

ENCLOSURE SPECIFIC DATA
for
AVL Technologies
Model 1214 / 1050 Tripod
1.2m/1.4m Portable Auto-Acquisition Antenna

Revision: 23 June 2011

1.0 INTRODUCTION

1.1 Appendix Organization

This appendix is provided as a supplement to the baseline RC4000 User's Manual which describes the PCB board stack that is common to all systems. Section 2 describes the mechanical aspects of the controller, while section 3 describes the electrical connections.

2.0 MECHANICAL

2.1 RC4000 Antenna Controller Chassis and Lid

For the U6 mount, the ACU is mechanized as an embedded controller. The PCB board stack is located inside a weatherproof enclosure. Figure 1 shows the ACU on the positioner.



Figure 1

The chassis of the RC4000 consists of a frame with a floor, and separate end panels and lid. Figure 2 shows the chassis frame. 10-32 blind PEMs are provided on the bottom and sides of the chassis for mounting the ACU.

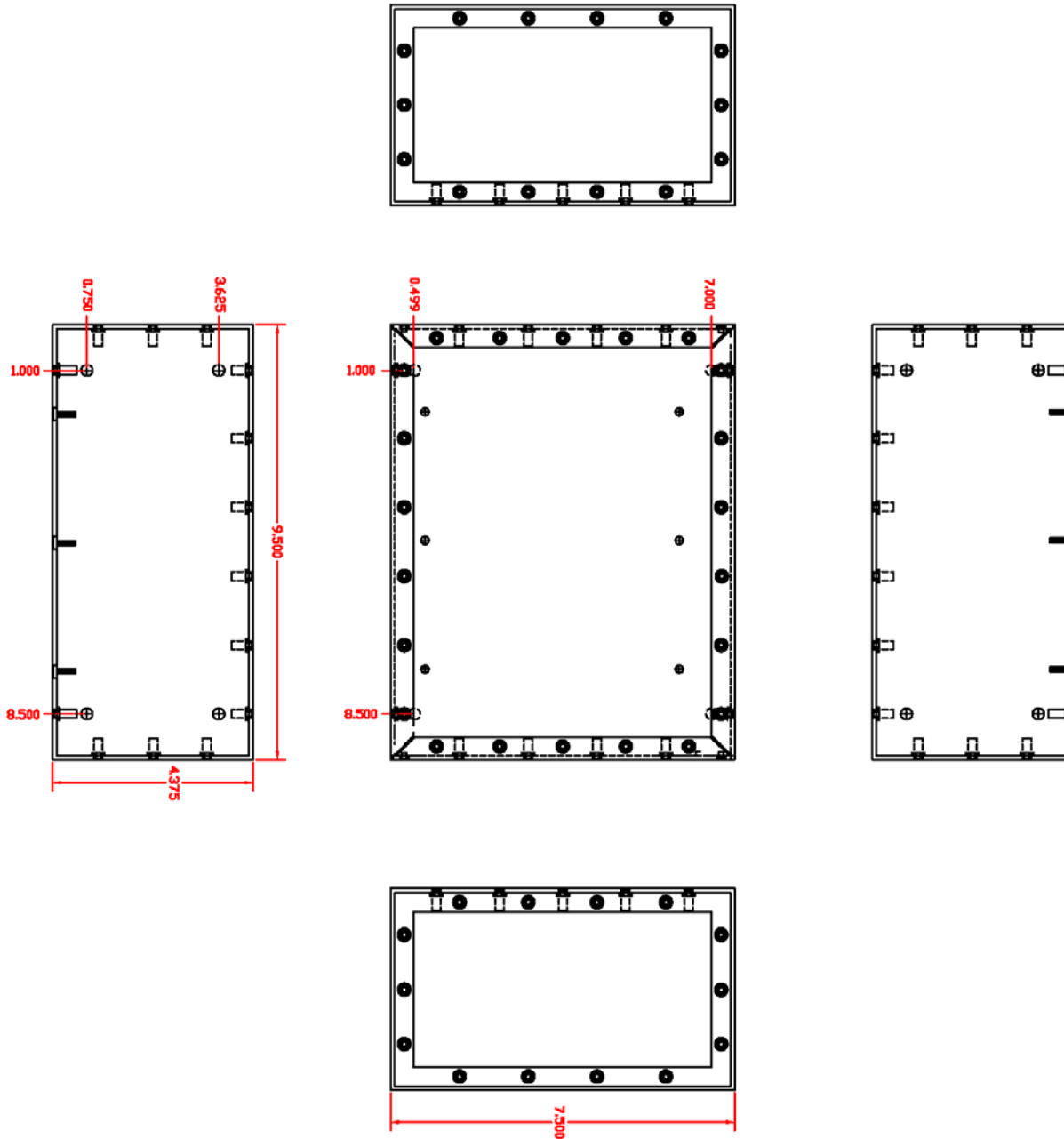


Figure 2

Figure 3 shows the lid of the enclosure.

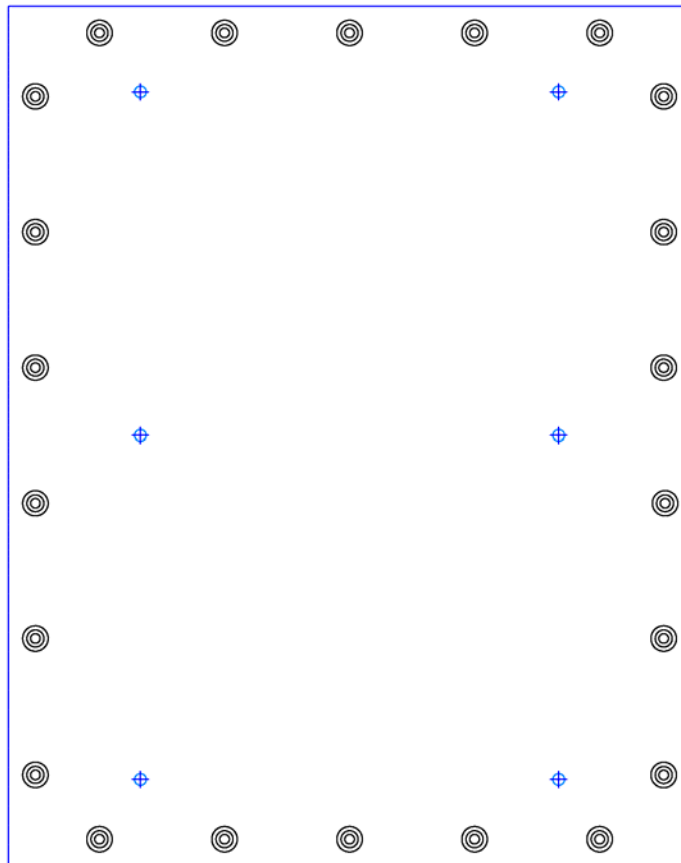


Figure 3

2.2 RC4000 End Panels

The RC4000 end panels are where the connectors are located. The User Interface end panel contains connectors that the user may need to frequently have access to, such as the AC power, ethernet, and buttons, for example. The other end is the Antenna Interface end panel, which includes connectors that primarily go to the antenna itself, such as the motor and sensors connections. Figure 4 shows both end panels, with the Antenna Interface on top and the User Interface on bottom.

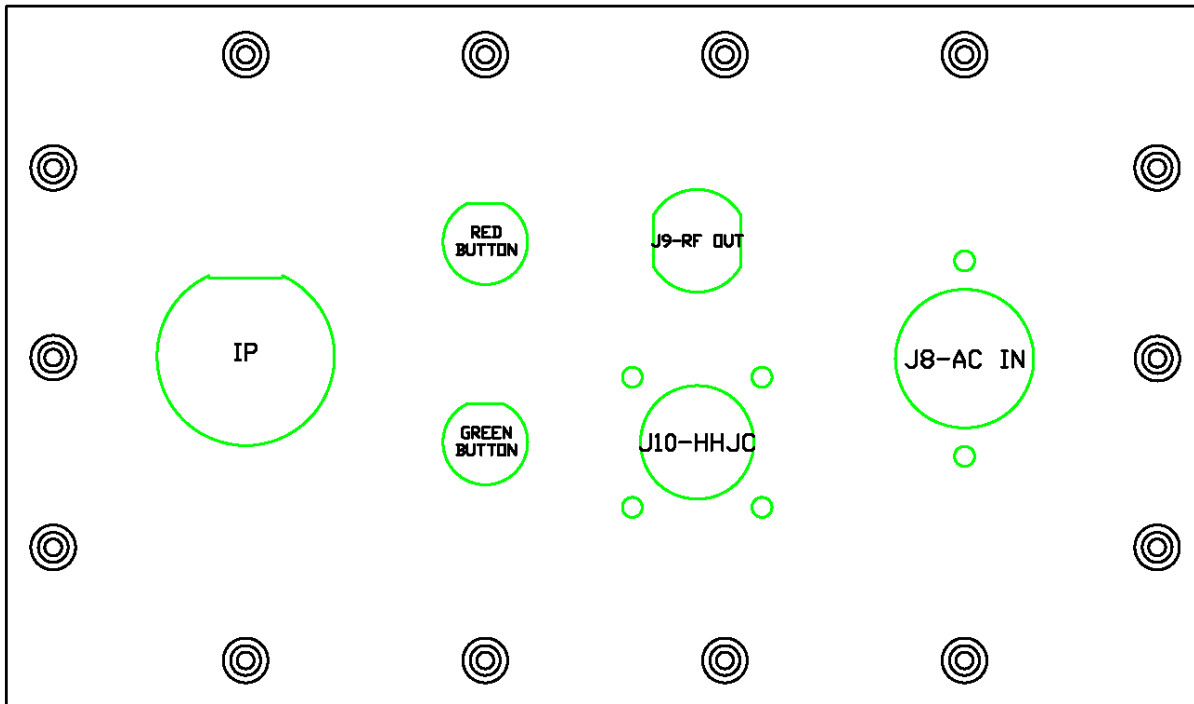
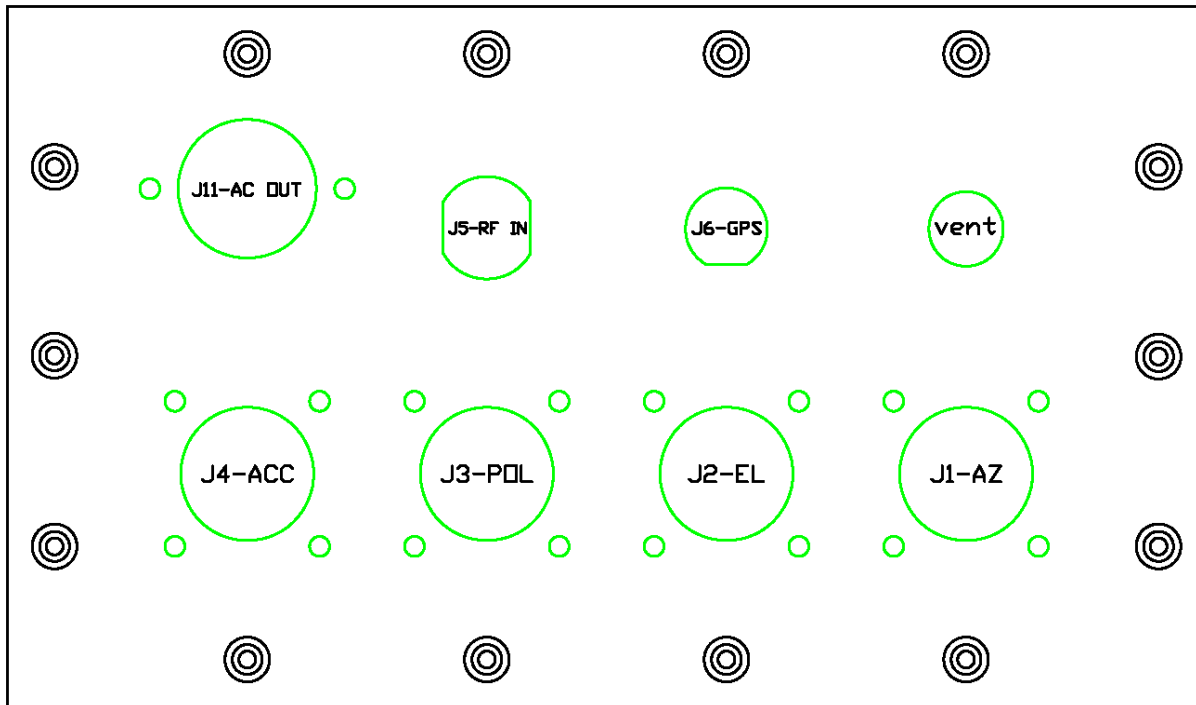


Figure 4

2.3 CONNECTORS

Table 1 provides a list of the external connectors on the enclosure end panels.

Ref Des	Part Number	Description
J1	Amphenol MS-3122E14-19S	Azimuth
J2	Amphenol MS-3122E14-19S	Elevation
J3	Amphenol MS-3122E14-19S	Pol
J4	Amphenol MS-3122E14-19P	Acc
J5	Amphenol 172129	RF In
J6	Amphenol 122192	GPS In
J7	Tyco 1738601-1	IP ** Must use environmentally sealed mating connector **
J8	Amphenol C016 20C003 100 12	AC Power In
J9	Amphenol 172129	RF Out
J10	Amphenol MS-3122E12-10S	HHJC
J11	Amphenol C016 20G003 100 12	AC Power Out

Table 1

3.0 ELECTRICAL

3.1 System Interface

Please refer to the main RC4000 User Manual to become familiar with specific capabilities and functionality of the RC4000 PCB board stack.

Figures 5 and 6 are provided to assist in interfacing to the RC4000. These diagrams lists common equipment and how it connects to each connector on the enclosure.

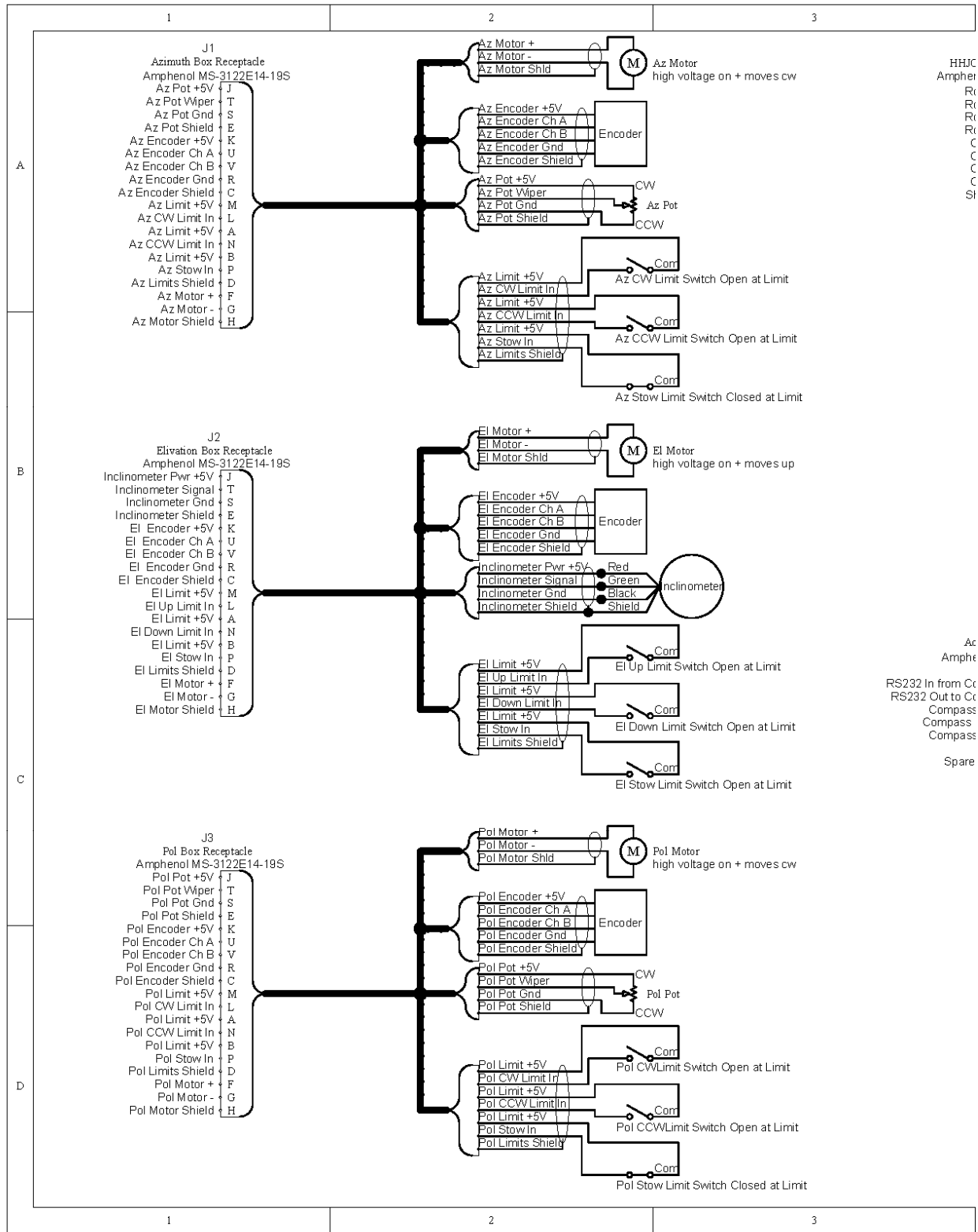


Figure 5

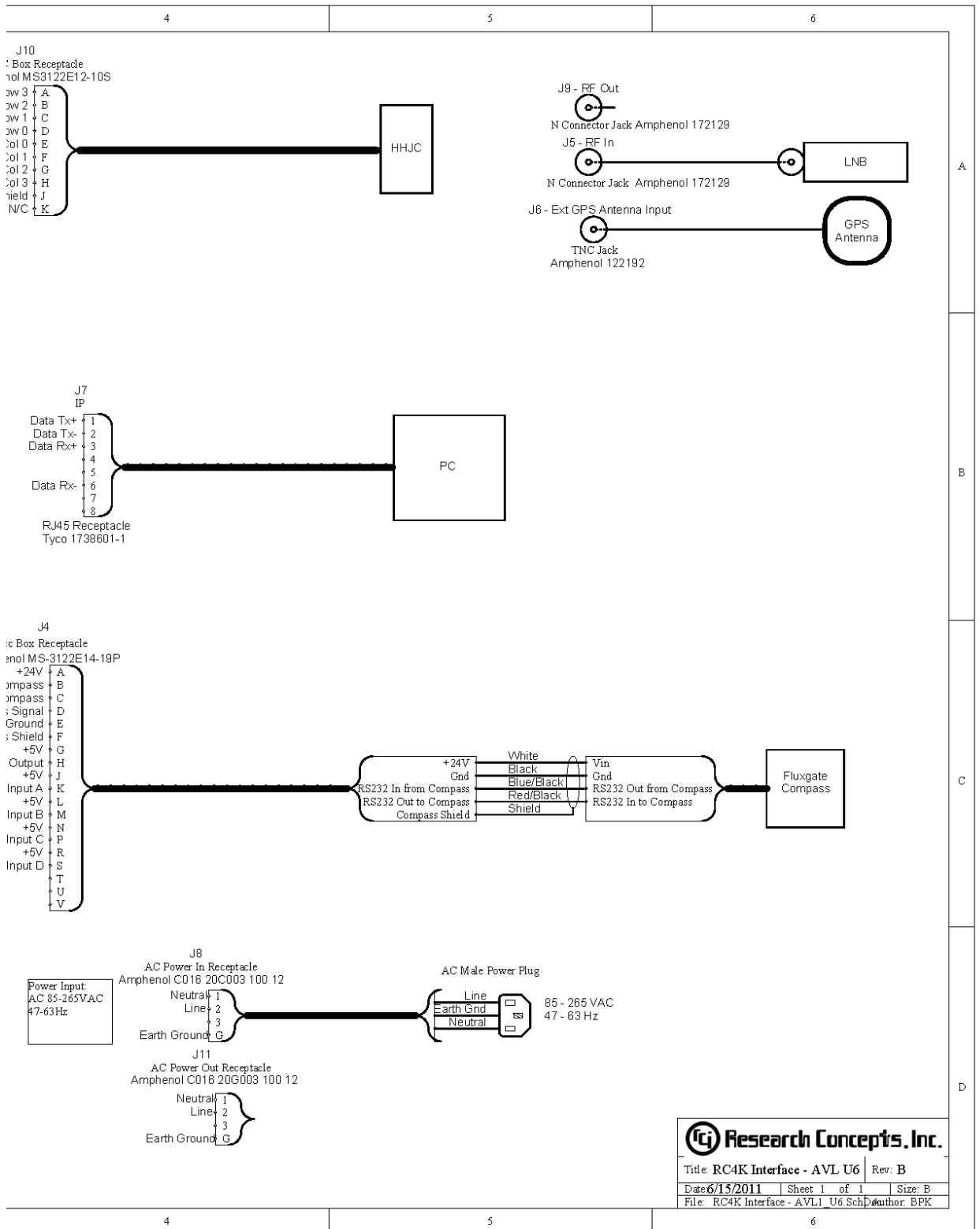


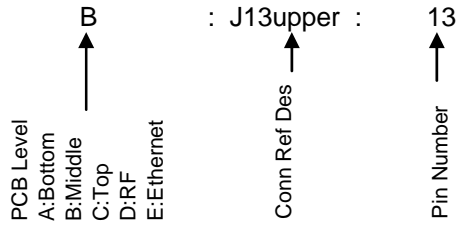
Figure 6

3.2 Internal Wiring

The following section deals with the internal wiring of the RC4000. The wires are put into groups that match up with the external box connector they route to. Most board stacks are made of 3 or 4 PCBs and possibly an Ethernet card. The key below shows how each board is coded to trace wires from circular box connector to PCB connector.

For a more detailed explanation of functions of individual pins, please refer to the main RC4000 User Manual.

PCB Connector Pin Key:



J1 Azimuth		Amphenol MS-3122E14-19S
Box Connector Pin	PCB Connector Pin	Description
A	B:J14upper:13	AZ Limit +V
B	B:J14upper:15	AZ Limit +V
C	B:J14upper:10	AZ Encoder Shield
D	B:J14upper:8	AZ Limits Shield
E	B:J14upper:4	AZ Pot Shield
F	A:J5:8	AZ Motor +
G	A:J5:9	AZ Motor -
H	A:J5:10	AZ Motor Shield
J	B:J14upper:1	AZ Pot +V
K	B:J14upper:5	AZ Encoder +V
L	B:J14upper:12	AZ CW Limit
M	B:J14upper:11	AZ Limit +V
N	B:J14upper:14	AZ CCW Limit
P	B:J14upper:16	AZ Stow Limit
R	B:J14upper:9	AZ Encoder Gnd
S	B:J14upper:3	AZ Pot Gnd
T	B:J14upper:2	AZ Pot Wiper
U	B:J14upper:6	AZ Encoder Ch A
V	B:J14upper:7	AZ Encoder Ch B

J2 Elevation Amphenol MS-3122E14-19S		
Box Connector Pin	PCB Connector Pin	Description
A	B:J14lower:13	EL Limit +V
B	B:J14lower:15	EL Limit +V
C	B:J14lower:10	EL Encoder Shield
D	B:J14lower:8	EL Limits Shield
E	B:J14lower:4	Inclinometer Shield
F	A:J5:5	EL Motor +
G	A:J5:6	EL Motor -
H	A:J5:7	EL Motor Shield
J	B:J14lower:1	Inclinometer +V
K	B:J14lower:5	EL Encoder +V
L	B:J14lower:12	EL Up Limit
M	B:J14lower:11	EL Limit +V
N	B:J14lower:14	EL Down Limit
P	B:J14lower:16	EL Stow Limit
R	B:J14lower:9	EL Encoder Gnd
S	B:J14lower:3	Inclinometer Gnd
T	B:J14lower:2	Inclinometer Signal
U	B:J14lower:6	EL Encoder Ch A
V	B:J14lower:7	EL Encoder Ch B

J1 Pol Amphenol MS-3122E14-19S		
Box Connector Pin	PCB Connector Pin	Description
A	B:J13upper:13	Pol Limit +V
B	B:J13upper:15	Pol Limit +V
C	B:J13upper:10	Pol Encoder Shield
D	B:J13upper:8	Pol Limits Shield
E	B:J13upper:4	Pol Pot Shield
F	A:J5:11	Pol Motor +
G	A:J5:12	Pol Motor -
H	A:J5:13	Pol Motor Shield
J	B:J13upper:1	Pol Pot +V
K	B:J13upper:5	Pol Encoder +V
L	B:J13upper:12	Pol CW Limit
M	B:J13upper:11	Pol Limit +V
N	B:J13upper:14	Pol CCW Limit
P	B:J13upper:16	Pol Stow Limit
R	B:J13upper:9	Pol Encoder Gnd
S	B:J13upper:3	Pol Pot Gnd
T	B:J13upper:2	Pol Pot Wiper
U	B:J13upper:6	Pol Encoder Ch A
V	B:J13upper:7	Pol Encoder Ch B

J4 Acc		Amphenol MS-3122E14-19P
Box Connector Pin	PCB Connector Pin	Description
A	B:J13lower:1	+24V
B	B:J13lower:2	RS232 In from Compass
C	B:J13lower:3	RS232 Out to Compass
D	B:J13lower:4	Compass Signal
E	B:J13lower:5	Compass Gnd
F	B:J13lower:6	Compass Shield
G	B:J13lower:7	+5V
H	B:J13lower:8	Spare Output
J	B:J13lower:9	+5V
K	B:J13lower:10	Input A
L	B:J13lower:11	+5V
M	B:J13lower:12	Input B
N	B:J13lower:13	+5V
P	B:J13lower:14	Input C
R	B:J13lower:15	+5V
S	B:J13lower:16	Input D
T		
U		
V		

J5 RF In		Amphenol 172129
PCB Ref Des	Description	
D:J1	N to SMB	

J6 GPS In		Amphenol 122192
PCB Ref Des	Description	
C:GPS Module	TNC to MCX	

J7 IP		Tyco 1738601-1
Box Connector Pin	PCB Connector Pin	Description
1	E:J1:1	Data Tx+
2	E:J1:2	Data Tx-
3	E:J1:3	Data Rx+
4		
5		
6	E:J1:6	Data Rx-
7		
8		

J8 AC In		Amphenol C016 20C003 100 12
Box Connector Pin	PCB Connector Pin	Description
1	A:J1:1	Neutral
2	A:J1:2	Line (3A SB fuse)
3		
G	A:J1:G	Earth Ground

J9 RF Out		Amphenol 172129
PCB Ref Des	Description	
D:J2	N to SMB	

J10 HHRC Amphenol MS-3122E12-10S		
Box Connector Pin	PCB Connector Pin	Description
A	B:J10:1	Row 3
B	B:J10:2	Row 2
C	B:J10:3	Row 1
D	B:J10:4	Row 0
E	B:J10:5	Col 0
F	B:J10:6	Col 1
G	B:J10:7	Col 2
H	B:J10:8	Col 3
J	B:J10:9	Shield
K		

J11 AC Out Amphenol C016 20G003 100 12		
Box Connector Pin	J8 Connector Pin	Description
1	1	Neutral
2	2	Line
3		
G	G	Earth Ground

Red Button Oslo LRTITO6R19G		
Box Connector Pin	PCB Connector Pin	Description
A	B:J2:1	switch
B	B:J2:2	switch
C	B:J2:5	LED anode
D	B:J2:6	LED cathode

Green Button Oslo LRTITO6G49G		
Box Connector Pin	PCB Connector Pin	Description
A	B:J2:3	switch
B	B:J2:4	switch
C	B:J2:7	LED anode
D	B:J2:8	LED cathode

P/N of Plugs for PCB Connectors	
PCB Connector	P/N
A:J1	Phoenix 1873061
A:J5	Phoenix 1940017
B:J2	Phoenix 1881383
B:J10	8-pin header (.1in spacing)
B:J13upper	Phoenix 1952403
B:J13lower	Phoenix 1952403
B:J14upper	Phoenix 1952403
B:J14lower	Phoenix 1952403