

Figure 5 – Unpacking the adaptor for a non-integrated antenna


	<p style="text-align: center;">IMPORTANT NOTE: NEVER REMOVE THE ROUND YELLOW PADS, VISIBLE AT THE ANTENNA ACCESS, USED TO SEAL THE OUTDOOR SYSTEM.</p>
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Figure 6 – Unpacking the NT unit

The NT unit equipment is protected by safety cover. Do not unpack the equipment in advance if it is not to be installed immediately.



Figure 7 – Unpacking the NT Lite unit

3.1.2 Checking the configuration

The Terminal Station components delivered are:

- the **RT unit** (also called **RT** or **RT radio**) and its installation accessories are in one box for integrated antenna. For non integrated antenna, there are three boxes: RT radio, antenna and pole mounting.
- the **NT unit** (also called **NT**) and its installation accessories are in another box.

Depending on the site configurations, the delivery will include individual boxes containing:

- one or more passive or active **splitter** modules.
- one or more **repeater** modules.

3.1.2.1 Content of boxes

For integrated antenna

EQUIPMENT	CONTENTS
RT UNIT	1 RT with antenna mounted assembly
	1 wall mount
	1 bearing mount
	1 horizontal polarisation kit with screw accessories
	2 U bolts
	1 bag containing 1 type "N" 75 ohm connector, four M6x50 screws with washers and plugs; four M8 nuts with washers, 2 terminal lugs and one M6x20 screw with washers

For non integrated antenna

EQUIPMENT	CONTENTS
RT UNIT	1 RT with adaptation for mounting a 600 mm diameter antenna

EQUIPMENT	CONTENTS
RT UNIT	1 Pole mounting including 2 fine alignments for antenna
	2 U bolts
	Pole mounting 1 bag containing 7 M6x16 screws with washers
	5 crimp terminals, 1 M6 nut and 2 washers

EQUIPMENT	CONTENTS
Antenna	600 mm diameter antenna

In any case

EQUIPMENT	CONTENTS
NT UNIT	1 Indoor Unit
	1 installation kit containing feet, bracket mouting, handles, attachment accessories and 1 "F" connector

EQUIPMENT	CONTENTS
Splitter kit	1 splitter passive module
	1 bag containing screw accessories
	W3 connectors F and one 75 Ω load

EQUIPMENT	CONTENTS
Repeater kit	1 repeater module
	1 bag containing screw accessories
	2 connectors "F"

3.1.2.2 Storage

If installation is to be deferred, the type of packaging defines the equipment storage conditions:

- **cardboard boxes** should be warehoused indoors, in a well-ventilated and dry room ,
- **wooden or polywood boxes** may be stored outdoors, provided that they are protected from rain and direct sunlight.

3.2 Labels on the equipment

The labels below are affixed to the equipment and their cardboard boxes to indicate the contents.

Figures given on the examples below are not contractual.

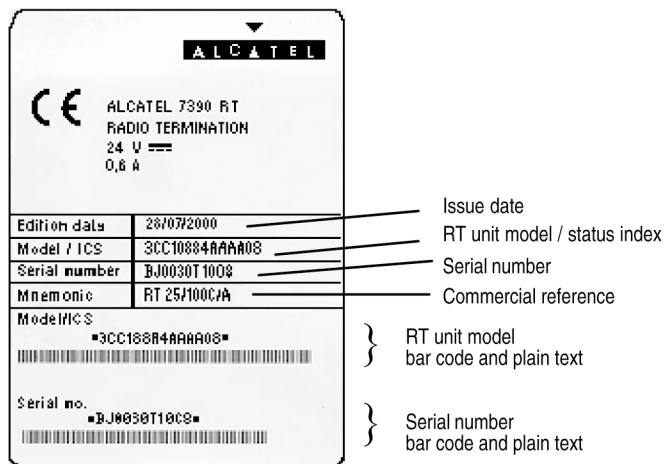


Figure 8 – Packaging of the RT unit

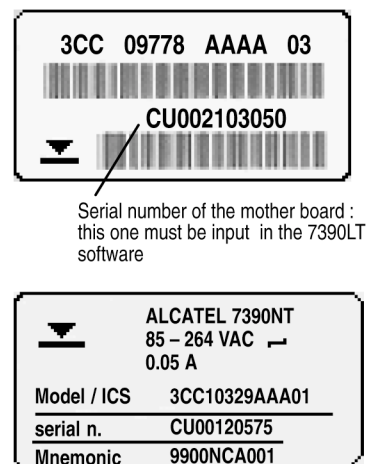


Figure 9 – Packagings of the NT unit

3.3 Installing the equipment

It is recommended that all peripheral equipment (e.g., repeaters, splitters) as well as the engineering accessories should be installed **before installation of the Terminal Station**.

3.3.1 Information required for installation

Appendix 1 – 7390 TS installation sheet contains a sheet for you **to complete** and collect all the general information needed for the installation procedure.

3.3.2 Precautions concerning electromagnetic compatibility

Installation is designed to meet all new requirements concerning electromagnetic compatibility and safety.

The performance of the equipment depends on installation practices (cable installation, ground connections, etc.) which should be based on best trade practices and which may be degraded if these practices are not respected.

3.3.3 Tools required

The installation staff must possess a standard installation toolkit (containing, in particular: drill, drill bits, soldering iron, cable tie pliers, terminal pliers). A heating pack is also required for heat-shrinking operations.

The list of tools required for the mechanical installation of the Terminal Station is given below:

FOR INTEGRATED ANTENNA

Tool	Use
5 mm Allen key (for M6 screw)	For securing the pole mounting and wall mounting
13 wrench	For tightening the U bolts on the 40 to 50 mm tube
Level gauge or inclinometer	For vertically of the bearing axis



Figure 10 – - Inclinometer

FOR NON INTEGRATED ANTENNA

Tool	Use
2.5 mm Allen key (for M3 screw)	For adjusting the polarization of the antenna
3 mm Allen key (for M4 screw)	For adjusting the polarization of the antenna
5 mm Allen key (for M6 screw)	For mounting the antenna
8 mm Allen key (for M10 screw)	For tightening the different parts of the pole mounting
10 mm Flat wrench	For fixing the ground terminal
16/17 mm box wrench and flatwrench	For fixing the "pole mounting" and fine tuning the antenna and various fastenings
16/17 mm torque wrench	For fixing the pole mounting and various fastening with the correct torque
20 mm Flat wrench	For fitting the "N" coaxial plugs

Depending on the installations, additional equipment, provided by Alcatel as optional, may prove useful:

Tool	Use	Industrial Code
E-RIT and NT installation tool kit cables and software	E-RIT installation	9900YTA001

To get the commercial codes of these items, please consult *Appendix 5 – Correspondence between commercial codes and industrial codes relating to the TS* which gives the connection between industrial and commercial codes.

A compass and a pair of binoculars (not supplied) are useful for rough prepointing of the antenna.

The use of a torque wrench is recommended.

3.4 Installation of the Terminal Station RT unit with an integrated antenna



Considerations:

The installation of the RT unit should satisfy the following criteria:

- unimpeded direct line of sight between RT unit and RBS (Base Station),
- perfect mechanical rigidity,
- enabling precise antenna alignment.

The 7390RT is designed for outdoor installation without any particular protection. However, the following recommendations must be respected:

- do not install equipment below bird nesting areas,
- do not attach equipment to a surface prone to vibrations (machinery, lift housing, air conditioning, etc.),
- do not attach equipment to chimneys which give off fat deposits, dust and other aerosols which are liable to come to rest on the equipment,
- do not install equipment in proximity of sources of heat,
- do not place the equipment in proximity to corrosive gas outputs,
- do not place the equipment below roof run-offs not equipped with guttering (high risk of microwave short-circuit),
- do not install at man-height to prevent human collisions against the antenna. This could cut the radio link with the central station.

Two types of assembly are possible:

- on a **flat, vertical surface** (e.g., a wall),
- on a **pole/tube** (existing or to be installed), using threaded U-bolts and nuts (M8).

Note: *The pole/tube selected should be sufficiently rigid to prevent antenna misalignment and resist vibrations.*

Use tube supports that comply with our recommendations. Support references are mentioned in the next chapters.

3.4.1 Definition of assemblies with respect to chosen polarization

The Terminal Station RT unit can be mounted with **horizontal** (H) or **vertical** (V) polarization.



To mount the radio/antenna assembly on the support arm, in the event of **horizontal polarization**, the horizontal polarization kit must be used. This consists of an additional joint to compensate for the mechanical rotation of the system.

The pole-mounting mechanical assembly consists of (*Figure 11 – Support arm components*):

- **two** components in the case of vertical polarization (V): wall mounting (ref.1) and bearing mounting (ref.2);
- **three** components in the case of **horizontal** polarization (H): wall mounting (ref.1) , bearing mounting (ref.2) and polarization mounting (ref.3).

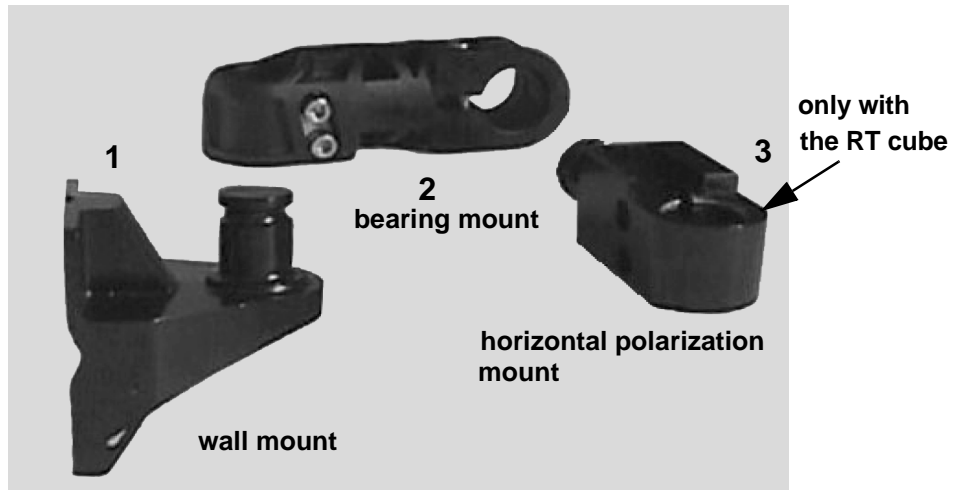


Figure 11 – Support arm components

A polarization slot indicator at the rear of the RT unit can be checked to confirm that the assembly is correct with respect to the chosen polarization:

- if the letter "H" can be read naturally, polarization is **horizontal**,
- if the letter "V" can be read naturally, polarization is **vertical**,

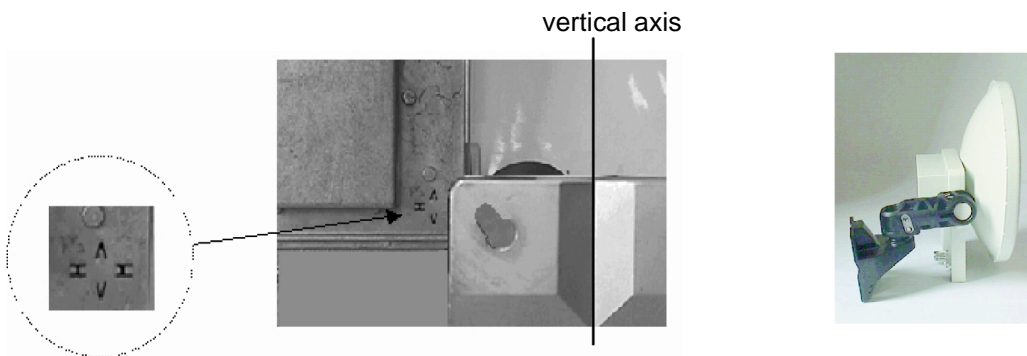


Figure 12 – Vertical Polarization

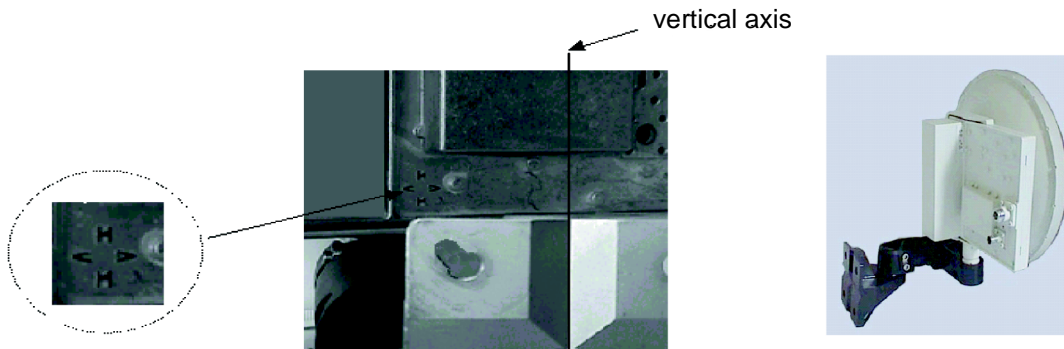


Figure 13 – Horizontal polarization

3.4.2 Installation of the 7390 RT on a wall or flat vertical surface

Considerations:

- If attaching the RT unit using bolts and plugs, select the attachment components to suit the composition of the attachment surface.
- The surface chosen should not be prone to vibrations (e.g., avoid machine housings).
- To mark the drill holes, use the drilling template printed on the inside panel of the RT unit packaging box.

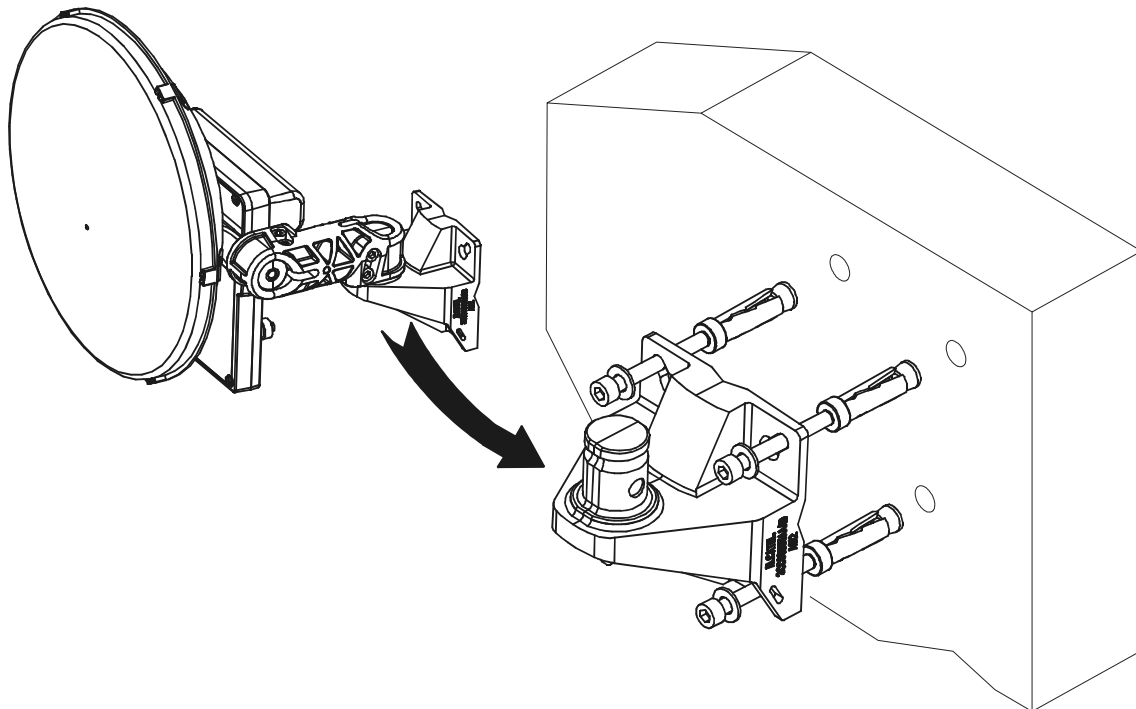


Figure 14 – Installation of the RT unit on a wall


Stages

1. Select the installation location and determine the polarization of the RT unit.
2. Place the drilling template against the wall (or surface) to be pierced.

Note: The vertical axis of the wall mounting assembly must be respected (see Figure 15 – Wall mounting). Used a bubble level or inclinometer.

3. Drill the 4 holes.
4. Insert the 4 plugs.
5. Install and secure the wall mounting (V et H polarization) using four M6x50 screws with washers.

Note: Screw torque = 4.3 to 4.9 m.N.

	<p>IMPORTANT: VERTICALITY OF $\pm 1^\circ$ REQUIRED FOR POLARIZATION</p>
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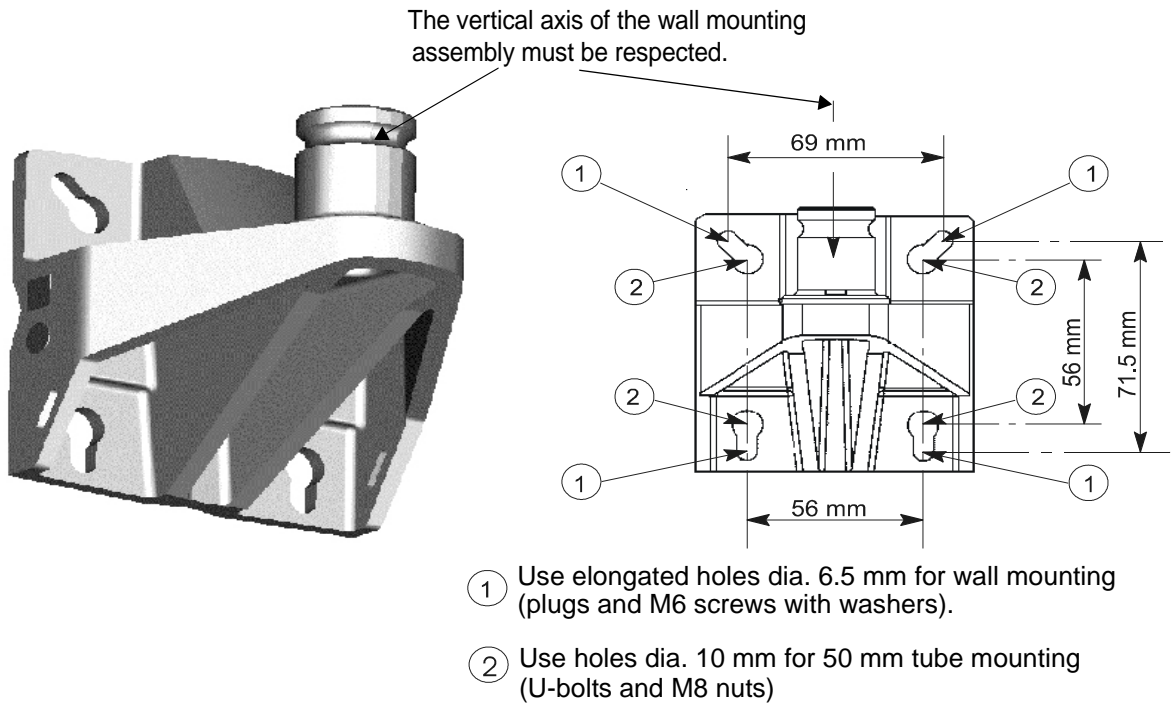


Figure 15 – Wall mounting

6. Install and secure the bearing mounting on the wall mounting (V and H polarization).

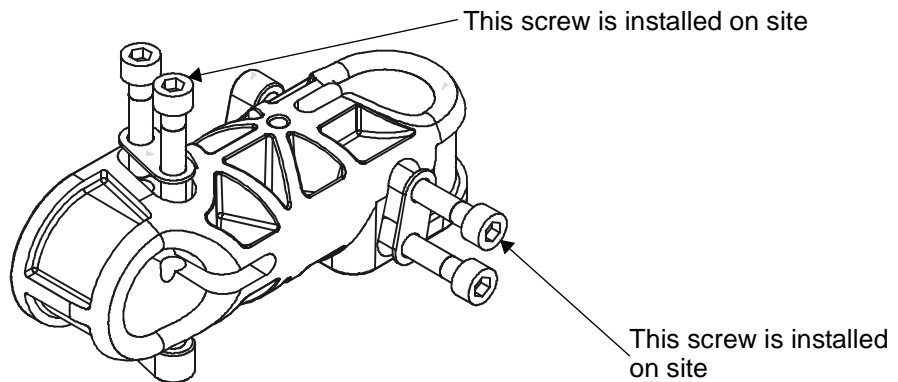


Figure 16 – Screws mounting



To continue the hardware installation, go to step **7** in the case of **horizontal** polarization or go directly to step **8** for **vertical** polarization.

7. Install and secure the polarization mounting (**H polarization only**).
8. Install and secure the RT unit on the support arm. Check on polarization indicator that the polarization assembly is correct (cf. *Figure 12 – Vertical Polarization* and *Figure 13 – Horizontal polarization*).
9. Release the RT assembly locking screw and carry out antenna prepointing visually and/or using a compass and a map. To do this, orientate the assembly so that the antenna is pointed towards the Base Station antenna.
10. Remove the radio module from its axis for configuration (see *Chapter 4 Commissioning the 7390 TS Terminal Station*).

3.4.3 Installation of the RT unit on a tube for «N» or «F» connector RT

Considerations

- Install on tube using two U-bolts.
- Installation may be carried out on a newly installed or existing tube.
- The external diameter of the tube is **76 mm** in standard configuration.
- The support tube, along with the U-bolts, must be clean and (apart from threads) grease-free.
- If specific site features make perfect alignment impossible (line of sight parallel to the wall, for example). You are recommended to use a support that complies with our specifications (see references in the paragraphs which follow).

	IMPORTANT: VERTICALITY OF $\pm 1^\circ$ REQUIRED FOR POLARIZATION
	IMPORTANT NOTE: THE USE OF SUPPORTS WITH A SLENDERNESS RATIO GREATER THAN OUR MODELS SHOULD BE EXCLUDED (TOO FLEXIBLE)

Note: *The use of supports with slenderness ratios inferior to our own is authorized (more rigid).*

Note: *Slenderness ratio = length / cross-section of sections used.*

Steps

1. Select the installation location and determine the polarization of the RT.
2. Install and secure the wall mounting (V et H polarization) using the two U-bolts (and nuts with washers) provided for this purpose, or the attachment hardware delivered with the specific wall mount.

Note: *Screw torque = 10.5 to 12 m.N.*

Note: *The vertical axis of the wall mounting assembly must be respected.*

3. Install and secure the bearing mounting on the wall mounting (V and H polarization), see *Figure 11 – Support arm components*.

To continue the hardware installation, go to step **4** in the case of **horizontal** polarization or go directly to step **5** for **vertical** polarization.

4. Install and secure the polarization mounting (**H polarization only**).
5. Install and secure the RT radio unit with its antenna on the support arm. Check the polarization indicator to check correct polarization (cf. *Figure 12 – Vertical Polarization* and *Figure 13 – Horizontal polarization*).
6. Release the RT assembly locking screw and carry out antenna prepointing visually and/or using a compass and a map. To do this, orientate the assembly so that the antenna is pointed towards the Base Station antenna.
7. Remove the radio module from its axis for configuration (See *Chapter 4 Commissioning the 7390 TS Terminal Station*) to make commissioning easier.