Comba Public Safety BDAs utilize control channel signal levels in P25 based trunked system networks as the means for monitoring and alarming for donor antenna malfunctions. It is rare – but there are cases where the network is NOT a trunked network; therefore, there are no control channels available for use in donor antenna monitoring and alarming. In these cases – please use the alternate methodology for donor antenna monitoring and alarming described below.

**Using DC voltage and the AUX port to monitor the Donor antenna line**

<table>
<thead>
<tr>
<th>Components Required</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bias T, N (M-F), with BNC for DC port, 700MHz-900MHz, or wider</td>
<td>1</td>
</tr>
<tr>
<td>50 Ohm terminator with BNC connector</td>
<td>1</td>
</tr>
</tbody>
</table>

![Diagram](image)

Figure 1
Connections: (Figure 1)

1. Each Bias T has an RF port, a DC port, and an RF&DC port - connect the Bias T units according to the following diagram:

![Diagram of Bias T connections]

2. Connect the RF port of the Bias T to the donor antenna.
3. Connect the 50 Ohm terminator to the DC port on the Bias T at the donor antenna end.
4. Connect the donor coaxial cable to the RF&DC port of the Bias T.
   (NOTE: Adaptors/jumpers (N-M to N-M) may be needed for the coax connections)
5. Unlock and open the door of the UHF BDA.
6. Connect the DC cable (black connectors) near the top of the unit to connect DC 5V to the Bias T built into the BDA (see image below).
7. Close and lock the doors when done.
Important notes:

1. If there are any other components on the coaxial cable between the two Bias T that will block the DC - this solution will not function correctly.

For example, some surge arrestors will pass DC (e.g. Polyphaser GT-NFF-AL) - these can be used in between the Bias T units. Some surge arrestors will block DC - these can’t be used in between the Bias T units.

2. Waterproof or weatherize the Bias T if used outdoor or as required by the AHJ

Software Configuration:

1. Device-Overview: Click “Modify” on the third row and select “Enable” for Donor ANT.

2. Management-Alarm Setting: Click “Setting” for a dry contact. Check the Donor Ant and VSWR alarms to group under Antenna Malfunction (NFPA required). Donor Ant alarm will monitor the donor antenna. VSWR alarm will monitor the indoor antennas/passive components. For Dry Contact Remark, name appropriately (i.e. “Antenna Malfunction”) for alarm indication.
Dry Contact Alarm Definition:

<table>
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<tr>
<th>Pin Definition</th>
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<th>Pin Definition</th>
<th>Pin Number</th>
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<td>ALM2 Port</td>
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<td>AUX Port</td>
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<td>CLOSE4</td>
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<td>COM4</td>
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</table>

IMPORTANT: If the network is not a trunked system or does not utilize control channels, disable the DL Low alarm in the “Device-Overview” page.