
	Installation Procedure, ProVision2 to ProVision3 System Upgrade	 8000-35512-IP Rev A1
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1. Purpose

The purpose of this document is to provide the information for upgrading a Provision 2 (or SafeView) system to a Provision 3 wideband system.

2. Scope

Use this procedure when upgrading an existing Provision 2 to a Provision 3 wideband system.

3. Applicable Documents

1600-30872-00	KIT, PV2-PVW SYSTEM UPGRADE
1600-30872-01	KIT, PV2-PVW SYS UPGRD W/O ASCU
8100-20602-TM	MANUAL, MAINTENANANCE, PV2
8100-22758-00	INSTALL MANUAL, PV2, ROW

4. Definitions

PV2 – Provision 2 Scanner (also SafeView)
 PV3 or PVW – Provision 3 Wideband Scanner
 GPU – Graphics Processing Unit

5. Requirements

N/A (If not applicable.)

5.1. Media

N/A

5.2. Tools and/or Equipment

The service technician should be equipped with the standard tools required for servicing a Provision 2 body scanner. Refer to the Provision 2 installation manual [P/N 8100-22758-00] for a detailed list of tools. Some additional tools and items required for the upgrade are as follows:

Screwdriver, Phillips, (#1 & #2)

Screwdriver, Slotted, Narrow Blade, 3mm Tip Width, 150mm Long

Cutter, Wire, Diagonal

Wire Stripper for 16 AWG wire

4mm & 5mm Hex Keys

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10mm Socket

Scissors

Credit card or license

Glass cleaner or Simple Green

Lint free cloth

8 ½ x 11” Piece of paper (standard letter size)

Heat gun or hair dryer (may not be required)

NOTE

- *A number in parenthesis after the name of a part is the item number as shown on the assembly drawing. This number is also listed on the BOM, Example: Widget (3).*
- *ASOAD = As Shown On Assembly Drawing.*
- *When handling Printed Circuit Boards, ensure that your ESD wrist strap is secured and tied to ground.*

WARNING!

- 1. Follow appropriate Lockout/Tagout Requirements & Procedure as outlined in Provision2 Installation Manual [8100-22758-00] section 3.2 before starting this process.**

6. Responsibilities

Qualified field service and technical personnel. Electrical safety measures must be followed.

7. Instructions

7.1. Installation Overview

1. Remove and replace the existing power supply in the PV2 Electrical Enclosure.
2. Replace the Blueman decal on the outer radome.
3. Replace the PV2 masts with PV3 wideband masts.
4. Replace the V2ISUs with V3ISUs.
5. Replace or upgrade the ASCU to an ASCU VI with a Graphics Processing Unit (GPU).
6. Apply labels for system ID & FCC Part 15.

7.2. Power Supply Upgrade

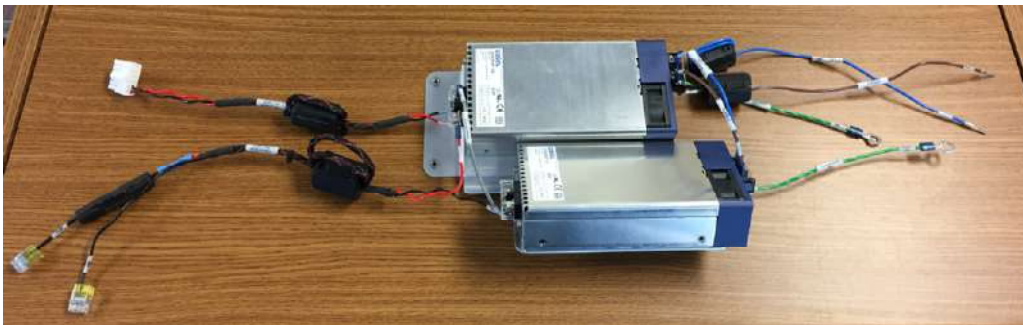


Figure 1 – New Power Supply Assembly [1000-30982-00]

7.3. Remove Power

Remove all power from PV2 system and follow Lockout/Tagout procedures.

7.4. Remove Covers

- 7.4.1 Remove the cosmetic skin covers to access the electrical enclosure.
- 7.4.2 Remove the electrical enclosure sheet metal cover.

7.5. Remove Old Power Supply

- 7.5.1 Remove the four screws from the bottom of the electrical enclosure holding the existing power supply to the sheet metal.
- 7.5.2 Disconnect the Minitfit connector at J26 on the power distribution board. Remove the 48 VDC conductors from pins 1 and 2 of the cable connector [1200-26805-00 or 1200-12288-00] by cutting with wire cutters as close to the connector as possible. Part number may vary depending on the date of manufacture for the PV2.

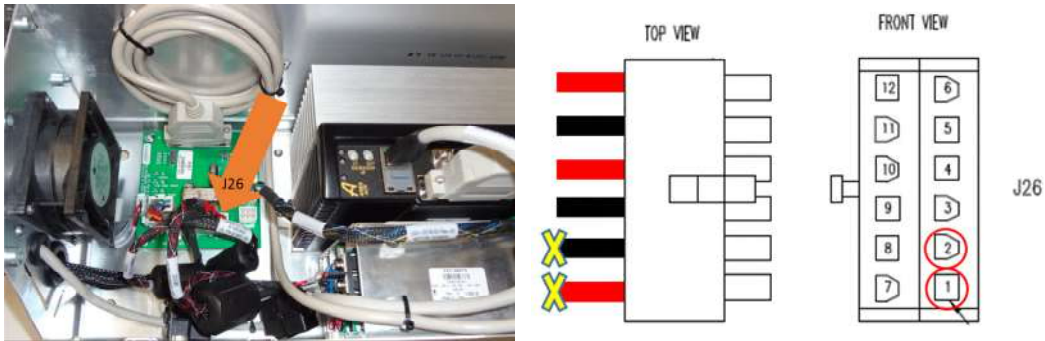


Figure 2 – Remove Conductors from J26 Connector

7.5.3 Disconnect the Power Supply input AC power cables at the Power Distribution Block [1200-12283-00 & 1200-12284-00.]

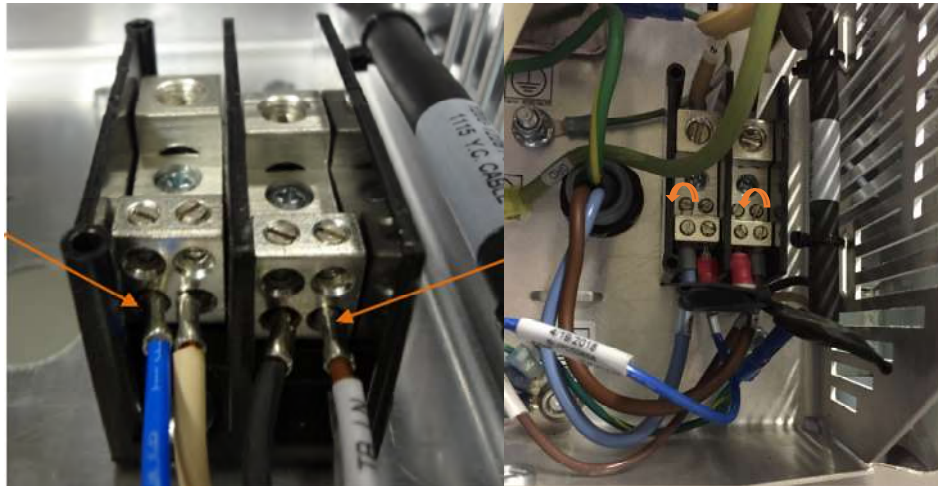


Figure 3 – Disconnect from Power Distribution Block

7.5.4 Disconnect the ground cable [1200-12294-00] from the ground stud. Remove the four screws holding the power supply to the bottom of the electrical enclosure then remove power supply and attached cables.



Figure 4 – Disconnect Ground Cable

7.6. Install New Power Supply

- 7.6.1 Slide new power supply assembly into electrical enclosure and re-install the four screws removed in step 7.5.1 to attach the power supply bracket to the electrical enclosure.

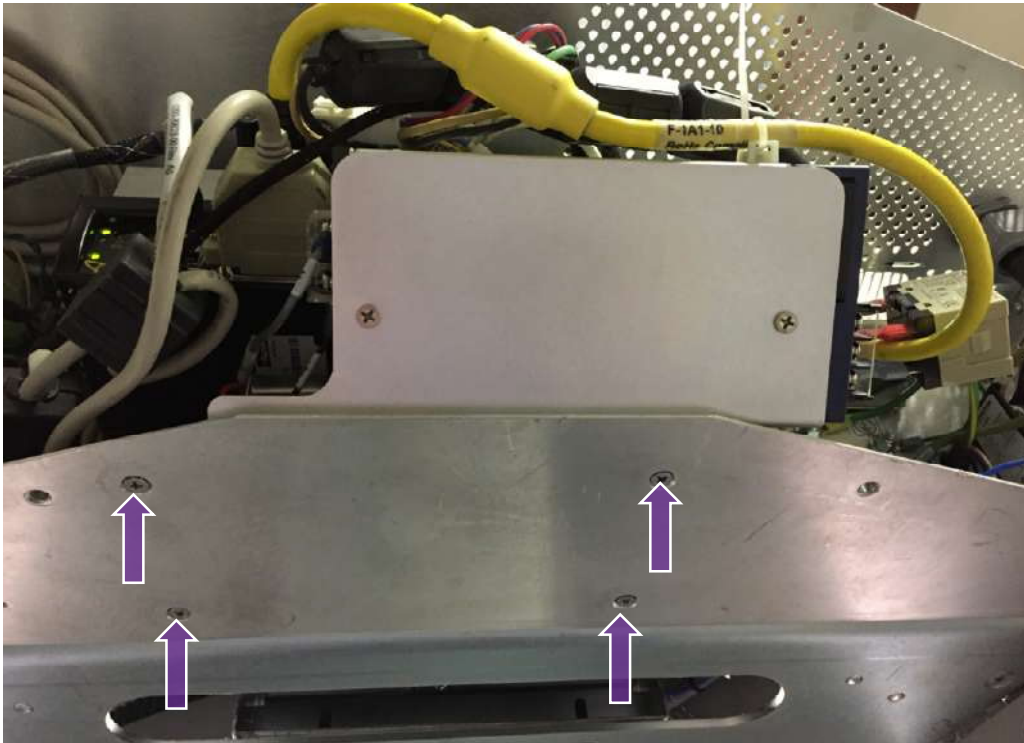


Figure 5 – Attach New Power Supply Assembly

- 7.6.2 Insert the AC Line In [1200-32101-00] and Neutral [1200-32103-00] cables into the appropriate location on the AC in Power Distribution Block and tighten the lugs.

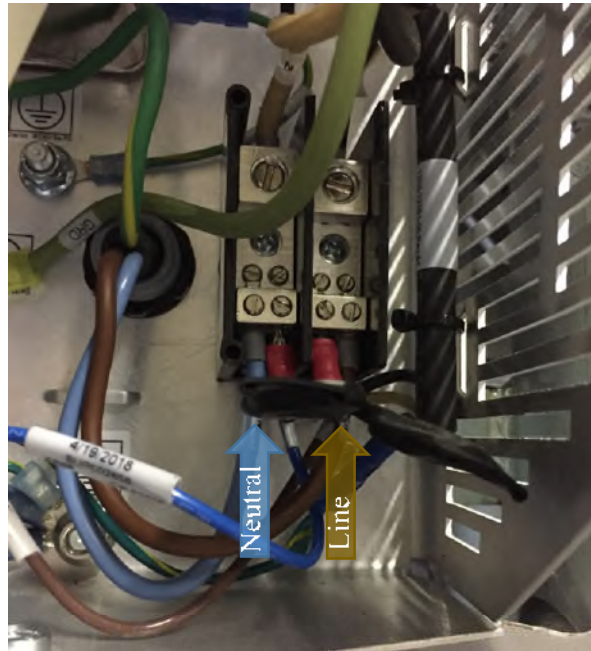


Figure 6 – Insert AC Cables to Power Distribution Block

7.6.3 Attach both ground cables [1200-32102-00] to the ground lug.

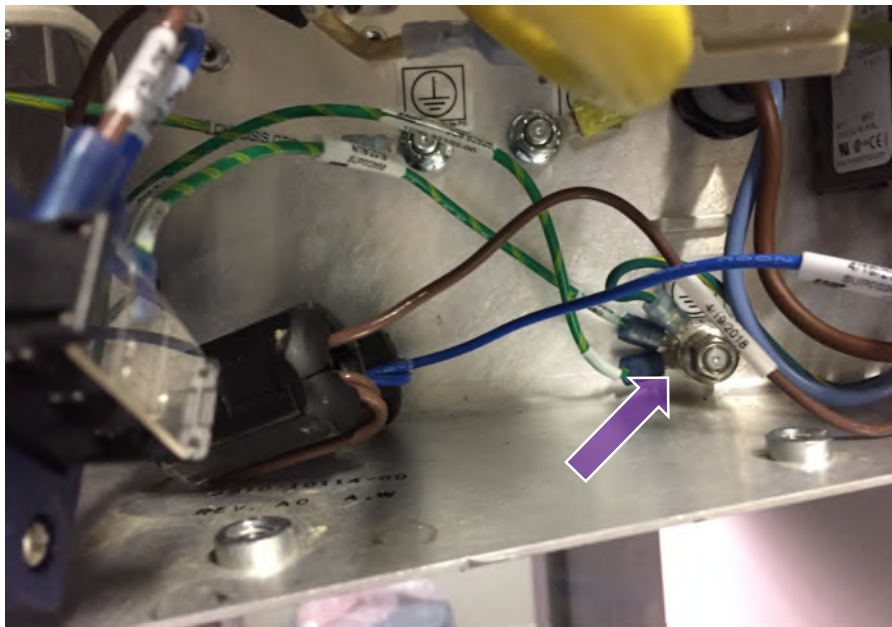


Figure 7 – Attach Ground Cables to Grounding Stud

7.6.4 Plug the 24VDC cable [1200-32104-00] from the Power Supply Assembly into J26 on the Power Distribution Board.

7.6.5 Using the existing 48VDC distribution cable removed from the connector in step 7.4.2. [1200-26805-00 or 1200-12288-00], strip back the insulation 10-mm \pm 1-mm.

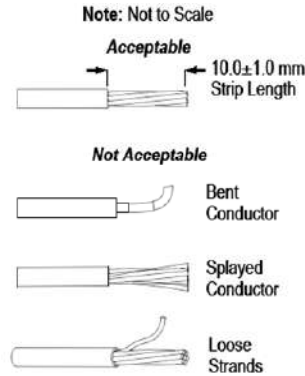


Figure 8 – Strip Cables

7.6.6 Carefully insert ends of the cables cut from the connector in step 7.4.2 into the terminals included with the Power Supply Assembly [1000-30982-00]. Insert the +48V cable (red) into the terminal labeled (+48V) and the -48V cable (black) into the terminal labeled (-48V). Refer to connector documentation (0300-32100-00) if unfamiliar with this connector type.

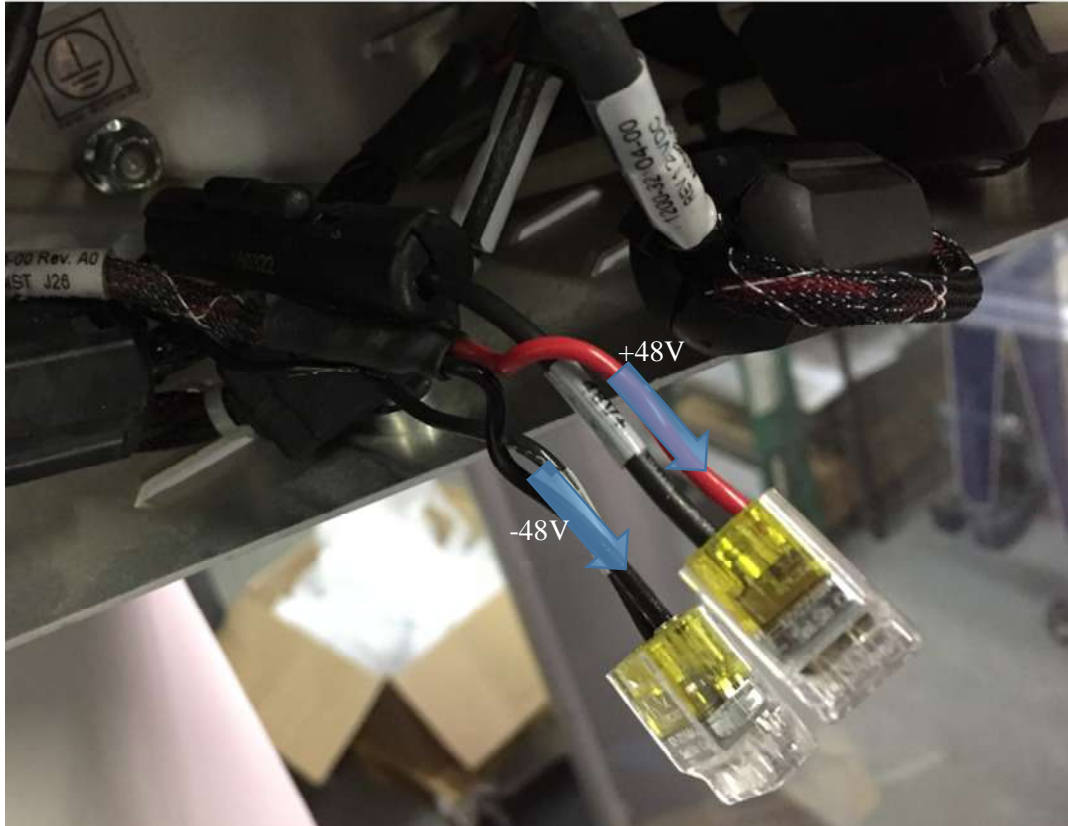


Figure 9 – 48V Connections

7.6.7 Double check that all electrical connections are tight and correct.

7.6.8 Remove two of the cable ties from the old power supply and attach with existing screws to the new power supply. Use cable ties to dress cables in the electrical enclosure.



Figure 10 – Dress Cables

7.7. Replace Covers and test functionality

7.8. Blueman Replacement

To gain access to the Blueman decal refer to the Provision 2 Maintenance Manual 8100-20602-TM (Section 7.6 Component Replacement Procedure).

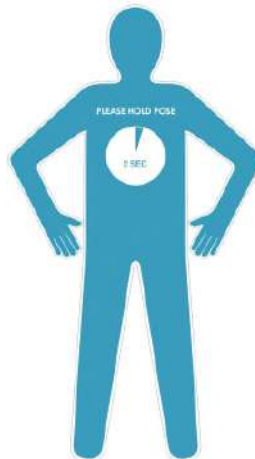


Figure 11 - PV3 Relaxed Stance

7.9. Remove existing decal

7.9.1 Once the inner radome has been removed the Blueman decal is accessible for replacement. Gently peel up the edge of the decal until there is enough material to grip with fingers. Continue to pull the decal off until it is completely removed. If the decal tears during removal repeat this step for the remaining pieces. If the decal does not come off easily and cleanly, a heat gun or hair dryer can be carefully used to alleviate removal of the existing decal.

7.9.2 Clean the surface of the radome using a glass cleaner such as Windex or Simple Green and a lint free cloth.

7.9.3 From inside the portal, center and align the edge of a standard 8 ½ x 11” sheet of paper as shown in Figure 12. Paper should lay flat against the radome. Use the masking tape provided with the install kit to secure the paper for label registration. A stool may be required to visually see the painted edge. The center point can be measured for accuracy by placing a tape measure flat against the radome.

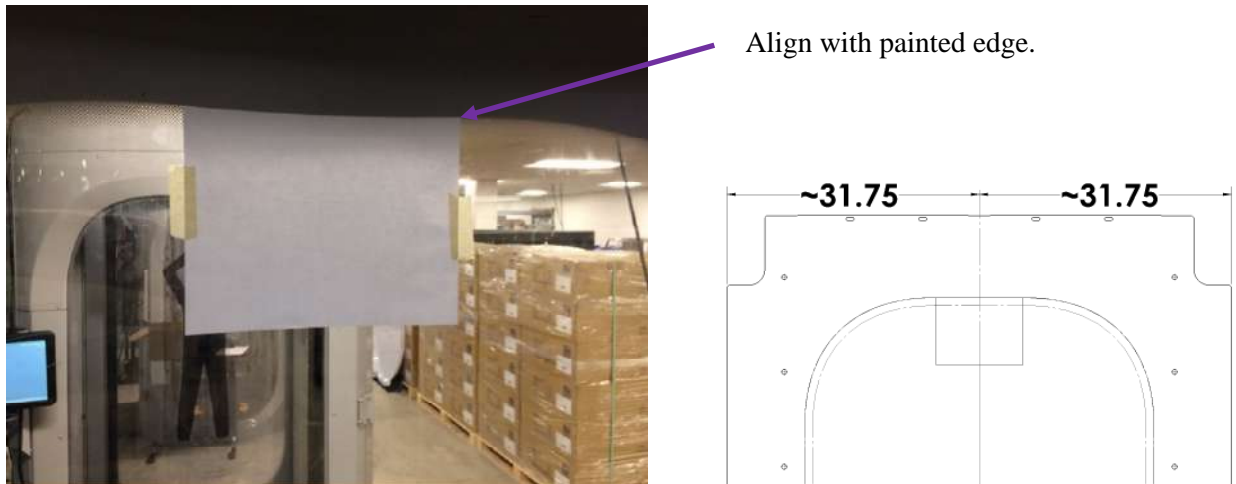


Figure 12 – Initial Registration

7.9.4 Horizontally center and align the top edge of the blue man registration marks with the bottom of the paper as shown in Figure 13. The text on the decal should be readable through the transfer paper from inside the portal when placed against the radome. Use the masking tape provided with the install kit to secure the overlay as shown.

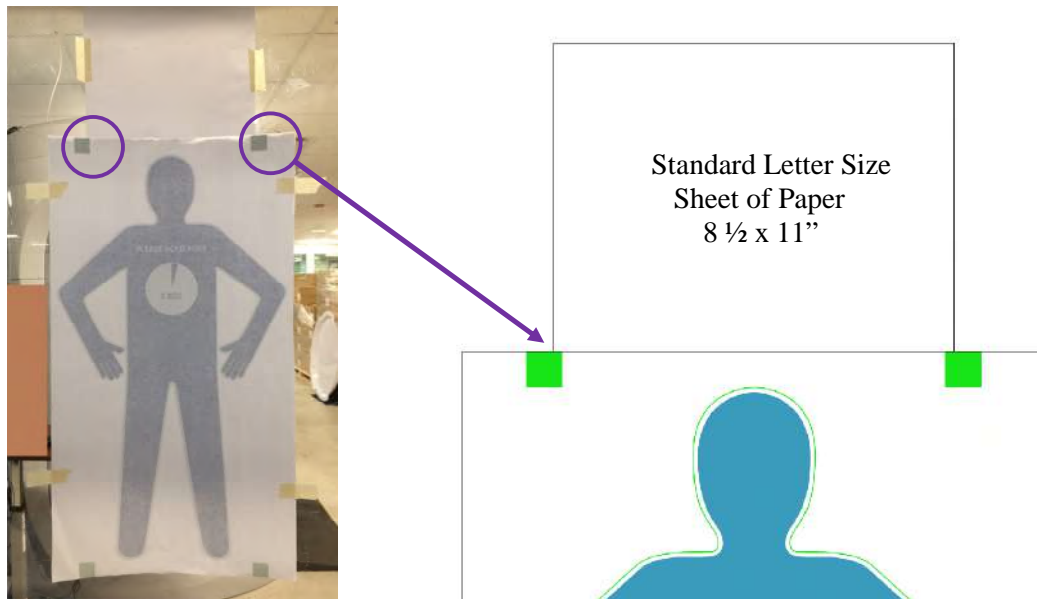


Figure 13 – Label Registration

7.9.5 Remove the paper used for initial registration and apply a piece of masking tape vertically over the center of the overlay as shown to act as a hinge.



Figure 14 – Hinge Method

7.9.6 Lift the first side of the overlay and cut off the corner registration blocks used for alignment. Peel back the transfer paper with the decal and proceed to cut that half of the label backer off while holding the transfer paper with the decal up as shown in Figure 15.

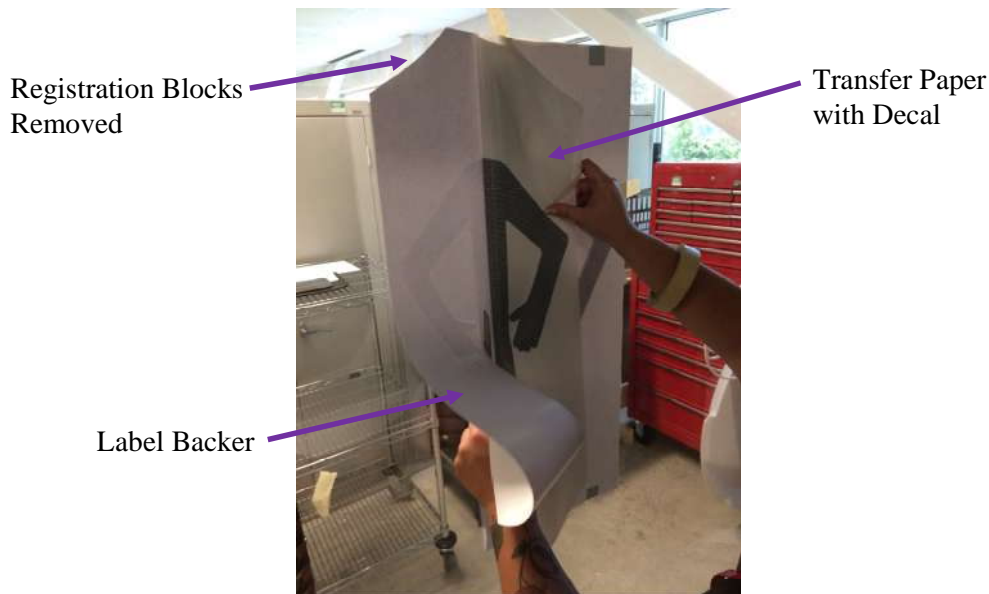


Figure 15 – Label Application Step 1

7.9.7 Run a credit card or stiff plastic object up and down vertically while evenly applying pressure against the radome. Start from the hinge and proceed toward the edge as the decal is slowly lower against the radome.



Figure 16 – Label Application Step 2

7.9.8 After the first side of the decal has been applied to the radome remove the remaining masking tape and registration blocks from the second side.



Figure 17 – Label Application Step 3

7.9.9 Lift up the second side and remove the remaining backer as shown.



Figure 18 – Label Application Step 4

7.9.10 Repeat step 2 working from the center outward. Evenly force the air from beneath the image.

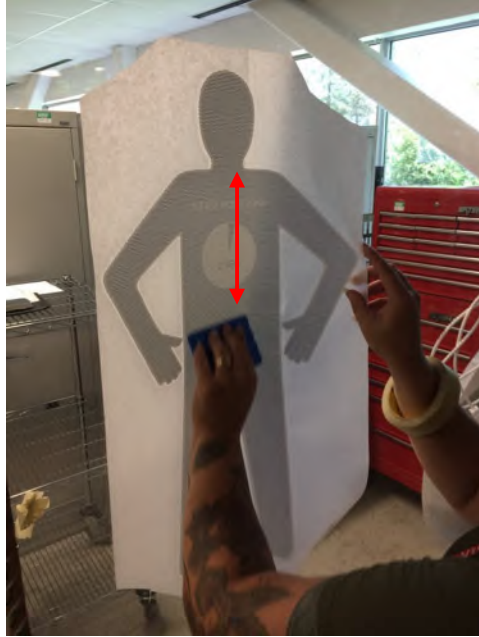


Figure 19 – Label Application Step 5

7.9.11 To avoid lifting the newly installed decal from the radome, remove the transfer paper by pulling directly downward as shown in Figure 20.



Figure 20 – Label Application Step 6

7.10. Mast Replacement

7.10.1 Disconnect the mast cabling from the ISU. Remove the five bolts securing the mast to the swing arm and be sure to save the hardware for reuse. Install the PV3 mast [1000-30230-00] using the center bolt only leaving it loose to allow mast rotation. Remove the protective film from both sides of cosmetic mast wrap [3000-32879-00] and wipe down with ESD wipes [490-26003]. Install the cosmetic wrap using the push rivets [410-21034] provided with the upgrade kit. After the cosmetic wrap has been installed, rotate the mast into position and reinstall the remaining four bolts. Torque the four perimeter bolts to 54.2 Nm (40.0 ft-lb) in a cross pattern and torque the center bolt to 37.9 Nm (28.0 ft-lb).

7.10.2 Once the mast has been secured, dress the cabling as close as possible to the mast swing arm using the cable clamp [0380-31093-00] provided with the upgrade kit to avoid contact with the radome as shown in Figure 21.



Figure 21 – Mast Cable Routing

7.10.3 Repeat the same steps to replace the second mast.

7.10.4 Refer to the Provision 2 Maintenance Manual 8100-20602-TM. (Section 7.6 Component Replacement Procedure) to reinstall components removed for mast accessibility.

7.11. ISU Replacement

7.11.1 Refer to the Provision 2 Maintenance Manual 8100-20602-TM (Section 7.6 Component Replacement Procedure) for ISU removal and replacement.

7.11.2 Remove the V2ISU from the system. Place the V3ISU in the mounting tray and loosely install a single mounting screw in the hole furthest from the mast cabling connections as shown in Figure 22. Apply a few turns only.



Figure 22 – V3ISU Installation: Step 2

7.11.3 Plug the mast cables in by identifying the marking on each cable with the port markings on the enclosure.

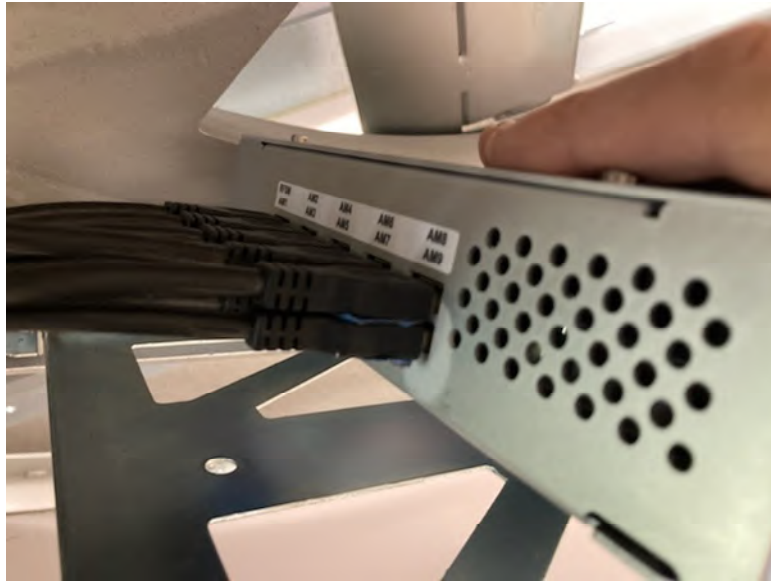


Figure 23 – V3ISU Installation: Step 3

7.11.4 With the V3ISU loosely installed, lift up the rear and place the cable retention bracket (P/N 3000-34233-00) under the cables while being careful not to disengage the cables. With the cables installed, gently slide the retention bracket into position while being careful to guide each stacked pair into the relevant slot as shown in Figure 24.



Figure 24 – V3ISU Installation: Step 4

- 7.11.5 With the cable retention bracket in position, set the enclosure down on the tray and loosely install the common mounting screw from underneath to hold the retention bracket. Continue to loosely install the remaining two screws. Do not overtighten as the unit needs to float within the holes until step 6 of the V3ISU installation procedure.



Figure 25 – V3ISU Installation: Step 5

- 7.11.6 Apply pressure evenly to the front of the V3ISU to position the unit as far back and as far down as possible within the mounting tray. The two outermost mounting points will provide the limit of how far the unit will go in this direction. This is necessary to facilitate proper cable retention in the rear and also to provide sufficient clearance for closing the tray. While holding the V3ISU in this position, tighten the hardware to secure the unit within the tray.



(Front of ISU)
Position unit
from this end

Figure 26 – V3ISU Installation: Step 6

- 7.11.7 On the rear of the ISU, push the retention bracket against the unit by applying pressure to the ends while tightening the screw as shown in Figure 27.

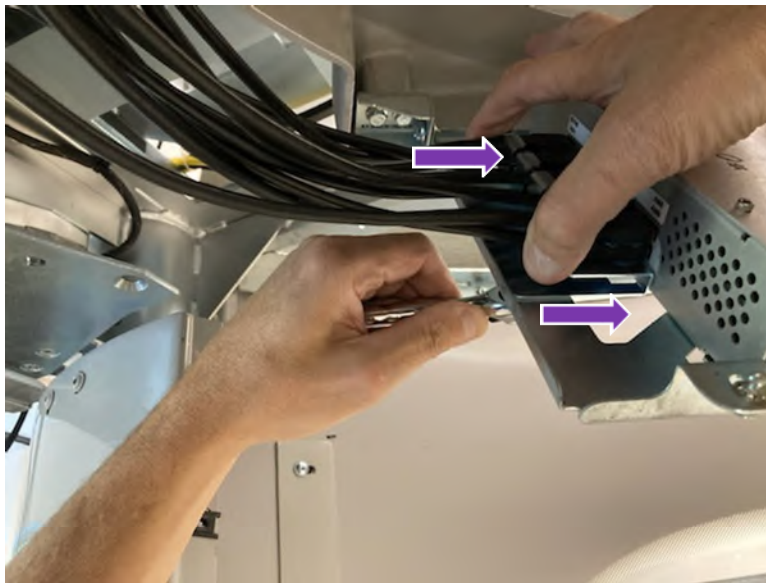


Figure 27 – V3ISU Installation: Step 7

- 7.11.8 Snap fit a ferrite core P/N 0375-35639-00 on each individual cable (10X) and position them toward the cable retention bracket as shown in Figure 10. Once this has been completed the ISU tray can be rotated to the closed position and secured. **NOTE: Installation of ferrite cores are required on one mast only.**



Figure 28 – V3ISU Installation: Step 8

7.11.9 Dress the mast cabling as neatly as possible as shown in Figure 11 to assure there is no interference upon rotation of the mast.

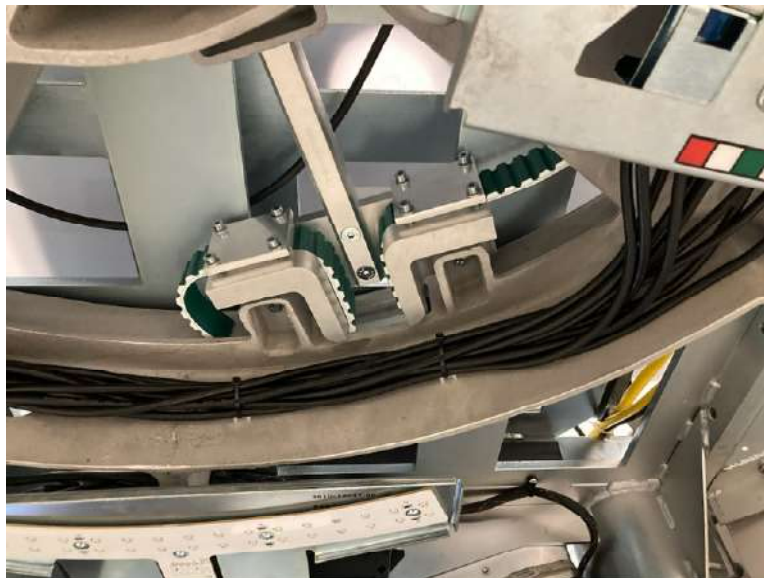


Figure 29 – V3ISU Installation: Step 9

7.11.10 Repeat steps 1 thru 7 and step 9 to replace the second ISU.

7.12. ASCU Upgrade

The Provision 3 wideband system requires the minimum of an ASCU VI for operation. The server also requires a GPU for processing high resolution images. The following instructions are provided for upgrading the ASCU VI to include a GPU.

7.12.1 Place the ASCU VI on a clean work surface. Using a #1 Phillips screwdriver, remove the five screws from the locations shown in Figure 30. After the hardware has been removed, slide the cover back (6) and lift on the rear edge for removal (7).

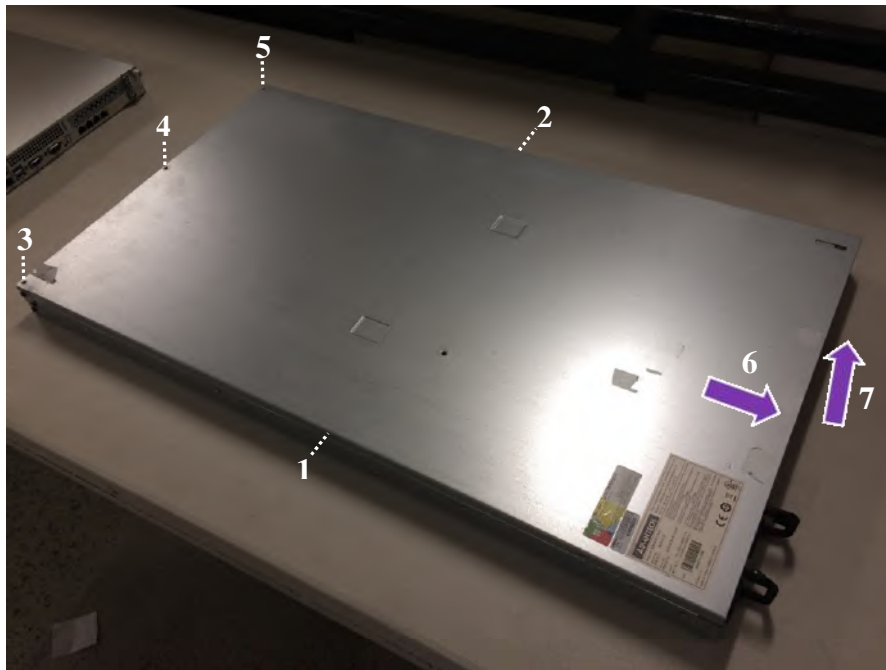


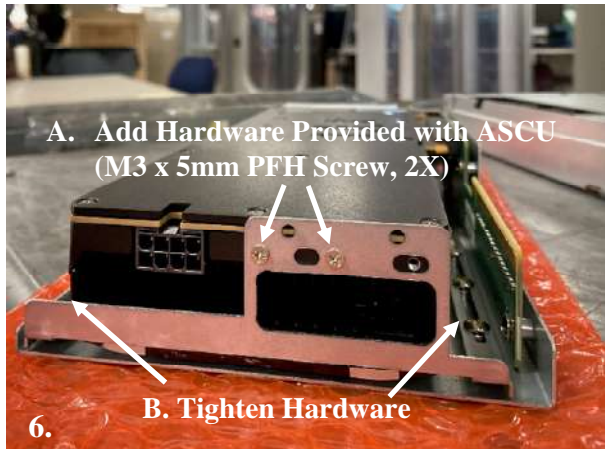
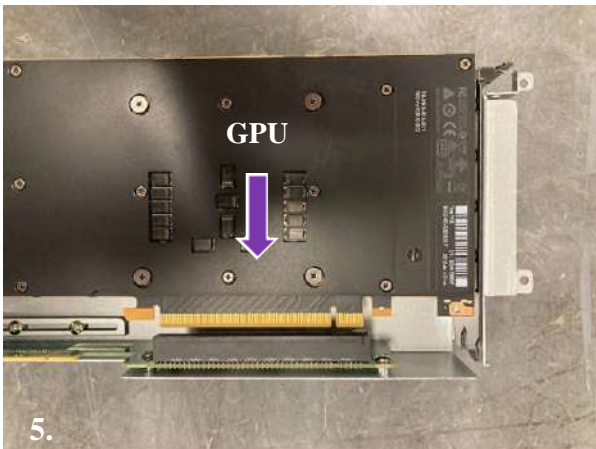
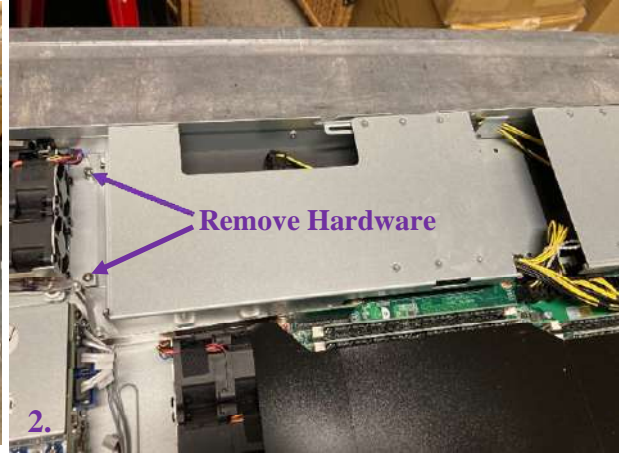
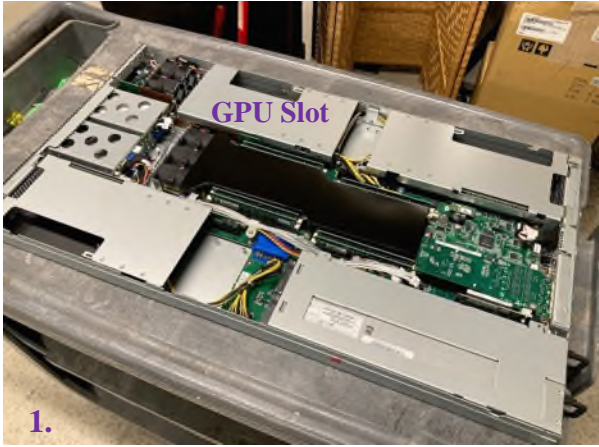
Figure 30 – ASCU VI Top Cover Removal

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7.12.2 Once the ASCU top cover has been removed. Follow the steps provided for GPU installation.



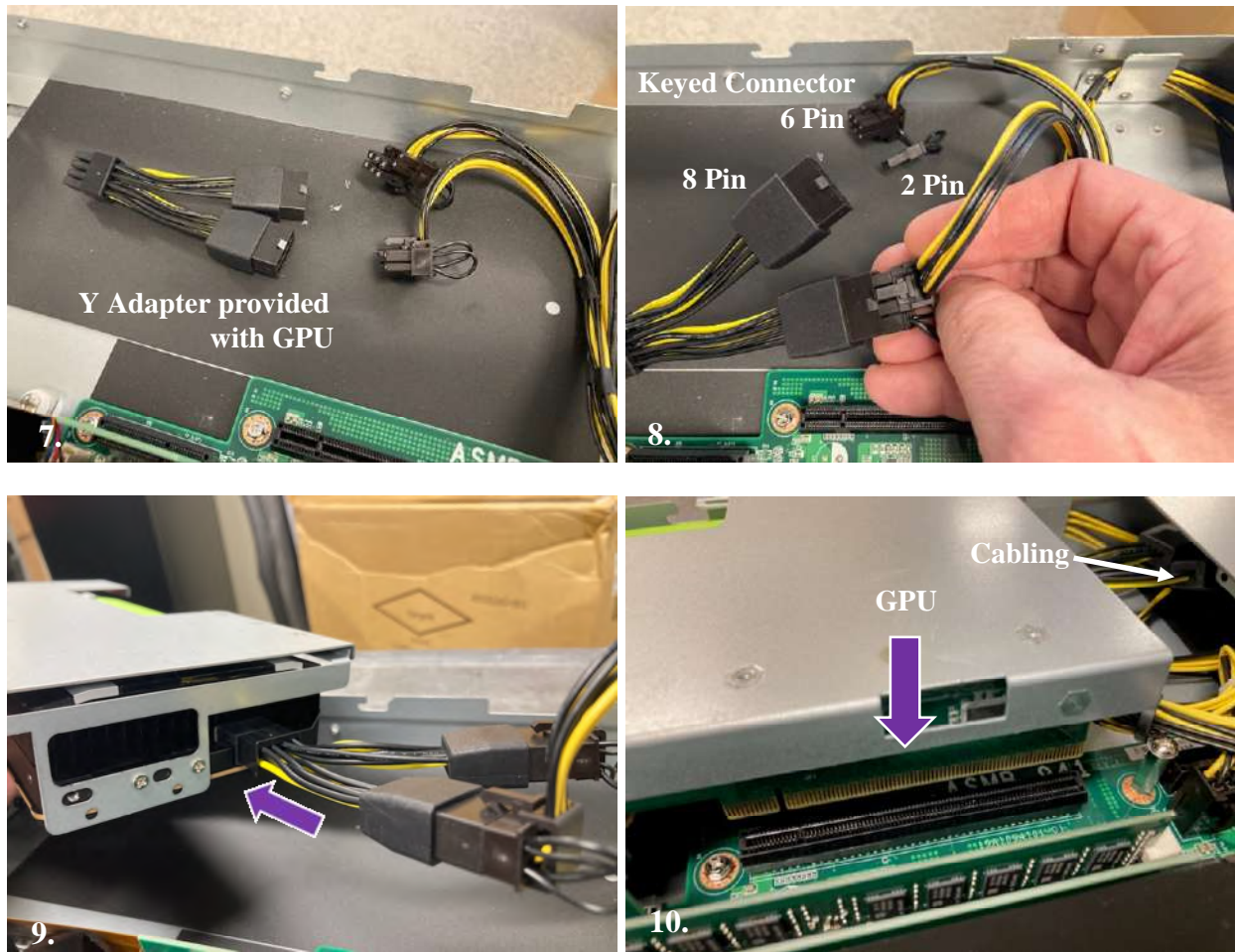


Figure 31 – GPU Installation

7.12.3 After the GPU has been plugged into the mother board, reinstall the two mounting screws to secure the metal carrier. Place the top cover onto the ASCU and slide it back into position. Reinstall the 5 mounting screws to complete the GPU upgrade.

7.13. PV3 System Upgrade Labeling

7.13.1 The PV3 mast assembly P/N 1000-30230-00 (QTY 2) provided in the upgrade kit will have a factory applied FCC label for the transmitter circuit applied in the area shown below.

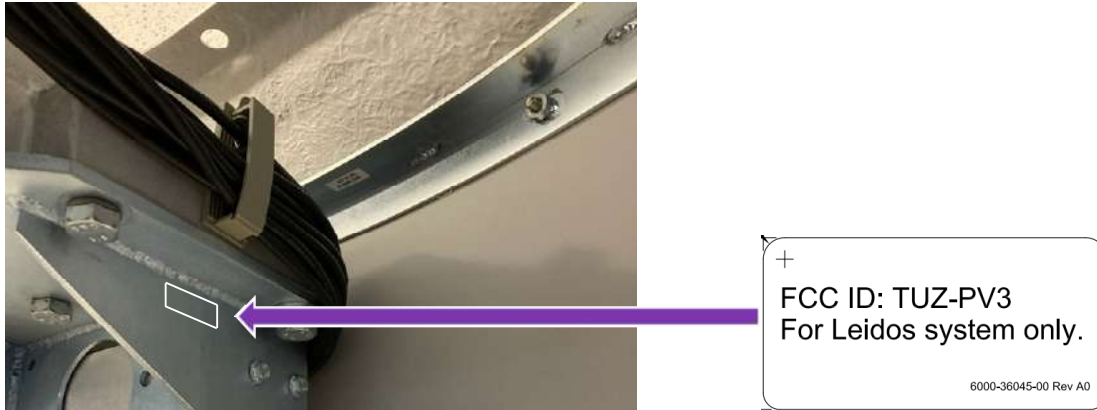


Figure 32 – FCC Transmitter Marking

7.13.2 Apply the PV3 FCC Part 15 label P/N 6000-36044-00 over the existing FCC label near the power entry panel as indicated in Figure 33.

7.13.3 Apply the PV3 system upgrade label P/N 6000-36192-00 in an available space around the serial number label.

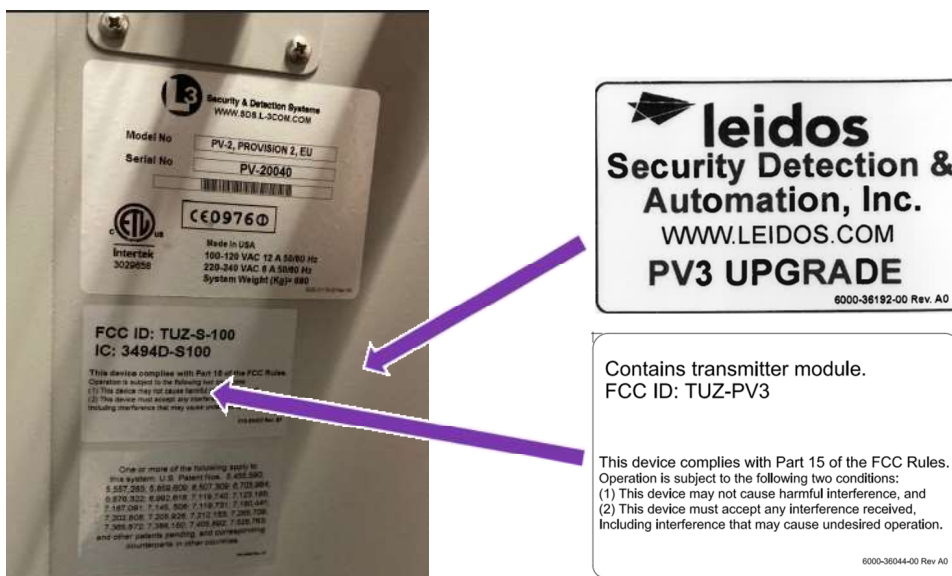


Figure 33 – FCC Part 15 Marking & PV3 ID Label

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8. Records

N/A

Revision History

Date	Rev.	Originator	Workflow No.	Description
11/24/2020	A0	K. Antosh	N/A	Initial Release
05/11/2021	A1	K. Antosh	E006756	Add system labeling instructions