# Enabling DIP Switches on the QuickServer

**MSA** | **field**server

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# 1    Introduction

There are 3 groups of DIP switches available on the QuickServer.

- **A Bank** – Address DIP Switch
- **B Bank** – Baud rate DIP Switch
- **S Bank** – Secondary DIP Switch

# 2    Setting QuickServer DIP Switches

## 2.1    How to Set the Baud Rate Using DIP Switches

Use the B bank DIP switches to set the baud rate. See DIP switch settings table below

| Baud | B0 | B1 | B2 | B3 |
|------|-----|-----|-----|-----|
| Auto | Off | Off | Off | Off |
| 110 | On | Off | Off | Off |
| 300 | Off | On | Off | Off |
| 600 | On | On | Off | Off |
| 1200 | Off | Off | On | Off |
| 2400 | On | Off | On | Off |
| 4800 | Off | On | On | Off |
| 9600 | On | On | On | Off |
| 19200 | Off | Off | Off | On |
| 20833 | On | Off | Off | On |
| 28800 | Off | On | Off | On |
| 38400 | On | On | Off | On |
| 57600 | Off | Off | On | On |
| 76800 | On | Off | On | On |
| 115200 | Off | On | On | On |

**NOTE:    Auto-baud is only supported for BACnet MS/TP.**

For example, to set the baud rate to 57600, the following DIP switch settings apply:
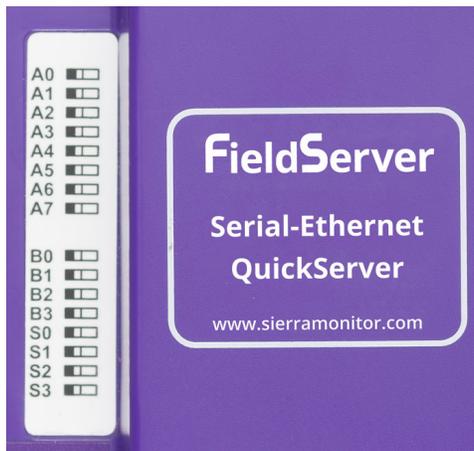
To configure DIP switches B0-B3 to adjust the baud rate, the Dynamic Parameters Field needs to be added to the configuration file.

1. First define a Data Array to hold the baud value read from the DIP switches.

```
Data_Arrays
Data_Array_Name , Data_Format , Data_Array_Length , Data_Array_Function , Scan_Interval
DA_B            , BAUD        , 1                 , Dip_Switches_B      , 2s
```

2. Make sure a connection is defined in the config file, for example Modbus_RTU.

```
Connections
Port   , Baud  , Parity , Data_Bits , Stop_Bits , Protocol
R1     , 9600  , None   , 8         , 1         , Modbus_RTU
```

**NOTE:**   **The baud specified here is just a placeholder. The baud rate set on the QuickServer connection will be as set manually on the QuickServer B bank DIP switches – see example below.**

3. Define a dynamic parameter of Function Baud_Rate and Descriptor_Name of the port that the baud rate has to be set.

```
Dynamic_Parameters
Function    , Data_Array_Name , Data_Array_Offset , Descriptor_Name
Baud_Rate , DA_B            , 0                 , R1
```

4. Download the config file (see the FS-GUI manual for more details).

5. Restart the FieldServer.

**NOTE:**   **The baud rate as set on the DIP switches is only read at start-up. To set a new baud rate, make the DIP switch changes and restart the QuickServer.**

The baud rate as set on the B bank DIP switches can be found in the FS-GUI Data Arrays section as shown below.
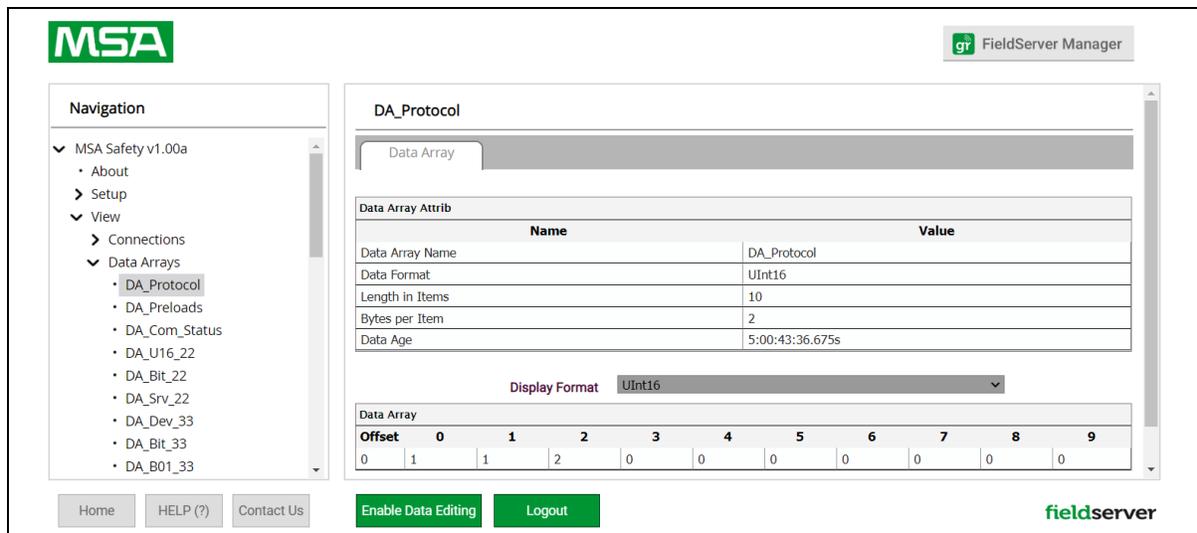
The baud rate as set on the B bank DIP switches can also be found in the FS-GUI Connections section as seen in the following screenshot.
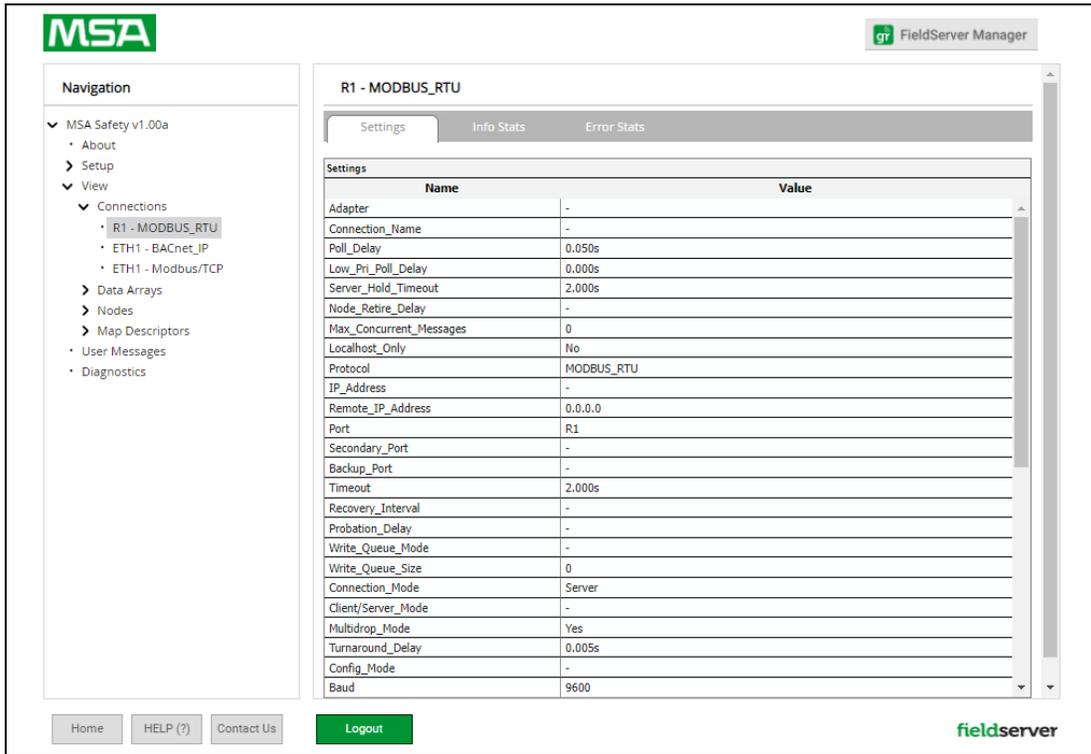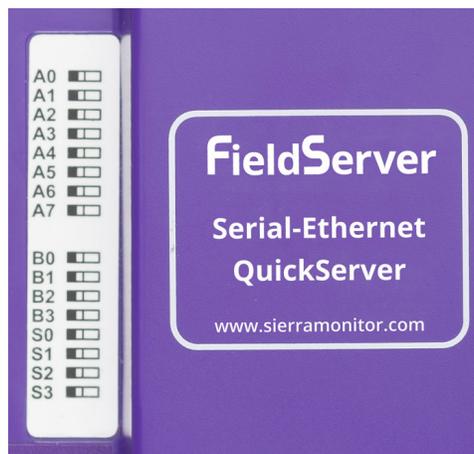


## 2.2 How to Set the Node_ID Using DIP Switches

Use the A bank DIP switches to set the Node_ID. See the table of A bank DIP switch combinations in the QuickServer Start-up Guide for a complete list of settings.

For example, to set the Node_ID to 18, the following settings apply:

| Address | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|---|
| 18 | Off | On | Off | Off | On | Off | Off | Off |

To configure DIP switches A0-A7 to adjust the Device ID, the Dynamic Parameters Field needs to be added to the configuration file.

1. Define a Data Array to hold the Node_ID Value read from the DIP switches:

```
Data_Arrays
Data_Array_Name , Data_Format , Data_Array_Length , Data_Array_Function , Scan_Interval
DA_A            , UINT16      , 1                 , Dip_Switches_A      , 2s
```

2. Make sure a connection is defined in the config file, for example Modbus_RTU.

```
Connections
Port   , Baud  , Parity , Data_Bits , Stop_Bits , Protocol
R1     , 57600 , None   , 8         , 1         , Modbus_RTU
```

3. Also, make sure the Node is defined for the Node_ID that will be set in the DIP switches.

```
Nodes
Node_Name , Node_ID , Protocol     , Port
Device_A  , 11      , Modbus_RTU   , R1
```

4. Then define a dynamic parameter of Function Change_Node_ID and Descriptor_Name of the Node that the ID has to be set.

```
Dynamic_Parameters
Function        , Data_Array_Name , Data_Array_Offset , Descriptor_Name , Low_Limit , High_Limit
Change_Node_ID  , DA_A            , 0                 , Device_A        , 1         , 255
```

5. Download the config file (see the FS-GUI manual for more details).

6. Restart the FieldServer.

**NOTE:    The Node ID is only read on startup. To set a new Node ID, change the DIP switch settings and restart the QuickServer.**

The Node_ID set on the A bank DIP switches is now shown in the FS-GUI Nodes section as seen below.
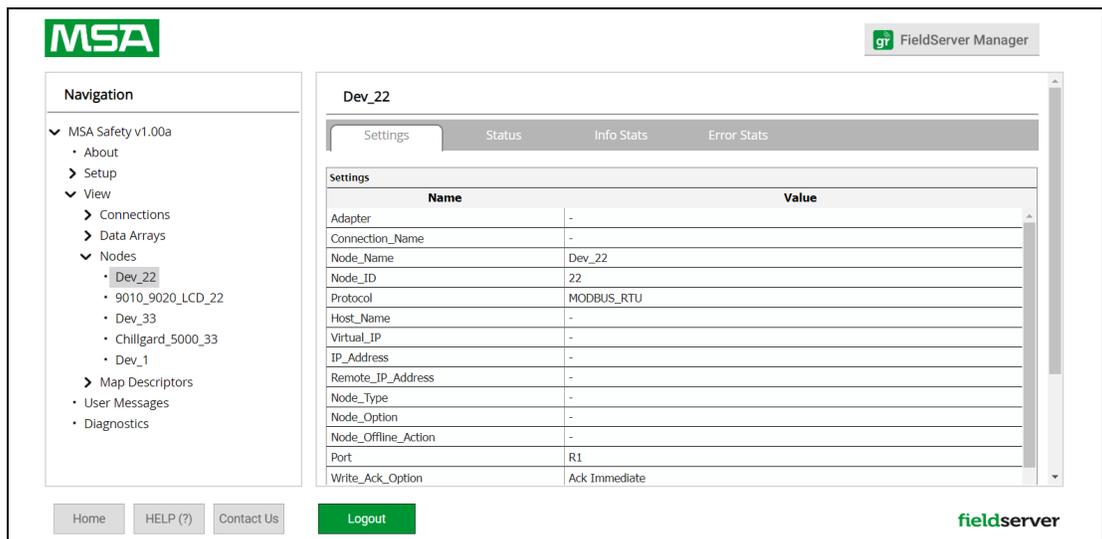
### 2.3    How to Set the System Station or MAC Address Using DIP Switches

Use the S bank DIP switches to set the MAC_Address. See the S bank table in QuickServer Start-up Guide for complete list of settings.

When using Change_System_Address, the Descriptor_Name is the Title under the Bridge section.

Use the S bank DIP switches to set the MAC Address. See the DIP switch settings table below.

| MAC Address | S0 | S1 | S2 | S3 |
|:---:|:---:|:---:|:---:|:---:|
| 0 | Off | Off | Off | Off |
| 1 | On | Off | Off | Off |
| 2 | Off | On | Off | Off |
| 3 | On | On | Off | Off |
| 4 | Off | Off | On | Off |
| 5 | On | Off | On | Off |
| 6 | Off | On | On | Off |
| 7 | On | On | On | Off |
| 8 | Off | Off | Off | On |
| 9 | On | Off | Off | On |
| 10 | Off | On | Off | On |
| 11 | On | On | Off | On |
| 12 | Off | Off | On | On |
| 13 | On | Off | On | On |
| 14 | Off | On | On | On |
| 15 | On | On | On | On |

For example, to set the MAC Address to 11, the following settings apply:
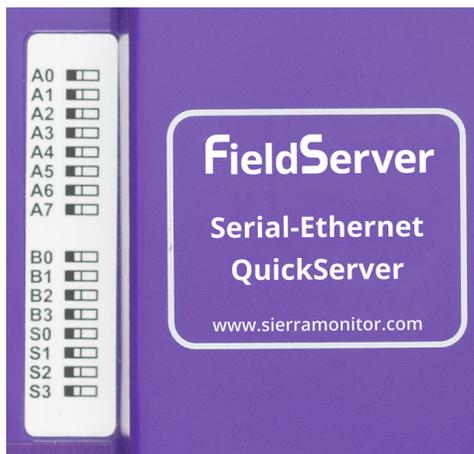
To configure the DIP switches S0-S3 to adjust the BACnet MAC Address, the Dynamic Parameters Field needs to be added to the configuration file.

1. Define the MAC Address in the Bridge section of the config file:

```
Bridge
Title                    , System_Station_Address
MAC_Address test , 1
```

2. Define a Data Array to hold the MAC Address Value read from the DIP switches

```
Data_Arrays
Data_Array_Name , Data_Format , Data_Array_Length , Data_Array_Function  , Scan_Interval
DA_S             , UINT16       , 1                 , Dip_Switches_S        , 2s
```

3. Then define a dynamic parameter of Function Change_Node_ID and Descriptor_Name for the Node that the ID should be set.

```
Dynamic_Parameters
Function                     , Data_Array_Name , Data_Array_Offset , Descriptor_Name , Low_Limit , High_Limit
Change_System_MAC_Addr , DA_S             , 0                 , MAC_Adress test , 1          , 15
```

4. Download the config file (see the FS-GUI manual for more details).

5. Restart the FieldServer.

**NOTE:  The MAC Address as set on the DIP switches is only read at start-up. To set a new MAC Address, make the DIP switch changes and restart the QuickServer.**

The MAC Address/System_Node_ID set on the S bank DIP switches is now shown in the FS-GUI Settings section as seen below.
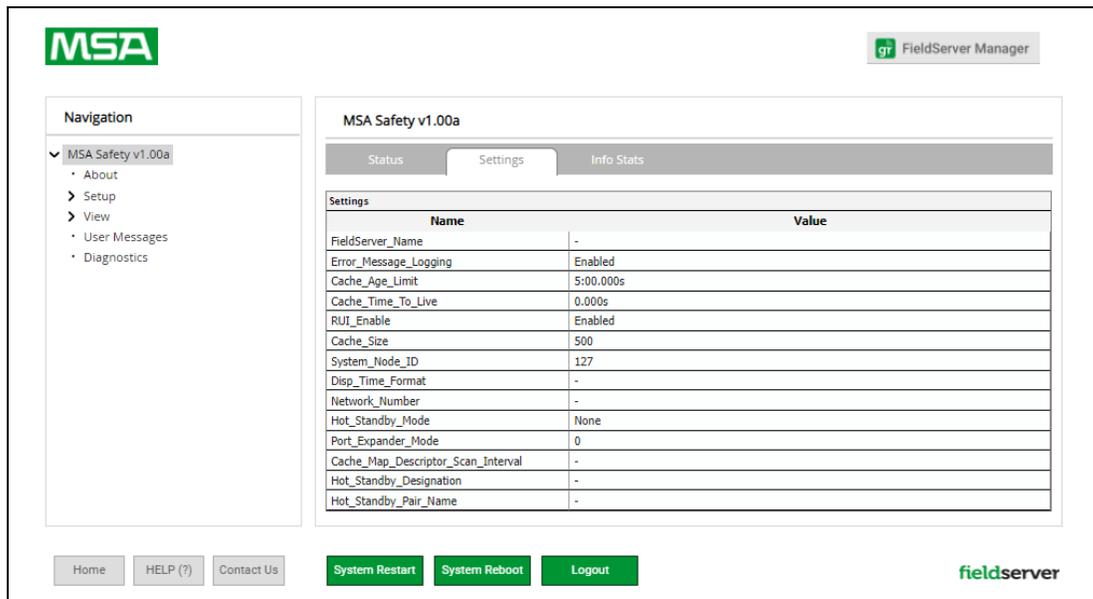
# 3  Profiles

## 3.1  How to Load Different Config Files

The S-Bank DIP switches can be used to set up different profiles each linked to a unique config file.

1. Create the different config files for each profile, hereafter called the Profile Configuration files. In the example below, the files are called prof1.csv, prof2.csv, prof3.csv.

2. Create a profiles definition config file that will be used to define the profiles. This file can be named any name and must end with .csv. When downloaded, it will be renamed on the FieldServer to config.csv. Start by adding a Data Array section that will hold the DIP switch value:

```
Data_Arrays
Data_Array_Name , Data_Format , Data_Array_Length , Data_Array_Function , Scan_Interval
DA_LOAD_CSV     , UINT16      , 1                  , ProtoCarrier_ID_S   , 2s
```

3. Then create a Config table section and add each Profile Configuration file with a Table Index Value to match the DIP switch's value.

```
Config_Table
Config_Table_Name , Table_String , Table_Index_Value
csvfilenames      , prof1.csv    , 1                    // Load config 1
csvfilenames      , prof2.csv    , 2                    // Load config 2
csvfilenames      , prof3.csv    , 3                    // Load config 3
```

**NOTE:   In the above example, a DIP switch value of 3 will load the profile that consists of prof3.csv.**

4. Add a dynamic Parameters section that references the data array name and Config Table Name, defined previously.

```
Dynamic_Parameters
Function , Data_Array_Name , Data_Array_Offset , Config_Table_Name , Restart_Method
load_csv , DA_LOAD_CSV     , 0                 , csvfilenames      , On_Change
```

5. Download the Profiles Definition config file from the Configuration File Transfer page, and download the individual profile configuration files from the General File Transfer page.  See the FS-GUI manual for details.

6. Make sure to restart the QuickServer for changes to take effect.

By setting the DIP switches specified in the following table, the associated profile configuration file will be loaded at start-up. For example, setting the DIP switch to a value of 2 will load profile configuration file prof2.csv.

| Setting | S0 | S1 | S2 | S3 |
|---|---|---|---|---|
| No change | Off | Off | Off | Off |
| 1 | On | Off | Off | Off |
| 2 | Off | On | Off | Off |
| 3 | On | On | Off | Off |
| 4 | Off | Off | On | Off |
| 5 | On | Off | On | Off |
| 6 | Off | On | On | Off |
| 7 | On | On | On | Off |
| 8 | Off | Off | Off | On |
| 9 | On | Off | Off | On |
| 10 | Off | On | Off | On |
| 11 | On | On | Off | On |
| 12 | Off | Off | On | On |
| 13 | On | Off | On | On |
| 14 | Off | On | On | On |
| 15 | On | On | On | On |

The FS-GUI User Messages Information section shows the currently loaded profile as seen below.

### 3.2    How to Clear Profiles

This section describes a dynamic parameter called Clear_Profiles. This will clear the profile database if any value is written to the data array.

This dynamic parameter is used to clear all profiles that are loaded on start-up. Any value written to the data array will trigger the clearing of profiles. A restart is required to clear the active configuration if the profiles have already been loaded.

```
// Dynamic_Parameters

Function       , Data_Array_Name , Data_Array_Offset , Length
Clear_Profiles , DA_MODE         , 0                 , 0
```

This is the table that connects a profile name with a csv file to load. These profiles can either be loaded from the web or from a data array (DIP switch included).

```
// Profiles

Profile_Filename , Profile_Parameters , Profile_Selector , Profile_Name
prof1m.csv       , node_id            , 1                , Veris H8035 MSTP
prof2m.csv       , node_id            , 2                , Veris H8036 MSTP
```