DataSend Installation Instructions

Model: DataSend900 PSTN

Description

The DataSend900 PSTN Unit is the central system control/data collection unit for a DataStream Radio network. The Network is designed to automatically and remotely gather readings from a number of Water Meters located within a defined area.

Note Please refer to the Technical Manual for further information.

Specification

Power Supply: 5Vdc 800mA
Operating Frequency: 902MHz to 928MHz (Frequency Hopping)
Telephone Connection: ITU Approved PSTN Data Modem

Required Equipment

The following items are required for DataSend installation:

- DataSend900 PSTN Unit.
- 5Vdc 800mA Power supply.
- USB-A to USB-A Cable.
- RJ11 Telephone cable suitable to connect to a local phone point.
- Computer running Windows XP®.
- 'DataSend USB Configurator' software.

Installation Instructions

Note: DataStream Systems are intended to be professionally installed. Only a half-wave dipole antenna with a maximum gain of 2.15dBi should be fitted to the product to meet the FCC regulations.
The unit is designed to be wall-mounted and unattended in normal operation.

To mount the unit:

1. Remove the box lid; use a screwdriver to release each of the lid screws from the box.
2. Before fixing, ensure the Box is positioned so that the RF antenna may be orientated vertically (upwards).
3. Using suitable wall mountings screw the box to the wall through the holes in the four corners of the box.
4. Once the box is securely fixed to the wall and before refitting the Lid, connect a suitable 5Vdc Power Supply to the 2.1mm Power Jack.
5. Using a suitable Type-A to Type-A USB Lead, connect the DataSend to a PC that has previously had the *'DataSend USB Configurator'* installed. Ensure the PC is powered-on before connecting to the DataSend.
   Note There is a USB socket mounted inside the DataSend Box.
6. Configure the System as shown in the Configuration Procedure below.
7. Once the System has been configured, disconnect the USB Lead.
8. Refit the Lid and fit the supplied blanking caps to cover the lid screws.
9. Finally connect the DataSend Box to a telephone line via the RJ11 socket.

Configuration Procedure

The DataSend is visible to Windows as a 'virtual Comport'. The *'DataSend USB Configurator'* program will attempt to automatically locate the correct Comport and connect to the DataSend unit. If it fails, an error message will be displayed and manual selection of the Comport may be required.
Note connection failure will normally be caused by starting the program before the USB driver has fully initialized. If this is the case, simply restarting the program will fix the problem.
Once a connection has been established, the program will read the existing configuration from the DataSend. A message will be displayed indicating if the configuration data has been successfully received.
The DataSend may now be configured, as follows:

1. Choose a unique *'Network ID'*. i.e. an ID that is not already used by an adjacent DataStream Network. This value must be different from the Default of 105,129,126,150. If you do not have any preference on the ID, press the *'Generate ID'* button to obtain a random *Network ID*.
2. Carefully edit the *'DataRelay IDs'* list to match the *DataRelay IDs* that were recorded during installation. If there are any duplicate IDs in the list, an error message will be displayed.
3. If required, enable the *'Utility Mask'* option – see the *'Configuration Software Manual'* for details of this option.
   Note if the *'Utility Mask'* option is enabled, all the EndPoints need to be configured to transmit the correct Utility Code for the Nearest DataRelay.
4. Set the required *'Reading Interval'* – the frequency that the latest Endpoint data is retrieved from each DataRelay module. The minimum allowed interval is a function of the number of DataRelays in the Network.
   Note the configuration program will automatically calculate the minimum time required to get data from all the listed DataRelays and will not allow an interval setting below this value. It will also display the maximum length of history available with the selected interval (for most settings this will be 90 days).
5. Ensure the PC's clock is set to the correct time – this will be used to set the real-time clock (RTC) in the DataSend.
6. Write the new configuration data to the DataSend by pressing the *'Write Configuration'* button. Once the DataSend has been successfully updated, a *'Configuration Updated'* message will be displayed.
   Note it is recommended that all the DataRelays should be installed and powered-on before writing the new Configuration to the DataSend unit – the DataSend unit will transmit the required Network ID to each DataRelay as it is registered with the DataSend unit.
7. Optionally import a previously generated route file by pressing the *'Import Route…'* button. This will automatically store a copy of the route file in a reserved area in the DataSend's non-volatile memory. A large route file could take several minutes to copy, so a progress bar will be displayed during the transfer.
   Note the reserved area can store a maximum of 5119488 bytes, so the route file must be no larger than 5119488 bytes. The program will display a warning message if this size limit is exceeded.
8. Finally, start the Network running by pressing the *'Start Network'* button.

See the *'Configuration Software Manual'* for more details on the available settings.

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General Warnings and Safety

Caution Ensure a separation distance of at least 20 cm (8 inches) is normally maintained between the transmitter's antenna and the body of the user or nearby persons. The DataSend is not designed for or intended to be used in portable applications within 20 cm. (8 inches) of the body of the user.
Warning Changes or modifications to the product not expressly approved by BluTower could void the user's authority to operate the equipment. See FCC information below.

This sheet provides instructions needed to successfully connect and configure the DataSend for use in a DataStream Network. These instructions are only a supplement to training in the operation of the product. For further training information, contact BluTower directly.

Regulatory Information

FCC Part 15 Regulation
This device complies with Part 15 of the FCC Rules. 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 complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not transmit simultaneously with any other antenna or transmitter, except in accordance with FCC multi- transmitter product procedures.

Regulatory Information (PSTN Modem Module)

Approvals
ITU-T V.92/V.90/56K (-92 build option), V.34/33.6K (-34 build option), V.22bis/2400 baud (-22 build option),
V.22, V.23, & V.21; Bell 212A & Bell 103
V.44 Error Correction (MT9234SMI)
V.42 LAPM, MNP 2-4 Error Correction
V.42bis & MNP Class 5 data compression
Certifications
UL 1950, EN 60950, CSA 950, AS 3260, CCC
EMC: FCC Part 15 (Class B), Canada (Class B), EN 55022 (Class B), EN 55024
FCC Part 15 Regulation
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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 or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Plug the equipment into an outlet on a circuit that is different from the one used by the receiver.
Consult the dealer or an experienced radio/TV technician for help.
This device complies with Part 15 of the FCC rules. Operation of this device is subject to the following conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.
WARNING – Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Industry Canada
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B respecte toutes les exigences du Reglement Canadien sur le materiel brouilleur.

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