Panasonic NFC-TAG Development kit Installation Manual

Ver2.42

Panasonic Semiconductor Solutions Co., Ltd.

2015/01/08

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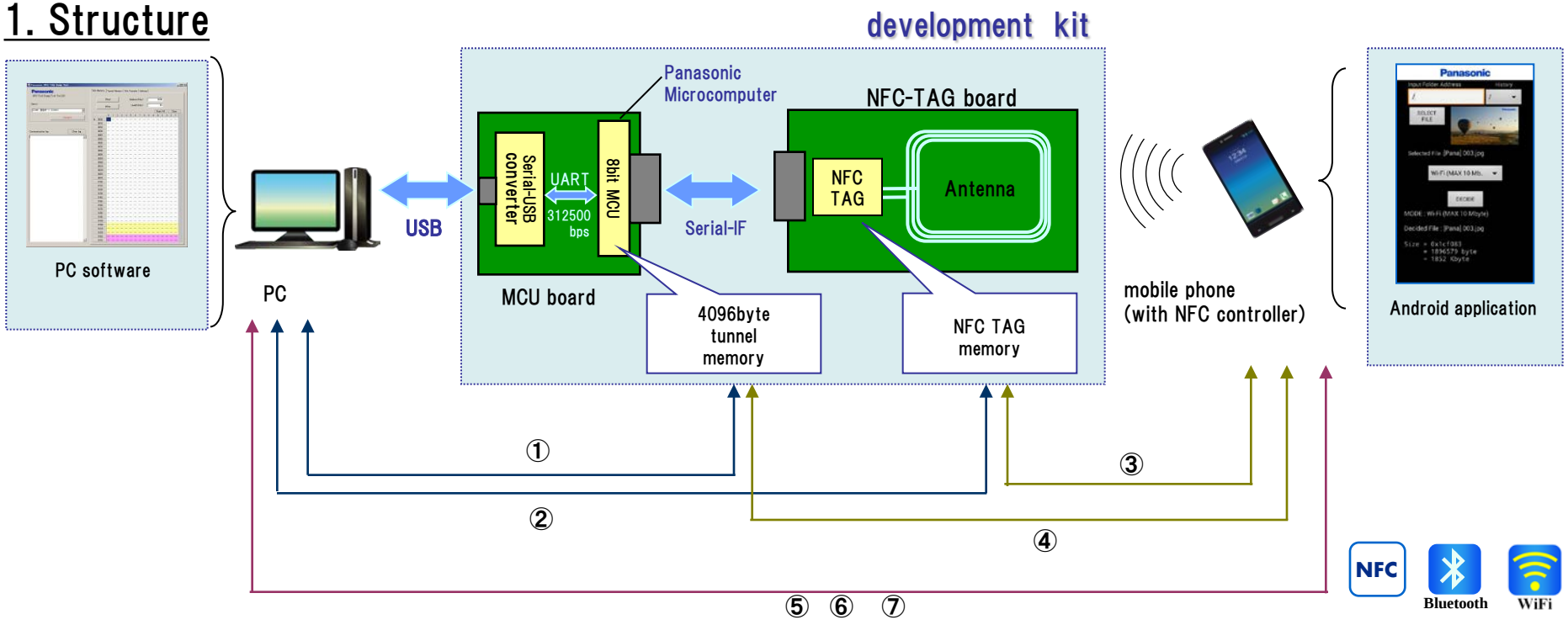
Summary of Development kit (1)

1. Structure



※ NFC TAG memory = 512 byte : MN63Y1208 / MN63Y1210A/MN63Y1213
1024 byte : MN63Y1214 / MN63Y1217
※ tunnel memory = microcomputer memory
※ Serial-IF MN63Y1208 / MN63Y1213 / MN63Y1214 / MN63Y1217 : I2C 100Kbps
MN63Y1210A : UART 9600bps, 38400bps , Clock Synchronous Serial 1Mbps

2. Function

① Read/Write NFC-TAG memory from mobile phone with NFC function
② Read/Write Tunnel memory from mobile phone with NFC function
③ Read/Write NFC-TAG memory from PC(microcomputer)
④ Read/Write Tunnel memory from PC
⑤ Write Files from mobile Phone to PC by NFC
⑥ Write Files from mobile Phone to PC by Bluetooth (Send Pairing information by NFC)
⑦ Write Files from mobile Phone to PC by WiFi (Send Pairing information by NFC)

Summary of Development kit (2)

3. Software Version

In this document, we have assumed the use of the following software.

Software		Version	File Name	outline
Microcomputer Software		2.42	※It is written in the MCU board	Microcomputer board control software
PC Software (control MCU board)		2.42	NFCTAG_DumpTool_v242.exe	Read/Write the NFC-TAG/MCU memory from PC
		3.5.605	InTheHand.Net.Personal.dll	control the Bluetooth adapter when performing the file transfer by Bluetooth *※About how to obtain, please refer to [setup procedure (3)]*
		1.0.1	NfcWifiCtrl.dll	control the WiFi adapter when performing the file transfer by WiFi
PC Software (control PC-R/W)		1.42	NFCTAG_DumpTool_PCSC_V142.exe	Read/Write the NFC-TAG/MCU memory from PC-R/W (Sony PaSoRi) that is connect to the PC
		2.2.2	NfcRW.dll	control the Sony PaSoRi
Android Application	Read/Write	1.51	Panasonic_TagRW_v151.apk	Read/Write the NFC-TAG/MCU memory from mobile phone
	File transfer	1.55	Panasonic_TagFileTx_v155.apk	transfer the files such as photos to the PC from the mobile phone
	NFC TAG setting	1.50	Panasonic_TagSetting1208_v150.apk	MN63Y1208 TAG setting
		1.50	Panasonic_TagSetting1210_v150.apk	MN63Y1210A TAG setting
		1.50	Panasonic_TagSetting1213_v150.apk	MN63Y1213 TAG setting
		1.54	Panasonic_TagSetting1214_v154.apk	MN63Y1214 TAG setting
		1.53	Panasonic_TagSetting1217_v153.apk	MN63Y1217 TAG setting

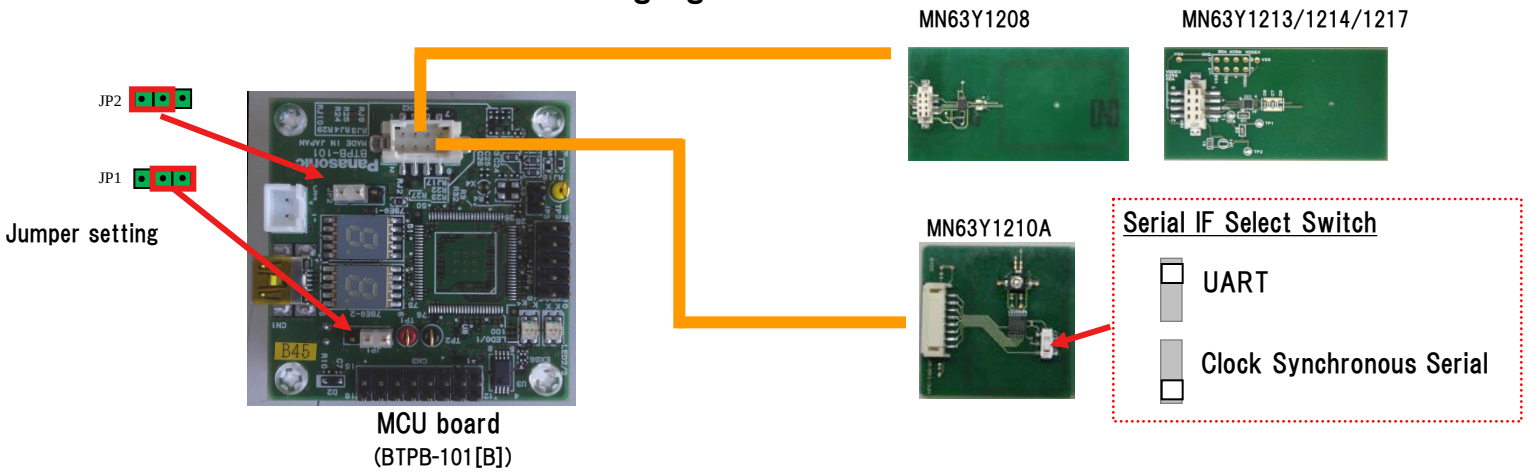
Usage of PC Software(control PC-R/W) , Please refer to the Software Manual for NFC-R/W (NFC-RW Application Manual(E)_v142A.pdf)

Development kit setup procedure

Setup procedure (1)

Step1. board Setting

Please refer board connection of the following figure.



Step2. install driver and Application (for PC)

(1) Please copy an application file to a personal computer

Sample Application : NFCTAG_DumpTool_vXXX.exe

※対応OS:Microsoft Windows 7 SP1

(2) Please download and install [.NET Framework] from the following site.

・Microsoft .NET Framework 4 Client Profile
download site http://www.microsoft.com/en-us/download/details.aspx?id=24872

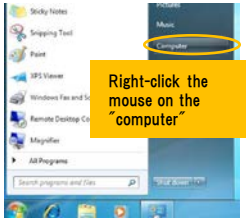
Setup procedure (2)

(3) Please download and install [driver of the MCU board] from the following site.

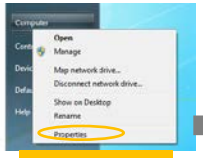
・Virtual COM Port Driver (FTDI)
download site http://www.ftdichip.com/Drivers/VCP.htm
→ Please choose an appropriate driver from the item of VCP Drivers.

① connect MCU Board to PC by USB

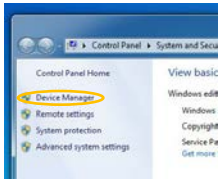
② open the Device Manager



Right-click the mouse on the "computer"

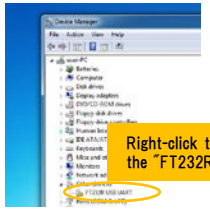


Select "Properties"

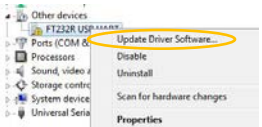


Select "Device Manager"

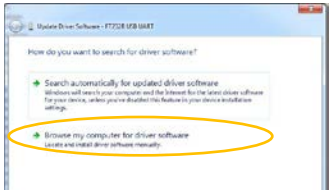
③ install driver for FT232



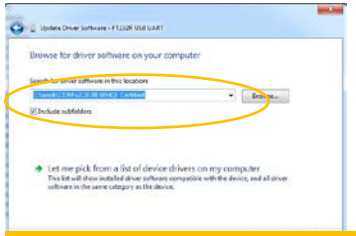
Right-click the mouse on the "FT232R USB UART"



Select "Update Driver Software"



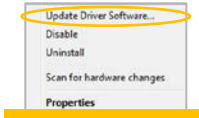
select "Browse my computer for driver software"



set the downloaded driver in the input box of [Search for driver software in this location], and Install the driver

④ install driver for USB Serial Port

Right-click the mouse on the "USB Serial Port"



Select "Update Driver Software"

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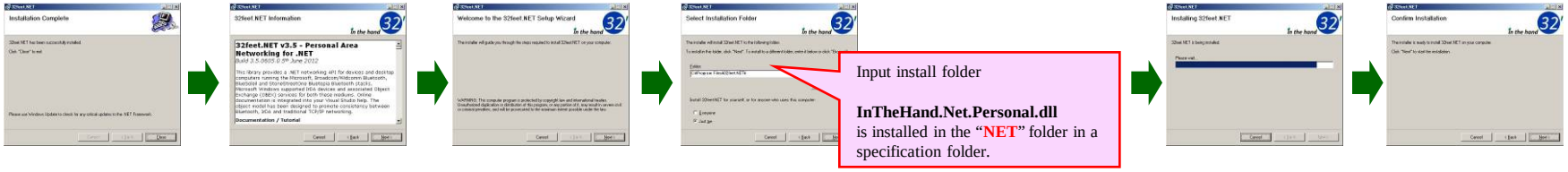
Setup procedure (3)

(4) Please download and install [library] from the following site.

This procedure is necessary for performing a file transfer by Bluetooth

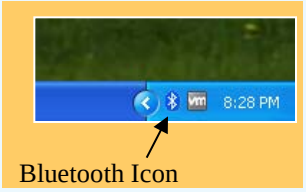
- 32feet.NET (http://32feet.codeplex.com/)
  download site http://32feet.codeplex.com/downloads/get/386489
  - ※ file name : 32feet.NET 3.5.zip
  - PC Application needs the library file that is included in "32feet.NET 3.5.zip". (InTheHand.Net.Personal.dll)
  - Please install the library file (InTheHand.Net.Personal.dll) in the same directory as the PC Application.

Install Step (run Setup.exe)

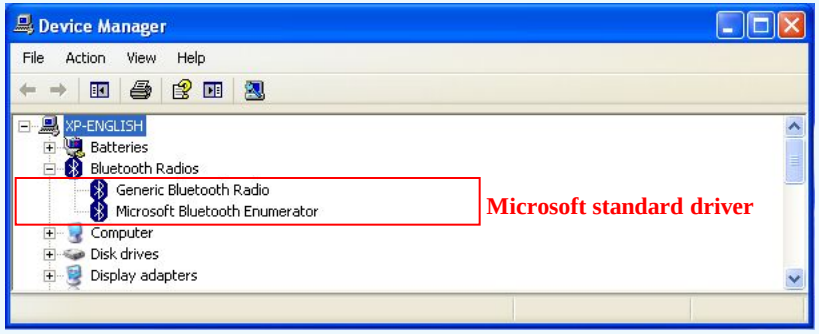


※When using Bluetooth, Bluetooth function is required for the personal computer.
We use following USB-Bluetooth Adapter
BT-MicroEDR2X, BT-Micro4 (PLANEX COMMUNICATIONS INC.)
http://www.planex.co.jp/product/bluetooth/bt-microedr2x/

About Bluetooth driver
OS standard driver of Microsoft should be used for the Bluetooth driver.



confirm in device manager



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Setup procedure (4)

(5) Please copy WiFi control library(DLL) to a personal computer.

This procedure is necessary for performing a file transfer by WiFi

Please put the following library file in the same directory as the PC Application.

- Library : NfcWifiCtrl.dll

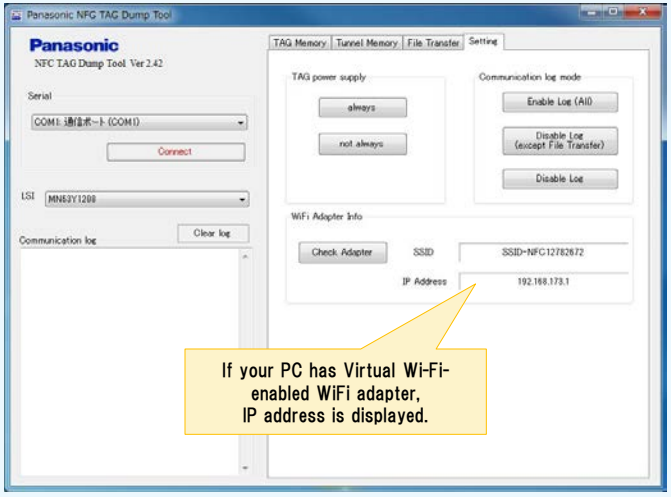
※Support OS : Microsoft Windows 7 SP1

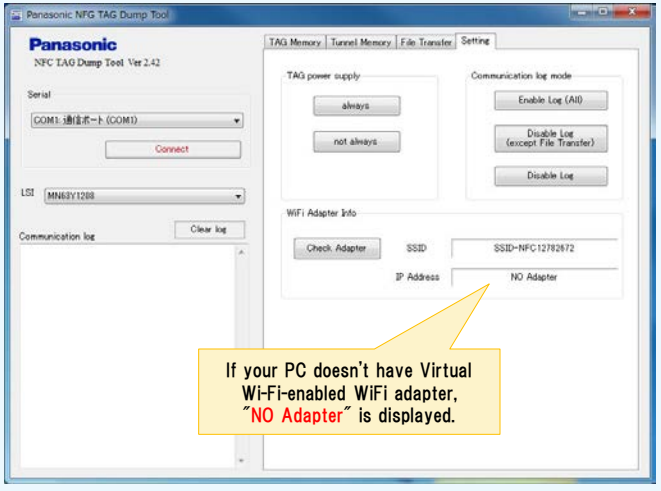
※ When using WiFi, WiFi function is required for the personal computer.
We use following USB-WiFi Adapter
WLI-UC-GNM2 (BUFFALO INC.)
http://buffalo.jp/product/wireless-lan/client/wli-uc-gnm2/

About WiFi function

Our development kit uses "Virtual Wi-Fi (wireless hosted network)" that is Microsoft Windows7 standard function.
So Virtual Wi-Fi-enabled WiFi adapter is required.
(Our development kit supports one Virtual Wi-Fi-enabled WiFi adapter)

※After the PC software startup (startup as administrator),
you can see whether your PC has Virtual Wi-Fi-enabled WiFi adapter.





Setup procedure (5)

Step3. install Android Application

Please install Android Application to the mobile Phone

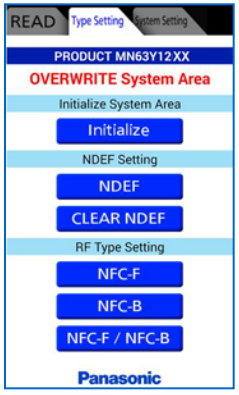
Android Sample Application

- Panasonic_TagRW_vXXX.apk (data transfer application)
- Panasonic_TagFileTx_vXXX.apk (file transfer application)
- Panasonic_TagSettingXXXX_vXXX.apk (MN63Y1208/1210A/1213/1214/1217 TAG setting application)

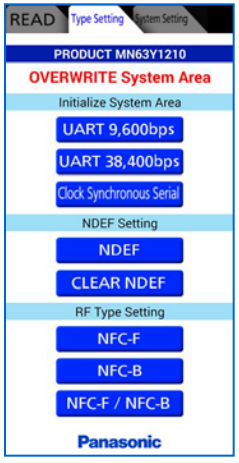
TagRW

TagFileTx

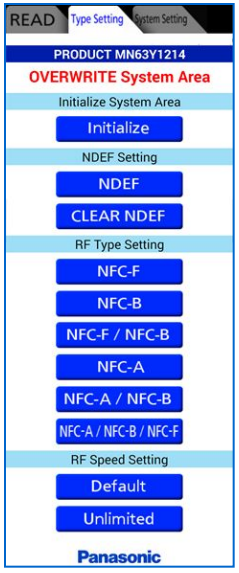
TagSetting



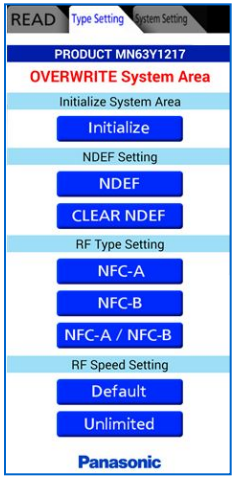
MN63Y1208
MN63Y1213



MN63Y1210A



MN63Y1214



MN63Y1217

usage of the applications, Please refer to each manuals.

Setup procedure (6)

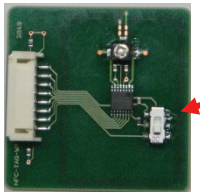
Step4. NFC TAG initial setting

The initial configuration of the NFC TAG board (antenna board)

■MN63Y1210A

Serial Type　: UART / Clock Synchronous Serial

(1) Board Setting

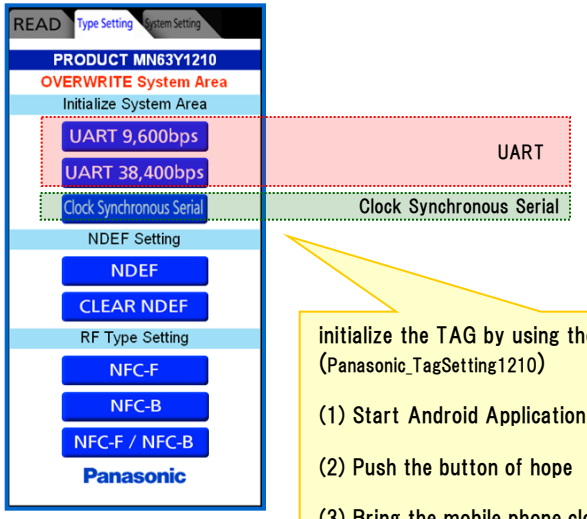


MN63Y1210

Serial IF Select Switch

- UART
- Clock Synchronous Serial

(2) writing initialization data (Serial Type setting)



initialize the TAG by using the application of TAG setting.
(Panasonic_TagSetting1210)

(1) Start Android Application

(2) Push the button of hope

(3) Bring the mobile phone close to the TAG to write initial data

Setup procedure (7)

■MN63Y1208/1213/1214/1217

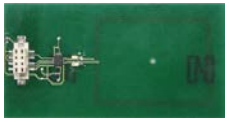
(1) writing initialization data

initialize the TAG by using the application of TAG setting.
(Panasonic_TagSetting1208 / 1213 / 1214 / 1217)

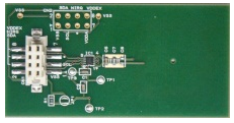
(1) Start Android Application

(2) Push "initialize" button

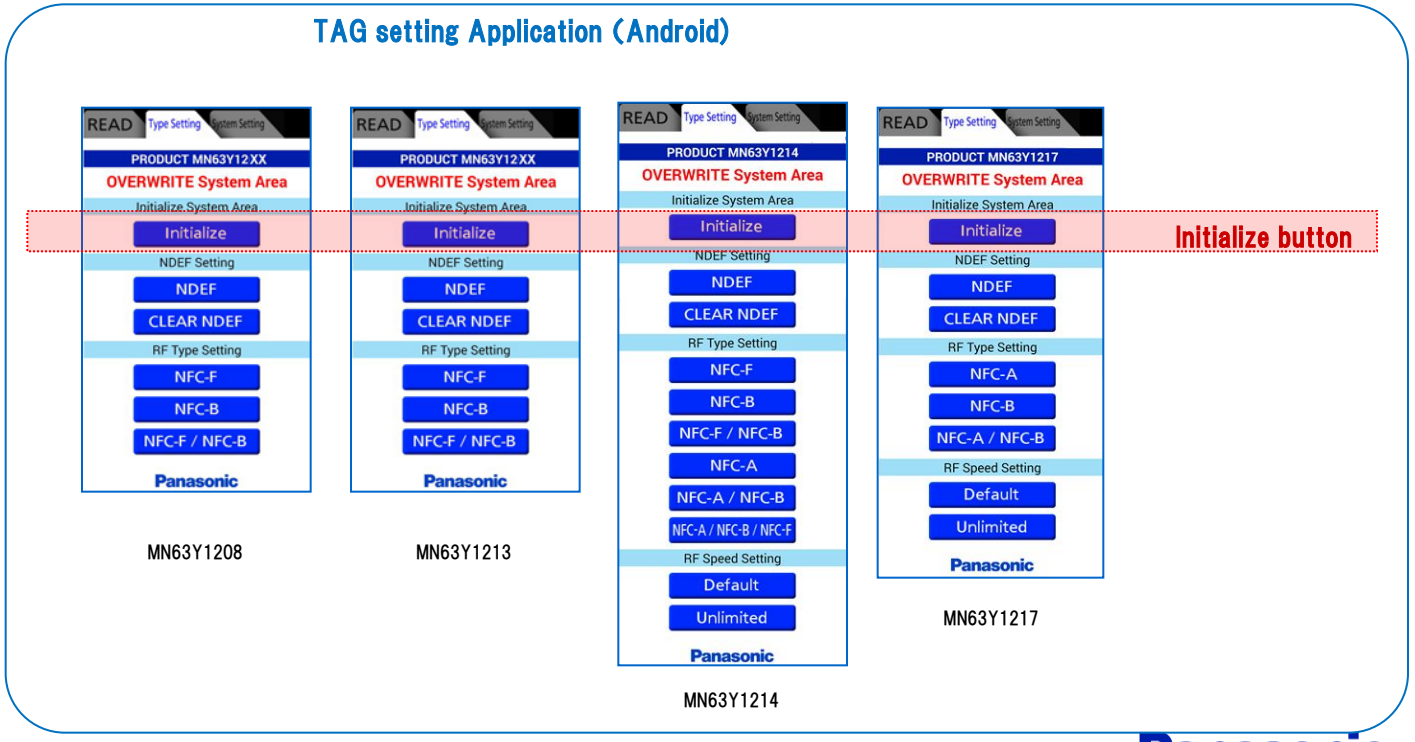
(3) Bring the mobile phone close to the TAG to write initial data



MN63Y1208



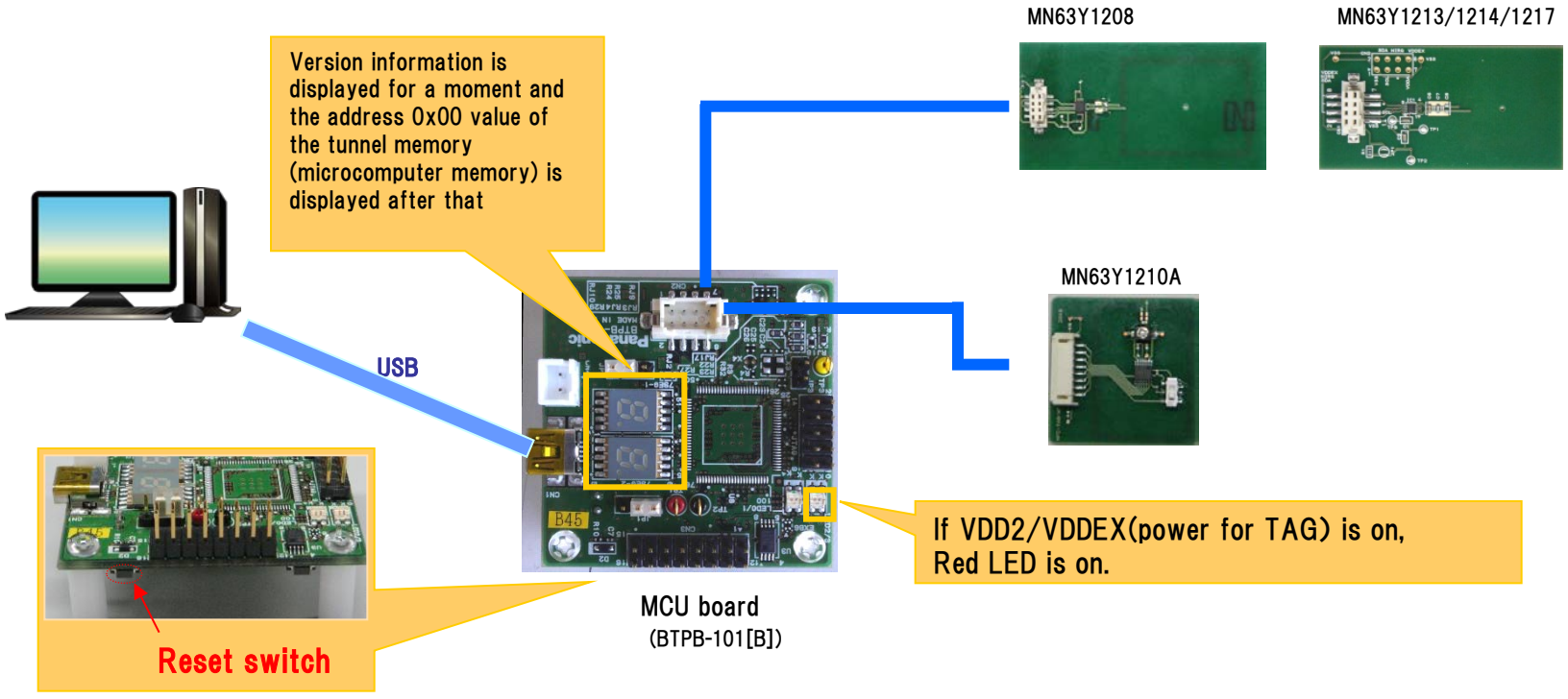
MN63Y1213/1214/1217



Setup procedure (8)

Step5. Reset MCU Board

After connecting the personal computer and MCU board by USB,
Please push the reset switch of the MCU board.



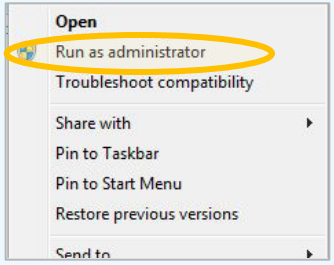
Setup procedure (9)

Step6. Start PC software

This procedure is necessary for performing a file transfer by WiFi

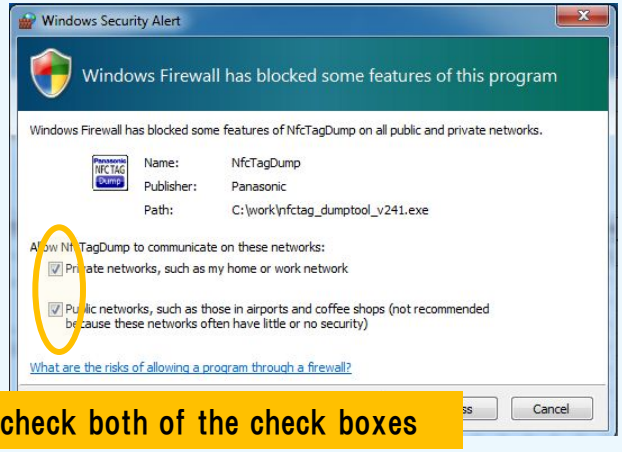
In case of performing the file transfer by WiFi

If you do the file transfer by WiFi, please start the PC software as administrator.
※In order to use Microsoft Windows7 standard function "Virtual Wi-Fi (wireless hosted network)", you must start the application as administrator.



On the PC software,
In the menu that appears when you right-click the mouse
Please select [Run as administrator]

When you start the PC software as administrator, the Security Alert screen will appear.
If you perform the file transfer by WiFi, please check both of the check boxes.
※This is necessary to perform the data communication with mobile phones.



please check both of the check boxes

Development kit usage

Usage 1 (Read/Write TAG)

After performing the contents of the [start-up procedure], please start the PC software.

TAG Read/Write

■connect to the target board

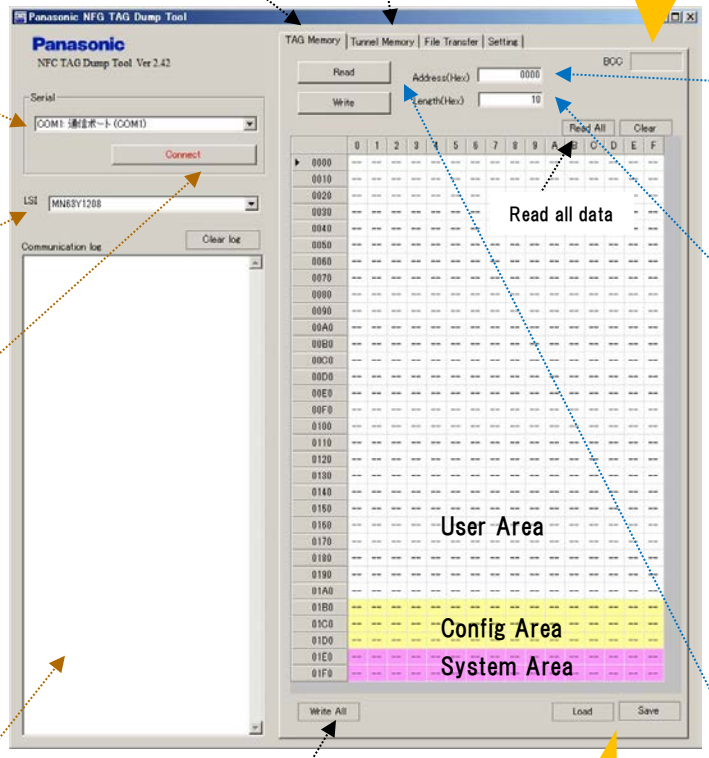
STEP1
select virtual COM port
(connect to the board)

STEP2
select the TAG LSI model

STEP3
push the “Connect” button

STEP4
push the reset switch of the board

STEP5
starting log is displayed



BCC calculated value is displayed
* if the value of BCC set in the system area has a problem, it is displayed with red.

(not use for MN63Y1210A)

■Read/Write memory

STEP6
Input memory Address
(16-byte alignment hexadecimal number)

※A click of a cell will input an address automatically

STEP7
Input Length (hexadecimal number)

[NFC-TAG memory]
・MN63Y1208/1210A/1213
0x01 ～ 0x200 [1～512 byte]
・MN63Y1214/1217
0x01 ～ 0x400 [1～1024 byte]

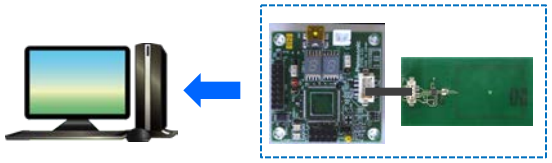
[tunnel memory]
0x01 ～ 0x1000 [1～4096 byte]

STEP8
push Read / Write button

※before you write, please set value to cell.

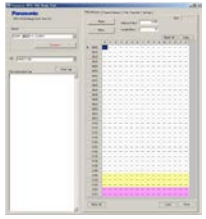
Usage 2 (file transfer1)

STEP 1



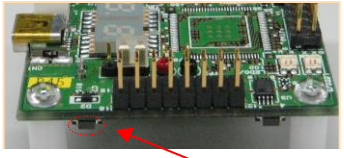
connect MCU board to PC by USB

STEP 2



Start the PC software, and connect to the MCU board

STEP 3



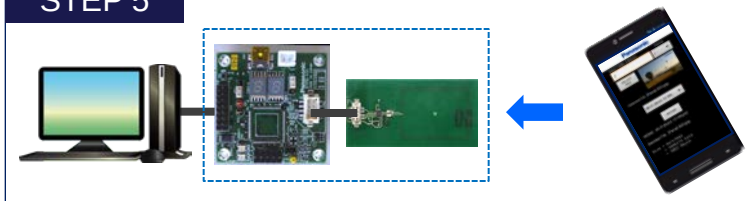
Push the reset switch of the MCU board (reset the board)

STEP 4

Android
file transfer Application
(TagFileTx)

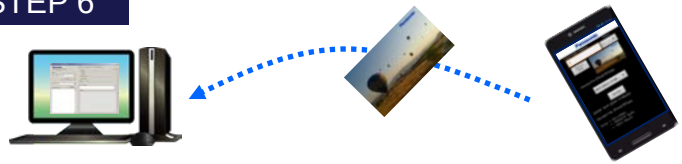
Start the file transfer application on mobile phone
and select the file that you want to transfer to the PC

STEP 5



touch the tag by the mobile phone

STEP 6

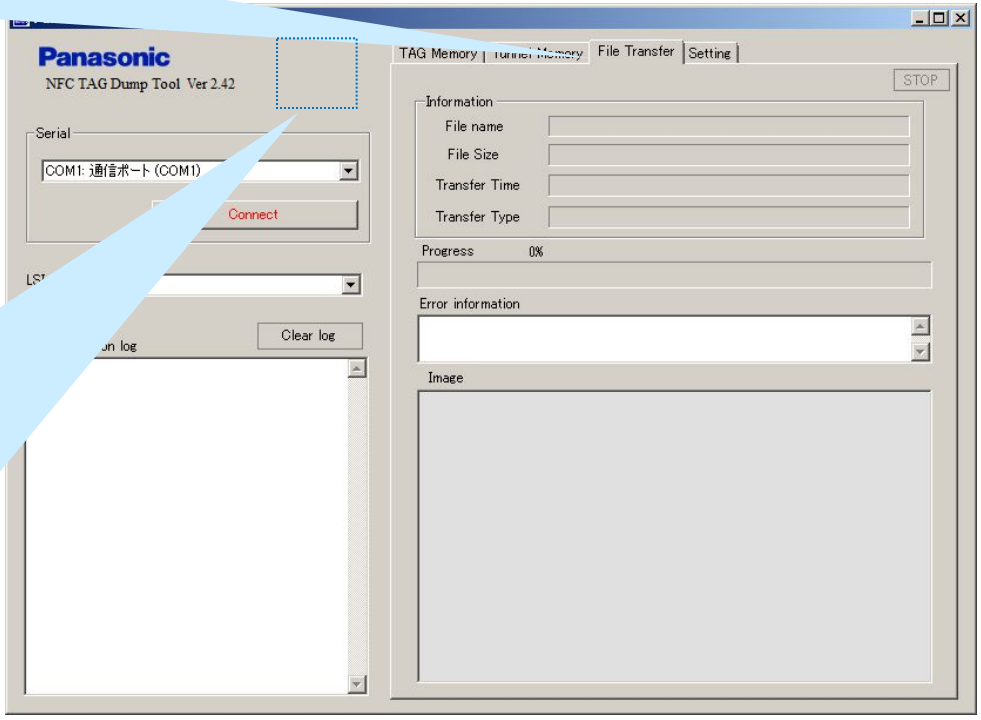


Screen of the PC software switches automatically,
And file transfer is started (see next page)

Usage 3 (file transfer2)

file transfer screen

If the mobile phone that is performing android application (Panasonic_TagFileTx) is brought close to NFC-TAG, a file transfer will be started automatically and information will be displayed on the “file Transfer” tab.



The following icons are displayed during a file transfer by Bluetooth/WiFi.

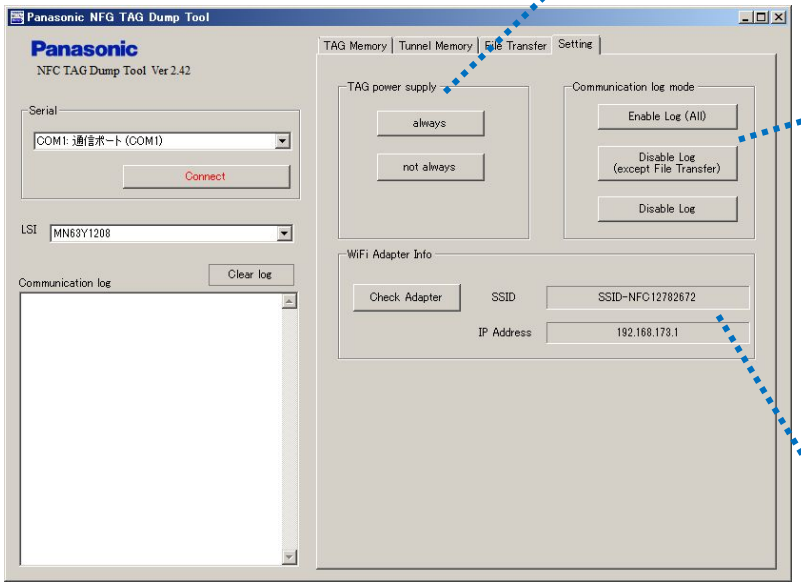
Bluetooth — Waiting for Bluetooth connection

Bluetooth — file transfer by Bluetooth

WiFi — Waiting for WiFi connection

WiFi — file transfer by WiFi

Usage 4 (setting)



■Tag power supply

control the power supply to the tag from the microcomputer

- always : power supply to the tag always
- not always : power supply to the tag when necessary

■Communication log mode

set of log display

- Enable Log (All) : enable all log
- Disable Log (except File Transfer) : enable only necessary logs for file transfer
- Disable Log : disable all log

■WiFi Adapter Info

Display the information of WiFi adapter (PC will be the access point)

- SSID : SSID of the access point
- IP Address : IP address of the access point

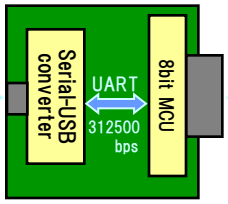
Check Adapter : update the information of WiFi adapter

(supplement) Bluetooth file transfer sequence

PC software

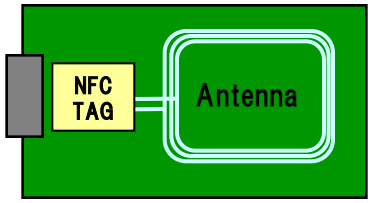
PC

USB



MCU board

Serial-IF



NFC-TAG board

mobile phone
(with NFC controller)

Android application

①Tunnel Write
(Start Command & Bluetooth MAC address)

touch the tag by the mobile phone

② Start Bluetooth
Start Bluetooth in server mode and Wait connection from PC (use RFCOMM Protocol)

③Connect PC to Mobile Phone by Bluetooth
(use RFCOMM Protocol and Bluetooth MAC address of the Mobile Phone)

④Connection OK

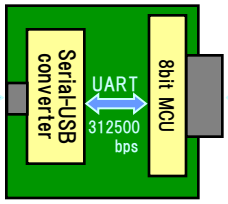
⑤Send File Data

(supplement) WiFi file transfer sequence

PC software

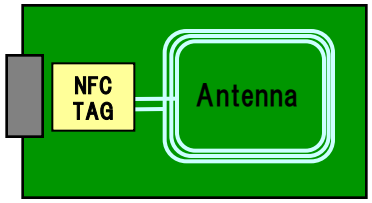
PC

USB



MCU board

Serial-IF



NFC-TAG board

mobile phone
(with NFC controller)

Android application

① start WiFi access point

Start WiFi access point and wait for the connection from the mobile phone.

② Tunnel Write
(Start Command & WiFi MAC address)

touch the tag by the mobile phone

③ Connection request to the access point from the mobile phone by WiFi

④ Connection OK

⑤Send file data

Revision History

Version	Date	Comments
2.00	2012/11/22	Initial edition
2.20	2013/09/05	Version up of PC software/Android application
2.21	2013/10/03	add MN63Y1213
2.30	2013/10/25	Version up of PC software
2.41	2014/10/31	add MN63Y1214/1217, support WiFi file transfer
2.42	2015/01/08	Version up of Microcomputer software / PC software / Android software

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