

AERI and E-AERI Systems

AERI Reference Calibration Source Installation and User Guide

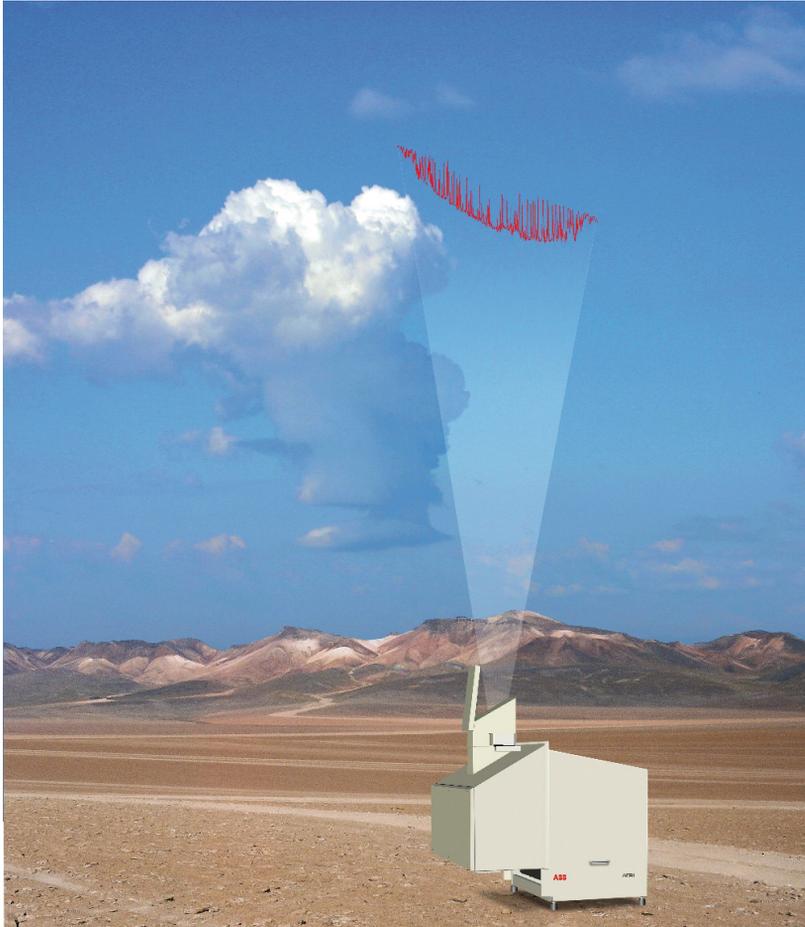


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Section 1 About this Manual

Purpose of Document

This document is intended for personnel using the AERI Reference Calibration Source with the standard the AERI and E-AERI spectroradiometer. This manual explains installation, user, maintenance and troubleshooting instructions for the AERI Reference Calibration Source.



All servicing of the equipment is to be performed by Qualified Service Personnel only.

Definition of Icons

This publication includes **Warning**, **Caution**, and **Information** where appropriate to point out safety related or other important information. It also includes **Tip** to point out useful hints to the reader. The corresponding symbols should be interpreted as follows:



The laser warning icon indicates the presence of a hazard related to the presence of a laser.



The ISO General Warning icon indicates safety information that must be followed by user. The information concerns the presence of a hazard which will, could or may result in *personal injury* or even death.



The information icon alerts the reader to pertinent facts and conditions in the use of the equipment.



The tip icon indicates advice on, for example, how to design your project or how to use a certain function.



The ESD icon indicates the presence of equipment sensitive to electrostatic discharge.



The hot icon indicates the presence of a hot surface.

Acronyms

ABB	Ambient Blackbody
BFS	Bomem File System
C&DH	Command and Data Handling
GUI	Graphical User Interface
HBB	Hot Blackbody
FTS	Fourier Transform Spectrometer

Section 2 Safety Summary

Warnings, Cautions and Notices

User must comply with all warnings, cautions and notices indicated in this manual. Failing to comply with any of the instructions, precautions or warnings contained in this manual is in direct violation of the standards of design, manufacture, and intended use of the equipment. Failure to comply with any of the warnings, cautions or notices can result in personal injuries and/or equipment damages. If you do not fully understand the information contained in this manual, please contact ABB. Refer to the back cover of this manual. ABB Inc. assumes no liability for the user's failure to comply with any of these safety requirements.

ESD Warnings



Electrostatic Sensitive Device

Perform maintenance procedures in an ESD protected environment.

Always use an ESD protection to perform maintenance procedures on the AERI system. If you are not familiar with ESD protection, or if ESD protection material is not available, contact ABB customer support. Refer to the back cover of this manual.

Electrical Warnings



Disconnect power or take precautions to insure that contact with energized parts is avoided when servicing.

Make sure the system is configured to use the available line voltage.

Ensure that the equipment and any devices or power cords connected to it are properly grounded.

The grounding pin of the power connector must be present at all times. If necessary, have a certified electrician install a grounded wall outlet.

Protective earthing connection (grounding) must be active at all times. The absence of grounding can lead to a potential shock hazard that could result in serious personnel injury. If an interruption of the protective earthing connection is suspected, ensure the equipment remains inoperative.

Always replace old fuses with new ones of the same type. If uncertain, contact ABB Inc. Damage may result if wrong fuses are used.

Use the equipment ONLY if a power outlet properly grounded is available.

Before using the equipment, make sure the appropriate line voltage is available.

Do not use repaired fuses and avoid any situations that could short circuit the fuse.

Use a power extension ONLY if it has proper conductive protection (grounding).

General Warnings



Do not apply power when connecting or disconnecting components. Connect all components BEFORE powering up the unit. Contact your local ABB support for information.



Do not attempt any adjustment, maintenance, or repair procedure to the equipment if immediate first aid is not accessible.

Do not, under any circumstances, remove the warning and caution labels. Information must be available at all times for the security of the user.

The blackbody control unit weighs 65 lb. When lifting bend your knees or ask for the help of a second person.



Do not operate the equipment in the presence of explosive or flammable products, condensing moisture and excessive dust.

Do not store the spectrometer in an environment with condensing moisture and excessive dust.

Read this manual thoroughly before installing this equipment. If you do not understand the content of this manual, contact ABB service personnel.

General Notices



Changing the computer or instrument IP address should be done by qualified personnel only.

All components, whether in transportation, operation or storage, must be in a non-corrosive environment.

Do not use the equipment if any signs of damages are present. Contact ABB service personnel.

Environmental Information

The EARI reference calibration source has required the extraction and use of natural resources for its production. Therefore, it system may contain hazardous substances that could impact health and environment. In order to avoid dissemination of these hazardous products into the environment and also to reduce the extraction and protect our natural resources, ABB inc. strongly recommends to return old units to your supplier in order to make sure materials used to produce the equipment are reused or recycled in a sound way.

Labels

2- 1. Labels on the blackbody control unit

Label	Description	Location
 <p>The photograph shows the front panel of a blackbody control unit. On the left is an Ethernet port with a blue label. In the center is a power inlet with a green terminal block and a label that reads 'POWER INLET 100-240 VAC 50/60 Hz 300 VA'. On the right is an ON/OFF switch. Above these ports is a large black label with white and red text. The label includes the ABB logo, company address (ABB Inc., 245 Chertoff Blvd., East Suite 300, Cambridge, MA 02142), phone number (617-877-2848), website (www.abb.com/usa/usa), and safety warnings in English and French. It also lists the model number (1022-17-1-00005-01), serial number (AUG2019-001), and manufacturing date (AUGUST 2019).</p>	<p>This label indicates the following information:</p> <ul style="list-style-type: none"> - ABB address - Warning - Model number - Serial number - Manufacturing date - The CSA certification label - Ethernet and power connector and specifications - The ON/OFF switch 	<p>This label is located on top of the blackbody control unit.</p>

Section 3 About AERI Reference Calibration Source

Overview

The AERI Reference Calibration Source has been specifically developed to allow quick and reliable reference calibrations. It consists of:

 A photograph of a white, rectangular control unit with two silver cylindrical handles on top. It is sitting on a blue surface in a laboratory setting with shelves in the background.	Blackbody Control Unit
 A photograph of a cylindrical, metallic blackbody with a black top cap and a black handle. It is sitting on a blue surface.	1 Blackbody (the system can support 2 blackbodies)

	<p>Extension for Blackbody installation at Nadir Position</p>
	<p>USB stick with Blackbody coefficient file (This picture is an example only, the USB stick may differ from the shown picture).</p>
	<p>Ethernet cable</p>
	<p>Blackbody cable(s)</p>

 A black, rugged, rectangular transit case with a textured surface and a handle on the right side. The lid is open, revealing a black foam interior with a recessed area for a control unit.	<p>Blackbody control unit transit case</p>
 A black, rugged, rectangular transit box with a textured surface and a handle on the right side. The lid is open, revealing a black foam interior with three circular recessed compartments for accessories.	<p>Accessories transit box</p>
 A power cable with a black braided outer jacket and a blue and black braided inner jacket. The cable is coiled and has a black cylindrical connector at one end and a blue and black cylindrical connector at the other.	<p>Power cable</p>
	<p>Screws (not shown)</p>

Weight

Travel box empty	40 lb
Blackbody control unit	65 lb
Accessories (1 blackbody, cables extensions)	22 lb
Additional blackbody	13 lb

Dimensions

Transit case (each)	32" W x 23 ½" D x 19 ½" H
Blackbody control unit	27 ½" W x 17 ½" D x 14 ¾" H

Section 4 Unpacking and Installing

Unpacking

This chapter describes how to unpack and set-up the AERI Reference Calibration Source either in stand-alone or thru-wall configuration.



Do not apply power when connecting or disconnecting components. Connect all components BEFORE powering up the unit. Contact your local ABB support for information.



The grounding pin of the power connector must be present at all times. If necessary, have a certified electrician install a grounded wall outlet.

Protective earthing connection (grounding) must be active at all times. The absence of grounding can lead to a potential shock hazard that could result in serious personnel injury. If an interruption of the protective earthing connection is suspected, ensure the equipment remains inoperative.

The AERI Reference Calibration Source is delivered in two (2) transit cases. The Blackbody Control Unit is delivered in the first transit case as shown on [Figure 4- 1](#). The Blackbody(ies) and accessories (cables, adaptor, USB stick, etc.) are delivered in the second transit case as shown on [Figure 4- 2](#).



Figure 4- 1. Blackbody Control Unit in its transportation box



*Figure 4- 2. Blackbody(ies) and Accessories Transit Case**

* 2nd Blackbody is shown only to demonstrate packing capability. It must be ordered separately.

The layout of the shipping case allows for limited placement. It was designed to ensure that components when repacked in the case are firmly held in position. Failing to secure components in the shipping case may result in damage to the enclosed components.

Installation

The AERI Reference Calibration Source is installed each time an AERI Reference Calibration is to be performed. After the calibration the Blackbody(ies) and accessories are to be removed and put back in their transit cases.

To install the AERI Reference Calibration Source on an operating AERI system

1. Close the Acquisition Sequencer (Ingest) software by typing several times “CTRL-C” in the black window of the Acquisition Sequencer (Ingest) software.
2. With the Instrument Control (FTSW AERI) software, set the mirror to Nadir position (0°) to avoid possible mirror contamination, refer to the AA004392-01 Aerie FTSW Software manual, section 5, Measurements tab.
3. Turn the AERI system Off.
4. Remove the front-end front panel by unscrewing the 6 screws.
5. Unscrew the 5 screws of the protective enclosure. It will remain in place as the hooks of the protective enclosure are still inserted in the bars of the back panel.
6. Disconnect the following:
 - rain sensors (2)
 - sun sensor
 - fan out
 - trap motor
 - trap switch
 - airflow,
 - ground
7. Remove the protective enclosure with much care. 2 Persons are required to remove the enclosure and another person to make sure no cables or components inside the enclosure become damaged.

8. Disconnect the fan power on the back side of the fan.

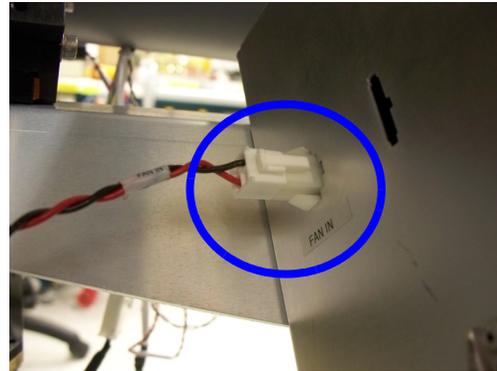
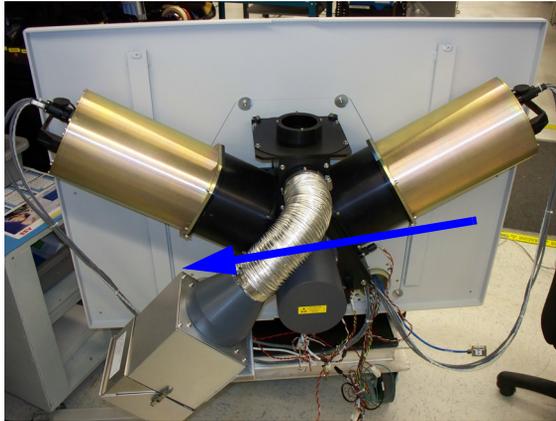


Figure 4- 3. Disconnect fan power

9. The blackbody control unit can be left in its transit case or taken out and put on the floor or a table next to the front-end optics. This unit weighs 65 lb, bend your knees when lifting this unit to prevent back injuries or ask for help of a second person.

10. Remove the black cover on top of the AERI front-end optics by unscrewing the 4 screws. Refer to [Figure 4- 4](#).

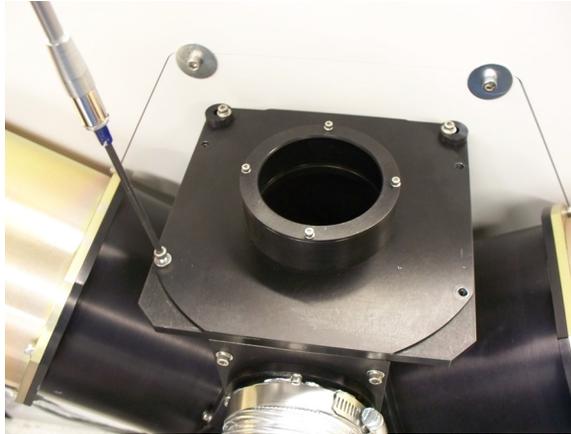


Figure 4- 4. Remove black cover



Make sure no dirt, dust or water enters the AERI system aperture to prevent any contamination on the mirror. Should any contaminant enter the aperture refer to AA004389-01 rev. A.1.2 AERI User manual, section 7, Cleaning procedures.

11. Take the blackbody out of its transit case and remove the red cover by unscrewing the 4 screws.

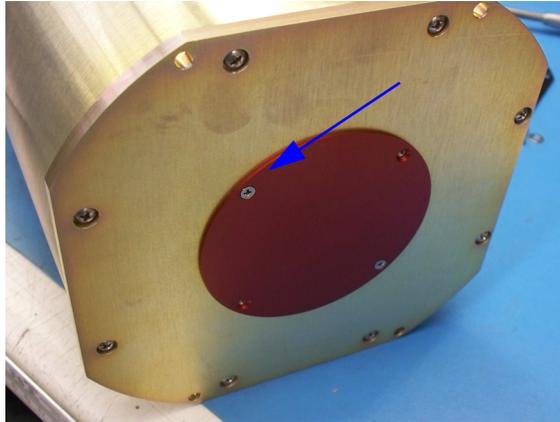


Figure 4- 5. Remove red cover from the Blackbody

12. Install the Blackbody on top of the front-end optics and screw in place with the 4 long screws supplied in the accessory transit case. Refer to [Figure 4- 6](#).



Figure 4- 6. Install 3rd Blackbody

13. Connect power cable in the Blackbody Control Unit and to a power outlet. Refer to [Figure 4- 7](#).



Figure 4- 7. Connect Power cable

14. Connect the Ethernet cable to the Blackbody Control Unit (refer to [Figure 4- 7](#)) and to the EARI system, refer to [Figure 4- 8](#).

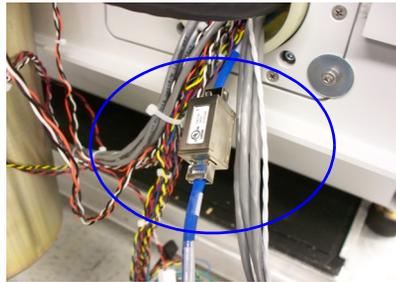


Figure 4- 8. Ethernet connection



Connection to the AERI system is possible in two different ways:

- The Blackbody control unit can be installed close to the front-end and cables connect directly to the blackbody and the ethernet extension.
- In a through-wall configuration the blackbody control unit can be left inside the shelter and the cables are inserted in the tubes that cross the wall, refer to [Figure 4- 9](#). The foam inserted in the tube will have to be removed from the front-end side to allow the cable to go through. The supplied cables are 5m long. Make sure that the Blackbody Control unit is close enough to the AERI system to allow connection to the blackbodies outside.



Figure 4- 9. Different connection possibilities

15. Connect the Blackbody cable in the Blackbody Control Unit and the connector socket on top of the blackbody. Usually BB1 is connected on top, thus BB1 cable is used for the connection. Refer to [Figure 4- 10](#)

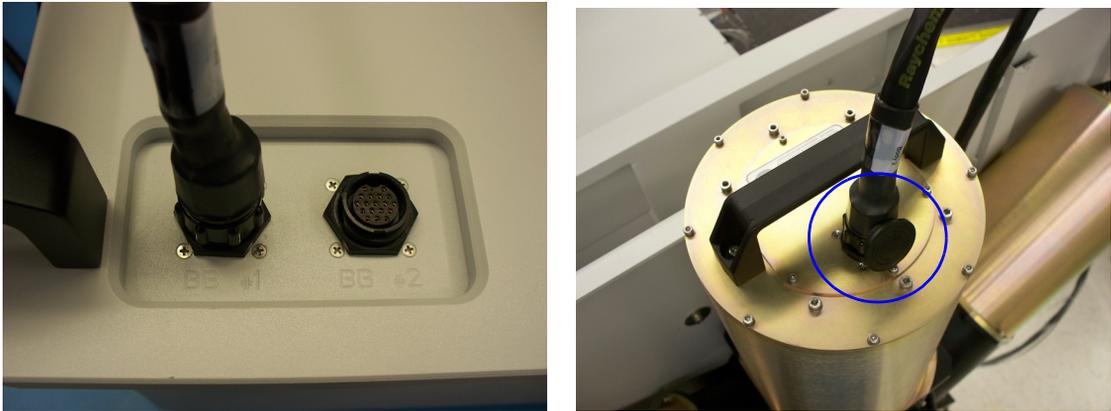


Figure 4- 10. Blackbody cable connection

Additional Blackbody connection at NADIR Position

An additional Blackbody can be connected below the front-end optics.



This blackbody cannot be configured to be the hot Blackbody because the ascending heat will falsify the temperature readings as the temperature will not be uniform for this blackbody.

1. Remove the white cover located at the bottom of the front-end optics by unscrewing the 4 screws, refer to [Figure 4- 11](#).

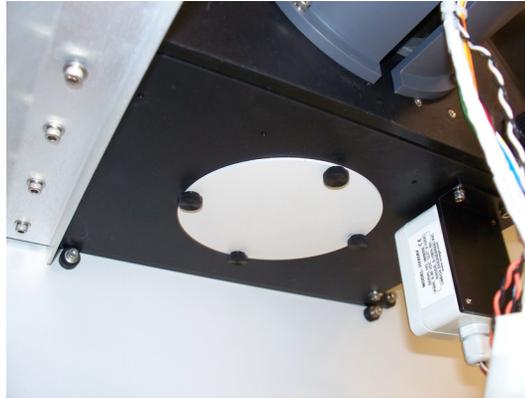


Figure 4- 11. Remove the white cover

2. Connect the black extension with the 4 captive screws, refer to [Figure 4- 12](#).

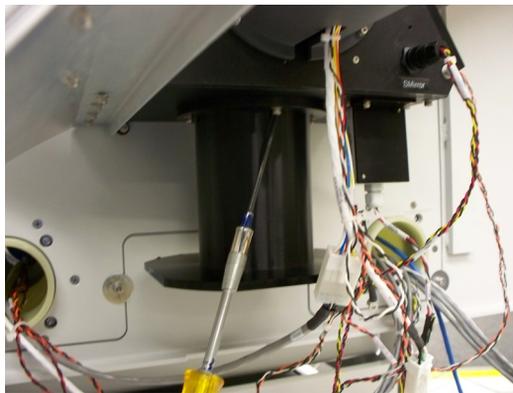


Figure 4- 12. Connect black extension

3. Take the blackbody out of its transit case and remove the red cover by unscrewing the 4 screws.



Figure 4- 13. Remove red cover (4 screws)

4. Connect the Blackbody to the black extension with the 4 long screws supplied.
5. Connect Blackbody cable in the Blackbody Control Unit and the connector socket at the bottom of the blackbody. Usually BB2 is connected at the bottom, thus BB2 cable is used for the connection.



Figure 4- 14. 2 Blackbody cable connections

Software Configuration for the Reference Calibration Source

The software's configuration file needs to be modified temporarily for the additional Blackbody(ies) to be recognized.

1. Make sure all software are closed.
2. Open Explorer and open the FTSW_AERI.config file with Notepad.

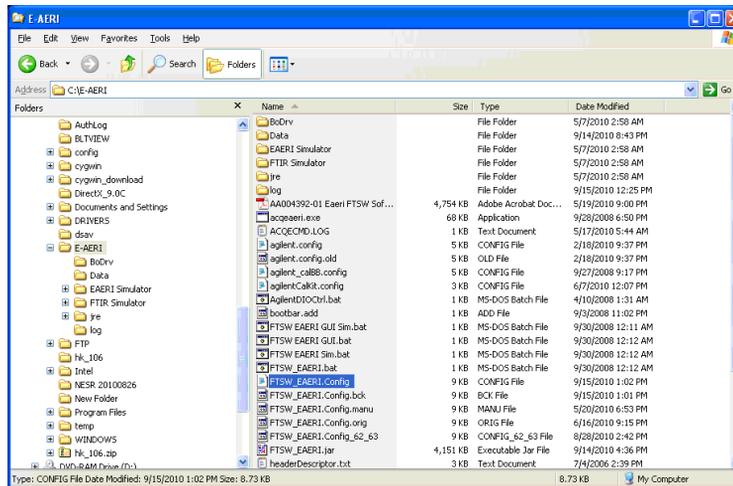
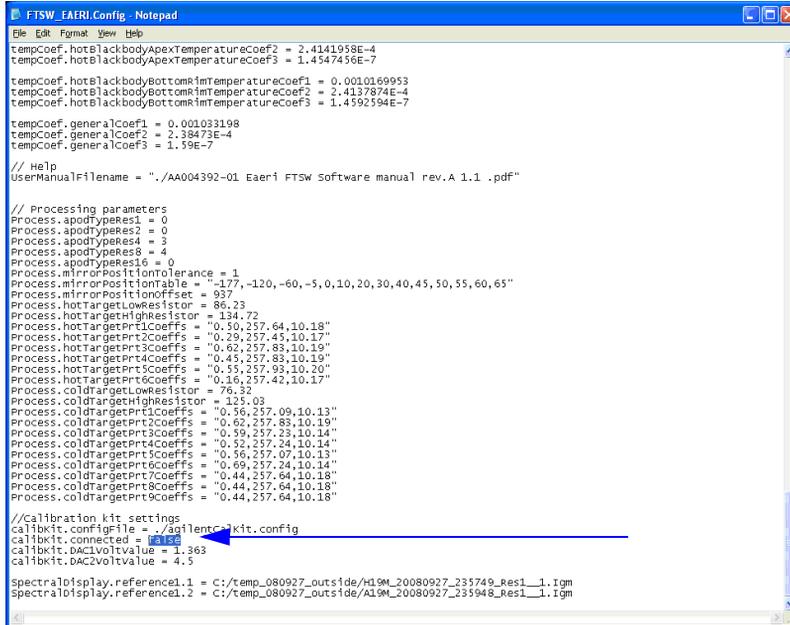


Figure 4- 15. FTSW_AERI.config file

3. In the line “calibkit.connected” at the bottom, set false to true, refer to Figure 4- 16.



```

FTSW_EAERI.Config - Notepad
File Edit Format View Help
tempCoeff.hotBlackbodyApexTemperatureCoeF2 = 2.4141958E-4
tempCoeff.hotBlackbodyApexTemperatureCoeF3 = 1.4547456E-7
tempCoeff.hotBlackbodyBottomrimTemperatureCoeF1 = 0.0010169953
tempCoeff.hotBlackbodyBottomrimTemperatureCoeF2 = 2.4137874E-4
tempCoeff.hotBlackbodyBottomrimTemperatureCoeF3 = 1.4592594E-7
tempCoeff.generalCoeF1 = 0.001033198
tempCoeff.generalCoeF2 = 2.38473E-4
tempCoeff.generalCoeF3 = 1.59E-7
// Help
UserManualFilename = ".\AA004392-01 Eae1 FTSW software manual rev.A 1.1 .pdf"
// Processing parameters
Process.apodTypeRes1 = 0
Process.apodTypeRes2 = 0
Process.apodTypeRes4 = 3
Process.apodTypeRes8 = 4
Process.apodTypeRes16 = 0
Process.mirrorPositionTolerance = 1
Process.mirrorPositionOffset = 937
Process.hotTargetLowResistor = 86.23
Process.hotTargetHighResistor = 134.72
Process.hotTargetPrt1Coeffs = "0.50,257.64,10.18"
Process.hotTargetPrt2Coeffs = "0.29,257.45,10.17"
Process.hotTargetPrt3Coeffs = "0.62,257.83,10.19"
Process.hotTargetPrt4Coeffs = "0.45,257.83,10.19"
Process.hotTargetPrt5Coeffs = "0.55,257.93,10.20"
Process.hotTargetPrt6Coeffs = "0.16,257.42,10.17"
Process.coldTargetLowResistor = 76.32
Process.coldTargetHighResistor = 125.03
Process.coldTargetPrt1Coeffs = "0.56,257.09,10.13"
Process.coldTargetPrt2Coeffs = "0.62,257.83,10.19"
Process.coldTargetPrt3Coeffs = "0.59,257.23,10.14"
Process.coldTargetPrt4Coeffs = "0.52,257.24,10.14"
Process.coldTargetPrt5Coeffs = "0.56,257.07,10.13"
Process.coldTargetPrt6Coeffs = "0.69,257.24,10.14"
Process.coldTargetPrt7Coeffs = "0.44,257.64,10.18"
Process.coldTargetPrt8Coeffs = "0.44,257.64,10.18"
Process.coldTargetPrt9Coeffs = "0.44,257.64,10.18"
//Calibration kit settings
calibkit.configFile = ./agilentCalKit.config
calibkit.connected = true
calibkit.dac1voltage = 1.363
calibkit.dac2voltage = 4.5
SpectralDisplay.reference1.1 = C:/temp_080927_outside/H19M_20080927_235749_Res1_1.1gm
SpectralDisplay.reference1.2 = C:/temp_080927_outside/H19M_20080927_235948_Res1_1.1gm

```

Figure 4- 16. Set false to true



The default temperatures of the additional blackbodies are set to 45°C (1.363V) for BB1 and to ambient (4.5V) for BB2. To change the blackbody temperatures, set the DAC1 and DAC2 voltages to the required temperatures. Refer to the AA004389-01 AERI User manual for the corresponding table.



BB2 should always be set to ambient temperature because ascending heat will falsify the temperature readings.

4. Click on **File** and **Save**.
5. Start FTSW EAERI GUI.bat from the desktop, be careful not to start the Acquisition Sequencer (Ingest) software.

- The software detects a modification in the configuration file and displays the following window. Click **OK** to start FTSW AERI in calibration mode.

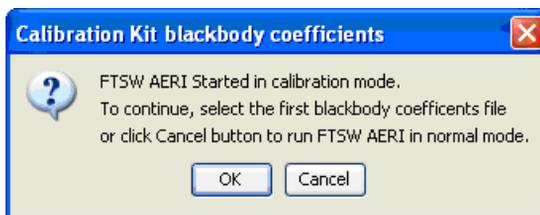


Figure 4- 17. Calibration Kit Blackbody Coefficients dialog box

- Insert the USB stick that was delivered with the Reference calibration source and browse to E:\. Note that the USB key may be different from the one in the picture below.



Figure 4- 18. USB stick



The USB key contains the coefficient file(s) associated with the supplied blackbody(ies). If multiple blackbodies are purchased, the USB key will contain the coefficient files for them. Each coefficient file name contains the serial number of the corresponding blackbody.

8. Choose the file that corresponds to the installed blackbody and click **Open**.

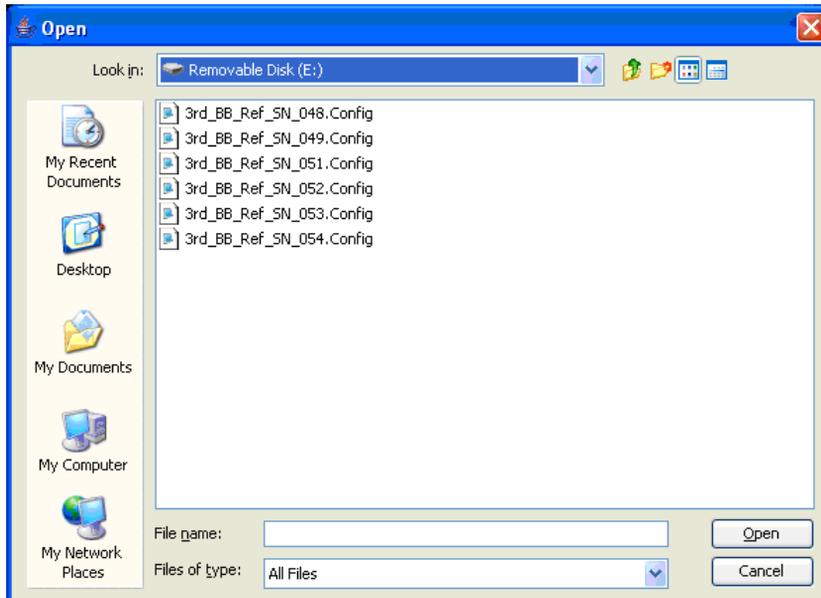


Figure 4- 19. Choose Configuration File

9. The following window is displayed asking you whether the second Blackbody is connected. If Yes, repeat steps 6 - 8 for the second Blackbody. If No,

Instrument Control (FTSW) will start. Verify if the information related to ref1 and ref2 is displayed. Refer to [Figure 4- 20](#).

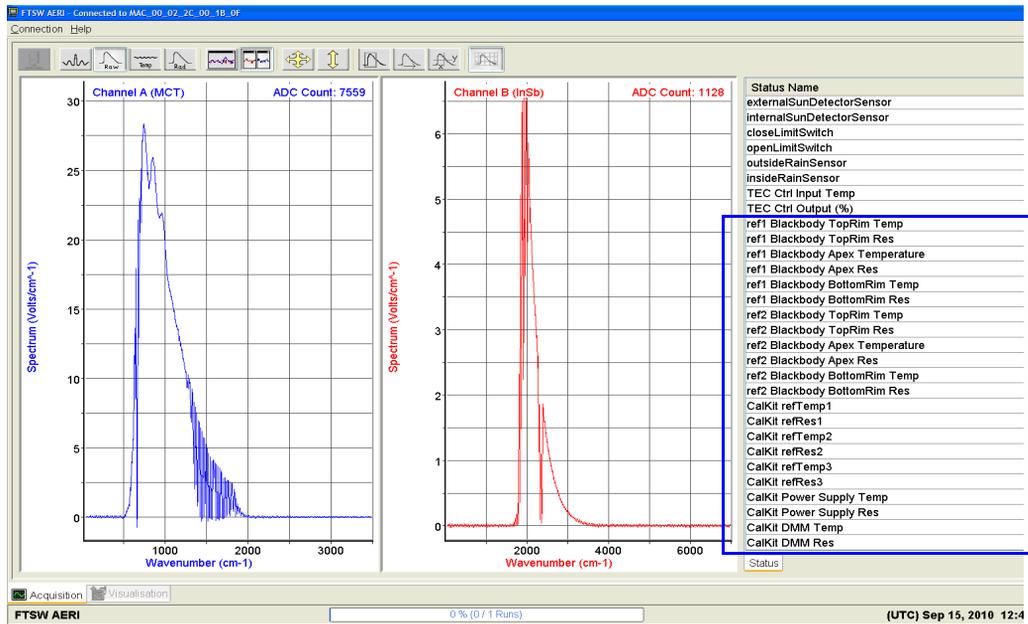


Figure 4- 20. Instrument (FTSW) window

10. When validated, close Instrument Control (FTSW) and start Acquisition Sequencer (Ingest) to perform the calibrations.



It will take a few minutes for the reference blackbody(ies) to warm up and stabilize at the set temperature. The data collected during the stabilization process should be discarded from the calibration data.

11. When the calibration is completed, the AERI system needs to put back to its original state. Do the following:
- In the configuration file, put false (refer to [Step 3](#) on page 24).
 - Disconnect Blackbody, ethernet and power cables.
 - Remove Blackbody(ies) and reinstall the(ir) cover(s).

- Put the Blackbody Control Unit and the additional Blackbody(ies) in their transit cases



Make sure no dirt, dust or water enters the AERI system aperture to prevent any contamination on the mirror. Should any contaminant enter the aperture refer to AA004389-01 rev. A.1.2 Eaeri User manual, section 7, Cleaning procedures.

- If the second blackbody was installed (at NADIR position), remove the extension and screw the white cover back in place.
- Screw the black cover on top of the front-end optics back in place.
- Reinstall the font-end enclosure
- Reconnect the rain sensors (2), sun sensor, fan out, trap motor, trap switch
- airflow, ground.
- Reinstall the front-end panel.

Section 5 Maintenance

Inspection

The AERI Reference Calibration Source has been designed to be used in a laboratory or outside at non-harsh weather conditions. The AERI Reference Calibration source is not water-proof, i.e. should not be exposed to rain, snow, sand and other. ABB recommends to perform visual inspection regularly.

- Check if the two air filters on the Blackbody Control Unit are damaged or dirty. Clean or replace if necessary.
- Check if power cords, blackbody cables and Ethernet cables are in good condition. If necessary replace cables and cords.
- Remove the Protective enclosure of the Blackbody Control Unit and check if there is any water infiltration. If there is water inside the enclosure, remove water and call ABB service personnel.

Maintenance procedures

Filter Cleaning

The two filters on top of the Blackbody Control Unit are to be cleaned on a regular basis and that depending on their use and the environment where the AERI is

operated. Simply remove the filter cover, clean the filter with water. When dry replace the filter above the fan and clip the filter cover into place.

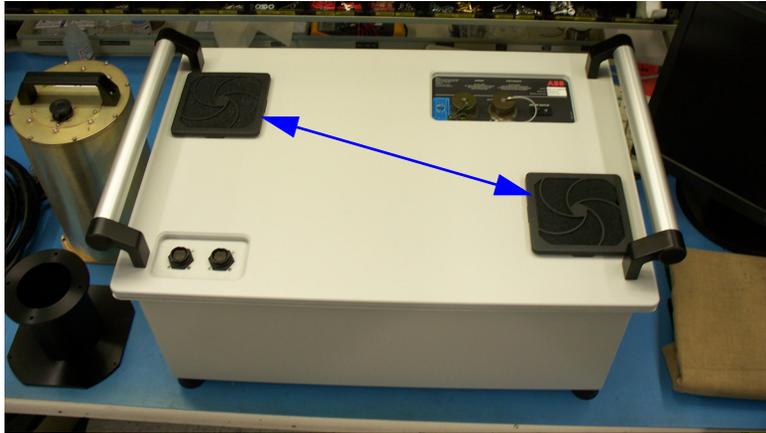


Figure 5- 1. Filters to clean

Agilent Maintenance

The agilents have to be maintained periodically.

1. Turn the Blackbody control unit upside down.

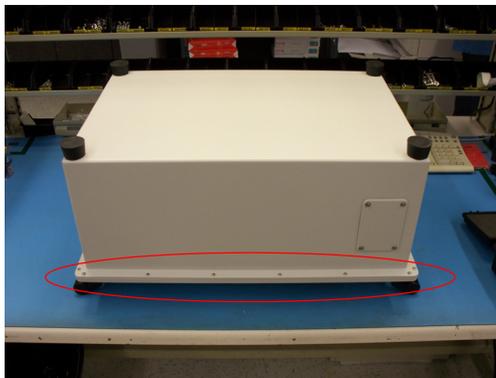


Figure 5- 2. Blackbody control unit upside down

2. Unscrew the 20 screws of the cover as shown in [Figure 5- 2](#).
3. Unscrew the two screws holding the metal bands in place.

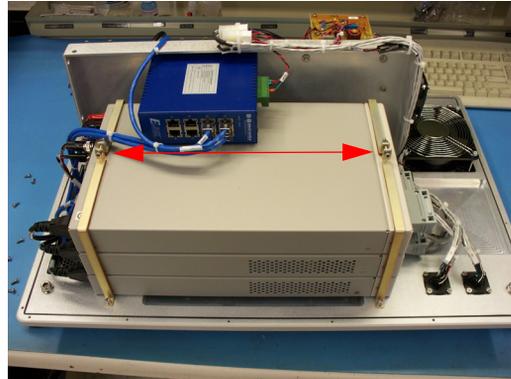


Figure 5- 3. Unscrew to loosen metal bands

4. Remove connectors of both sides.

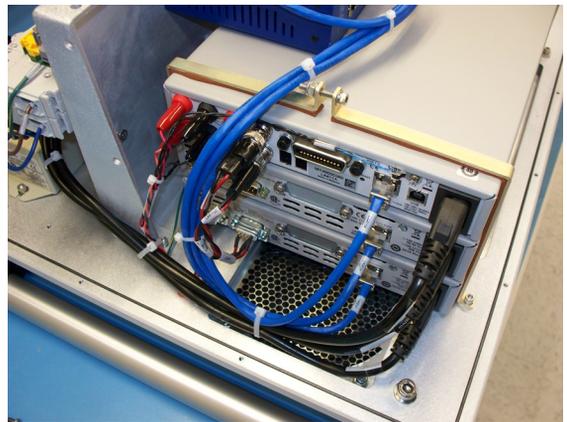


Figure 5- 4. Connectors to remove on both sides



All connectors are clearly identified.

5. Remove the agilent module for maintenance. The agilent modules should be inserted in the following order to allow proper connection of the cables:
 - L4421A at the bottom
 - L4452A in the middle
 - L4411A on top
6. Reconnect all connectors on both sides.
7. Fold the metal band and screw the top screw in place, refer to [Figure 5- 3](#).
8. Put the cover of the Blackbody control unit back in place and screw the 20 screws.

Agilent configuration



The Agilent modules are preconfigured by ABB in the Blackbody control unit prior to delivery. If a new module is purchased or if the module LAN needs to be reset, follow the procedure below to reconfigure proper IP address for each module.

1. Make sure the Blackbody control unit power is connected to a power source and that the ethernet cable is connected to the AERI system.
2. Turn off all Agilent modules of the Blackbody control unit.
3. Go to Start menu, Programs, Agilent IO Libraries suite, Agilent connection Expert.
4. Close the welcome screen.

Agilent 4411A Configuration

1. On the left bar menu, click Add an instrument.
2. Select LAN, then OK.

3. Select IP Address.



Figure 5- 5. L4411A Agilent Instrument Configuration

4. Turn On the L4411A put the IP Address shown on the display of the L4411A.
5. Click on Identify Instrument.
6. Make sure the identification passes, and click OK.
7. Click on Instrument Web Interface
8. Go in the view and modify Configuration Section.
9. Click modify configuration.
10. Set the following configuration for the L4411A: (See figure below) for the fields: DHCP, Automatic private IP and IP address.

Parameter	Configured Value	Edit Configuration
IP Settings may be obtained automatically using the following:		
DHCP: *	ON	<input checked="" type="radio"/> OFF <input type="radio"/> ON
Automatic Private IP: *	ON	<input checked="" type="radio"/> OFF <input type="radio"/> ON
IP Settings to use if automatic modes are off or servers are unavailable:		
IP Address: *	169.254.4.10	<input type="text" value="169.254.4.12"/>
Subnet Mask: *	255.255.0.0	<input type="text" value="255.255.0.0"/>
Default Gateway: *	0.0.0.0	<input type="text" value="0.0.0.0"/>

Figure 5- 6. Agilent Configuration Window

11. Click on Save, then OK, then Yes.
12. Click Restart L4411A LAN, then Ok.
13. Close Web browser.
14. Return to Agilent Connection Expert Window.

15. Click on Change Properties.
16. Put the right IP Address (169.254.44.12), click OK.

Agilent 4421A Configuration



Figure 5- 7. L4421A Agilent instrument configuration

1. On the left bar menu, click Add an instrument.
2. Select LAN, then OK.
3. Select IP Address.
4. Turn On the L4421A instrument and wait until the LAN led on instrument front panel changes to green.
5. Put this IP Address: 169.254.44.88.
6. Click on Identify Instrument.
7. Make sure the identification passes, and click OK.
8. Click on Instrument Web Interface.
9. Go in the view and modify Conf.guration Section.
10. Click modify configuration.

- Set the following configuration for the L4421A.

Parameter	Configured Value	Edit Configuration
IP Settings may be obtained automatically using the following:		
DHCP: *	ON	<input checked="" type="radio"/> OFF <input type="radio"/> ON
Automatic Private IP: *	ON	<input checked="" type="radio"/> OFF <input type="radio"/> ON
IP Settings to use if automatic modes are off or servers are unavailable:		
IP Address: *	169.254.44.88	<input type="text" value="169.254.44.22"/>
Subnet Mask: *	255.255.0.0	<input type="text" value="255.255.0.0"/>
Default Gateway: *	0.0.0.0	<input type="text" value="0.0.0.0"/>

Figure 5- 8. Configuration Setting of L4421A

- Click Save, then OK.
- Click Restart L4421A LAN, then OK.
- Return to Agilent Connection Expert Window.
- Click on Change Properties.
- Put the right IP Address (169.254.44.22), click OK.

Agilent 4452A Configuration



Figure 5- 9. L4452A Agilent instrument configuration

- On the left bar menu, click Add an instrument.
- Select LAN, then OK
- Select IP Address.
- Turn On L4452A and wait until the LAN led on instrument front panel change to green.

5. Put this IP Address: 169.254.44.88
6. Click on Identify Instrument.
7. Make sure the identification passes, and click OK.
8. Click on Instrument Web Interface.
9. Go in the view and modify Configuration Section.
10. Click modify configuration.
11. Set the following configuration for the L4452A.

Parameter	Configured Value	Edit Configuration
IP Settings may be obtained automatically using the following:		
DHCP: *	OFF	<input checked="" type="radio"/> OFF <input type="radio"/> ON
Automatic Private IP: *	OFF	<input checked="" type="radio"/> OFF <input type="radio"/> ON
IP Settings to use if automatic modes are off or servers are unavailable:		
IP Address: *	169.254.44.52	<input type="text" value="169.254.44.53"/>
Subnet Mask: *	255.255.0.0	<input type="text" value="255.255.0.0"/>
Default Gateway: *	0.0.0.0	<input type="text" value="0.0.0.0"/>

Figure 5- 10. Configuration window for L4452A

12. Click Save, then OK.
13. Click Restart L4452A LAN, then OK.
14. Return to Agilent Connection Expert Window.
15. Click on Change Properties.
16. Put the right IP Address(169.254.44.53), click OK.



ABB recommends a complete verification once a year.

Section 6 Troubleshooting

This chapter describes the main problems that may be encountered immediately after applying power to the Blackbody control unit or during its use.



Electrostatic Sensitive Device

Perform maintenance procedures in an ESD protected environment.

Always use an ESD protection to perform maintenance procedures on the AERI system. If you are not familiar with ESD protection, or if ESD protection material is not available, contact ABB customer support. Refer to the back cover of this manual.



Disconnect power or take precautions to insure that contact with energized parts is avoided when servicing.

Make sure the system is configured to use the available line voltage.

Ensure that the equipment and any devices or power cords connected to it are properly grounded.

The grounding pin of the power connector must be present at all times. If necessary, have a certified electrician install a grounded wall outlet.

Protective earthing connection (grounding) must be active at all times. The absence of grounding can lead to a potential shock hazard that could result in serious personnel injury. If an interruption of the protective earthing connection is suspected, ensure the equipment remains inoperative.

No Power

- Make sure the equipment is properly connected to a power outlet.
- Verify the cables.
- Verify if the breakers (2) are correct as follows:

- a. Remove the small cover on the side by unscrewing the 4 screws.



Figure 5- 11. Remove the small cover

- b. Verify if the breakers in the opening are correctly set.



Figure 5- 12. Breakers

- c. Verify if the breaker at the inside top of the opening is set correctly.



Figure - 6:

Calkit not connected

- Make sure the IP addresses are properly configured. Refer to [Agilent configuration](#) on page 32.
- Make sure that the line “calibkit.connected” is set to true, refer to [Step 3](#) on page 24.

Housekeeping data not shown

- If the housekeeping data does not show during standard operation when the calkit is not used, the configuration file may be incorrect.
- Make sure that the line “calibkit.connected” is set to false, refer to [Step 11](#) on page 27.



As a precaution, please copy the default file to be able to overwrite a config file that was modified incorrectly.

Before Contacting ABB

If you are unable to solve a problem contact ABB. Before contacting ABB, please check the following:

- All cables are properly installed.
- The power switch on the power module is turned ON.
- All pertinent Troubleshooting steps in this manual have been followed.
- The model number of the system.
- The serial number of the system.

Before sending equipment to ABB inc.

Before sending equipment to ABB, you must first

- Obtain from ABB's after sales service a Contamination Data Sheet.
- Fill out and sign the Contamination Data Sheet. Do not forget to check the check boxes of the Non-contaminated Material Declaration section. Then return the fully completed Declaration to ABB.
- Obtain the authorization from ABB personnel. You must receive a Return Merchandise Authorization (RMA) prior to sending the analyzer back to ABB, otherwise receipt of any equipment will be refused.

Repacking



Use the supplied transit cases to pack the equipment for storage or to send to ABB.

ABB recommends to install the case on a shipping pallet to avoid damages during shipment

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