Title:	**Installation Manual for the BS4 Basestation**		
Date:	08 May 2017	Document ref:	2LT053 03

Telensa

BS4 installation instructions

Contents

OPERATIONAL SAFETY NOTICES 3

INSTALLER 3
POWER SUPPLY CONNECTION 3
BATTERY PACK 3
RADIO TRANSMITTER - CAUTION 3

1 EQUIPMENT OVERVIEW 4

2 ACCESSORIES REQUIRED 4

3 INSTALLATION PROCEDURE 4

3.1 MOUNTING LOCATION 4
3.2 PREPARATION 4
3.3 MOUNTING PLATE 5
3.4 BASE STATION CASE ASSEMBLY 5
3.5 POWER CONNECTION 5
3.6 OTHER CONNECTIONS 5
3.7 INSTALLATION COMPLETION 5

4 SERVICING 6

4.1 BATTERY PACK REPLACEMENT 6

5 NOTICES FOR PRODUCTS OPERATED IN THE USA & CANADA 7

6 BS4 SPECIFICATIONS 9

6.1 ELECTRICAL PARAMETERS: 9
6.2 ENVIRONMENTAL 9
6.3 SAFETY COMPLIANCE 9

7 CONTACT DETAILS 9

Operational Safety Notices

Installer

Installers must be suitably trained and qualified for electrical work, according to the laws and local codes for the locality and country.

This unit must only be installed by personnel that have been trained by Telensa or their representatives to carry out this work.

Power Supply Connection

The supply voltage for the base station is hazardous and all necessary precautions must be taken to ensure the safety of the installer, maintenance staff and any person that may come into contact with the unit or its wiring.

A method of isolating the power supply connection must be included in the supply circuit.

Supply connections must be made water and weatherproof against the weather conditions encountered at the installation location.

This product must be grounded.

Battery Pack

The base station uses a NiMh battery pack to maintain operation during short term power loss.

Only replace this pack with the same Telensa type replacement battery pack.

Radio Transmitter - CAUTION

The base station unit described in this guide emits radio frequency energy through its antenna. Although the power level is low, concentrated energy from a directional antenna may pose a health hazard. Only outdoor antennas certified with this transmitter should be used and must be installed to provide a separation distance of at least 23cm (10 inches) from all persons who could be nearby when the base station is operating.

1 Equipment Overview

The BS4 base station has two weatherproof compartments for the functional components.

The smaller left hand compartment contains the power connection, hazardous voltages and the unit power supply. This compartment should not be opened. Only a trained electrician should open this compartment.

The right hand compartment contains safe voltages at 12V DC maximum. This compartment contains the electronics, the cellular SIM cards and the backup battery.

2 Accessories required

- Antenna, 8dBi gain type:
    - For US / N.America: Shakespeare SKP-794-8-915
    - For EU / UK: Shakespeare SKP-794-8-868

  Do not use any other antenna type!
- Mounting hardware:
    - For wooden pole – Long bolts , nuts x 2
    - For metal / concrete pole - Mounting straps to suit pole diameter, stainless steel x 2
- Tools as required

3 Installation Procedure

The product is installed in two stages. First fit the rear mounting plate to the pole or lighting column. Once the mounting plate is secured, the base station case is then secured to the mounting plate. Finally, the outer plastic protective cover is fitted and clipped in place over the case.

3.1 Mounting location

- The base station must be mounted so that its light sensor is not illuminated by the area lighting or other light source.

3.2 Preparation

- Remove the white outer cover of the base station.
- Loosen the hex head M8 bolt located between the two covers of the base station. Lift it up.
- Slide the base station case up to release it from the keyhole slots on the back plate. Remove the case from the mounting plate.
- Inspect the metal case for exterior damage
- Release the right hand door of the case by unscrewing all six fixing screws. Unscrew so that the screws are threaded into the cover plate, this will make opening the cover easier.
- Open the cover and plug the back-up battery connector into its white PCB mounted connector at the bottom right of the main PCB.
- Fit the cellular SIM cards to the backhaul PCB at the top right if not already installed
- Close the cover and tighten the six cover bolts to prevent moisture ingress

3.3 Mounting plate

The base station mounting plate must be fixed to the top of the mounting pole. There are two types of mounting plate, one for strap fixing, and the other with a U channel on the rear for direct pole mount using two bolts.

- Note the up arrow on the mounting plate and fix the plate this way up
- Fix the mounting plate to the pole or lighting column in the required position.

3.4 Base station case assembly

- Attach the main antenna using the strap and two M5 Nyloc fixing nuts on the rear of the unit.
- Connect the antenna lead to the LH large antenna socket at the bottom of the case and tighten.
- Now that the case assembly is prepared, place it against the mounting plate, locate the two large screw heads on the rear of the unit into the keyhole slots in the mounting plate and drop the heads down into the keyhole slots to hang the case in place. Make sure both fixing heads are engaged in the slots.
- Secure the case to the mounting plate by using the long M8 securing bolt on the front plate. Tighten.

3.5 Power connection

A means of safely disconnecting the base station from power MUST be included in the supply connection.

- If required, trim the mains power lead to the desired length for the installation, strip back and prepare the wire ends
- Isolate and test the source power supply and connect the base station power cable to the supply via a connector or junction box suitable for the installation environment.

NOTE: **This product must be grounded** for safe operation.

3.6 Other connections

- If required, terminate the local internet connection using the recommended weatherproof RJ45 connector and plug into the network connector at the bottom of the unit.

3.7 Installation completion

- Fit the white protective cover over the two pegs at the top of the unit. Lock in place using the clip at the front of the unit.
- Switch on the main supply power
- Check the function of the unit by logging in to the PLANet system as per the Telensa system training.

4 Servicing

4.1 Battery pack replacement

The base station uses a 9.6V NiMh battery pack to maintain operation during short term power loss.

CAUTION: Only replace the battery pack with the same Telensa type BS4 replacement battery pack.

When the battery pack has been identified for replacement;

- Remove the base station outer cover and open the right hand compartment of the case
- Unplug the battery pack from its socket on the PCB
- Remove the battery pack by cutting the three nylon cable ties holding it in place
- If the battery pack is leaking electrolyte then use protective gloves for handling and wash hands immediately afterwards
- Replace the battery pack with the new pack.
- Secure the pack in place using the three supplied cable ties, tighten gently
- Plug in the new battery pack
- Replace the case cover and tighten the retaining screws
- Replace the outer cover and clip in place

Safely dispose of old battery packs following local environmental guidance and legislative requirements.

5 Notices for products operated in the USA & Canada

This device complies with Part 15 of the FCC Rules and ISED's license-exempt RSSs.

Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Consult a dealer or an experienced radio/TV technician for help.

Note that no changes shall be made to the equipment without the manufacturer's permission as this may void the user's authority to operate the equipment.

This transmitter must not be co-located or operated with any other antenna or transmitter.

This device complies with Part 2.1091 of the FCC Rules for an uncontrolled environment. This device is exempt from the routine RF exposure evaluation requirements of RSS-102, section 2.5.2.

This equipment should be installed and operated with a minimum distance of 23cm between the radiator and bystanders.

Déclaration de Conformité Industrie Canada (IC)

Le présent appareil est conforme aux CNR d'Industrie Canada (IC) applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

1) l'appareil ne doit pas produire de brouillage;

2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet appareil est exempté des exigences habituelles d'évaluation de l'exposition RF de RSS-102, section 2.5.2. Cet équipement doit être installé et utilisé avec une distance minimale de 23 cm entre le radiateur et les passants.

Antenna

This radio transmitter type BS4 has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Shakespeare SKP-794-8-915 +8dBi

Under ISED regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication!

Cet émetteur radio type BS4 a été approuvé par l'ISED pour fonctionner avec les types d'antennes indiqués ci-dessous avec le gain maximal autorisé indiqué. Les types d'antennes non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits pour une utilisation avec cet appareil.

Shakespeare SKP-794-8-915 +8dBi

En vertu des règlements ISED, cet émetteur radio ne peut fonctionner qu'avec une antenne d'un type et un gain maximal (ou moindre) approuvé pour l'émetteur par ISED. Afin de réduire les interférences radio potentielles pour les autres utilisateurs, le type d'antenne et son gain doivent être choisis de telle sorte que la puissance isotrope rayonnée équivalente (e.i.r.p.) ne soit pas supérieure à celle nécessaire pour une communication réussie!

6 BS4 Specifications

6.1 Electrical Parameters:

- Rated Voltage: 100 - 240 VAC, 50-60Hz
- Rated Current: 0.5A maximum
- Power Consumption: 15W average, 30W peak
- Radio Transmit Power**:** N America: 4W EIRP using the specified antenna
- Operating frequency band: N. America: 902-928MHz, EU: 868-870MHz
- NiMh backup battery time: Typically 30 minutes after loss of power

6.2 Environmental

- Operating Temperature: -40 to 50 °C Ambient
- Protection Rating: IP66

6.3 Safety Compliance

This equipment complies with the electrical safety requirements of the international safety standard IEC 60950-1, -22.

7 Contact Details

Address:

Telensa Ltd,
Iconix 3
London Road
Pampisford
Cambridge
CB22 3EG • UK

Telephone:

Sales & General: +44 (0)1799 588800
Support: +44 (0)1799 399200

Email: support@telensa.com

Website: http://www.telensa.com