

## ***Application note for sample code "Tweet Application"***

**WBSACVLXY-XX**

Mar-2016

## Revision History

<b>Version</b>	<b>Date</b>	<b>Description</b>
<b>1.0</b>	2015/03/17	First official release

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## 1 Introduction

This Documentation is instructions for test of HTTP POST by posting a tweet on Twitter using the Arduino/Genuino UNO (referred to as Arduino) and WLAN modules "WYSACVLXY-XX" (referred to as WLAN module).

A part from this, there is a need for Internet-connected wireless access point, And PC for programming, Monitoring and setting Arduino.

## 2 Preparation

### 2.1 Baud rate setting of WLAN module

Arduino UNO has only one UART (Hardware Serial), which is used to connect the PC. This is for debug and facilitates developer to modify program and to confirm operation. Connection to WLAN module uses GPIO of Arduino emulates as UART ("Software Serial"). Connect PC and WLAN module direct by USB.

Set the baud rate to 9600bps as Arduino cannot receive some data when the baud rate is 115220bps as default of WLAN module. (Setting the rate to maximum or 2,000,000bps will not cause a problem when using HW serial.)

Connect the WLAN board and the PC directly by USB, and then WLAN board is recognized as virtual COM port in Windows PC. (USB Serial Port (COMxx) xx is numeric value. Note this value). Download and install the driver from [FTDI's web site](#) if required. Connect to WLAN board from PC via USB by terminal software such as "Tera Term". The setting of Tera Term is following:

**Table 1: Setting of Tera Term**

[Setup] → [Terminal...]	[New-line], [Receive:]	"CR+LF"
	[New-line], [Transmit:]	"AUTO"
	[Local echo:]	checked
[Setup] → [Serial port...]	[Port]:	<<virtual COM number>>
	[Baud rate:]	<b>115200</b>
	[Flow control:]	"none"

Push the button (SW1) on WLAN module connection is successful, when the version information is displayed on the console screen.

Send the following command from console software

**WSTC0101<CR><LF>**

This command means baud rate of UART set to 9600bps.

The setting is finished when "ACK" is shown on the console. Baud rate of the UART is set to 9600bps after the reset.

For more information about this command, please refer to following sections in the Document "WLAN Embedded Software Spec."

- 3. Control Command Syntax
- 5.1 Common Commands, "STC"
- 5.3 Common value(STC, GTC), No.01 "UART baud rate (bps)"

## 2.2 Equipment Overview and Installation

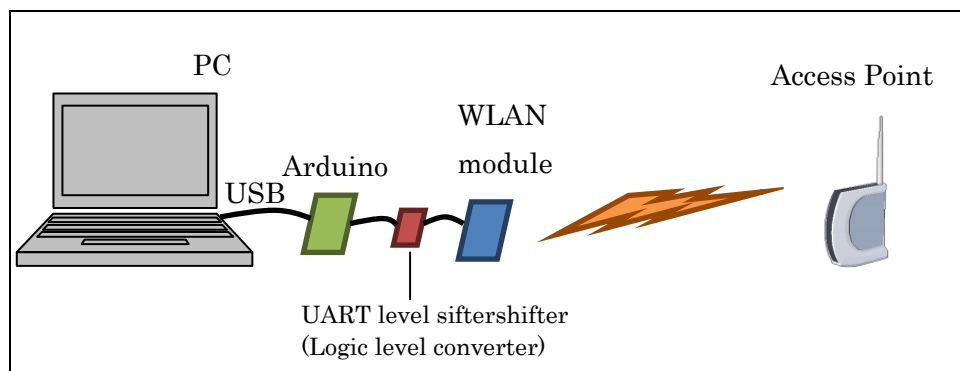


Figure 1: Equipment composition

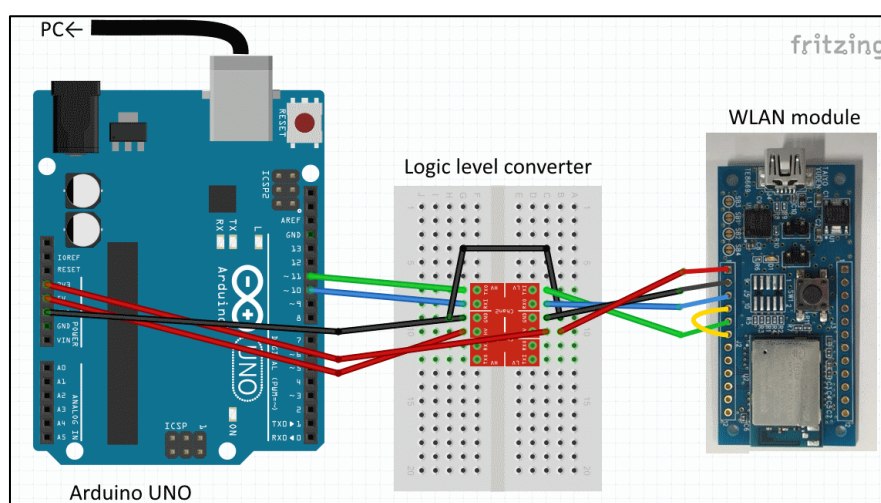


Figure 2: Wire connection between Arduino UNO and WLAN module

WLAN module works at 3.3V, but Arduino UNO works at 5V. So, voltage conversion is required between both UARTs. Module called as level shifter or logic level converter is used for the conversion. "[sparkfun Bi-Directional Logic Level Converter](#)" is used as UART level shifter in Figure 2.

D10, D11 pins of Arduino are used for RX, TX of software serial. The power supply of the WLAN board is supplied from 3.3V pin of Arduino. UART Flow control becomes invalid by short-circuits of UART1\_CTSN and UART1\_RTSN of WLAN board (Yellow line in above Figure 2).

\* Please refer to the Evaluation board Manual for more information about the connection of the WLAN module and the various devices.

## 3 Sample code

\*This document is written based on Arduino IDE Ver1.6.7 distributed by Arduino.cc.

Following 1 additional library is used in the sample code.

- Software Serial library (Standard additional library in Arduino IDE)

"Software Serial library" are included in standard additional libraries of Arduino IDE. Install it from [Sketch] → [Include Library]

To tweet on Twitter requires authentication by OAuth. However, it is difficult to be authenticated by only

Arduino. So, in this case the authentication is conducted by a proxy server prepared for library of "Tweet Library for Arduino" (author: NeoCat).

<http://playground.arduino.cc/Code/TwitterLibrary>

At first, you should create your Twitter token to post a message using OAuth.

<http://arduino-tweet.appspot.com/oauth/twitter/login>

Sign In by your twitter account, and permit the application (proxy server) to access your twitter account. Note the "token" obtained here because "token" is used in the sketch (program). Do "STEP1" only as the library provided from the site cannot be used for WLAN module because it's for EthernetShield.

Operating the sample code requires modifying as following:

- Wireless access point settings (at line 20-21)

SSID, Password

For more information about this command, please refer to following sections in the Document "WLAN Embedded Software Spec."

- 3. Control Command Syntax
- 5.4 Infrastructure Control Commands , "STI"
- 5.6 Profile Table(STI, GTI, STU, GTU), No.01~08

- Your token (at line 24)
- Message (at line 26)

After modified as above, write a program to the Arduino using the Arduino IDE.

Arduino tweets a message to your Twitter account.

\* **Please avoid sending more than 1 request per minute** in order not to overload the proxy server of arduino-tweet.appspot.com.

\* Twitter seems to reject repeated tweets with the same content (returns error 403). So, you should change the message (String "msg") in sample code each time.

## 4 Note

Acknowledgment: We referred to the source code of "Twitter Library for Arduino" in preparing the sample code. Thank you to NeoCat.

<http://playground.arduino.cc/Code/TwitterLibrary>

\*Arduino is open-source hardware. Twitter is a registered trademark of Twitter, Inc. All other trademarks are the property of their respective owners.

This sample code is provided "as is" and is not supported by Taiyo Yuden.