



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV. NO.

B

Experiment Electrical
Interface Definitions

PAGE 1 OF 13 PAGES

This memorandum provides the information made available by the experiments since the issue of Revision A.

All references to Constantan should be changed to read Manganin throughout ATM-483. (Ref. ATM-503) The wire used will be 24 AWG unless otherwise stated.

References to connectors by numbers P50, J50B, etc., are taken from Interface Cable Diagrams for Arrays A and B produced by Systems Group.

Prepared by: *D. Perkins*

Derek Perkins

Approved by: *A. B. Collins*

A. B. Collins



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV.NO.

B

Experiment Electrical
Interface Definitions

PAGE 2 OF 13 PAGES

• Page 24 of ATM-483

Heat Flow, Cable A Details, Revised

<u>Connector (J70)</u>	<u>Function</u>	<u>Wire Type and A.W.G.</u>	<u>Terminal Board Pin</u>
1	Analog	Copper	70-01
2	Analog	Copper	70-02
3	Analog	Copper	70-03
4	Analog	Copper	70-04
5	Analog	Copper	70-05
6	Analog	Copper	70-06
7	Analog	Copper	70-07
8	Shield	Manganin	70-08
9	Data	Manganin	70-09
10	Connected to Pin 8		
11	Shift Pulse	Manganin	70-10
12	Connected to Pin 8		
13	Demand Line	Manganin	70-11
14	Connected to Pin 8		
15	Frame Mark	Manganin	70-12
16	Connected to Pin 8		
17	90 Frame Mark	Manganin	70-13
18	Signal Return	Copper	70-14
19	Connected to Pin 8		
20	Command 1	Manganin	70-15
21	Command 2	Manganin	70-16
22	Command 3	Manganin	70-17
23	Command 4	Manganin	70-18
24	Command 5	Manganin	70-19
25	Command 6	Manganin	70-20
26	Command 7	Manganin	70-21
27	Command 8	Manganin	70-22
28	Command 9	Manganin	70-23
29	Command 10	Manganin	70-24
30	Command 11	Manganin	70-25



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV.NO.

B

Experiment Electrical
Interface Definitions

PAGE 3 OF 13 PAGES

Page 24 of ATM-483 (continued)

Heat Flow, Cable A Details, Revised

<u>Connector (J70)</u>	<u>Function</u>	<u>Wire Type and A.W.G.</u>	<u>Terminal Board Pin</u>
31	Command Spare	Manganin	70-26
32	Command Spare	Manganin	70-27
33	Command Spare	Manganin	70-28
34	Power Return	Manganin	70-29
35	Power	Manganin	70-30
36	Connected to Pin 34		
37	Connected to Pin 35		
38	Connected to Pin 34		
39	Connected to Pin 35		
40	Connected to Pin 34		
41	Connected to Pin 35		
42	Connected to Pin 34		
43	Connected to Pin 35		
44	Heater Power	Manganin	70-31
45	Not Used		
46	Not Used		
47	Not Used		



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH. NO.

Experiment Electrical
Interface Definitions

ATM-483

REV. NO.

B

PAGE 4 OF 13 PAGES

Page 27 of ATM-483 Cable B Details

<u>Connector Pin (P70)</u>	<u>Function</u>
1 thru 7	Analog Line
8	Shield
9	Data
10	Shield
11	Shift Pulse
12	Shield
13	Data Demand
14	Shield
15	Frame Mark
16	Shield
17	90th Frame Mark
18	Signal Return
19	Chassis Return
20 thru 30	Command Lines
31, 32, 33	Command Spare Lines
34	Power Return
35	Experiment Power
36	Power Return
37	Experiment Power
38	Power Return
39	Experiment Power
40	Power Return
41	Experiment Power
42	Power Return
43	Experiment Power
44	Heater Power
45	Not Used
46	Not Used
47	Not Used



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV.NO.

B

Experiment Electrical
Interface Definitions

PAGE 5 OF 13 PAGES

Active Seismic Experiment Jumper Cables

Mortar Box to Central Station (2 interconnecting cables)

<u>Connectors (P52A, J52A)</u>	<u>Connectors (P52B, J52B)</u>	<u>Function</u>
1	f	+5v Telemetry
2	g	+24v Arming STD
3	h	E-W Angle
4	j	+24v Arming (SEQ)
5	a	N-S Angle
6	b	Operational Power
7	c	Grenade Launcher Assembly
8	d	Temperature Sensor
9	e	Power/Signal Return
10	U	Range Start/Stop
11	V	29v Survival Power
12	W	Fire Grenade #3
13	X	Power/Signal Return
14	Y	Fire Grenade #1
15	Z	Range Line Power +5v
16	A	Fire Grenade #2
17	B	Chassis Common
18	C	Fire Grenade #4
19	D	Mortar Box Temp. Sensor
20	E	29v Survival Power
		Sequential Fire

Thumper to Central Station (2 interconnecting cables)

<u>Connector (P51A, J51A)</u>	<u>Connector (P51B, J51B)</u>	<u>Function</u>
1	K	Thumper Real Time Event
2	J	Electrical Common
3	A	+29v Supply
4	B	Thumper Arm

Thumper Test Points to Simulator 1 Cable

<u>Test Point (P57B)</u>	<u>Connector (J57B)</u>	<u>Function</u>
1	A	Capacitor Volts Test
2	B	A.S.1 Test
3	C	Power Signal Return



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV.NO.

B

Experiment Electrical
Interface Definitions

PAGE 6 OF 13 PAGES

Active Seismic Experiment Jumper Cables

Geophone to Central Station (2 interconnecting cables)

Connectors (P50A, J50A)Connectors (J50B, P50C)Function

1	A	Geophone 3 'A'
2	B	Geophone 3 'B'
3	F	Shield
4	C	Geophone 2 'A'
5	D	Geophone 2 'B'
6	G	Shield
7	E	Geophone 1 'A'
8	S	Geophone 1 'B'
9	R	Shield
10	M	Geophone Temp. Sensor
11	L	Geophone Temperature Sensor Return
12	P	Shield
13	K	O/P #1
14	H	O/P #2
15	J	O/P #3



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

Experiment Electrical
Interface Definitions

NO.

ATM-483

REV. NO.

B

PAGE 7 OF 13 PAGES

Active Seismic Jumper Cables

Grenade Launcher Assembly to Simulator (2 interconnecting cables)

<u>Connectors (J56A, P56A)</u>	<u>Connectors (P56B, J56C)</u>	<u>Function</u>
1	A	Fire Grenade #1
2	B	Range Start #1
3	AA	Arm #1, 2, 3, 4
4	BB	Range Stop #1
5	D	Range Start #2
6	DD	Spare
7	CC	Range Stop #2
8	C	Fire Grenade #2
9	FF	Chassis Common
10	EE	+5v Telemetry
11	GG	+5v Transducer Power
12	HH	Heater Control Temp. Sensor
13	W	+29v Heater Power
14	X	N-S Angle
15	Y	+29v Sensor Power
16	Z	E-W Angle
17	J	+5v Range Line Power
18	K	Heater Control Temp. Sensor
19	L	Grenade Launch Temp.
20	M	Heater Status G. S. E.
21	N	Range Stop #3
22	P	Electrical Common
23	E	Fire #3
24	F	Range Start #3
25	R	Spare
26	S	Spare
27	T	Range Stop #4
28	U	Spare
29	H	Range Start #4
30	G	Fire Grenade #4



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV.NO.

B

Experiment Electrical
Interface Definitions

PAGE 8 OF 13 PAGES

Active Seismic Sub-System Test Jumper Cable

This cable set is required to connect the Active Seismic electronics to the mortar, thumper, geophones and subsystem test set during subsystem tests. The cable will mate with the jumper cable on each item.

<u>Connector to Central Electronics (P10D)</u>	<u>Connector Number</u>	<u>Pin</u>	<u>Function</u>
1	ETS	DD	Experiment Data
2	ETS	u	RTG O/P Volts
3	ETS	m	Set Engineering Data Mode
4	ETS	v	RTG O/P Current
5	ETS	k	Set Seismic Data Mode
6	ETS	w	RTG Temp. #1 Hot
7	ETS	c	Geophone Calibrate
8	ETS	x	RTG Temp. #1 Cold
9	ETS	a	Geophone Sequence
10	J52D	f	+5v Telemetry
11	J52D	g	+24v Arming
12	J52D	h	E-W Angle
13	J52D	j	+24v Sequential Arming
14	J52D	a	N-S Angle
15	J52D	b	Operational Power
16	J52D	c	GLA Temp. Sensor
17	J52D	d & W	Power Signal Return
18	J52D	e	Range Start/Stop
19	ETS	r	Central Electronics Temperature
20	ETS	b	Arm Grenades
21	ETS	s	Mortar Box Temperature
22	ETS	W	Fire Grenade #1
23	ETS	t	GLA Temperature
24	ETS	X	Fire Grenade #2
25	ETS	q	Geophone Temperature
26	ETS	Y	Fire Grenade #3
27	ETS	y	Shunt Regulator Current
28	J52D	X	Fire Grenade #1
29	J52D	Y	+5 volts
30	J52D	Z	Fire Grenade #2
31	J52D	A	Chassis Return
32	J52D	V	Fire Grenade #3



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH. NO.

ATM-483

REV.NO.

B

Experiment Electrical
Interface Definitions

PAGE 9 OF 13 PAGES

Active Seismic Subsystem Test Jumper Cable (continued)

Connector Connector P10D	Connector Number	Pin	Function
33	J52D	C	Mortar Box Temperature Sensor
34	J52D	B	Fire Grenade #4
35	J52D	U & D	+29v Heater Power
36	J52D	E	Sequential Fire
37	ETS	FF	10.6 Kc Clock
38	ETS	i	+29v Survival Power
39	ETS	Z	Fire Grenade #4
40	ETS	h	+29v Operational Power
41	ETS	n	Sequential Fire
42	ETS	f	+15 Volts
43	ETS	g	+5 Volts
44	ETS	j	-12 Volts
45	ETS	GG	Spare
46	ETS	BB	Spare
47	J51D	K	Thumper Real Time Event
48	J51D	A	+29 Volts Supply
49	J51D	J	Electrical Common
50	J50D	J	Output #3
51	J50D	H	Output #2
52	J50D	K	Output #1
53	ETS	d	Power/Signal Return
54	ETS	V	G.S.E.
55	ETS	A	G.S.E.
56	ETS	B	G.S.E.
57	ETS	C	G.S.E.
58	ETS	D	G.S.E.
59	ETS	E	G.S.E.
60	ETS	F	G.S.E.
61	ETS	CC	Spare
62	ETS	AA	Spare
63	ETS	p	Spare
64	J51D	B	Thumper Arm
65	J50D	L	Geophone Temperature Sensor Return
66	J50D	S	Geophone #1 'B'
67	J50D	R	Geophone #1 Shield
68	J50D	C	Geophone #2 'A'
69	J50D	G	Geophone #2 Shield
70	J50D	A	Geophone #3 'A'
71		H	G.S.E.



19-Sept-66.

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV.NO.

B

Experiment Electrical
Interface Definitions

PAGE 10 OF 13 PAGES

Connector P10D	Connector		Function
	Number	Pin	
72	ETS	J	G. S. E.
73	ETS	K	G. S. E.
74	ETS	L	G. S. E.
75	ETS	M	G. S. E.
76	ETS	N	G. S. E.
77	ETS	P	G. S. E.
78	ETS	R	G. S. E.
79	ETS	EE	Spare
80	ETS	S	Spare
81	ETS	T	Spare
82	ETS	U	Spare
83	J50D	M	Geophone Temperature
84	J50D	P	Geophone Temperature Shield
85	J50D	E	Geophone #1 'A'
86	J50D	D	Geophone #2 'B'
87	J50D	F'	Geophone #3 Shield
88	J50D	B	Geophone #3 'B'



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV.NO.

B

Experiment Electrical
Interface Definitions

PAGE 11 OF 13 PAGES

Charged Particle Experiment Jumper Cables

<u>Connectors (J65A, P65A)</u>	<u>Connectors (P65B, J65B)</u>	<u>Function</u>
1	j	Shield Wire 2
2	V	Data Line
3	s	Shield Wire 4
4	U	Shift Pulse
5	i	Shield Wire 6
6	T	Even Frame Mark
7	t	Shield Wire 9
8	S	Shield Wires 11 to 18
9	h	Demand Line
10	r	Signal Return
11	R	Command
12	g	Command
13	q	Command
14	P	Command
15	f	Command
16	e	Command
17	N	Command
18	M	Command
19	L	Analog Signal
20	K	Analog Signal
21	J	Analog Signal
22	d	Analog Signal
23	c	Analog Signal
24	H	Analog Signal
25	p	Spare
26	b	Operating and Heater Power
27	G	Operating and Heater Power
28	n	Operating and Heater Power
29	a	Operating and Heater Power
30	F	Power Return
31	m	Power Return
32	k	Power Return
33	Z	Power Return
34	E	Survival Heater Power
35	Y	Survival Heater Power
36	X	Survival Heater Power
37	D	Survival Heater Power



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

ATM-483

REV. NO.

B

Experiment Electrical
Interface Definitions

PAGE 12 OF 13 PAGES

Heat Flow Experiment Jumper Cables

<u>Connectors (J70A, P70A)</u>	<u>Connectors (P70B, J70B)</u>	<u>Function</u>
1	F	Analog Signal
2	g	Analog Signal
3	G	Analog Signal
4	H	Analog Signal
5	h	Analog Signal
6	J	Analog Signal
7	i	Analog Signal
8	K	Shield Wire 9
9	j	Data
10	BB	Shield Wire 11
11	k	Shift Pulse
12	M	Shield Wire 13
13	N	Data Demand
14	m	Shield Wire 15
15	CC	Frame Mark
16	P	Shield Wire 17
17	n	90th Frame Mark
18	R	Signal Return
19	p	Shield Wires 20 to 30
20	DD	Command
21	S	Command
22	EE	Command
23	T	Command
24	q	Command
25	U	Command
26	NN	Command
27	r	Command
28	V	Command
29	FF	Command
30	s	Command
31	W	Command Spare
32	t	Command Spare
33	X	Command Spare
34	u	Power Return
35	Y	Power
36	Z	Power Return
37	a	Power
38	b	Power Return



19-Sept-66

BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

NO.

REV.NO.

ATM-483

B

Experiment Electrical
Interface Definitions

PAGE 13 OF 13 PAGES

Heat Flow Experiment Jumper Cable (continued)

Connectors (J70A, P70A)Connectors (P70B, J70B)Function

39	A	Power
40	c	Power Return
41	B	Power
42	d	Power Return
43	C	Power
44	e	Heater Power
45	D	Spare
46	f	Spare
47	E	Spare