# *Sending Email via Public Email Sites*
# *Model 5300 Controller*

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## Overview

This document shows you how to set up the Model 5300 to send emails to a public email service such as GMX. The advantage of this is that you can then send emails to public sites and multiple domains.

The first section will be more of an addendum for those of you familiar with sending emails via a private server.

After that we will go more in depth for those not familiar with sending email from the Blue Fusion controllers.

You will find supplemental information on sending/receiving emails to/from the controller in the 5300 Communication Guide:

http://www.ctc-control.com/customer/techinfo/docs/5300_951/951-530002.pdf

## Sending an email with Auth and Login sequence overview

In the past the Model 5300 had the ability to send emails as long as they didn't require an AUTH and LOGIN sequence as many public email sites require. Information on setting up email without this requirement can be found in the Communications Guide:

http://www.ctc-control.com/customer/techinfo/docs/5300_951/951-530002.pdf

The limitation to using a private server is that all emails must go to the domain(s) that the server supported.

New to the Model 5300 firmware release 5.00.49 is the support of the AUTH LOGIN sequence used by a number of public email sites. One in particular is www.gmx.com. This web site can be used for both POP3 and SMTP email. Unlike sites like gmail and hotmail, it does not require SSL/TLS encryption. Using gmx as an email server, you can send email to any account. This site will allow you to send email to multiple email domains.

**If you are already familiar with how to send email** via a private email server using WebMon, note that you will need to either manually create your own email text file or modify the file created via WebMon to enable the AUTH LOGIN feature.  To do this you specify a USER and PASSWORD definition with the [SMTP] section of your email_XXX.email file as follows.

```
[SMTP]
IP=213.165.64.45
PORT=25
USER=bluefusion@gmx.com
PASSWORD=BlueFusion
HELO=
TO=emailaddress@gmail.com
FROM=bluefusion@gmx.com
CC=
SUBJECT=Message from BlueFusion1
 [SMTP_MESSAGE]
The current value of the mstimer (register 13002) is %dR13002.
```

**USER=** User account name, limited to 80 characters. For GMX mail server this is your email address.

**PASSWORD=** Email account password, limited to 80 characters.

These email files need to be a text file.  You can create it using any text editor such as note pad.  These email files must be named email_XXX.email, email_XXX.email and so on, where XXX indicates the email number you use to send via register 12317.   So if you're setting up email number 1 the file name needs to be email_001.email.

## Starting from the beginning (step by step guide)

*If you have never set up email before we'll start from the beginning.*

### Overview

*Simple Mail Transfer Protocol (SMTP)*, documented in RFC 821, is the Internet's standard host-to-host mail transport protocol which typically operates over TCP port 25. The controller is capable of sending formatted email, using SMTP, under the control of a Quickstep program or by remote communications accessing a data register. Messages may be created within an ASCII text editor.

### *Note:*
1. For email to operate properly the controller must have an email account on the email server. This will consist of a user account and password. The same account can be shared by multiple controllers.

### Register Access

Text files created in a specific format and naming convention are stored on the flash disk /_system/Emails subdirectory. Files are stored with a name of "Email_###.email" where „###" references the value which would be written to the SMTP Send Register (12317), to request transmission. For example, a file name of "Email_001.email" would be sent if a „1" was written to the SMTP Send Register. Register 12318 is the SMTP Status Register. The status contents are defined as follows, after a write to the SMTP Send Register:

| STATUS | DESCRIPTION |
|---|---|
| 0 | Processing |
| -1 | Undefined |
| 0x80000100 | General Error, out of memory |
| 0x80000900 | Error, parameter error, aborted |
| 0x80001400 | Requested operation has failed. |
| 0x80002100 | Error, cannot connect to host. |

*Note:*

1. These are hex values.  You can set CTCmon to display in hex values as shown below:
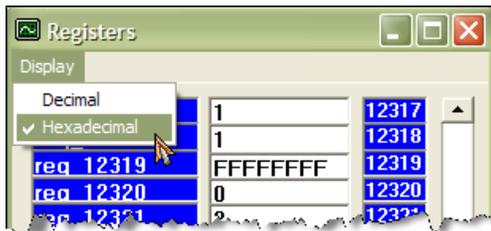


### Step1)  Setup a public email account

You'll need to setup a public email account such as GMX (www.gmx.com) and find out the smtp server dns name or IP Address(es) it uses.

Gmx uses 4 different IP addresses: 213.165.64.42, 213.165.64.43, 213.165.64.44 and 213.165.64.45.   Any one of those will work.

*Note:*

1. If you only have the dns name and cannot find the IP Address you can translate the dns name of the smtp server using this site:

http://www.hcidata.info/host2ip.htm

For example the dns name of gmx server is smtp.gmx.com.   Using the site listed above you enter this and click on Find IP Address.

This page can be used to find the IP of a host machine (convert host to IP) or domain name (convert domain name to ip address) or find the name of one of the hosts at an IP address (convert ip address).

It will also show the location of IP address. The country data is about 94% accurate.

**Convert Host Name to IP Address or Vice Versa**

Host Name [smtp.gmx.com]     IP Address [127.0.0.1]

[Find IP Address]     [Find Host Name]

Which gives you the following results:

This page can be used to find the IP of a host machine (convert host to IP) or domain name (convert domain name to ip address) or find the name of one of the hosts at an IP address (convert ip address).

It will also show the location of IP address. The country data is about 94% accurate.

**Details of smtp.gmx.com**

Host Name  : smtp.gmx.com

IP Address : 213.165.64.43 and 213.165.64.44 and 213.165.64.45 and 213.165.64.42

Location   : Germany (accuracy)

### Step2)  Setup the email file you plan to send

This file is a simple text file and can be created using a text editor such as note pad.  The file will look much like the following example.  *Be sure to put a carriage return on the very last line of your message so that the cursor is all the way to the left and below your message.* This file will be named Email_nnn.email.  Where nnn is the email number.  You can create up to 999 different email messages.  The file name is case sensitive.

```
 [SMTP]
IP=213.165.64.45
PORT=25
USER=bluefusion@gmx.com
PASSWORD=BlueFusion
HELO=
TO=emailaddress@gmail.com
FROM=bluefusion@gmx.com
CC=
SUBJECT=Message from BlueFusion1
 [SMTP_MESSAGE]
The current value of the mstimer (register 13002) is %dR13002.
```

The breakdown of this info is as follows:

    [SMTP]
    IP=213.165.64.45   *the IPAddress of the SMTP server of the email service you are using.*
    Port=25   *Port 25 is the typical port used by email servers.*
    USER=bluefusion@gmx.com   *this is the User account name.  For GMX mail server this is your email address.  Limited to 80 characters.*
    PASSWORD=BlueFusion  *email account password.  Limited to 80 characters.*
    HELO=
    TO=emailaddress@gmail.com
    FROM=bluefusion@gmx.com
    CC=
    SUBJECT=Message from BlueFusion1
    [SMTP_MESSAGE]
    The current value of the mstimer (register 13002) is %dR13002.   *this is where you enter the message you want to send.  In this example we are sending a text message and inserting the mstimer register value via the %dR13002.  The value of the register at the time that the email send is executed will be inserted into the email.*

For additional info on these fields see the Appendix.

### Step3)  Download the file to the email directory in the controller

To do this you will ftp into the controller and drag and drop your file in the _system/Emails directory.  You can do this via Windows Explorer**.**

Enter in ftp://IPAddressofController  in the address field.  Then click Okay.
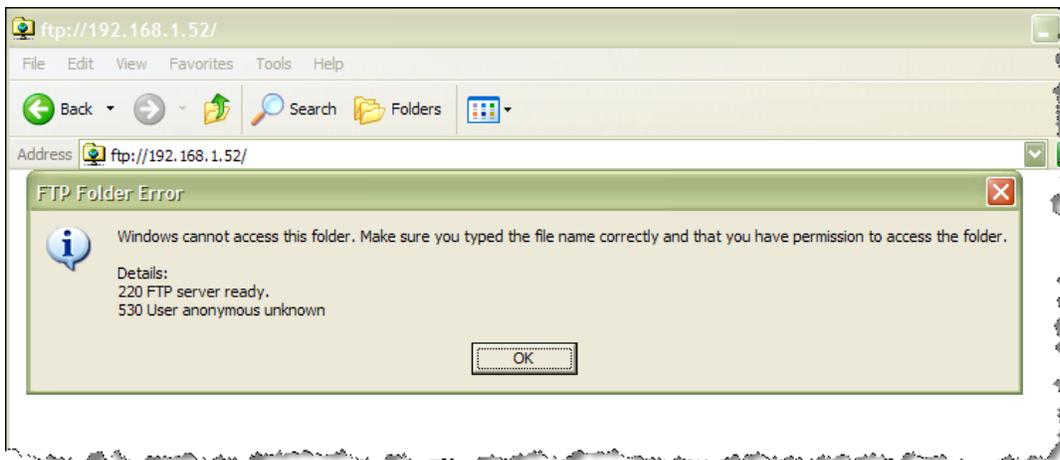
Select Login As:
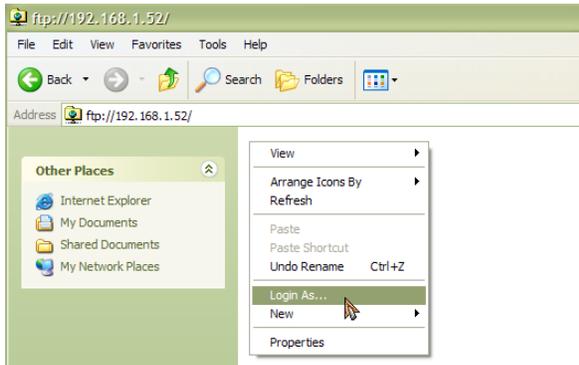


Type admin in the User name box and BlueFusion in the password box (assuming your controller is still using the default password).



Click on the _system directory
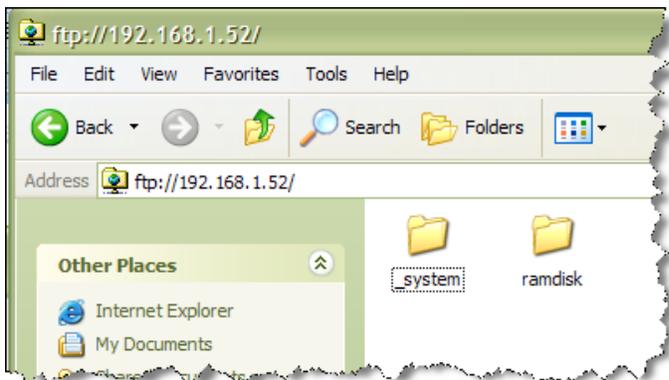


You can then drag and drop the file(s) you created in step 2 into the Emails directory.
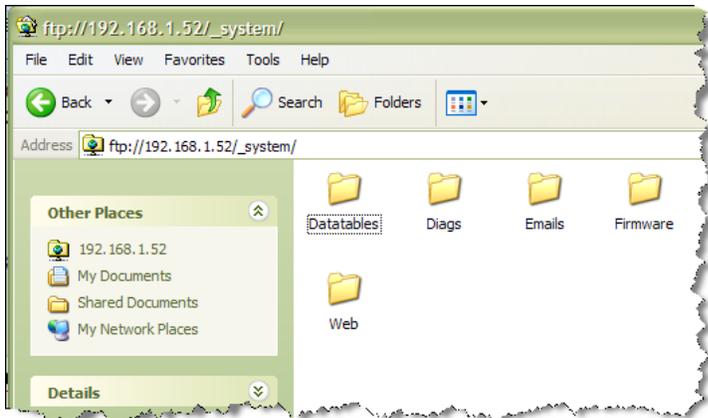
### Step4)  Test your email

Here we will make sure your email will send properly.  We can do this by simply setting the email number(s) to the SMTP Send Register (12317) via CTCMon.

In this example we want to send email file Emal_001.email, so we set register 12317 to 1.  The Email Result Register 12318 will be set to 0 while it's sending and then be set to 1 after it successfully sends.  If register 12318 goes to any other value you have a fault and should refer to the section on Troubleshooting.
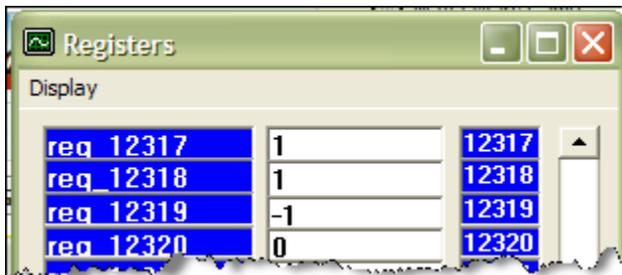


The result of the email sent from the example email file created in step 2 is as follows.
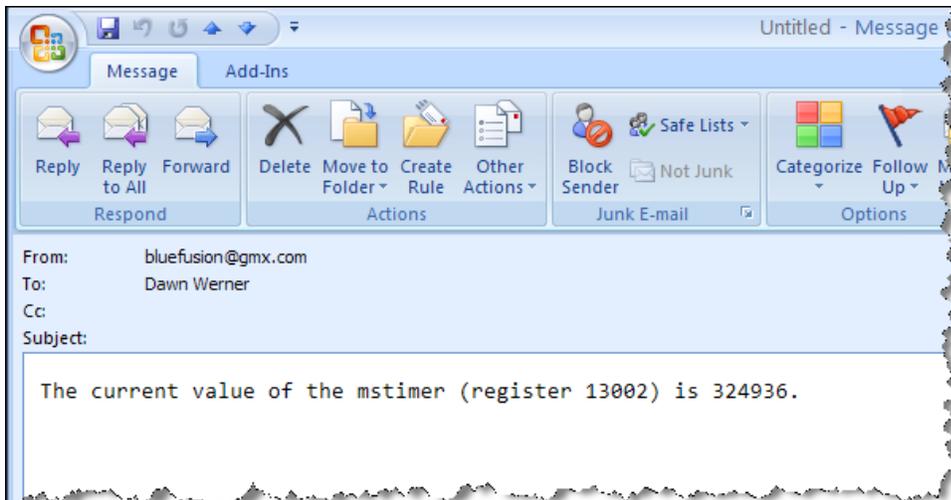
**Step5)  Add the code to send the email to your quickstep program**

This is done by simply setting the email number of the email file you want to send to register 12317.  You will probably want to add code to confirm the email was sent properly by checking that register 12318 is set to one after a delay.

Below is an example.

```
[1] Check_Input
    ;;; Check to see if an email should be sent
    --------------------------------------------------------------------------------
    <NO CHANGE IN DIGITAL OUTPUTS>
    --------------------------------------------------------------------------------
    monitor Input_1 goto Send_Email_1
    monitor Input_2 goto Send_Email_2

[5] Send_Email_1
    ;;; Send the first email message
    --------------------------------------------------------------------------------
    <NO CHANGE IN DIGITAL OUTPUTS>
    --------------------------------------------------------------------------------
    store 1 to Send_Email_reg12317
    goto Confirm_Send

[6] Send_Email_2
    ;;; Send the second email message
    --------------------------------------------------------------------------------
    <NO CHANGE IN DIGITAL OUTPUTS>
    --------------------------------------------------------------------------------
    store 2 to Send_Email_reg12317
    goto Confirm_Send

[7] Confirm_Send
    ;;; Confirm that the message is sent then go back and wait for another email send input.
    ;;; Goto error if it is not.
    --------------------------------------------------------------------------------
    <NO CHANGE IN DIGITAL OUTPUTS>
    --------------------------------------------------------------------------------
    if Email_Result_Reg_12318=1 goto Check_Input
    if Email_Result_Reg_12318 < 0 goto Email_Failure

[8] Email_Failure
    ;;; Here you can either try to send the message again, or report the error to an HMI.
    --------------------------------------------------------------------------------
    <NO CHANGE IN DIGITAL OUTPUTS>
    --------------------------------------------------------------------------------
```

## Troubleshooting

If in step 4 you find that your result comes back negative you'll want to check the following items.   Check with your IT department if you're not sure about any of these.

1)  Are the IPaddress, subnet mask, and gateway set-up properly for you network?
    a.  The IPaddress is set up using the 4 registers starting at 20048
    b.  The subnet mask is set up using the 4 registers starting at 20064
    c.  The gateway is set up using the 4 registers starting at 20080
        i.  Don't forget you need to set register 20096 to 1 and recycle power for any changes to the network settings to apply.
2)  Make sure the port you are using is correct for the public server you are using.
    a.  This was set in your email file in step 2.
3)  Make sure your firewall is not blocking this port.
4)  Confirm that the SMTP server IPAddress was set correctly in the email file you created in step 2.
5)  Make sure the username and password were also setup properly in step 2.

If you still can't get emails to send refer SMTP Email Diagnostics in the 5300 Communications Guide on page 75.

## Appendix

## Creating Emails using ASCII Text Editor

The text used to create emails, to be sent by a 5300 controller, requires a specific format. That format includes various 'section headers', used to define the necessary parameters.

There are two section headers. The first, known as [SMTP], must appear in the

beginning of the file and is used to define all the specific details of the email message,

such as destination, mail server, etc. No spaces are allowed except within the email

message itself, designated by the [SMTP_MESSAGE] section header. It is best to use a

sample email as an example:

```
# This is a comment
[SMTP]
IP=12.40.53.10
PORT=25
USER=bluefusion@gmx.com
PASSWORD=BlueFusion
HELO=
TO=kevin@ctc-control.com
FROM=Test5300@ctc-control.com
CC=
BCC=
SUBJECT=Test email message
 [SMTP_MESSAGE]
Enter Email Message to send, %05dR13002 references register...
# - The Pound sign may appear as the first character in any line. All following text on
that line will be ignored. It is used to place comments within your email definition
document.
```

The above sections are described as follows.

[SMTP] – Section header. Required to be on the first line of the file.

IP= This is the SMTP Server IP address of the server handling your email account. It is typically within the same domain as the 'From:' email address. The "dot" notation format is used. No spaces are allowed before or after the '=' sign.

PORT= The standard SMTP port used is 25; it may be changed here if desired. This is the port the SMTP server will be listening on for connection requests.

**USER=** User account name, limited to 80 characters. For GMX mail server this is your email address.

**PASSWORD=** Email account password, limited to 80 characters.

HELO= Optional field which can be used to report your domain within the email. It is required by some hosts. For example the domain of www.ctc-control.com would be ctc-control.com.

TO= Required field, defining the destination. Only one may be listed per 'TO'

although multiple 'TO' fields are allowed.

FROM= Required field, the email address that represents the controller and that can be replied to. This account should exist on the SMTP server, if not then relaying must be enabled.

CC= Optional field, defining the destination to copy the email to. **Only one may be listed per 'CC' although multiple 'CC' fields are allowed.**

BCC= Optional field, defining the destination to copy the email to. Only one may be listed per 'BCC' although multiple 'BCC' fields are allowed. Typically BCC fields are hidden and will not be displayed when the email is received.

SUBJECT= Required field, specifies the email subject, generally a short summary.

Spaces are allowed within the text.

[SMTP_MESSAGE] = Section header. Required prior to the start of the email text message. All following text is assumed to be part of the email. Reference the "Creating Emails using WebMON" section for details on the 'Message' area.

Ensure that the enter key is entered on the last item in the message, returning the cursor to the far left hand side of the message.