

Santa Clara County Fire Volunteer Comm Package

Drawings

Open Questions, ToDos

- 1. ..
- 2. ..
- 3. ..
- 4. ..

VCP, Documentation, Notes			
REVISION	DATE	AUTHOR	
1.0	11/9/2014	J Oberhofer	Ok
1.1	12/05/14	J Oberhofer	As Built
1.2	07/27/15	J Oberhofer	Data Cable Subsys. Pin-out update

28

24

20

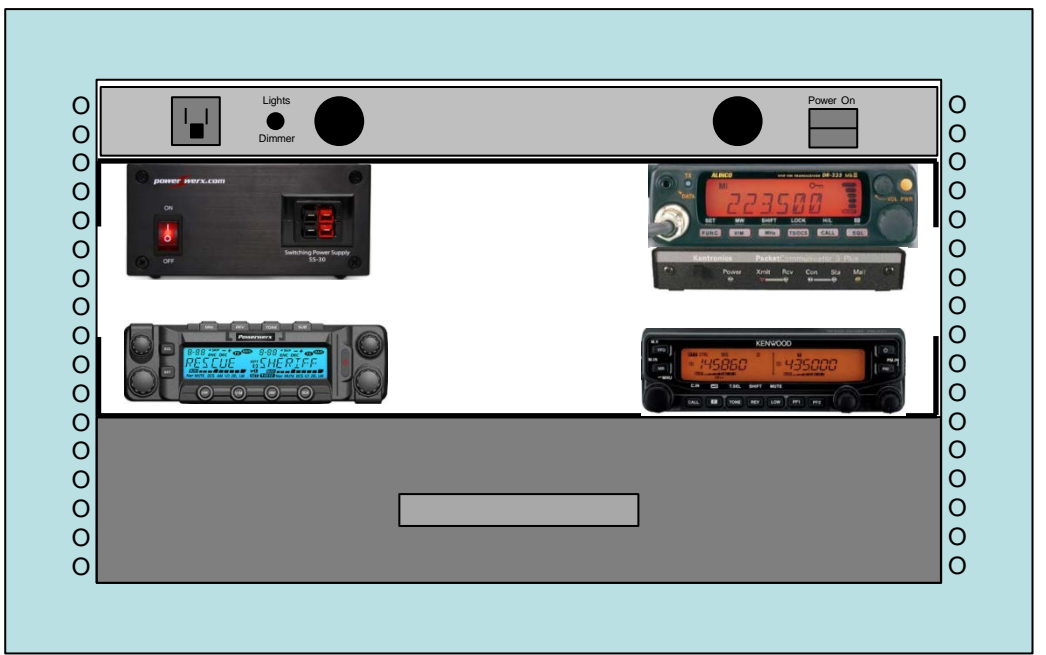
16

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Light Bar/Power conditioner

Shelf #2

Shelf #1

Drawer

21.25"

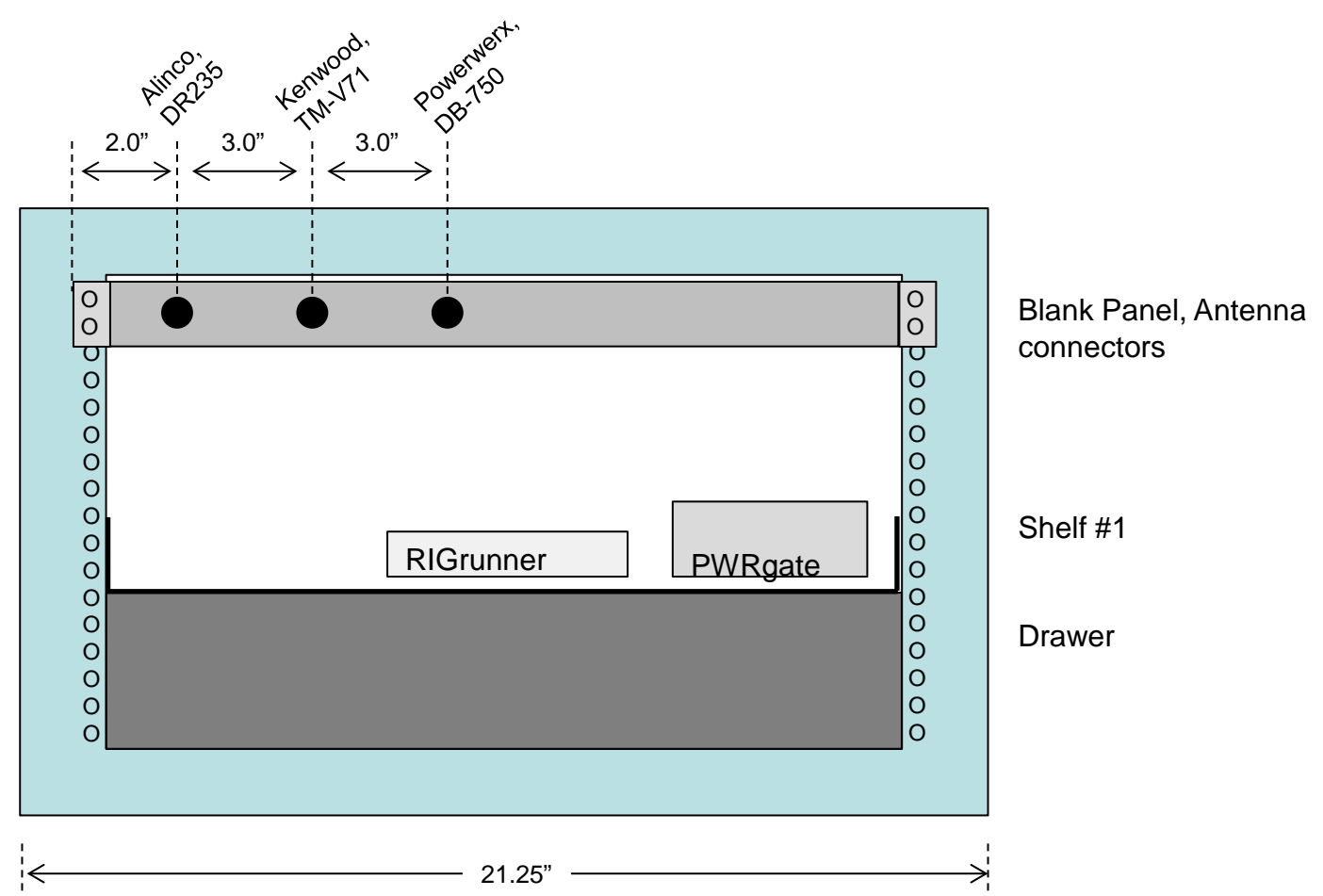
1. 6U Gator Box; From Top to Bottom
 1. 1U Light Bar/Power Conditioner
 2. 1U Shelf #2. Situated 2U below Light Bar/Power Conditioner; installed upside down.
 3. 1U Shelf #1. Situated above the Drawer
 4. 2U Drawer
 5. All Radios are positioned in the shelves as shown.
 6. Radio lateral placement on the shelves are determined based on getting the mounting screws to align.



VCP, Front View, Cover removed			
REVISION	DATE	AUTHOR	
1.0	11/9/2014	J Oberhofer	Ok
1.1	12/05/14	J Oberhofer	As Built

0 4 8 12 16 20 24 28 32 36 40 44 48 52 56

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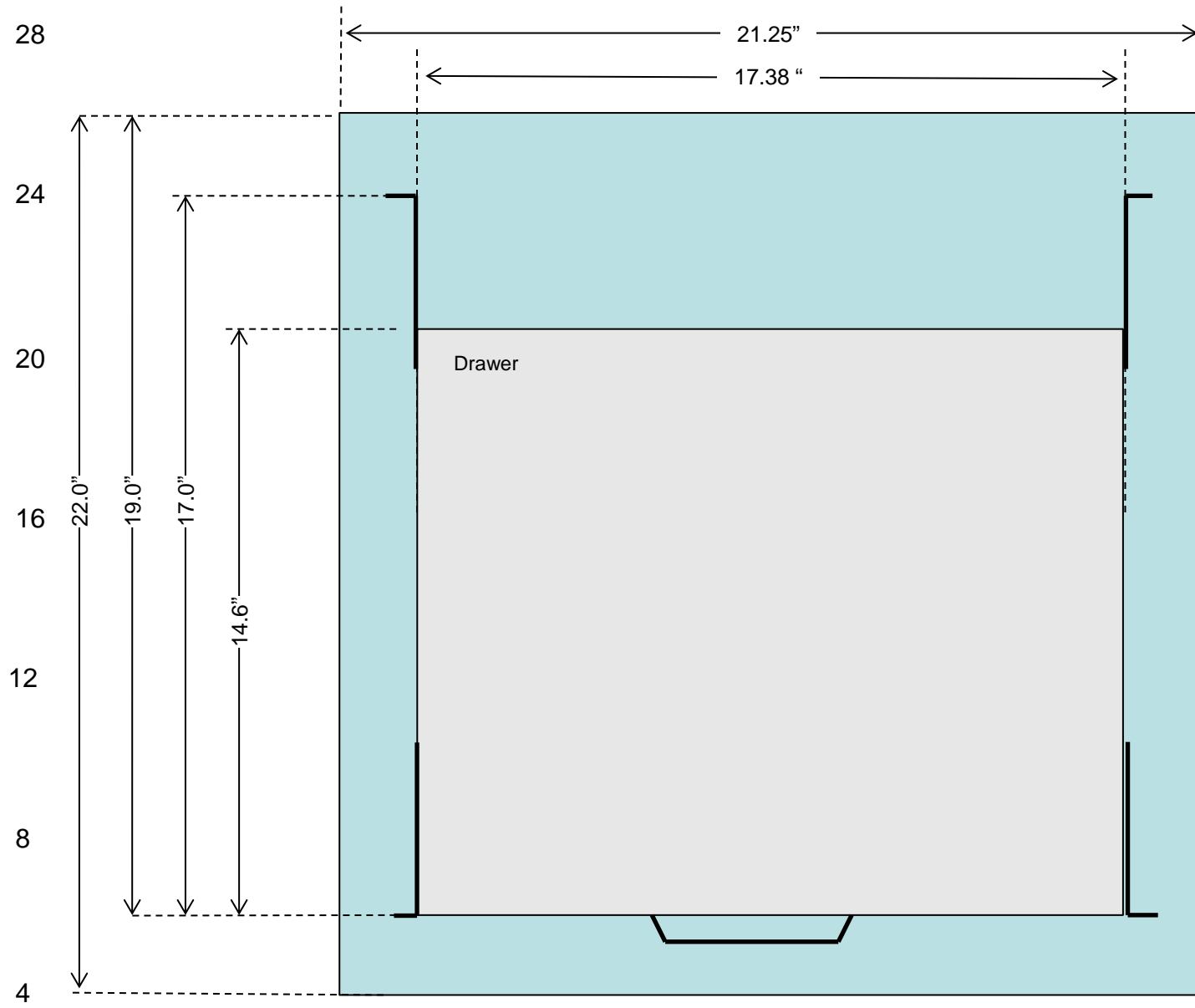


1. 6U Gator Box; From top to bottom
 1. 1U Blank Panel
 - Drill 3 5/8" holes for UHF F/F Panel Mount connectors
 - 1st hole: 2 inches from the left edge
 - 2nd hole: 3 inches from the 1st hole
 - 3rd hole: 3 inches from the 2nd hole
 2. 1U Shelf #1. Situated above the Drawer
 3. 2U Drawer



VCP, Back View, Cover removed			
REVISION	DATE	AUTHOR	
1.0	11/9/2014	J Oberhofer	Ok
1.1	12/05/14	J Oberhofer	As Built

0 4 8 12 16 20 24 28 32 36 40 44 48 52 56



1. Measurement values are exact. All pictorial representation are approximate.

2. 6U Gator Box; Top View, cut-away to see the internal placement of components. Dimensions:

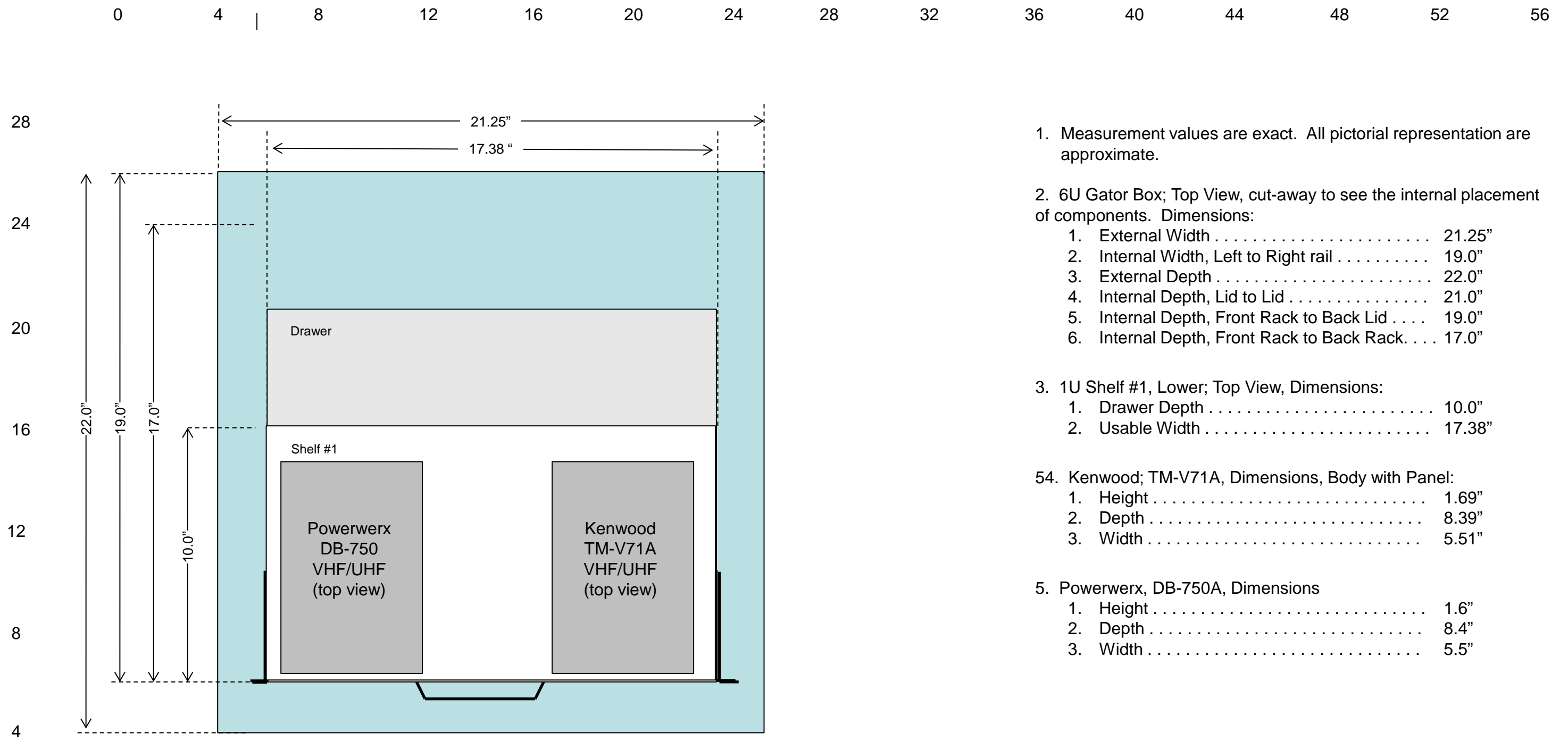
1. External Width 21.25"
2. Internal Width, Left to Right rail 19.0"
3. External Depth 22.0"
4. Internal Depth, Lid to Lid 21.0"
5. Internal Depth, Front Rack to Back Lid 19.0"
6. Internal Depth, Front Rack to Back Rack. 17.0"

3. 2U Drawer; Top View, Dimensions:

1. Drawer Depth 14.625"
2. Drawer Width 17.125"

0

VCP, Top View, Drawer			
REVISION	DATE	AUTHOR	
1.0	11/9/2014	J Oberhofer	Ok



1. Measurement values are exact. All pictorial representation are approximate.

2. 6U Gator Box; Top View, cut-away to see the internal placement of components. Dimensions:

- 1. External Width 21.25"
- 2. Internal Width, Left to Right rail 19.0"
- 3. External Depth 22.0"
- 4. Internal Depth, Lid to Lid 21.0"
- 5. Internal Depth, Front Rack to Back Lid 19.0"
- 6. Internal Depth, Front Rack to Back Rack. 17.0"

3. 1U Shelf #1, Lower; Top View, Dimensions:

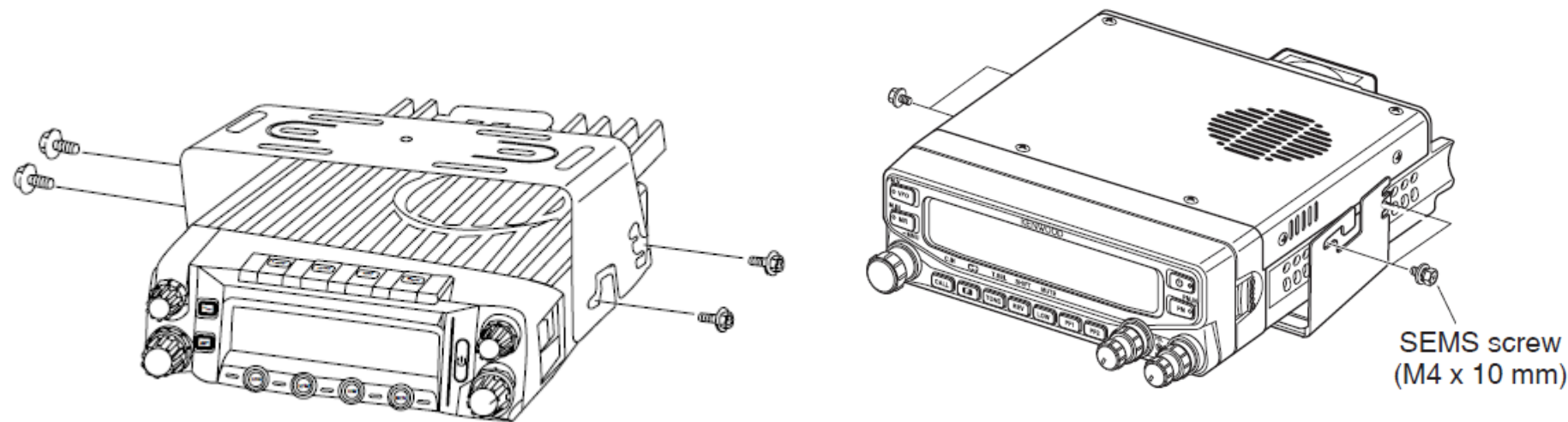
- 1. Drawer Depth 10.0"
- 2. Usable Width 17.38"

54. Kenwood; TM-V71A, Dimensions, Body with Panel:

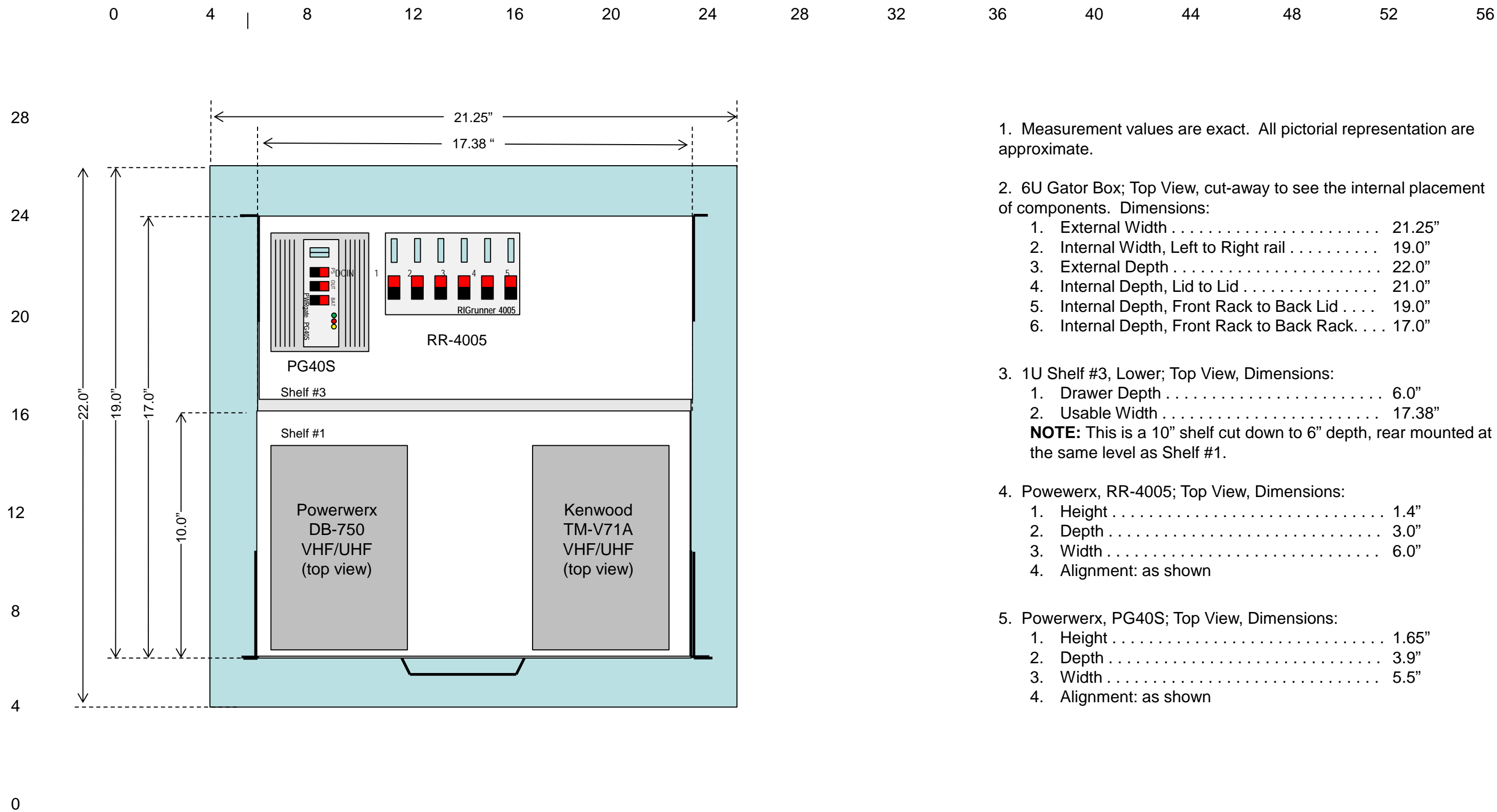
- 1. Height 1.69"
- 2. Depth 8.39"
- 3. Width 5.51"

5. Powerwerx, DB-750A, Dimensions

- 1. Height 1.6"
- 2. Depth 8.4"
- 3. Width 5.5"



VCP, Top View, 1 st Shelf level (bottom, front)			
REVISION	DATE	AUTHOR	
1.0	11/9/2014	J Oberhofer	Ok
1.1	12/05/14	J Oberhofer	As Built



1. Measurement values are exact. All pictorial representation are approximate.

2. 6U Gator Box; Top View, cut-away to see the internal placement of components. Dimensions:

1. External Width 21.25"
2. Internal Width, Left to Right rail 19.0"
3. External Depth 22.0"
4. Internal Depth, Lid to Lid 21.0"
5. Internal Depth, Front Rack to Back Lid 19.0"
6. Internal Depth, Front Rack to Back Rack. 17.0"

3. 1U Shelf #3, Lower; Top View, Dimensions:

1. Drawer Depth 6.0"
2. Usable Width 17.38"

NOTE: This is a 10" shelf cut down to 6" depth, rear mounted at the same level as Shelf #1.

4. Powerwerx, RR-4005; Top View, Dimensions:

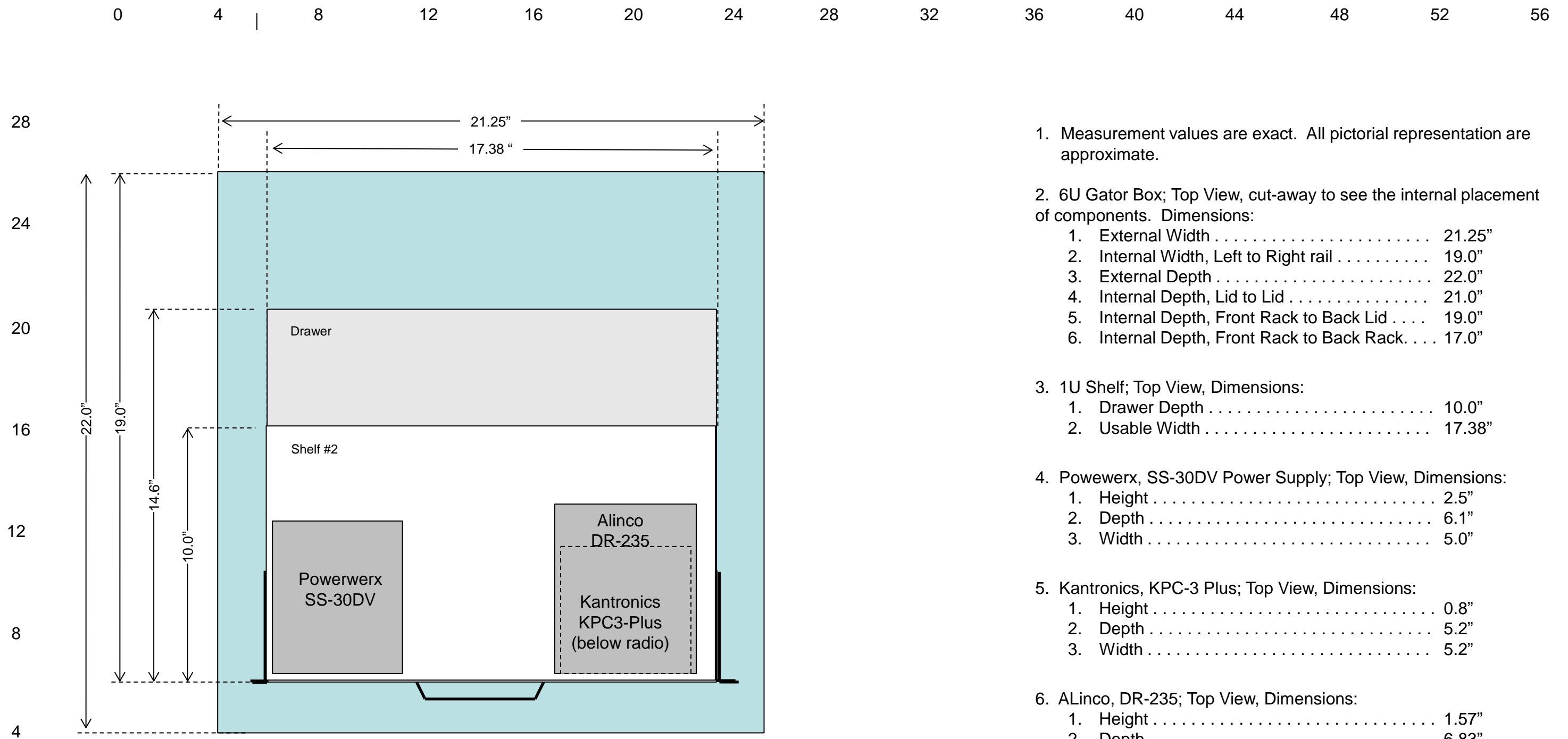
1. Height 1.4"
2. Depth 3.0"
3. Width 6.0"
4. Alignment: as shown

5. Powerwerx, PG40S; Top View, Dimensions:

1. Height 1.65"
2. Depth 3.9"
3. Width 5.5"
4. Alignment: as shown

VCP, Top View, 1st Shelf level (bottom, rear)

REVISION	DATE	AUTHOR	
1.0	11/9/2014	J Oberhofer	Ok
1.1	12/05/14	J Oberhofer	Updated; As Built

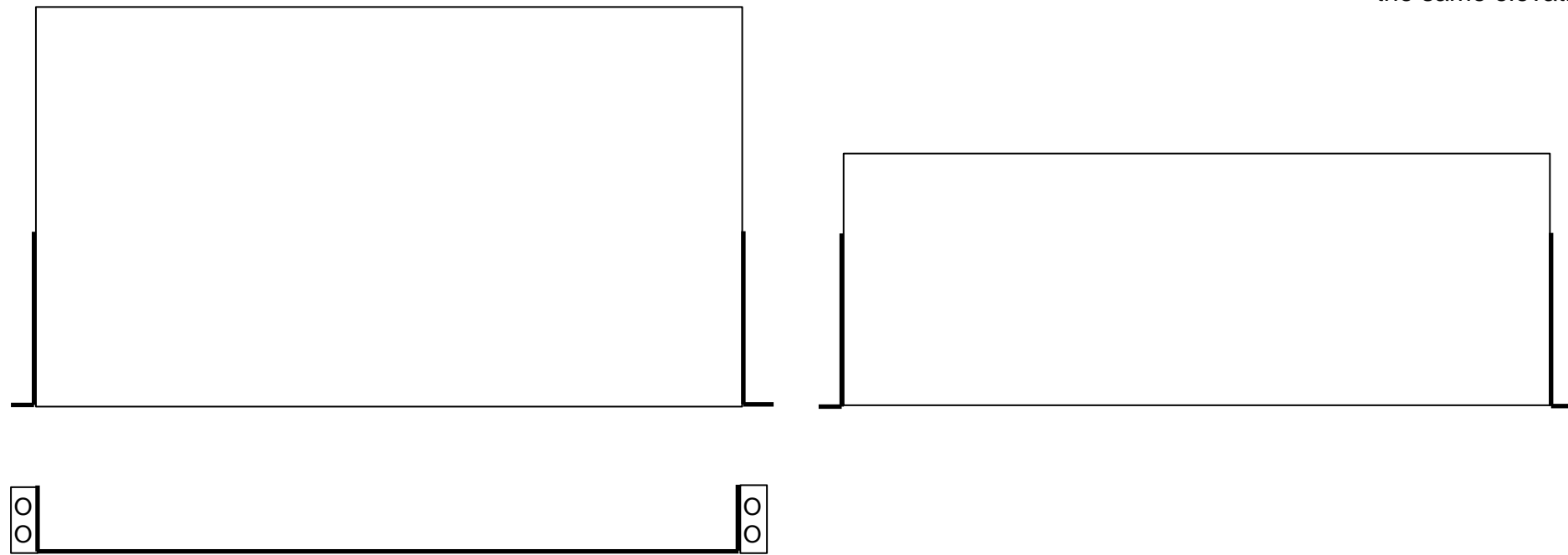


- Measurement values are exact. All pictorial representation are approximate.
- 6U Gator Box; Top View, cut-away to see the internal placement of components. Dimensions:
 - External Width 21.25"
 - Internal Width, Left to Right rail 19.0"
 - External Depth 22.0"
 - Internal Depth, Lid to Lid 21.0"
 - Internal Depth, Front Rack to Back Lid 19.0"
 - Internal Depth, Front Rack to Back Rack. 17.0"
- 1U Shelf; Top View, Dimensions:
 - Drawer Depth 10.0"
 - Usable Width 17.38"
- Powewerx, SS-30DV Power Supply; Top View, Dimensions:
 - Height 2.5"
 - Depth 6.1"
 - Width 5.0"
- Kantronics, KPC-3 Plus; Top View, Dimensions:
 - Height 0.8"
 - Depth 5.2"
 - Width 5.2"
- ALinco, DR-235; Top View, Dimensions:
 - Height 1.57"
 - Depth 6.83"
 - Width 5.58"



VCP, Top View, 2 nd Shelf Level (top)			
REVISION	DATE	AUTHOR	
1.0	11/9/2014	J Oberhofer	Ok
1.1	12/05/14	J Oberhofer	As Built

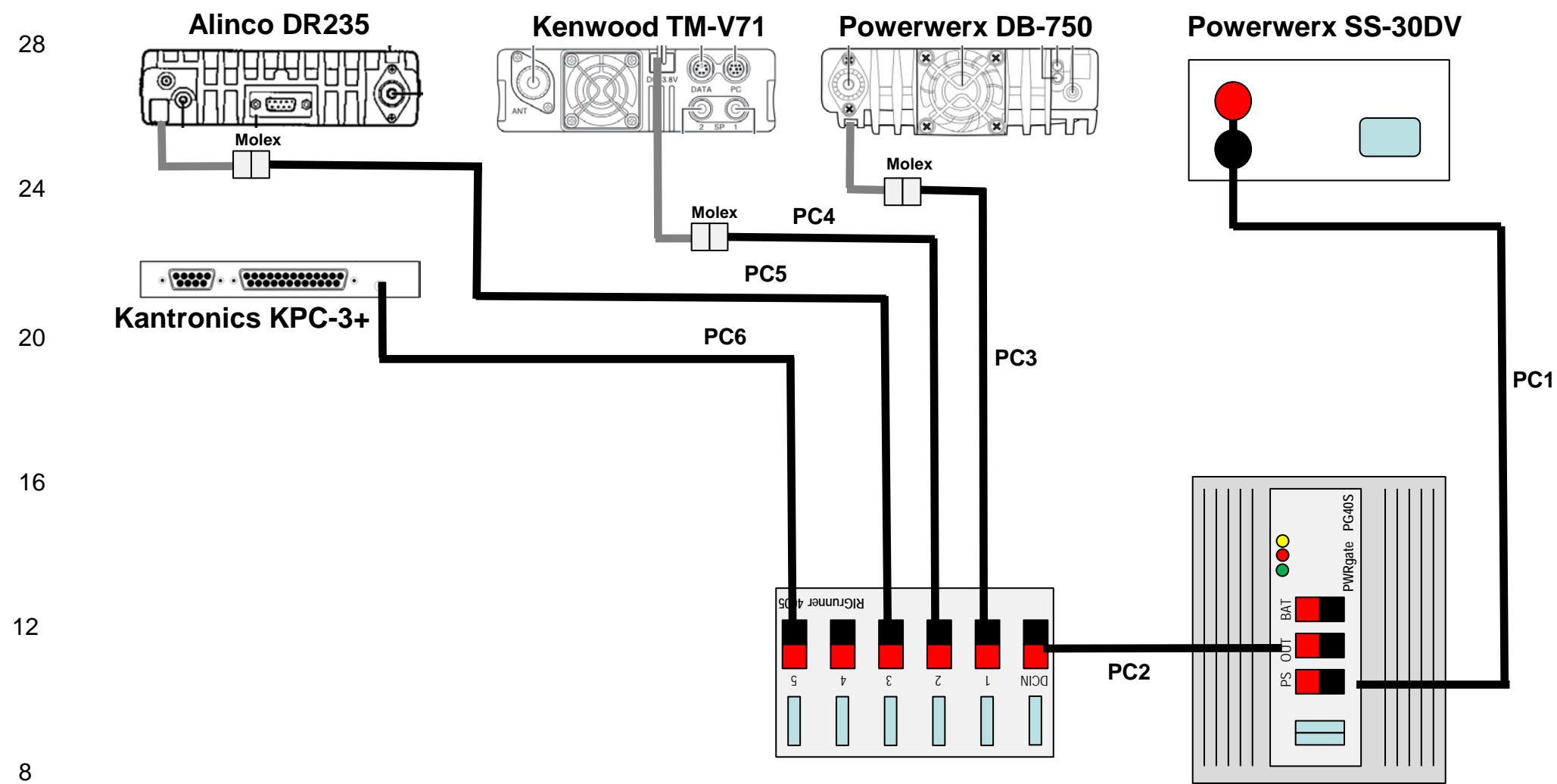
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1. Measurement values are exact. All pictorial representation are approximate.
2. 6U Gator Box; Top View, cut-away to see the internal placement of components. Dimensions:
 1. External Width 21.25"
 2. Internal Width, Left to Right rail 19.0"
 3. External Depth 22.0"
 4. Internal Depth, Lid to Lid 21.0"
 5. Internal Depth, Front Rack to Back Lid 19.0"
 6. Internal Depth, Front Rack to Back Rack. . . . 17.0"
3. 1U Shelf #3, Lower; Top View, Dimensions:
 1. Drawer Depth 6.0"
 2. Usable Width 17.38"

NOTE: This is a 10" shelf cut down to 6" depth, rear mounted at the same elevation of Shelf #1.

VCP, Fabrication, Rear Shelf			
REVISION	DATE	AUTHOR	
1.0	11/9/2014	J Oberhofer	Ok
1.1	12/05/14	J Oberhofer	As Built



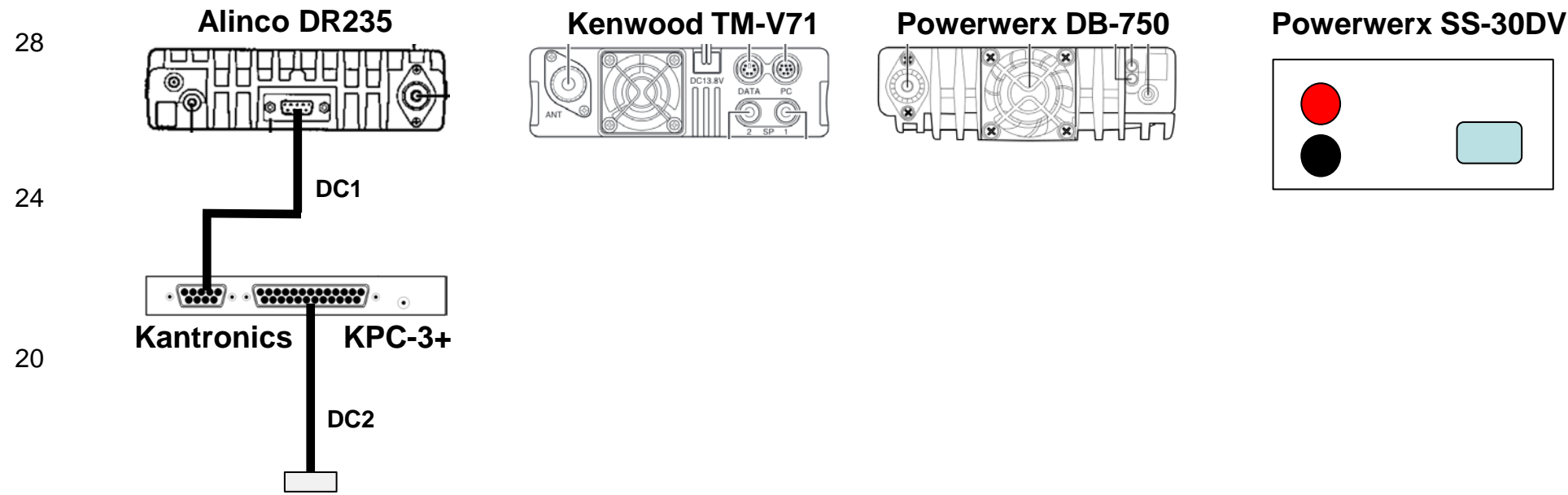
Power cables (PC)

1. PC1 – Power supply to PowerGate
Cable: Custom cable, approx. 24” end to end. Use a spare piece of cable from one of the radio’s power cable..
Term1: Lugs, 1/4” ID
Term 2: Power Pole
2. PC2 – PowerGate to Rig Runner
Cable: Custom cable, approx. 6” end to end. Use a spare piece of cable from one of the radio’s power cable..
Term 1: Power Pole
Term 2: Power Pole
3. PC3 – RigRunner to Radio, Powerwerx DB-750
Cable: Custom cable, approx. 16” end to end; use the radio’s power cable (Molex on one end); expect less than 12A.
Term1: Molex
Term2: Power Pole
4. PC4 – RigRunner to Radio, Kenwood TM V71
Cable: Custom cable, approx. 16” end to end; use the radio’s power cable (Molex on one end); expect less than 13A.
Term1: Molex
Term2: Power Pole
5. PC5 – RigRunner to Radio, Alinco DR235
Cable: Custom cable, approx. 16” end to end; use the radio’s power cable (Molex on one end); expect less than 8A.
Term1: Molex
Term2: Power Pole
6. PC6 – RigRunner to TNC, Kantronics KPC3+
Cable: Custom cable, approx. 18” end to end, 18-22 gauge; expect less than 300mA
Term1: 2.1mm power plug
Term2: Power Pole

Mounting Considerations:

1. PWRgate
 1. This unit installed so that the fuses are closest to the rear of the enclosure. This ensures that a fuse needing replacement can be easily reached.
 2. Orientation on the rear shelf is as shown above.
 3. Placement on the rear shelf requires positioning the unit so that all 4 mounting holes line up with the shelf cutouts.
2. RIgrunner
 1. This unit installed so that the fuses are closest to the rear of the enclosure. This ensures that a fuse needing replacement can be easily reached.
 2. Orientation on the rear shelf is as shown above.
 3. Placement on the rear shelf requires positioning the unit so that at least 3 mounting holes line with the shelf cutouts.

DC Power subsystem			
REVISION	DATE	AUTHOR	
1.0	01/1i8/15	J Oberhofer	As Built
1.1	4/30/15	J Oberhofer	Updated lengths



Data cables (DC)

1. DC1 – KPC3 to Alinco Cable
Cable: Standard Monitor Cable modified to align the TNC and Radio pin-outs. See notes below.
Jameco, P/N 181666, or equivalent
Term1: 9pin/M
Term 2: 9pin/M
2. DC2 – KPC3 to PC
Cable: Cable, Modem, 25pin/M-9pin/F, 6FT
Jameco, P/N 31722 , or equivalent
Term 1: 25pin/M
Term 2: 9pin/F

DC1 – Custom KPC3 to Alinco Data Cable

- NOTE:** There are 3 ways of building this cable:
1. Buy a custom cable on line.
 2. buy shielded cable and solder on both 9pin/M connectors, or
 3. Modify an existing cable as described below.

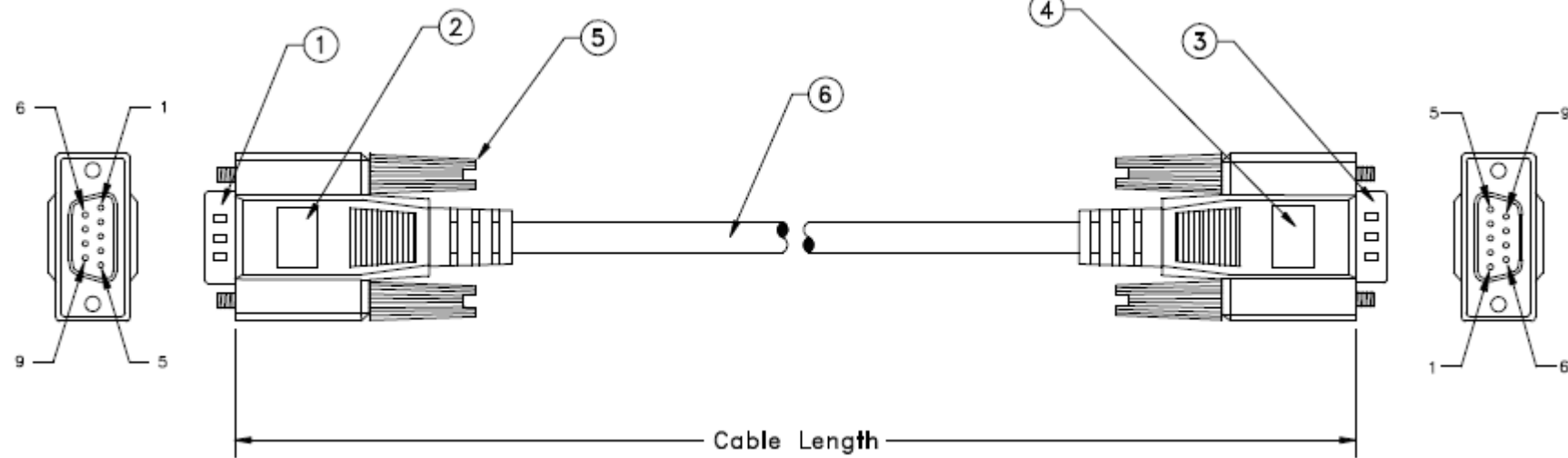
This procedure addresses option #3.

NOTE: if you use a different cable, the pin-to-cable color configuration may be different. Verify this before starting.

This cable is cut for 2 purposes

1. Reduce the overall length of the cable.
 2. remap the pins from the TNC to the Radio
1. Cut the cable so there is 4 inches of cable from the connector.
 2. Strip the wires, and confirm the pin-out to wire color.
 3. Add shrink tubing as necessary prior to assembling (can be taped when done as an alternative)
 4. Once pin-to-wire color are confirmed, solder the TNC signal wire to the corresponding Radio signal wire.
 5. Before sealing all connections, connect the cable and perform a test.
 6. Wrap each solder connection, and then wrap the cable splice.

DC1 – Custom KPC3 to Alinco Data Cable



Kantronics KPC3+

Pin	Description
1	Transmit Audio Out
3	PTT
5	Receive Audio In
6	GND Shield

PINS NOT CONNECTED

- 2
- 4
- 7
- 8
- 9

Alinco DR235

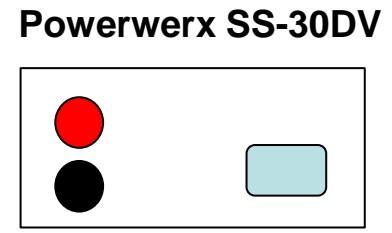
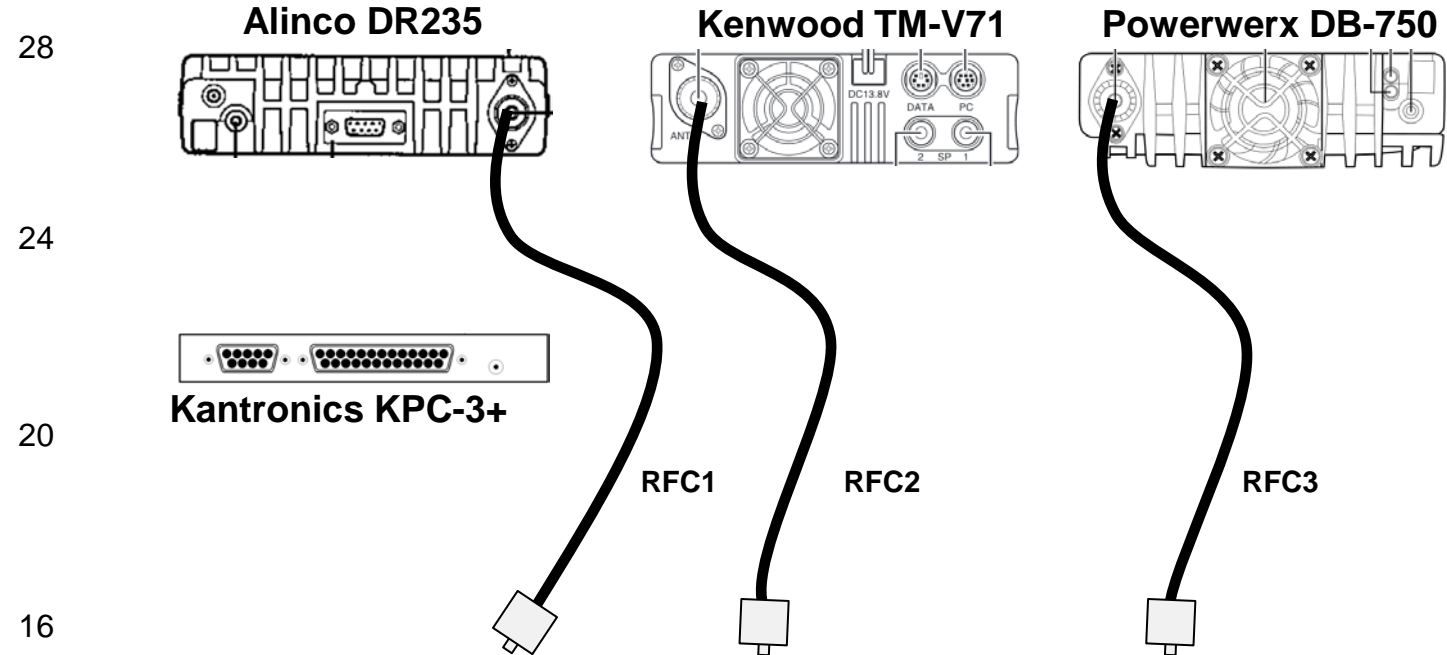
Pin	Description
9	Transmit In (to Mic)
7	PTT
4	Receive Out (fm Speaker)
5	GND Shield

PINS NOT CONNECTED

- 1
- 2
- 3
- 6
- 8

Data Cable subsystem

REVISION	DATE	AUTHOR	
1.0	01/1i8/15	J Oberhofer	As Built
1.1	07/27/15	J Oberhofer	Custom Cable pin-out corrections



Coax cables (RFC)

1. RFC1 – Alinco Coax Cable to UHF M/M Panel Mount
Cable: CXPO8XC, RG8X MINI, 1.5FT
HRO, P/N CXPO8XC, or equivalent
Term1, 2: PL259
2. RFC2 – Kenwood Coax Cable to UHF M/M Panel Mount
Cable: CXPO8XC, RG8X MINI, 1.5FT
HRO, P/N CXPO8XC, or equivalent
Term1, 2: PL259
3. RFC3 – Powererx Coax Cable to UHF M/M Panel Mount
Cable: CXPO8XC, RG8X MINI, 1.5FT
HRO, P/N CXPO8XC, or equivalent
Term1, 2: PL259

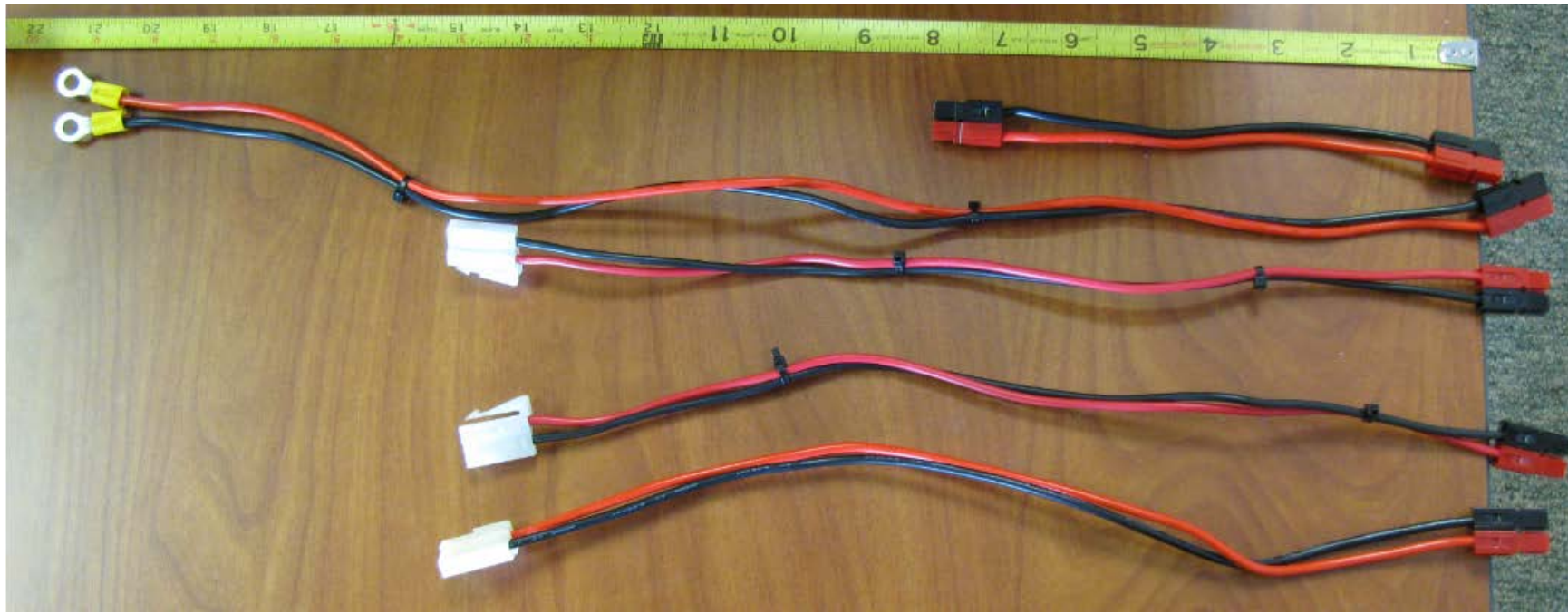
RF Cable subsystem			
REVISION	DATE	AUTHOR	
1.0	01/1i8/15	J Oberhofer	As Built

0 4 8 12 16 20 24 28 32 36 40 44 48 52 56

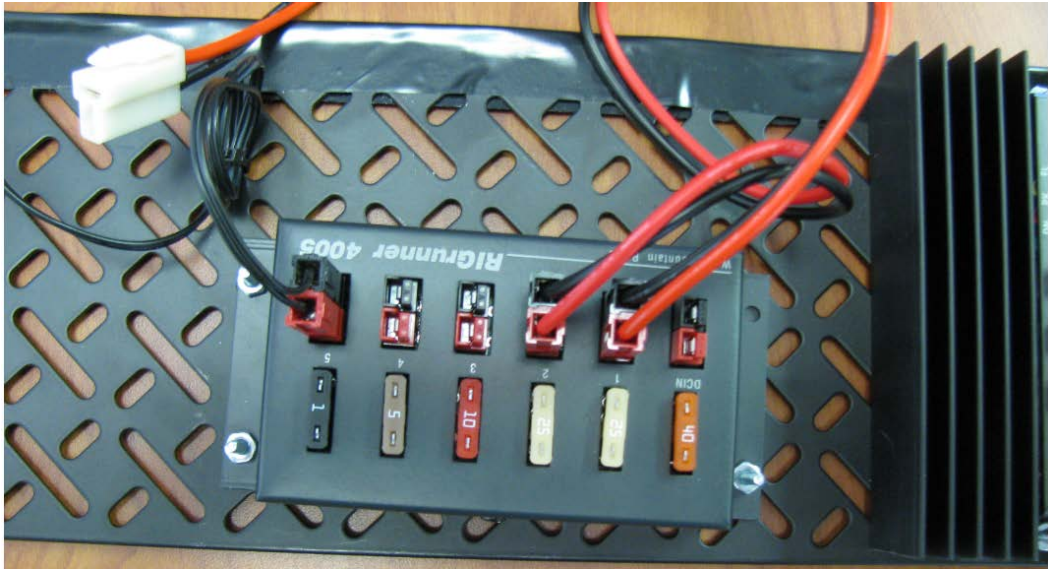
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1.0	01/1i8/15	J Oberhofer	As Built