
S	Service Module

Subsystem Code - The second character, alphanumeric, denotes the system within which the measurement originates.

A	Structures
C	Electrical
D	Launch Escape
E	Earth Landing
F	Environmental Control
G	Guidance and Navigation
H	Stabilization and Control
J	Life Systems
K	Flight Technology

P	Propulsion
R	Reaction Control
S	Crew Safety
T	Communications and Instrumentation

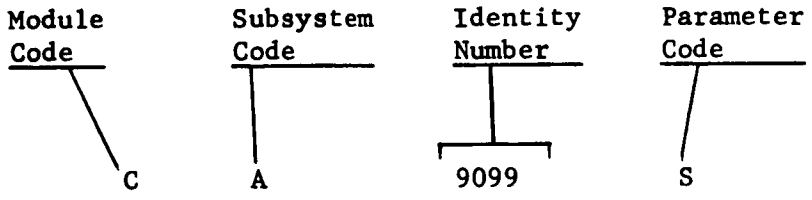
Identity Code - Characters three through six, numerical, are assigned.

Parameter Code - The seventh character, alphanumeric, denotes measurement classification.

A	Acceleration
B	Phase
C	Current
D	Vibration
E	Power
F	Frequency
G	Force
H	Position
J	Biomedical
K	Radiation
L	Velocity
M	Mass
P	Pressure
Q	Quantity
R	Rate
S	Strain

T	Temperature
V	Voltage
W	Time
X	Discrete Event
Y	Acoustical
Z	Ph-Acidity

The following sketch shows an example of a measurement number.



3.2 Measurement Description

The measurement description is a brief, definitive title given to each measurement. Standard abbreviations are used where applicable to keep the measurement description length, including spaces, within 32 characters.

3.3 Accessibility

Accessibility refers to the locations where the measurements may be made available (i. e., Telemetry, DISP, GSE)

3.4 Telemetry (TM)

Telemetry is the radiated or land line (coax) transmission of information from a spacecraft to a ground station. The Apollo program will use several telemetry methods, and within each method, there will be various types of signals.** The telemetry and tape recorder transmission and recording modes used in the telemetry column in the spacecraft 011 measurement list are as follows.

3.4.1 Pulse Code Modulation (PCM)

Pulse code modulation is a method of sampling and coding information and of transmitting it as a composite serial signal. The use of pulse code modulation in the measurement list refers to analog measurements digitally coded into eight-bit words for operational telemetry.

3.4.2 Minimum Data Mode (PCM+)

Flight critical measurements are coded with a PCM+. They will be monitored when the PCM system is operated on slow format

3.4.3 Pulse Code Modulation Events (PCME)

The pulse code modulation events method is the same as the pulse code modulation method, except that it uses special techniques to monitor events (e. g., on-off and open-close). Only one-bit words (operational) are used.

3.4.4 Pulse Code Modulation Digital (PCMD)

Pulse code modulation digital is used for very special types of monitoring requiring extra high accuracy, for grouping associated functions (events), and for monitoring signals already in the digital form.

3.4.5 Flight Qualification (FQ)

Flight qualification refers to those measurements required early in the flight program to qualify the vehicle for flight, after which they may no longer be needed. They are not a part of the standard spacecraft design configuration. These measurements are telemetered using a PAM/FM/FM system.

3.4.6 Flight Qualification Tape Recorder (FQ-TR)

Those R&D measurements recorded on the flight qualification tape recorder use the above coding.

** All signals brought to Apollo telemetry will also be available at a J-box or distribution panel.

3.4.7 Tape Recorder (TR)

Those measurements recorded on the operational tape recorder use the above coding.

3.4.8 Flight Qualification Low Level Pulse Code Modulation (FQ-LL PCM)

The above coding refers to low-level strain measurements when applicable. (Not applicable to SC 011)

3.5 Displays (DISP)

These are measurements displayed for the astronauts. Coding designations include M for meter, L for on-off light, S for selectable (single meter or light to monitor more than one function), TB for talkback, and X for a not yet defined display. An asterisk beside a display measurement indicates that it is also on the master caution and warning display panel.

3.6 Ground Support Equipment (GSE)

The ground support equipment codes appearing in the spacecraft 011 measurement list are as follows:

3.6.1 Acceptance Checkout Equipment (P)

On flight vehicles, acceptance checkout equipment (ACE) will be used at the preflight checkout area and the launch pad. It may also be used during systems and combined systems test. Acceptance checkout equipment carry-on will be used to sample those measurements designated by an AP, TP, or P in the ground support equipment column.

3.6.1.1 Access Points (A)

Access points are points in the command module that are physically accessible to the astronaut during flight. These points may be on the panel of the equipment involved or on a separate panel for remote pickups. Normally, the only wiring required for an access point

will be on a tee from the main instrumentation wire to the front panel of the equipment. If the measurement is not in this category, then special wiring must be provided from the pickup point to the separate panel in the command module. Access point signals need not be signal conditioned.

3.6.1.2 Test Points (T)

Test points are points in a system that may be used by ground support equipment for checkout. They need not be signal conditioned. Test points from a particular system will be brought to a common panel in order to provide availability in the vertically mated configuration. These test points are not accessible after close-out in preparation for a flight.

3.6.1.3 Radio Frequency (RF)

RF measurements are required to check out the RF link

3.6.2 Special Test Unit

The Special Test Unit (STU) will be used for individual and combined systems tests. It will provide stimuli and monitor responses during all levels of testing. An "S" in the GSE column is the coding used to indicate those measurements to be monitored by STU. Not applicable to spacecraft 011.

3.6.3 Umbilical (U)

On flight vehicles, measurements through the GSE umbilicals will be used to determine final preflight status. USM denotes the umbilical from the service module, USI the umbilical from the Saturn 1 vehicles.

3.7 Measurement Source ($^{M}_{S}$)

This column is not used on SC-011.

3.8 Category ($^{C}_{Y}$)

A 1, 2, 3 or 4 is used in this column. See table in Section 2 for explanation of categories.

3.9 Priority (P/R)

All primary and secondary measurements as indicated at the time of the measurement list are defined as follows:

Primary (P)

Primary measurements are required as follows:

1. For real time display during the Apollo flight mission to observe system performance and analyze trends.

2. For verification of spacecraft onboard displays.

3. For rapid evaluation of general spacecraft status.

4. For abort or launch contingency.

5. For providing information directly concerned with crew safety.

Secondary (S)

Secondary measurements are required as diagnostic backup to primary measurements.

3.10 Ground Operational Support System (G/S)

An "X" in this column in association with an operational flight telemetry measurement indicates that measurement is ground displayed at the ground tracking and monitor stations located around the world.

3.11 Response

Rate

The rate indicates the sampling rate desired on each measurement, i. e., 1, 10, 50, 100 or 200.

Unit

The unit column indicates the sample rate units, i. e., S/S (samples per second), CPS (cycles per second) or KC (thousands cycles per second).

3.12 Data Range

The data range denotes the required instrumentation range (upper and lower limits) of the measurement. No data is required beyond these limits.

Low

The low column indicates the minimum limit.

High

The high column designates the maximum limit.

Engineering Unit

The unit column denotes the engineering units of the data monitored. Appropriate abbreviations are used. (See Appendix A).

3.13 Location

The following is the measurement axis system only and should not be confused with the spacecraft reference axis system. All measurement locations are referenced from the X, Y and Z axes, the dimensions being in inches and degrees. The X axis is the vertical center-line of the vehicle, the +Z -Z axis being a plane including the X axis and the center of the escape hatch. The +Y -Y axis is a plane at right angles to the +Z -Z axis at the X axis and including it. See figure 1 (c).

These references hold true whether polar or rectangular coordinates are used. The location coordinates denote the physical location where the measurement is taken.

When the location is given in polar coordinates, it is referenced from the +Y (+Y = 0°). The angle increases in a counter-clockwise direction (when viewed looking aft) with the +Z at 90; thus a location designated as X_c91, 90 degrees would be located flush with the exterior surface of the command module, unless otherwise indicated, 91 inches above the reference plane, X_c0, 90° from the +Y axis. The X_c0 point being a point 1.3 inches forward of the surface of the ablative material at the nadir of

its curve.

When rectangular coordinates are used the measurement location will lie in a plane intersecting the X -axis, and at right angles to it; the point on the plane being determined by the Y and Z coordinates, therefore a location given as X_c85, Y_c50, Z_c-68 will be located in the plane 85 inches above the reference, X_c0, at the intersection of the Y and Z coordinates.

3.14 Measurement Summary Headings

The two pages following the measurement listing summarize the measurement (Section 5.0 and Section 7.0). The column headings used in these summaries are as described below for Part 1 and Part 2.

3.14.1 Measurement Summary, Part 1

The column headings used in Part 1 are as follows:

1. System - Systems for which measurement totals are presented (See Section 3.1 for codes).

2. SM to CM - Number of measurements originating in either the service module or launch vehicle and going to the command module. Indicates total number of measurements going through umbilical.

3. TR - Number of measurements recorded on the onboard tape recorder.

4. FQ - The flight qualification R&D telemetry measurement totals.

5. PCM - Number of analog operational telemetry functions, the column headings 1, 10, 50 and 100 refer to sampling rates and are sub totals.

6. PCME - Number of operational telemetry event functions (discrete on-offs).

7. PCMD - Number of pulse code modulation digital functions (See section 3.4.4).

8. IFTS - This requirement has been deleted for Block I vehicles, however, this column will be utilized to provide additional summary information at a later date.

9. DISP - Number of displays.

10. FLT TOTAL - Total number of flight measurements. These measurements are the total count of measurements having entries in columns TR, FQ, PCM, PCME, PCMD, and DISP. FLT TOTAL may be less than the sum of the quantities in the other columns because 2 measurements may appear in more than one column. For example a measurement may be on both PCM and FQ, but it will be counted only once in the FLT TOTAL column.

11. GOSS - Number of ground operational support measurements.

12. GSE ACC - Number of access points on the spacecraft.

13. GSE TEST - Spacecraft test point totals. **

14. GSE ACE - Number of Acceptance Checkout Equipment points on the spacecraft (usually associated with access or test points).

15. C/O TOTAL - Total number of checkout test points, umbilical connections, etc. (this is now being reviewed by NAA and subject to change).

16. SYSTEM TOTAL - Total measurement sources on the spacecraft. ***

3.14.2 Measurement Summary, Part 2

The column headings used in Part 2 are as follows:

1. SYSTEM - System for which measurement totals are presented (See section 3.1 for codes).

2. MODULE - Module in which measurements appear as designated by the codes (See section 3.1 for codes).

3. CLASS - Denotes the measurement classification such as acceleration, pressure, etc. (See section 3.1 for codes).

3.15 Changes

The following codes will be used and will precede the affected measurement:

(+) A plus denotes a measurement which has been added to the list.

(*) An asterisk denotes a measurement which has been changed. The asterisk will precede the measurement identification.

** See Section 3.6.1.2 for definition of test points.

*** The system total may be less than the sum of the quantities in the other columns, because a measurement may appear in more than one column. For example, a measurement may be on both PCM and display, but it will be counted only once in the system total column.

4.0 OPERATIONAL MEASUREMENTS FOR SC 011

Operational measurements are defined as those measurements which will remain fixed for a block of vehicles fulfilling similar type missions. The spacecraft 011 operational measurements, however, are not identical to the Block I measurements appearing in NASA Program Apollo Working Paper 1130, or those required for SC 009. SC 011 will have a G&N system aboard that will be instrumented with all operational measurements. The operational measurements in this document apply to spacecraft 011 only.

(MSC) APOLLO CM/SM MEASUREMENT LIST

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S A2362 T	TEMP SEXT 3 IN SURF	PCM				2	1	S/S	-100	+200 DEG F	XS280,56DEG
S A2361 T	TEMP SEXT 6 IN SURF	PCM				2	1	S/S	-100	+200 DEG F	XS280,236DEG
S A2364 T	TEMP SEXT 3 FUEL TANK SURF	PCM				2	1	S/S	-100	+200 DEG F	XS280,66DEG
S A2365 T	TEMP SEXT 6 FUEL TANK SURF	PCM				2	1	S/S	-100	+200 DEG F	XS280,246DEG
S A2366 T	TEMP SEXT 4 IN SURF	PCM				2	1	S/S	-100	+200 DEG F	XS280,145DEG
S A2367 T	TEMP SEXT 1 IN SURF	PCM				2	1	S/S	-100	+200 DEG F	XS280,325DEG

(MSC)

APOLLO CM/SM MEASUREMENT LIST

SYSTEM
ELECTRICAL

OPER FOR SC 11

12 OCTOBER 1964
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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C C0175	T TEMP STATIC INVERTER 1	PCM+		L	*	1 X 1	S/S	+32	+248	DEG F	
C C0176	T TEMP STATIC INVERTER 2	PCM+		L	*	1 X 1	S/S	+32	+248	DEG F	
C C0177	T TEMP STATIC INVERTER 3	PCM+		L	*	1 X 1	S/S	+32	+248	DEG F	
C C0178	T TEMP BATTERY A CASE	PCM+				2 X 1	S/S	+32	+212	DEG F	
C C0179	T TEMP BATTERY B CASE	PCM+				2 X 1	S/S	+32	+212	DEG F	
C C0181	F FREQUENCY AC BUS 1 PHASE B			SM		1		+380	+420	CPS	
C C0182	F FREQUENCY AC BUS 1 PHASE C			SM		1		+380	+420	CPS	
C C0183	F FREQUENCY AC BUS 2 PHASE B			SM		1		+380	+420	CPS	
C C0184	F FREQUENCY AC BUS 2 PHASE C			SM		1		+380	+420	CPS	
C C0188	P PRESS BATT COMPARTMENT (MANIF)	PCM				1 10	S/S	+0	+18	PSIA	
C C0200	V AC VOLTAGE MAIN BUS 1 PHASE A	PCM+		SM	A	1 X 10	S/S	+0	+150	VAC	
C C0201	V AC VOLTAGE MAIN BUS 1 PHASE B	PCM		SM	A	1 X 10	S/S	+0	+150	VAC	
C C0202	V AC VOLTAGE MAIN BUS 1 PHASE C	PCM		SM	A	1 X 10	S/S	+0	+150	VAC	
C C0203	V AC VOLTAGE MAIN BUS 2 PHASE A	PCM+		SM	A	1 X 10	S/S	+0	+150	VAC	
C C0204	V AC VOLTAGE MAIN BUS 2 PHASE B	PCM		SM	A	1 X 10	S/S	+0	+150	VAC	
C C0205	V AC VOLTAGE MAIN BUS 2 PHASE C	PCM		SM	A	1 X 10	S/S	+0	+150	VAC	
C C0206	V DC VOLTAGE MAIN BUS A	PCM+		SM	A	1 X 10	S/S	+0	+45	VDC	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C C0207	V DC VOLTAGE MAIN BUS B	PCM+		SM	A	1 X 10	S/S		+0	+45	VDC	
C C0208	V DC VOLTAGE NON ESSENTIAL BUS				AP	3 10	S/S		+0	+45	VDC	
C C0210	V DC VOLTAGE BATTERY BUS A	PCM		SM		1 X 10	S/S		+0	+45	VDC	
C C0211	V DC VOLTAGE BATTERY BUS B	PCM		SM		1 X 10	S/S		+0	+45	VDC	
C C0212	V DC VOLTAGE POST LANDING BATTERY	PCM		SM		1 X 10	S/S		+0	+45	VDC	
C C0213	F FREQUENCY AC BUS 1 PHASE A	PCM		SM	AP	1 X 1	S/S		+380	+420	CPS	
C C0215	C DC CURRENT BATT CHARGER OUT	PCM+		SM		1 X 10	S/S		+0	+5	AMP	
C C0217	F FREQUENCY AC BUS 2 PHASE A	PCM		SM	AP	1 X 1	S/S		+380	+420	CPS	
C C0222	C DC CURRENT BATTERY A	PCM		SM		1 X 10	S/S		+0	+100	AMP	
C C0223	C DC CURRENT BATTERY B	PCM		SM		1 X 10	S/S		+0	+100	AMP	
C C0224	C DC CURRENT POST LANDING BATTERY	PCM		SM		1 X 10	S/S		+0	+100	AMP	
C C0227	V DC VOLTAGE PYRO BATT A	PCM		SM		1 X 10	S/S		+0	+40	VDC	
C C0228	V DC VOLTAGE PYRO BATT B	PCM		SM		1 X 10	S/S		+0	+40	VDC	
C C0232	V DC VOLTAGE BATTERY RELAY BUS	PCM+				1 X 10	S/S		+0	+45	VDC	
C C0233	X DC UNDER-VOLTAGE IND BUS A			L	*	1			OFF	ON	EVENT	
C C0234	X DC UNDER-VOLTAGE IND BUS B			L	*	1			OFF	ON	EVENT	
C C0236	X AC UNDER-OVER-VOLTAGE BUS 1			L	*	1			OFF	ON	EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS			DATA RANGE LOW	HIGH	UNITS	LOCATION
C C0237	X AC UNDER-OVER-VOLTAGE BUS 2			L *		1			OFF	ON	EVENT	
C C0242	X OVERLOAD CURRENT AC BUS 1			L *		1			OFF	ON	EVENT	
C C0243	X OVERLOAD CURRENT AC BUS 2			L *		1			OFF	ON	EVENT	
C C0340	V AC VOLTAGE MAIN BUS 1 PH A				AP	3	10	S/S	+105	+130	VAC	
C C0341	V AC VOLTAGE MAIN BUS 1 PH B				AP	3	10	S/S	+105	+130	VAC	
C C0342	V AC VOLTAGE MAIN BUS 1 PH C				AP	3	10	S/S	+105	+130	VAC	
C C0343	V AC VOLTAGE MAIN BUS 2 PH A				AP	3	10	S/S	+105	+130	VAC	
C C0344	V AC VOLTAGE MAIN BUS 2 PH B				AP	3	10	S/S	+105	+130	VAC	
C C0345	V AC VOLTAGE MAIN BUS 2 PH C				AP	3	10	S/S	+105	+130	VAC	
C C0346	V DC VOLTAGE MAIN BUS A				AP	3	10	S/S	+20	+42	VDC	
C C0347	V DC VOLTAGE MAIN BUS B				AP	3	10	S/S	+20	+42	VDC	
S C2060	P N2 PRESSURE F/C 1 REGULATED	PCM		STB*		1 X 1		S/S	+0	+75	PSIA	
S C2061	P N2 PRESSURE F/C 2 REGULATED	PCM		STB*		1 X 1		S/S	+0	+75	PSIA	
S C2062	P N2 PRESSURE F/C 3 REGULATED	PCM		STB*		1 X 1		S/S	+0	+75	PSIA	
S C2066	P O2 PRESSURE F/C 1 REGULATED	PCM		STB*		1 X 10		S/S	+0	+75	PSIA	
S C2067	P O2 PRESSURE F/C 2 REGULATED	PCM		STB*		1 X 10		S/S	+0	+75	PSIA	
S C2068	P O2 PRESSURE F/C 3 REGULATED	PCM		STB*		1 X 10		S/S	+0	+75	PSIA	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
S C2069 P	H2 PRESSURE F/C 1 REGULATED	PCM		STB*		1 X	10	S/S	+0	+75	PSIA	
S C2070 P	H2 PRESSURE F/C 2 REGULATED	PCM		STB*		1 X	10	S/S	+0	+75	PSIA	
S C2071 P	H2 PRESSURE F/C 3 REGULATED	PCM		STB*		1 X	10	S/S	+0	+75	PSIA	
S C2081 T	TEMP F/C 1 COND EXHAUST	PCM+		SM *	P	1 X	1	S/S	+175	+225	DEG F	
S C2082 T	TEMP F/C 2 COND EXHAUST	PCM+		SM *	P	1 X	1	S/S	+175	+225	DEG F	
S C2083 T	TEMP F/C 3 COND EXHAUST	PCM+		SM *	P	1 X	1	S/S	+175	+225	DEG F	
S C2084 T	TEMP F/C 1 SKIN	PCM+		SM *	P	1	1	S/S	+80	+550	DEG F	
S C2085 T	TEMP F/C 2 SKIN	PCM+		SM *	P	1 X	1	S/S	+80	+550	DEG F	
S C2086 T	TEMP F/C 3 SKIN	PCM+		SM *	P	1 X	1	S/S	+80	+550	DEG F	
S C2087 T	TEMP FC 1 RADIATOR OUTLET	PCM+		STB*		1 X	1	S/S	-50	+300	DEG F	
S C2088 T	TEMP FC 2 RADIATOR OUTLET	PCM+		STB*		1 X	1	S/S	-50	+300	DEG F	
S C2089 T	TEMP FC 3 RADIATOR OUTLET	PCM+		STB*		1 X	1	S/S	-50	+300	DEG F	
S C2113 C	DC CURRENT F/C 1 OUTPUT	PCM+		SM	P	1	10	S/S	+0	+100	AMP	
S C2114 C	DC CURRENT F/C 2 OUTPUT	PCM+		SM	P	1 X	10	S/S	+0	+100	AMP	
S C2115 C	DC CURRENT F/C 3 OUTPUT	PCM+		SM	P	1 X	10	S/S	+0	+100	AMP	
S C2116 V	DC VOLTS FC 1 OUTPUT				USM	3	10	S/S	+25	+40	VDC	
S C2117 V	DC VOLTS FC 2 OUTPUT				USM	3	10	S/S	+25	+40	VDC	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
S C2118 V	DC VOLTS FC 3 OUTPUT				USM	3	10	S/S	+25	+40	VDC	
S C2120 X	FUEL CELL 1 BUS A DISCONNECT	PCME		TB *	P	1	10	S/S	OFF	ON	EVENT	
S C2121 X	FUEL CELL 2 BUS A DISCONNECT	PCME		TB *	P	1	10	S/S	OFF	ON	EVENT	
S C2122 X	FUEL CELL 3 BUS A DISCONNECT	PCME		TB *	P	1	10	S/S	OFF	ON	EVENT	
S C2125 X	FUEL CELL 1 BUS B DISCONNECT	PCME		TB *	P	1	10	S/S	OFF	ON	EVENT	
S C2126 X	FUEL CELL 2 BUS B DISCONNECT	PCME		TB *	P	1	10	S/S	OFF	ON	EVENT	
S C2127 X	FUEL CELL 3 BUS B DISCONNECT	PCME		TB *	P	1	10	S/S	OFF	ON	EVENT	
S C2130 X	PURGE VALVE H2 F/C 1 OPERATE				TP	3	10	S/S	CLOSE	OPEN	EVENT	
S C2131 X	PURGE VALVE H2 F/C 2 OPERATE				TP	3	10	S/S	CLOSE	OPEN	EVENT	
S C2132 X	PURGE VALVE H2 F/C 3 OPERATE				TP	3	10	S/S	CLOSE	OPEN	EVENT	
S C2133 X	PURGE VALVE O2 F/C 1 OPERATE				TP	3	10	S/S	CLOSE	OPEN	EVENT	
S C2134 X	PURGE VALVE O2 F/C 2 OPERATE				TP	3	10	S/S	CLOSE	OPEN	EVENT	
S C2135 X	PURGE VALVE O2 F/C 3 OPERATE				TP	3	10	S/S	CLOSE	OPEN	EVENT	
S C2139 R	FLOW RATE H2 F/C 1	PCM		SM *		1 X	10	S/S	+0	+0.2	LB/HR	
S C2140 R	FLOW RATE H2 F/C 2	PCM		SM *		1 X	10	S/S	+0	+0.2	LB/HR	
S C2141 R	FLOW RATE H2 F/C 3	PCM		SM *		1 X	10	S/S	+0	+0.2	LB/HR	
S C2142 R	FLOW RATE O2 F/C 1	PCM		SM *		1 X	10	S/S	+0	+1.6	LB/HR	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
S C2143 R	FLOW RATE O2 F/C 2	PCM		SM *		1 X 10	S/S		+0	+1.6	LB/HR	
S C2144 R	FLOW RATE O2 F/C 3	PCM		SM *		1 X 10	S/S		+0	+1.6	LB/HR	
S C2160 Z	PH FACTOR WATER CONDITION F/C 1	PCM		STB*		1 X 1	S/S		+6	+12	PH	
S C2161 Z	PH FACTOR WATER CONDITION F/C 2	PCM		STB*		1 X 1	S/S		+6	+12	PH	
S C2162 Z	PH FACTOR WATER CONDITION F/C 3	PCM		STB*		1 X 1	S/S		+6	+12	PH	
S C2323 X	FUEL CELL 1 SHUT OFF MON	PCME		TB	TP	1 10	S/S	CLOSE		OPEN	EVENT	
S C2324 X	FUEL CELL 2 SHUT OFF MON	PCME		TB	TP	1 10	S/S	CLOSE		OPEN	EVENT	
S C2325 X	FUEL CELL 3 SHUT OFF MON	PCME		TB	TP	1 10	S/S	CLOSE		OPEN	EVENT	
C C2401 X	DCV INPUT INVERTER 1				A	3					EVENT	
C C2402 X	DCV INPUT INVERTER 2				A	3					EVENT	
C C2403 X	DCV INPUT INVERTER 3				A	3					EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C D0002 X	LES ABORT INITIATE SIGNAL A	PCME				2	10	S/S			EVENT	
C D0005 V	DC VOLTAGE PYRO BUS A	PCM				2	10	S/S				
C D0006 V	DC VOLTAGE PYRO BUS B	PCM				2	10	S/S				
C D0023 X	CM-SM SEP RELAY CLOSE A	PCME				2	10	S/S			EVENT	
C D0024 X	CM-SM SEP RELAY CLOSE B	PCME				2	10	S/S			EVENT	
C D0044 X	BOOSTER CUTOFF SIGNAL A	PCME				2	10	S/S			EVENT	
C D0045 X	BOOSTER CUTOFF SIGNAL B	PCME				2	10	S/S			EVENT	
C D0060 X	FWD HS NOT SEP A			L		1						
C D0061 X	FWD HS NOT SEP B			L		1						
C D0062 X	LES ABORT INITIATE SIGNAL B	PCME				2	10	S/S			EVENT	
C D0080 X	MESC PYRO BUS A INDICATE ON				USI	3	1	S/S			EVENT	
C D0081 X	MESC PYRO BUS B INDICATE ON				USI	3	1	S/S			EVENT	
C D0082 X	MESC LOGIC BUS A INDICATE ON				USI	3	1	S/S			EVENT	
C D0083 X	MESC LOGIC BUS B INDICATE ON				USI	3	1	S/S			EVENT	
C D0084 X	MESC PYRO FIRING RLY IND SAFE A				USM	3	1	S/S			EVENT	
C D0085 X	MESC PYRO FIRING RLY IND SAFE B				USM	3	1	S/S			EVENT	
C D0089 X	MESC LOGIC SW IND SAFE				USI	3	1	S/S			EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C D0089 X	MESC LOGIC SW IND ARM				USI	3	1	S/S			EVENT	
C D0105 X	TWR JETT A			PCME		2	10	S/S			EVENT	
C D0106 X	TWR JETT B			PCME		2	10	S/S			EVENT	
C D0120 X	CANARD DEPLOY A			PCME		2	10	S/S			EVENT	
C D0121 X	CANARD DEPLOY B			PCME		2	10	S/S			EVENT	
S D0125 X	ADAPT/SM SEP INITIATE A			PCME		2	10	S/S			EVENT	
S D0126 X	ADAPT/SM SEP INITIATE B			PCME		2	10	S/S			EVENT	
S D0127 X	ADAPTER SEP A			PCME		2	10	S/S			EVENT	
S D0128 X	ADAPTER SEP B			PCME		2	10	S/S			EVENT	
C D0130 X	HAND CONTROLLER INPUT A			PCME		2	10	S/S			EVENT	
C D0131 X	HAND CONTROLLER INPUT B			PCME		2	10	S/S			EVENT	
C D0132 V	EDS ABORT LOGIC IN NO 1			PCM		2	10	S/S	+0	+37	VDC	
C D0133 V	EDS ABORT LOGIC IN NO 2			PCM		2	10	S/S	+0	+37	VDC	
C D0134 V	EDS ABORT LOGIC IN NO 3			PCM		2	10	S/S	+0	+37	VDC	
C D0135 V	EDS ABORT LOGIC OUT A			PCME		2	10	S/S			EVENT	
C D0136 V	EDS ABORT LOGIC OUT B			PCME		2	10	S/S			EVENT	
C D0140 X	DIRECT ULLAGE ON A			PCME		2	10	S/S			EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C D0141 X	DIRECT ULLAGE ON B	PCME				2	10	S/S			EVENT	
C D0170 X	RCS ACTIVATE SIG A	PCME				2	10	S/S			EVENT	
C D0171 X	RCS ACTIVATE SIG B	PCME				2	10	S/S			EVENT	
C D0173 X	CM RCS PRESS SIG A	PCME				2	10	S/S			EVENT	
C D0174 X	CM RCS PRESS SIG B	PCME				2	10	S/S			EVENT	
C D0200 V	DC VOLTAGE LOGIC BUS A	PCM				2	10	S/S	+0	+37	VDC	
C D0201 V	DC VOLTAGE LOGIC BUS B	PCM				2	10	S/S	+0	+37	VDC	
C D0218 X	MESC PYRO SWITCH IND SAFE			USI		3	1	S/S			EVENT	
C D0219 X	MESC PYRO SWITCH IND ARM			USI		3	1	S/S			EVENT	
C D0230 X	FWD HEAT SHIELD JETT A	PCME				2	10	S/S			EVENT	
C D0231 X	FWD HEAT SHIELD JETT B	PCME				2	10	S/S			EVENT	
C D0315 X	EDS ENABLE A	PCME				2	10	S/S			EVENT	
C D0316 X	EDS ENABLE B	PCME				2	10	S/S			EVENT	
C D0320 X	EDS UNSAFE A			USI		3	1	S/S			EVENT	
C D0321 X	EDS UNSAFE B			USI		3	1	S/S			EVENT	
S D0350 X	SM BATT MONITOR A			USM		3	1	S/S			EVENT	
S D0351 X	SM BATT MONITOR B			USM		3	1	S/S			EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S D0352	X SM JETTISON SAFE A				USM	3	1			S/S	EVENT
S D0353	X SM JETTISON SAFE B				USM	3	1			S/S	EVENT
C D0550	X DSIF ANT DEPLOY RLY CLOSE A				AP	3	10			S/S	EVENT
C D0551	X DSIF ANT DEPLOY RLY CLOSE B				AP	3	10			S/S	EVENT
C D0560	X MESC TD1 SYS A				A	3					
C D0561	X MESC TD1 SYS B				A	3					
C D0562	X MESC TD2 SYS A				A	3					
C D0563	X MESC TD2 SYS B				A	3					
C D0564	X MESC TD3 SYS A				A	3					
C D0565	X MESC TD3 SYS B				A	3					
C D0566	X MESC TD4 SYS A				A	3					
C D0567	X MESC TD4 SYS B				A	3					
C D0568	X MESC TD5 SYS A				A	3					
C D0569	X MESC TD5 SYS B				A	3					
C D0570	X MESC TD6 SYS A				A	3					
C D0571	X MESC TD6 SYS B				A	3					
C D0572	X MESC TD7 SYS A				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS	DATA RANGE LOW	HIGH	UNITS	LOCATION
C D0573	X MESC TD7 SYS B				A	3				
C D0574	X MESC TD3 SYS A				A	3				
C D0575	X MESC TD8 SYS B				A	3				
C D0576	X MESC TD9 SYS A				A	3				
C D0577	X MESC TD9 SYS B				A	3				
C D0578	X MESC TD10 SYS A				A	3				
C D0579	X MESC TD10 SYS B				A	3				
C D0580	X MESC TD11 SYS A				A	3				
C D0581	X MESC TD11 SYS B				A	3				
C D0582	X MESC TD12 SYS A				A	3				
C D0583	X MESC TD12 SYS B				A	3				
C D0584	X MESC TD13 SYS A				A	3				
C D0585	X MESC TD13 SYS B				A	3				
C D0586	X MESC TD14 SYS A				A	3				
C D0587	X MESC TD14 SYS B				A	3				
C D0588	X MESC TD15 SYS A				A	3				
C D0589	X MESC TD15 SYS B				A	3				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYSTS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C D0592 X MESC TD16 SYS A					A	3					
C D0591 X MESC TD16 SYS B					A	3					

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C E0001 X	DROGUE DEPLOY RELAY CLOSE A	PCME				2	10	S/S			EVENT	
C E0002 X	DROGUE DEPLOY RELAY CLOSE B	PCME				2	10	S/S			EVENT	
C E0003 X	MAIN CHUTE DEPL-DRG REL RELAY A	PCME				2	10	S/S			EVENT	
C E0004 X	MAIN CHUTE DEPL-DRG REL RELAY B	PCME				2	10	S/S			EVENT	
C E0007 X	BARO SW LOCK-IN RLY CLOSE A	PCME				2	10	S/S			EVENT	
C E0008 X	BARO SW LOCK-IN RLY CLOSE B	PCME				2	10	S/S			EVENT	
C E0025 X	BARO SW S1 AND S2 SYS A				A	3						
C E0026 X	BARO SW S3 AND S4 SYS A				A	3						
C E0027 X	BARO SW S3 AND S4 SYS B				A	3						
C E0029 X	BARO SW S1 AND S2 SYS B				A	3						
C E0035 P	BAROMETRIC PRESS STATIC REF	PCM		M		1	1	S/S	+0	+15	PSIA	
C E0040 X	ELS TIME DELAY TD1 SYS A (2 SEC)				A	3						
C E0041 X	ELS TIME DELAY TD1 SYS B (2 SEC)				A	3						
C E0042 X	ELS TIME DELAY TD2 SYS A (2 SEC)				A	3						
C E0043 X	ELS TIME DELAY TD2 SYS B (2 SEC)				A	3						
C E0044 X	ELS TIME DELAY TD3 SYS A (14 SEC)				A	3						
C E0045 X	ELS TIME DELAY TD3 SYS B (14 SEC)				A	3						

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C E0046 X	ELS TIME DELAY TD4 SYS A (14 SEC)				A	3					
C E0047 X	ELS TIME DELAY TD4 SYS B (14 SEC)				A	3					
C E0048 X	ELS TD3 AND TD4 ARMING SYS A				A	3					
C E0049 X	ELS TD3 AND TD4 ARMING SYS B				A	3					
C E0310 X	ELS PYRO RELAY K1 SAFE A				USM	3	1	S/S		EVENT	
C E0311 X	ELS PYRO RELAY K2 SAFE A				USM	3	1	S/S		EVENT	
C E0312 X	ELS PYRO RELAY K3 SAFE A				USM	3	1	S/S		EVENT	
C E0313 X	ELS PYRO RELAY K4 SAFE A				USM	3	1	S/S		EVENT	
C E0314 X	ELS PYRO RELAY K1 SAFE B				USM	3	1	S/S		EVENT	
C E0315 X	ELS PYRO RELAY K2 SAFE B				USM	3	1	S/S		EVENT	
C E0316 X	ELS PYRO RELAY K3 SAFE B				USM	3	1	S/S		EVENT	
C E0317 X	ELS PYRO RELAY K4 SAFE B				USM	3	1	S/S		EVENT	
C E0321 X	MAIN CHUTE DISCONNECT RELAY A	PCME				2	10	S/S		EVENT	
C E0322 X	MAIN CHUTE DISCONNECT RELAY B	PCME				2	10	S/S		EVENT	

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C F0001	P PRESSURE CABIN	PCM+		M		1 X 1	S/S	+0	+17	PSIA	
C F0002	T TEMP CABIN	PCM+		M		1 X 1	S/S	+20	+95	DEG F	
C F0005	P PRESS CO2 PARTIAL	PCM+		M *		1 X 1	S/S	+0	+30	MMHG	
C F0006	P PRESS SURGE TANK	PCM		SM		1 X 1	S/S	+50	+1050	PSIA	
C F0008	T TEMP SUIT SUPPLY MANIF	PCM		M		1 X 1	S/S	+20	+95	DEG F	
C F0009	Q QUANTITY WASTE WATER TANK	PCM+		SM		1 X 1	S/S	+0	+100	PCNT	
C F0010	Q QUAN POTABLE H2O TANK	PCM+		SM		1 X 1	S/S	+0	+100	PCNT	
C F0012	P PRESS SUIT DEMAND REG SENSE	PCM+		M		1 X 1	S/S	+0	+17	PSIA	
C F0015	P PRESS SUIT COMPRESSOR DIFF	PCM+		M		1 X 1	S/S	+0	+1	PSID	
C F0016	P PRESS GLYCOL PUMP OUTLET	PCM+		M		1 X 1	S/S	+0	+60	PSIA	
C F0017	T TEMP GLYCOL EVAP OUTLET STEAM	PCM		M		1 X 1	S/S	+20	+95	DEG F	
C F0018	T TEMP GLYCOL EVAP OUTLET LIQUID	PCM+		M		1 X 1	S/S	+25	+75	DEG F	
C F0019	Q QUANTITY GLYCOL ACCUM	PCM+		M		1 X 1	S/S	+0	+100	PCNT	
C F0020	T TEMP SPACE RADIATOR OUTLET	PCM+		M *		1 X 1	S/S	-50	+100	DEG F	
C F0029	P PRESS GLYCOL EVAP OUT STEAM	PCM+				2 X 10	S/S	+0	+0.3	PSIA	
S F0030	Q QUANTITY H2 TANK 1	PCM+		M		1 X 1	S/S	+0	+28	LB	
S F0031	Q QUANTITY H2 TANK 2	PCM+		M		1 X 1	S/S	+0	+28	LB	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S F0032 Q	QUANTITY O2 TANK 1	PCM+		M		1 X 1	S/S	+0	+320	LB	
S F0033 Q	QUANTITY O2 TANK 2	PCM+		M		1 X 1	S/S	+0	+320	LB	
C F0035 R	FLOWRATE ECS O2	PCM+		M		1 X 1	S/S	+0	+1.0	LB/HR	
C F0036 P	PRESS OUTLET O2 REG SUPPLY	PCM				2 X 1	S/S	+0	+150	PSIA	
S F0037 P	PRESS O2 TANK 1	PCM+		SM *		1 X 1	S/S	+50	+1050	PSIA	
S F0038 P	PRESS O2 TANK 2	PCM+		M *		1 X 1	S/S	+50	+1050	PSIA	
S F0039 P	PRESS H2 TANK 1	PCM+		M *		1 1	S/S	+0	+350	PSIA	
S F0040 P	PRESS H2 TANK 2	PCM+		M *		1 X 1	S/S	+0	+350	PSIA	
S F0041 T	TEMP O2 TANK 1	PCM+				2 X 1	S/S	-325	+80	DEG F	
S F0042 T	TEMP O2 TANK 2	PCM+				2 X 1	S/S	-325	+80	DEG F	
S F0043 T	TEMP H2 TANK 1	PCM+				2 X 1	S/S	-425	-200	DEG F	
S F0044 T	TEMP H2 TANK 2	PCM+				2 X 1	S/S	-425	-200	DEG F	
S F0092 X	O2 TANKS PRESS SW CKT 1 OPEN				TP	3 1	S/S	CLOSE	OPEN	EVENT	
S F0093 X	O2 TANKS PRESS SW CKT 2 OPEN				TP	3 1	S/S	CLOSE	OPEN	EVENT	
S F0094 X	H2 TANKS PRESS SW CKT 1 OPEN				TP	3 1	S/S	CLOSE	OPEN	EVENT	
S F0095 X	H2 TANKS PRESS SW CKT 2 OPEN				TP	3 1	S/S	CLOSE	OPEN	EVENT	
C F0105 X	EMERGENCY O2 FLOW INDICATION			L *		1				EVENT	

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE LOW	DATA RANGE HIGH	UNITS	LOCATION
C F0197 X	H2O SEPARATOR PUMP FAILURE			L *		1			EVENT	
C F0320 P	PRESS IMU BYPASS				T	3				
C F0321 P	PRESS GLYCOL SERIES CK VLV				T	3				
S F0324 P	PRESS SM GSE GLYCOL SUPPLY				T	3				
S F0325 P	PRESS SM GSE GLYCOL RETURN				T	3				
C F0326 P	PRESS POTABLE H2O TANK DRAIN				T	3				
C F0327 P	PRESS WASTE H2O TANK DRAIN				T	3				
C F0328 P	PRESS H2O SERIES CK VLV				T	3				
C F0329 P	PRESS H2O CHILLER OUT				T	3				
C F0330 P	PRESS H2O HEATER OUT				T	3				
C F0331 P	PRESS TANK PRESS SYS				T	3				
C F0332 P	PRESS SURGE TANK SYS				T	3				
C F0333 P	PRESS BACK PACK SUPPLY				T	3				
C F0334 P	PRESS BACK PACK RETURN				T	3				
C F0335 P	PRESS SUIT CONNECTOR 1				T	3				
C F0336 P	PRESS SUIT CONNECTOR 2				T	3				
C F0337 P	PRESS SUIT CONNECTOR 3				T	3				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYSTS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C F0338 P	PRESS SUIT CONNECTOR 4				T	3					
C F0339 P	PRESS RETURN AIR SERIES CK VLV				T	3					
C F0342 P	PRESS CABIN REG INFLOW PORT				T	3					
C F0343 P	PRESS DEMAND REG CABIN SENSE PORT				T	3					
C F0344 P	PRESS CABIN REG SENSE PORT				T	3					
C F0345 P	PRESS EMERG O2 INFLOW PORT				T	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G0001 V	COMPUTER DIGITAL DATA 40 BITS	PCMD				2 X 50	S/S					
C G1000 V	+120 VDC IRIG SUPPLY			AP		3	1	S/S	+4	+132	VDC	PSA TRAY 2
C G1001 V	+120 VDC IRIG SUPPLY NOISE RMS			P		3	1	S/S				PSA TRAY 2
C G1002 X	+120 VDC IRIG SUPPLY NOISE PEAKS			P		3	10	S/S				PSA TRAY 2
C G1003 V	+12 VDC IRIG SUPPLY			AP		3	1	S/S	+0	+15	VDC	PSA TRAY 2
C G1006 V	+32 VDC IRIG SUPPLY			AP		3	1	S/S	+0	+40	VDC	PSA TRAY 2
C G1010 V	+120 VDC PIPA SUPPLY			AP		3	1	S/S	+4	+132	VDC	PSA TRAY 7
C G1011 V	+120 VDC PIPA NOISE RMS			P		3	1	S/S				PSA TRAY 7
C G1012 X	+120 VDC PIPA SUPPLY NOISE PEAKS			P		3	10	S/S				PSA TRAY 7
C G1016 V	+32 VDC PIPA SUPPLY			AP		3	1	S/S				PSA TRAY 2
C G1020 V	+13 VDC AGC SUPPLY			AP		3	1	S/S	+0	+20	VDC	PSA TRAY 10
C G1021 V	+13 VDC AGC SUPPLY NOISE RMS			P		3	1	S/S				PSA TRAY 10
C G1022 X	+13 VDC AGC SUPPLY NOISE PEAKS			P		3	10	S/S				PSA TRAY 10
C G1030 V	+3 VDC AGC SUPPLY			AP		3	1	S/S	+0	+5	VDC	PSA TRAY 10
C G1031 V	+3 VDC AGC SUPPLY NOISE RMS			P		3	1	S/S				PSA TRAY 10
C G1032 X	+3 VDC AGC SUPPLY NOISE PEAKS			P		3	10	S/S				PSA TRAY 10
C G1050 V	+20 VDC SIG CONDITIONER SUPPLY			A		3						

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C G1100 V	-28 VDC SUPPLY				A	3		-30	+0	VDC	PSA TRAY 1
C G1101 V	-28 VDC SUPPLY	PCM+				2 X 1	S/S	-30	+0	VDC	PSA TRAY 1
C G1110 V	2.5 VDC TM BIAS	PCM+				2 1	S/S				
C G1200 V	IMU 800 CPS DRIVE RMS				A	3					PSA TRAY 2
C G1201 V	IMU 28V .8KC 1 PCT 0 DEG SUP RMS				AP	3 1	S/S	+25	+30	VRMS	PSA TRAY 2
C G1202 V	IMU 28V .8KC 5 PCT 90DEG SUP RMS				AP	3 1	S/S	+0	+35	VRMS	PSA TRAY 2
C G1203 V	IMU 28V .8KC 5 PCT 0 DEG SUP RMS				AP	3 1	S/S	+0	+35	VRMS	PSA TRAY 2
C G1204 V	CDU 28V .8KC 5PCT-90 DEG SUP RMS				AP	3 1	S/S	+0	+35	VRMS	PSA TRAY 10
C G1206 B	PH DIFF IMU 1-5 PCT 0--90 DEG				P	3 1	S/S	-35	+35	SIN20	PSA TRAY 2
C G1207 B	PH DIFF IMU 5-5 PCT -90-0 DEG				P	3 1	S/S	-35	+35	SIN30	PSA TRAY 2
C G1209 B	PH DIFF CDU 5P 90D IMU 1P 0 DEG				P	3 1	S/S	+0	+35	VRMS	PSA TRAY 10
C G1210 V	OPTX 800 CPS DRIVE				A	3					PSA TRAY 6
C G1211 V	OPTX 28V .8KC 1PCT 0 DEG SUP RMS				AP	3 1	S/S	+25	+30	VRMS	PSA TRAY 6
C G1212 V	OPTX 28V .8KC 5 PCT -90D SUP RMS				AP	3 1	S/S	+0	+35	VRMS	PSA TRAY 6
C G1216 B	PH DIFF OPTX 1-5 PCT 0--90 DEG				P	3 1	S/S	-35	+35	SIN15	PSA TRAY 6
C G1220 B	PH DIFF OPTX 1PCT IMU 5PCT				AP	3 1	S/S				
C G1300 V	IMU 3200 CPS DRIVE				A	3					PSA TRAY 1

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G1301	V IMU 2V 3200 CPS SUPPLY RMS				AP	3	1	S/S	-2.5	+0	VRMS	PSA TRAY 1
C G1302	V 20V 3.2KC SQ WAVE SUPPLY RMS				AP	3	1	S/S	-2.5	+0	VRMS	PSA TRAY 1
C G1304	V IMU 2V 3200 CPS SUPPLY				A	3						
C G1306	B PHASE DIFF IMU 2V 3.2KC AGC SYNC				P	3	1	S/S	-2	+0	SIN 5	PSA TRAY 1
C G1400	V IMU 2V 25.6KC SUPPLY IN PH				AP	3	1	S/S	+0	+3	VRMS	PSA TRAY 2
C G1401	V OPTX 2V 25.6KC SUPPLY IN PH				AP	3	1	S/S	+0	+3	VRMS	PSA TRAY 2
C G1402	B PH DIFF IMU 25.6KC OPTX 25.6KC				AP	3	1	S/S				
C G1500	V +28 VDC BUS 1				AP	3	1	S/S	+0	+40	VDC	PSA TRAY 10
C G1501	V +28 VDC BUS 1 NOISE RMS				P	3	1	S/S				PSA TRAY 10
C G1502	X +28 VDC BUS 1 NOISE PEAKS				P	3	10	S/S				PSA TRAY 10
C G1503	X IMU +28 VDC OPERATE	PCME				2 X	10	S/S				PSA TRAY 10
C G1510	V +28 VDC BUS 2				AP	3	1	S/S	+0	+40	VDC	PSA TRAY 10
C G1511	V +28 VDC BUS 2 NOISE RMS				P	3	1	S/S				PSA TRAY 10
C G1512	X +28 VDC BUS 2 NOISE PEAKS				P	3	10	S/S				PSA TRAY 10
C G1513	X IMU +28 VDC STANDBY	PCME				2 X	10	S/S				PSA TRAY 10
C G1520	V +28 VDC BUS 3				AP	3	1	S/S	+0	+40	VDC	PSA TRAY 10
C G1521	V +28 VDC BUS 3 NOISE RMS				P	3	1	S/S				PSA TRAY 10

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G1522 X	+28 VDC BUS 3 NOISE PEAKS				P	3	10	S/S				PSA TRAY 10
C G1523 X	AGC +28 VDC	PCME				2	10	S/S				PSA TRAY 10
C G1530 V	+28 VDC BUS 4				AP	3	1	S/S	+0	+40	VDC	PSA TRAY 10
C G1531 V	+28 VDC BUS 4 NOISE RMS				P	3	1	S/S				PSA TRAY 10
C G1532 X	+28 VDC BUS 4 NOISE PEAKS				P	3	10	S/S				PSA TRAY 10
C G1533 X	OPTX +28 VDC	PCME				2	10	S/S				PSA TRAY 10
C G2000 V X	PIPA SG OUTPUT RMS				AP	3	1	S/S	+0	+1.000	VRMS	PSA TRAY 3
C G2002 V X	PIPA SG OUTPUT QUAD				P	3	1	S/S	+0	+0.800	VRMS	PSA TRAY 3
C G2003 V X	PIPA PVR				A	3						PSA TRAY 3
C G2004 C X	PIPA TORQUE CURRENT CALIBRATE				A	3						PSA TRAY 3
C G2005 C X	PIPA TORQUE CURRENT MONITOR				A	3						PSA TRAY 3
C G2011 V X	PIPA SG OUTPUT				A	3						
C G2012 V X	PIPA POS PULSE COUNT				A	3						
C G2013 V X	PIPA NEG PULSE COUNT				A	3						
C G2020 V Y	PIPA SG OUTPUT RMS				AP	3	1	S/S	+0	+1.000	VRMS	PSA TRAY 3
C G2022 V Y	PIPA SG OUTPUT QUAD				P	3	1	S/S	+0	+0.800	VRMS	PSA TRAY 3
C G2023 V Y	PIPA PVR				A	3						PSA TRAY 3

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G2024	C Y PIPA TORQUE CURRENT CALIBRATE				A	3						PSA TRAY 3
C G2025	C Y PIPA TORQUE CURRENT MONITOR				A	3						PSA TRAY 3
C G2031	V Y PIPA SG OUTPUT				A	3						
C G2032	V Y PIPA POS PULSE COUNT				A	3						
C G2033	V Y PIPA NEG PULSE COUNT				A	3						
C G2040	V Z PIPA SG OUTPUT RMS				P	3	100	S/S	+0+1.000		VRMS	PSA TRAY 4
C G2042	V Z PIPA SG OUTPUT QUAD				P	3	1	S/S	+0+0.800		VRMS	PSA TRAY 4
C G2043	V Z PIPA PVR				A	3						PSA TRAY 4
C G2044	C Z PIPA TORQUE CURRENT CALIBRATE				A	3						PSA TRAY 4
C G2045	C Z PIPA TORQUE CURRENT MONITOR				A	3						PSA TRAY 4
C G2051	V Z PIPA SG OUTPUT				A	3						
C G2052	V Z PIPA POS PULSE COUNT				A	3						
C G2053	V Z PIPA NEG PULSE COUNT				A	3						
C G2100	X Y IRIG +COMMANDS COUNT				AP	3	10	S/S				PSA TRAY 4
C G2101	X Y IRIG -COMMANDS COUNT				AP	3	10	S/S				PSA TRAY 4
C G2102	V Y IRIG PVR				A	3						PSA TRAY 4
C G2103	C Y IRIG TORQUE CURRENT CALIBRATE				A	3						PSA TRAY 4

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G2104 C Y	IRIG TORQUE CURRENT MONITOR				A	3						PSA TRAY 4
C G2106 V	IGA SERVO ERROR				A	3						PSA TRAY 1
C G2107 V	IGA SERVO ERROR IN PHASE				AP	3	1	*S/S	+0	+0.500	VRMS	PSA TRAY 1
C G2108 V	IGA SERVO ERROR QUAD				P	3	1	S/S	+0	+1.000	VRMS	PSA TRAY 1
C G2109 V	IG ADA PREAMP OUT				A	3						
C G2110 V	IGA TORQUE MOTOR INPUT	PCM				2	10	S/S				
C G2111 V	IGA SERVO TEST INPUT				A	3						PSA TRAY 1
C G2112 V	IGA 1X RES OUTPUT SINE IN PHASE	PCM				2	X 10	S/S				
C G2113 V	IGA 1X RES OUTPUT COS IN PHASE	PCM				2	X 10	S/S				
C G2114 V	IGA 16X RES OUTPUT SINE				A	3						
C G2115 V	IGA 16X RES OUTPUT COS				A	3						
C G2117 V	IGA SERVO ERROR IN PHASE	PCM				2	100	S/S	+0	+0.500	VRMS	PSA TRAY 1
C G2130 X Z	IRIG +COMMANDS COUNT				AP	3	10	S/S				PSA TRAY 4
C G2131 X Z	IRIG -COMMANDS COUNT				AP	3	10	S/S				PSA TRAY 4
C G2132 V Z	IRIG PVR				A	3						PSA TRAY 4
C G2133 C Z	IRIG TORQUE CURRENT CALIBRATE				A	3						PSA TRAY 4
C G2134 C Z	IRIG TORQUE CURRENT MONITOR				A	3						PSA TRAY 4

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G2135	V Z IRIG PRE AMP OUTPUT QUAD				AP	3	1	S/S				PSA TRAY 5
C G2136	V MGA SERVO ERROR				A	3						PSA TRAY 1
C G2137	V MGA SERVO ERROR IN PHASE				P	2	1	*S/S	+0	+0.500	VRMS	PSA TRAY 1
C G2138	V MGA SERVO ERROR QUAD				P	3	1	S/S	+0	+1.000	VRMS	PSA TRAY 4
C G2139	V MG ADA PREAMP OUTPUT				A	3						
C G2140	V MGA TORQUE MOTOR INPUT	PCM				2	10	S/S				PSA TRAY 4
C G2141	V MGA SERVO TEST INPUT				A	3						PSA TRAY 4
C G2142	V MGA 1X RES OUTPUT SINE IN PHASE	PCM				2 X	10	S/S				PSA TRAY 4
C G2143	V MGA 1X RES OUTPUT COS IN PHASE	PCM			A	2	10	S/S				PSA TRAY 10
C G2144	V MGA 16X RES OUTPUT SINE				A	3						
C G2145	V MGA 16X RES OUTPUT COS				A	3						
C G2147	V MGA SERVO ERROR IN PHASE	PCM				2	100	S/S	+0	+0.500	VRMS	PSA TRAY 1
C G2160	X X IRIG +COMMANDS COUNT				AP	3	10	S/S				PSA TRAY 4
C G2161	X X IRIG -COMMANDS COUNT				AP	3	10	S/S				PSA TRAY 4
C G2162	V X IRIG PVR				A	3						PSA TRAY 3
C G2163	C X IRIG TORQUE CURRENT CALIBRATE				A	3						PSA TRAY 3
C G2164	C X IRIG TORQUE CURRENT MONITOR				A	3						PSA TRAY 3

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G2165 V X	IRIG PRE AMP OUTPUT QUAD				AP	3	1	S/S				PSA TRAY 5
C G2166 V	OGA SERVO ERROR RMS				A	3						PSA TRAY 1
C G2167 V	OGA SERVO ERROR IN PHASE	PCM			P	2	1*	S/S	+0	+0.500	VRMS	PSA TRAY 1
C G2168 V	OGA SERVO ERROR QUAD				P	3	1	S/S	+0	+1.000	VRMS	PSA TRAY 1
C G2170 V	OGA TORQUE MOTOR INPUT	PCM				2	10	S/S				PSA TRAY 1
C G2171 V	OGA SERVO TEST INPUT				A	3						PSA TRAY 1
C G2172 V	OGA 1X RES OUTPUT SINE IN PHASE	PCM				2 X	10	S/S				PSA TRAY 1
C G2173 V	OGA 1X RES OUTPUT COS IN PHASE	PCM				2 X	10	S/S				PSA TRAY 1
C G2174 V	OGA 16X RES OUTPUT SINE				A	3						
C G2175 V	OGA 16X RES OUTPUT COS				A	3						
C G2177 V	OGA SERVO ERROR IN PHASE	PCM				2	100	S/S	+0	+0.500	VRMS	PSA TRAY 1
C G2200 V	IGA CDU SERVO ERROR				A	3						PSA TRAY 6
C G2201 V	IGA CDU FAIL SIGNAL				AP	3	1	S/S				PSA TRAY 6
C G2202 X	IGA CDU +DELTA THETA				A	3						PSA TRAY 5
C G2203 X	IGA CDU -DELTA THETA				A	3						PSA TRAY 5
C G2204 V	IGA CDU 16X RES ERROR IN PHASE				AP	3	10	S/S	+0	+0.250	VRMS	PSA TRAY 6
C G2205 V	IGA CDU 16X RES ERROR RMS				A	3						

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G2206 V	IGA CDU 1X RES ERROR IN PHASE	PCM				2	1	S/S	+0+0.250		VRMS	PSA TRAY 1
C G2207 V	IGA CDU 1X RES ERROR RMS				A	3						
C G2209 V	SCS PITCH IN PHASE				AP	3	1*	S/S	+0+1.000		VRMS	PSA TRAY 7
C G2212 X	IG CDU COMMAND PULSES +				A	3						PSA TRAY 5
C G2213 X	IG CDU COMMAND PULSES -				A	3						PSA TRAY 5
C G2214 V	IG DAC ERROR SIGNAL IN PHASE				AP	3	1*	S/S	+0+6.000		VRMS	PSA TRAY 5
C G2230 V	MGA CDU SERVO ERROR				A	3						PSA TRAY 6
C G2231 V	MGA CDU FAIL SIGNAL RMS				AP	3	1	S/S				PSA TRAY 6
C G2232 X	MGA CDU +DELTA THETA				A	3						PSA TRAY 5
C G2233 X	MGA CDU -DELTA THETA				A	3						PSA TRAY 5
C G2234 X	MGA CDU 16X RES ERROR IN PHASE				AP	3	10	S/S	+0+0.250		VRMS	PSA TRAY 6
C G2235 V	MGA CDU 16X RES ERROR RMS				A	3						
C G2236 V	MGA CDU 1X RES ERROR IN PHASE	PCM				2	1	S/S	+0+0.250		VRMS	PSA TRAY 1
C G2237 V	MGA CDU 1X RES ERROR RMS				A	3						
C G2239 V	SCS YAW BODY AXIS IN PHASE				AP	3	1*	S/S	+0+1.000		VRMS	PSA TRAY 7
C G2241 V	SCS YAW OFFSET AXIS IN PHASE				AP	3	1*	S/S	+0+1.000		VRMS	PSA TRAY 6
C G2242 X	MG CDU COMMAND PULSES +				A	3						PSA TRAY 5

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G2243 X	MG CDU COMMAND PULSES -				A	3						PSA TRAY 5
C G2244 V	MG DAC ERROR SIGNAL IN PHASE				AP	3	1*	S/S	+0+6.000		VRMS	PSA TRAY 5
C G2260 V	OGA CDU SERVO ERROR				A	3						PSA TRAY 6
C G2261 V	OGA CDU FAIL SIGNAL RMS				AP	3	1	S/S	+0+5.000		VRMS	PSA TRAY 6
C G2262 X	OGA CDU +DELTA THETA				A	3						PSA TRAY 5
C G2263 X	OGA CDU -DELTA THETA				A	3						PSA TRAY 5
C G2264 V	OGA CDU 16X RES ERROR IN PHASE	PCM+			AP	2	10	S/S	+0+0.250		VRMS	PSA TRAY 6
C G2265 V	IGA CDU 16X RES ERROR RMS				A	3						
C G2266 V	OGA CDU 1X RES ERROR IN PHASE	PCM				2	1	S/S	+0+0.250		VRMS	PSA TRAY 1
C G2267 V	IGA CDU 1X RES ERROR RMS				A	3						
C G2269 V	SCS ROLL BODY AXIS IN PHASE				AP	3	1*	S/S	+0+1.000		VRMS	PSA TRAY 7
C G2271 V	SCS ROLL OFFSET AXIS IN PHASE				AP	3	1*	S/S	+0+1.000		VRMS	PSA TRAY 7
C G2272 X	OG CDU COMMAND PULSES +				A	3						PSA TRAY 5
C G2273 X	OG CDU COMMAND PULSES -				A	3						PSA TRAY 5
C G2274 V	OG DAC ERROR SIGNAL IN PHASE				AP	3	1*	S/S	+0+6.000		VRMS	PSA TRAY 5
C G2300 T	PIPA TEMP	PCM+				1 X	1	S/S				
C G2301 T	IRIG TEMP	PCM+				1 X	1	S/S				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G2302 C	IMU HEATER CURRENT	PCM+				1 X 1		S/S	+0	+5.000	AMP	PSA TRAY 7
C G2303 C	IMU BLOWER CURRENT	PCM+				1 X 1		S/S	+0	+5.000	AMP	PSA TRAY 7
C G2304 V	IMU TEMP CONTROL BRIDGE SUPPLY				AP	3	1	S/S	+20	+25	VDC	PSA TRAY 7
C G2305 V	IMU TEMP CONTROL AMP OUTPUT				A	3						PSA TRAY 7
C G3001 X	TRUN DCU DECODER -DELTA TH				A	3						PSA TRAY 7
C G3002 X	SHAFT CDU DECODER +DELTA TH				A	3						PSA TRAY 7
C G3003 X	SHAFT CDU DECODER -DELTA TH				A	3						PSA TRAY 7
C G3101 V	SXT TRUN 16X RES ERROR IN PHASE				AP	3	10*	S/S				PSA TRAY 9
C G3102 V	SXT TRUN MOTOR DRIVE IN PHASE	PCM				2	10	S/S				PSA TRAY 9
C G3103 V	SXT TRUN MOTOR DRIVE QUAD				AP	3	1	S/S				PSA TRAY 9
C G3111 V	SXT SHAFT 16X RES ERROR IN PHASE				AP	3	10*	S/S				PSA TRAY 9
C G3112 V	SXT SHAFT MOTOR DRIVE IN PHASE	PCM				2	10	S/S				PSA TRAY 9
C G3113 V	SXT SHAFT MOTOR DRIVE QUAD				A	3						PSA TRAY 9
C G3120 V	SCT TRUN 1X RES ERROR IN PHASE				AP	3	10*	S/S				PSA TRAY 9
C G3130 V	SCT SHAFT 1/2X RES ERROR IN PHASE				AP	3	10*	S/S				PSA TRAY 9
C G3200 V	TRUN CDU MOTOR DRIVE IN PHASE	PCM				2	10	S/S				
C G3201 V	TRUN CDU MOTOR DRIVE QUAD				AP	3	1	S/S				PSA TRAY 8

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C G3206 V	TRUN CDU TACH OUTPUT IN PH				AP	3	10*	S/S				PSA TRAY 8
C G3209 V	OPTX DIRECT TRUNION CONTLR IN PH	PCM				2	10	S/S				PSA TRAY 8
C G3220 V	SHAFT CDU MOTOR DRIVE IN PHASE	PCM				2	10	S/S				PSA TRAY 8
C G3221 V	SHAFT CDU MOTOR DRIVE QUAD				AP	3	1	S/S				PSA TRAY 8
C G3226 V	SHAFT CDU TACH OUTPUT IN PH				AP	3	10*	S/S				PSA TRAY 8
C G3229 V	OPTX DIRECT SHAFT CONTLR IN PH	PCM				2	10	S/S				PSA TRAY 8
C G4005 X	800 PPS SET				A	3						PSA TRAY 2
C G4006 X	800 PPS RESET				A	3						PSA TRAY 2
C G4007 X	3200 PPS SET				A	3						PSA TRAY 1
C G4008 X	3200 PPS RESET				A	3						PSA TRAY 1
C G4010 X	25.6 KPPS SET				A	3						PSA TRAY 2
C G4011 X	25.6 KPPS RESET				A	3						PSA TRAY 2
C G4300 T	AGC TEMP	PCM				2	1	S/S				
C G5000 X	PIPA FAIL	PCME		X	*	1	X 10	S/S				
C G5001 X	IMU FAIL	PCME		X	*	1	X 10	S/S				
C G5002 X	CDU FAIL	PCME		X	*	1	X 10	S/S				
C G5003 X	GIMBAL LOCK WARNING	PCME		X	*	1	X 10	S/S				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C G5005 X	ERROR DETECT	PCME		X *		1	10			S/S	
C G5006 X	IMU TEMP LIGHT	PCME		X *		1	10			S/S	
C G5007 X	ZERO ENCODER LIGHT	PCME		X		1	10			S/S	
C G5008 X	IMU DELAY LIGHT	PCME		X		1	10			S/S	
C G5020 X	AGC ALARM 1 (PROGRAM)	PCME		X		1	10			S/S	
C G5021 X	AGC ALARM 2 (AGC ACTIVITY)	PCME		X		1	10			S/S	
C G5022 X	AGC ALARM 3 (T/M)	PCME		X		1	10			S/S	
C G5023 X	AGC ALARM 4 (PROG CK FAIL)	PCME		X		1	10			S/S	
C G5024 X	AGC ALARM 5 (SCALAR FAIL)	PCME		X		1	10			S/S	
C G5025 X	AGC ALARM 6 (PARITY FAIL)	PCME		X		1	10			S/S	
C G5026 X	AGC ALARM 7 (COUNTER FAIL)	PCME		X		1	10			S/S	
C G5027 X	AGC ALARM 8 (KEY RELEASE)	PCME		X		1	10			S/S	
C G5028 X	AGC ALARM 9 (RUPT LOCK)	PCME		X		1	10			S/S	
C G5029 X	AGC ALARM 10 (TC TRAP)	PCME		X		1	10			S/S	
C G5030 X	COMPUTER POWER FAIL LIGHT	PCME		X *		1 X	10			S/S	
C G5100 H 2X	TRUN ANGLE CDU DISPLAY			X		1					
C G5101 H	SHAFT ANGLE CDU DISPLAY			X		1					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C G5102 H	ROLL ANGLE CDU DISPLAY			X		1					
C G5103 H	PITCH ANGLE CDU DISPLAY			X		1					
C G5104 H	YAW ANGLE CDU DISPLAY			X		1					
C G5200 X	ZERO ENCODE MODE SWITCH			X		1					
C G5201 X	COARSE ALIGN MODE SWITCH			X		1					
C G5202 X	FINE ALIGN MODE SWITCH			X		1					
C G5203 X	CDU MANUAL MODE SWITCH			X		1					
C G5204 X	ATTITUDE CONTROL MODE SWITCH			X		1					
C G5205 X	ENTRY MODE SWITCH			X		1					
C G5206 X	TRANSFER SWITCH			X		1					
C G5300 H	ATTITUDE ERROR DISPLAY (R,P,Y)			X		1					
C G5400 X	IMU TEMP CONTROL MODE SWITCH			X		1					
C G5500 X	SXT SPEED SWITCH			X		1					
C G5501 X	OPTX MODE SWITCH			X		1					
C G5502 X	SLAVE SCT SWITCH			X		1					
C G5503 X	MARK SWITCH			X		1					
C G6000 P	IMU PRESSURE	PCM			A	2	1	S/S			

MEAS. ID		MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C G9000	X	AGC PROGRAM DISPLAY			X		1					
C G9001	X	AGC NOUN DISPLAY			X		1					
C G9002	X	AGC VERB DISPLAY			X		1					
C G9003	X	AGC DISPLAY 1			X		1					
C G9004	X	AGC DISPLAY 2			X		1					
C G9005	X	AGC DISPLAY 3			X		1					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H0001	V ECA P GPX 1 POWER 26 VAC PH A				A	3						
C H0005	V ECA P VOLTAGE LEVEL +40 VDC				A	3			+0	+40.8	VDC	
C H0006	V ECA P VOLTAGE LEVEL -40 VDC				A	3			-40.8	+0	VDC	
C H0007	V ECA P VOLTAGE LEVEL +20 VDC				A	3			+0	+22	VDC	
C H0008	V ECA P VOLTAGE LEVEL -20 VDC				A	3			-22	+0	VDC	
C H0012	V -4 VDC ECA P				A	3			-4.6	+0	VDC	
C H0013	V +31.9 VDC ECA P				A	3			+0	+31.9	VDC	
C H0014	V AC POWER GROUND ECA P				A	3						
C H0019	V DC POWER GROUND ECA P				A	3						
C H0020	V G-N PITCH ERROR DEMOD IN				AP	3	1	S/S				
C H0024	V PITCH RATE	PCM				2	50	S/S				
C H0025	V PITCH MAN ROTATION CONTROL	PCM			A	2	50	S/S	+0	+6	VRMS	
C H0026	V PITCH 1 POS FEEDBACK DEMOD OUT				A	3						
C H0028	V PITCH 2 VEL GEN DEMOD IN				AP	3	50	S/S				
C H0029	V PITCH 2 POS FEEDBACK DEMOD OUT				A	3						
C H0030	H PITCH 2 POS FEEDBACK DEMOD IN				AP	3	10	S/S				
C H0031	H PITCH 1 POS FEEDBACK DEMOD IN				AP	3	1	S/S				

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H0032 V	PITCH 1 VEL GEN DEMOD IN				AP	3	50	S/S				
C H0034 H	PITCH POS FEEDBACK IN	PCM				2	50	S/S	-6	+6	VDC	
C H0036 V	PTV INTEGRATOR AMP OUT				AP	3	10	S/S				
C H0037 V	PTV SERVO 1 + CLUTCH VOLTS				AP	3	50	S/S				
C H0038 V	PTV SERVO 1 - CLUTCH VOLTS				AP	3	50	S/S				
C H0039 V	PTV DIFF CLUTCH VOLTS SERVO 1				A	3						
C H0040 V	PTV SERVO 2 + CLUTCH VOLTS				AP	3	50	S/S				
C H0041 V	PTV SERVO 2 - CLUTCH VOLTS				AP	3	50	S/S				
C H0042 V	PTV DIFF CLUTCH VOLTS SERVO 2				A	3						
C H0045 V	PITCH RATE GYRO OUT (SCS)				AP	3	1	S/S	+0	+2.8	VRMS	
C H0047 V	PTV DIFF CLUTCH VOLTS COMB	PCM				2	50	S/S				
C H0048 X	PITCH MIN IMPULSE CONTROL				A	3					EVENT	
C H0050 V	PITCH RATE ERROR AMP OUT				AP	3	10	S/S				
C H0053 V	PTV GIMBAL POS COMD				AP	3	1	S/S				
C H0060 V	PITCH TOTAL ERROR AMP OUT				AP	3	10	S/S				
C H0061 X	+ PITCH ROTATION LOGIC IN				A	3					EVENT	
C H0062 X	- PITCH ROTATION LOGIC IN				A	3					EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS		RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H0067 V P	INTEGRATOR/ATT ERROR SUMMING	PCM+			A	2	10	S/S					
C H0070 V	PITCH ATT ERROR AMP OUT				AP	3	10	S/S					
C H0075 V	PITCH SCS ATT ERROR	PCM+				2	X 10	S/S		+0	+10	VRMS	
C H0076 V	PITCH AG PRE AMP OUT				AP	3	10	S/S					
C H0077 V	PITCH INTEGRATOR IN				A	3							
C H0081 X	ECA P TRANSLATION STICK +X COMD				A	3						EVENT	
C H0082 X	ECA P TRANSLATION STICK -X COMD				A	3						EVENT	
C H0085 X	PITCH/X SOLENOID DRIVERS DISABLE				AP	3	1	S/S				EVENT	
C H0087 X	+ PITCH/+X SOLENOID DRIVER OUT	PCME				2	200	S/S				EVENT	
C H0088 X	- PITCH/+X SOLENOID DRIVER OUT	PCME				2	200	S/S				EVENT	
C H0089 X	+ PITCH/-X SOLENOID DRIVER OUT	PCME				2	200	S/S				EVENT	
C H0090 X	- PITCH/-X SOLENOID DRIVER OUT	PCME				2	200	S/S				EVENT	
C H0100 X	G-N DV MODE CONTROL	PCME		X		1	X 10	S/S				EVENT	
C H0101 X	G-N ATT MODE CONTROL	PCME		X		1	X 10	S/S				EVENT	
C H0102 X	G-N ENTRY MODE CONTROL	PCME		X		1	X 10	S/S				EVENT	
C H0103 X	MONITOR MODE CONTROL	PCME		X		1	X 10	S/S				EVENT	
C H0187 V	SCS JET DRIVER 1 STIM				A	3				+0	+28	VDC	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H0188 V	SCS JET DRIVER 2 STIM				A	3		+0	+28	VDC	
C H0189 V	SCS JET DRIVER 3 STIM				A	3		+0	+28	VDC	
C H0190 V	SCS JET DRIVER 4 STIM				A	3		+0	+28	VDC	
C H0200 X P	RATE IN TRANSFER RELAY				A	3				EVENT	
C H0201 X P	G-N ATT IN RELAY				A	3				EVENT	
C H0202 X P	AG ATT IN RELAY				A	3				EVENT	
C H0203 X P	.05 G SWITCH RELAY				A	3				EVENT	
C H0204 X P	ENTRY GAIN RELAY				A	3				EVENT	
C H0205 X	MINIMUM INPULSE ENABLE RELAY				A	3				EVENT	
C H0207 X P	TVC ENABLE RELAY				A	3				EVENT	
C H0208 X P	TVC GAIN CHANGE RELAY				A	3				EVENT	
C H0209 X P	TVC ELECT TRANSFER RELAY				AP	3	1	S/S		EVENT	
C H0210 X P	SERVO 1 ENGAGE RELAY				AP	3	1	S/S		EVENT	
C H0211 X P	SERVO 2 ENGAGE RELAY				AP	3	1	S/S		EVENT	
C H0214 X	ENGINE IGNITION RELAY				AP	3	1	S/S		EVENT	
C H0217 X P	AUTO-INTERRUPT RELAY				AP	3	1	S/S		EVENT	
C H0218 X P	PSEUDO RATE CUTOUT RELAY				A	3				EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H0220 V	ECA P GPI 1 POWER +20 VDC				A	3		+0	+22	VDC	
C H0221 V	ECA P GPI 1 POWER -20 VDC				A	3		-22	+0	VDC	
C H0224 V	ECA P TVC 1 POWER +30 VDC				A	3		+0	+32	VDC	
C H0225 V	ECA P TVC 1 POWER -30 VDC				A	3		-32	+0	VDC	
C H0226 V	ECA P TVC 1 POWER +35 VDC				A	3		+0	+40	VDC	
C H0227 V	ECA P TVC 2 POWER +35 VDC				A	3		+0	+40	VDC	
C H0228 V	ECA P TVC 2 POWER +30 VDC				A	3		+0	+32	VDC	
C H0229 V	ECA P TVC 2 POWER -30 VDC				A	3		-32	+0	VDC	
C H0230 V	26V 400 CPS PHASE A ECA P				A	3					
C H0400 V	PITCH SIG GROUND				A	3				GND	
C H0401 V	AGAP-RGP SIG GROUND				A	3				GND	
C H0402 V	ECA P TVC 1 PWR +35 VDC RETURN				A	3					
C H0403 V	ECA P TVC 2 PWR +35 VDC RETURN				A	3					
C H0411 V	ECA P GPX 2 POWER 26 VAC PH A				A	3					
C H0413 V	PTV LIMITER AMP OUT				AP	3	50 S/S				
C H0613 V	PTV LIMITER AMP NULL				AP	3	1 S/S				
C H0628 V	PITCH 2 VEL GEN NULL				AP	3	1 S/S				

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H0632 V	PITCH 1 VEL GEN NULL				AP	3	1	S/S				
C H0660 V	PITCH TOTAL ERROR AMP NULL				AP	3	1	S/S				
C H1001 V	ECA Y GPX 1 POWER 26 VAC PH A				A	3						
C H1005 V	ECA Y VOLTAGE LEVEL +40 VDC				A	3			+0	+40.8	VDC	
C H1006 V	ECA Y VOLTAGE LEVEL -40 VDC				A	3			-40.8	+0	VDC	
C H1007 V	ECA Y VOLTAGE LEVEL +20 VDC				A	3			+0	+22	VDC	
C H1008 V	ECA Y VOLTAGE LEVEL -20 VDC				A	3			-22	+0	VDC	
C H1012 V	-4 VDC ECA Y				A	3			-4.6	+0	VDC	
C H1013 V	+31.9 VDC ECA Y				A	3			+0	+31.9	VDC	
C H1014 V	AC POWER GROUND ECA Y				A	3						
C H1019 V	DC POWER GROUND ECA Y				A	3						
C H1020 V	G-N YAW ERROR DEMOD IN				AP	3	1	S/S				
C H1024 V	YAW RATE	PCM				2	50	S/S				
C H1025 V	YAW MAN ROTATION CONTROL	PCM			A	2	50	S/S	+0	+6	VRMS	
C H1026 V	YAW 1 POS FEEDBACK DEMOD OUT				A	3						
C H1028 V	YAW 2 VEL GEN DEMOD IN				AP	3	50	S/S				
C H1029 V	YAW 2 POS FEEDBACK DEMOD OUT				A	3						

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H1030	H YAW 2 POS FEEDBACK DEMOD IN				AP	3	10	S/S				
C H1031	H YAW 1 POS FEEDBACK DEMOD IN				AP	3	10	S/S				
C H1032	V YAW 1 VEL GEN DEMOD IN				AP	3	50	S/S				
C H1033	V YAW 1 VEL GEN DEMOD OUT				A	3						
C H1034	H YAW POS FEEDBACK IN	PCM				2	50	S/S	-8.5	+8.5	VDC	
C H1036	V YTV INTEGRATOR AMP OUT				AP	3	10	S/S				
C H1037	V YTV SERVO 1 + CLUTCH VOLTS				AP	3	50	S/S				
C H1038	V YTV SERVO 1 - CLUTCH VOLTS				AP	3	50	S/S				
C H1039	V YTV DIFF CLUTCH VOLTS SERVO 1				A	3						
C H1040	V YTV SERVO 2 + CLUTCH VOLTS				AP	3	50	S/S				
C H1041	V YTV SERVO 2 - CLUTCH VOLTS				AP	3	50	S/S				
C H1042	V YTV DIFF CLUTCH VOLTS SERVO 2				A	3						
C H1045	V YAW RATE GYRO OUT (SCS)				AP	3	10	S/S	+0	+2.8	VRMS	
C H1047	V YTV DIFF CLUTCH VOLTS COMB	PCM				2	50	S/S				
C H1048	X YAW MIN IMPULSE CONTROL				A	3					EVENT	
C H1050	V YAW RATE ERROR AMP OUT				AP	3	10	S/S				
C H1053	V YTV MAN GIMBAL POSITION COMD				AP	3	1	S/S				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H1060 V	YAW TOTAL ERROR AMP OUT				AP	3	10	S/S				
C H1061 X	+ YAW ROTATION LOGIC IN				A	3					EVENT	
C H1062 X	- YAW ROTATION LOGIC IN				A	3					EVENT	
C H1067 V	Y INTEGRATOR/ATT ERROR SUMMING	PCM+			A	2	10	S/S				
C H1068 V	ROLL RATE INPUT TO YAW				AP	3	1	S/S				
C H1070 V	YAW ATT ERROR AMP OUT				AP	3	10	S/S				
C H1072 V	ROLL RATE TO YAW DEMOD OUT				A	3						
C H1075 V	YAW SCS ATT ERROR	PCM+				2	X 10	S/S	+0	+10	VRMS	
C H1076 V	YAW AG PRE AMP OUT				AP	3	10	S/S				
C H1077 V	YAW INTEGRATOR IN				A	3						
C H1085 X	YAW/X SOLENOID DRIVERS DISABLE				AP	3	1	S/S				
C H1087 X	+YAW/+X SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H1088 X	-YAW/+X SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H1089 X	+YAW/-X SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H1090 X	-YAW/-X SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H1100 X	SCS DV MODE CONTROL	PCME		X		1	10	S/S			EVENT	
C H1101 X	SCS ATT MODE CONTROL	PCME		X		1	X 10	S/S			EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H1102 X	SCS ENTRY MODE CONTROL	PCME		X		1 X 10	S/S				EVENT	
C H1103 X	SCS LOCAL VERTICAL MODE CONTROL	PCME		X		1 X 10	S/S				EVENT	
C H1187 V	SCS JET DRIVER 5 STIM				A	3			+0	+28	VDC	
C H1188 V	SCS JET DRIVER 6 STIM				A	3			+0	+28	VDC	
C H1189 V	SCS JET DRIVER 7 STIM				A	3			+0	+28	VDC	
C H1190 V	SCS JET DRIVER 8 STIM				A	3			+0	+28	VDC	
C H1200 X Y	RATE IN TRANSFER RELAY				A	3					EVENT	
C H1201 X Y	G-N ATT IN RELAY				A	3					EVENT	
C H1202 X Y	AG ATT IN RELAY				A	3					EVENT	
C H1203 X Y	0.05 G SWITCH RELAY				A	3					EVENT	
C H1204 X Y	ENTRY GAIN RELAY				A	3					EVENT	
C H1206 X	DEADBAND CHANGE RELAY				A	3					EVENT	
C H1207 X Y	TVC ENABLE RELAY				A	3					EVENT	
C H1208 X Y	TVC GAIN CHANGE RELAY				A	3					EVENT	
C H1209 X Y	TVC ELECT TRANSFER RELAY				AP	3	1	S/S			EVENT	
C H1210 X Y	SERVO 1 ENGAGE RELAY				AP	3	1	S/S			EVENT	
C H1211 X Y	SERVO 2 ENGAGE RELAY				AP	3	1	S/S			EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H1217	X Y AUTO INTERRUPT RELAY				AP	3	1 S/S			EVENT	
C H1218	X Y PSEUDO RATE CUTOUT RELAY				A	3				EVENT	
C H1220	V ECA Y GPI 1 POWER +20 VDC				A	3		+0	+22	VDC	
C H1221	V ECA Y GPI 1 POWER -20 VDC				A	3		-22	+0	VDC	
C H1224	V ECA Y TVC 1 POWER +30 VDC				A	3		+0	+32	VDC	
C H1225	V ECA Y TVC 1 POWER -30 VDC				A	3		-32	+0	VDC	
C H1226	V ECA Y TVC 1 POWER +35 VDC				A	3		+0	+40	VDC	
C H1227	V ECA Y TVC 2 POWER +35 VDC				A	3		+0	+40	VDC	
C H1228	V ECA Y TVC 2 POWER +30 VDC				A	3		+0	+32	VDC	
C H1229	V ECA Y TVC 2 POWER -30 VDC				A	3		-32	+0	VDC	
C H1230	V 26V 400 CPS PHASE A ECA Y				A	3					
C H1400	V YAW SIG GROUND				A	3				GND	
C H1401	V AGAP-RGP SIG GROUND				A	3				GND	
C H1402	V ECA Y TVC 1 POWER +35 VDC RETURN				A	3					
C H1403	V ECA Y TVC 2 POWER +35 VDC RETURN				A	3					
C H1411	V ECA Y GPX 2 POWER 26 VAC PH A				A	3					
C H1413	V YTV LIMITER AMP OUT				AP	3	50 S/S				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H1613 V	YTV LIMITER AMP NULL				AP	3	1	S/S				
C H1628 V	YAW 2 VEL GEN NULL				AP	3	1	S/S				
C H1632 V	YAW 1 VEL GEN NULL				AP	3	1	S/S				
C H1660 V	YAW TOTAL ERROR AMP NULL				AP	3	1	S/S				
C H2005 V	ECA R VOLTAGE LEVEL +40 VDC				A	3			+0	+40.8	VDC	
C H2006 V	ECA R VOLTAGE LEVEL -40 VDC				A	3			-40.8	+0	VDC	
C H2007 V	ECA R VOLTAGE LEVEL +20 VDC				A	3			+0	+22	VDC	
C H2008 V	ECA R VOLTAGE LEVEL -20 VDC				A	3			-22	+0	VDC	
C H2012 V	-4 VDC ECA R				A	3			-4.6	+0	VDC	
C H2013 V	+31.9 VDC ECA R				A	3			+0	+31.9	VDC	
C H2015 V	COMBINED AG SMRD				A	3						
C H2016 F	PITCH AG SMRD				AP	3	10	S/S				
C H2017 F	YAW AG SMRD				AP	3	10	S/S				
C H2018 F	ROLL AG SMRD				AP	3	10	S/S				
C H2019 V	DC POWER GROUND ECA R				A	3					GND	
C H2020 V	G-N ROLL ERROR DEMOD IN				AP	3	10	S/S				
C H2024 V	ROLL RATE	PCM				2	50	S/S				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H2025 V	ROLL MAN ROTATION CONTROL OUT	PCM			A	2	50	S/S	+0	+6	VRMS	
C H2026 X	COMBINED RG SMRD				A	3						
C H2027 F	PITCH RG SMRD				AP	3	10	S/S				
C H2028 F	YAW RG SMRD				AP	3	10	S/S				
C H2029 F	ROLL RG SMRD				AP	3	10	S/S				
C H2030 T	COMBINED ATTITUDE GYRO TEMP	PCM				2	1	S/S				
C H2045 V	ROLL RATE GYRO OUT				AP	3	10	S/S	+0	+2.8	VRMS	
C H2048 X	ROLL MIN IMPULSE CONTROL				A	3					EVENT	
C H2050 V	ROLL RATE ERROR AMP OUT				AP	3	10	S/S				
C H2060 V	ROLL TOTAL ERROR AMP OUT				AP	3	10	S/S				
C H2061 X	+ ROLL ROTATION LOGIC IN				A	3					EVENT	
C H2062 X	- ROLL ROTATION LOGIC IN				A	3					EVENT	
C H2070 V	ROLL ATTITUDE ERROR AMP OUT				AP	2	10	S/S				
C H2075 V	ROLL SCS ATT ERROR	PCM+				2 X	10	S/S	+0	+10	VRMS	
C H2076 V	ROLL AG PRE AMP OUT				AP	3	10	S/S				
C H2081 X	ECA R TRANSLATION STICK +Z COMD				A	3					EVENT	
C H2082 X	ECA R TRANSLATION STICK -Z COMD				A	3					EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXC	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H2083 X	ECA R TRANSLATION STICK +Y COMD				A	3					EVENT	
C H2084 X	ECA R TRANSLATION STICK -Y COMD				A	3					EVENT	
C H2085 X	R/Z SOLENOID DRIVERS DISABLE 1				AP	3	1	S/S				
C H2086 X	R/Y SOLENOID DRIVERS DISABLE 2				AP	3	1	S/S				
C H2087 X	+ ROLL/+Z SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H2088 X	- ROLL/+Z SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H2089 X	+ ROLL/-Z SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H2090 X	- ROLL/-Z SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H2091 X	+ ROLL/+Y SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H2092 X	- ROLL/+Y SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H2093 X	+ ROLL/-Y SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H2094 X	- ROLL/-Y SOLENOID DRIVER OUT	PCME				2	200	S/S			EVENT	
C H2187 V	SCS JET DRIVER 9 STIM				A	3			+0	+28	VDC	
C H2188 V	SCS JET DRIVER 10 STIM				A	3			+0	+28	VDC	
C H2189 V	SCS JET DRIVER 11 STIM				A	3			+0	+28	VDC	
C H2190 V	SCS JET DRIVER 12 STIM				A	3			+0	+28	VDC	
C H2191 V	SCS JET DRIVER 13 STIM				A	3			+0	+28	VDC	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H2192 V	SCS JET DRIVER 14 STIM				A	3		+0	+28	VDC	
C H2193 V	SCS JET DRIVER 15 STIM				A	3		+0	+28	VDC	
C H2194 V	SCS JET DRIVER 16 STIM				A	3		+0	+28	VDC	
C H2200 X R	RATE IN TRANSFER RELAY				A	3				EVENT	
C H2201 X R	G-N ATT IN RELAY				A	3				EVENT	
C H2202 X R	AG ATT IN RELAY				A	3				EVENT	
C H2203 X R	.05 G SWITCH RELAY				A	3				EVENT	
C H2204 X R	ENTRY GAIN RELAY				A	3				EVENT	
C H2209 X	G-N SYNC RELAY				A	3				EVENT	
C H2217 X R	AUTO INTERRUPT RELAY				AP	3	1 S/S			EVENT	
C H2218 X R	PSEUDO RATE CUTOUT RELAY				A	3				EVENT	
C H2240 V	ECA R VOLTAGE LEVEL +30 VDC				A	3					
C H2241 V	ECA R VOLTAGE LEVEL +15 VDC				A	3					
C H2242 V	ECA R VOLTAGE LEVEL -15 VDC				A	3					
C H2243 V	ECA R VOLTAGE LEVEL 20V SQW 1				A	3					
C H2244 V	ECA R VOLTAGE LEVEL 20V SQW 2				A	3					
C H2246 V	ECA R VOLTAGE LEVEL -10 VDC				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H2247 V	R SIG COND POWER SUPPLY RETURN				A	3						
C H2400 V	ROLL SIGNAL GROUND				A	3					GND	
C H2401 V	AGAP-RGP SIGNAL GROUND				A	3					GND	
C H2660 V	ROLL TOTAL ERROR AMP NULL				AP	3	1	S/S				
C H3005 V	ECA D VOLTAGE LEVEL +20 VDC 1				A	3						
C H3006 V	ECA D VOLTAGE LEVEL -20 VDC 1				A	3						
C H3007 V	ECA D VOLTAGE LEVEL +20 VDC 2				A	3						
C H3008 V	ECA D VOLTAGE LEVEL -20 VDC 2				A	3						
C H3012 V	26V 400 CPS PHASE A AG MTR POWER				A	3						
C H3013 V	26V 400 CPS PHASE C AG MTR POWER				A	3						
C H3014 V	AC POWER GROUND (MOTOR PHASE B)				A	3					GND	
C H3019 V	DC POWER GROUND GYRO				A	3					GND	
C H3040 X	ROLL WARM UP OUT				A	3						
C H3041 X	PITCH WARM UP OUT				A	3						
C H3042 X	YAW WARM UP OUT				A	3						
C H3129 V	PITCH ATT SERVO AMP OUT			X	A	1						
C H3130 V	YAW ATT SERVO AMP OUT			X	A	1						

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H3131 V	ROLL ATT SERVO AMP OUT			X	A	1					
C H3135 V	PITCH GPI AMP DEMOD OUT			X	A	1					
C H3136 V	YAW GPI AMP DEMOD OUT			X	A	1					
C H3150 H	PITCH ATT GYRO OUT				AP	3	1	S/S			
C H3151 H	YAW ATT GYRO OUT				AP	3	1	S/S			
C H3152 H	ROLL ATT GYRO OUT				AP	3	1	S/S			
C H3160 V	PITCH AG TORQUE AMP OUT				A	3					
C H3161 V	YAW AG TORQUE AMP OUT				A	3					
C H3162 V	ROLL AG TORQUE AMP OUT				A	3					
C H3165 A	ACCELEROMETER OUT				A	3					
C H3170 V	DV REMAINING IND MOTOR WIND-1			X	A	1					
C H3171 V	DV REMAINING IND MOTOR WIND-2			X	A	1					
C H3174 V	4KC CLOCK REF LO				A	3					
C H3175 V	PITCH ATT VEL GEN OUT				A	3					
C H3176 V	YAW ATT VEL GEN OUT				A	3					
C H3177 V	ROLL ATT VEL GEN OUT				A	3					
C H3178 V	4KC CLOCK REF HI				AP	3	1	S/S			

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H3179	A AXIS ACCEL TORQUER				AP	3	10 S/S				
C H3180	A AXIS ACCEL TORQUER (RET)				AP	3	1 S/S				
C H3181	X DV REMAINING SET SWITCH				A	3					
C H3184	V DV REMAINING POT OUT	PCM			A	2	10 S/S				
C H3185	X .05 G MANUAL SWITCH	PCME			P	2	10 S/S				
C H3187	V AC SIG GEN PRIMARY 3.6 VAC PWR				A	3					
C H3200	X ECA D PITCH BACK-UP RATE RELAY				AP	3	1 S/S			EVENT	
C H3201	X ECA D YAW BACK-UP RATE RELAY				AP	3	1 S/S			EVENT	
C H3202	X ECA D ROLL BACK-UP RATE RELAY				AP	3	1 S/S			EVENT	
C H3203	X AGCU OUT TORQUE AMP IN RELAY				AP	3	1 S/S			EVENT	
C H3204	X AGAP SUM AMP OUT AGCU IN RELAY				AP	3	1 S/S			EVENT	
C H3205	X ECA D WARM UP RELAY				A	3				EVENT	
C H3206	X 2 SEC ROT CONT DELAY SIG				A	3				EVENT	
C H3207	X ECA D TEMP OUTBAND RELAY			L *	A	3				EVENT	
C H3212	X ECA D AGCU TORQUE/MODE RELAY				A	3				EVENT	
C H3217	X ECA D DV INTEGRATOR INHIBIT RLY				AP	3	1 S/S			EVENT	
C H3218	X ECA D THRUST ON RELAY				A	3				EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H3250 V	PITCH VELOCITY AMP DEMOD OUT			X	A	1					
C H3251 V	YAW VELOCITY AMP DEMOD OUT			X	A	1					
C H3252 V	ROLL VELOCITY AMP DEMOD OUT			X	A	1					
C H3253 V	FDAI PITCH RESOLVER OUT				A	3					
C H3254 V	FDAI YAW RESOLVER OUT				A	3					
C H3255 V	FDAI ROLL RESOLVER OUT				A	3					
C H3256 V	PITCH ERROR AMP DEMOD OUT			X	A	1					
C H3257 V	YAW ERROR AMP DEMOD OUT			X	A	1					
C H3258 V	ROLL ERROR SERVO AMP OUT			X	A	1					
C H3259 X	COINCIDENCE DETECT ENABLE SWITCH				A	3					
C H3261 X	TAIL OFF SET SWITCH				A	3					
C H3270 V	COINCIDENCE DETECT POT OUT				A	3					
C H3271 H	PITCH GIMBAL POS IN				AP	3	50			S/S	
C H3272 H	YAW GIMBAL POS IN				AP	3	50			S/S	
C H3273 V	G-N PITCH ERROR IN				A	3					
C H3274 V	G-N YAW ERROR IN				A	3					
C H3275 V	G-N ROLL ERROR IN				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H3276 H	FDAI ROLL ERROR POS OUT				A	3				
C H3278 X	SELF TEST				A	3				
C H3282 V	FDAI ROLL ERROR VEL GEN OUT				A	3				
C H3303 V	28 VDC SCS INPUT POWER DISP				A	3				
C H3304 V	G-N 800 CPS REF HIGH				A	3				
C H3312 V	G-N 800 CPS REF LOW				A	3			GND	
C H3319 V	DC POWER GROUND DISP				A	3				
C H3321 V	DV SIG GROUND DISP				A	3				
C H3325 V	ECA D VOLTAGE LEVEL +40 VDC				A	3				
C H3326 V	ECA D VOLTAGE LEVEL -40 VDC				A	3				
C H3327 V	ECA D VOLTAGE LEVEL +20 VDC				A	3				
C H3328 V	ECA D VOLTAGE LEVEL +28 VDC				A	3				
C H3329 V	ECA D VOLTAGE LEVEL +12 VDC PS 1				A	3				
C H3330 V	ECA D VOLTAGE LEVEL -12 VDC PS 1				A	3				
C H3331 V	ECA D VOLTAGE LEVEL +12 VDC PS 2				A	3				
C H3332 V	ECA D VOLTAGE LEVEL -12 VDC PS 2				A	3				
C H3334 V	ECA D VOLTAGE LEVEL +7.5 VDC				A	3				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H3335	V ECA D VOLTAGE LEVEL -7.5 VDC				A	3					
C H3401	V ECA D AGAP-RGP SIGNAL GROUND				A	3				GND	
C H3665	A ACCELEROMETER OUT NULL				A	3					
C H4001	V 26 V 400 CPS LAG PH A 23.7 DEG				A	3					
C H4002	V 115V 400 CPS PHASE A				A	3					
C H4003	V 115V 400 CPS PHASE B				A	3					
C H4004	V 115V 400 CPS PHASE C				A	3					
C H4005	V ECA X VOLTAGE LEVEL +40 VDC				A	3		+0	+46	VDC	
C H4006	V ECA X VOLTAGE LEVEL -40 VDC				A	3		-46	+0	VDC	
C H4007	V ECA X VOLTAGE LEVEL +20 VDC				A	3		+0	+23	VDC	
C H4008	V ECA X VOLTAGE LEVEL -20 VDC				A	3		-23	+0	VDC	
C H4009	V 28 VDC SCS INPUT POWER ECA X				A	3					
C H4012	V 20V 400 CPS PH B ECA X				A	3					
C H4013	V +31.1 VDC				A	3					
C H4014	V AC POWER GROUND ECA X				A	3				GND	
C H4015	V 20V 400 CPS PH B ECA X RET				A	3				GND	
C H4019	V DC POWER GROUND ECA X				A	3				GND	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C H4100 H	RESOLVER SIN OUT PITCH ATT	PCM+				2	X 10	S/S				
C H4101 H	RESOLVER COS OUT PITCH ATT	PCM+				2	X 10	S/S				
C H4102 H	RESOLVER SIN OUT YAW ATT	PCM+				2	X 10	S/S				
C H4103 H	RESOLVER COS OUT YAW ATT	PCM+				2	X 10	S/S				
C H4104 H	RESOLVER SIN OUT ROLL ATT	PCM+				2	X 10	S/S				
C H4105 H	RESOLVER COS OUT ROLL ATT	PCM+				2	X 10	S/S				
C H4200 X	FDAI ALIGN RELAY				A	3						
C H4300 V	AGCU PITCH ERROR OUT				AP	3	1	S/S				
C H4301 V	AGCU YAW WIND ERROR OUT				AP	3	1	S/S				
C H4302 V	AGCU ROLL WIND ERROR OUT				AP	3	1	S/S				
C H4310 V	PITCH ATT SET ERROR				A	3						
C H4311 V	YAW ATT SET ERROR				A	3						
C H4312 V	ROLL ATT SET ERROR				A	3						
C H4320 X	SPS SOLENOID DRIVER OUT 1	PCME				2	50	S/S			EVENT	
C H4321 X	SPS SOLENOID DRIVER OUT 2	PCME				2	50	S/S			EVENT	
C H4322 X	G-N THRUST ON/OFF PULSE TRAIN IN			X	A	1						
C H4323 X	DV THRUST OFF MAN CONT				AP	3	1	S/S			EVENT	

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H4324 X	DV THRUST INITIATE MAN CONT			X	AP	3	1	S/S			EVENT
C H4330 V	PITCH AG ERROR OUTPUT				AP	3	10	S/S			
C H4331 V	YAW AG WIND AXIS ERROR OUT				AP	3	10	S/S			
C H4332 V	ROLL AG WIND AXIS ERROR OUT				AP	3	10	S/S			
C H4335 X	TRANS STICK ENG OFF COMD				A	3					EVENT
C H4340 X	AUTO DV ON/OFF COMD				AP	3	1	S/S			EVENT
C H4350 V	PITCH EULER ANGLE ERROR				A	3					
C H4351 V	AGCU PITCH GATE OUT				A	3					
C H4352 V	YAW EULER ANGLE ERROR				A	3					
C H4353 V	AGCU YAW GATE OUT				A	3					
C H4354 V	AGCU ROLL GATE OUT				A	3					
C H4356 V	ORBITAL RATE IN				A	3					
C H4357 V	LOGIC ENABLE				A	3					
C H4359 V	YAW RSVR 1A OUT TORQUE AMP IN				A	3					
C H4360 V	YAW RSVR 1B OUT				A	3					
C H4361 V	YAW RSVR 3 OUT BUFFER AMP IN				A	3					
C H4362 V	AGCU PITCH TORQUE COMD				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H4363 V	AGCU ROLL/YAW TORQUE COMD				A	3					
C H4364 V	AGCU SQ WAVE GEN PHASE A				AP	3	1	S/S			
C H4365 V	AGCU SQ WAVE GEN PHASE A-180 DEG				AP	3	1	S/S			
C H4366 V	ECA VOLTAGE LEVEL -4 VDC				A	3					
C H4400 V	AGCU PITCH MOTOR COIL DRIVER 1				A	3				EVENT	
C H4401 V	AGCU PITCH MOTOR COIL DRIVER 2				A	3				EVENT	
C H4402 V	AGCU PITCH MOTOR COIL DRIVER 3				A	3				EVENT	
C H4403 V	AGCU PITCH MOTOR COIL DRIVER 4				A	3				EVENT	
C H4404 V	AGCU YAW MOTOR COIL DRIVER 1				A	3				EVENT	
C H4405 V	AGCU YAW MOTOR COIL DRIVER 2				A	3				EVENT	
C H4406 V	AGCU YAW MOTOR COIL DRIVER 3				A	3				EVENT	
C H4407 V	AGCU YAW MOTOR COIL DRIVER 4				A	3				EVENT	
C H4408 V	AGCU ROLL MOTOR COIL DRIVER 1				A	3				EVENT	
C H4409 V	AGCU ROLL MOTOR COIL DRIVER 2				A	3				EVENT	
C H4410 V	AGCU ROLL MOTOR COIL DRIVER 3				A	3				EVENT	
C H4411 V	AGCU ROLL MOTOR COIL DRIVER 4				A	3				EVENT	
C H4412 V	AGCU PITCH FORWARD CONTROL				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H4413 V	AGCU YAW FORWARD CONTROL				A	3					
C H4414 V	AGCU ROLL FORWARD CONTROL				A	3					
C H4415 V	AGCU PITCH REVERSE CONTROL				A	3					
C H4416 V	AGCU YAW REVERSE CONTROL				A	3					
C H4417 V	AGCU ROLL REVERSE CONTROL				A	3					
C H4418 V	AGCU PITCH DEMOD OUT				A	3					
C H4419 V	AGCU YAW DEMOD OUT				A	3					
C H4422 V	AGCU PITCH MOTOR LOGIC SET				A	3					
C H4423 V	AGCU YAW MOTOR LOGIC SET				A	3					
C H4424 V	AGCU ROLL MOTOR LOGIC SET				A	3					
C H4425 V	28 VDC STEPPER MOTOR AGCU				AP	3	1		S/S		
C H4430 X	PITCH FORWARD SET OUT				A	3				EVENT	
C H4431 X	PITCH FORWARD RESET OUT				A	3				EVENT	
C H4432 X	PITCH REVERSE SET OUT				A	3				EVENT	
C H4433 X	PITCH REVERSE RESET OUT				A	3				EVENT	
C H4434 X	YAW FORWARD SET OUT				A	3				EVENT	
C H4435 X	YAW FORWARD RESET OUT				A	3				EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H4436 X	YAW REVERSE SET OUT				A	3				EVENT	
C H4437 X	YAW REVERSE SET OUT				A	3				EVENT	
C H4438 X	ROLL FORWARD SET OUT				A	3				EVENT	
C H4439 X	ROLL FORWARD RESET OUT				A	3				EVENT	
C H4440 X	ROLL REVERSE SET OUT				A	3				EVENT	
C H4441 X	ROLL REVERSE RESET OUT				A	3				EVENT	
C H4602 X	PHASE ROTATION 115V 400CPS				AP	3	1	S/S		EVENT	
C H4630 V	PITCH AG ERROR NULL				A	3					
C H4631 V	YAW AG WIND AXIS ERROR NULL				A	3					
C H4632 V	ROLL AG WIND AXIS ERROR NULL				A	3					
C H4700 B	AGCU PITCH ERROR PHASE				A	3					
C H4701 B	AGCU YAW ERROR PHASE				A	3					
C H4702 B	AGCU ROLL ERROR PHASE				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
S P0001 P	HE PRESS TANK	PCM+		M	T	1 X 10	S/S		+0	+5K	PSIA	
S P0003 P	PRESS OXIDIZER TANKS	PCM+		M *	T	1 10	S/S		+0	+300	PSIA	
S P0006 P	PRESS FUEL TANKS	PCM+		M *	T	1 10	S/S		+0	+300	PSIA	
S P0009 P	PRESS MAIN VLV ENG OXIDIZER IN	PCM		M	T	1 X 10	S/S		+0	+300	PSIA	
S P0010 P	PRESS MAIN VLV ENG FUEL IN	PCM		M	T	1 X 10	S/S		+0	+300	PSIA	
S P0011 Q	TOTAL QUANTITY OXIDIZER			M		1			+0	+31K	LB	
S P0012 Q	TOTAL QUANTITY FUEL			M		1			+0	+16K	LB	
S P0020 T	TEMP CHAMBER OUTER SKIN 1	PCM		L *		1 X 1	S/S		+0	+500	DEG F	
S P0022 H	POSITION FUEL/OXIDIZER VLV 1	PCM				2 X 10	S/S		+0	+90	DEG	
S P0023 H	POSITION FUEL/OXIDIZER VLV 2	PCM				2 X 10	S/S		+0	+90	DEG	
S P0024 H	POSITION FUEL/OXIDIZER VLV 3	PCM				2 X 10	S/S		+0	+90	DEG	
S P0025 H	POSITION FUEL/OXIDIZER VLV 4	PCM				2 X 10	S/S		+0	+90	DEG	
S P0026 H	POSITION FUEL/OXIDIZER VLV 1			M		1			+0	+90	DEG	
S P0027 H	POSITION FUEL/OXIDIZER VLV 2			M		1			+0	+90	DEG	
S P0028 H	POSITION FUEL/OXIDIZER VLV 3			M		1			+0	+90	DEG	
S P0029 H	POSITION FUEL/OXIDIZER VLV 4			M		1			+0	+90	DEG	
S P0030 X	HE ISOLATION VLV 1			TB	TP	1 10	S/S	CLOSE		OPEN	EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S P0031 X	HE ISOLATION VLV 2		TB	TP		1	10 S/S	CLOSE	OPEN	EVENT	
S P0046 H	PU VALVE INCREASE MON		TB	P		1	1 S/S				
S P0047 H	PU VALVE DECREASE MON		TB	P		1	1 S/S				
S P0050 T	TEMP NOZZLE OUTER SKIN 1	PCM				2	1 S/S	-250	+2500	DEG F	
S P0099 P	PRESS TEST POINT 1			T		3		+0	+5K	PSIG	
S P0100 P	PRESS TEST POINT 2			T		3		+0	+5K	PSIG	
S P0101 P	PRESS TEST POINT 3			T		3		+0	+5K	PSIG	
S P0102 P	PRESS TEST POINT 4			T		3		+0	+300	PSIG	
S P0103 P	PRESS TEST POINT 5			T		3		+0	+300	PSIG	
S P0104 P	PRESS TEST POINT 6			T		3		+0	+300	PSIG	
S P0105 P	PRESS TEST POINT 7			T		3		+0	+300	PSIG	
S P0106 P	PRESS TEST POINT 8			T		3		+0	+300	PSIG	
S P0107 P	PRESS TEST POINT 9			T		3		+0	+300	PSIG	
S P0108 P	PRESS TEST POINT 10			T		3		+0	+300	PSIG	
S P0109 P	PRESS TEST POINT 11			T		3		+0	+250	PSIG	
S P0110 P	PRESS TEST POINT 12			T		3		+0	+250	PSIG	
S P0111 P	PRESS TEST POINT 13			T		3		+0	+300	PSIG	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	LOW	DATA RANGE HIGH	UNITS	LOCATION
S P0112 P	PRESS TEST POINT 14				T	3			+0	+300 PSIG	
S P0113 P	PRESS TEST POINT 15				T	3			+0	+300 PSIG	
S P0114 P	PRESS TEST POINT 16				T	3			+0	+300 PSIG	
S P0115 P	PRESS TEST POINT 17				T	3			+0	+300 PSIG	
S P0116 P	PRESS TEST POINT 18				T	3			+0	+300 PSIG	
S P0118 P	PRESS TEST POINT 20				T	3			+0	+50 PSIA	
S P0119 P	PRESS TEST POINT 21				T	3			+0	+50 PSIA	
S P0120 P	PRESS TEST POINT 22				T	3			+0	+50 PSIA	
S P0121 P	PRESS TEST POINT 23				T	3			+0	+50 PSIA	
S P0640 Q	PROPELLANT UNBALANCE (OXIDIZER)			M		1			-300	+300 LB	
S P0655 Q	QUANTITY SPS OXIDIZER TANK 1	PCM			T	2 X 1	S/S		+0	+16K LB	
S P0656 Q	QUANTITY SPS OXIDIZER TANK 2	PCM			T	2 X 1	S/S		+0	+16K LB	
S P0657 Q	QUANTITY SPS FUEL TANK 1	PCM			T	2 X 1	S/S		+0	+8K LB	
S P0658 Q	QUANTITY SPS FUEL TANK 2	PCM			T	2 X 1	S/S		+0	+8K LB	
S P0661 P	PRESS ENGINE CHAMBER	PCM				2 X 100	S/S		+0	+150 PSIA	
S P0662 X	SERVICE ENG SOL VLV 1, 2 SIG MON				TP	3 1	S/S		OFF	ON EVENT	
S P0664 X	SERVICE ENG SOL VLV 3, 4 SIG MON				TP	3 1	S/S		OFF	ON EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	TM	ACCESSIBILITY AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S PC666	X SERVICE ENG SOL VLV 5 SIG MON				TP	3	1	S/S	OFF	ON EVENT	
S PC667	X SERVICE ENG SOL VLV 6 SIG MON				TP	3	1	S/S	OFF	ON EVENT	
S P1000	X PITCH MOTOR FAIL		L	*	P	1	1	S/S		EVENT	
S P1001	X YAW MOTOR FAIL		L	*	P	1	1	S/S		EVENT	
S P1002	X SPS PU SENSOR FAIL		L	*	P	1	1	S/S		EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C R0001 P	HE PRESS TANK A	PCM+		SM		1 X 1	S/S	+0	+5K	PSIA	
C R0002 P	HE PRESS TANK B	PCM+		SM		1 X 1	S/S	+0	+5K	PSIA	
C R0003 T	HE TEMP TANK A	PCM		SM		1 1	S/S	+0	+300	DEG F	
C R0004 T	HE TEMP TANK B	PCM		SM		1 1	S/S	+0	+300	DEG F	
C R0005 P	PRESS FUEL TANK A	PCM+		SM *		1 X 10	S/S	+0	+400	PSIA	
C R0006 P	PRESS FUEL TANK B	PCM+		SM *		1 X 10	S/S	+0	+400	PSIA	
C R0011 P	PRESS OXIDIZER TANK A	PCM+		SM *		1 X 10	S/S	+0	+400	PSIA	
C R0012 P	PRESS OXIDIZER TANK B	PCM+		SM *		1 X 10	S/S	+0	+400	PSIA	
C R0030 X	COMBINED HE ISOLATION VLVS A MON			TB		1		CLOSE	OPEN	EVENT	
C R0031 X	COMBINED HE ISOLATION VLVS B MON			TB		1		CLOSE	OPEN	EVENT	
C R1001 P	PRESS TEST POINT 65				T	3					
C R1002 P	PRESS TEST POINT 64				T	3					
C R1003 P	PRESS TEST POINT 15				T	3					
C R1004 P	PRESS TEST POINT 14				T	3					
C R1005 P	PRESS TEST POINT 54				T	3					
C R1006 P	PRESS TEST POINT 53				T	3					
C R1007 P	PRESS TEST POINT 4				T	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXC	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C R1008	P PRESS TEST POINT 3				T	3					
C R1009	P PRESS TEST POINT 55				T	3					
C R1010	P PRESS TEST POINT 5				T	3					
C R1011	X HE SQUIB VALVE A CONTINUITY				T	3					
C R1012	X HE SQUIB VALVE B CONTINUITY				T	3					
C R1020	X COMBINED PROP ISO VLV MON SYS A			TB		1				EVENT	
C R1021	X COMBINED PROP ISO VLV MON SYS B			TB		1				EVENT	
C R1030	X HE ISOLATION VALVE A1 POS				TP	3	1	S/S CLOSE	OPEN	EVENT	
C R1031	X HE ISOLATION VALVE B1 POS				TP	3	1	S/S CLOSE	OPEN	EVENT	
C R1032	X HE ISOLATION VALVE A2 POS				TP	3	1	S/S CLOSE	OPEN	EVENT	
C R1033	X HE ISOLATION VALVE B2 POS				TP	3	1	S/S CLOSE	OPEN	EVENT	
C R1034	X FUEL ISOLATION VALVE A1 POS				TP	3	1	S/S CLOSE	OPEN	EVENT	
C R1035	X FUEL ISOLATION VALVE B1 POS				TP	3	1	S/S CLOSE	OPEN	EVENT	
C R1036	X OXIDIZER ISOLATION VALVE A1 POS				TP	3	1	S/S CLOSE	OPEN	EVENT	
C R1037	X OXIDIZER ISOLATION VALVE B1 POS				TP	3	1	S/S CLOSE	OPEN	EVENT	
C R1040	P PRESS TEST POINT 52				T	3					
C R1041	P PRESS TEST POINT 2				T	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS	DATA RANGE LOW	HIGH	UNITS	LOCATION
C R1042 P	PRESS TEST POINT 56				T	3				
C R1043 P	PRESS TEST POINT 57				T	3				
C R1044 P	PRESS TEST POINT 6				T	3				
C R1045 P	PRESS TEST POINT 7				T	3				
C R1046 P	PRESS TEST POINT 58				T	3				
C R1047 P	PRESS TEST POINT 59				T	3				
C R1048 P	PRESS TEST POINT 8				T	3				
C R1049 P	PRESS TEST POINT 9				T	3				
C R1050 P	PRESS TEST POINT 60				T	3				
C R1051 P	PRESS TEST POINT 10				T	3				
C R1052 P	PRESS TEST POINT 61				T	3				
C R1053 P	PRESS TEST POINT 11				T	3				
C R1054 P	PRESS TEST POINT 62				T	3				
C R1055 P	PRESS TEST POINT 12				T	3				
C R1056 P	PRESS TEST POINT 63				T	3				
C R1057 P	PRESS TEST POINT 13				T	3				
C R1058 P	PRESS TEST POINT 66				T	3				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS	DATA RANGE LOW	HIGH	UNITS	LOCATION
C R1059 P	PRESS TEST POINT 16				T	3				
C R1060 P	PRESS TEST POINT 67				T	3				
C R1061 P	PRESS TEST POINT 17				T	3				
C R1070 P	PRESS TEST POINT 51				T	3				
C R1071 P	PRESS TEST POINT 1				T	3				
C R1072 P	PRESS TEST POINT 68				T	3				
C R1073 P	PRESS TEST POINT 18				T	3				
C R1074 P	PRESS TEST POINT 69				T	3				
C R1075 P	PRESS TEST POINT 19				T	3				
C R1076 P	PRESS TEST POINT 70				T	3				
C R1077 P	PRESS TEST POINT 20				T	3				
C R1078 P	PRESS TEST POINT 71				T	3				
C R1079 P	PRESS TEST POINT 21				T	3				
C R1120 X	OX DUMP SQUIB VLV CONT SYS A				T	3				
C R1121 X	OX DUMP SQUIB VLV CONT SYS B				T	3				
C R1122 X	OX-HE BYPAS SQUIB VLV CONT SYS A				T	3				
C R1123 X	OX-HE BYPAS SQUIB VLV CONT SYS B				T	3				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C R1124 X	FUEL-HE BYPASS SQUIB VLV CONT A				T	3					
C R1125 X	FUEL-HE BYPASS SQUIB VLV CONT B				T	3					
C R1126 X	HE INTERCON SQUIB VLV CONT-FUEL				T	3					
C R1127 X	HE INTERCON SQUIB VLV CONT (OX)				T	3					
C R1128 X	OX SYS INTERCON SQUIB VLV CONT				T	3					
C R1129 X	FUEL SYS INTERCON SQUIB VLV CONT				T	3					
S R5001 P	HE PRESS TANK A	PCM+		SM		1 X 1	S/S	+0	+5K	PSIA	XA963,YA-11,ZA-81
S R5002 P	HE PRESS TANK B	PCM+		SM		1 X 1	S/S	+0	+5K	PSIA	XA963,YA81,ZA-11
S R5003 P	HE PRESS TANK C	PCM+		SM		1 X 1	S/S	+0	+5K	PSIA	XA963,YA11,ZA81
S R5004 P	HE PRESS TANK D	PCM+		SM		1 X 1	S/S	+0	+5K	PSIA	XA963,YA-81,ZA11
S R5005 T	HE TEMP TANK A				TP	3 1	S/S	-100	+200	DEG F	XA963,YA-11,ZA-81
S R5006 T	HE TEMP TANK B				TP	3 1	S/S	-100	+200	DEG F	XA963,YA81,ZA-11
S R5007 T	HE TEMP TANK C				TP	3 1	S/S	-100	+200	DEG F	XA963,YA11,ZA81
S R5008 T	HE TEMP TANK D				TP	3 1	S/S	-100	+200	DEG F	XA963,YA-81,ZA11
S R5017 T	TEMP FUEL LINE A				T	3		+0	+200	DEG F	
S R5018 T	TEMP FUEL LINE B				T	3		+0	+200	DEG F	
S R5019 T	TEMP FUEL LINE C				T	3		+0	+200	DEG F	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXC	DISP	GSE	MCPG SYRS	RESPONSE	LOW	DATA RANGE HIGH	UNITS	LOCATION
S R5020 T	TEMP FUEL LINE D				T	3		+0	+200	DEG F	
S R5050 X	COMBINED PROP ISO VLV MON SYS A			TB		1				EVENT	
S R5051 X	COMBINED PROP ISO VLV MON SYS B			TB		1				EVENT	
S R5052 X	COMBINED PROP ISO VLV MON SYS C			TB		1				EVENT	
S R5053 X	COMBINED PROP ISO VLV MON SYS D			TB		1				EVENT	
S R5055 Q	QUANTITY FUEL TANKS A,B,C,D	PCMD		SM		1 X 10	S/S	+0	+70	LB	
S R5056 Q	QUANTITY OX TANKS A,B,C,D	PCMD		SM		1 X 10	S/S	+0	+140	LB	
S R5060 X	OX/FUEL RATIO UNBALANCE SYS A			L *		1					
S R5061 X	OX/FUEL RATIO UNBALANCE SYS B			L *		1					
S R5062 X	OX/FUEL RATIO UNBALANCE SYS C			L *		1					
S R5063 X	OX/FUEL RATIO UNBALANCE SYS D			L *		1					
S R5065 T	TEMP ENGINE PACKAGE A1	PCM		SM *		1 X 1	S/S	+0	+300	DEG F	XA963,YA-11,ZA-81
S R5066 T	TEMP ENGINE PACKAGE B1	PCM		SM *		1 X 1	S/S	+0	+300	DEG F	XA963,YA-81,ZA11
S R5067 T	TEMP ENGINE PACKAGE C1	PCM		SM *		1 X 1	S/S	+0	+300	DEG F	XA963,YA11,ZA81
S R5068 T	TEMP ENGINE PACKAGE D1	PCM		SM *		1 X 1	S/S	+0	+300	DEG F	XA963,YA81,ZA-11
S R5101 X	HE ISOLATION VLV A1 POSITION			TB	TP	1 1	S/S	OPEN	CLOSE	EVENT	
S R5102 X	HE ISOLATION VLV B1 POSITION			TB	TP	1 1	S/S	OPEN	CLOSE	EVENT	

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
S R5103 X	HE ISOLATION VLV C1 POSITION			TB	TP	1	1	S/S	OPEN	CLOSE	EVENT	
S R5104 X	HE ISOLATION VLV D1 POSITION			TB	TP	1	1	S/S	OPEN	CLOSE	EVENT	
S R5105 X	HE ISOLATION VLV A2 POSITION			TB	TP	1	1	S/S	OPEN	CLOSE	EVENT	
S R5106 X	HE ISOLATION VLV B2 POSITION			TB	TP	1	1	S/S	OPEN	CLOSE	EVENT	
S R5107 X	HE ISOLATION VLV C2 POSITION			TB	TP	1	1	S/S	OPEN	CLOSE	EVENT	
S R5108 X	HE ISOLATION VLV D2 POSITION			TB	TP	1	1	S/S	OPEN	CLOSE	EVENT	
S R5109 X	FUEL ISOLATION VLV A1 POSITION				TP	3	1	S/S	OPEN	CLOSE	EVENT	
S R5110 X	FUEL ISOLATION VLV B1 POSITION				TP	3	1	S/S	OPEN	CLOSE	EVENT	
S R5111 X	FUEL ISOLATION VLV C1 POSITION				TP	3	1	S/S	OPEN	CLOSE	EVENT	
S R5112 X	FUEL ISOLATION VLV D1 POSITION				TP	3	1	S/S	OPEN	CLOSE	EVENT	
S R5113 X	OX ISOLATION VLV A2 POSITION				TP	3	1	S/S	OPEN	CLOSE	EVENT	
S R5114 X	OX ISOLATION VLV B2 POSITION				TP	3	1	S/S	OPEN	CLOSE	EVENT	
S R5115 X	OX ISOLATION VLV C2 POSITION				TP	3	1	S/S	OPEN	CLOSE	EVENT	
S R5116 X	OX ISOLATION VLV D2 POSITION				TP	3	1	S/S	OPEN	CLOSE	EVENT	
S R5729 P	A HE MANIFOLD PRESS	PCM+		SM *		1	10	S/S	+0	+400	PSIA	XA963,YA-11,ZA-81
S R5776 P	B HE MANIFOLD PRESS	PCM+		SM *		1	10	S/S	+0	+400	PSIA	XA963,YA81,ZA-11
S R5817 P	C HE MANIFOLD PRESS	PCM+		SM *		1	10	S/S	+0	+400	PSIA	XA963,YA11,ZA81

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
S R5830	P D HE MANIFOLD PRESS	PCM+		SM *		1	10	S/S	+0	+400	PSIA	XA963,YA-81,ZA11
S R6010	P PRESS SYS A TEST POINT 2				T	3			+0	+5K	PSIG	
S R6011	P PRESS SYS A TEST POINT 3				T	3			+0	+5K	PSIG	
S R6012	P PRESS SYS B TEST POINT 2				T	3			+0	+5K	PSIG	
S R6013	P PRESS SYS B TEST POINT 3				T	3			+0	+5K	PSIG	
S R6014	P PRESS SYS C TEST POINT 2				T	3			+0	+5K	PSIG	
S R6015	P PRESS SYS C TEST POINT 3				T	3			+0	+5K	PSIG	
S R6016	P PRESS SYS D TEST POINT 2				T	3			+0	+5K	PSIG	
S R6017	P PRESS SYS D TEST POINT 3				T	3			+0	+5K	PSIG	
S R6020	P PRESS SYS A TEST POINT 4				T	3			+0	+300	PSIG	
S R6021	P PRESS SYS A TEST POINT 5				T	3			+0	+300	PSIG	
S R6022	P PRESS SYS B TEST POINT 4				T	3			+0	+300	PSIG	
S R6023	P PRESS SYS B TEST POINT 5				T	3			+0	+300	PSIG	
S R6024	P PRESS SYS C TEST POINT 4				T	3			+0	+300	PSIG	
S R6025	P PRESS SYS C TEST POINT 5				T	3			+0	+300	PSIG	
S R6026	P PRESS SYS D TEST POINT 4				T	3			+0	+300	PSIG	
S R6027	P PRESS SYS D TEST POINT 5				T	3			+0	+300	PSIG	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S R6030	P PRESS SYS A TEST POINT 11				T	3		+0	+300	PSIG	
S R6031	P PRESS SYS A TEST POINT 12				T	3		+0	+300	PSIG	
S R6032	P PRESS SYS B TEST POINT 11				T	3		+0	+300	PSIG	
S R6033	P PRESS SYS B TEST POINT 12				T	3		+0	+300	PSIG	
S R6034	P PRESS SYS C TEST POINT 11				T	3		+0	+300	PSIG	
S R6035	P PRESS SYS C TEST POINT 12				T	3		+0	+300	PSIG	
S R6036	P PRESS SYS D TEST POINT 11				T	3		+0	+300	PSIG	
S R6037	P PRESS SYS D TEST POINT 12				T	3		+0	+300	PSIG	
S R6050	P PRESS SYS A TEST POINT 6				T	3		+0	+300	PSIG	
S R6051	P PRESS SYS B TEST POINT 6				T	3		+0	+300	PSIG	
S R6052	P PRESS SYS C TEST POINT 6				T	3		+0	+300	PSIG	
S R6053	P PRESS SYS D TEST POINT 6				T	3		+0	+300	PSIG	
S R6054	P PRESS SYS A TEST POINT 7				T	3		+0	+300	PSIG	
S R6055	P PRESS SYS A TEST POINT 8				T	3		+0	+300	PSIG	
S R6056	P PRESS SYS B TEST POINT 7				T	3		+0	+300	PSIG	
S R6057	P PRESS SYS B TEST POINT 8				T	3		+0	+300	PSIG	
S R6058	P PRESS SYS C TEST POINT 7				T	3		+0	+300	PSIG	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS	DATA RANGE LOW	HIGH	UNITS	LOCATION
S R6059	P PRESS SYS C TEST POINT 8				T	3	+0	+300	PSIG	
S R6060	P PRESS SYS D TEST POINT 7				T	3	+0	+300	PSIG	
S R6061	P PRESS SYS D TEST POINT 8				T	3	+0	+300	PSIG	
S R6062	P PRESS SYS A TEST POINT 9				T	3	+0	+300	PSIG	
S R6063	P PRESS SYS A TEST POINT 10				T	3	+0	+300	PSIG	
S R6064	P PRESS SYS B TEST POINT 9				T	3	+0	+300	PSIG	
S R6065	P PRESS SYS B TEST POINT 10				T	3	+0	+300	PSIG	
S R6066	P PRESS SYS C TEST POINT 9				T	3	+0	+300	PSIG	
S R6067	P PRESS SYS C TEST POINT 10				T	3	+0	+300	PSIG	
S R6068	P PRESS SYS D TEST POINT 9				T	3	+0	+300	PSIG	
S R6069	P PRESS SYS D TEST POINT 10				T	3	+0	+300	PSIG	
S R6070	P PRESS SYS A TEST POINT 13				T	3	+0	+300	PSIG	
S R6071	P PRESS SYS B TEST POINT 13				T	3	+0	+300	PSIG	
S R6072	P PRESS SYS C TEST POINT 13				T	3	+0	+300	PSIG	
S R6073	P PRESS SYS D TEST POINT 13				T	3	+0	+300	PSIG	
S R6074	P PRESS SYS A TEST POINT 14				T	3	+0	+300	PSIG	
S R6075	P PRESS SYS B TEST POINT 14				T	3	+0	+300	PSIG	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS	DATA RANGE LOW	HIGH	UNITS	LOCATION
S R6076	P PRESS SYS C TEST POINT 14				T	3	+0	+300	PSIG	
S R6077	P PRESS SYS D TEST POINT 14				T	3	+0	+300	PSIG	
S R6080	P PRESS SYS A TEST POINT 1				T	3	+0	+5K	PSIG	
S R6081	P PRESS SYS B TEST POINT 1				T	3	+0	+5K	PSIG	
S R6082	P PRESS SYS C TEST POINT 1				T	3	+0	+5K	PSIG	
S R6083	P PRESS SYS D TEST POINT 1				T	3	+0	+5K	PSIG	
S R6084	P PRESS SYS A TEST POINT 15				T	3	+0	+300	PSIG	
S R6085	P PRESS SYS B TEST POINT 15				T	3	+0	+300	PSIG	
S R6086	P PRESS SYS C TEST POINT 15				T	3	+0	+300	PSIG	
S R6087	P PRESS SYS D TEST POINT 15				T	3	+0	+300	PSIG	
S R6088	P PRESS SYS A TEST POINT 16				T	3	+0	+300	PSIG	
S R6089	P PRESS SYS B TEST POINT 16				T	3	+0	+300	PSIG	
S R6090	P PRESS SYS C TEST POINT 16				T	3	+0	+300	PSIG	
S R6091	P PRESS SYS D TEST POINT 16				T	3	+0	+300	PSIG	
S R6092	P PRESS SYS A TEST POINT 17				T	3	+0	+300	PSIG	
S R6093	P PRESS SYS B TEST POINT 17				T	3	+0	+300	PSIG	
S R6094	P PRESS SYS C TEST POINT 17				T	3	+0	+300	PSIG	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S R6095	P PRESS SYS D TEST POINT 17				T	3		+0	+300	PSIG	
S R6096	P PRESS SYS A TEST POINT 18				T	3		+0	+300	PSIG	
S R6097	P PRESS SYS B TEST POINT 18				T	3		+0	+300	PSIG	
S R6098	P PRESS SYS C TEST POINT 18				T	3		+0	+300	PSIG	
S R6099	P PRESS SYS D TEST POINT 18				T	3		+0	+300	PSIG	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
L S0001 V	Q-BALL VECTOR SUM OUTPUT	PCME		M		1	10	S/S	+0	+5	VDC	
B S0016 X	LAUNCH VEH GUIDANCE FAIL A	PCME		L		1	10	S/S				EVENT INSTRUMENT UNIT
B S0017 X	LAUNCH VEH GUIDANCE FAIL B			L		1						EVENT INSTRUMENT UNIT
B S0020 X	LAUNCH VEH RATE EXCESSIVE A	PCME		L		1	10	S/S				EVENT INSTRUMENT UNIT
B S0021 X	LAUNCH VEH RATE EXCESSIVE B			L		1						EVENT INSTRUMENT UNIT
B S0030 X	ENG NO 1 OUT A	PCME		L		1	10	S/S				EVENT INSTRUMENT UNIT
B S0031 X	ENG NO 1 OUT B			L		1						EVENT INSTRUMENT UNIT
B S0032 X	ENG NO 2 OUT A	PCME		L		1	10	S/S				EVENT INSTRUMENT UNIT
B S0033 X	ENG NO 2 OUT B			L		1						EVENT INSTRUMENT UNIT
B S0034 X	ENG NO 3 OUT A	PCME		L		1	10	S/S				EVENT INSTRUMENT UNIT
B S0035 X	ENG NO 3 OUT B			L		1						EVENT INSTRUMENT UNIT
B S0036 X	ENG NO 4 OUT A	PCME		L		1	10	S/S				EVENT INSTRUMENT UNIT
B S0037 X	ENG NO 4 OUT B			L		1						EVENT INSTRUMENT UNIT
B S0038 X	ENG NO 5 OUT A	PCME		L		1	10	S/S				EVENT INSTRUMENT UNIT
B S0039 X	ENG NO 5 OUT B			L		1						EVENT INSTRUMENT UNIT
B S0040 X	ENG NO 6 OUT A	PCME		L		1	10	S/S				EVENT INSTRUMENT UNIT
B S0041 X	ENG NO 6 OUT B			L		1						EVENT INSTRUMENT UNIT

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
B SC042	X ENG NO 7 OUT A	PCME		L		1	10	S/S			EVENT	INSTRUMENT UNIT
B SC043	X ENG NO 7 OUT B			L		1					EVENT	INSTRUMENT UNIT
B SC044	X ENG NO 8 OUT A	PCME		L		1	10	S/S			EVENT	INSTRUMENT UNIT
B SC045	X ENG NO 8 OUT B			L		1					EVENT	INSTRUMENT UNIT
B SC060	X LIFT OFF SIGNAL A	PCME		L		1 X	10	S/S			EVENT	
B SC061	X LIFT OFF SIGNAL B	PCME		L		1 X	10	S/S			EVENT	
C SC080	X EDS ABORT REQUEST A	PCME		L		1	10	S/S			EVENT	
C SC081	X EDS ABORT REQUEST B			L		1					EVENT	
C SC150	X MASTER CAUTION-WARNING ON	PCME		L		1	10	S/S			EVENT	
C SC160	X NO AUTO ABORT A			L		1					EVENT	
C SC161	X NO AUTO ABORT B			L		1					EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXB	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T0008 V	HF 455KC OSC LEVEL				A	3					
C T0009 V	HF OSC TRANSMIT BUFFER LEVEL				A	3					
C T0014 X	SIG COND UNREG DC SUPPLY VOLTAGE				AP	3	1			S/S	
C T0015 V	SIG COND POS SUPPLY VOLTS	PCM+			A	2	10			S/S	
C T0016 V	SIG COND NEG SUPPLY VOLTS	PCM+			A	2	10			S/S	
C T0017 V	SENSOR EXCITATION 5 VOLTS	PCM+			A	2	10			S/S	
C T0018 V	SENSOR EXCITATION 10 VOLTS	PCM+			A	2	10			S/S	
C T0024 X	HF RCVR UNREG B+ VOLTAGE				A	3					
C T0039 V	HF RCVR AGC VOLTAGE				A	3					
C T0042 V	HF RCVR REG B+ VOLTAGE				A	3					
C T0044 V	HF RCVR AUDIO OUTPUT (3-WIRE)				A	3					
C T0047 V	HF XMTR AUDIO INPUT (3-WIRE)				A	3					
C T0048 V	HF XMTR DETECTED RF OUTPUT				A	3					
C T0049 X	VHF REC BEACON UNREG DC SUPPLY V				AP	3	1			S/S	
C T0053 V	TV COMPOSITE VIDEO OUTPUT				A	3					
C T0054 X	TV CAMERA UNREG DC SUPPLY VOLTS				AP	3	1			S/S	
C T0055 V	TV CAMERA TARGET VOLTAGE	PCM			A	2	10			S/S	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T0056 V	VHF/FM EXCITER -10V PWR SUPPLY				A	3					
C T0057 V	VHF/FM PA FINAL AMP GRID VOLTS				A	3					
C T0058 V	VHF/FM PA MOD BIAS VOLTAGE				A	3					
C T0062 V	VHF/FM XMTR AFC				A	3					
C T0063 V	VHF/FM EXCITER OUTPUT				A	3					
C T0066 V	VHF/FM XMTR +160V POWER SUPPLY				AP	3	1	S/S			
C T0069 V	C-BAND PULSER OUTPUT WAVEFORM				A	3					
C T0071 V	C-BAND REC VIDEO 1				A	3					
C T0072 V	C-BAND REC VIDEO 2				A	3					
C T0073 V	C-BAND REC VIDEO 3				A	3					
C T0074 V	C-BAND REC VIDEO 4				A	3					
C T0077 V	C-BAND XPONDER PS +20V				A	3					
C T0078 V	C-BAND XPONDER PS +10V				A	3					
C T0079 V	C-BAND XPONDER PS -27V				A	3					
C T0080 V	C-BAND MODULATION LOW VOLTAGE B+				A	3					
C T0082 C	C-BAND XPONDER XTAL CURRENT 1				A	3			+0.2	+0.8	MAMP
C T0083 C	C-BAND XPONDER XTAL CURRENT 2				A	3			+0.2	+0.8	MAMP

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T0084 C	C-BAND XPONDER XTAL CURRENT 3				A	3		+0.2	+0.8	MAMP	
C T0085 C	C-BAND XPONDER XTAL CURRENT 4				A	3		+0.2	+0.8	MAMP	
C T0089 V	C-BAND XMTR OUTPUT MONITOR	PCM			A	2	10 S/S				
C T0097 X	C-BAND UNREG DC SUPPLY VOLTAGE				AP	3	1 S/S				
C T0098 V	C-BAND DECODER OUT	PCM			A	2	10 S/S				
C T0099 V	C-BAND RF SW VERIFICATION VOLT				A	3					
C T0102 V	HF XMTR REG B+ VOLTAGE				A	3					
C T0103 V	HF OSC RECEIVE BUFFER LEVEL				A	3					
C T0120 X	PCM BIT RATE CHANGE 8 BIT	PCMD			A	2	X 10 S/S				
C T0125 V	PCM HI LEVEL 85 PERCENT REF	PCM+			A	2	X 10 S/S				
C T0126 V	PCM HI LEVEL 15 PERCENT REF	PCM+				2	X 10 S/S				
C T0127 V	PCM LO LEVEL 85 PERCENT REF	PCM+				2	X 1 S/S				
C T0128 V	PCM LO LEVEL 15 PERCENT REF	PCM+				2	X 1 S/S				
C T0129 V	PCM PWR SUPPLY VOLTAGE 1,+20V				A	3					
C T0130 V	PCM PWR SUPPLY VOLTAGE 2,-20V				A	3					
C T0131 V	PCM PWR SUPPLY VOLTAGE 3,+10V				A	3					
C T0132 V	PCM PWR SUPPLY VOLTAGE 4,+6V REG				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C TC133 V	PCM PWR SUPPLY VOLTAGE 5,+6V				A	3					
C TC134 V	PCM PWR SUPPLY VOLTAGE 6,+3V				A	3					
C TC135 V	PCM PWR SUPPLY VOLTAGE 7,-3V				A	3					
C TC136 V	PCM PWR SUPPLY VOLTAGE 8,+15V				A	3					
C TC137 V	PCM PWR SUPPLY VOLTAGE 9,-15V				A	3					
C TC138 V	PCM PWR SUPPLY VOLTAGE 10,-10V				A	3					
C TC139 X	CENTRAL TIMING UNREG SUPP VOLTS				AP	3	1		S/S		
C TC140 F	CTE 512KC BUFFER OUTPUT 1				A	3					
C TC141 X	CTE TIMING MODE MONITOR	PCME			A	2	10		S/S		
C TC142 F	CENTRAL TIMING GMT 32 BIT	PCMD				2 X	10		S/S		
C TC143 V	CTE DC POWER SOURCE TP 2				A	3					
C TC144 F	CTE EXT SYNC INPUT (1024KC)				A	3					
C TC147 V	S-BAND REC AGC VOLTAGE	PCM+		M	A	1	10		S/S		
C TC148 V	S-BAND REC VCO OUTPUT LEVEL				A	3					
C TC180 E	VHF/AM XMTR OUTPUT POWER				RF	3					
C TC181 F	VHF/AM XMTR OUTPUT FREQUENCY				RF	3					
C TC183 V	VHF/AM XMTR MODULATION				RF	3					

(MSC) APPLIED CM/SM MEASUREMENT LIST

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MEAS. ID	MEASUREMENT DESCRIPTION	TM	ACCESSIBILITY AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T0191 V	VHF/AM REC AGC VOLTAGE	PCM			A	2	10	S/S			
C T0193 X	VHF/AM XMTR UNREG DC SUPP VOLTS				AP	3	1	S/S			
C T0196 V	VHF/AM RECEIVER SENSITIVITY				RF	3					
C T0197 V	VHF/AM RECEIVER DISTORTION				RF	3					
C T0198 F	VHF/AM RECEIVER FREQUENCY				RF	3					
C T0210 V	S-BAND +15 V PWR SUPPLY VOLTAGE				AP	3	1	S/S			
C T0211 V	S-BAND -15 V PWR SUPPLY VOLTAGE				AP	3	1	S/S			
C T0212 V	S-BAND RCVR STATIC PHASE ERROR	PCM+			A	2	10	S/S			
C T0213 V	S-BAND XMTR FM OSC OUTPUT LEVEL				A	3					
C T0214 V	S-BAND AUX OSC OUTPUT LEVEL				A	3					
C T0215 V	S-BAND XMTR DETECTED RF OUTPUT	PCM			A	2	1	S/S			
C T0218 V	S-BAND PA ANODE SUPPLY VOLTAGE				A	3					
C T0219 V	S-BAND PA CATHODE SUPP VOLTAGE				A	3					
C T0220 V	S-BAND PA COLLECTOR SUPP VOLTAGE				A	3					
C T0221 C	S-BAND COMB HELIX-ANODE CURRENT				A	3					
C T0225 V	MOD PH DET UP-LNK SUBCARRIER OUT				A	3					
C T0226 V	PHASE MODULATOR INPUT A				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C TC244 V UDL	CTE +6V EXCITATION				A	3						
C TC245 V UDL	NORMALIZED POWER				AP	3	1	S/S				
C TC246 X UDL	AGC DATA 1				A	3					EVENT	
C TC247 X UDL	AGC DATA C				A	3					EVENT	
C TC248 X UDL	CTE RESET				A	3					EVENT	
C TC250 X UDL	CTE ADVANCE DAYS				A	3					EVENT	
C TC251 X UDL	CTE ADVANCE HOURS				A	3					EVENT	
C TC252 X UDL	CTE ADVANCE MINUTES				A	3					EVENT	
C TC253 X UDL	CTE ADVANCE SECONDS				A	3					EVENT	
C TC254 V UDL	PRIME POWER				AP	3	1	S/S				
C TC255 V UDL	UHF AUDIO				A	3						
C TC256 X UDL	SUB-BIT DETECTOR AUDIO INPUT				A	3						
C TC257 X UDL	SUB-BIT DETECTOR OUTPUT				A	3						
C TC258 V PMP	70 KC DISCRIMINATOR OUTPUT				AP	3	1	S/S				
C TC259 V UDL	S-BAND AUDIO				A	3						
C TC261 V UDL	RECEIVER SIGNAL STRENGTH	PCM+			A	2	X 10	S/S				
C TC262 V UDL	SYS VALIDITY SIGNAL 8-BIT	PCMD			A	2	X 50	S/S				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T0316	X VHF/AM RCVR UNREG DC SUPP VOLT				AP	3	1			S/S	
C T0317	V VHF/AM XMTR AUDIO INPUT				A	3					
C T0318	V VHF/AM RCVR AUDIO OUTPUT				A	3					
C T0319	V VHF/AM RCVR BIO-MED DATA OUTPUT				A	3					
C T0320	V VHF/AM XMTR DETECTED RF OUTPUT	PCM			A	2	100			S/S	
C T0321	V VHF/AM RCVR 12 V POWER SUPPLY				A	3					
C T0322	V VHF/AM XMTR 26 V POWER SUPPLY				A	3					
C T0323	V VHF/AM 150 VOLT MODULATOR				A	3					
C T0324	V VHF/AM 300 VOLT MODULATOR				A	3					
C T0325	V VHF/AM XMTR FINAL AMP GRID VOLT				AP	3	1			S/S	
C T0326	T TEMP VHF RECOVERY BEACON				A	3					
C T0330	V VHF/FM XMTR PA DETECTED RF OUT	PCM			A	2	10			S/S	
C T0331	V VHF REC BEACON DET RF OUTPUT				A	3					
C T0333	T TEMP HF PA MODULE				A	3					
C T0334	V VHF REC BEACON REG DC VOLTS				A	3					
C T0335	X PROGRAMMER WORD TIMING TRIGGER				A	3					
C T0336	V VHF RECOV BEACON 6A VDC REG VOLT				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C T0340 X	PCM TIMING SOURCE EXT OR INT	PCME			A	2	10	S/S				
C T0342 X	RESET COINCIDENCE	PCME			A	2	10	S/S				
C T0358 V	ADC PAM INPUT				A	3						
C T0361 V	PCM A2 IFT DIGITAL MULTIPLEXER				A	3			+0	+3.8	VDC	
C T0362 V	PCM A3 IFT DIGITAL MULTIPLEXER				A	3			+0	+3.8	VDC	
C T0363 V	PCM A4 IFT DIGITAL MULTIPLEXER				A	3			+0	+3.8	VDC	
C T0364 V	PCM A5 IFT DIGITAL MULTIPLEXER				A	3			+0	+3.8	VDC	
C T0365 V	PCM A6 IFT DIGITAL MULTIPLEXER				A	3			+0	+3.8	VDC	
C T0366 V	PCM A7 IFT DIGITAL MULTIPLEXER				A	3			+0	+3.8	VDC	
C T0367 V	PCM A9 IFT PARALLEL START-STOP				A	3			+0	+3.8	VDC	
C T0368 V	PCM A10 IFT OUTPUT REGISTER				A	3			+0	+3.8	VDC	
C T0369 V	PCM A12 IFT PROGRAMMER MATRIX				A	3			+0	+3.8	VDC	
C T0370 V	PCM A13 IFT PROGRAMMER CD1				A	3			+0	+3.8	VDC	
C T0371 V	PCM A14 IFT PROGRAMMER CD2				A	3			+0	+3.8	VDC	
C T0372 V	PCM A15 IFT PROGRAM CTR MATRIX				A	3			+0	+3.8	VDC	
C T0373 V	PCM A16 IFT PROGRAM CTR MATRIX				A	3			+0	+3.8	VDC	
C T0374 V	PCM A4 IFT LOW LEVEL AMP				A	3			+0	+3.8	VDC	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS	LOW	DATA RANGE HIGH	UNITS	LOCATION
C T0375 V	PCM A19 IFT HIGH SPEED GATES				A	3		+0 +3.8	VDC	
C T0376 V	PCM 50 PPS OUTPUT				A	3				
C T0377 V	PCM A20 IFT EMCODER				A	3		+0 +3.8	VDC	
C T0378 V	NRZ SERIAL DATA				A	3				
C T0379 V	SUBCARRIER REFERENCE (512KC)				USM	3				
C T0380 V	DATA RATE TIMING				USM	3				
C T0382 V	SUB FRAME RATE TIMING (1PPS)				USM	3				
C T0383 V	RZ SERIAL DATA				USM	3				
C T0384 V	INTERCOM-TWISTED SHLDED PAIR				USM	3				
C T0402 F	CTE 512KC BUFFER OUTPUT 2				A	3				
C T0403 F	CTE 512KC BUFFER OUTPUT 3				A	3				
C T0405 F	CTE 6.4KC BUFFER OUTPUT 1				A	3				
C T0406 F	CTE 6.4KC BUFFER OUTPUT 2				A	3				
C T0407 F	CTE 6.4KC BUFFER OUTPUT 3				A	3				
C T0408 F	CTE 1CPS BUFFER OUTPUT 1				A	3				
C T0409 F	CTE 1CPS BUFFER OUTPUT 2				A	3				
C T0410 F	CTE 1CPS BUFFER OUTPUT 3				A	3				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T0411	F CTE 1CPS BUFFER OUTPUT 4				A	3					
C T0412	F CTE 2048KC OUTPUT 1				A	3					
C T0413	F CTE 2048KC OUTPUT 2				A	3					
C T0414	F CTE 2048KC OUTPUT 3				A	3					
C T0415	F CTE 4KC BUFFER OUTPUT				A	3					
C T0416	F CTE 1 CYCLE PER 10 MINUTES TP				A	3					
C T0417	F CTE 10 CPS TEST POINT				A	3					
C T0440	E VHF/FM XMTR OUTPUT POWER				RF	3					
C T0441	F VHF/FM XMTR CARRIER FREQUENCY				RF	3					
C T0442	F VHF/FM XMTR FREQUENCY DEVIATION				RF	3					
C T0443	F VHF/FM XMTR FREQ DEV LINEARITY				RF	3					
C T1000	V SERIAL PCM DATA INPUT				A	3					
C T1002	V SERIAL PCM DATA OUTPUT				A	3					
C T1003	X DSE UNREG DC SUPPLY VOLTS				AP	3	1	S/S			
C T1005	V DIGITAL CLOCK RECORDER INPUT				A	3					
C T1020	C DIGITAL RECORD HEAD CURRENT 1				A	3					
C T1021	C DIGITAL RECORD HEAD CURRENT 2				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T1022 C	DIGITAL RECORD HEAD CURRENT 3				A	3					
C T1023 C	DIGITAL RECORD HEAD CURRENT 4				A	3					
C T1024 C	DIGITAL RECORD HEAD CURRENT 5				A	3					
C T1040 V	DIGITAL PLAYBACK AMP OUTPUT 1				A	3					
C T1041 V	DIGITAL PLAYBACK AMP OUTPUT 2				A	3					
C T1042 V	DIGITAL PLAYBACK AMP OUTPUT 3				A	3					
C T1043 V	DIGITAL PLAYBACK AMP OUTPUT 4				A	3					
C T1044 V	DIGITAL PLAYBACK AMP OUTPUT 5				A	3					
C T1070 C	ANALOG RECORD HEAD CURRENT 1				A	3					
C T1071 C	ANALOG RECORD HEAD CURRENT 2				A	3					
C T1072 C	ANALOG RECORD HEAD CURRENT 3				A	3					
C T1073 C	ANALOG RECORD HEAD CURRENT 4				A	3					
C T1074 C	ANALOG RECORD HEAD CURRENT 5				A	3					
C T1075 C	ANALOG RECORD HEAD CURRENT 6				A	3					
C T1076 C	ANALOG RECORD HEAD CURRENT 7				A	3					
C T1077 C	ANALOG RECORD HEAD CURRENT 8				A	3					
C T1078 C	ANALOG RECORD HEAD CURRENT 9				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T1110 C	ANALOG PLAYBACK AMP OUTPUT 1				A	3					
C T1111 C	ANALOG PLAYBACK AMP OUTPUT 2				A	3					
C T1112 C	ANALOG PLAYBACK AMP OUTPUT 3				A	3					
C T1113 C	ANALOG PLAYBACK AMP OUTPUT 4				A	3					
C T1114 C	ANALOG PLAYBACK AMP OUTPUT 5				A	3					
C T1115 C	ANALOG PLAYBACK AMP OUTPUT 6				A	3					
C T1116 C	ANALOG PLAYBACK AMP OUTPUT 7				A	3					
C T1117 C	ANALOG PLAYBACK AMP OUTPUT 8				A	3					
C T1118 C	ANALOG PLAYBACK AMP OUTPUT 9				A	3					
C T1135 X	ERASE AMP OUTPUT				A	3					
C T1136 X	DSE ERASE MONITOR, REVERSE				A	3					
C T1140 V	POWER SUPPLY 1 VOLTAGE				A	3					
C T1141 V	POWER SUPPLY 2 VOLTAGE				A	3					
C T1142 V	POWER SUPPLY 3 VOLTAGE				A	3					
C T1176 V	PMP LOW PASS FILTER OUTPUT				A	3					
C T1182 V	PMP BIO-MED FM MIXING NETWORK				A	3					
C T1185 V	PMP FREQ DOUBLER INPUT				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T1190 V	PMP BAND PASS FILTER OUTPUT				A	3					
C T1198 V	PMP TV INPUT TO MIXING NETWORK				A	3					
C T1200 V	PMP 1.25 MC SCO INPUT				A	3					
C T1201 V	PMP 1.25 MC SCO OUTPUT				A	3					
C T1202 V	PMP 1.024 MC BDPASS FILTER INPUT				A	3					
C T1203 V	PMP SCO MIXING NETWORK OUTPUT				A	3					
C T1205 V	PMP SCO INPUT 1				A	3					
C T1206 V	PMP SCO INPUT 2				A	3					
C T1207 V	PMP SCO INPUT 3				A	3					
C T1208 V	PMP SCO INPUT 4				A	3					
C T1209 V	PMP SCO INPUT 5				A	3					
C T1210 V	PMP SCO INPUT 6				A	3					
C T1211 V	PMP SCO INPUT 7				A	3					
C T1212 V	PMP SCO INPUT 8				A	3					
C T1213 V	PMP SCO INPUT 9				A	3					
C T1215 V	PMP SCO OUTPUT 1				A	3					
C T1216 V	PMP SCO OUTPUT 2				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXC	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T1217 V	PMP SCO OUTPUT 3				A	3					
C T1218 V	PMP SCO OUTPUT 4				A	3					
C T1219 V	PMP SCO OUTPUT 5				A	3					
C T1220 V	PMP SCO OUTPUT 6				A	3					
C T1221 V	PMP SCO OUTPUT 7				A	3					
C T1222 V	PMP SCO OUTPUT 8				A	3					
C T1223 V	PMP SCO OUTPUT 9				A	3					
C T1227 V	PMP UP-VOICE DISCRIMINATOR OUT				A	3					
C T1228 V	PMP UP-VOICE DISCRIMINATOR INPUT				A	3					
C T1232 V	PMP REG DC SUPPLY VOLTAGE				AP	3	1	S/S			
C T1233 V	PMP +28 VDC SUPPLY VOLTAGE				A	3					
C T1600 V	FQR RECORD HEAD 1 OUTPUT				A	3		+0	+0.3	VDC	
C T1601 V	FQR RECORD HEAD 2 OUTPUT				A	3		+0	+0.3	VDC	
C T1602 V	FQR RECORD HEAD 3 OUTPUT				A	3		+0	+0.3	VDC	
C T1603 V	FQR RECORD HEAD 4 OUTPUT				A	3		+0	+0.3	VDC	
C T1604 V	FQR RECORD HEAD 5 OUTPUT				A	3		+0	+0.3	VDC	
C T1605 V	FQR RECORD HEAD 6 OUTPUT				A	3		+0	+0.3	VDC	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T1606 V	FOR RECORD HEAD 7 OUTPUT				A	3		+0	+0.3	VDC	
C T1607 V	FOR RECORD HEAD 8 OUTPUT				A	3		+0	+0.3	VDC	
C T1608 V	FOR RECORD HEAD 9 OUTPUT				A	3		+0	+0.3	VDC	
C T1609 V	FOR RECORD HEAD 10 OUTPUT				A	3		+0	+0.3	VDC	
C T1610 V	FOR RECORD HEAD 11 OUTPUT				A	3		+0	+0.3	VDC	
C T1611 V	FOR RECORD HEAD 12 OUTPUT				A	3		+0	+0.3	VDC	
C T1612 V	FOR RECORD HEAD 13 OUTPUT				A	3		+0	+0.3	VDC	
C T1613 V	FOR RECORD HEAD 14 OUTPUT				A	3		+0	+0.3	VDC	
C T1614 F	FOR REFERENCE OSC (25KC) OUTPUT				A	3					
C T1615 V	FOR CALIBRATE COMMAND				A	3					
C T1616 V	FOR ELAPSED TIME GEN OUTPUT				A	3					
C T1617 F	FOR ERASE AMPLIFIER OUTPUT				A	3					
C T1618 F	FOR BIAS OSCILLATOR OUTPUT				A	3					
C T1619 V	FOR CALIBRATE LEVEL OUTPUT				A	3					
C T1620 V	FOR DC-DC CONVERTER OUTPUT				A	3					
C T1621 V	FOR POWER SUPPLY -7.5 VDC REG				A	3					
C T1622 V	FOR POWER SUPPLY +20 VDC REG				A	3					

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C T1623 V	FOR POWER SUPPLY +28 VDC REG				A	3					
C T1624 F	FOR REFERENCE OSC (50KC) OUTPUT				A	3					
C T1625 V	FOR SIGNAL INPUT 1				A	3		+0	+5	VDC	
C T1626 V	FOR SIGNAL INPUT 2				A	3		+0	+5	VDC	
C T1627 V	FOR SIGNAL INPUT 3				A	3		+0	+5	VDC	
C T1628 V	FOR SIGNAL INPUT 4				A	3		+0	+5	VDC	
C T1629 V	FOR SIGNAL INPUT 5				A	3		+0	+5	VDC	
C T1630 V	FOR SIGNAL INPUT 6				A	3		+0	+5	VDC	
C T1631 V	FOR SIGNAL INPUT 7				A	3		+0	+5	VDC	
C T1632 V	FOR SIGNAL INPUT 8				A	3		+0	+5	VDC	
C T1633 V	FOR SIGNAL INPUT 9				A	3		+0	+5	VDC	
C T1634 V	FOR SIGNAL INPUT 10				A	3		+0	+5	VDC	
C T1635 V	FOR SIGNAL INPUT 11				A	3		+0	+5	VDC	
C T1636 V	FOR SIGNAL INPUT 12				A	3		+0	+5	VDC	
C T1637 V	FOR SIGNAL INPUT 13				A	3		+0	+5	VDC	
C T1638 V	FOR SIGNAL INPUT 14				A	3		+0	+5	VDC	

5.0 FLIGHT QUALIFICATION MEASUREMENTS

The flight qualification measurements are those measurements required early in the flight program to qualify the vehicle for flight after which they are no longer needed. These are also referred to as R&D measurements.

Location coordinates appearing in the measurement list are defined in section 3.13. Some measurements, however, use coordinates which are not explained in section 3.13. For example, measurement CA 1008T references a location described as $Z_c 61$, $Y_c 0$, BL. The Z and Y axes are as defined in section 3.13 with the BL (Bond Line) replacing the X coordinates. The Bond Line is the mating surface of the ablative and honeycomb material.

Similarily, measurement CA 1013T defines a location $Z_c 0$, $Y_c 71$, .05 in. Again, Z and Y coordinates are as previously defined, the .05 in being a depth dimension, referenced from the aft surface of the ablative material.

MEAS. ID	MEASUREMENT DESCRIPTION	TM	ACCESSIBILITY AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C A0400	S STRAIN AX FWD LONGERON 2 IN VERT	PCM				4	1	S/S -6000	+6000	UI/IN	XC77,317DEG
C A0401	S STRAIN AX FWD LONG 4 OUT VERT	TR				4	1	S/S -6000	+6000	UI/IN	XC77,43DEG
C A0403	S STRAIN AX FWD LONG 8 OUT VERT	TR				4	1	S/S -6000	+6000	UI/IN	XC77,223DEG
C A0404	S STRAIN AX FWD LONG 2 IN VERT	PCM				4	1	S/S -6000	+6000	UI/IN	XC75.4,317DEG
C A0405	S STRAIN AX FWD LONG 4 IN VERT	PCM				4	1	S/S -6000	+6000	UI/IN	XC75.4,43DEG
C A0407	S STRAIN AX FWD LONG 8 IN VERT	PCM				4	1	S/S -6000	+6000	UI/IN	XC75.4,223DEG
C A0408	S STRAIN AX FWD LONG 2 IN VERT	PCM				4	1	S/S -6000	+6000	UI/IN	XC50.1,317DEG
C A0409	S STRAIN AX FWD LONG 4 OUT VERT	TR				4	1	S/S -6000	+6000	UI/IN	XC50.1,43DEG
C A0411	S STRAIN AX FWD LONG 8 OUT VERT	TR				4	1	S/S -6000	+6000	UI/IN	XC50.1,223DEG
C A0412	S STRAIN AX FWD LONG 2 IN VERT	PCM				4	1	S/S -6000	+6000	UI/IN	XC48.5,317DEG
C A0413	S STRAIN AX FWD LONG 4 IN VERT	PCM				4	1	S/S -6000	+6000	UI/IN	XC48.5,43DEG
C A0415	S STRAIN AX FWD LONG 8 IN VERT	PCM				4	1	S/S -6000	+6000	UI/IN	XC48.5,223DEG
C A0960	T TEMP AFT HS STATIC PRESS LOC 3A	TR				4	1	S/S -100	+3000	DEG F	ZC71,YC0,.05IN
C A0961	T TEMP AFT HS STATIC PRESS LOC 3B	TR				4	1	S/S -100	+3000	DEG F	ZC71,YC0,.15IN
C A0962	T TEMP AFT HS STATIC PRESS LOC 3C	TR				4	1	S/S -100	+3000	DEG F	ZC71,YC0,.35IN
C A0963	T TEMP AFT HS STATIC PRESS LOC 3E	TR				4	1	S/S -100	+3000	DEG F	ZC71,YC0,.60IN
C A0964	T TEMP AFT HS STATIC PRESS LOC 3F	TR				4	1	S/S -100	+2000	DEG F	ZC71,YC0,1.1IN

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C A0965	T TEMP AFT HS STATIC PRESS LOC 3G	TR				4	1	S/S	-100	+1000	DEG F ZC71,YC0,1.6IN
C A0967	T TEMP AFT HS STATIC PRESS LOC 6A	TR				4	1	S/S	-100	+3000	DEG F ZC61,YC0,.05IN
C A0968	T TEMP AFT HS STATIC PRESS LOC 6B	TR				4	1	S/S	-100	+3000	DEG F ZC61,YC0,15IN
C A0969	T TEMP AFT HS STATIC PRESS LOC 6C	TR				4	1	S/S	-100	+3000	DEG F ZC61,YC0,.35IN
C A0970	T TEMP AFT HS STATIC PRESS LOC 6E	TR				4	1	S/S	-100	+3000	DEG F ZC61,YC0,.60IN
C A0971	T TEMP AFT HS STATIC PRESS LOC 6F	TR				4	1	S/S	-100	+2000	DEG F ZC61,YC0,1.1IN
C A0972	T TEMP AFT HS STATIC PRESS LOC 6G	TR				4	1	S/S	-100	+1000	DEG F ZC61,YC0,1.6IN
C A0977	T TEMP AFT HS STATIC PRESS LOC 8A	TR				4	1	S/S	-100	+3000	DEG F ZC39,YC0,.05IN
C A0978	T TEMP AFT HS STATIC PRESS LOC 8B	TR				4	1	S/S	-100	+3000	DEG F ZC39,YC0,.15IN
C A0979	T TEMP AFT HS STATIC PRESS LOC 8C	TR				4	1	S/S	-100	+3000	DEG F ZC39,YC0,.35IN
C A0980	T TEMP AFT HS STATIC PRESS LOC 8E	TR				4	1	S/S	-100	+3000	DEG F ZC39,YC0,.60IN
C A0981	T TEMP AFT HS STATIC PRESS LOC 8F	TR				4	1	S/S	-100	+2000	DEG F ZC39,YC0,1.1IN
C A0982	T TEMP AFT HS STATIC PRESS LOC 8G	TR				4	1	S/S	-100	+1000	DEG F ZC39,YC0,1.6IN
C A1001	T TEMP AFT HS STATIC PRESS LOC 12A	TR				4	1	S/S	-100	+3000	DEG F ZC0,YC0,.05IN
C A1002	T TEMP AFT HS STATIC PRESS LOC 12B	TR				4	1	S/S	-100	+3000	DEG F ZC0,YC0,.2IN
C A1003	T TEMP AFT HS STATIC PRESS LOC 12C	TR				4	1	S/S	-100	+1500	DEG F ZC0,YC0,.4IN
C A1004	T TEMP AFT HS STATIC PRESS LOC 12D	TR				4	1	S/S	-100	+600	DEG F ZC0,YC0,BL

MEAS. ID	MEASUREMENT DESCRIPTION	TM	ACCESSIBILITY AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C A1008	T TEMP AFT HS STATIC PRESS LOC 6D	TR				4	1	S/S	-100	+600	DEG F	ZC+61,YCO,BL
C A1012	T TEMP AFT HS STATIC PRESS LOC 3D	TR				4	1	S/S	-100	+600	DEG F	ZC+71,YCO,BL
C A1013	T TEMP AFT HS STATIC PRESS LOC 5A	TR				4	1	S/S	-100	+3000	DEG F	ZCO,YC71,.05IN
C A1014	T TEMP AFT HS STATIC PRESS LOC 5B	TR				4	1	S/S	-100	+3000	DEG F	ZCO,YC71,.2IN
C A1015	T TEMP AFT HS STATIC PRESS LOC 5C	TR				4	1	S/S	-100	+1500	DEG F	ZCO,YC71,.4IN
C A1016	T TEMP AFT HS STATIC PRESS LOC 5D	TR				4	1	S/S	-100	+600	DEG F	ZCO,YC71,BL
C A1020	T TEMP AFT HS STATIC PRESS LOC 8D	TR				4	1	S/S	-100	+600	DEG F	ZC39,YCO,BL
C A1021	T TEMP AFT HS STATIC PRESS LOC 4A	TR				4	1	S/S	-100	+3000	DEG F	ZC-71,YCO,.05IN
C A1022	T TEMP AFT HS STATIC PRESS LOC 4B	TR				4	1	S/S	-100	+3000	DEG F	ZC-71,YCO,.2IN
C A1023	T TEMP AFT HS STATIC PRESS LOC 4C	TR				4	1	S/S	-100	+1500	DEG F	ZC-71,YCO,.4IN
C A1024	T TEMP AFT HS STATIC PRESS LOC 4D	TR				4	1	S/S	-100	+600	DEG F	ZC-71,YCO,BL
C A1025	T TEMP AFT HS STATIC PRESS LOC 10A	TR				4	1	S/S	-100	+3000	DEG F	ZCO,YC39,.05IN
C A1026	T TEMP AFT HS STATIC PRESS LOC 10B	TR				4	1	S/S	-100	+3000	DEG F	ZCO,YC39,.2IN
C A1027	T TEMP AFT HS STATIC PRESS LOC 10C	TR				4	1	S/S	-100	+1500	DEG F	ZCO,YC39,.4IN
C A1028	T TEMP AFT HS STATIC PRESS LOC 10D	TR				4	1	S/S	-100	+600	DEG F	ZCO,YC39,BL
C A1032	T TEMP AFT HS STATIC PRESS LOC 11D	TR				4	1	S/S	-100	+600	DEG F	ZCO,YC-39,BL
C A1037	T TEMP SIDE HS LOC 1 A	TR				4	1	S/S	-100	+3000	DEG F	XC23.2,90DEG,.05IN

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C A1038	T TEMP SIDE HS LOC 1 B	TR				4	1	S/S	-100	+3000 DEG F	XC23.2,90DEG,.2IN
C A1039	T TEMP SIDE HS LOC 1 C	TR				4	1	S/S	-100	+1500 DEG F	XC23.2,90DEG,.4IN
C A1040	T TEMP SIDE HS LOC 1 D	TR				4	1	S/S	-100	+600 DEG F	XC23.2,90DEG,BL
C A1041	T TEMP SIDE HS LOC 2 A	TR				4	1	S/S	-100	+3000 DEG F	XC44,90DEG,.05IN
C A1042	T TEMP SIDE HS LOC 2 B	TR				4	1	S/S	-100	+1500 DEG F	XC44,90DEG,.2IN
C A1043	T TEMP SIDE HS LOC 2 C	TR				4	1	S/S	-100	+600 DEG F	XC44,90DEG,BL
C A1044	T TEMP SIDE HS LOC 3 A	TR				4	1	S/S	-100	+3000 DEG F	XC60,90DEG,.05IN
C A1045	T TEMP SIDE HS LOC 3 B	TR				4	1	S/S	-100	+1500 DEG F	XC60,90DEG,.2IN
C A1046	T TEMP SIDE HS LOC 3 C	TR				4	1	S/S	-100	+600 DEG F	XC60,90DEG,BL
C A1047	T TEMP SIDE HS LOC 4 A	TR				4	1	S/S	-100	+3000 DEG F	XC81,90DEG,.05IN
C A1048	T TEMP SIDE HS LOC 4 B	TR				4	1	S/S	-100	+1500 DEG F	XC81,90DEG,.2IN
C A1049	T TEMP SIDE HS LOC 4 C	TR				4	1	S/S	-100	+600 DEG F	XC81,90DEG,BL
C A1050	T TEMP SIDE HS LOC 5 A	TR				4	1	S/S	-100	+3000 DEG F	XC112.25,90DEG,.05IN
C A1051	T TEMP SIDE HS LOC 5 B	TR				4	1	S/S	-100	+600 DEG F	XC112.25,90DEG,BL
C A1052	T TEMP SIDE HS LOC 6 A	TR				4	1	S/S	-100	+3000 DEG F	XC23.2,135DEG,.05IN
C A1053	T TEMP SIDE HS LOC 6 B	TR				4	1	S/S	-100	+2000 DEG F	XC23.2,135DEG,.2IN
C A1054	T TEMP SIDE HS LOC 6 C	TR				4	1	S/S	-100	+1500 DEG F	XC23.2,135DEG,.4IN

MEAS. ID	MEASUREMENT DESCRIPTION	TM	ACCESSIBILITY AUXD	DISP	GSE	MCPG SYSTS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C A1055	T TEMP SIDE HS LOC 6 D	TR				4	1	S/S	-100	+600	DEG F XC23.2,135DEG,BL
C A1083	T TEMP SIDE HS LOC 9 A	TR				4	1	S/S	-100	+1500	DEG F XC81,180DEG,.05IN
C A1084	T TEMP SIDE HS LOC 9 B	TR				4	1	S/S	-100	+1500	DEG F XC81,180DEG,.2IN
C A1085	T TEMP SIDE HS LOC 11 A	TR				4	1	S/S	-100	+2000	DEG F XC23.2,180DEG,.05IN
C A1086	T TEMP SIDE HS LOC 11 B	TR				4	1	S/S	-100	+1000	DEG F XC23.2,180DEG,.2IN
C A1087	T TEMP SIDE HS LOC 11 C	TR				4	1	S/S	-100	+600	DEG F XC23.2,180DEG,BL
C A1089	T TEMP SIDE HS LOC 9 C	TR				4	1	S/S	-100	+600	DEG F XC81,180DEG,BL
C A1091	T TEMP SIDE HS LOC 16 A	TR				4	1	S/S	-100	+2000	DEG F XC50,228DEG,.05IN
C A1092	T TEMP SIDE HS LOC 16 B	TR				4	1	S/S	-100	+1000	DEG F XC50,228DEG,.2IN
C A1093	T TEMP SIDE HS LOC 16 C	TR				4	1	S/S	-100	+600	DEG F XC50,228DEG,BL
C A1096	T TEMP SIDE HS LOC 18 A	TR				4	1	S/S	-100	+2000	DEG F XC44,270DEG,.05IN
C A1097	T TEMP SIDE HS LOC 18 B	TR				4	1	S/S	-100	+1000	DEG F XC44,270DEG,.2IN
C A1098	T TEMP SIDE HS LOC 18 C	TR				4	1	S/S	-100	+600	DEG F XC44,270DEG,BL
C A1099	T TEMP SIDE HS LOC 29 A	TR				4	1	S/S	-100	+1500	DEG F XC81,228DEG,.05IN
C A1100	T TEMP SIDE HS LOC 29 B	TR				4	1	S/S	-100	+600	DEG F XC81,228DEG,BL
C A1102	X CHAR AFT HS STATIC PRESS LOC 4 A	TR				4	10	S/S			EVENT ZC-71,YCO
C A1111	X CHAR AFT HS STATIC PRESS LOC 12	TR				4	10	S/S			EVENT ZCO,YCO

MEAS. ID	MEASUREMENT DESCRIPTIØN	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPØNSE		DATA RANGE LØW	HIGH	UNITS	LØCATIØN
C A1116 X	CHAR AFT HS STATIC PRESS LØC 3	TR				4	10	S/S			EVENT	ZC71,YCO
C A1130 T	TEMP SIDE HS LØC 30 A	TR				4	1	S/S	-100	+2000	DEG F	XC60,228DEG,.05IN
C A1131 T	TEMP SIDE HS LØC 30 B	TR				4	1	S/S	-100	+1000	DEG F	XC60,228DEG,.2IN
C A1132 T	TEMP SIDE HS LØC 30 C	TR				4	1	S/S	-100	+600	DEG F	XC60,228DEG,BL
C A1141 P	AFT HT SHLD BNDRY STATIC PRES 1	TR				4	10	S/S	+0	+5	PSIA	ZC75,YCO
C A1142 P	AFT HT SHLD BNDRY STATIC PRES 2	TR				4	10	S/S	+0	+3	PSIA	ZC-71,YCO
C A1143 P	AFT HT SHLD BNDRY STATIC PRES 3	TR				4	10	S/S	+0	+5	PSIA	ZC71,YCO
C A1145 P	AFT HT SHLD BNDRY STATIC PRES 5	TR				4	10	S/S	+0	+3	PSIA	ZCO,YC71
C A1146 P	AFT HT SHLD BNDRY STATIC PRES 6	TR				4	10	S/S	+0	+5	PSIA	ZC61,YCO
C A1147 P	AFT HT SHLD BNDRY STATIC PRES 7	TR				4	10	S/S	+0	+5	PSIA	ZC55,YCO
C A1148 P	AFT HT SHLD BNDRY STATIC PRES 8	TR				4	10	S/S	+0	+5	PSIA	ZC39,YCO
C A1149 P	AFT HT SHLD BNDRY STATIC PRES 9	TR				4	10	S/S	+0	+3	PSIA	ZC-39,YCO
C A1150 P	AFT HT SHLD BNDRY STATIC PRES 10	TR				4	10	S/S	+0	+5	PSIA	ZCO,YC39
C A1151 P	AFT HT SHLD BNDRY STATIC PRESS 11	TR				4	10	S/S	+0	+5	PSIA	ZCO,YC-39
C A1152 P	AFT HT SHLD BNDRY STATIC PRES 12	TR				4	10	S/S	+0	+5	PSIA	ZCO,YCO
C A1160 P	SIDE HS BNDRY STATIC PRES LØC 1	TR				4	10	S/S	+0	+0.5	PSIA	XC23.2,90DEG
C A1161 P	SIDE HS BNDRY STATIC PRES LØC 2	TR				4	10	S/S	+0	+0.5	PSIA	XC44,90DEG

MEAS. ID	MEASUREMENT DESCRIPTION	TM	ACCESSIBILITY AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C A1162 P	SIDE HS BNDRY STATIC PRES LOC 3	TR				4	10	S/S	+0	+0.5	PSIA	XC60,90DEG
C A1163 P	SIDE HS BNDRY STATIC PRES LOC 4	TR				4	10	S/S	+0	+0.5	PSIA	XC81,90DEG
C A1164 P	FWD HS BNDRY STATIC PRES LOC 5	TR				4	10	S/S	+0	+0.5	PSIA	XC112.25,90DEG
C A1165 P	SIDE HS BNDRY STATIC PRES LOC 6	TR				4	10	S/S	+0	+0.5	PSIA	XC23.2,135DEG
C A1166 P	SIDE HS BNDRY STATIC PRES LOC 13	TR				4	10	S/S	+0	+0.5	PSIA	XC21.5,270DEG
C A1168 R	FLUX SIDE HS LOC 14	TR				4	1	S/S	+0	+5	B/F/S	XC81,188DEG
C A1169 P	FWD HS BNDRY STATIC PRES LOC 10	TR				4	10	S/S	+0	+0.5	PSIA	XC88,185DEG
C A1170 P	SIDE HS BNDRY STATIC PRES LOC 11	TR				4	10	S/S	+0	+0.5	PSIA	XC23.2,180DEG
C A1171 P	SIDE HS BNDRY STATIC PRES LOC 12	TR				4	10	S/S	+0	+0.5	PSIA	XC23.2,225DEG
C A1172 P	SIDE HS BNDRY STATIC PRES LOC 14	TR				4	10	S/S	+0	+0.5	PSIA	XC81,188DEG
C A1173 P	SIDE HS BNDRY STATIC PRES LOC 15	TR				4	10	S/S	+0	+0.5	PSIA	XC40,214DEG
C A1175 P	SIDE HS BNDRY STATIC PRES LOC 19	TR				4	10	S/S	+0	+0.5	PSIA	XC81,270DEG
C A1176 P	FWD HS BNDRY STATIC PRES LOC 20	TR				4	10	S/S	+0	+0.5	PSIA	XC112.25,270DEG
C A1177 P	SIDE HS BNDRY STATIC PRES LOC 16	TR				4	10	S/S	+0	+0.5	PSIA	XC50,228DEG
C A1178 P	SIDE HS BNDRY STATIC PRES LOC 22	TR				4	10	S/S	+0	+0.5	PSIA	XC60,143DEG
C A1179 P	SIDE HS BNDRY STATIC PRES LOC 23	TR				4	10	S/S	+0	+0.5	PSIA	XC44,180DEG
C A1180 P	SIDE HS BNDRY STATIC PRES LOC 24	TR				4	10	S/S	+0	+0.5	PSIA	XC60,178DEG

MEAS. ID	MEASUREMENT DESCRIPTION	TM	ACCESSIBILITY AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C A1182	P SIDE HS BNDRY STATIC PRESS LOC 26	TR				4	10	S/S	+0	+0.5	PSIA	XC67,270DEG
C A1185	P APEX BNDRY STATIC PRESS LOC 1	TR				4	10	S/S	+0	+0.5	PSIA	XC133.7APEX
C A1201	R FLUX AFT HS STATIC PRESS LOC 12	TR				4	1	S/S	+0	+75	B/F/S	ZC0,YC0
C A1204	R FLUX AFT HS STATIC PRESS LOC 1	TR				4	1	S/S	+0	+150	B/F/S	ZC+75,YC0
C A1207	R FLUX AFT HS STATIC PRESS LOC 2	TR				4	1	S/S	+0	+30	B/F/S	ZC-71,YC0
C A1213	R FLUX AFT HS STATIC PRESS LOC 3	TR				4	1	S/S	+0	+150	B/F/S	ZC+71,YC0
C A1216	R FLUX AFT HS STATIC PRESS LOC 5	TR				4	1	S/S	+0	+75	B/F/S	ZC0,YC+71
C A1219	R FLUX AFT HS STATIC PRESS LOC 6	TR				4	1	S/S	+0	+150	B/F/S	ZC+61,YC0
C A1225	R FLUX AFT HS STATIC PRESS LOC 7	TR				4	1	S/S	+0	+150	B/F/S	ZC+55,YC0
C A1228	R FLUX AFT HS STATIC PRESS LOC 8	TR				4	1	S/S	+0	+75	B/F/S	ZC+39,YC0
C A1231	R FLUX AFT HS STATIC PRESS LOC 9	TR				4	1	S/S	+0	+45	B/F/S	ZC-39,YC0
C A1234	R FLUX AFT HS STATIC PRESS LOC 10	TR				4	1	S/S	+0	+75	B/F/S	ZC0,YC+39
C A1237	R FLUX AFT HS STATIC PRESS 11	TR				4	1	S/S	+0	+75	B/F/S	ZC0,YC-39
C A1250	R FLUX SIDE HS LOC 1	TR				4	1	S/S	+0	+40	B/F/S	XC23.2,90DEG
C A1253	R FLUX SIDE HS LOC 2	TR				4	1	S/S	+0	+25	B/F/S	XC44,90DEG
C A1256	R FLUX SIDE HS LOC 3	TR				4	1	S/S	+0	+12.5	B/F/S	XC60,90DEG
C A1259	R FLUX SIDE HS LOC 4	TR				4	1	S/S	+0	+10	B/F/S	XC81,90DEG

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	LOW	DATA RANGE HIGH	UNITS	LOCATION
C A1262 R	FLUX FWD HS LOC 5	TR				4	1	S/S	+0	+10 B/F/S	XC112.25,90DEG
C A1265 R	FLUX SIDE HS LOC 6	TR				4	1	S/S	+0	+10 B/F/S	XC23.2,135DEG
C A1274 R	FLUX FWD HS LOC 10	TR				4	1	S/S	+0	+5 B/F/S	XC88,175DEG
C A1277 R	FLUX SIDE HS LOC 11	TR				4	1	S/S	+0	+7.5 B/F/S	XC23.2,180DEG
C A1280 R	FLUX SIDE HS LOC 12	TR				4	1	S/S	+0	+5 B/F/S	XC23.2,225DEG
C A1283 R	FLUX SIDE HS LOC 13	TR				4	1	S/S	+0	+2.5 B/F/S	XC21.5,270DEG
C A1286 R	FLUX SIDE HS LOC 14	TR				4	1	S/S	+0	+2.5 B/F/S	XC40,214DEG
C A1292 R	FLUX SIDE HS LOC 19	TR				4	1	S/S	+0	+5 B/F/S	XC81,270DEG
C A1295 R	FLUX FWD HS LOC 20	TR				4	1	S/S	+0	+2.5 B/F/S	XC112.25,270DEG
C A1298 R	FLUX SIDE HS LOC 16	TR				4	1	S/S	+0	+5 B/F/S	XC50,228DEG
C A1305 R	ABLATION AFT HS LOC 3	TR				4	10	S/S			ZC+71,YCO
C A1307 R	ABLATION AFT HS LOC 4	TR				4	10	S/S			ZC-71,YCO
C A1313 R	ABLATION AFT HS LOC 12	TR				4	10	S/S			ZCO,YCO
C A1320 R	FLUX SIDE HS LOC 22A	TR				4	1	S/S	+0	+10 B/F/S	XC60,143DEG
C A1323 R	FLUX SIDE HS LOC 22B	TR				4	1	S/S	+0	+5 B/F/S	XC44,180DEG
C A1326 R	FLUX SIDE HS LOC 24	TR				4	1	S/S	+0	+5 B/F/S	XC60,178DEG
C A1332 R	FLUX SIDE HS LOC 26	TR				4	1	S/S	+0	+5 B/F/S	XC67,270DEG

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C A1341 R	FLUX APEX LOC 1	TR				4	1 S/S	+0	+10	B/F/S	XC133.7 APEX
C A1344 R	FLUX RENDEZVOUS WINDOW FRAME	TR				4	1 S/S	+0	+10	B/F/S	XC57.6,231DEG
C A1360 T	TEMP SIDE HS LOC 19 A	TR				4	1 S/S	-100	+1500	DEG F	XC81,270DEG,.05IN
C A1361 T	TEMP SIDE HS LOC 19 B	TR				4	1 S/S	-100	+600	DEG F	XC81,270DEG,BL
C A1362 T	TEMP FWD HS LOC 20 A	TR				4	1 S/S	-100	+1500	DEG F	XC112.25,270DEG,.05IN
C A1363 T	TEMP FWD HS LOC 20 B	TR				4	1 S/S	-100	+600	DEG F	XC112.25,270DEG,BL
C A1364 T	TEMP SIDE HS UMB CON LOC 1 A	TR				4	1 S/S	-100	+1000	DEG F	XC31,UMB 285DEG
C A1365 T	TEMP SIDE HS UMB CON LOC 1 B	TR				4	1 S/S	-100	+1000	DEG F	XC39.6,UMB 285DEG
C A1366 T	TEMP SIDE HS UMB CON LOC 1 C	TR				4	1 S/S	-100	+1000	DEG F	XC25,UMB 285DEG
C A1367 T	TEMP SIDE HS UMB CON LOC 1 D	TR				4	1 S/S	-100	+600	DEG F	XC20.8,UMB 285DEG
C A1368 T	TEMP SIDE HS LOC 21 A	TR				4	1 S/S	-100	+3000	DEG F	XC44,45DEG,.05IN
C A1369 T	TEMP SIDE HS LOC 21 B	TR				4	1 S/S	-100	+1500	DEG F	XC44,45DEG,.2IN
C A1370 T	TEMP SIDE HS LOC 21 C	TR				4	1 S/S	-100	+600	DEG F	XC44,45DEG,BL
C A1379 T	TEMP AFT HS TENSION TIE 1A	TR				4	1 S/S	-100	+3000	DEG F	R60,42.75DEG,.05IN
C A1380 T	TEMP AFT HS TENSION TIE 1B	TR				4	1 S/S	-100	+1500	DEG F	R60,42.75,.2IN
C A1381 T	TEMP AFT HS TENSION TIE 1C	TR				4	1 S/S	-100	+600	DEG F	R60,42.75DEG,BL
C A1382 R	FLUX AFT HS TENSION TIE 1D	TR				4	1 S/S	+0	+150	B/F/S	R60,42.75DEG

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	LOW	HIGH	UNITS	LOCATION
C A1383 P	PRESS AFT HS TENSION TIE 1D	TR				4	10 S/S	+0	+5	PSIA	R60,42.75DEG
C A1386 P	PRESS RENDEZVOUS WINDOW FRAME	TR				4	10 S/S	+0	+0.5	PSIA	XC57.6,231DEG
C A1401 S	STRAIN AX AFT HS OUT Z-Z	TR				4	10 S/S	-5000	+5000	UI/IN	CENTER
C A1402 S	STRAIN AX AFT HS IN Z-Z	TR				4	10 S/S	-5000	+5000	UI/IN	CENTER
C A1403 S	STRAIN AX AFT HS OUT Y-Y	TR				4	10 S/S	-5000	+5000	UI/IN	CENTER
C A1404 S	STRAIN AX AFT HS IN Y-Y	TR				4	10 S/S	-5000	+5000	UI/IN	CENTER
C A1405 S	STRAIN AX AFT HS OUT RADIAL	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 46,90DEG
C A1406 S	STRAIN AX AFT HS IN RADIAL	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 46,90DEG
C A1407 S	STRAIN AX AFT HS OUT TANG	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 47,90DEG
C A1408 S	STRAIN AX AFT HS IN TANG	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 47,90DEG
C A1409 S	STRAIN AX AFT HS OUT RADIAL	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 46,0DEG
C A1410 S	STRAIN AX AFT HS IN RADIAL	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 46,0DEG
C A1411 S	STRAIN AX AFT HS OUT TANG	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 47,0DEG
C A1412 S	STRAIN AX AFT HS IN TANG	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 47,0DEG
C A1413 S	STRAIN AX AFT HS OUT RADIAL	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 46,180DEG
C A1414 S	STRAIN AX AFT HS IN RADIAL	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 46,180DEG
C A1415 S	STRAIN AX AFT HS OUT TANG	TR				4	10 S/S	-5000	+5000	UI/IN	RADIUS 47,180DEG

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C A1416 S	STRAIN AX AFT HS IN TANG	TR				4	10	S/S	-5000	+5000	UI/IN	RADIUS 47,180DEG
C A1670 R	FLUX SIDE HS SCIMITAR ANT	TR				4	1	S/S	+0	+45	B/F/S	XC27.1,253DEG
C A1672 R	FLUX SIDE HS SCIMITAR ANT	TR				4	1	S/S	+0	+45	B/F/S	XC32.6,253DEG
C A1675 P	PRESS SIDE HS SCIMITAR ANT	TR				4	10	S/S	+0	+3	PSIA	XC27.1,253DEG
C A1676 P	PRESS SIDE HS SCIMITAR ANT	TR				4	10	S/S	+0	+3	PSIA	XC32.6,253DEG
C A1677 P	PRESS SIDE HS SCIMITAR ANT	TR				4	10	S/S	+0	+3	PSIA	XC32.6,253DEG
S A2362 T	TEMP BEAM 2	FQ				4	1	S/S	-100	+200	DEG F	XS280,43DEG,R66
S A2363 T	TEMP BEAM 5	FQ				4	1	S/S	-100	+200	DEG F	XS280,223DEG,R66
C A7649 P	PRESS BETWEEN STRUCTURES LOC 1	TR				4	1	S/S	+0	+15	PSIA	XC75.5,35DEG
C A7650 P	PRESS CM VENT DUCT	TR				4	1	S/S	+0	+15	PSIA	XC23.5,252DEG
C A7880 T	TEMP CM VENT DUCT HEAT SINK	TR				4	1	S/S	-100	+1500	DEG F	XC20.2,249DEG
C A7882 T	TEMP CM VENT DUCT HEAT SINK	TR				4	1	S/S	-100	+1500	DEG F	XC28,249DEG
C A7884 T	TEMP CM VENT DUCT HEAT SINK	TR				4	1	S/S	-100	+2000	DEG F	XC31.5,249DEG

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C C0180 T	TEMP POST LANDING BATTERY CASE	FQ				4	1	S/S	+32	+212	DEG F	
C C0185 T	TEMP PYRO BATTERY A CASE	FQ				4	1	S/S	+32	+212	DEG F	
C C0186 T	TEMP PYRO BATTERY B CASE	FQ				4	1	S/S	+32	+212	DEG F	
C C0214 V	DC VOLTAGE BATT CHARGER OUT	PCM		SM		1	10	S/S	+0	+45	VDC	

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C D0037 X	ELS SEQ START RLY CLOSE A	PCME				2	10	S/S		EVENT	
C D0038 X	ELS SEQ START RLY CLOSE B	PCME				2	10	S/S		EVENT	
C D0101 X	LE/PC MTR FIRE INITIATE A	PCME				2	10	S/S		EVENT	
C D0102 X	LE/PC MTR FIRE INITIATE B	PCME				2	10	S/S		EVENT	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C G2010 V X	PIPA SG OUTPUT IN PHASE	TR				4	2000CPS				
C G2030 V Y	PIPA SG OUTPUT IN PHASE	TR				4	2000CPS				
C G2050 V Z	PIPA SG OUTPUT IN PHASE	TR				4	2000CPS				
C G3000 X	TRUN CDU DECODER +DELTA TH			A		3					PSA TRAY 7
C G6001 D	NAV BASE ROLL VIBRATION	TR				4	2000CPS				
C G6002 D	NAV BASE PITCH VIBRATION	TR				4	2000CPS				
C G6003 D	NAV BASE YAW VIBRATION	TR				4	2000CPS				

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG RESPONSE SYRS	DATA RANGE LOW	HIGH	UNITS	LOCATION
C H0027	V PITCH 2 VEL GEN DEMOD OUT				A	3				
C H0033	V PITCH 1 VEL GEN DEMOD OUT				A	3				
C H1027	V YAW 2 VEL GEN DEMOD OUT				A	3				

MEAS. ID	MEASUREMENT DESCRIPTION	TM	ACCESSIBILITY AUXD DISP OSE	MCPG SYMS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C K0004 A	LINEAR ACCEL STRUCTURE +-AXIS A	PCM		4	100 S/S	-2	+10	G	XC78,YC0,ZC21
C K0005 A	LINEAR ACCEL STRUCTURE +-AXIS A	PCM		4	100 S/S	-1.56	+1.56	G	XC78,YC0,ZC21
C K0006 A	LINEAR ACCEL STRUCTURE +-AXIS A	PCM		4	100 S/S	-1.56	+1.56	G	XC78,YC0,ZC21
C K0020 D	VIBRATION FORCE/FUEL SM ENGINE	TR		4	2500CPS	-50	+50	G	SM ENGINE TNJ
C K0021 D	VIBRATION RADIAL SM ENGINE	TR		4	2500CPS	-50	+50	G	SM ENGINE TNJ
C K0032 Y	ACOUSTIC CM INTERIOR LOW RANGE	TR		4	10K CPS	+70	+110	DB	CM INTERIOR
C K0033 Y	ACOUSTIC CM INTERIOR HIGH RANGE	TR		4	10K CPS	+100	+140	DB	CM INTERIOR
C K0040 D	VIBRATION X-X AXIS LOC A	TR		4	2500CPS	-75	+75	G	XC81,YC0,ZC25
C K0041 D	VIBRATION Z-Z AXIS LOC A	TR		4	2500CPS	-75	+75	G	XC42.7,YC0,ZC60
C K0042 D	VIBRATION X-X AXIS LOC B	TR		4	2500CPS	-75	+75	G	XC14,YC0,ZC57
C K0043 D	VIBRATION Z-Z AXIS LOC B	TR		4	2500CPS	-75	+75	G	XC34,YC0,ZC33
C K0061 A	LINEAR ACCEL CM DRAG AXIS	TR		4	30 CPS	+0	+10	G	
C K0062 A	LINEAR ACCEL CM LIFT AXIS	TR		4	30 CPS	-0.5	+6	G	
C K1000 N	16 MM CAMERA VIEW SUBJECTS			4	100 FPS				PHOTO ACCESS TUNNEL

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
S P0002 T	HE TEMP TANK	PCM		M	T	1	1	S/S	-100	+200	DEG F	
S P0005 T	TEMP OXIDIZER ENG FEED LINE	FQ				4	1	S/S	+0	+200	DEG F	
S P0008 T	TEMP FUEL ENG FEED LINE	FQ				4	1	S/S	+0	+200	DEG F	
S P0040 T	TEMP MAIN VLV ENGINE FUEL IN	FQ				4	1	S/S	+0	+200	DEG F	
S P0041 T	TEMP MAIN VLV ENGINE OXIDIZER IN	FQ				4	1	S/S	+0	+200	DEG F	
S P0051 T	TEMP NOZZLE OUTER SKIN 2	FQ				4	1	S/S	-250	+2500	DEG F	
S P0052 T	TEMP NOZZLE OUTER SKIN 3	FQ				4	1	S/S	-250	+2500	DEG F	
S P0053 T	TEMP NOZZLE OUTER SKIN 4	FQ				4	1	S/S	-250	+2000	DEG F	
S P0060 T	TEMP INJECTOR MANIFOLD	FQ				4	1	S/S	+0	+200	DEG F	
S P2054 T	TEMP GIMBAL ACTR CASE (YAW)	FQ				4	1	S/S	+0	+200	DEG F	
S P2055 T	TEMP GIMBAL ACTR CASE (PITCH)	FQ				4	1	S/S	+0	+200	DEG F	
S P2063 T	TEMP OVERBD LINE OUT OF SOLENOID	FQ				4	1	S/S	+0	+250	DEG F	
S P2064 T	TEMP OVERBD LINE INTO CHECK VLV	FQ				4	1	S/S	-150	+350	DEG F	
S P2065 T	TEMP OVERBD LINE OUT OF CHK VLV	FQ				4	1	S/S	-150	+350	DEG F	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
C R0081	T TEMP OX VLV OUT CCW ENG SYS A	FQ				4	1 S/S	+0	+300	DEG F	
C R0083	T TEMP OX VLV OUT CCW ENG SYS B	FQ				4	1 S/S	+0	+300	DEG F	
C R0085	T TEMP OX VLV OUT -Y ENG SYS A	FQ				4	1 S/S	+0	+300	DEG F	
C R0086	T TEMP OX VLV OUT +Y ENG SYS B	FQ				4	1 S/S	+0	+300	DEG F	
C R0623	P FUEL LINE PRESS SYS A	FQ				4	1 S/S	+0	+400	PSIA	
C R0624	P FUEL LINE PRESS SYS B	FQ				4	1 S/S	+0	+400	PSIA	
C R0625	P OXIDIZER LINE PRESS SYS A	FQ				4	1 S/S	+0	+400	PSIA	
C R0626	P OXIDIZER LINE PRESS SYS B	FQ				4	1 S/S	+0	+400	PSIA	
C R4553	T -YAW ENG OUT WALL TEMP 1 SYS A	FQ				4	1 S/S	+0	+1000	DEG F	
C R4554	T -YAW ENG OUT WALL TEMP 2 SYS A	FQ				4	1 S/S	+0	+1000	DEG F	
C R4555	T -YAW ENG OUT WALL TEMP 3 SYS A	FQ				4	1 S/S	+0	+1000	DEG F	
C R4556	T +YAW ENG OUT WALL TEMP 1 SYS B	FQ				4	1 S/S	+0	+1000	DEG F	
C R4557	T +YAW ENG OUT WALL TEMP 2 SYS B	FQ				4	1 S/S	+0	+1000	DEG F	
C R4558	T +YAW ENG OUT WALL TEMP 3 SYS B	FQ				4	1 S/S	+0	+1000	DEG F	
C R4559	T CCW ROLL ENG OUT WALL T 1 SYS A	FQ				4	1 S/S	+0	+1000	DEG F	
C R4560	T CCW ROLL ENG OUT WALL T 2 SYS A	FQ				4	1 S/S	+0	+1000	DEG F	
C R4561	T CCW ROLL ENG OUT WALL T 3 SYS A	FQ				4	1 S/S	+0	+1000	DEG F	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	LOW	DATA RANGE HIGH	UNITS	LOCATION
C R4580 T	CCW ROLL ENG OUT WALL T 1 SYS B	FQ				4	1	S/S	+0 +1000	DEG F	
C R4581 T	CCW ROLL ENG OUT WALL T 2 SYS B	FQ				4	1	S/S	+0 +1000	DEG F	
C R4582 T	CCW ROLL ENG OUT WALL T 3 SYS B	FQ				4	1	S/S	+0 +1000	DEG F	
S R5733 P	A OXIDIZER MANIFOLD PRESS	FQ				4	1	S/S	+0 +300	PSIA	
S R5737 P	A FUEL MANIFOLD PRESS	FQ				4	1	S/S	+0 +300	PSIA	
S R5780 P	B OXIDIZER MANIFOLD PRESS	FQ				4	1	S/S	+0 +300	PSIA	
S R5784 P	B FUEL MANIFOLD PRESS	FQ				4	1	S/S	+0 +300	PSIA	
S R5820 P	C OXIDIZER MANIFOLD PRESS	FQ				4	1	S/S	+0 +300	PSIA	
S R5821 P	D OXIDIZER MANIFOLD PRESS	FQ				4	1	S/S	+0 +300	PSIA	
S R5822 P	C FUEL MANIFOLD PRESS	FQ				4	1	S/S	+0 +300	PSIA	
S R5823 P	D FUEL MANIFOLD PRESS	FQ				4	1	S/S	+0 +300	PSIA	
S R7125 T	TEMP INJ HEAD -P ENG SYS A	FQ				4	1	S/S	+0 +500	DEG F	
S R7128 T	TEMP INJ HEAD +Y ENG SYS B	FQ				4	1	S/S	+0 +500	DEG F	
S R7134 T	TEMP INJ HEAD CCW ENG SYS A	FQ				4	1	S/S	+0 +500	DEG F	
S R7137 T	TEMP INJ HEAD CW ENG SYS C	FQ				4	1	S/S	+0 +500	DEG F	
S R7145 T	-P ENG FUEL VLV SOLENOID SYS A	FQ				4	1	S/S	+0 +300	DEG F	XA963,YA-11,ZA-81
S R7148 T	CCW ENG FUEL VLV SOLENOID SYS A	FQ				4	1	S/S	+0 +300	DEG F	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	LOW	DATA RANGE HIGH	UNITS	LOCATION
S R7149 T +Y ENG FUEL VLV SOLENOID SYS B		FQ				4	1	S/S	+0	+300 DEG F	
S R7155 T CW ENG FUEL VLV SOLENOID SYS C		FQ				4	1	S/S	+0	+500 DEG F	

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE		DATA RANGE LOW	HIGH	UNITS	LOCATION
C T0010 T	TEMP SIGNAL CONDITIONER PACKAGE	FQ			AP	3	1	S/S	+32	+250	DEG F	
C T0013 X	TAPE MOTION MONITOR R AND D	PCME				4	10	S/S				
C T0065 T	TEMP VHF/FM XMTR	FQ			AP	3	1	S/S	+32	+250	DEG F	
C T0096 T	TEMP C-BAND XPONDER (OUT STAGE)	FQ			AP	3	1	S/S	+32	+250	DEG F	
C T0108 K	GAS ANALYSIS-SUIT AND CABIN	PCM				2	10	S/S				
C T0179 T	TEMP S-BAND XPONDER (OUTPUT)	FQ			AP	3	1	S/S	+32	+250	DEG F	
C T0194 T	VHF/AM XMTR TEMP	FQ			AP	3	1	S/S	+32	+250	DEG F	
C T0216 T	S-BAND PWR AMPLIFIER TEMP	FQ			AP	3	1	S/S	+32	+250	DEG F	
C T1400 V	90X10 HI-LEVEL COMM TM DATA	TR				4	18KC					
C T1401 V	90X10 HI-LEVEL COMM TR DATA	TR				4	18KC					
C T1402 V	90X10 LO-LEVEL COMM 2 TR DATA	TR				4	18KC					
C T1403 V	90X10 LO-LEVEL COMM 1 TR DATA	TR				4	18KC					

Subsystem	OP Meas Anal	OP Meas PCM Event	OP Meas Digi	OP Meas Disp	OP Meas Total	FQ Anal	FQ PCM Event	FQ PAM FM/FM	FQ TR	FQ Total	PCM Total	Sys Total
A - Structures	6	0	0	0	6	8	0	2	190	200	14	206
C - Electrical	57	9	0	72	76	0	0	3	0	3	66	79
D - Launch Escape	7	32	0	2	41	0	0	0	0	0	39	41
E - Earth Landing	1	8	0	1	9	0	0	0	0	0	9	9
F - Environmental Control	29	0	0	25	31	0	0	0	0	0	29	31
G - Guidance & Navigation	30	23	1	43	78	0	0	0	6	6	54	84
H - Stabilization Control	24	27	0	24	67	0	0	0	0	0	51	67
K - Flight Technology	0	0	0	0	0	3	0	0	10	13	3	13
P - Propulsion	17	0	0	21	31	0	0	13	0	13	17	44
R - Reaction Control	20	0	2	42	42	0	0	36	0	36	22	78
S - Crew Safety	1	14	0	28	28	0	0	0	0	0	15	28
T - Communications & Instrumentation	19	3	3	1	25	0	1	6	4	11	26	36
TOTAL	211	116	6	259	434	11	1	60	210	282	345	716

Measurement Summary SC-011

6.0 TELEMETRY LOADING SCHEDULE

(To be added at a later date)

7.0 TELEMETRY MODIFICATION KIT

This kit will be added to the service module subsequent to manufacturing completion of the service module. It is required to telemeter back additional measurements from the service module and the LEM adapter. The column headings are as defined in section 3.0 with the addition of the abbreviation SMTM in the telemetry column representing service module telemetry.

(MSC) APOLLO SM MOD KIT MEASUREMENT LIST

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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S A0613 P	SM INTERNAL PRESSURE	SMTM				4	10 S/S	+0	+15	PSIA	XS277,YS15,ZS15
S A2020 S	STRAIN AX TENSION BOLT BEAM 2	SMTM				4	10 S/S	+0	+5000	UI/IN	BEAM 2
S A2021 S	STRAIN AX TENSION BOLT BEAM 4	SMTM				4	10 S/S	+0	+5000	UI/IN	BEAM 4
S A2022 S	STRAIN AX TENSION BOLT BEAM 6	SMTM				4	10 S/S	+0	+5000	UI/IN	BEAM 6
S A3271 S	SM BEAM 1 OUTER CAP STRAIN 1	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA983,332 DEG
S A3272 S	SM BEAM 1 OUTER CAP STRAIN 2	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA973,332 DEG
S A3273 S	SM BEAM 1 OUTER CAP STRAIN 3	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA858,332 DEG
S A3274 S	SM BEAM 1 OUTER CAP STRAIN 4	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA848,332 DEG
S A3275 S	SM BEAM 4 OUTER CAP STRAIN 1	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA983,152 DEG
S A3276 S	SM BEAM 4 OUTER CAP STRAIN 2	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA973,152 DEG
S A3277 S	SM BEAM 4 OUTER CAP STRAIN 3	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA858,152 DEG
S A3278 S	SM BEAM 4 OUTER CAP STRAIN 4	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA848,152 DEG
S A4001 S	STRAIN S/C SM COMP PAD BEAM 1A	SMTM				4	10 S/S	-5000	+1000	UI/IN	XA1000,YA30.5,ZA-15.5
S A4002 S	STRAIN S/C SM COMP PAD BEAM 1B	SMTM				4	10 S/S	-5000	+1000	UI/IN	XA1000,YA61,ZA-31
S A4003 S	STRAIN S/C SM COMP PAD BEAM 2A	SMTM				4	10 S/S	-5000	+1000	UI/IN	XA1000,YA24.5,ZA23.8
S A4004 S	STRAIN S/C SM COMP PAD BEAM 2B	SMTM				4	10 S/S	-5000	+1000	UI/IN	XC3,YC45.7,ZC43.5
S A4005 S	STRAIN S/C SM COMP PAD BEAM 3A	SMTM				4	10 S/S	-5000	+1000	UI/IN	XA1000,YA-8,ZA33.5

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(MSC) APOLLO SM MOD KIT MEASUREMENT LIST

SYSTEM R/D MEASUREMENTS ONLY SPACECRAFT 11 SUPPRESSED 12 OCTOBER 1964 L- 2
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MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S A4006	S STRAIN S/C SM COMP PAD BEAM 3B	SMTM				4	10	S/S -5000	+1000	UI/IN	XA1000,YA-25,ZA66.5
S A4007	S STRAIN S/C SM COMP PAD BEAM 4A	SMTM				4	10	S/S -5000	+1000	UI/IN	XA1000,YA-30.5,ZA15.5
S A4008	S STRAIN S/C SM COMP PAD BEAM 4B	SMTM				4	10	S/S -5000	+1000	UI/IN	XC3,YC-55.3,ZC28.5
S A4009	S STRAIN S/C SM COMP PAD BEAM 5A	SMTM				4	10	S/S -5000	+1000	UI/IN	XA1000,YA-24.5,ZA-24
S A4010	S STRAIN S/C SM COMP PAD BEAM 5B	SMTM				4	10	S/S -5000	+1000	UI/IN	XA1000,YA-49.5,ZA-47
S A4011	S STRAIN S/C SM COMP PAD BEAM 6A	SMTM				4	10	S/S -5000	+1000	UI/IN	XA1000,YA-8,ZA-33.5
S A4012	S STRAIN S/C SM COMP PAD BEAM 6B	SMTM				4	10	S/S -5000	+1000	UI/IN	XC3,YC14,ZC-61.3
S A7900	T TEMP SKIN SURF AFT OF UMB	SMTM				4	10	S/S -100	+600	DEG F	XC325,307 DEG
S A7901	T TEMP SKIN SURF AFT OF UMB	SMTM				4	10	S/S -100	+600	DEG F	XS305,307 DEG
S A7902	T TEMP ECS PANEL SKIN SURF	SMTM				4	10	S/S -100	+600	DEG F	XS284,5DEG 24MIN
S A7903	T TEMP ECS PANEL SKIN SURF	SMTM				4	10	S/S -100	+600	DEG F	XS284,185DEG 24MIN
S A7904	T TEMP RCS FWD HOUSING SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS328,263 DEG
S A7905	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS350,307 DEG
S A7906	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS335,263 DEG
S A7907	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS291,263 DEG
S A7908	T TEMP CM/SM FAIRING OUTER SURF	SMTM				4	10	S/S -100	+600	DEG F	XS370,236 DEG
S A7909	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS290,147DEG 21MIN

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S A7910	T TEMP INNER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS290,147DEG 21MIN
S A7911	T TEMP OUTER SURF-SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS230,236 DEG
S A7912	T TEMP INNER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS230,236 DEG
S A7913	T TEMP SM AFT BULKHD	SMTM				4	10	S/S -100	+600	DEG F	XS203,159DEG,R74
S A7914	T TEMP SM AFT BULKHD	SMTM				4	10	S/S -100	+600	DEG F	XS203,159DEG,R68
S A7915	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS280,236 DEG
S A7916	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS350,253 DEG
S A7917	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS320,268 DEG
S A7918	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS320,286 DEG
S A7919	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS250,263 DEG
S A7920	T TEMP RADIATOR TUBE	SMTM				4	10	S/S -100	+600	DEG F	XS285,10.5 DEG
S A7921	T TEMP OUTER SURF SM SKIN	SMTM				4	10	S/S -100	+600	DEG F	XS280,53 DEG
A A7930	T TEMP SLA OUTER SKIN SURF	SMTM				4	10	S/S -100	+600	DEG F	XA593,185 DEG
A A7931	T TEMP SLA FWD RING OUTER SKIN	SMTM				4	10	S/S -100	+600	DEG F	XA831.9,90 DEG
A A7932	T TEMP SLA INNER SKIN SURF	SMTM				4	10	S/S -100	+600	DEG F	XA603,88 DEG
A A7933	T TEMP SLA INNER SKIN SURF	SMTM				4	10	S/S -100	+600	DEG F	XA775,124 DEG
A A7934	T TEMP SLA OUTER SKIN SURF	SMTM				4	10	S/S -100	+600	DEG F	XA775,124 DEG

(MSC) APOLLO SM MOD KIT MEASUREMENT LIST

SYSTEM R/D MEASUREMENTS ONLY SPACECRAFT 11 SUPPRESSED 12 OCTOBER 1964 L- 2
STRUCTURES PAGE NO. 4 F-12

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
A A7935 T	TEMP SLA OUTER SKIN SURF	SMTM				4	10 S/S	-100	+600	DEG F	XA603,88 DEG
A A7936 T	TEMP SLA MID RING SUPPORT	SMTM				4	10 S/S	-100	+600	DEG F	XA583.2,270 DEG
A A7937 T	TEMP SLA OUTER SKIN SURF	SMTM				4	10 S/S	-100	+600	DEG F	XA603,268 DEG
A A7938 T	TEMP SLA OUTER SKIN SURF	SMTM				4	10 S/S	-100	+600	DEG F	XA583.2,180 DEG
A A7939 T	TEMP SLA OUTER SKIN FWD OF HINGE	SMTM				4	10 S/S	-100	+600	DEG F	XA593.2,95 DEG
A A7940 T	TEMP SLA OUTER SKIN FWD OF HINGE	SMTM				4	10 S/S	-100	+600	DEG F	XA593.2,275 DEG
A A7941 T	TEMP SLA OUTER SKIN SURF (MDF)	SMTM				4	10 S/S	-100	+600	DEG F	XA654.5,90 DEG
A A8120 S	SLA OUTER SHELL LONG STRAIN 1	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,34 DEG
A A8121 S	SLA OUTER SHELL CIRF STRAIN 1	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,34 DEG
A A8122 S	SLA INNER SHELL LONG STRAIN 1	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,34 DEG
A A8123 S	SLA INNER SHELL CIRF STRAIN 1	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,34 DEG
A A8124 S	SLA OUTER SHELL LONG STRAIN 2	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,124 DEG
A A8125 S	SLA OUTER SHELL CIRF STRAIN 2	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,124 DEG
A A8126 S	SLA INNER SHELL LONG STRAIN 2	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,124 DEG
A A8127 S	SLA INNER SHELL CIRF STRAIN 2	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,124 DEG
A A8128 S	SLA OUTER SHELL LONG STRAIN 3	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,214 DEG
A A8129 S	SLA OUTER SHELL CIRF STRAIN 3	SMTM				4	10 S/S	-5000	+5000	UI/IN	XA775,214 DEG

(MSC) APOLLO SM MOD KIT MEASUREMENT LIST

SYSTEM R/D MEASUREMENTS ONLY SPACECRAFT 11 SUPPRESSED 12 OCTOBER 1964 L- 2
STRUCTURES PAGE NO. 5 F-12

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
A A8130 S SLA	INNER SHELL LONG STRAIN 3	SMTM				4	10	S/S -5000	+5000	UI/IN	XA775,214 DEG
A A8131 S SLA	INNER SHELL CIRF STRAIN 3	SMTM				4	10	S/S -5000	+5000	UI/IN	XA775,214 DEG
A A8132 S SLA	OUTER SHELL LONG STRAIN 4	SMTM				4	10	S/S -5000	+5000	UI/IN	XA775,304 DEG
A A8133 S SLA	OUTER SHELL CIRF STRAIN 4	SMTM				4	10	S/S -5000	+5000	UI/IN	XA775,304 DEG
A A8134 S SLA	INNER SHELL LONG STRAIN 4	SMTM				4	10	S/S -5000	+5000	UI/IN	XA775,304 DEG
A A8135 S SLA	INNER SHELL CIRF STRAIN 4	SMTM				4	10	S/S -5000	+5000	UI/IN	XA775,304 DEG
A A8140 S SLA	RING STIFFENER AX STRAIN 1	SMTM				4	10	S/S -2000	+2000	UI/IN	XA584.7,YA115,ZA0
A A8141 S SLA	RING STIFFENER AX STRAIN 2	SMTM				4	10	S/S -2000	+2000	UI/IN	XA584.7,YA-115,ZA0
A A8142 S SLA	RING STIFFENER AX STRAIN 3	SMTM				4	10	S/S -2000	+2000	UI/IN	XA584.7,YA0,ZA115
A A8143 S SLA	RING STIFFENER AX STRAIN 4	SMTM				4	10	S/S -2000	+2000	UI/IN	XA584.7,YA0,ZA-115
A A8144 S SLA	LEM RING CABLE AX STRAIN 1	SMTM				4	10	S/S -2000	+2000	UI/IN	XA584.7,TURNBUCKLE
A A8145 S SLA	LEM RING CABLE AX STRAIN 2	SMTM				4	10	S/S -2000	+2000	UI/IN	XA584.7,TURNBUCKLE
A A8146 S SLA	LEM RING CABLE AX STRAIN 3	SMTM				4	10	S/S -2000	+2000	UI/IN	XA584.7,TURNBUCKLE
A A8147 S SLA	LEM RING CABLE AX STRAIN 4	SMTM				4	10	S/S -2000	+2000	UI/IN	XA584.7,TURNBUCKLE

(MSC) APOLLO SM MOD KIT MEASUREMENT LIST

SYSTEM R/D MEASUREMENTS ONLY SPACECRAFT 11 SUPPRESSED 12 OCTOBER 1964 L- 2
FLIGHT TECHNOLOGY PAGE NO. 6 F-12

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S K0240	D VIB AFT HE TANK MOUNT X-AXIS	SMTM				4	250 CPS	-20	+20	G	XS286.5,325DEG,R22
S K0241	D VIB AFT HE TANK MOUNT RADIAL	SMTM				4	250 CPS	-20	+20	G	XS286.5,325DEG,R22
S K0242	A ACCEL AFT BULKHD TK BASE X-AXIS	SMTM				4	100 CPS	-20	+20	G	XS203,YS-24,ZS0
S K0243	A ACCEL AFT BULKHD TK BASE Y-AXIS	SMTM				4	100 CPS	-10	+10	G	XS203,YS-24,ZS0
S K0244	A ACCEL AFT BULKHD TK BASE Z-AXIS	SMTM				4	100 CPS	-10	+10	G	XS203,YS-24,ZS0
S K0245	D VIB SM HE PRESS PANEL RADIAL	SMTM				4	500 CPS	-50	+50	G	XS268,152DEG,R50
S K0246	D VIB SM HE PRESS PANEL TANGENTIAL	SMTM				4	500 CPS	-50	+50	G	XS268,152DEG,R50
A K0250	D VIB SLA SKIN PANEL RADIAL	SMTM				4	400 CPS	-100	+100	G	XA543.25,304 DEG
A K0251	D VIB SLA SKIN PANEL RADIAL	SMTM				4	400 CPS	-100	+100	G	XA647.5,236 DEG
A K0252	D VIB SLA SKIN PANEL RADIAL	SMTM				4	400 CPS	-100	+100	G	XA780,304 DEG

(MSC) APOLLO SM MOD KIT MEASUREMENT LIST

SYSTEM R/D MEASUREMENTS ONLY SPACECRAFT 11 SUPPRESSED 12 OCTOBER 1964 L- 2
CREW SAFETY PAGE NO. 7 F-12

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S S0125 X	CM/SM PHYS SEP MON	SMTM				4	10	S/S		STEP	CM/SM FAIRING

(MSC) APOLLO SM MOD KIT MEASUREMENT LIST

SYSTEM R/D MEASUREMENTS ONLY SPACECRAFT 11 SUPPRESSED 12 OCTOBER 1964 L- 2
COMMUNICATIONS AND INSTRUMENTATION PAGE NO. 8 F-12

MEAS. ID	MEASUREMENT DESCRIPTION	ACCESSIBILITY TM	AUXD	DISP	GSE	MCPG SYRS	RESPONSE	DATA RANGE LOW	HIGH	UNITS	LOCATION
S T1490 T	SM PAM/FM/FM PKG TEMP	SMTM				4	10 S/S	-100	+400	DEG F	TCS SHELF

APOLLO CM/SM MEASUREMENT REQUIREMENTS SUMMARY

SPACECRAFT 11 — 12 OCTOBER 1964 — PART 1

SYSTEM	SM TO CM	TR	FQ	PCM	PCM 1	SUBTOTALS 10	50	(S/S) 100	PCME	PCMD	----	DISP	FLT TOT	GOSS	GSE ACC	GSE TEST	GSE ACE	C/O TOTAL	SYSTEM TOTAL
A	2	191	2	8	8	0	0	0	0	0	0	0	143	0	0	0	0	0	201
C	0	0	3	1	0	1	0	0	0	0	0	1	3	0	0	0	0	0	4
D	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
G	0	6	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	7
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
K	2	10	0	3	0	0	0	3	0	0	0	0	6	0	0	0	0	0	14
P	13	0	13	1	1	0	0	0	0	0	0	1	13	0	0	1	0	0	14
R	16	0	36	0	0	0	0	0	0	0	0	0	36	0	0	0	0	0	36
T	0	4	6	1	0	1	0	0	1	0	0	0	4	0	6	0	6	0	12
TOTAL	33	211	60	14	9	2	0	3	5	0	0	2	208	0	10	1	6	0	295

94 SUPPRESSED MEASUREMENTS

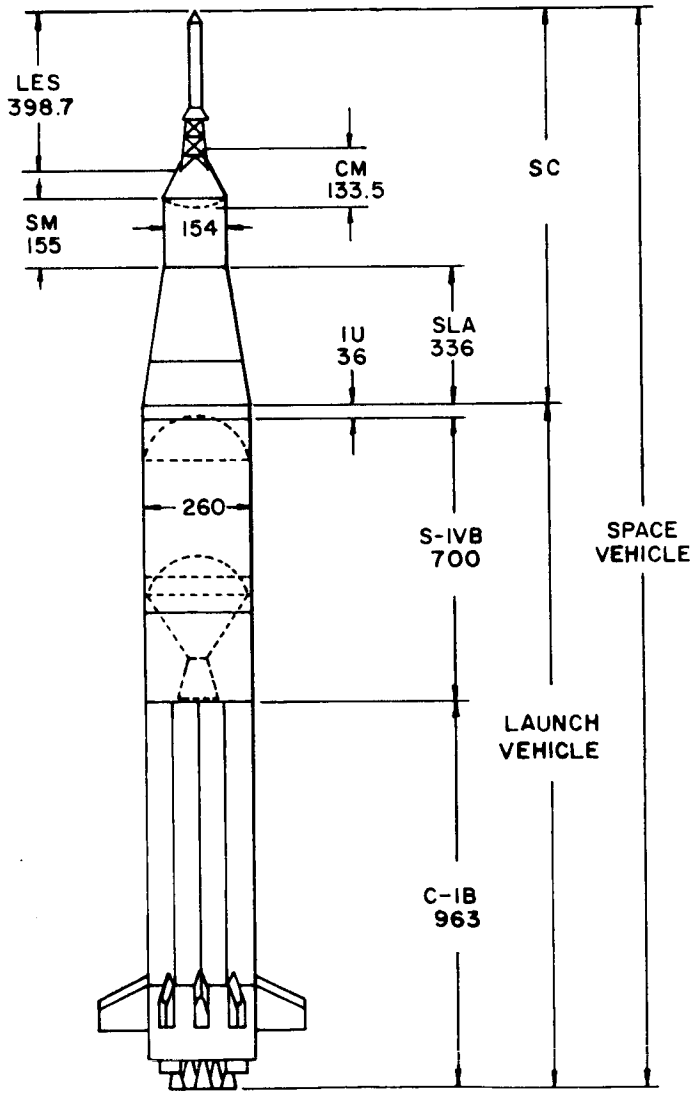
APØLLØ CM/SM MEASUREMENT REQUIREMENTS SUMMARY

SPACECRAFT 11 — 12 ØCTØBER 1964 — PART 2

SYS-TEM	MØDULE A	B	C	L	S	CLASS A	C	D	E	F	H	P	Q	R	S	T	V	X	Y
A	0	0	199	0	2	0	0	0	0	0	0	38	0	39	28	93	0	3	0
C	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0
D	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
G	0	0	7	0	0	0	0	3	0	0	0	0	0	0	0	0	3	1	0
H	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
K	0	0	12	0	2	5	0	6	0	0	0	0	0	0	0	0	0	0	2
P	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	14	0	0	0
R	0	0	20	0	16	0	0	0	0	0	0	12	0	0	0	24	0	0	0
T	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	6	4	1	0
TØTAL	0	0	261	0	34	5	0	9	0	0	0	50	0	39	28	140	11	9	2

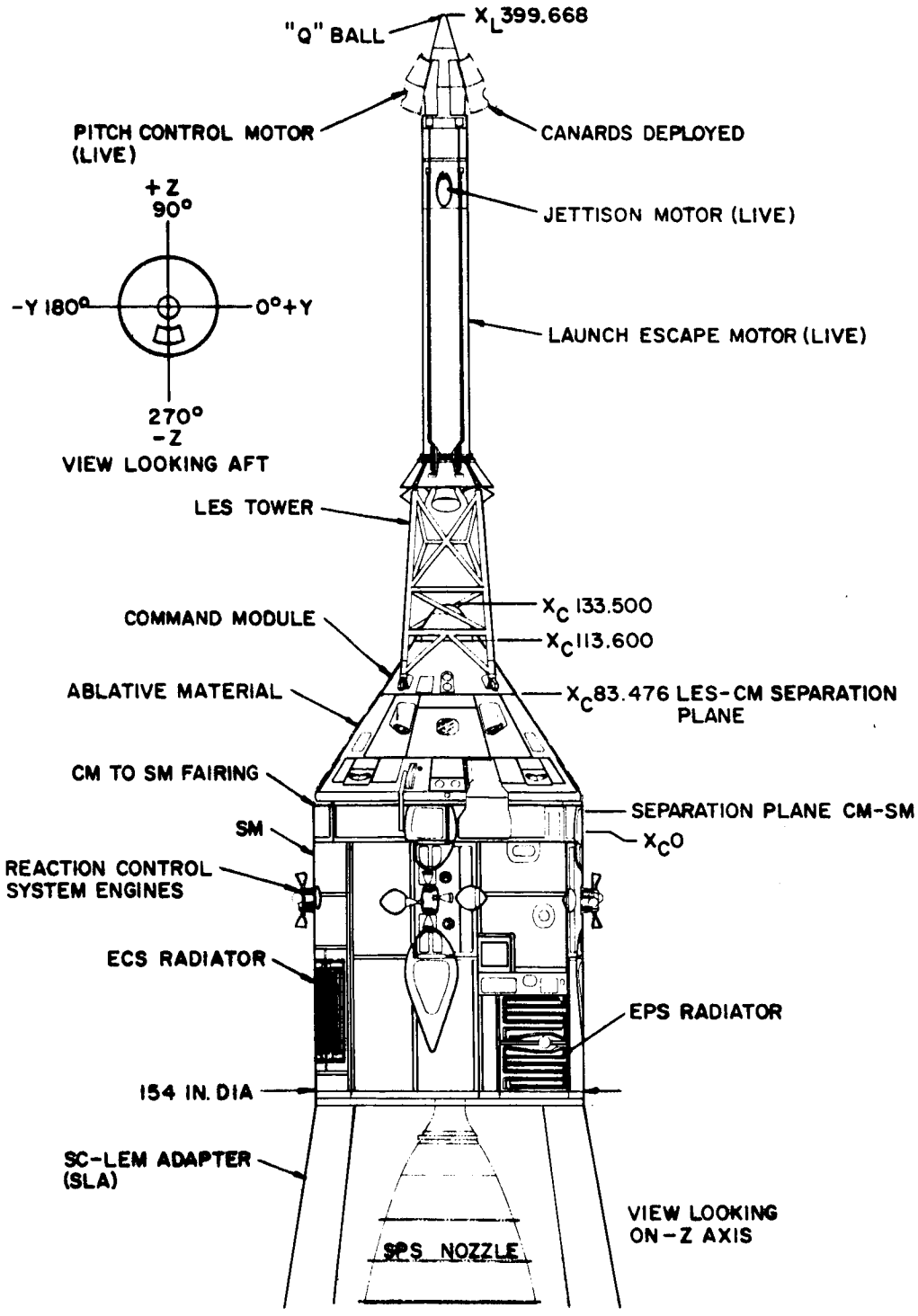
8.0 FIGURES

NOTES:
ALL DIMENSIONS ARE IN INCHES.
ALL DIMENSIONS ARE APPROXIMATE.
DRAWING IS NOT TO SCALE.



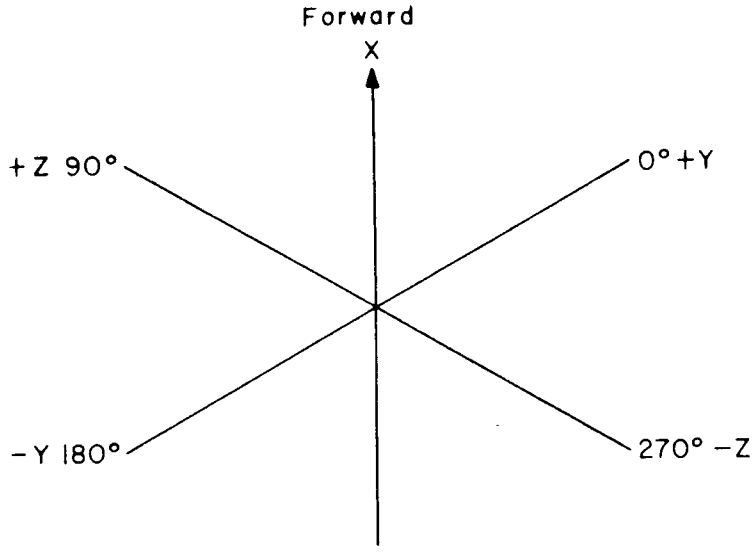
(a) Liftoff configuration

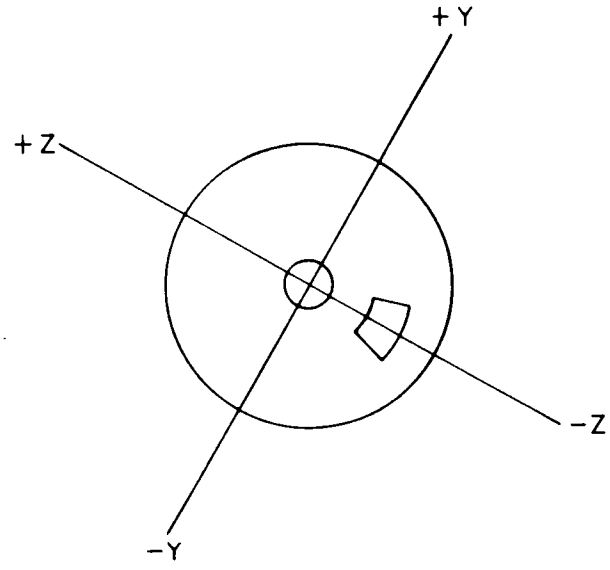
Figure 1-Mission 202 vehicle



(b) SC 011 configuration

Figure 1.-Continued





View looking aft

(c) Measurement location axis references

Figure 1. – Concluded

APPENDIX A

ENGINEERING UNITS ABBREVIATIONS

AC	Alternating Current
AMP	Amperes
B/F/S	BTU Per Square Foot Per Second
CCM	Cubic Centimeters
CC/M	Cubic Centimeters per Minute
CFM	Cubic Feet per Minute
CM	Centimeters
CPS	Cycles per Second
DB	Decibels
DC	Direct Current
DEG	Degrees
DEG C	Degrees Centigrade
DEG F	Degrees Fahrenheit
DEG/S	Degrees per Second
FPS	Frames per Second
FT/S	Feet per Second
FT/S2	Feet per Second Squared
FT-TN	Foot-Ton
G	Gravitational Unit
GAL	Gallons
GND	Ground
GPM	Gallons per Minute
GPS	Gallons per Second
IN	Inches
INH2O	Inches of Water
IN/IN	Inch per Inch
IN-LB	Inch-Pounds
IN/S	Inches per Second
KC	Kilocycles
KLB	Kilopounds
KP/S	Kilopulses per Second
LB	Pounds
LB/FT2	Pounds per Square Foot
LB/HR	Pounds per Hour
LB/S	Pounds per Second
M	Meters
MAMP	Milliamperes
MC	Megacycles
MMHG	Millimeters of Mercury
MS	Milliseconds
MV	Millivolts
MVDC	Millivolts Direct Current

MV/M	Millivolts per Meter
MW	Milliwatts
PCNT	Percent
PH	Hydrogen ION Concentration
PPS	Pulses per Second
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
PSIA	Pounds per Square Inch Absolute
PSID	Pounds per Square Inch Differential
PSIG	Pounds per Square Inch Gauge
PVAC	Peak Volts Alternating Current
RMS	Root Mean Square
RPM	Revolutions per Minute
R/S2	Radians per Second Squared
SEC	Seconds
SFT2	Slug-Feet Squared
SLUG	Slugs
S/S	Samples per Second
UAMP	Microamperes
UI/IN	Microinches per Inch
US	Microseconds
UW	Microwatts
VAC	Volts Alternating Current
VDC	Volts Direct Current
VPK	Volts Peak
VRMS	Volts Root Mean Square
W	Watts