

Software Embedded Wireless LAN Module 802.11b/g/n WYSACVLXY-XX & WBSACVLXY-1 Overview

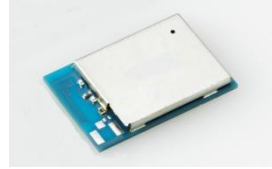
Version 1.1

November 30th, 2016

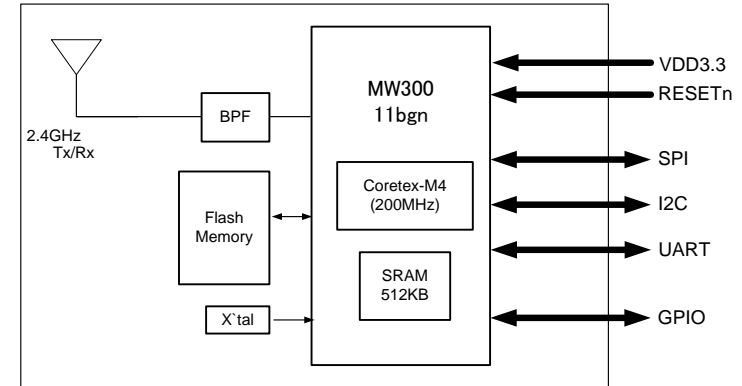
WYSACVLXY-XX: Software Embedded 802.11b/g/n Module

Features

- SMD type module. with trace ANT
- IEEE802.11b/g/n conformity.
- Channel Number : 1 to 11 channel (11bgn)
- Interface : UART (baud rate: 9600~2000000, default 115200)
- Built-in Application Processor, WLAN front end, Flash Memory, Xtal, Power circuits
- Security: WPA-2 using AES/CCMP along with legacy security features
- Advanced Wi-Fi features: 802.11n, Micro-AP mode, client mode, WPS
- Software: HTTP client, HTTPs client, WPS, IEEE power save/Deep sleep, Firmware update
- Outline: 21.4 x 14.0 x 2.4max mm
- Package: Metal case package
- Japan, FCC and IC qualified
- CE conducted test report available
- RoHS Conformity



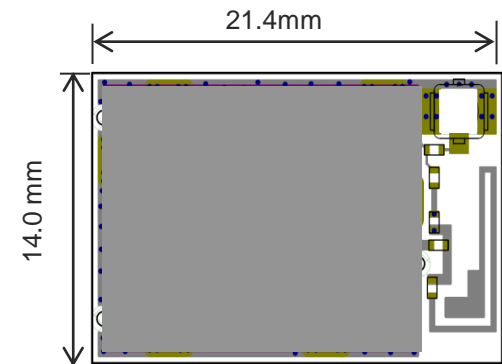
Block Diagram



General Electrical Specification

| Parameter | Description | Min. | Typ. | Max. | Units |
|--------------------------|----------------|------|-----------------|------|-------|
| Frequency Range | 11b/ g/ n | 2412 | | 2462 | MHz |
| Operation Voltage | VBAT | 3.0 | 3.3 | 3.6 | V |
| | VIO | 3.0 | 3.3 | 3.6 | V |
| TX Output Power(11b/g/n) | 11b/11g/11n | | 15 / 9 / 9 | | dBm |
| RX Sensitivity (11b/g/n) | 11b/11g/11n | | -86 / -71 / -68 | | dBm |
| TX Power Consumption | Burst Mode 11b | | 165 | | mA |
| RX Power Consumption | Mode 11n-HT20 | | 82 | | mA |
| Power Consumption | Sleep Mode | | 0.6 | | mA |
| Operating Temperature | | -30 | | 85 | deg-C |

Outline



WBSACVLXY-1: Wireless LAN Module Evaluation Kit

To Evaluate WLAN Module WYSACVLXY-XX
You Will Need WBSACVLXY-1

WBSACVLXY-1 is the evaluation kit for WLAN Module **WYSACVLXY-XX**. This kit has everything you need to evaluate the performance of this module.

1 WBSACVLXY-1



WBSACVLXY-1 Kit includes:

| No. | Item | Description | Qty |
|-----|-----------------------------|---|-----|
| 1 | WBSACVLXY-1 | Evaluation Board for WLAN module WYSACVLXY-XX with mini USB interface | 1 |
| 2 | Document access information | A card described information to download technical documents. | 1 |

Supplemental Product Information

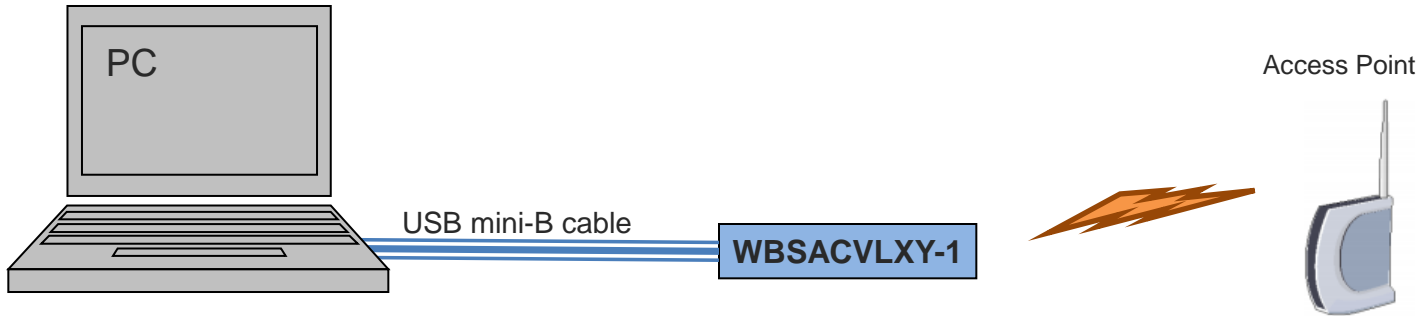
What will be provided if the Evaluation Board is purchased

- Software Specification: Command Reference document

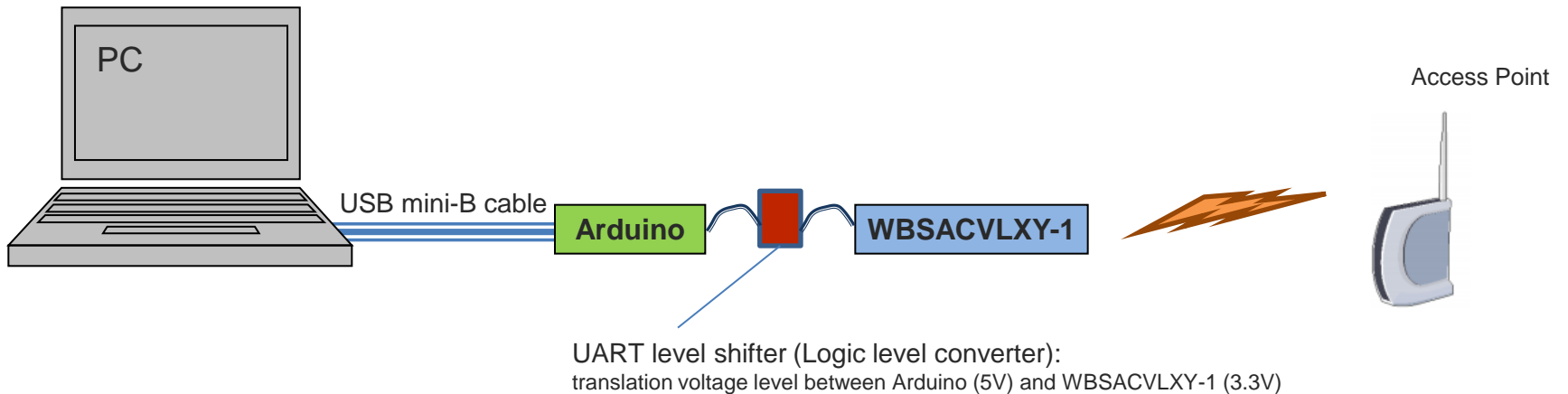
Attention: WYSACVLXY-XX (not WBSACVLXY-1) provided by web distributor is not bundled any above document. If need it, you should purchase WBSACVLXY-1 (Evaluation Board).

Example of hardware configuration for WBSACVLXY-1

- In case of connect with PC



- In case of connect with Arduino

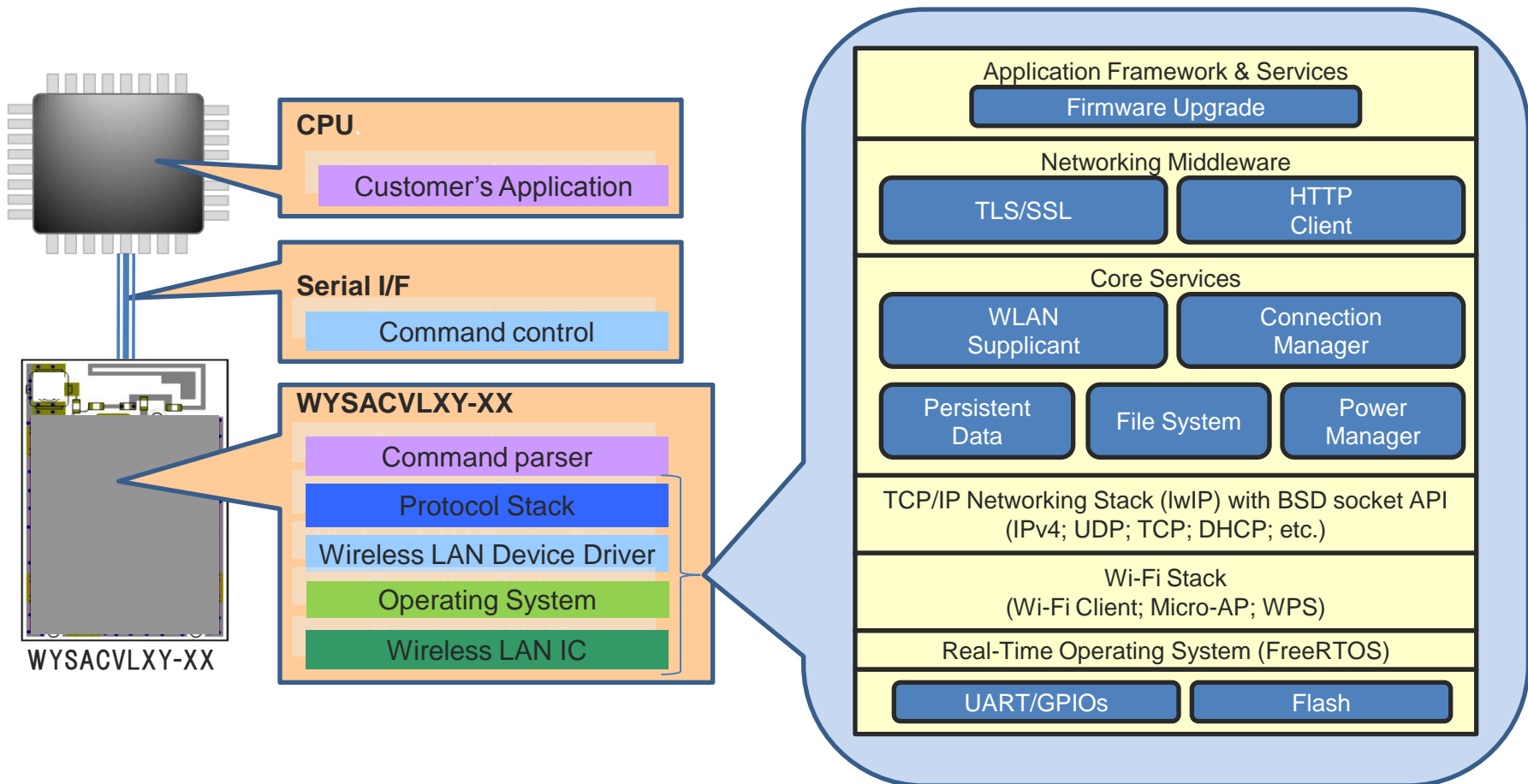


Attention: USB mini-B cable is not bundled in WBSACVLXY-1

Software Structure

WYSACVLXY-XX is a software embedded wireless LAN Module

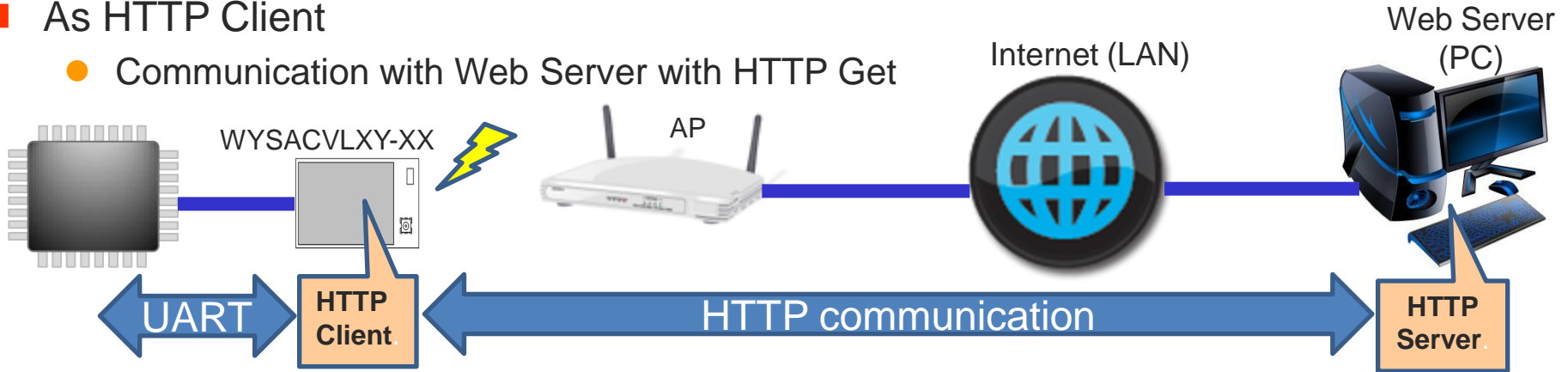
- WLAN driver, OS, Protocol Stack are included in the module.
- Controlled by easy command via UART
- Easy to implement wireless LAN, TCP/IP (socket interface), and Internet access protocol (HTTP, HTTPs) to your product



Usage Examples

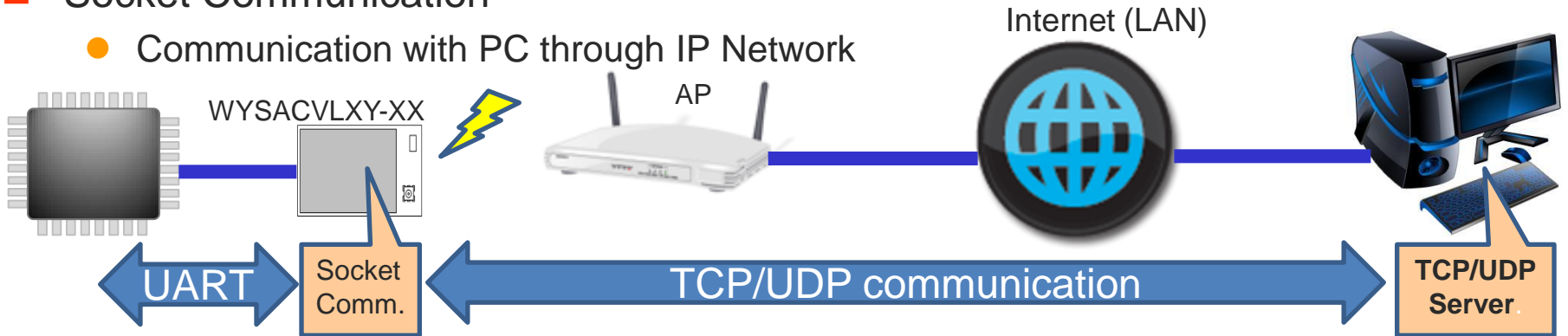
■ As HTTP Client

- Communication with Web Server with HTTP Get

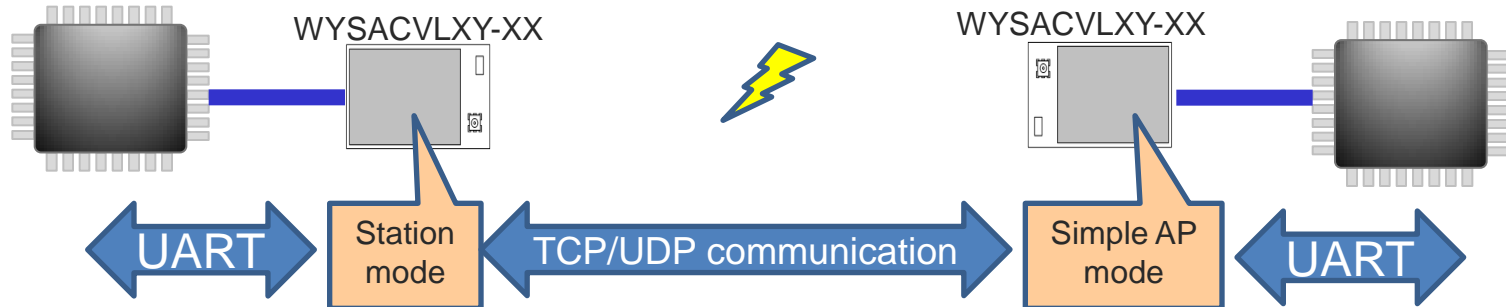


■ Socket Communication

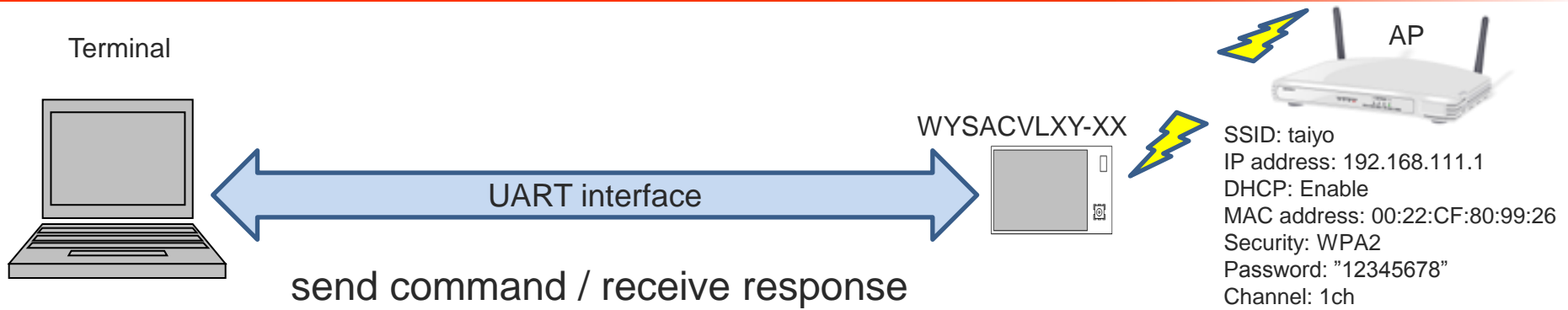
- Communication with PC through IP Network



- Replace fast UART cable



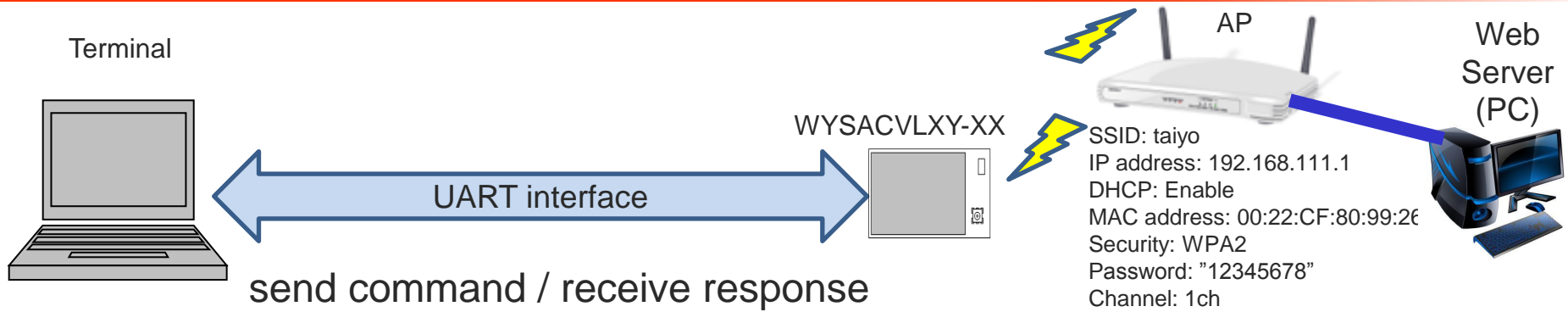
Sample Command Sequence: How to connect to an existing AP



| Sequence | Send command to the module | Response from the module | Brief Description |
|----------|----------------------------|---|--|
| Step-1 | WISC | SCR01,0022CF809926,taiyo SCR02,0022CF809927,ap-game-809927 SCR03,001D738229D4,BUFFALO-AGL300NH_G SCR04,1CB17FE59B5A,ap_demo SCR05,2EB17FE59B5A,aterm-b47dc0-gw ACK | Scan access points (5 AP exists in this case) |
| Step-2 | WISD01 | SCD01,0022CF809926,1,1,1,1,0,0,1,-46,taiyo | Confirm details of "taiyo" AP based on scan results. (BSSID="0022CF809926", channel=1ch, WMM=supported, WPS=PIN, WEP=WPA=unavailable, WPA2=available, RSSI=-46dBm、SSID="taiyo") |
| Step-3 | WSTI101taiyo | ACK | Select SSID ("taiyo") to be connect |
| Step-4 | WSTI1024 | ACK | Select security type (WPA2) |
| Step-5 | WSTI10312345678 | ACK | Set pass phrase ("12345678") |
| Step-6 | WSTI1041 | ACK | DHCP |
| Step-7 | WICO1 | CON1,taiyo | Connect to AP -> Success to connect to "taiyo" |
| Step-8 | WGCN | CFG0022CF809926,1,4,192.168.111.2,taiyo | Get connect info (BSSID="0022CF809926", channel=1ch, security=WPA2, IP address, SSID="taiyo") |

Note:The above PRELIMINARY schedule is not guaranteed, and is subject to change.

Sample Command Sequence: How to execute HTTP GET



| Sequence | Send command to the module | Response from the module | Brief Description |
|----------------|---------------------------------|---|--|
| Step-1 | Connect to AP (previous page) | | |
| Step-2 (http) | WHTG01http://www.google.co.jp/ | RCS01 RCT01<!doctype html><html itemscope="" itemtype="http://schema.org/WebPage" lang="ja"><head><meta content="「E^鈕 駄????~c[・オト「ワキBウワエワ?・¥?pオトAiTオ フ??ツユセウ「B“ ...(snip) | HTTP GET for http://www.google.co.jp/ |
| Step-2 (https) | WHTG01https://www.google.co.jp/ | RCS01 RCT01<!doctype html><html itemscope="" itemtype="http://schema.org/WebPage" lang="ja"><head><meta content="「E^鈕 駄????~c[・オト「ワキBウワエワ?・¥?pオトAiTオ フ??ツユセウ「B“ ...(snip) | HTTP GET for https://www.google.co.jp/ |

Note:The above PRELIMINARY schedule is not guaranteed, and is subject to change.

TAIYO YUDEN