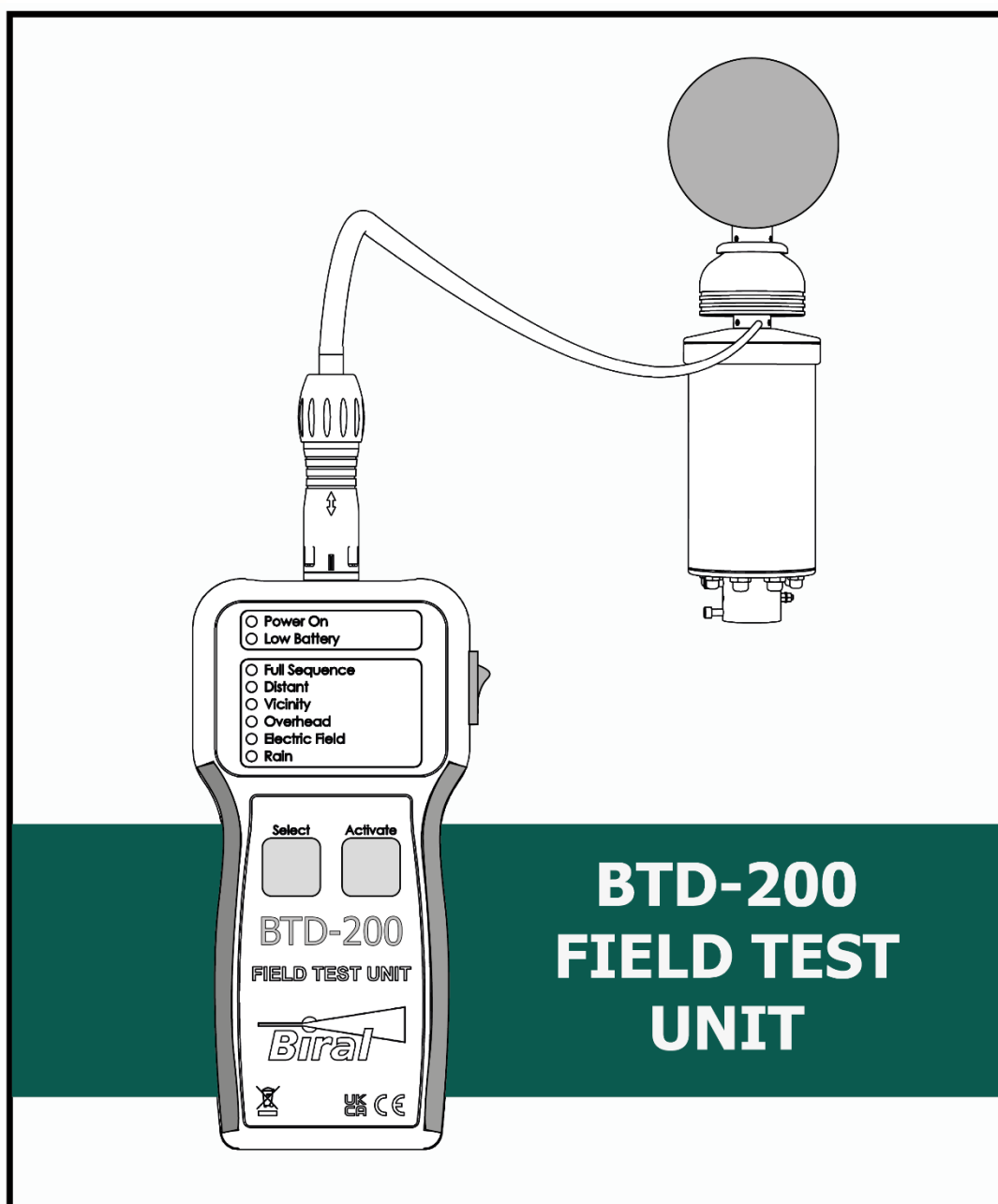


USER MANUAL

INSTALLATION - OPERATION - MAINTENANCE



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1 PRIMARY FUNCTION

The Biral BTD-200 Field Test Unit (FTU) simulates lightning flashes, strong electric fields and charged precipitation. It is intended for checking the operation of Biral BTD-200 thunderstorm warning systems and any connected accessories.

NOTE: Not for BTD-200 calibration, validation of sensor siting requirements or confirming correct installation.

2 IMPORTANT SAFETY INSTRUCTIONS

2.1 Batteries



This product is designed to use **ALKALINE 9V PP3** batteries only.

Use of other battery types or voltages may result in equipment damage, personal injury, or fire.

DO NOT USE RECHARGABLE BATTERIES

2.2 Inappropriate Use



This equipment is intended for use only with the **Biral BTD-200** Thunderstorm Detection Sensor **ONLY**

Connection to other equipment may result in personal injury or equipment damage.

Use of this product in a manner not described or specified in this manual may result in equipment damage or personal injury.

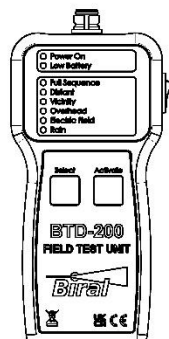
2.3 Environmental Conditions



Only for use in **DRY CONDITIONS**, with no local thunderstorm activity within **40Km (25Miles)**

3 BOX CONTENTS

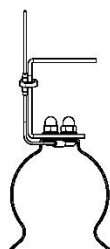
The following equipment is supplied in the BTD-200 FTU carton. Please check the contents carefully and immediately report any missing items to your supplier.



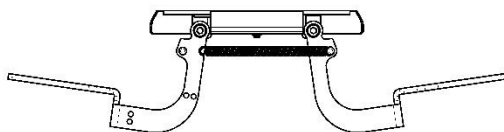
1x FTU Handheld unit



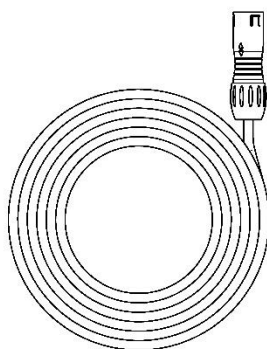
1x PP3 9V Battery



1x Primary Antenna Clamp



1x Secondary Antenna Clamp



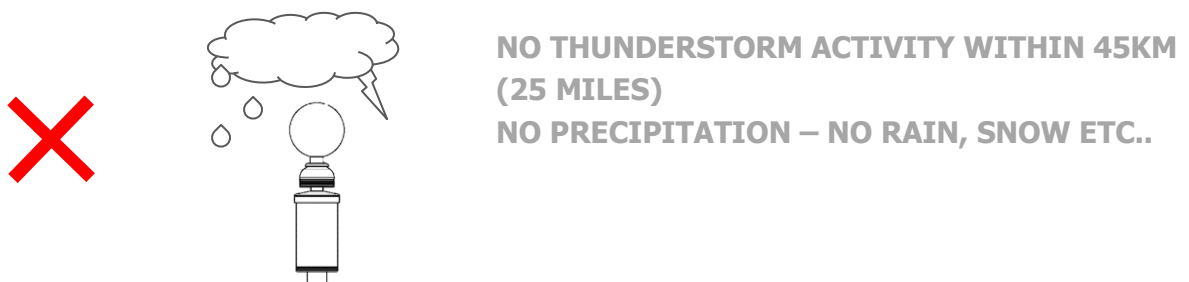
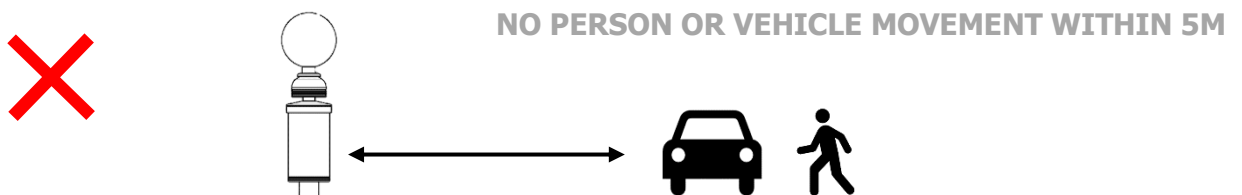
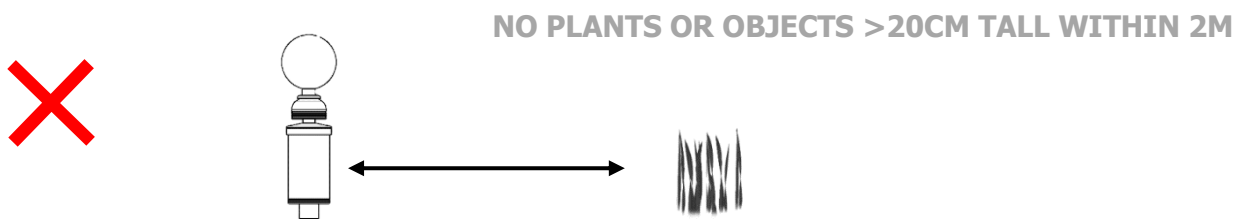
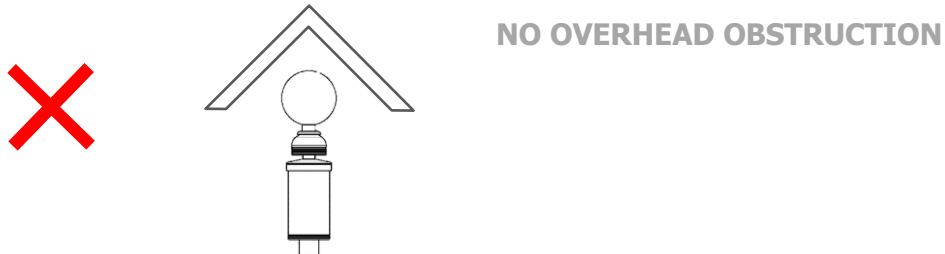
**1x FTU Cable assembly
(Hard Wired to Clamps)**

1x Microfibre Cloth

4 BTD-200 FIELD TEST UNIT OPERATING INSTRUCTIONS

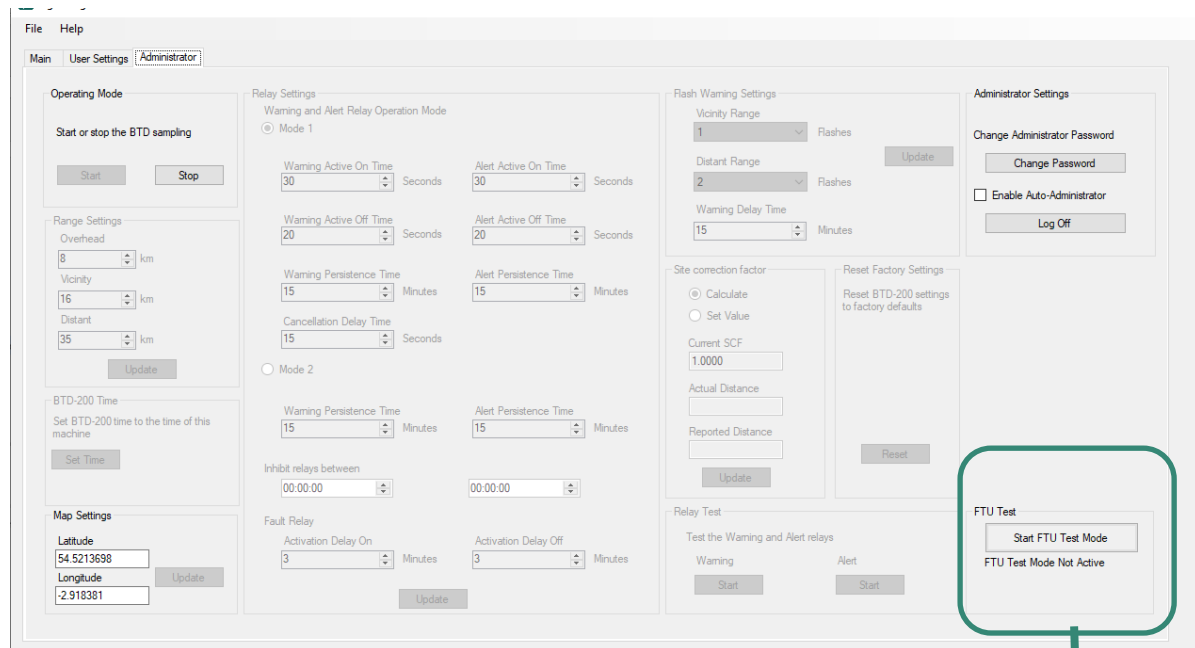
4.1 Pre-test Preparation

4.1.1 Test Environment



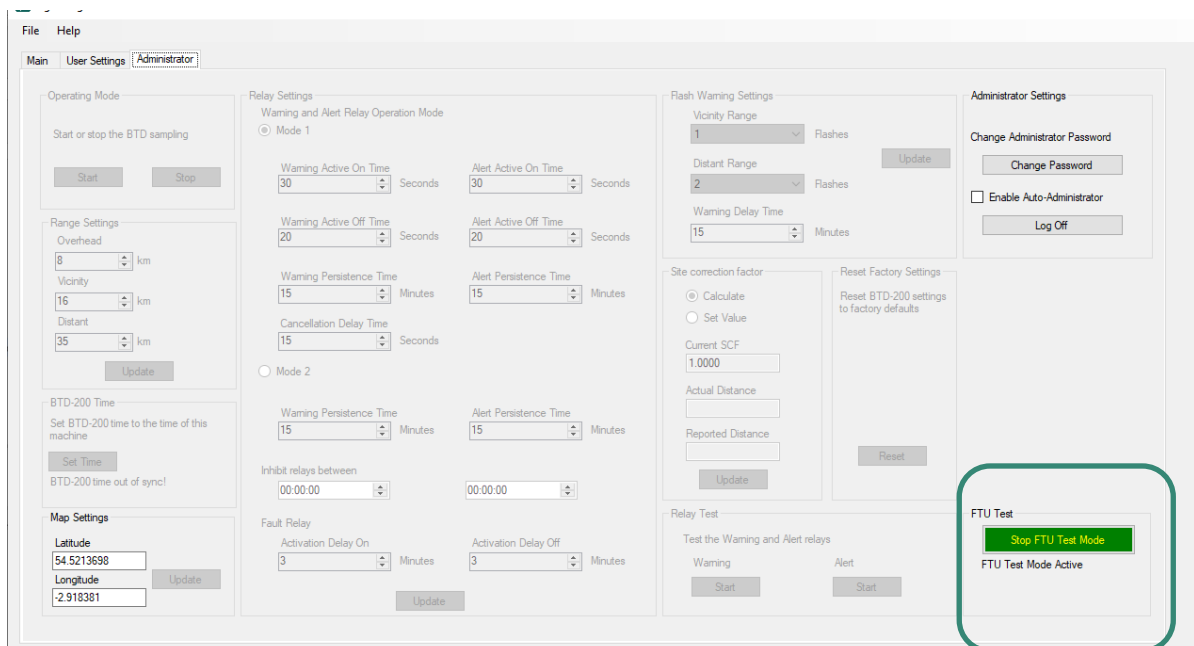
4.1.2 Lightning Works software testing setup (optional software)

4.1.2.1 Press Start FTU Test Mode button



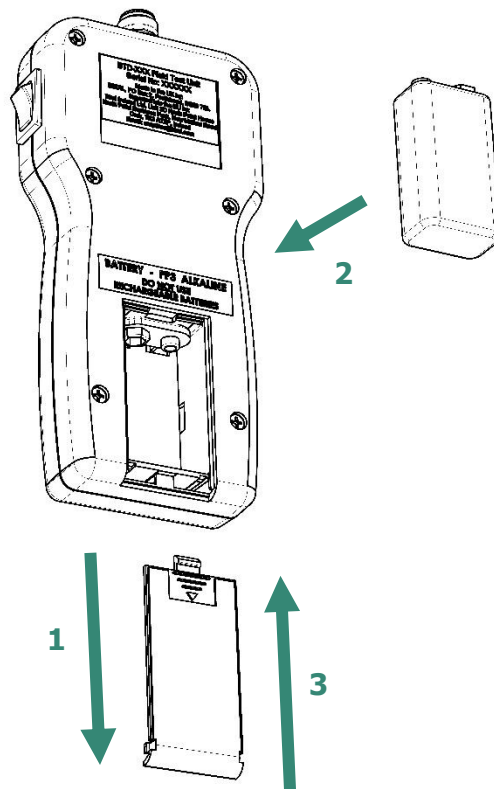
Start FTU Test Mode

4.1.2.2 Wait for FTU test to initialise



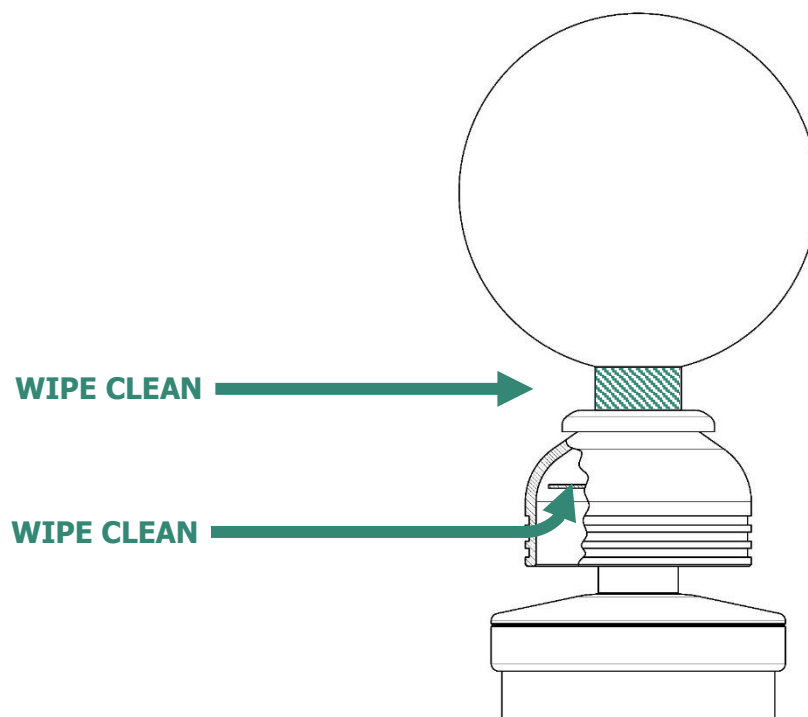
FTU Test Started

4.1.3 FTU Battery installation



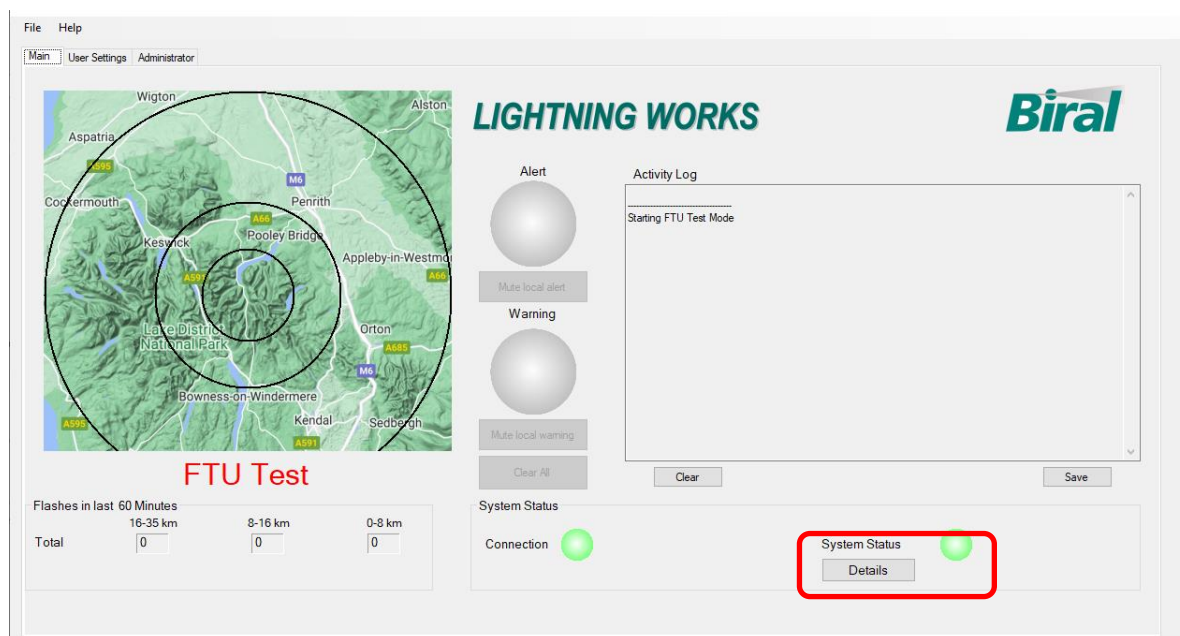
4.1.4 Antenna Cleaning

4.1.4.1 Using the Microfibre Cloth, wipe dust, dirt and debris, from the contact areas on both antennae **before** starting any testing.

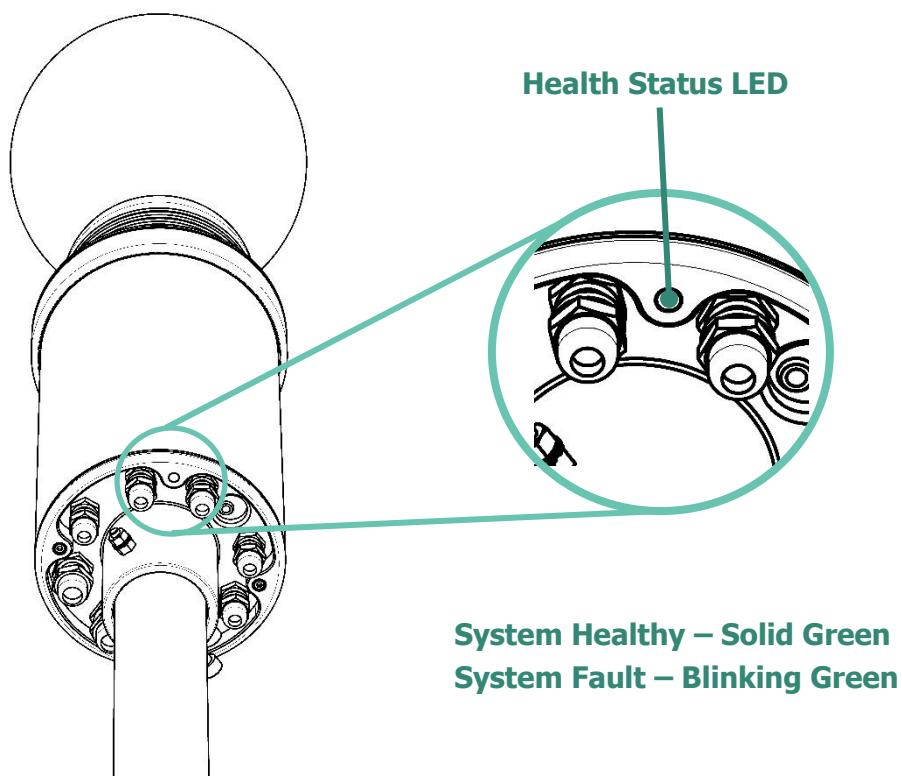


Self-Test Status

4.1.4.2 Ensure system self-test status is healthy via either Lightning Works or on-sensor indicator



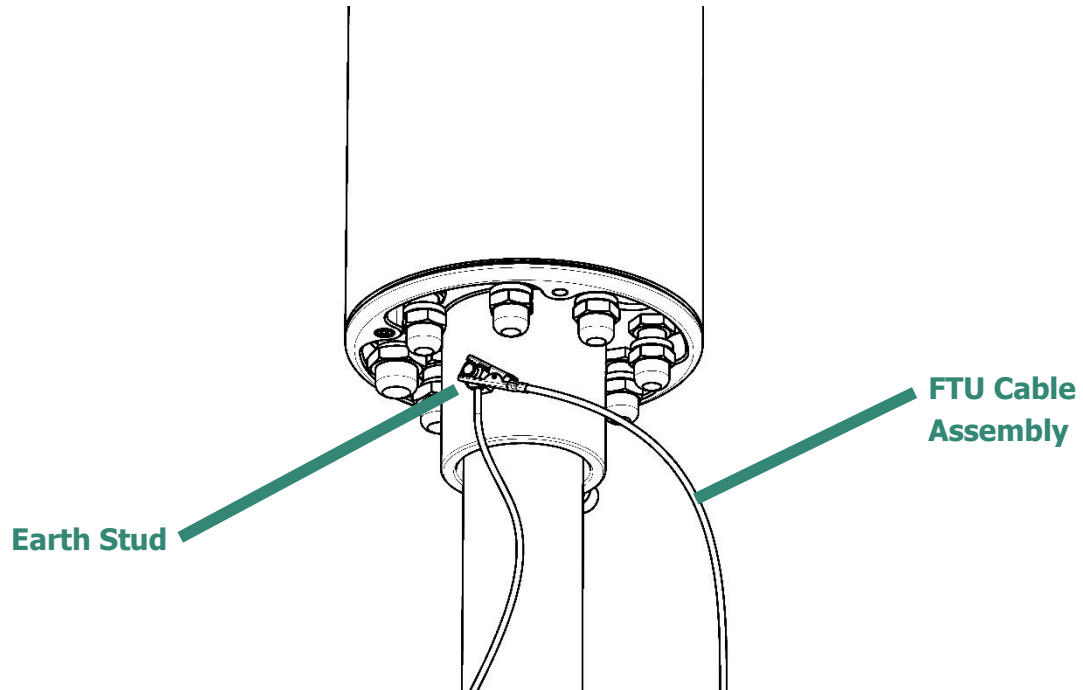
OR



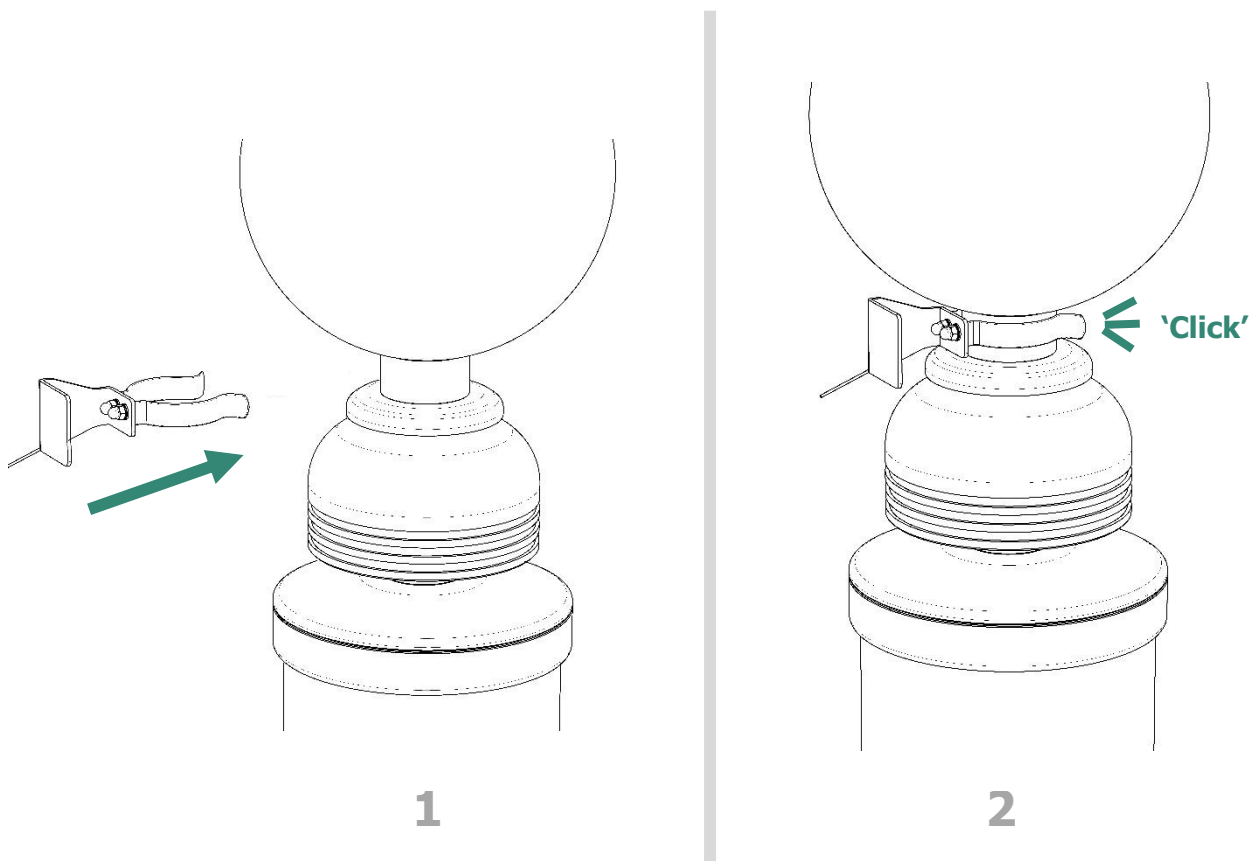
5 OPERATION

5.1 Antenna/Earth Reference Connections

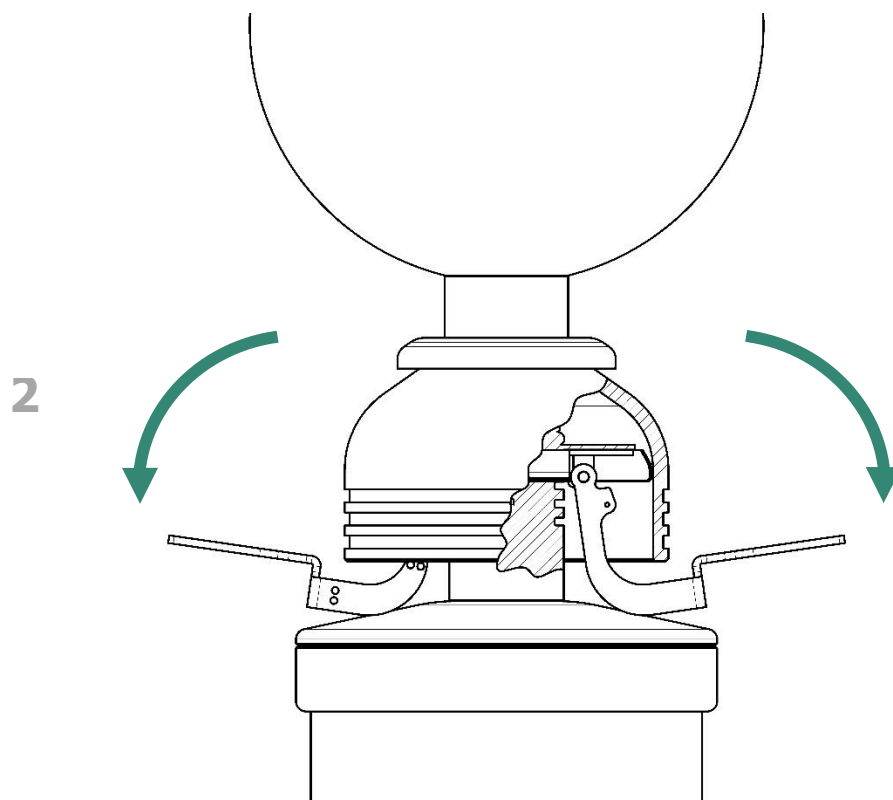
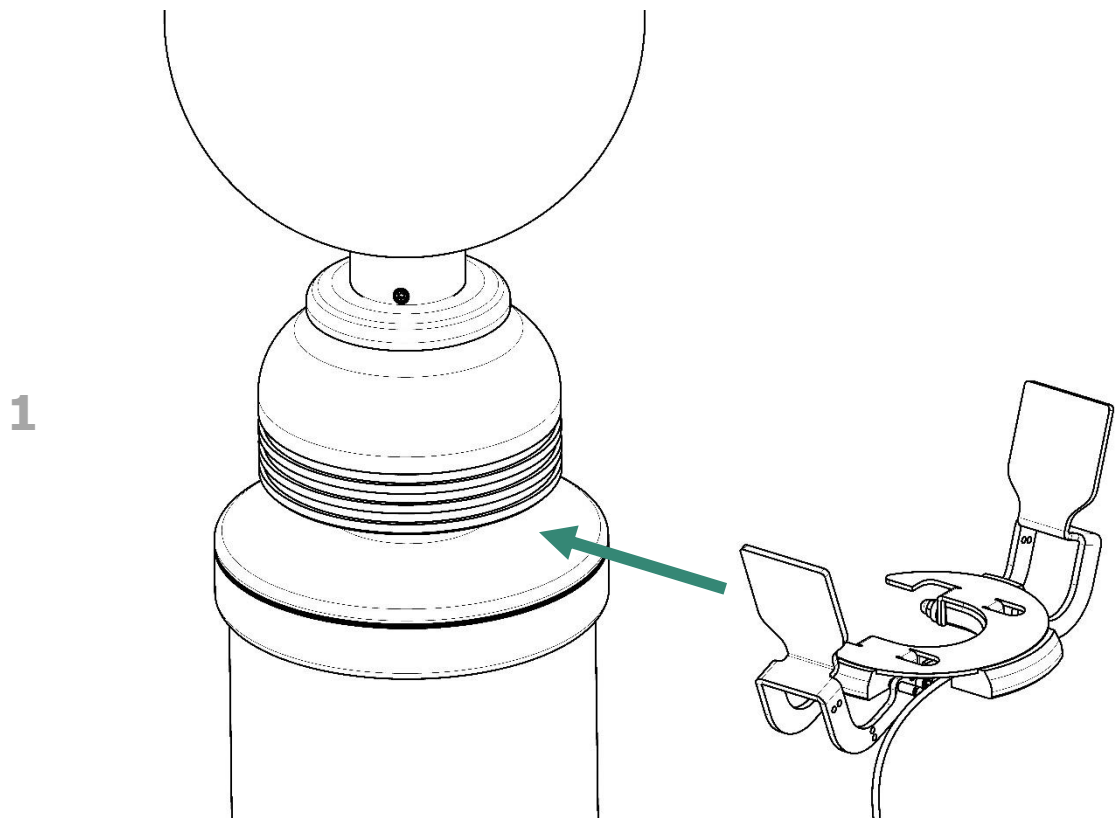
5.1.1 Attach clip to Earth Stud at Base of BTD-200



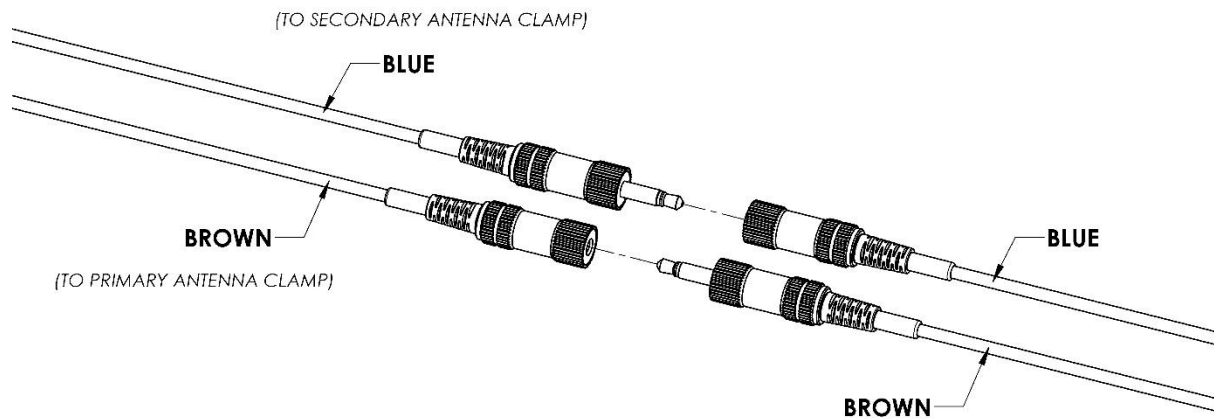
5.1.2 Attach Primary Antenna Clip



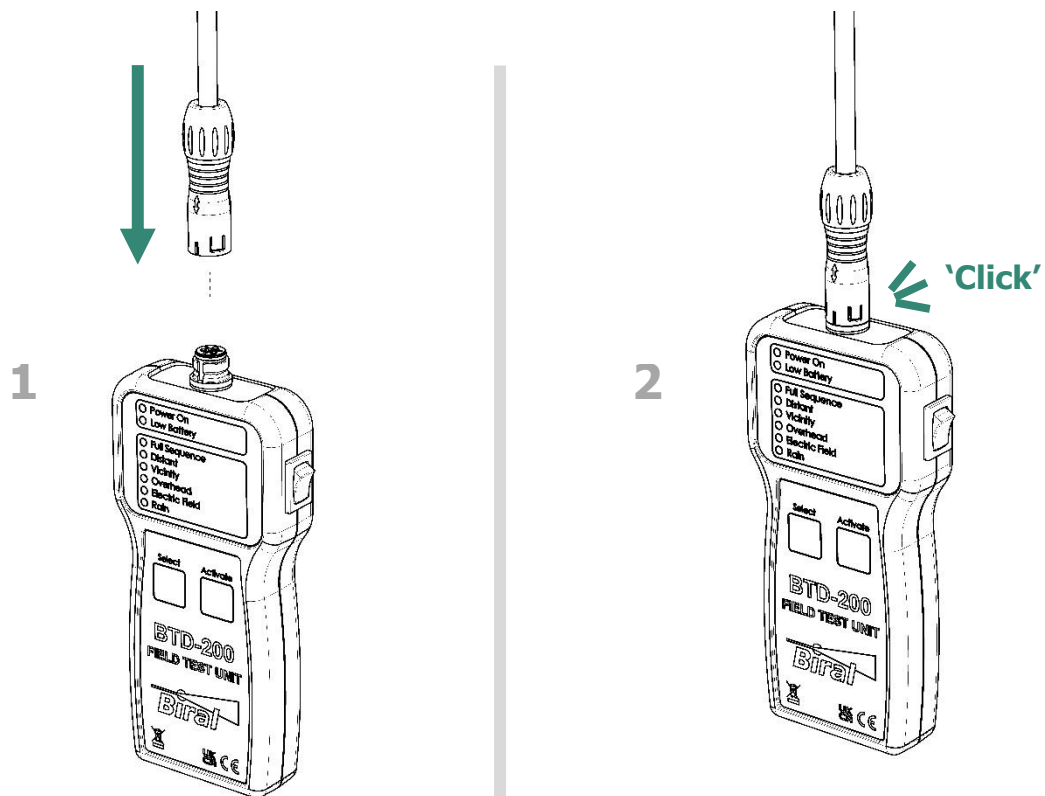
5.1.3 Attach Secondary Antenna Saddle



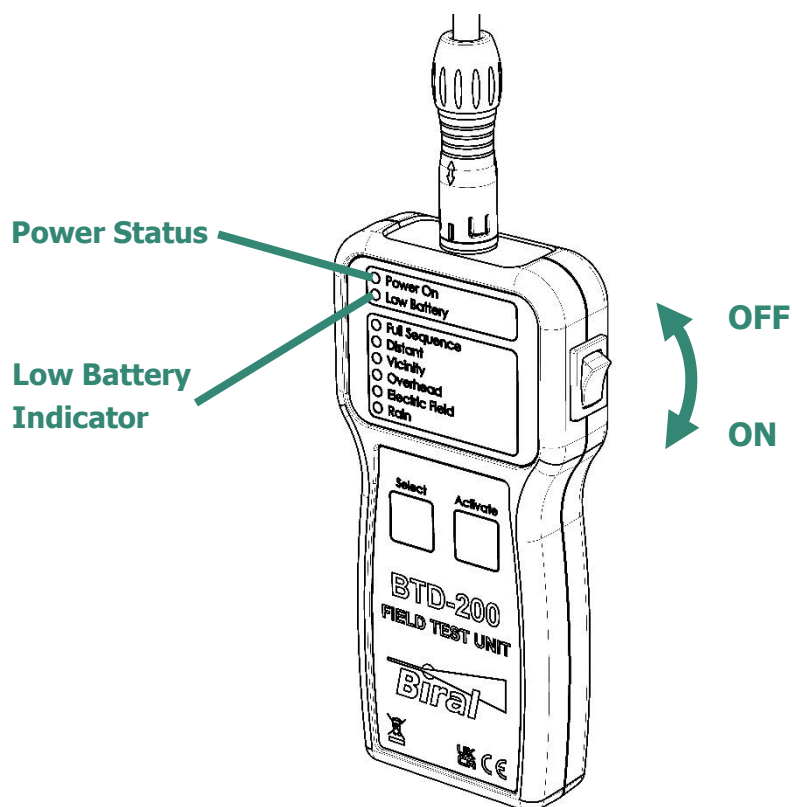
5.1.4 Connect Primary and Secondary Antenna Clamps to the Cable Assembly:



5.1.5 Connect Antenna Assembly to FTU Handheld Unit



5.2 Power-On FTU Handheld Unit



WARNING: Field Test Unit will not execute tests if low battery is indicated. Both touch buttons will be deactivated

NOTE: Select and Activate buttons may not work correctly when wearing gloves.

5.3 Operator Location during Test

Move away from the BTD-200 to the maximum extent of the Cable. Do not pull the Cable tight.

Remain still for the duration of the tests.

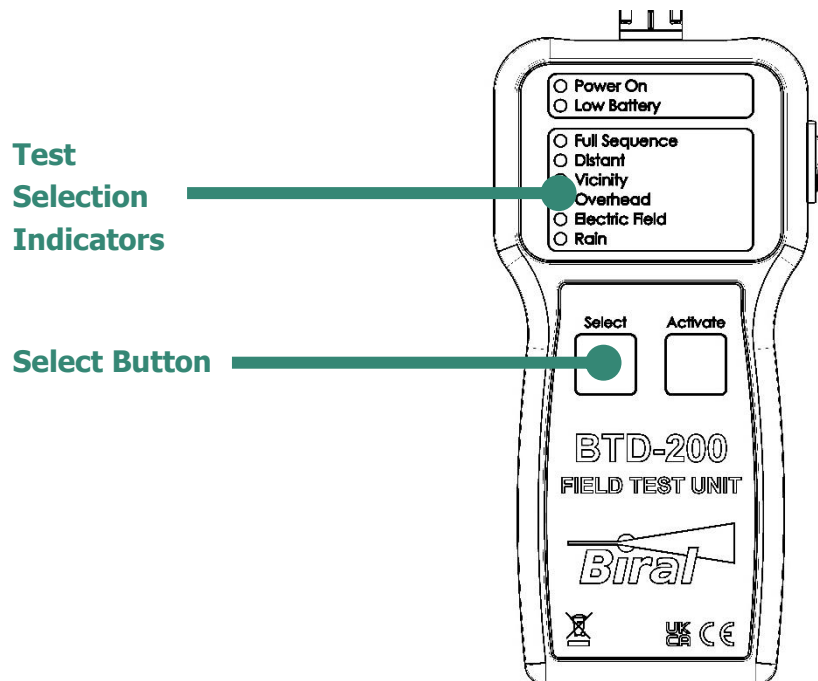
5.4 Conducting a Test



WARNING: Ensure pre-test criteria (section 4.1) conditions are met before commencing testing

5.4.1 Selecting a Test

Touch 'Select' Button to cycle through test options to desired test sequence.

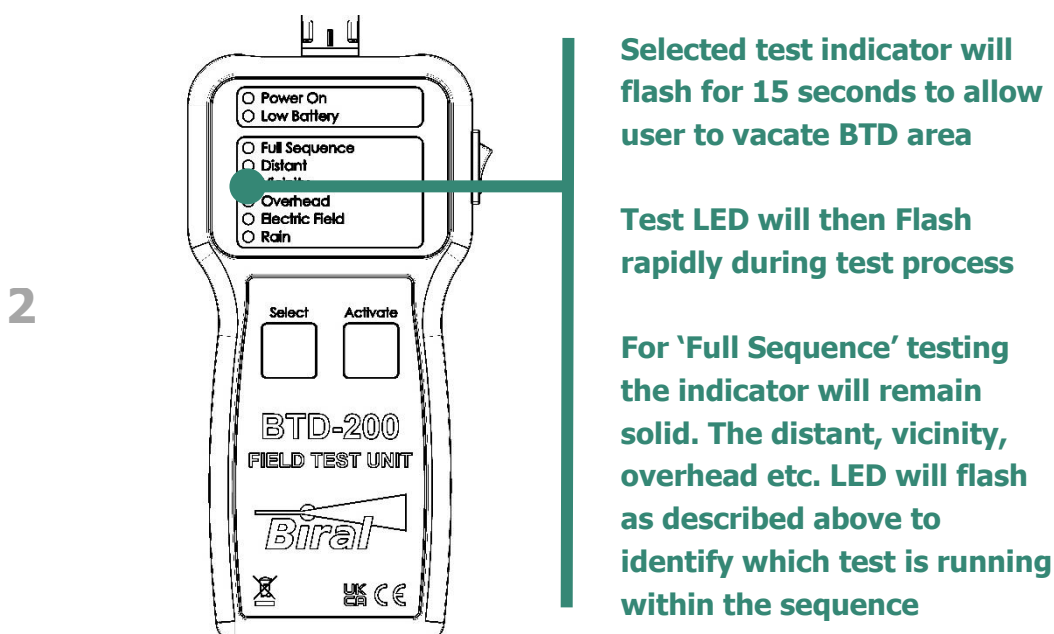
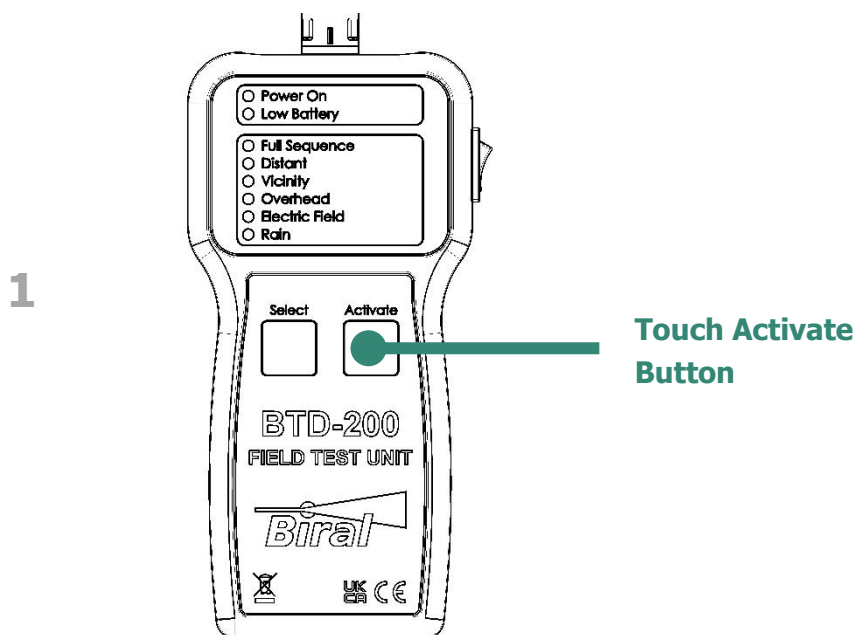


5.4.1.1 Test Options

Test Name	Description	Range and Event Time
Electric Field	Simulation of strong atmospheric electric field	5 seconds
Rain	Simulation of Charged Precipitation	5 seconds
Overhead	Simulation of lightning activity	2 flashes, 3 seconds apart, 6-8Km
Vicinity	Simulation of lightning activity	2 flashes, 3 seconds apart, 9-11Km
Distant	Simulation of lightning activity	2 flashes, 3 seconds apart, 17-21Km
Full Sequence	Sequence of simulations	Sequence order: Distant - Vicinity – Overhead - Electric Field - Rain

5.4.2 Activating a Test

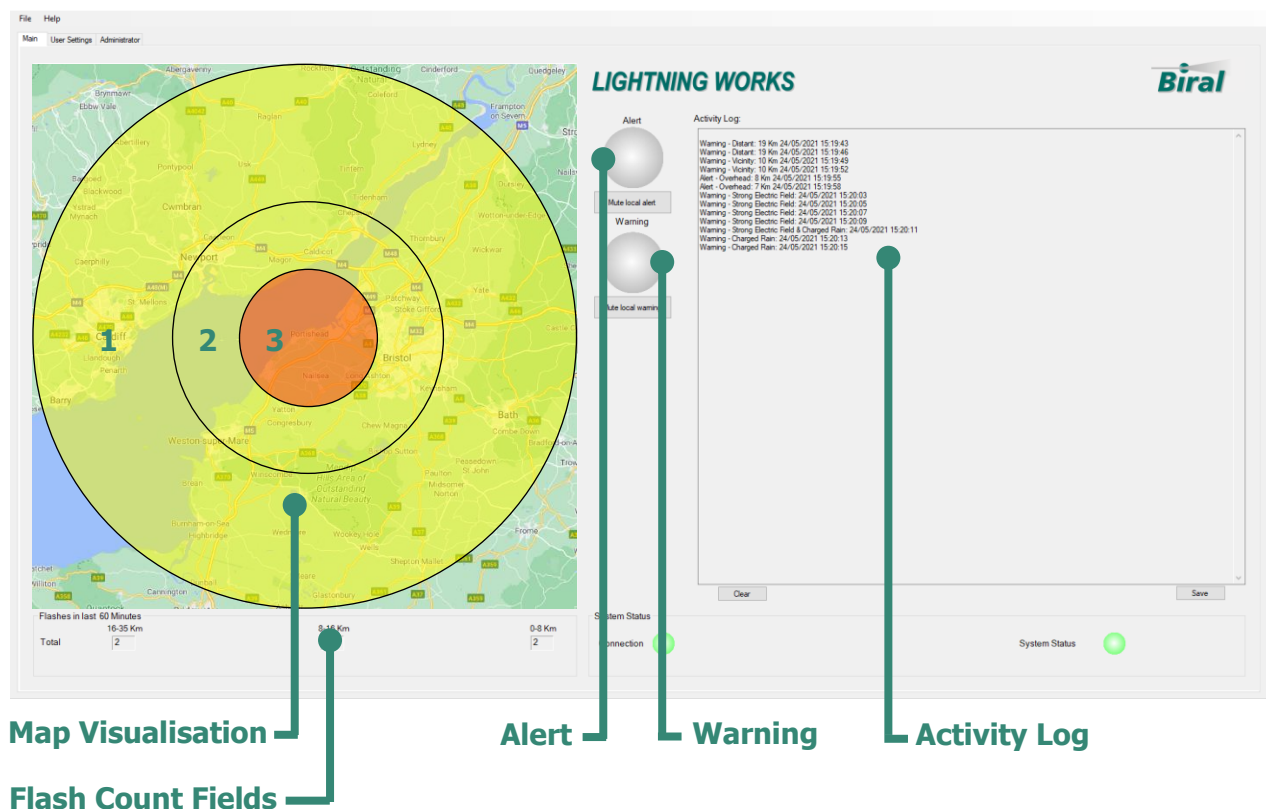
Touch 'Activate' button to start selected test



WARNING: Field Test Unit will not execute tests if low battery is indicated. Both touch buttons will be deactivated.

5.5 Test Results/System Behaviour

5.5.1 For systems using Lightning Works.



5.5.1.1 Map Visualisation & Flash Count Fields

Zone	Map Highlight	Flash count in last 60 minutes
Zone 1	Highlights yellow during 'Distant' test	2 flashes in 16-35Km field
Zone 2	Highlights yellow during 'Vicinity' test	2 flashes in 8-16Km field
Zone 3	Highlights red during 'Overhead' test	2 flashes in 0-8Km field

5.5.1.2 Alert & Warning Lamps

Lamp Output	Activating Test(s)
Warning	Electric Field, Rain, Vicinity, Distant
Alert	Overhead
Warning & Alert	Full Sequence, either lamp will illuminate as above, dependent on current test in sequence

5.5.1.3 Activity Log entry format

[Alarm type][Thunderstorm activity type : Distance][Event Date][Event Time]

5.5.1.4 'Full Sequence' Activity Log example

Warning – Distant: 19 Km 24/05/2021 15:19:43
 Warning – Distant: 19 Km 24/05/2021 15:19:46
 Warning – Vicinity: 10 Km 24/05/2021 15:19:49
 Warning – Vicinity: 10 Km 24/05/2021 15:19:52
 Alert – Overhead: 8 Km 24/05/2021 15:19:55
 Alert – Overhead: 8 Km 24/05/2021 15:19:58
 Warning – Strong Electric Field: 24/05/2021 15:20:03
 Warning – Strong Electric Field: 24/05/2021 15:20:05
 Warning – Strong Electric Field: 24/05/2021 15:20:07
 Warning – Strong Electric Field: 24/05/2021 15:20:09
 Warning – Strong Electric Field & Charged Rain: 24/05/2021 15:20:11
 Warning – Charged Rain: 24/05/2021 15:20:13
 Warning – Charged Rain: 24/05/2021 15:20:15

Expect 2-4 entries here

Expect 2-4 entries here

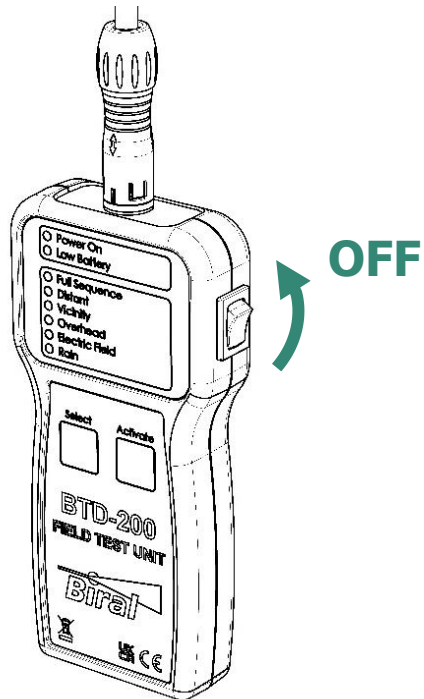
5.5.2 For systems utilising alarms or relay actuated accessories, the alarms and relay(s) will activate as they would with lightning flashes, rain or strong electric fields, see 4.4.1.1 for output definitions.

NOTE: Relays will reset after 15 minutes, wait until relay reset before running additional tests.

NOTE: Full sequence test not recommended for systems without Lightning Works software

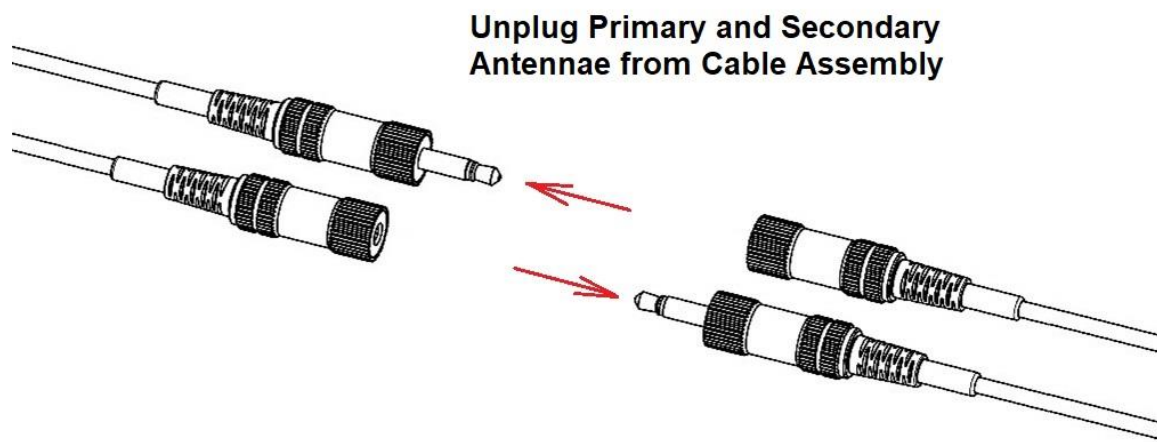
5.6 Ending BTD-200 Test Procedure

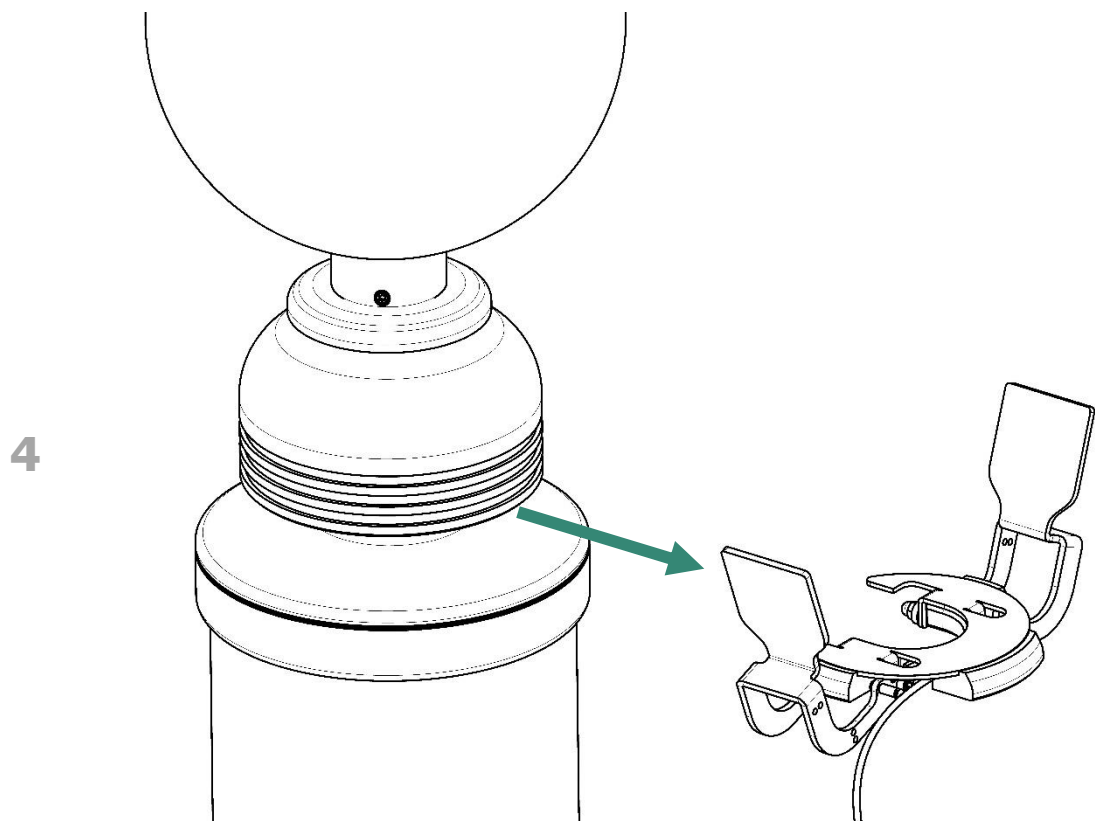
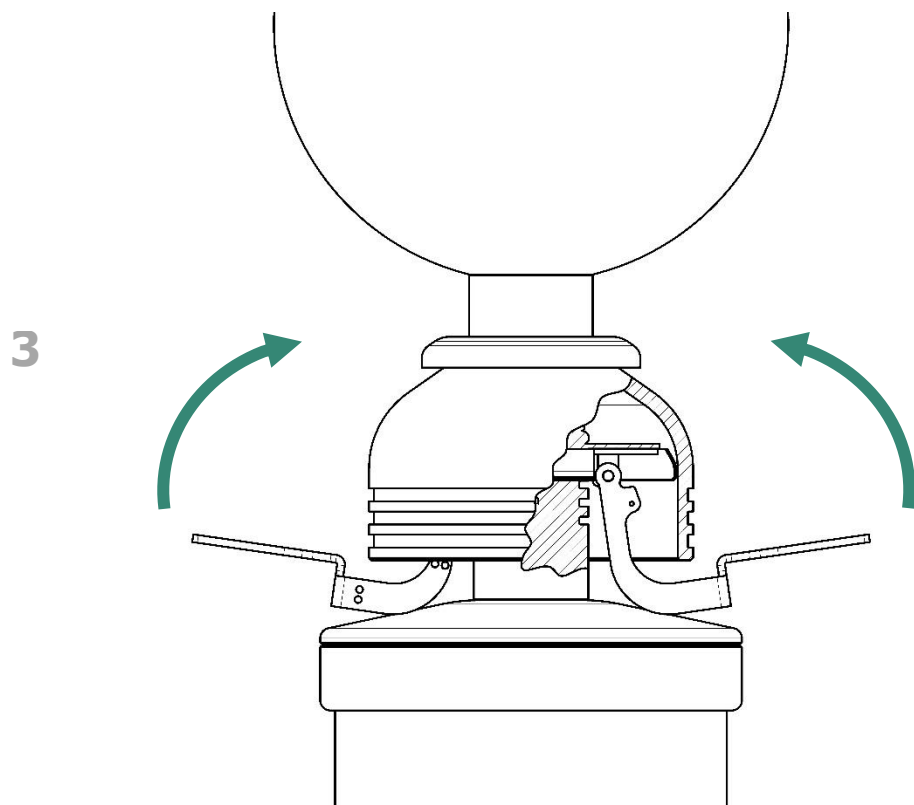
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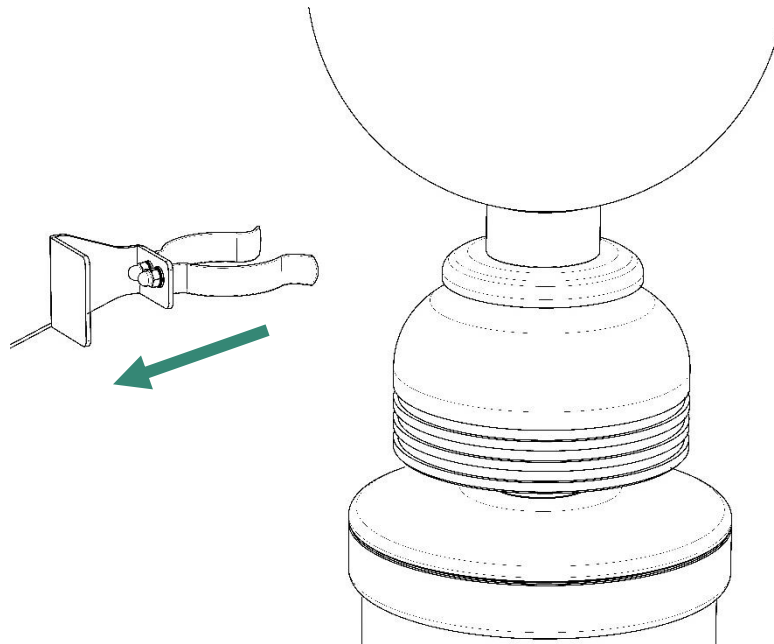
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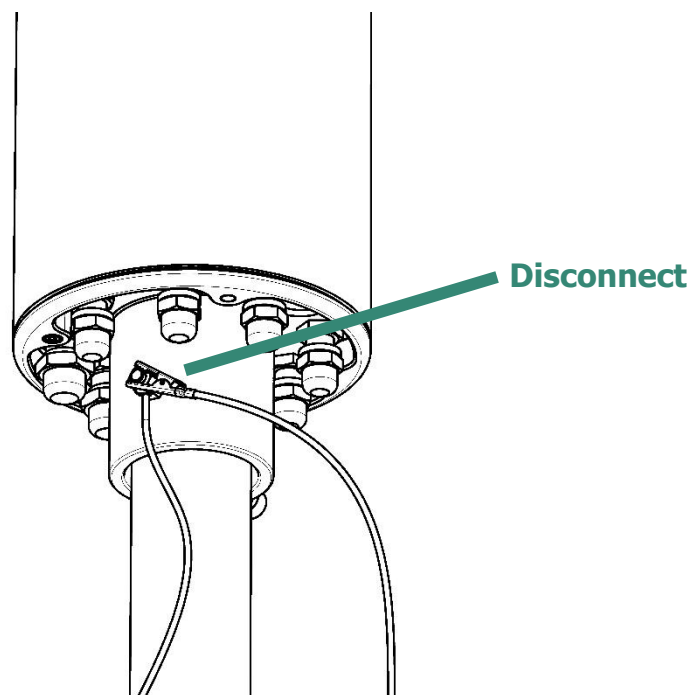




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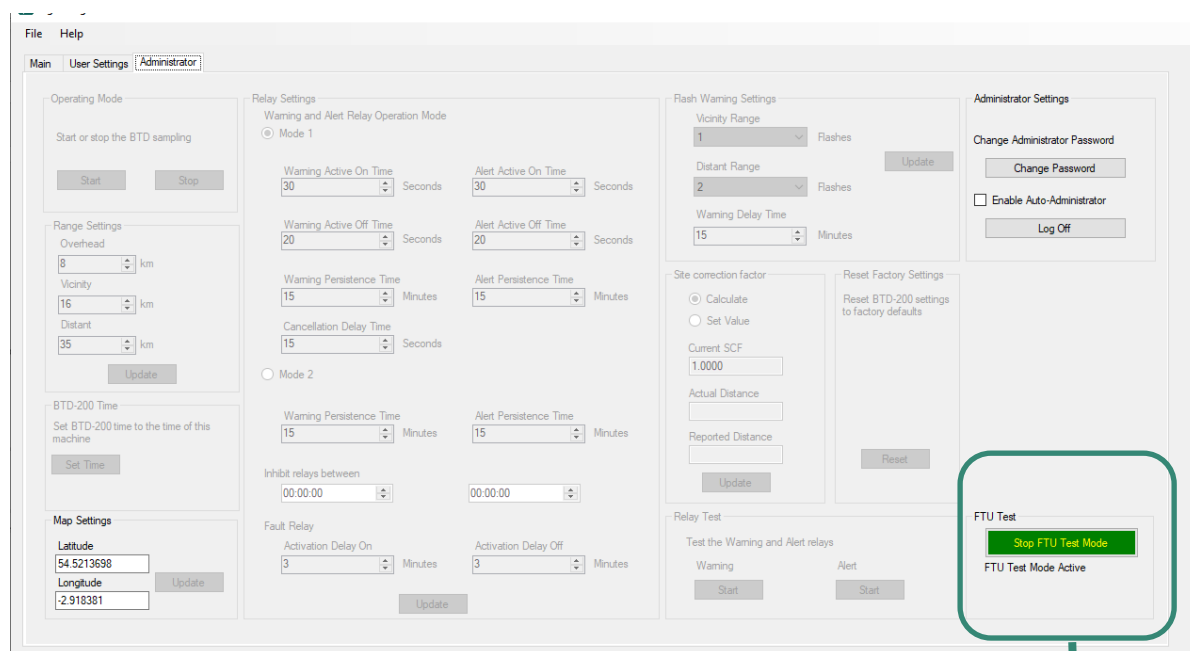


6



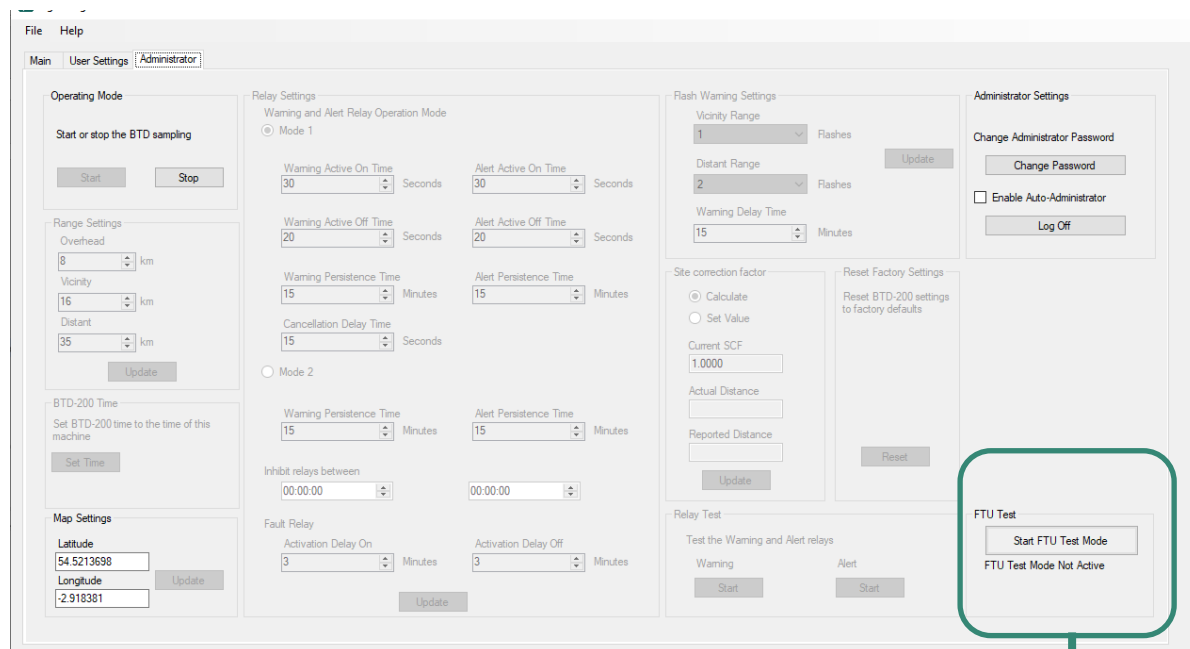
5.6.1 Resetting Lightning Works

5.6.1.1 Press Stop FTU Test Mode button



Stop FTU Test Mode

5.6.1.2 Wait for the FTU Test Mode to stop and the button background to clear



FTU Test Mode Finished

5.7 Storage

Disconnect and remove FTU Battery if not being used for a period of 3 weeks or more

6 Certification and Compliance

CE and UKCA marked
EMC: EN61326-1:2013 Industrial immunity, industrial emissions
RoHS and WEEE compliant

Biral's BTU sensors and equipment comply with the requirements for CE and UKCA marking. Once installed, it is the user's responsibility to ensure that all connections made to the equipment comply with all Local and National safety requirements.

Biral sensors are imported into the EU by Biral Ireland Limited, Unit 3D North Point House, North Point Business Park, New Mallow Road, Cork, T23 AT2P, Ireland

7 Maintenance and Calibration

The BTU-200 FTU is used to check the operation of the BTU-200 sensor, it is not a calibration device.

The BTU-200 FTU does not require any periodic maintenance or calibration.

8 Contacting Biral

If you would like technical assistance, advice or you have any queries regarding the operation of the FTU please do not hesitate to contact us.

Contact us by telephone on: + 44 (0)1275 847787

Contact us by email at: enquiries@biral.com

9 One Year Warranty

The BTD-200 FTU comes with a one year limited warranty against defective materials and workmanship. If you have any questions about the warranty, please contact Biral.

To help us to assist you please be sure to include the following information:

- Model of equipment
- Serial number of equipment
- Nature of defect
- Your full name, address and contact details

PROPRIETARY NOTICE

The information contained in this manual (including all illustrations, drawings, schematics and parts lists) is proprietary to BIRAL. It is provided for the sole purpose of aiding the buyer or user in operating and maintaining the equipment. This information is not to be used for the manufacture or sale of similar items without written permission.

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