BS400 Base Station
Setup, Configuration and Usage

Wireless Data Communication Hub + LAN Web Page

Compatible with
- SkidWeigh Plus ED4-LTL
- SkidWeigh Plus ED4-IM
- SkidFleet ED5
- SkidFleet ED6
- SkidFleet ED7
- Defender IM3

Version 2.2

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BS 400 Base Station Overview

The BS400 Base Station is an RF communication hub that wirelessly connects your material handling fleet equipped with IVDT products with mobile RF units capturing vehicle and operator data automatically, store and provide various data output sources specific to the BS400, FTP standard network connection, real-time alerts email notification and LAN web page.

BS 400 Base Station Specifications and Features

Base Station
- Housing Enclosure: (7" x 51/4" x 2" / 175 x 130 x 45mm) ABS
- 5.7" TFT Color Touch Screen with High Contrast LED Back Light
- Operating Voltage, 12 VDC
- Current Consumption 250 mA
- 16 Bit Micro Controller
- 64 Mbit Flash Memory
- Real Time Clock With Battery Backup
- USB Interface for Data Upload by USB Memory Stick

Power Supply
- Mode Electronic AC Adapter
- Class 2 Transformer
- Input: 120VAC 60 Hz 260mA
- Output: 12 VDC 1000 mA
- UL, CSA, RoHS

Ethernet Connectivity
- Digi Connect ME9210 Low-emission Design (FCC Class B)
- 32-bit Digi NS921-processor
- Memory Base Population 8MB SDRAM
- Power Requirements Maximum 450 mA, typical 346 mA (Ethernet Activated)
- Integrated 10/100 Mbit Ethernet Interface
- On-chip Hardware Encryption Engine
- Connector RJ-45
- UL 60950-1 EN 60950 (EU)
- CSA C22.2 No. 60950
- EN 55024
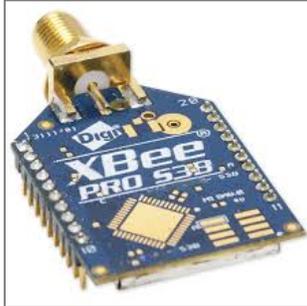
RF Long Range Module XBee-Pro 900 MHz
- Long range (28 miles / 45 km) line of site, Indoor urban (.5 miles / .8 km)
- DigiMesh network protocol
- 900 MHz license free ISM band operation
- Antenna, RPSMA (A09-HASM-675 A)
- FCC Approval MCQ-XBPS3B
- IC Approval 1846A-XBPSB

BS 400 Base Station Set-up

Summary: As part of your system we will be providing you with a wireless base station (BS400) unit that captures information (via RF serial communication) from each lift truck that is equipped with an on-board devices. The base station unit collects the information so that it can be retrieved and sorted through a LAN navigation page. This unit will also archive data through FTP to a designated file and be used to trigger email notification for selected events.

SKM (wireless base station)

FTP Server

Network Hub

Router

Shipping/Warehouse Office

Main Office
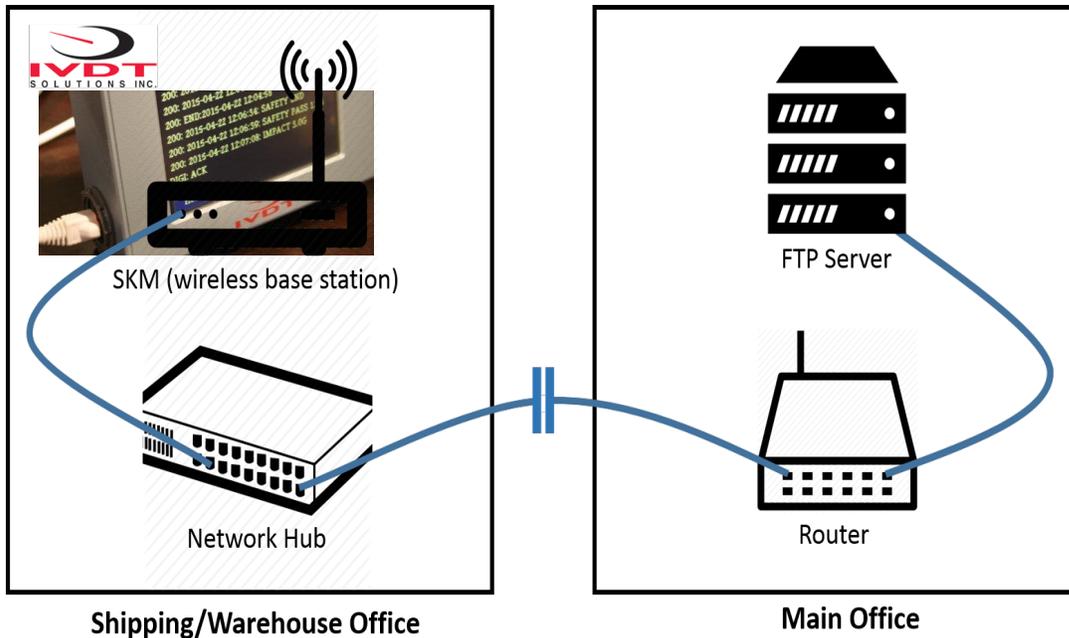
Base Station Connection Details (see illustration):
- The SKM will need to communicate with a FTP server, which is expected to be somewhere physically on your company's premises.
- The SKM should be located in the shipping office (or some central location with clear lines of sight for the lift trucks) and connected to the local switch with an Ethernet cable.
- The SKM will obtain an IP (network) address from the network's DHCP server, that is, will be on the same local network as other computers in the shipping office.
- That local network must, in turn, have access to the FTP server, either directly or via a router.

FTP Requirements
- IP address of FTP server
- Username of FTP account on server
- Password for same
- Folder where the uploaded files will be written (this is for archived data that is no longer stored on the base station.

LAN Webpage
- Assignment of an designated IP address on network

Email Notification
    No Authentication
- Mail Server IP: should be a server listening on port 25
- Mail Sender: A valid email account that is configured and known to the server. ex, forklifts@abc.com

    Authentication Required
- Some details required depending on whether Plain, Authlogin, or MD5 authentication is used.

Network Connection

Once you have plugged in the Ethernet cable and turned on the BS400, the IVDT logo screen will appear. After four seconds the system will automatically default to terminal mode and run a series of checks while validating the I.P. address. Once this has been completed the I.P. address will appear on the screen in terminal mode. You can verify by pressing the **'Home'** button, bottom left of screen then **'Clock & More'** This screen will confirm and display the functioning I.P. address of the unit.

I.P. address confirmation

Terminal Mode, Home, Clock & More, and Admin

Regular operation of the base station will allow users to toggle between 4 screens with specific functions applied to each. The system upon start up will always default to **'Terminal Mode'.**

Terminal Mode
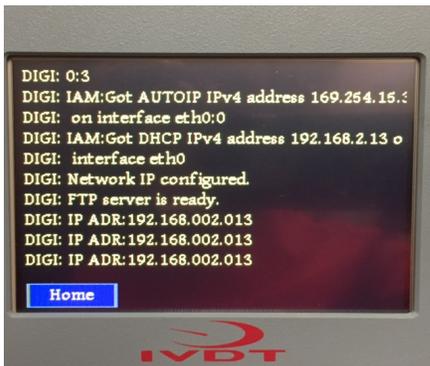
Terminal mode is the systems activity display in continual script. Upon start up it displays system checks and the functioning I.P. address. Once this is complete the screen in terminal mode will display communication events as they are received from the on-board units.

Home

Home provides the user of the base station with the ability to enter either the Clock & More or the Admin functions

Clock & More

Clock & More allows the user to Set Clock, return to Terminal mode or Test Email connections for event notification. It also displays the functioning I.P. address of the unit*. See Clock & More Functions for more information.*

Admin
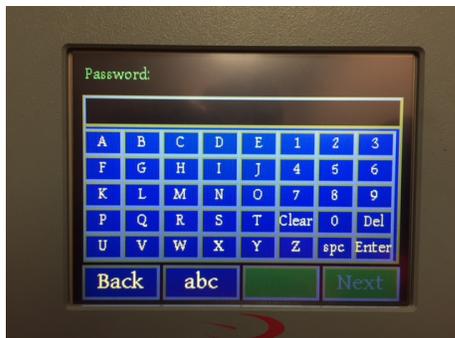
The Admin section is password protected and where those responsible for setting up the base station, enter the network information to send emails and archive information through FTP. *See Admin Functions for more information*

Clock & More Functions

3 Functions: Set Clock, Return to Terminal, and Test Email.

Set Clock

Step 1: Select '**Set Clock**'
Step 2: Press '**Set**' to activate time/date change cursor.
Step 3: Beginning with the hour, bottom left, use the arrow buttons to change the value. When you have reached your desired value, press '**Set**' to move to the next part of the date, until complete.
Step 4: When you have entered all time/date values the time will show the counting seconds, press '**Home**' to exit.

Terminal

This function key, returns the base station to the visible activity screen of the '**Terminal Mode'.**

Test Email

'**Test Email'** allows users to test the connectivity of the network information entered into '**Setup Email'** function of the password protected '**Admin'** menu. *See Admin Functions for setup.* Pressing '**Test Email'** will show no activity on the base station screen, however all recipients entered into '**Setup Email'** will receive a test message email upon an successful test.

Admin Functions

3 Functions: Setup Email, Archive Server Setup, and Archive to FTP Server.

To access the Admin Function Menu you will need to enter the correct password when '**Admin'** is selected in '**Clock & More'.**

Setup Email

Step1: Having entered the '**Setup Email'** function the system will bring you to 2 '**Base Station – Email Notification'** screens. Select the appropriate notifications applicable to your system and press next.

Note:
Only select the event notifications that are optioned in your system and are configured in the on-board units.

Step 2: The system will ask you to input the I.P. address of the **'Mail Server',** enter and press next.
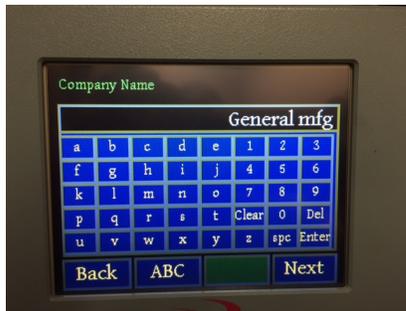
Step 3: The system will ask that you enter a **'Company Name'**, enter the appropriate information for purpose of configuring the email and the LAN webpage.

Step 4: The base station communicates without encryption, enter the Mail Port, typically port 25.

Step 5: Enter the SMTP mode.
0 for no authentication
1 for Plain
2 for Login

Step 6: If authenticated a Username will need to be entered.

Step 7: If authenticated a Password will need to be entered.

Step 8: Enter the email that is setup on your SMTP server.

Step 9: Enter the number of mail recipients, up to 20.

Step 10: Enter the email addresses.

Recycling Mode

Step 11: Repeat steps 9 for the Recycling mode. If recycling mode is not required just enter 1 to move forward.

Step 12: Repeat step 10 for the Recycling mode. If recycling mode is not required just enter an address to move forward.

Archive Server Setup

Step 1: Enter the IP address of the FTP server.

Step 2: Enter the FTP server username.
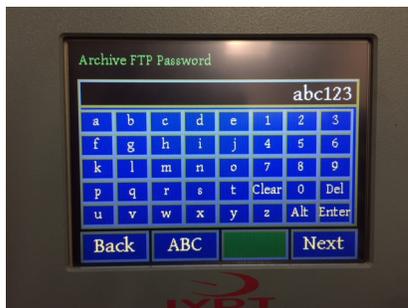
Step 3: Enter the FTP server password.

Step 4: The system will automatically archive the files to the default folder of the FTP server. It is advised for convenience and ease of use to create a designated folder.

Archive to FTP Server

Similar to 'Test Email', 'Archive to FTP Server is a forced / push function allowing the end user to archive the data when required. This is function is particularly useful in the event that network maintenance is required and may interfere with auto archiving.

I.S. Information Suite: Fleet Manager

The BS400, base station provides a LAN webpage that allows users to view and sort data that is present in the activity window.

A: **Location**
Function: This is a title that you can assign to the LAN webpage to describe the company, department or working area for the group of lift trucks communicating with that particular base station.
Instruction: Step 3 of "Setup Email" is a free format field that will ask you input this information.

B: **Login**
Function: This is the I.P. address of the base station.
Instruction: In your web browser type in the I.P. address of the base station. Provided you are connected to the LAN or a subnet of you will have access to the web page.

C: **Activity Window**
Function: The activity window is a continuous scroll that details the events on the web page as they are captured on the base station from the on-board units.
Instruction: This is an automatic function. To update the web page at any time press **F5**.

D: Display Events

Function: Depending on the configuration of the on-board units and the events that are specific to your system, **Display Events**, allows you to select all available or specific events that you would like to see.

Instruction: The webpage will automatically load with all events selected. Unselect the evens that you do not wish to see to narrow your search. Move your cursor over the **Set Data** button **G**, Press **F5.**

E: Selected Row Filter

Function: This allows you to select a specific operator or truck that you would like to see the data arranged according to your **Display Event** selections.

Instruction: Select either Truck or Operator, by unselecting the one you do not wish to see. Move your cursor to the **Activity Window,** select an event that has the truck or operator, press the **Set Data** button **G,** then **F5.**

F: Start Date / End Date

Function: Allows you to access specific data on the base station, not yet archived to the server, by date.

Instruction: Enter the start date and the end date as per the arrangement on the web page and press the **Set Data** button **G,** and press **F5.**

G: Set Data

Function: Organizes and compiles the data based on the query selections above. Works in conjunction with **F5.**

Instruction: Each time a selection has been made before the screen will sort move your cursor over **Set Data**, left click and press **F5.**

Note: Newer versions of the IS: Information Suite Fleet Manager have an onscreen download function.