

# **Ultra Beam**

## **Dynamic Antenna Systems**

### MANUAL "WIRING CONTROL CABLE"



Rev. 1.10

# INTRODUCTION

The electrical control wiring is a simple component but at the same time among the most important of the entire antenna system.

It needs suitable features for a good transfer of the electrical signal to the stepper motors as well as appropriate quality in order to resist the action of atmospheric agents to which the antenna is normally subject.

Since 2010 UltraBeam builds Plug and Play Fully factory assembled electrical wiring, so just plug the wiring to the controller and the motor drive and your antenna is ready for use.

This solution reduces to ZERO the possibility of errors in the electrical connections between the controller and the

antenna motor units, which happened in the past with home made wiring.

Furthermore, the factory-assembled wiring is devoid of electrical contact points usually present at the intersection of the downward multipolar cable and the individual motor cables, this avoids any bad contact

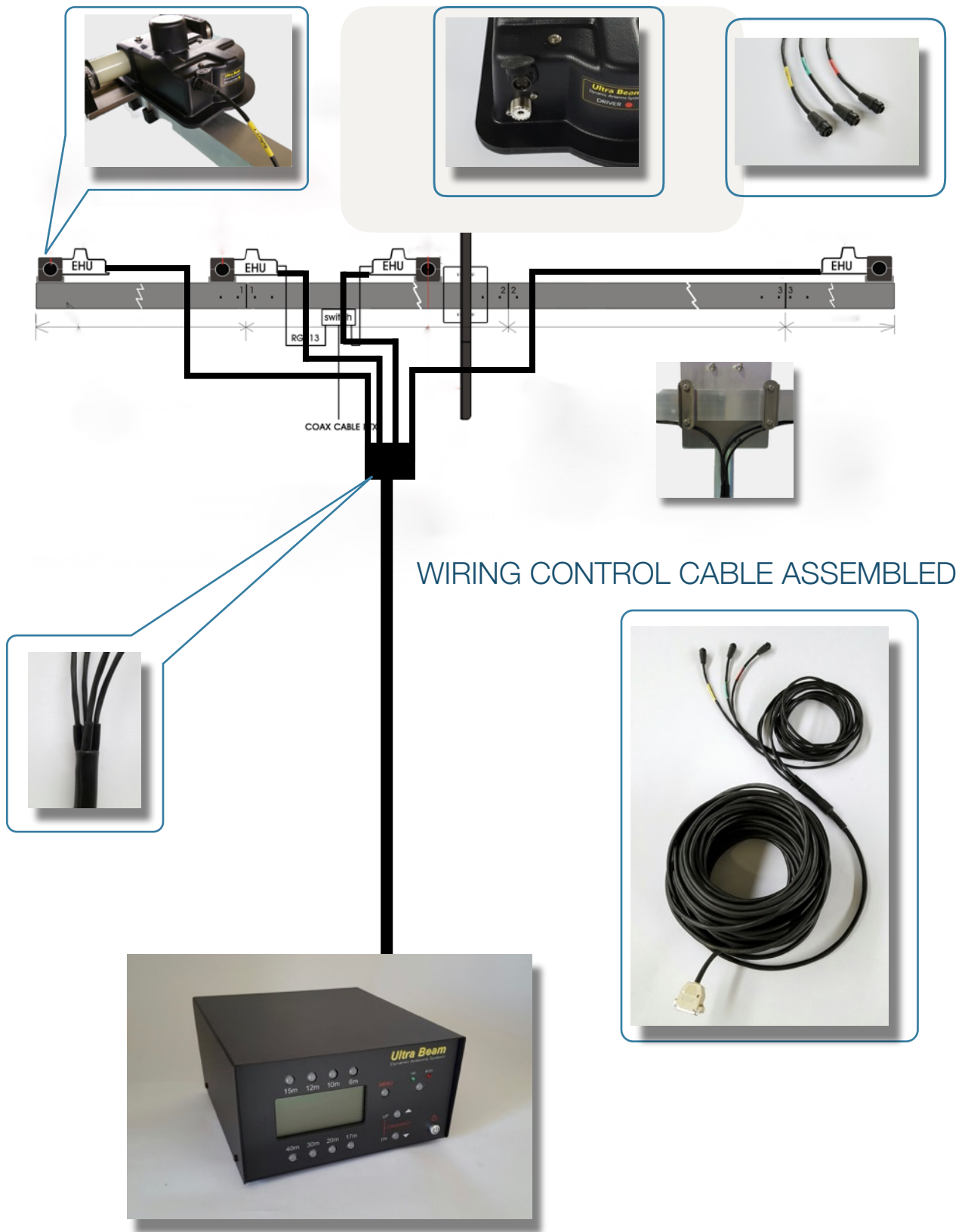
ensuring a smooth functioning over time.

The harnesses are made with high quality multi-core cables and are produced specifically on UltraBeam specifications, the connectors used are the excellent IP68 made by Switchcraft with gold plated contacts.



NOTE: wiring are built of specific length as specified by customer order.

The technical and mechanical characteristics of UltraBeam motor units make good operation of the antenna even with very long cablings up to 200-300 meters.



Details of the main wiring harness factory assembled by UltraBeam

The motor units of the antennas ordered with electrical wiring will be assembled with female multipolar connectors for instant plug and play, simply attach the cables to the boom and the cast.

**NOTE:** In cases where it is necessary to pass the cable through electrical conduits or holes in the wall it will be enough to remove the DB25 and pass the cable from the outside to the inside and resolder as before.

# HOME MADE WIRING

Since 2015 UltraBeam offers an alternative to assembled cable harness and produces a construction kit for home made electrical wiring "PCB Connectors"

This solution is an alternative to the assembled cable harness and allows the use of an existing or buried multipolar cable between the station and the tower.

The PCB Connectors employ sliding terminals for easy execution.

You do not need any wiring diagram, screen printing in this card indicates the needed connections without any possibility of error (fig.1)

The PCB antenna card is supplied with a sealed housing that is usually fixed by ties to the mast.

The antennas supplied with PCB Connectors Kit will have motor units with cable already welded and adequate length to position the motor on the boom (fig.2)

A second card "DB-25 PCB" provided with the kit is attached to the controller, it replaces the classic DB25 and allows the connection of the cable to the controller without soldering (Figure 3)



Fig.2

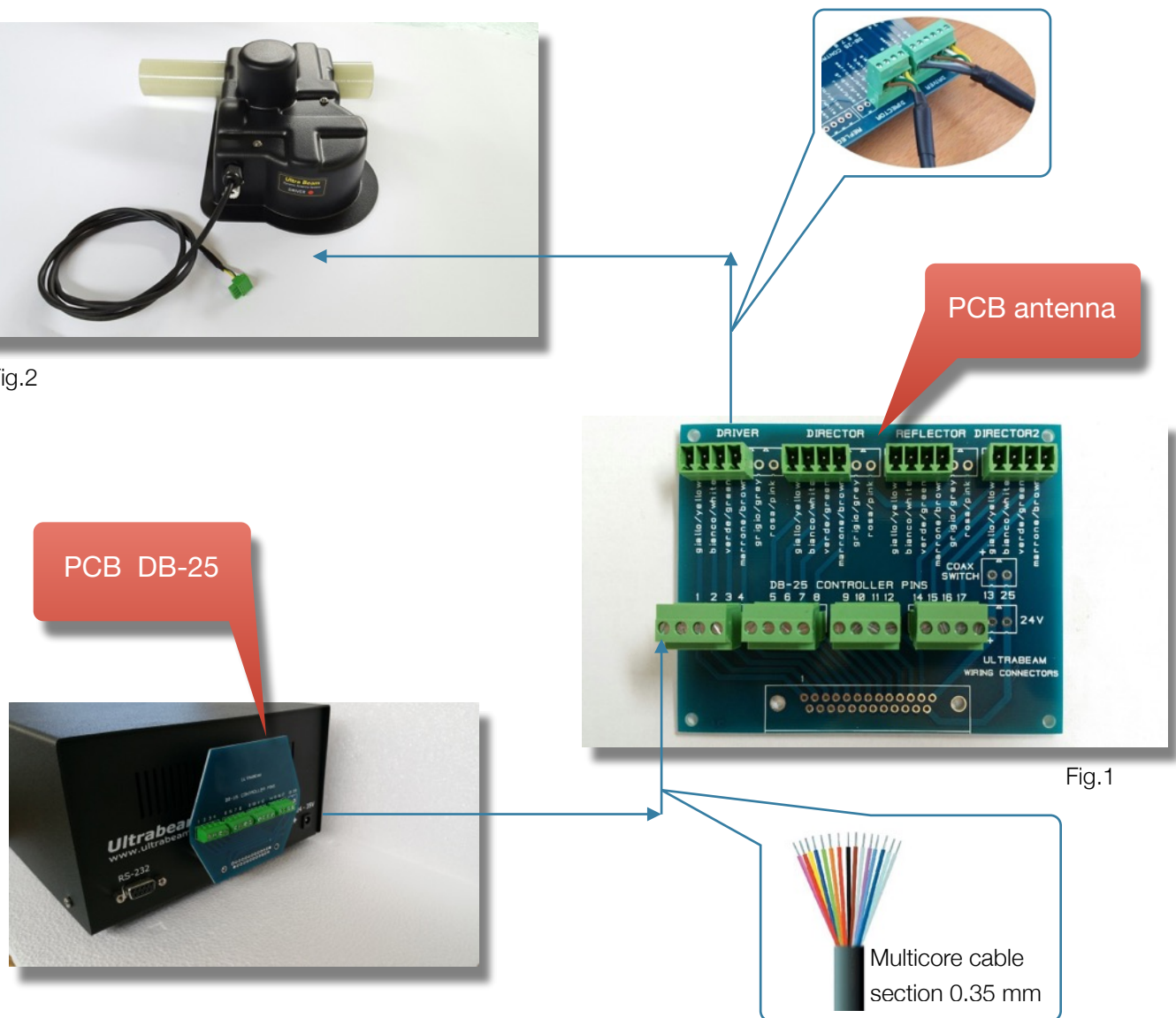


Fig.1

NOTE: the female terminals are soldered on the boards by UltraBeam according to the antenna model and the male terminals applied to the motor cable (Fig.2) you should always solder the multipolar cable wires before fastening them to the connection terminals between the two PCB boards.

## PRE-ASSEMBLY TEST WITH PCB KIT

A DB-25 integrated in the "PCB antenna" card (fig.4) offers the possibility of an immediate test of all the motor units, recommended before the installation of the antenna.

Just connect the PCB antenna directly to the controller (Figure 4) and connect the terminals to the sliding terminals of motors as shown in the screen printing, perform the "TEST" procedure described in the controller manual (page 10).

If you want you can test the fully configured wiring (Figure 5) and then connect the multipolar cable to the card terminals and connect the PCB DB-25 to the controller.

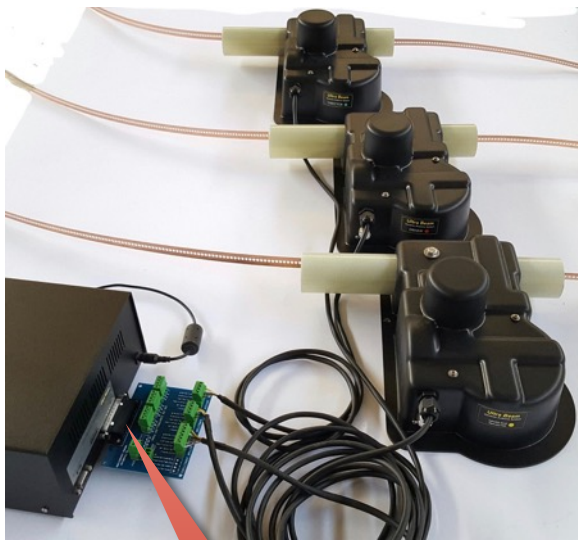


Fig.4

DB25 using  
only for test



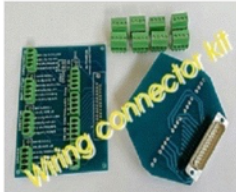
Fig.5

Multicore cable  
Controller > Antenna

### NOTE :

Although building an electric wiring harness with PCB Kit is extremely simple, UltraBeam will not be responsible for any malfunctions and / or failures caused by construction of the wiring.

## HOW TO ORDER

|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------|
|  | <b>Cablaggio 30 metri</b><br>Cablaggio completamente assemblato con connettori multipolari IP68 incluso 30 metri cavo controllo.<br>NOTA: Se ti occorre una misura diversa (Esempio 45 metri) e' sufficiente selezionare la voce 'Cablaggio 30 metri' e aggiungere 15 metri dalla casella 'Cavo MULTIPOLARE 12x0,35mm'.<br>Wiring 30 meters<br>Wiring fully assembled with IP68 connectors, including 30 meters of control cable<br>Wiring more than 30 meters<br>Extra cost per meter over 30. Example: If you need a cable 45 meters select the wiring 30 meters and add 15 in box 'MULTICORE Cable'. | 197.00 | <input type="text" value="1"/> <input type="button" value="+"/> <input type="button" value="-"/>  |
|  | <b>KIT Scheda Connettori</b><br>Kit cablaggio da assemblare completo di PCB CONNECTOR, DB-25 CONTROLLER PINS e morsetti a carrello estraibile.<br><b>Wiring connector PCB</b><br>Wiring kits to assemble complete PCB CONNECTOR, DB-25 CONTROLLER PINS and extractable sliding terminals.                                                                                                                                                                                                                                                                                                               | 67.00  | <input type="text" value="0"/> <input type="button" value="+"/> <input type="button" value="-"/>  |
|  | <b>Cavo MULTIPOLARE 12x0,35 mm.</b><br>Cavo per il collegamento dall'antenna al controller.<br><b>MULTICORE Cable 12x0,35mm</b><br>Cable to connect the antenna to the controller.                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.10   | <input type="text" value="15"/> <input type="button" value="+"/> <input type="button" value="-"/> |

## WIRING ASSEMBLY

In the order form of all UltarBeam models is found the selection of the assembled electrical wiring.

30 meters is normally the minimum extent necessary for installation, if enough for your setup. Just select "1" in the selection box to the right of the price

In cases where you need a specific length above 30 meters, select in addition to the wiring additional meters in the "multipolar cable" box.

As an example: if you need a 45 meters total cable, first select cabling + 15m multi-core cable, a 45 meters harness and descent will be built.

Note: the length of the wiring is meant from the controller DB25 to the Y hub, the motor cables should not be considered in overall length.

## WIRING BOARDS WITH PCB CARDS

If you wish to buy the antenna with PCB kit, simply select 1 kit connector card and "multipolar cable" indicating the meters (if necessary).

If you already have your own multicore cable verify that the wires number and section are appropriate as indicated in the order form.