Wind Tunnel Operations Division
Wind Tunnel Systems Branch

INSTRUMENTATION MEASUREMENT REPORT WORK INSTRUCTION

Original
May, 1998

Document Number: A006-9861-XM3

This is a controlled document.
The official version of this document is on the AO Server.
Printed copies are for reference only.

Prepared For
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Ames Research Center, Moffett Field, California

Prepared by
Roy Arakaki, SIMCO Electronics

Approved By:

Herbert J. Finger
Chief, Wind Tunnel Systems Branch

5/15/98
Date

This is a controlled document.
Any changes to this document must be in accordance with the
Configuration Management Procedures, A027-9391-XB4

1.0 Purpose

The purpose of this guide is to assist Instrumentation Engineers in completing the Instrumentation Measurement Report (IMR) used for tests in the FO Wind Tunnel facilities.

2.0 Definitions

See “A006-9861-XM3 IMR Guide” attached to this document

3.0 Reference Documents

Data Management Manual (A027-9761-XB1)

4.0 Tools Required

- Macintosh Computer
- Microsoft Excel Software (version 5.0 or greater)

5.0 Procedure Details

Complete forms (attached) in accordance with instructions on each page.

A006-9861-XM3 IMR Guide

Doc. No. A006-9861-XM3 IMR Guide
Original signed by Herb Finger
May 1998

NAME OF TEST

Test No: XX-XXXX

INSTRUMENTATION MEASUREMENT REPORT
REVISION (ALPHA CHAR.)
IE: (NAME OF IE)

Subsystem ID
FSP 1: Balance FSP 5: Tunnel
FSP 2: Pressure FSP 6: Temperature
FSP 3: Digital FSP 7: WICS
FSP 4: Analog

Calibration Types:
R: Resistor
V: Voltage
X: Physical
S: Simulator

Priority Types:
A: Measurement Critical
B: Measurement Important
C: Measurement Optional
D: Measurement Not Necessary

MAX EU:
Shows the computed value of the maximum EU value SDS will attain for the gain applied

Numbering "0" Based ID: Shaded

Numbering "1" Based ID: Plain

	Base	IRQ	DMA	System
GPIB0	200	10	6	Preston, Temp Sub
GPIB1	260	15	7	PF Amps, Keithley, EDC

INSTRUMENTATION MEASUREMENT LIST / RESEARCHERS TEST REQUIREMENTS

Meas. No.	Measurement ID	Description	S/N	Cal. Date	Device	Sub System	Scan Rate	PRI	Unit/	Pos. Dir.	Acc. Tgt	Cal. Type	Range
BALANCE SUBSYSTEM (FSP #1)													
63	BAL1N1	Normal Force 1			350Ω Strain Gage	FSP 1	3125	A	lbs	Up	15	R	6000
64	BAL1N2	Normal Force 2			350Ω Strain Gage	FSP 1	3125	A	lbs	Dn	15	R	6000
65	BAL1A	Axial Force1			350Ω Strain Gage	FSP 1	3125	A	lbs	In	6.25	R	2500
66	BAL1S1	Side Force 1				FSP 1	3125	A	lbs	Rt	7.5	R	3000
		Side Force 2					3125	A	lbs	Lt	7.5	R	3000
		Rolling Moment					3125				3.3325	R	1333
ANALOG SUBSYSTEM (FSP #4)													
72	RMSHORIZ	RMS Gage Horizontal Tail			RMS Mean, 350ΩStr. G	FSP 4	3125	C	V	Up	0.01	X	10
73	RMSWING	RMS Gage Wing Root			RMS Mean, 350ΩStr. G	FSP 4	3125	C	V	Up	0.01	X	10
74	RMSWING70	RMS Gage Outboard Wing			RMS Mean, 350ΩStr. G	FSP 4	3125	C	V	Up	0.01	X	10
									°	Up	0.032	X	32
									°F	Up	0.08	X,S	80
									°	Up	0.032	X	32
									°F	Up	0.08	X,S	80

AMPLIFIER SETUP / COMP MTHD / INSTRUMENTATION ENGINEER

Meas. No.	Conditioner Setup V	F	G	RCal.	Shnt	MAX EU	Data Type	CONVERSION: EU/mV/V (BEFORE GAINED) OS	KO	K1	K2	RATIO INCAL Cnts	CONVERSION: EU/CNT (AFTER GAINED) OS	K0	+K1/-K1	K2
63	5	1 HZ	1024	120.8K	120K	.	BipolyBias	SEE TD SPREADSHEET					SEE TE CONVERSION SHEET			
64	5	1 HZ	1024	120.8K	120K	.	BipolyBias	SEE TD SPREADSHEET					SEE TE CONVERSION SHEET			
65	5	1 HZ	1024	50.2K	50K	.	BipolyBias	SEE TD SPREADSHEET					SEE TE CONVERSION SHEET			
66	5	1 HZ	1024	120.8K	120K	.	BipolyBias	SEE TD SPREADSHEET					SEE TE CONVERSION SHEET			
(Side Force 2)	5	1 HZ	1024	120.8K	120K	.	BipolyBias	SEE TD SPREADSHEET					SEE TE CONVERSION SHEET			
(Rolling Moment)	5	1 HZ	512	34.99K	35K	.	BipolyBias	SEE TD SPREADSHEET					SEE TE CONVERSION SHEET			
	*	1 HZ	1	*	*	.										
72	*	1 HZ	1	*	*	32768.	RAW	0	0.0000E+00	1.0000E+00	*	n/a	0	0.	1.0000E+00	*
73	*	1 HZ	1	*	*	32768.	RAW	0	0.0000E+00	1.0000E+00	*	n/a	0	0.	1.0000E+00	*
74	*	1 HZ	1	*	*	32768.	RAW	0	0.0000E+00	1.0000E+00	*	n/a	0	0.	1.0000E+00	*
	*	1 HZ	32	*	*	.	POLY									
	*	1 HZ	16	*	*	.	POLY									
	*	1 HZ	32	*	*	.	POLY									
	*	1 HZ	16	*	*	.	POLY									

SDS INTERFACE SETUP

Meas. No.	PF Amplifier chn	chs	GPIB addr	Preston chn	slt	chs	GPIB addr	EDC GPIB addr	K.Syn GPIB addr	K.Rly GPIB addr	FSP chs	GPIB 0 slt	GPIB 1 slt
63	1	1	8	0	20	1	1	9	10	11	1	6	8
64	2	1	8	1	20	1	1	9	10	11	1	6	8
65	3	1	8	2	20	1	1	9	10	11	1	6	8
66	4	1	8	3	20	1	1	9	10	11	1	6	8
	5	1	8	4	20	1	1	9	10	11	1	6	8
	6	1	8	5	20	1	1	9	10	11	1	6	8
72	2	1	8	1	20	1	1	9	10	11	1	6	8
73	3	1	8	2	20	1	1	9	10	11	1	6	8
74	4	1	8	3	20	1	1	9	10	11	1	6	8
	5	1	8	4	20	1	1	9	10	11	1	6	8
	6	1	8	5	20	1	1	9	10	11	1	6	8
	7	1	8	6	20	1	1	9	10	11	1	6	8
	8	1	8	7	20	1	1	9	10	11	1	6	8
	9	1	8	8	20	1	1	9	10	11	1	6	8
	10	1	8	9	20	1	1	9	10	11	1	6	8
	11	1	8	10	20	1	1	9	10	11	1	6	8
	12	1	8	11	20	1	1	9	10	11	1	6	8
	13	1	8	12	20	1	1	9	10	11	1	6	8
	14	1	8	13	20	1	1	9	10	11	1	6	8
	15	1	8	14	20	1	1	9	10	11	1	6	8
	16	1	8	15	20	1	1	9	10	11	1	6	8
	17	2	8	16	19	1	1	9	10	11	1	6	8
	18	2	8	17	19	1	1	9	10	11	1	6	8
	19	2	8	18	19	1	1	9	10	11	1	6	8
	20	2	8	19	19	1	1	9	10	11	1	6	8
	21	2	8	20	19	1	1	9	10	11	1	6	8
	22	2	8	21	19	1	1	9	10	11	1	6	8
	23	2	8	22	19	1	1	9	10	11	1	6	8
	24	2	8	23	19	1	1	9	10	11	1	6	8
	25	2	8	24	19	1	1	9	10	11	1	6	8
	26	2	8	25	19	1	1	9	10	11	1	6	8

SDS NAME DERIVATIVE OF ACRONYM FROM TE MEASUREMENT REQUIREMENT LIST (MRL)

SERIAL NUMBER OF THE DEVICE

DEVICE TYPE: SPECIAL INSTRUCTIONS: RANGE, OUTPUT TYPE, ETC.

TARGET OF MEAS. ACCUR.

TESTO PER. RNG.

COMPUTATION USED FOR MEAS.

SDS CHANNEL ASSIGNMENTS
A **TEST DEPENDEN**T SETUP SELECTED BY THE INSTRUMENTATION ENGINEER IDENTIFYING THE ROUTING AND DIGITAL ADDRESS FOR EACH CHANNEL TO THE FSP.
(NECESSARY INFORMATION ACQUIRED FROM THE DEVELOPMENTAL GROUP WHO INSTALLED SDS EQUIPMENT- REFER TO ADTE GROUP)

DEVICE DESCRIPTION DESCRIBES THE DEVICE USED FOR MEASUREMENT

CALIB. DUE DATE OF THE DEVICE

Unit : UNIT OF MEASURE

Pos Dir. : DIRECTION OF FORCE APPLIED TO PRODUCE A POSITIVE OUTPUT

CONVERSIONS FROM CALIB. LAB. USUALLY IN "EU/MV/V"

CONVERSIONS: COMPUTED GAINED COEFFICIENTS TO "EU/CNT" FOR SDS

NUMBER ASSIGN: PER MRL AS AN IDENT. RESOURCE

SIGNAL CONDITIONING THIS SECTION PROVIDES THE SETUP INSTRUCTIONS EACH ROW = A CHANNEL

REVISION to the IMR items are identified in RED Alpha-Numeric characters

INSTRUMENTATION MEASUREMENT LIST — TEMPERATURE SUBSYSTEM (FSP #6) / RESEARCHERS TEST REQUIREMENTS / AMPLIFIER SETUP

Meas. No.	Measurement ID	Description	S/N	Cal. Date	Devise Type/Char.	Sub System	Scan Rate	PRI	Units Pos.	Dir.	% Tol Tgt	Cal. Type	Range	Conditioner Setup V	F	G	CAL	Shnt	Rng Lmt (EU)
TEMPERATURE INFORMATION																			
26	TREF	Ref Thermistor in HP1413			**5000Ω**	FSP6	10	A	°F	Inc.	3.00 °F	*	100 °F	*	2 HZ	1	*	*	*
59	THERMO_W1	WICS Temp. #1			Type J T/C	FSP6	10	B	°F	Inc.	3.00 °F	X,S	100 °F	*	2 HZ	64	*	*	*
60	THERMO_W2	WICS Temp. #2			Type J T/C	FSP6	10	B	°F	Inc.	3.00 °F	X,S	100 °F	*	2 HZ	64	*	*	*
61	THERMO_W3	WICS Temp. #3			Type J T/C	FSP6	10	B	°F	Inc.	3.00 °F	X,S	100 °F	*	2 HZ	64	*	*	*
62	THERMO_W4	WICS Temp. #4			Type J T/C	FSP6	10	B	°F	Inc.	3.00 °F	X,S	100 °F	*	2 HZ	64	*	*	*
82	TBAL1	**BalTemp 1-Forward Outer**			Type J T/C	FSP6	10	B	°F	Inc.	3.00 °F	X,S	100 °F	*	2 HZ	64	*	*	*
83	TBAL2	**BalTemp 2 -Forward Inner**			Type J T/C	FSP6	10	B	°F	Inc.	3.00 °F	X,S	100 °F	*	2 HZ	64	*	*	*

COMP MTHD / INSTR. ENG. / PLENUM TERM. / CR PATCH PANEL / SDS INTERFACE HARDWARE SETUP

Meas. No.	Data Type	CONVERSION: EU/cnt Slope (m) OS	+K0	+K1	K2	K3	INST. PNL ID: J#	TRN/RSS PNL/ J #	SDS INPUT PNL ID/ CONN. #	HP_E1413B Input Unit chn	slt	chs	VXI addr	HP_E1406 Cntrl slt	chs	VXI addr	GPIB addr	FSP 586 GPIB 0 slt	chs
26	POLY	0	3.2000E+01	1.8000E+00	*	*	On HP_1413B Card			0	2	1	3	0	1	0	9	1	1
59	POLY	0	3.2000E+01	1.8000E+00	*	*	RSS T/C #1	RSS #1	T/C #1	1	2	1	3	0	1	0	9	1	1
60	POLY	0	3.2000E+01	1.8000E+00	*	*	RSS T/C #2	RSS #2	T/C #2	2	2	1	3	0	1	0	9	1	1
61	POLY	0	3.2000E+01	1.8000E+00	*	*	RSS T/C #3	RSS #3	T/C #3	3	2	1	3	0	1	0	9	1	1
62	POLY	0	3.2000E+01	1.8000E+00	*	*	RSS T/C #4	RSS #4	T/C #4	4	2	1	3	0	1	0	9	1	1
82	POLY	0	3.2000E+01	1.8000E+00	*	*	TRN T/C #1	TRN #1	T/C #5	5	2	1	3	0	1	0	9	1	1
83	POLY	0	3.2000E+01	1.8000E+00	*	*	TRN T/C #2	TRN #2	T/C #6	6	2	1	3	0	1	0	9	1	1

TEMPERATURE DEVICE TYPE: SPECIAL INSTRUCTIONS: Ω-TYPE; SENSITIVITY, ETC.

CONDITIONER SETUP: INSTRUCTIONS TO SETUP VXI CARDS.

CONVERSION SETUP(SDS): CONVERSION USED TO CONVERT °C (VXI DEFAULT) TO °F(SDS PREFERENCE).

PLENUM TERMINALS; PATCH PANEL ASSIGMENTS: PANEL & TERMINAL/CONNECTOR ASSIGNMENTS

INTERFACE HARDWARE SETUP: IDENTIFICATION OF EACH CHANNEL ASSIGNMENT PER DEVICE THROUGH THE TEMPERATURE SUBSYSTEM UNITS.

NAME OF TEST

Test No: XX-XXXX

Subsystem ID
FSP 1: Balance FSP 5: Tunnel
FSP 2: Pressure FSP 6: Temperature
FSP 3: Digital FSP 7: WICS
FSP 4: Analog

Calibration Types:
R: Resistor
V: Voltage
X: Physical
S: Simulator

Priority Types:
A: Measurement Critical
B: Measurement Important
C: Measurement Optional
D: Measurement Not Necessary

Numbering "0" Based ID:

Numbering "1" Based ID: Plain

	Base	IRQ	DMA	System
GPIB0	260	10	5	Preston Tank Sub
GPIB1	260	15	7	PE Amps, Keithley, 2nd

FACILITY INSTRUMENTATION MEASUREMENTS

This page contains instrumentation measurements acquired for all 12 Foot Pressurized Wind Tunnel Tests.

With the exception of the Model Attitude Information, you can customize this page to suit your test needs. Since the Model Attitude information is provided in a data stream, all model attitude information must be acquired in the order listed in this IMR, regardless of needs.

Lines of measurements not applicable for a test can be deleted per test requirements.

INSTRUMENTATION MEASUREMENT LIST (µAnnex MUX Unit) | RESEARCHERS TEST REQUIREMENTS | CONV TYPE | INSTR. ENG. CONVERSION: EU/cnt | INSTRUMENT TYPE | SDS INTERFACE HARDWARE SETUP µANNEX MEASUREMENTS FSP-586

Meas. No.	Measurement ID	Description	S/N	Cal. Date	Device	Sub System	Scan Rate	PRI	Units Pos.	Dir.	Acc in (±EU)	Cal. Type	Range	Data Type	Slope (m) OS	K0	K1	K2	K3	INSTRUMENT TYPE	INTERFACE UNIT	µANNEX chn	chs	Baud	Parity	Data	Stop	IP Addr	chs	GPIB0 slot	GPIB1 slot
PSI PRESSURE INFORMATION (FSP #2)																															
5	PREFFSP2_1	Reference Press. Reading			Intel Paro	FSP2	10	A	PSIA	Inc.	0.04	*	100	POLY	0.00	0.00	144.00	n/a	n/a	Paro		10	1	19200	NONE	8	1	193.1.1.71	1	6	*
7	DPCALFSP2_1	Calibration Press. Reading			Intel Paro	FSP2	10	B	PSID	Inc.	0.0072	*	18	POLY	0.00	0.00	144.00	n/a	n/a	Paro		11	1	19200	NONE	8	1	193.1.1.71	1	6	*
9	DPMONFSP2	Monitor Press. Rdg: DPMONs			Intel Paro	FSP2	10	B	PSID	Inc.	0.0072	*	18	POLY	0.00	0.00	144.00	n/a	n/a	Paro		12	1	19200	NONE	8	1	193.1.1.71	1	6	*
37	C1FSP2	TRN C1 Press. in Floor			OMEGA Xdr	FSP2	10	A	PSIG	Inc.	0.3125	*	125	POLY	0.00	0.00	1.00	n/a	n/a	Omega Transducer	Newport	4	1	19200	EVEN	7	2	193.1.1.71	1	6	*
38	C2FSP2	TRN C2 Press. in Floor			OMEGA Xdr	FSP2	10	A	PSIG	Inc.	0.3125	*	125	POLY	0.00	0.00	1.00	n/a	n/a	Omega Transducer	Newport	5	1	19200	EVEN	7	2	193.1.1.71	1	6	*
39	C1C2SRCEFSP2	C1 & C2 Nitrogen Air Source			OMEGA Xdr	FSP2	10	A	PSIG	Inc.	1.5	*	600	POLY	0.00	0.00	1.00	n/a	n/a	Omega Transducer	Newport	6	1	19200	EVEN	7	2	193.1.1.71	1	6	*
	PPLENUMf2	Plenum Pressure			OMEGA Xdr	FSP2	10	A	PSIG	Inc.	0.25	*	100	POLY	0.00	0.00	1.00	n/a	n/a	Omega Transducer	Newport	7		19200	EVEN	7	2	193.1.1.71	1	6	*
40	INSTAIRFSP2	Instrument Air			OMEGA Xdr	FSP2	10	A	PSIG	Inc.	0.3125	*	125	POLY	0.00	0.00	1.00	n/a	n/a	Omega Transducer	Newport	8	1	19200	EVEN	7	2	193.1.1.71	1	6	*
41	INSTVACFSP2	Instrument Vacuum			OMEGA Xdr	FSP2	10	B	PSIG	Inc.	0.0375	*	15	POLY	0.00	0.00	1.00	n/a	n/a	Omega Transducer	Newport	9	1	19200	EVEN	7	2	193.1.1.71	1	6	*
6	PREFFSP2_2	2nd Reference Press. Reading			Intel Paro	FSP2	10	A	PSIA	Inc.	0.04	*	100	POLY	0.00	0.00	144.00	n/a	n/a	Paro		13	1	19200	NONE	8	1	193.1.1.71	1	6	*
8	DPCALFSP2_2	2nd Calibration Press. Reading			Intel Paro	FSP2	10	A	PSIA	Inc.	0.04	*	100	POLY	0.00	0.00	144.00	n/a	n/a	Paro		14	1	19200	NONE	8	1	193.1.1.71	1	6	*
PSI PRESSURE INFORMATION (FSP #7)																															
52	PREFFSP7	Reference Press. Reading			Intel Paro	FSP7	10	A	PSIA	Inc.	0.05	*	125	POLY	0.00	0.00	144.00	n/a	n/a	Paro		10	1	19200	NONE	8	1	193.1.1.73	1	1	*
53	DPCALFSP7	Calibration Press. Reading			Intel Paro	FSP7	10	B	[illegible]					[illegible]	[illegible]			n/a	n/a	Paro		11	1	19200	NONE	8	1	193.1.1.73	1	1	*
54	DPMONFSP7	Monitor Press. Rdg: DPMONs			Intel Paro	FSP7	10	B	[illegible]					[illegible]	[illegible]			n/a	n/a	Paro		12	1	19200	NONE	8	1	193.1.1.73	1	1	*
47	DPREFFSP7_1	dRef Pressure, Paro			Intel Paro	FSP7	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	Paro		13	1	19200	NONE	8	1	193.1.1.73	1	1	*
35	C1FSP7	WICS Plenum C1			OMEGA Xdr	FSP7	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	Omega Transducer	Newport	2	1	19200	EVEN	7	2	193.1.1.73	1	1	*
36	C2FSP7	WICS Plenum C2			OMEGA Xdr	FSP7	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	Omega Transducer	Newport	3	1	19200	EVEN	7	2	193.1.1.73	1	1	*
56	C1C2SRCEFSP7	WICS C1 & C2 Air Source			OMEGA Xdr	FSP7	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	Omega Transducer	Newport	4	1	19200	EVEN	7	2	193.1.1.73	1	1	*
57	INSTAIRFSP7	WICS Instrument Air			OMEGA Xdr	FSP7	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	Omega Transducer	Newport	5	1	19200	EVEN	7	2	193.1.1.73	1	1	*
58	INSTVACFSP7	WICS Instrument Vacuum			OMEGA Xdr	FSP7	10	B	[illegible]					[illegible]	[illegible]			n/a	n/a	Omega Transducer	Newport	6	1	19200	EVEN	7	2	193.1.1.73	1	1	*
	PPLENUM	For PSI Initialization only, no SDS			OMEGA Xdr	FSP7	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	Omega Transducer	Newport	7	1	19200	EVEN	7	2	193.1.1.73	1	1	*
TUNNEL FACILITY MEASUREMENT (FSP #5)																															
TUNNEL PRESSURE MEASUREMENT INFORMATION																															
1	PT	Tunnel Total Pressure (primary)			Intel Paro	FSP5	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	Paro		2	1	19200	NONE	8	1	193.1.1.72	1	1	*
3	DPQRING	Tunnel Qring Pressure (primary)			Intel Paro	FSP5	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	Paro		3	1	19200	NONE	8	1	193.1.1.72	1	1	*
2	PT2	Tunnel Total Pressure (redundant)			Intel Paro	FSP5	10	B	[illegible]					[illegible]	[illegible]			n/a	n/a	Paro		4	1	19200	NONE	8	1	193.1.1.72	1	1	*
4	DPQRING2	Tunnel Qring Pressure(redundant)			Intel Paro	FSP5	10	B	[illegible]					[illegible]	[illegible]			n/a	n/a	Paro		5	1	19200	NONE	8	1	193.1.1.72	1	1	*
MODEL ATTITUDE INFORMATION																															
10	RSSROLL	RSS Resolver Roll Position	FCS		FCS Resolver	FSP5	*		[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #1		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
11	RSSPITCH	RSS Resolver Pitch Position	FCS		FCS Resolver	FSP5	*		[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #2		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
12	RSSHEAVE	RSS Resolver Heave	FCS		FCS Resolver	FSP5	*		[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #3		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
13	TRNYAW	TRN Resolver Yaw Position	FCS		FCS Resolver	FSP5	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #4		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
14	TRNVERT	TRN Resolver Vertical Position	FCS		FCS Resolver	FSP5	10	A	[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #5		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
15	BMSPITCH	BMS Resolver Pitch Position	FCS		FCS Resolver	FSP5	10	A	[illegible]					[illegible]	[illegible]			-3.4000E-04	9.0260E-07	MSRD #6		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
16	HAAROLL	HAA Resolver Roll Positon	FCS		FCS Resolver	FSP5	*		[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #7		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
17	HAAPITCH	HAA Resolver Pitch Position	FCS		FCS Resolver	FSP5	*		[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #8		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
18	RSSROLLR	RSS Resolver Roll Position (redndt)	FCS		FCS Resolver	FSP5	*		[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #9		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
19	RSSPITCHR	RSS Resolver Pitch Postion (redndt)	FCS		FCS Resolver	FSP5	*		[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #10		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
20	RSSHEAVER	RSS Resolver Heave Postion (rdn)	FCS		FCS Resolver	FSP5	*		[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #11		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
21	TRNYAW_R	TRN Resolver Yaw Position (redn)	FCS		FCS Resolver	FSP5	10	B	[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #12		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
22	TRNVERT_R	TRN Resolver Vertical Position(rdn)	FCS		FCS Resolver	FSP5	10	B	[illegible]					[illegible]	[illegible]			n/a	n/a	MSRD #13		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
23	BMSPITCHR	BMS Resolver Pitch Positon (redn)	FCS		FCS Resolver	FSP5	10	B	°	Inc.	0.04	*	40	POLY	0.00	32.6545	0.291288	-3.4000E-04	9.0260E-07	MSRD #14		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
24	HAAROLLR	HAA Resolver Roll Position (redn)	FCS		FCS Resolver	FSP5	*		*		0	*	0	POLY	0.00	0.00	1.00	n/a	n/a	MSRD #15		6	1	19200	NONE	8	1	193.1.1.72	1	1	*
25	HAAPITCHR	HAA Resolver Pitch Position (redn)	FCS		FCS Resolver	FSP5	*		*		0	*	0	POLY	0.00	0.00	1.00	n/a	n/a	MSRD #16		6	1	19200	NONE	8	1	193.1.1.72	1	1	*

INSTRUMENTATION MEASUREMENT LIST (FACILITY VXI CHASSIS - FSP #5) | RESEARCHERS TEST REQUIREMENTS | DVM Setup | CONV TYPE | INSTR. ENG. CONVERSION: EU/cnt | INST. SOURCE | SDS INTERFACE HARDWARE SETUP HP FRONT END / CONTROLLER FSP-586

Meas. No.	Measurement ID	Description	S/N	Cal. Date	Device	Sub System	Scan Rate	PRI	Units Pos.	Dir.	Acc in (EU)	Cal. Type	Range	Cond. Setup Flt	Gn	Data Type	Slope (m) OS	K0	K1	INST. SOURCE	HP_1411B slt	chs	VXI addr	HP_1351A chn	slt	chs	VXI addr	HP_E1406A slt	chs	VXI addr	GPIB addr	chs	GPIB0 slot	GPIB1 slot
TUNNEL TEMPERATURE INFORMATION (Facility Controls System Measurements)																																	1	
27	THEXA1	Tunnel Temp Sensor TT-1A	FCS		4-20 ma Xmttr	FSP5	4	B	°F	Inc.	2.00 °	*	100	*	*	POLY	0.	-35.	35.	FCS-Volts	2	1	2	0	3	1	17	0	1	0	9	1	1	*
28	THEXA2	Tunnel Temp Sensor TT-1B	FCS		4-20 ma Xmttr	FSP5	4	B	°F	Inc.	2.00 °	*	100	*	*	POLY	0.	-35.	35.	FCS-Volts	2	1	2	1	3	1	17	0	1	0	9	1	1	*
29	THEXA3	Tunnel Temp Sensor TT-2A	FCS		4-20 ma Xmttr	FSP5	4	B	°F	Inc.	2.00 °	*	100	*	*	POLY	0.	-35.	35.	FCS-Volts	2	1	2	2	3	1	17	0	1	0	9	1	1	*
30	THEXA4	Tunnel Temp Sensor TT-2B	FCS		4-20 ma Xmttr	FSP5	4	B	°F	Inc.	2.00 °	*	100	*	*	POLY	0.	-35.	35.	FCS-Volts	2	1	2	3	3	1	17	0	1	0	9	1	1	*
31	THEXA5	Tunnel Temp Sensor TT-3A	FCS		4-20 ma Xmttr	FSP5	4	B	°F	Inc.	2.00 °	*	100	*	*	POLY	0.	-35.	35.	FCS-Volts	2	1	2	4	3	1	17	0	1	0	9	1	1	*
32	THEXA6	Tunnel Temp Sensor TT-3B	FCS		4-20 ma Xmttr	FSP5	4	B	°F	Inc.	2.00 °	*	100	*	*	POLY	0.	-35.	35.	FCS-Volts	2	1	2	5	3	1	17	0	1	0	9	1	1	*
33	THEXA7	Tunnel Temp Sensor TT-4A	FCS		4-20 ma Xmttr	FSP5	4	B	°F	Inc.	2.00 °	*	100	*	*	POLY	0.	-35.	35.	FCS-Volts	2	1	2	6	3	1	17	0	1	0	9	1	1	*
34	THEXA8	Tunnel Temp Sensor TT-4B	FCS		4-20 ma Xmttr	FSP5	4	B	°F	Inc.	2.00 °	*	100	*	*	POLY	0.	-35.	35.	FCS-Volts	2	1	2	7	3	1	17	0	1	0	9	1	1	*
														*	*																		1	
FACILITY POWER INFORMATION																																	1	
46	MUAPOW	Make-Up Air Power	FCS		4-20 ma Xmttr	FSP5	4	B	MW	Inc.		*	±17.55 MW	*	*	POLY	0.	-26.33	18.0064	FCS-Volts	2	1	2	16	4	1	18	0	1	0	9	1	1	*
43	IGVANGLE	IGV Angle	FCS		4-20 ma Xmttr	FSP5	4	B	°	Inc		*	±40°	*	*	POLY	0.	-60.	18.2482	FCS-Volts	2	1	2	17	4	1	18	0	1	0	9	1	1	*
45	TUNPOW	Main Tunnel Power	FCS		4-20 ma Xmttr	FSP5	4	B	MW	Inc.		*	0-23.4 MW	*	*	POLY	0.	0.	1.	FCS-Volts	2	1	2	18	4	1	18	0	1	0	9	1	1	*
42	CRPM	Compressor RPM	FCS		4-20 ma Xmttr	FSP5	4	B	RPM	Inc.		*	0-550 RPM	*	*	POLY	0.	0.	125.462	FCS-Volts	2	1	2	19	4	1	18	0	1	0	9	1	1	*

Doc. No. A006-9861-XM3 IMR Guide
Original signed by Herb Finger
May 1998

NAME OF TEST
Test No: XX-XXXX

INSTRUMENTATION MEASUREMENT REPORT
REVISION (ALPHA CHAR.)
IE: (NAME OF IE)

Subsystem ID
FSP 1: Balance FSP 5: Tunnel
FSP 2: Pressure FSP 6: Temperature
FSP 3: Digital FSP 7: WICS
FSP 4: Analog

Calibration Types:
R: Resistor
V: Voltage
X: Physical
S: Simulator

Priority Types:
A: Measurement Critical
B: Measurement Important
C: Measurement Optional
D: Measurement Not Necessary

PRESSURE SUBSYSTEM (FSP #2)

PSI MODULE MEASUREMENT IDENTIFICATION (DATA)							TEST REQUIREMENTS					Calib.	MODULE OPTIONS				SJU SETUP			SIFC SETUP				SDU LOCATION				
Meas. No.	Measurement ID	Description	S/N	Cal. Date	Device	Scan Rate Hz	Pri.	Devise Type	Total Ports	Acc in (EU)	Range	Settling Time(sec)	PMON Port	PURGE Used?	CALIBRATION PRESSURE SET	PMON SET	SJU #	Chnl	J-Box /Blk ID	SIFC ID	SIFC #	INPUT J#	OUT J#	SDU #	C	R	S	COMMENTS
												Settling Time: Select time in seconds that optimizes time for PSI to settle for Data Acquisition		**Purge Option: Yes or No**	**Calibration Pressures:** The 5 calibration pressure points for each module	**PMON Set:** Set pressure	**SJU #:** Number assigned to the SJU **Chnl:** SJU Connector Number (1-8) **J-Box/Blk #** J-Box: HAA, TRN or RSS Block #: 5, 6 or Cable ID			**SIFC ID:** Identification assigned to the S8400IFC (TRN or RSS) **SIFC #:** RSS = 1; TRN = 2 **INPUT J#:** From SJU/Taper Pin Block **OUT J#:** To SDU				**SDU #:** Number assigned to the SDU per PSI Specification **C, R, S:** Number Assigned to the Cluster, Rack and Slot per PSI Specification				COMMENTS: • Operational instructions • Reference setting instructions • Calibration sequence • Special instructions or comments

PCU MEASUREMENT IDENTIFICATION (PRESSURE CONTROL)							TEST REQUIREMENTS					Calib.	PCU OPTIONS		PCU SETUP						PCU LOCATION			
Meas. No.	Measurement ID	Description	Serial No.	Cal. Date	Device	Scan Rate Hz	Pri.	Devise Type	Acc in (EU)		Rng	Settling Time(sec)	REF. Type	CALIBRATION PRESSURE SETTING	PCU #	PCU Pres Rng	Ref. Pres.	PCU Type	Calibration Tolerance	MAX Pressure	PCU #	C	R	S
														Calibration Ranges: The 5 calibration pressure points for each PCU	**PCU #:** Number assigned to the PCU in the System		**Ref Pres** Reference Pressure		**Cal Tol:** Pressure tolerance in EU	**MAX Pres:** Maximum Pressure allowed to be Set by the PCU	**PCU #:** Number assigned to the SDU **C, R, S:** Number Assigned to the Cluster, Rack and Slot per PSI Specification			

WICS SUBSYSTEM (FSP #7)

PSI MODULE MEASUREMENT IDENTIFICATION (DATA)							TEST REQUIREMENTS					Calib.	MODULE OPTIONS				SJU SETUP			SIFC SETUP				SDU LOCATION				
Meas. No.	Measurement ID	Description	Serial No.	Cal. Date	Device	Scan Rate Hz	Pri.	Devise Type	Total Ports	Acc in (EU)	Range	Settling Time(sec)	PMON Port	PURGE Used?	CALIBRATION PRESSURE SET	PMON SET	SJU #	Chnl	J-Box /Blk ID	SIFC ID	SIFC #	INPUT J#	OUT J#	SDU #	C	R	S	COMMENTS
													PMON Port: PSI Port where PMON is assigned															

PCU MEASUREMENT IDENTIFICATION (PRESSURE CONTROL)							TEST REQUIREMENTS					Calib.	PCU OPTIONS		PCU SETUP						PCU LOCATION			
Meas. No.	Measurement ID	Description	Serial No.	Cal. Date	Device	Scan Rate Hz	Pri.	Devise Type	Acc in (EU)		Range	Settling Time(sec)	REF. PRESS.	CALIBRATION PRESSURE SETTING	PCU ID	PCU Pres Rng	Ref. Pres.	PCU Type	Calibration Tolerance	MAX Pressure	PCU #	C	R	S
													Ref Pres Reference Pressure Type			**Pres Rng:** Range of PCU		**TYPE:** Absolute Differential Gage					