

Gas Analysis System for Metabolic Analysis of Physiology (GASMAP) Qualify

Glenn Research Center

PIMS ISS Acceleration Handbook Date last modified 10/2/02

Microgravity Science Division

Data Description				
Sensor	121f02 500.0 sa/sec (200.00 Hz)			
Location	LAB1O2, ER1, Drawer 1			
Inc/Flight	Increment: 4, Flight: UF1			
Plot Type	spectrogram			

Notes:

The GASMAP device is used to monitor and analyze both inhaled and exhaled breath streams to determine their gas concentrations. Two GASMAP signatures are noted in the figure near 60 Hz: a sample pump and a fan. This equipment is located in the HRF rack #1 (LAB1S2) and used for the Pulmonary Function in Flight (PuFF) experiment, which studies effects of extravehicular activity (EVA) and long-term exposure to microgravity on the pulmonary function. As discussed with payload developers, the frequency changes away from nominal operation are likely a function of varying loads on the sample pump. The pump frequency ranged from 54 Hz (for brief calibrations) up to 62 Hz after the second PuFF run. The fan is tightly controlled in frequency but also transitions from baseline of about 57.4 Hz up to 58.1 Hz noted during calibrations.

Regime:	Vibratory
Category:	Experiment Equipment
Source:	GASMAP

Gas Analysis System for Metabolic Analysis of Physiology (GASMAP) Quantify			Data Description				
Quantity				Sensor 121f02 500.0 sa/s		sec (200.00 Hz)	
				Location LAB1O2, ER1, Dra		wer 1	
	Inc/Flig	Flight Increment: 4, Flight: UF1		:: UF1			
sams2, 121f02 at LAB102, ER1, Drawer 1:[128.73 - 23.53 144.15] 500.0 sa/sec (200.00 Hz) Jd = 0.122 Hz, Nfft = 4096 Temp. Res. = 8.192 sec, No = 0 GASMAP Sample Pump (58.2 < f < 61.2	SAMS 121f(SAMS 121f(SMAP Samp]	03 (Z-panel, ER2, LAB1O1) 04 (Z-panel, ER1, LAB1O2) .e Pump (58.2 < f < 61.2 Hz	Plot Ty	pe interval R	MS		
	, ,						
0.35 - 0.35 -	Sensor	Sensor Location	GASMAP Equipment	Frequency Range (Hz)	State	RMS Acceleration (ug _{RMS})	
0.3 - 0.3 -	121f02	LAB1O2, ER1, Drawer 1			OFF ON	24 >200	
Ž0.25 -	121f03 121f04	LAB1O1, ER2, Lower Z Panel	PUMP	58.2 – 61.2	OFF ON OFF	>115 70	
mining mi	121f02	LAB1O2, ER1, Drawer 1	FAN	57.2 – 57.6	ON OFF ON	>115 8 19	
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GMT 26-January-2002, 026/hh:mm	GMT 26–J	anuary–2002, 026/hh:mm		<u>. 0 . 0 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 </u>			
PIMS ISS Acceleration Handbook			Regim	ne: Vibratory	Vibratory		
Date last modified 10/2/02			Source	ce: GASMAP	GASMAP		