

CSL CS208-3G Intelligent Integrated RFID Reader with GPS

User's Manual

Version 1.0.0

CSL: The One-Stop-Shop for RFID Solutions

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2 FCC Statement

FCC NOTICE: To comply with FCC part 15 rules in the United States, the system must be professionally installed to ensure compliance with the Part 15 certification. It is the responsibility of the operator and professional installer to ensure that only certified systems are deployed in the United States. The use of the system in any other combination is expressly forbidden.

3 Introduction



CS208-3G Integrated Reader Features:

- Intelligent Integrated Reader with embedded edge server
- 3G/GSM/GPRS, SMS, Ethernet, USB and Serial
- Multiple choices of edge servers with intelligent event engine, and with APIs ranging from high level HTTP to C# to low level C, are available
- Ruggedized (MIL-STD-810) integrated reader with long read range
- Dense Reader Mode (DRM) available
- Unique offering: choice of Left Hand Circular Polarization or Right Hand Circular Polarization for dock door implementation
- Best of breed antenna performance: excellent axial ratio to give best read zone control
- Built-in Global Positioning System

Specifications:

Physical Characteristics:	Length: 300 mm; Width: 300 mm; Height: 100 mm
Weight:	3.5 Kg
Edge Software:	Multiple choices of edge servers with intelligent event engine, and with APIs ranging from high level HTTP to C# to low level C
Operating System:	Win CE
Read Range:	13 meters with DogBone tags from Smartrac (FCC version)
Protocol:	ISO18000-6C, EPC UHF Class 1 Gen 2, Dense Reader Mode available (Class 3 Gen 2 compliant)
Frequency Range:	One of the following: 865-868 MHz, 865-867 MHz, 902-928 MHz, 922-928 MHz, 920-925 MHz, 915-922MHz
Polarization:	Circular Polarization Antenna, choice of LHCP or RHCP
Signaling:	LEDs and industrial grade buzzer for read acknowledgement and alert
External Control:	4 x GPO and 4 x GPI
Operating Temp:	-20°C to 50°C (-4°F to 122°F)
Storage Temp:	-40°C to 85°C (-40°F to 185°F)
Humidity:	95% Non-condensing
Dust & Water:	IP 68, works in outdoor environment
Shock:	MIL-STD-810F Method 516.5 Procedure V, 75g, 6ms, 2 shocks per axis
Vibration:	MIL-STD-810F Method 514.5 Category 24
Mechanical Impact	Free falling ball impacting test: 500 g weight of ball in 1 meter
Resistance:	height
Connectivity:	3G/GSM/GPRS, SMS, Ethernet, USB and Serial (RS232)
Power Supply:	DC supply (12 V, 5 A), or use POE+ (IEEE802.3at)
Order Code:	CS208-3G-NXHCP
	N=1: 865-868 MHz (Europe) & 865-867 MHz (India), N=2: 902-928 MHz (USA), N=4: 922-928 MHz (Taiwan), N=7: 920-925 MHz (China, Australia, Malaysia, Hong Kong etc.), N=8: 915-922 MHz (Japan)
	X=L : LHCP
	X=R : RHCP

3.1 Product Package

3.1.1 Basic Package Content

Integrated reader	EDurant Addinity -Ethanrost Communitivity Big Damage Power On
12V power adaptor	
Power cord	No.

3.1.2 **Optional Accessories**

Optional Accessories that customer has to select and buy

Ethernet Cable	
Serial cable – Control Port	
Serial cable – Debug Port	2-B
USB cable – Client Cable	

USB cable – Host Cable	O i i
GPO Cable	Vorecomposition Vorecomposition
GPI Cable	
USB Cable – Dual Head	

Serial Cable Dual Head	
------------------------	--

3.1.3 Useful Components Customer Has to Source

If the user's or programmer's computer does not have serial port but only has USB ports (many laptops are like that now), then the user has to buy for themselves the following convertor to connect to USB ports:



4 Hardware Installation

4.1 Hardware Content of CS208-3G

4.1.1 CS208-3G Reader Overview

The CSL CS208 is the first INTELLIGENT INTEGRATED Reader in the world with GPS, embedded edge server and a wide selection of connectivity, including 3G/GSM/GPRS, SMS, Ethernet, USB and Serial.



Front panel of CS208.



Rear panel of CS208







CS208 Side View



GSM SIM card and SD card Slots





4.2 Operating Setup

4.2.1 Installation

4.2.1.1 Install the SIM card

- 1. Open the GSM SIM and SD card slot cover



- 2. Insert the GSM SIM card into the GSM SIM card slot. The contact pins of GSM SIM card should be followed the below photo.



- 3. Close the GSM SIM card/SD card slot Cover.

4.2.1.2 Install SD card

- 1. Open the GSM SIM and SD card slot cover.



- 2. Insert the SD card into the SD card slot



- 3. Close the cover of GSM SIM card/SD card Slots.



4.2.1.3 **Install Power Supply**

12 V Power Adaptor

Install "Control Serial" and "Debug Serial" (Optional for "Debug Serial") 4.2.1.4



Serial Cable Dual Head



4.2.1.5 Install Ethernet



Ethernet Cable

4.2.1.6 Install USB





USB cable

5 Software Application

5.1 Software Content of Shipment Package

The software of CS208 includes the following:

1.	Demo Applications and	Demo to run CS208 reader:
default setting		CS208BackendServer.exe
		CS208CommissioningAndFwUpgrade.exe
		Default setting file:
		default.ini (For user to define default setting of
		CS208-3G)
2.	Bootloader	CS208 Bootloader:
		u-boot_532M_v1.0.0.5_20140206.bin
3.	Operating System	WinCE 6.0: NK.nb0
4.	User Manuals	CSL CS208 User's Manual

5.2 PC Side Prerequisites

To run the CS208 application programs, the PC must have the following software installed:

- 1) Dot Net Framework 3.5 or above
- 2) Visual Studio 2008
- PuTTY for test (Not included in software package. Free download from http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html)

The software can be downloaded from Microsoft website or found on the CS208 software package inside folder "Software Development Environment on PC".

5.3 Default Setting

CS208 is shipped out with default setting stored in the file **factory.def**. User can refer to factory.def in the software package to define the default setting of CS208 reader and reconfigure the reader.

User is required to define the default setting file as default.ini and download the file to run CS208 the first time.

User can download the defined **default.ini** file from PC to CS208 via USB or Ethernet download:

USB download:

- 1. Power on CS208 and wait 2 minutes.
- Connect CS208 USB client cable to PC and make sure PC installed active sync(for Window XP) or mobile center (for Window 7/8).
- Open file exporter in PC and copy deault.ini into "CS208/Storage Card/CS208device" folder.
- 4. Power off CS208.
- 5. CS208 will use new configuration when user restart CS208.

Network download:

- Start demo program "CS208CommissioningAndFwUpgrade.exe" in "CS208-PC Demo\CS208FWUpgrade\bin\Release" folder.
- 2. Power on CS208 and wait 2 minutes.
- 3. Screen show "connected from xxxxxx" (xxxxx is CS208 Device ID)
- 4. Select "default.ini only"
- 5. Press "upgrade" button
- 6. Wait until success message box is displayed.
- 7. Power off CS208
- 8. CS208 will use new configuration when user restart CS208.

5.3.1 Format of default.ini for initial setting of CS208 RFID reader

[DEVICEID]

Model = CS208 ID = SerialNumber	; Model Name ; Device ID (default set to CS208 Reader internal serial number if the ID = SerialNumber, you can change it other name) ; Communication mode (GPRS / NETWORK / USB / SMS / SERIAL)	
CommMode = NETWORK		
[NETWORK] DHCP = N IP = 192.168.25.208 Subnet = 255.255.255.0 Gateway = 192.168.25.1 DNS1 = 192.168.25.1 DNS2 = 192.168.25.1	; Ethernet DHCP N/Y (N means Static IP) ; Ethernet IP Address, Static IP ; Ethernet Subnet ; Ethernet Gateway ; First DNS ; Second DNS	
[GSM] Antenna = 0 ;	0 = Auto select, 1 = Antenna Front Side; 2 = Antenna Back Side, 3 = External Antenna	
[GPRS] APN = CMNET	; GPRS APN (CMNET in China, CMHK in HK, rcomnet in India) (APN stands for Access Point Name, which is a property unique to a service provider)	
PHONENUMBER = *99#	; Dialup network phone number	
[SMS] PhoneNumber = AutoSwitchOverTime = 60 AuthorizedSender1 = AuthorizedSender2 = AuthorizedSender3 = AuthorizedUser1 = AuthorizedUser3 = AuthorizedPassword1 = AuthorizedPassword2 = AuthorizedPassword3 =	; Phone number of Backend control center ; Time of switching to SMS when network connection fails (minute) ; SMS authorized sender 1 ; SMS authorized sender 2 ; SMS authorized sender 3	
[SERVER] BackendServer = 1 ServerIP1 = 192.168.25.100 ServerIP2 = 192.168.25.108 Port = 9092 SynchronizationInterval = 60	; Select Backend Server (1/2) ; Backend Server IP 1 ; Backend Server IP 2 ; Backend Server Port number ; Keepalive interval time (minute). Reader will send keep alive packet per this time in minute.	
[DATA] ReadTag = N Access Password = 0000000 TagAuthenticationMask = MultiBank1 = NONE Offset1 = 0 Count1 = 0 MultiBank2 = NONE	 ; Read Tag at power up or restart ; Tag Password ; Authenticated TAG Mask (bit mask 1 = 1, 0 = 0, * = wildcard) ; First additional data bank to be read (Multi bank reading) ; First additional data Offset ; First additional data length (word) ; Second additional data bank to be read (Multi bank reading) 	

Offset2 = 0	; Second additional data Offset
Count2 = 0	; Second additional data length (word)
TagScanningCycle = 1	; Tag scanning cycle (minute), 0 = continuous read
TagScanningTime = 10	; Tag scanning time (second)
TagDuplicateFilterTime = 10	; Tag duplicate filter time (second)
[DATETIME]	; NTP Server IP (NTP stands for Network Time Protocol, it is the
NTP1 = time.nist.gov	network location that gives you accurate current time
NTP2 = stdtime.gov.hk	; NTP Server IP (backup)
TIMEZONE = India Standard Time	; Time Zone
[READER]	; RFID reader power (10 x value in dBm, 300 means 30 dBm)
Power = 300	; Country Code ETSI / IN / G800
Country = IN	; Frequency Channel (1 - 50, 0 = hopping) (India only 3 channels, 1,
Channel = 1	2 and 3)
Profile = 2	; Profile. Gen2 Profile
ALGORITHM = DYNAMIC	; DYNAMIC Q / FIXED Q
QVALUE = 3 [SIGNALS] Buzzor = 64	; Dynamic Start Q value / Fixed Q value
[GPS]	; 1 = Internal Antenna,
Antenna = 1	2 = External Antenna
[DATASTORAGE]	; 0 = RAM(1 record) / 1 = SDCARD (max 2G data)
Storage = 1	; Resend Tag data to backend server if reader does not receive data
DataResendTime = 5	acknowledgement from PC server (minute)

CS208 Burn-In Demo program startup 5.4 procedure

5.4.1 Server (Far-end Computer) Setup

1. Manually input the TCP/IP properties to target PC / Server to connect CS208 with default setting. Internet Protocol Version 4 (TCP/IPv4) Properties

Obtain DNS server address automatically () Use the following DNS server addresses: Preferred DNS server:

Alternate DNS server: Valdate settings upon exit

Subnet mask: Default gateway: 192 . 158 . 25 . 100

255 . 255 . 255 . 0

Adganced...

CK Cancel

	General	
IP address: 192.168.25.100	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings	
Subnet Mask: 255.255.255.0	 Obtan an IP address automatically 	
	O Use the following IP address:	
	[P address: 192 - 158 - 25 - 100	

2	Run	"CS208BackendServer exe"

Reader					Design (P)	Parameterization	Server receive	Date	(heather	
vollare	hterlage		Ha:		The second secon	1000000	Ine			
		Al Decortin	PC M	142 358 26 141	Mark 255 295 2	65.0	MEADER	CONFIG WRITE USER	SETOPO SECARES	egre 1
NE RECOR			1.1	Tob. Tablack PT						

5.4.2 Client Setup

- 1. Hardware: Ensure CS208 "Control Serial" port to PC "COM port" is connected.
- 2. Run "**putty.exe**" program in PC with setting as follow:



- Select "Serial"
- Set the COM port number, for example "COM1", that is connected to the "Control serial" port of CS208.
- Input the Speed of "9600" for the above used COM port.
- "Serial" to enter to the further setup page of the COM port.

ategory:	Basic options for your	PuTTY session	b. Input the COM
Logging	Specify the destination you wan	t to connect to	Number
- Keyboard - Bell - Features - Window - Appearance	COM1 Connection type: Baw Ielnet Rlogi	9600 9600	c. Input the Speed of 9600
	Load, save or delete a stored se Saved Sessions Default Settings	Load	a. Select "Serial"
- Data - Proxy - Telnet - Riogin		Sa <u>v</u> e	
B SSH Senal	Close <u>wi</u> ndow on exit: ⊘ Always ⊘ Never ●	Only on clean exit	
About		en <u>C</u> ancel	

- 3. In the COM setup page, select "None" in field of the "Flow control". And then press "Window" to enter to the "Window Setup Page".



- × 🕵 PuTTY Configuration Set "Columns" to 120 Category: 🖃 Session Options controlling PuTTY's window --- Logging Set the size of the window 😑 Terminal Set "Rows" to 40 Colu<u>m</u>ns <u>R</u>ows Keyboard 120 40 Bell When window is resized: - Features Change the number of rows and columns
 Change the size of the font . Window Appearance Change font size only when maximised Behaviour O Forbid resizing completely Translation Set "Lines of scrollbar" to Selection Control the scrollback in the window 100000 Colours 100000 Lines of scrollback Connection 🗹 Display scrollbar Data Proxy Display scrollbar in full screen mode Telnet Reset scrollback on keypress Rlogin Reset scrollback on display activity 😟 SSH 🛛 Push erased text into scrollback Serial About <u>O</u>pen <u>C</u>ancel
- 4. In "Window" setup page, in order to clearly display the information from CS208, it is better to set the "Window" as below.

- 5. Press "Open" button to run "PuTTY"

🕵 PuTTY Configuration		X	
Category:			1
 Session Logging Terminal Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours Connection Data Proxy Teinet Rlogin SSH Serial 	Options controlling P Set the size of the window Columns B. 120 4 When window is resized: 4 Ochange the number of rows 6 Change the number of rows 6 Change the size of the font 6 Change font size only wher 7 Forbid resizing completely 6 Control the scrollback in the will 1 Image of scrollback 1 Image of scrollback	PuTTY's window ows 10 s and columns in maximised indow 00000 en mode sss y activity back	Press "Open" button to run "PuTTY"
About		pen <u>C</u> ancel	1



- 6. After run the "PuTTY", the "PuTTY" screen is shown as

5.4.3 CS208 Normal Mode

5.4.3.1 CS208 Reader in Normal Mode

- 1. After setup "PuTTY" in 4.4.2. Client Setup, power up CS208.
- 2. The Power LED on the front panel will be lighted up as below



3. After CS208 search the GSM network, "GSM" LED will flash slowly.



4. When the announcement "Press 'P' to enter Production test or press 'E' to enter Engineering test" is displayed, user has 20 seconds to enter the "Production test" mode with pressing "P" or to enter the "Engineering test" mode with pressing "E". At this moment, just WAIT until the reader count down from 20 to 0 and skip self test mode.



5. The reader enters Normal Mode and is then connected to server (Remote Computer)



5.4.3.2 Server (Remote Computer) in Normal Mode

When the reader enters normal operation mode after power up, ensure the CS208 Backend Server (Remote computer) is turned on and press "Start". RFID Tag data will be displayed according to the setting of TagScanningInterval, TagScanningTime and TagDuplicateFilterTime in default.ini

VeviceName In Test-123 L	nterface /P AN 152.768	Mac	125	December 10		the second second second second		
eet•123 L	AN 152.768			neaderio	Detected time	line	Dete	Operation
		2. 00.05.7B.85.00.03		Test-123	10-10-2014 10:11:12	10-10-2014 11:30:22	3456000000000000000000000000000000000000	BACKUPIARTH
				Test-123	10-10-2014 10:11:12	10-10-2014 11:30:22	329810010000100112347850	BACKUPIARTH
				Test-123	10-10-2014 10:11:12	10-10-2014 11:30.22	123400000000000000000000000	BACKUPIARTH
				Test-123	10-10-2014 10:11:12	10-10-2014 11:30:22	300833820.00961400000000	BACKUPIARTH
				Test-123	10-10-2014 10:11:12	10-10-2014 11:30:23	100000000000000000000000000000000000000	BACKUPIARTH
				Test-123	10-10-2014 10:10:15	10-10-2014 11:30:23	C3010AAAAA0000000005457A3	BACKUPIARTH
				Test-123	10-10-2014 10:10:15	10-10-2014 11:30:23	E2009033110900990730C851	BACKUPIARTH
				Test-123	10-10-2014 10:10:13	10-10-2014 11:30:23	12340000000000000000000000007A	BACKUPIARTH
				Test-123	10-10-2014 10:10:13	10-10-2014 11:30:24	222266699566995655555555	BACKUPIARTH
				Test-123	10-10-2014 10:10:13	10-10-2014 11 30:24	329810010000100112347890	BACKUPIARTH
				Test-123	10-30-2014 10:10:13	10-10-2014 11:30:24	12340000000000000000000000000	BACKUPIARTH
				Test-123	10-10-2014 10:10:13	10-10-2014 11:30:24	100000000000000000000000000000000000000	BACKUPIARTH
				Test-123	10-10-2014 10:10:13	10-10-2014 11:30:25	12340000000000000000075	BACKUPIARTH
				Test-123	10-10-2014 10:10:13	10-10-2014 11:30.25	12340000000000000000076	BACKUPIARTH
				Test-123	10-10-2014 10:10:13	10-10-2014 11:30:25	3008338206/09014000000000	BACKUPIARTH
				Test-123	10-10-2014 10:10:13	10-10-2014 11:30:25	345600000000000000000000	BACKUPIARTH
				Test-123	10-10-2014 10:09:12	10-10-2014 11:30:25	100000000000000000000000000000000000000	BACKUPIARTH
				Test-123	10-10-2014 10:09:12	10-10-2014 11:30-26	300833E20CC9614000000000	BACKUPIARTH
				Test-123	10-10-2014 10:06:12	10-10-2014 11:30.26	1234000000000000000000000	BACKUPIARTH
			1.0					
							11	
cur occore]	0.00	PC info						
TO FILE	Gear Al Record	IP1	192.168.25.141	Mask 255 255 255 0		READER CO	NFIG WRITE USER SET	I GPO SD CARD SPACE
	N	1P2	192 168 25 180	Mark 255.255.255.0		BEADER DE	TAL WRITE EPC GE	T GPI SD CARD FORMAT

In default.ini:

Tag Scanning Interval

- Tag Scanning Interval is configured in term of minute (1 = 1 minute). If the value is zero, the reader will read data continuously.

Tag Scanning Time

- Time of scanning tag in each Tag Scanning Interval (1 = 1 second). After the Tag Scanning Time in each Tag Scanning Interval, the reader will stop reading tag.
- Tag Duplicate Filter Time
- Time of checking duplicate tag in the same period. For the same tag is read in the same Tag Duplicate Filter Time, the tag data will only displayed once only. (1 = 1 second)

5.4.4 CS208-3G Self-Test Mode

- 1. After setting up "**PuTTY**" in **Client Setup**, power up CS208. Watch the printout on the PuTTY screen connected to the Control Serial Port. Make sure that window is the ACTIVE window on the screen.
- 2. The Power LED on the front panel will light up as below



- 3. After CS208 search the GSM network, "GSM" LED will flash slowly.



- 4. At that point you will see a the announcement "Press 'P' to enter Production test or press 'E' to enter Engineering test" is displayed and the number in the bracket will decrement. The user has 20 seconds to enter the self test mode. At this moment, press 'P' or 'E' key (the PuTTY window must be the active window of the screen to receive the key press, of course) to enter production test mode or enter engineering test mode.



- 5. The self test menu will then be shown on the "PuTTY" screen as below

CS208 v2.1.12-DB (2015-10-27 21:15:57 UTC +08:00)	
Press 'F'to enter Froduction test or press 'E' to enter Engineering test (1 CS208 v2.1.12-DB Production Test Menu (2015-10-27 21:16:27 UTC +08:00)(GSM e HE910 12.00.006)	2) Modul
SHIFT-0: Reset to Fatory setting (reset to factory.def) SHIFT-1: Set to NEXT GSM Antenna (Current: 1) SHIFT-2: Set Test Server IP (Current : 192.168.25.100) SHIFT-3: Change APN Name (Current:) SHIFT-4: Set Test SMS Phone number (Current:) SHIFT-5: Set Buzzer Volume (Current: 64) SHIFT-7: Set to NEXT GPS Antenna (Current: 1) SHIFT-8: test Buzzer Tone(Current: 0)	
<pre>1: Test LED 2: Test Buzzer 3: Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s) 4: Test SMS 5: Check internet connection with server 192.168.25.100 port 9092 6: Ping local area network server 192.168.25.100 7: Read GSM RSSI and Registration Status 8: Get GPIO Status 9: SD Card 2 Test (External SD Card) 0: GPS Test 5: Write Tag Test T: Kill Tag Test (Tag will be destoryed permanently.)</pre>	
B: Burn-in Test Q: Exit Program N: Run Main Program (Normal Mode) Please Select Test Function and press <enter> to run item: </enter>	

5.4.5 CS208 Self Test Menu

5.4.5.1 Reset to Factory setting (SHIFT-0)

1. User can reset CS208 configuration file "default.ini" to initial setting (factory.def) using SHIFT-0 in Self Test Menu.



- 2. In the menu of Self Test Menu, choose "SHIFT-0: Reset to Factory setting"
- 3. CS208 undergoes factory reset and return message shown as below.



4. And then auto-return to Self Test Menu.

5.4.5.2 Change GSM Antenna (SHIFT-1)

1. In the menu, check "SHIFT-1: Set to Next GSM Antenna". The default value of "Antenna"

18 I.

SHIFT-0:	Reset to Fatory setting (reset to factory.def
SHIFT-1:	Set to NEXT GSM Antenna (Current: 1)
SHIFT-2:	Set Test Server IP (Current : 192.168.25.100)
SHIFT-3:	Change APN Name (Current:)
SHIFT-4:	Set Test SMS Phone number (Current:)
SHIFT-5:	Set Buzzer Volume (Current: 64)
SHIFT-7:	Set to NEXT GPS Antenna (Current: 1)
SHIFT-8:	test Buzzer Tone (Current: 0)

- 2. If you want to change antenna from 1 to 2, press "SHIFT" and "1" together.
- 3. The result is displayed when the test is finished. Current value of antenna is set to 2.

```
SHIFT-0: Reset to Fatory setting (reset to factory.def)
SHIFT-1: Set to NEXT GSM Antenna (Current: 2)
SHIFT-2: Set Test Server IP (Current : 192.168.25.100)
SHIFT-3: Change APN Name (Current: )
SHIFT-4: Set Test SMS Phone number (Current: )
SHIFT-5: Set Buzzer Volume (Current: 64)
SHIFT-7: Set to NEXT GPS Antenna (Current: 1)
SHIFT-8: test Buzzer Tone(Current: 0)
```

4. If you want to change antenna back from 2 to 3, press "SHIFT" and "1" together again.

SHIFT-0:	Reset to Fatory setting (reset to factory.def)
SHIFT-1:	Set to NEXT GSM Antenna (Current: 3)
SHIFT-2:	Set Test Server IP (Current : 192.168.25.100)
SHIFT-3:	Change APN Name (Current:)
SHIFT-4:	Set Test SMS Phone number (Current:)
SHIFT-5:	Set Buzzer Volume (Current: 64)
SHIFT-7:	Set to NEXT GPS Antenna (Current: 1)
SHIFT-8:	test Buzzer Tone(Current: 0)

Note: 1 = Front GSM Antenna; 2 = Back GSM Antenna; 3 = External GSM Antenna

5.4.5.3 Set Test Server IP (SHIFT-2)

- 1. In the menu, check "SHIFT-2: Set Test Server IP ...".
- 2. The default "Test Server IP" is "192.168.25.100".



- 3. If you want to change "Test Server IP", press "SHIFT" and "2" together.
- 4. Input the new IP address of Test Server. (for example: 218.103.18.229)
- 5. Press "Enter"

Please Select Test Function and press <Enter> to run item: @ Please enter PC server IP address : 218,103.18,229

6. The menu is displayed with the new IP address as shown below.



5.4.5.4 Change APN Name (SHIFT-3)

- 1. In the menu, check "SHIFT-3: Change APN Name ...".
- 2. The default APN Name is empty as below.



- 3. If you want to change APN Name, press "SHIFT" and "3" together.
- 4. Input the new APN Name (e.g. "CMHK")
- 5. Press "Enter"
| Please Se.
Please ent | lect Test Function and press <enter> to run item: #
ter APN : CMHK</enter> |
|--------------------------|--|
| The menu is | displayed with the new APN name as shown below. |
| SHIFT-0: | Reset to Fatory setting (reset to factory.def) |
| SHIFT-1: | Set to NEXT GSM Antenna (Current: 1) |
| SHIFT-2: | Set Test Server IP (Current : 192.168.25.100) |
| SHIFT-3: | Change APN Name (Current: CMHK) |
| SHIFT-4: | Set Test SMS Phone number (Current: New APN |
| SHIFT-5: | Set Buzzer Volume (Current: 64) |
| SHIFT-7: | Set to NEXT GPS Antenna (Current: 1) |
| SHIFT-8. | test Buzzer Tone (Current: 0) |

5.4.5.5 Set Test SMS Phone Number (SHIFT-4)

1. In the menu, check "SHIFT-4: Set Test SMS Phone Number...". There is no default value for SMS Phone Number



- 2. If you want to change "SMS Phone Number", press "SHIFT" and "4" together.
- 3. Input the new SMS Phone Number for test.
- 4. Press "Enter"

6.



5. The menu is displayed with the new APN name as shown below.



5.4.5.6 Set Buzzer volume (SHIFT-5)

1. In the menu, check "SHIFT-5: Set Buzzer volume". The default value of Buzzer volume

is 64

SHIFT-0:	Reset to Fatory setting (reset to factory.def)
SHIFT-1:	Set to NEXT GSM Antenna (Current: 1)
SHIFT-2:	Set Test Server IP (Current : 192.168.25.100)
SHIFT-3:	Change APN Name (Current:)
SHIFT-4:	Set Test SMS Phone number (Current:)
SHIFT-5:	Set Buzzer Volume (Current: 64)
SHIFT-7:	Set to NEXT GPS Antenna (Current: 1)
SHIFT-8:	test Buzzer Tone (Current: 0)

- 2. If you want to set Buzzer volume, press "SHIFT" and "5" together.
- 3. Input the new Buzzer volume. (Example: 45)

Please Select Test Function and press <Enter> to run item: % Please enter Test volume : 45

4. The menu will be shown on the screen again. Current value of Buzzer volume is set to 45.



5.4.5.7 Set GPS Antenna (SHIFT-7)

- 1. In the menu, check "SHIFT-7: Set to Next GPS Antenna". The default value of
- "Antenna" is 1.



If you want to change antenna from 1 to 2, press "SHIFT" and "7" together.
 Please Select Test Function and press <Enter> to run item: &

3. The result is displayed when the test is finished. Current value of antenna is set to 2.

SHIFT-0:	Reset to Fatory setting (reset to factory.def)
SHIFT-1:	Set to NEXT GSM Antenna (Current: 1)
SHIFT-2:	Set Test Server IP (Current : 192.168.2 New OFS Antenna
SHIFT-3:	Change APN Name (Current: CMHK)
SHIFT-4:	Set Test SMS Phone number (Current: 12345678)
SHIFT-5:	Set Buzzer Volume (Current: 45)
SHIFT-7:	Set to NEXT GPS Antenna (Current: 2)
SHIFT-8:	test Buzzer Tone(Current: 0)

Note: 1 = Internal GPS Antenna; 2 = External GPS Antenna

5.4.5.8 Test Buzzer Tone (SHIFT-8)

 In the menu, check "SHIFT-8: test Buzzer Tone". The default value of Buzzer Tone is 0 (There are 3 tones output sequentially, one for Read Tag 1 alert, one for Read Tag 2 alert, and one for Write Tag alert when you press "2" to test Buzzer with Buzzer Tone value 0).



- 2. If you want to test Read Tag 1 only, you can change the value of Buzzer Tone to "1" with pressing "SHIFT" and "8" together.
- 3. If you want to test Read Tag 2 only, you can change the value of Buzzer Tone to "2" with pressing "SHIFT" and "8" together.
- 4. If you want to test Write Tag only, you can change the value of Buzzer Tone to "3" with pressing "SHIFT" and "8" together.

5.4.5.9 Burn-in Program (B)

1. Press "B" to start the burn-in program. After start the burn-in program the information come from CS208 is shown on the screen as below.

C\$208 v2.1.13-DB Production Test Menu (2015-10-28 02:05:47 UTC +08:00) (GSM Module HE910 12.00.006)
SHIFT-0: Reset to Fatory setting (reset to factory.def)
SHIFI-1: Set to NEXT GSM Antenna (Current: 1)
SHIFT-2: Set Test Server IP (Current : 192.168.25.100)
SHIFT-3: Change APN Name (Current; CMHK)
SHIFT-4: Set Test SMS Phone number (Current:)
SHIFT-5: Set Buzzer Volume (Current: 64)
SHIFT-7: Set to NEXT GPS Antenna (Current: 1)
SHIFT-8: test Buzzer Ione(Current: 0)
1: Test LED
2: Test Buzzer
3: Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s)
4: Test SMS
5: Check internet connection with server 192.168.25.100 port 9092
6: Ping local area network server 192.168.25.100
7: Read GSM RSSI and Registration Status
8: Get GPIO Status
9: 5D Card 2 Test (External 5D Card)
0: GPS Test
S: Write Tag Test
T: Kill Tag Test (Tag will be destoryed permanently.)
B: Burn-in Test
2: EXIC Frogram
N: Run Main Program (Normal Mode)
Please Select Test Function and press <enter> to run item:</enter>

2. When Burn-in Program is entered, the next Test Item entered will be run continuously ("Running Cycle 1/2/3/4" are seen) until the user press "any key" to exit as below.

Please Select Test Function : B			
Please Entry Test Item Number			
Run Burn-in Test Item 2, Running	Cycle		
Run Burn-in Test Item 2, Running	Cycle		
Run Burn-in Test Item 2, Running	Cycle		
Run Burn-in Test Item 2, Running	Cycle		
Run Burn-in Test Item 2, Running	Cycle		
Run Burn-in Test Item 2, Running	Cycle	6	
Run Burn-in Test Item 2, Running	Cycle		
Run Burn-in Test Item 2, Running	Cycle		
Run Burn-in Test Item 2, Running	Cycle		
Run Burn-in Test Item 2, Running	Cycle	10	
Run Burn-in Test Item 2, Running	Cycle	11	

5.4.5.10 Test LED (1)

1. In the menu, use "1" to test LED

2. The main menu is displayed again when the test is finished.

3. If the test is run with Burn-in Program, the result is displayed as above.

Plea	ase Selec	t Tes	st Fur	icti	ion and p	press	<enter></enter>	to	run	item:	в
Plea	ase Enter	r Test	: Item	n Nu	umber						
Run	Burn-in	Test	Item	2,	Running	Cycle	1				
Run	Burn-in	Test	Item	2,	Running	Cycle	2				
Run	Burn-in	Test	Item	2,	Running	Cycle	3				
Run	Burn-in	Test	Item	2,	Running	Cycle	4				
Run	Burn-in	Test	Item	2,	Running	Cycle	5				
Run	Burn-in	Test	Item	2,	Running	Cycle	6				

5.4.5.11 Test Buzzer (2)

- 1. In the menu, use "2" to test Buzzer. Use "SHIFT-5" to set Buzzer Volume" and "SHIFT-8" to set Buzzer Tone before test Buzzer.
- 2. The main menu is displayed again when the test is finished.
- 3. If the test is run with Burn-in Program, the result is displayed as below.

```
Please Select Test Function and press <Enter> to run item: B
Please Enter Test Item Number
Run Burn-in Test Item 2, Running Cycle 1
Run Burn-in Test Item 2, Running Cycle 2
Run Burn-in Test Item 2, Running Cycle 3
Run Burn-in Test Item 2, Running Cycle 4
Run Burn-in Test Item 2, Running Cycle 5
Run Burn-in Test Item 2, Running Cycle 6
Run Burn-in Test Item 2, Running Cycle 7
Run Burn-in Test Item 2, Running Cycle 8
Run Burn-in Test Item 2, Running Cycle 9
Run Burn-in Test Item 2, Running Cycle 10
Run Burn-in Test Item 2, Running Cycle 11
Run Burn-in Test Item 2, Running Cycle 12
Run Burn-in Test Item 2, Running Cycle 13
Run Burn-in Test Item 2, Running Cycle 14
```

5.4.5.12 Test RFID Reader (3)

1. In the menu, check "3" to test RFID Reader, with Dynamic Q, Dwell, Duration defined. (Example: Dynamic Q = 7, Dwell = 2s, Duration = 10s)



2. The Tag info is displayed continuously when RFID tag is checked.

EPC		300833B2DDD9014000000000	RSSI	43.2
EPC		AD8A200000000000000000000000000000000000	RSSI	48
EPC		041027094900000000000236	RSSI	48.8
EPC		300833B2DDD901400000000	RSSI	52.8
EPC		E2006806000000000000000000	RSSI	54.4
EPC		555555555555555555000005	RSSI	52
EPC		E2009033110900991150A00B	RSSI	51.2
EPC		112233445566778899009988	RSSI	53.6
EPC		300833B2DDD906C00000000	RSSI	49.6
EPC		041027094900000000000236	RSSI	44.8
EPC		E2003412DC03011951395554	RSSI	56
EPC		300833B2DDD901400000000	RSSI	52.8
Stop	,	Inventory		
Disc	:0	nnect Reader		

3. After the time of duration defined (10 seconds), the test finished and the program return to menu

5.4.5.13 Test SMS (4)

1.In the menu, choose "4: Test SMS", the reader can send SMS to Phone with number set in "SHIFT-4", valid SIM card inserted with mobile service enabled in the reader.

SHIFT-0:	Reset to Fatory setting (reset to factory.def)
SHIFT-1:	Set to NEXT GSM Antenna (Current: 1)
SHIFT-2:	Set Test Server IP (Current : 192.168.25.100)
SHIFT-3:	Change APN Name (Current:)
SHIFT-4:	Set Test SMS Phone number (Current: 12345678)
SHIFT-5:	Set Buzzer Volume (Current: 64)
SHIFT-7:	Set to NEXT GPS Antenna (Current: 1)
SHIFT-8:	test Buzzer Tone(Current: 1)

- 2.Press "4" to test SMS.
- 3. The program returns to main menu when the test is finished.
- 4. The Mobile phone with No.12345678 will receive the message: "CS208 Send SMS Test".

5.4.5.14 Check internet connection with server (5)

1. In the menu, use "SHIFT-2" to set target Test Server IP (for example: 218.103.18.229) and use "SHIFT-3" to set APN (for example: CMHK).

SHIFT-0: Reset to Fatory setting (reset to factory.def
SHIFT-1: Set to NEXT GSM Antenna (Current: 1)
SHIFT-2: Set Test Server IP (Current : 218.103.18.229)
SHIFT-3: Change APN Name (Current: CMHK)
SHIFT-4: Set Test SMS Phone number (Current:)
SHIFT-5: Set Buzzer Volume (Current: 64)
SHIFT-7: Set to NEXT GPS Antenna (Current: 1)
SHIFT-8: test Buzzer Tone(Current: 0)

2. When the menu is shown again, check "5: Check internet connection with server" and press "5"

1:	Test LED
2:	Test Buzzer
3:	Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s)
4:	Test SMS
5:	Check internet connection with server 218.103.18.229 port 9092
6:	Ping local area network server 218.103.18.229
7:	Read GSM RSSI and Registration Status
8:	Get GPIO Status
9:	SD Card 2 Test (External SD Card)
0:	GPS Test
S:	Write Tag Test
T:	Kill Tag Test (Tag will be destorved permanently.)

3. The result is displayed as below.

Please	Sele	ct Test	Func	tion	and	press	<enter></enter>	to	run item	: 5
Connect	to :	Server	IP 21	8.10	3.18.	229 at	: 10/28/	2015	7:02:48	ΜA
TCP Cor	mect	Succes	s at	11/2	2/201	.5 9:51	L:07 AM			

4. The program automatically returns to the test menu.

5.4.5.15 Ping local area network server (6)

1.In the menu, use "SHIFT-2" to set target Test Server IP (Example: 192.168.25.100)

2. When the menu is shown again, choose "6: Ping local area network server ..."

```
1: Test LED
2: Test Buzzer
3: Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s)
4: Test SMS
5: Check internet connection with server 192.168.25.100 port 9092
6: Ping local area network server 192.168.25.100
7: Read GSM RSSI and Registration Status
8: Get GPIO Status
9: SD Card 2 Test (External SD Card)
0: GPS Test
S: Write Tag Test
T: Kill Tag Test (Tag will be destoryed permanently.)
B: Burn-in Test
Q: Exit Program
N: Run Main Program (Normal Mode)
Please Select Test Function and press <Enter> to run item:
```

3. The result is displayed as below.

Please	e Sele	ect	Test	Fur	ictio	n and	press <	(Enter>	to	run	item:	6
Pingin	ng Hos	st 1	92.10	68.2	25.100)						
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time=1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time=1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time<1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time=1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time<1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time=1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time=1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time=1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time<1	lms	TTL=	128	
Reply	from	192	.168	.25.	100:	Echo	size=32	2 time=1	lms	TTL=	128	

4. The program automatically returns to the test menu.

5.4.5.16 Read GSM RSSI and Registration Status (7)

1. In the menu, if you want to check GSM RSSI and registration status, choose "7".

```
1: Test LED
2: Test Buzzer
3: Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s)
4: Test SMS
5: Check internet connection with server 192.168.25.100 port 9092
6: Ping local area network server 192.168.25.100
7: Read GSM RSSI and Registration Status
8: Get GPIO Status
9: SD Card 2 Test (External SD Card)
0: GPS Test
S: Write Tag Test
T: Kill Tag Test (Tag will be destoryed permanently.)
B: Burn-in Test
Q: Exit Program
N: Run Main Program (Normal Mode)
Please Select Test Function and press <Enter> to run item:
```

2. The result is displayed (CSQ: GSM RSSI, CREG: GSM Registration) as below.



3. The program automatically returns to the test menu.

5.4.5.17 Get GPIO status (8)

1. In the menu, if you want to get GPIO status, choose "8: Get GPIO Status".

```
Please Select Test Function : 9
IO status = ON
I1 status = ON
LED will flash 3 times
```

2. The returned message is displayed with status of GPI pins. GPO pins will toggle in a HIGH-to-LOW transition 3 times.

5.4.5.18 SD Card Test (9)

1. In the menu, if you want to run SD Card Test, check "9: SD Card 2 Test (External SD Card)".



2. Press "9" to run the Write Test, Read Test, and Delete File Test in sequence.

3. The result is displayed when the test is finished.



4. The program automatically returns to the test menu.

5.4.5.19 GPS Test (0)

- 1. In the menu, use "SHIFT-7" to set GPS Antenna used (Internal antenna or External Antenna).
- 2. Press "0" to run the GPS Test.

```
1: Test LED
2: Test Buzzer
3:
  Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s)
  Test SMS
4:
5: Check internet connection with server 192.168.25.100 port 9092
6: Ping local area network server 192.168.25.100
7: Read GSM RSSI and Registration Status
8: Get GPIO Status
9: SD Card 2 Test (External SD Card)
0: GPS Test
S: Write Tag Test
T: Kill Tag Test (Tag will be destoryed permanently.)
B: Burn-in Test
Q: Exit Program
  Run Main Program (Normal Mode)
N:
Please Select Test Function and press <Enter> to run item:
```

3. The result is displayed as below.

\$GPSNMUN:	\$GPGSV,3,1,09,02,34,295,36,05,25,218,36,06,49,344,34,09,28,100,42*7B
\$GPSNMUN:	\$GPGSV,3,2,09,12,18,317,29,17,58,072,32,19,08,115,31,23,13,063,28*71
\$GPSNMUN:	\$GPGSV,3,3,09,28,30,172,34*4A
\$GPSNMUN:	\$GPRMC,025823.457,A,2216.6657,N,11410.1485,E,0.05,167.41,021115,,,A*68
\$GPSNMUN:	\$GPVTG,167.41,T,,M,0.05,N,0.10,K,A*3C
\$GPSNMUN:	\$GPGGA,025824.457,2216.6655,N,11410.1483,E,1,05,1.25,106.0,M,,M,,0000*75
\$GPSNMUN:	\$GPGLL,2216.6655,N,11410.1483,E,025824.457,A,A*5A
\$GPSNMUN:	\$GPGGA,025825.457,2216.6654,N,11410.1482,E,1,05,1.25,106.0,M,,M,,0000*74
\$GPSNMUN:	\$GPGLL,2216.6654 N,11410.1482,E,025825.457 A,A*5B
\$GPSNMUN:	\$GPGSA,A,3,02,05,06,09,12,,,,,,,4.00,1.25,3.75*0A
\$GPSNMUN:	\$GPGSV,3,1,09,02,34,295,32,05,25,218,34,06,49,344,36,09,28,100,41*7C
\$GPSNMUN:	\$GPGSV,3,2,09,12,18,317,31,17,58,072,29,19,08,115,31,23,13,063,*78
\$GPSNMUN:	\$GPGSV,3,3,09,28,30,172,32*4C
\$GPSNMUN:	\$GPRMC,025825.457,A,2216.6654,N,11410.1482,E,0.14,147.72,021115,,,A*68
\$GPSNMUN:	\$GPVTG,147.72,T,,M,0.14,N,0.26,K,A*3B
\$GPSNMUN:	\$GPGGA,025826.457,2216.6653,N,11410.1481,E,1,05,1.25,106.0,M,,M,,0000*73
\$GPSNMUN:	\$GPGLL,2216.6653,N,11410.1481,E,025826.457,A,A*5C
\$GPSNMUN:	\$GPGSA,A,3,02,05,06,09,12,,,,,,4.00,1.25,3.75*0A

4. Press "any key" to stop the test and then turn to test menu.

5.4.5.20 Write Tag Test (S)

- 1. Before run the "Write Tag Test", you must know the EPC code of the Tag you want to Write. (for example: AD94250042D0A99850000007).
- 2. Press "S" to run the "Write Tag Test".

1: Test LED
2: Test Buzzer
3: Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s)
4: Test SMS
5: Check internet connection with server 192.168.25.100 port 9092
6: Ping local area network server 192.168.25.100
7: Read GSM RSSI and Registration Status
8: Get GPIO Status
9: SD Card 2 Test (External SD Card)
0: GPS Test
S: Write Tag Test
T: Kill Tag Test (Tag will be destoryed permanently.)
B: Burn-in Test
Q: Exit Program
N: Run Main Program (Normal Mode)
Please Select Test Function and press <enter> to run item:</enter>

3. Enter the EPC code of the Tag you want to write.

Please Select Test Function and press <Enter> to run item: S Please enter Tag EPC mask : AD94250042D0A99850000007

4. Enter the new EPC code you want to change (for example AD94250042D0A99850000018).



5. The test result is displayed as below.



6. After finish the test, the program automatically return to the menu again.

5.4.5.21 Kill Tag Test (T)

- 1. Before run the "Kill Tag Test", you must know the EPC code of the Tag you want to kill. (for example: AD94250042D0A99850000018).
- 2. Press "T" to run the "Kill Tag Test". (Note: after kill a tag, the tag will be destroyed permanently!!!).

```
1: Test LED
2: Test Buzzer
3: Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s)
4: Test SMS
5: Check internet connection with server 192.168.25.100 port 9092
6: Ping local area network server 192.168.25.100
7: Read GSM RSSI and Registration Status
8: Get GPIO Status
9: SD Card 2 Test (External SD Card)
0: GPS Test
S: Write Tag Test
T: Kill Tag Test (Tag will be destoryed permanently.)
B: Burn-in Test
Q: Exit Program
N: Run Main Program (Normal Mode)
Please Select Test Function and press <Enter> to run item:
```

3. Enter the EPC code of the Tag you want to kill.



4. The test result is displayed as below.



5. After finish the test, the program automatically return to the menu again.

5.4.5.22 Run Main Program (Normal mode) (N)

Choose "N: Run Main Program (Normal mode)" will turn CS208 to return to normal operation mode from self test menu.

```
1: Test LED
2: Test Buzzer
3: Test RFID Reader (Dynamic Q = 7, Dwell = 2s and Duration = 10s)
4: Test SMS
5: Check internet connection with server 192.168.25.100 port 9092
6: Ping local area network server 192.168.25.100
7: Read GSM RSSI and Registration Status
8: Get GPIO Status
9: SD Card 2 Test (External SD Card)
0: GPS Test
S: Write Tag Test
T: Kill Tag Test (Tag will be destoryed permanently.)
B: Burn-in Test
Q: Exit Program
N: Run Main Program (Normal Mode)
Please Select Test Function and press <Enter> to run item:
```

5.4.6 Debug Port Setup (Optional)

In order to monitor the status of CS208, it is better to use the "Debug Serial" port of CS208 and "PuTTY" in PC side.

The "PuTTY" Setup as follow:

- 1.Connect "Debug Serial" port to PC "COM port". This "COM port" should be different from "Control Serial" port.
- 2. Run "putty.exe" PC program.
- 3.Select "Serial".
- 4.Input the COM port number, for example "COM4", that is connected to the "Debug Serial" port of CS208.
- 5. Input the Speed of "115200" for the above used COM port.
- 6. Press "Serial" to enter to the further setup page of the COM port.

🕵 PuTTY Configuration		
Category: Session Logging	Basic options for your PuTTY session	c. Input the COM Number
i ⊟ ·· Terminal I ···· Keyboard I ···· Bell	Serial line Speed	d. Input the Speed of 115200
Features ⊟-Window	Connection type: <u>Raw</u> <u>I</u> elnet Rlogin <u>S</u> SH Serial	
Appearance Behaviour	Load, save or delete a stored session	b. Select "Serial"
Translation Selection Colours Oata Proxy Telnet SSH Serial	Saved Sessions Default Settings Load Save Delete Delete Close window on exit: Always Never Only on clean exit	
About	<u>O</u> pen <u>C</u> ancel	
e.	Press "Serial" to enter to the further setup page	•

7.In the COM setup page, select "None" in field of the "Flow control". And then press "Window" to enter to the "Window Setup Page".

🕵 PuTTY Configuration		E	<	
Category:				
🖃 Session	Options controllin	g local serial lines		
Logging	- Select a serial line		1	
lerminal Keyboard	Serial line to connect to	COM4		
Bell	Configure the serial line			
Window	Speed (baud)	115200		
- Appearance - Behaviour	Data <u>b</u> its	8		
Translation	S <u>t</u> op bits	1		
Selection Colours	<u>P</u> arity	None 🔽		
Connection	<u>F</u> low control	XON/XOFP		
Data				Select "None" in
Telnet				"Flow control"
- Rlogin				field
. SSH				
Serial				
About		<u>O</u> pen <u>C</u> ancel]	
			<u></u>	
	1			
	And then press "V	/indow" to enter to		
	"Window setup pa	age"		

8.In "Window" setup page, in order to clearly display the information from CS208, it is better to set the "Window" as below



9. After setup, Press "Open" button

10. After power up CS208, the running status of CS208 is shown on the screen as below



5.5 CS208 Configuration

5.5.1 Initial Setup

1. When CS208 is used in the first time, it is set to factory default setting and sends data to

PC/Server via Ethernet in default static IP address 192.168.25.100. Therefore, user has to set PC for CS208 configuration as 192.168.25.100 at the beginning.

neral ou can get IP settings assigne is capability. Otherwise, you or the appropriate IP settings.	d automatically if your network support need to ask your network administrator
🗇 Obtain an IP addrese auto	natically
Uge the following IP addre	55;
(P address:	192 , 168 , 25 , 100
Sybretmaski	255 . 255 . 255 . Q
Qefault gateway:	+1 14 · · ·
O Ogtain 0145 server addres	s automatically
🛞 Use the following DNS ser	ver addresses:
Breferred DNS server:	(4) (4) (4)
gitemate DNS server:	1
🔲 Vaļdate cettings upon ex	t Advanced.

2.Connect CS208 to PC via Ethernet. Power up CS208.

3. Place some tags near CS208 for test.

4. Open PC Software "CS208BackendServer.exe" in the PC for CS208 configuration. Wait

Reader	bradava	10	Marc		sader ID	Delected time	Server receive	Data		Opera	ation
feat 123	UN	192168.2	00.0578 45:00:03	Te	st/123	10-10-2014 10:11:12	1010-2014 11:30:22	34560000	000000000000000000000000000000000000000	BACK	OPARTH
	1.4.50		na aton di stronga	Υr	at 123	10-10-2014 10 11:12	10102014 11:00:22	30061001	0000100112347650	BACH	WHARTH
				Ти	et 128	1010-3014 1011-12	1010,2014 11 20:22	123,00000	000000000000000000000000000000000000000	BACK	IPARTH
				Te	et-123	10-10-2014 1011-12	10-10-2014 11:30-22	30083382	000000000000000000000000000000000000000	BACK	UPARTH
				Te	nt-123	10-10-2014 1011-13	1010-2014 11:30:23	10000000	0000000000000073	BACK	UPARTH
				Te	et-123	10-10-2014 10:10:15	1010-2014 11:30:23	C3010444	AAD00000000A57A3	BACK	UPARTH
				Te	et-123	10-10-2014 10 10 15	1010-2014 11 30:33	E2009033	110900990730C851	BACK	UPARTH
				Te	at-123	10-10-2014 10:10:13	10-10-2014 11:30:23	17340000	001000000000007A	BACK	UPARTH
				Te	4-123	1010-2014 1010 13	10102014113024	23220660	000000055555555	BACK	UPARTH
				Te	nt-123	10-10-2014 10:10:13	1010201411:30:24	32081001	0090100112347896	BACK	UPARTH
				Te	nt-123	10-10-2014 10:10:13	1010/2014 11:30/24	12340000	000000000000000	BACK	UPARTH
				Te	st-123	10-10-2014 10:10:13	10-10-2014 11:30:24	10000000	00000000000071	BACK	UPARTH
				Te	et-123	10-10-2014 10:10:13	10-10-2014 11:30-25	12340000	000000000000075	BACK	UPARTH
				Ta	e-173	10-10-2014 10:10:17	1010-2014 11:30:25	12340000	00000000000075	BACK	UPARTH
				7.	at-723	10-10-2014 10 10 13	10-10-2514 11 30-25	30083382	00000000000000000	BACK	UPARTH
				Te	d-123	10-10-2014 10:10:13	10/10/2014 11:30:25	34560000	1000000000000000	BACK	UPARTH
				Te	st-123	10-10-2014 10:09:12	1010-2014 11:30:25	1:000000	0010000000000077	BACK	UPARTH
				Te	#-123	10-10-2014 10:09:12	1010-2014 11:30:25	30083392	000901400000000	BACK	UPARTH
				Te	nt-123	1010-2014 1009 12	10 10 2014 11:30 26	12340000	000000000000075	BACK	UPARTH
				Married B.							
_											
SAVE RECOR	DS Gear	All Records	PC trip	0 168 26 141	Mask 255 255 255 0		READER CO	NAG]	WRITE USER	SET GPO	SO CARD SPACE
1949 B-1923-			122	2 168 25 190	Mask 255 255 255 0		Enclose of	T	WOITE CAC	CET COL	
							THERE IS A	1.00	TYPINE BR.	(18 Y (194)	SULARI FORMA

until the CS208 reader appears and tag data is received.

 If CS208 reader does not appear and no tag data is received, please refer to CSL CS208 User's Manual and reconfigure CS208 Default Setting File (default.ini) by connecting CS208 reader via USB connection.

Reader				-				Sature metalog			
DeviceName	interface	1P	Mac		Header IL		L'électes time	time	Data	Operat	en
fed-123	LAN	192.168.2	00.01 7B 85 00.03		Test-123		10-10-2014 10:11:12	1010-2014 11:30.22	34560000000000000000000	BACKU	PARTH
					Test-123		10-10-2014 10:11 12	1010-2014 11:30-22	520810010090100112347856	влони	nARTH .
					Test-123		10-10-2014 10:11 12	10-10-2014 11:30:22	12340000000000000000000000000	BACKU	PARTH
					Test-123		10-10-2014 10:11:12	1010-2014 11:30:22	300833820605014000300000	BACKU	PARTH
					Test-123		10-10-2014 10 11 12	1010-2014 11:30:23	100000000000000000000075	BACKU	PARTH
					Yest-123		10-10-2014 10:10-15	1010-2014 11:30-23	C9010AAAAA000000000A57A3	BACKU	PARTH
					Test 123		10-10-2014 10:10:15	1010-2014 11:30:23	E2009033110900990730C851	BACKU	PARTH
					Test-123		10-10-2014 10:10.13	1010/2014 11:30 23	12340000000000000000000	BACKU	PARTH
					Test 123		10-10-2014 10:10:13	1010-2014 11:30:24	272226666666666666666666666666666666666	840400	PARTH
					Test-123		10-10-2014 10:10:11	10-10-2014 11:30-24	320810010000100112347896	BACKU	ралти
					Test-123		10-10-2014 10:10:13	1010-2014 11:30:24	12340000000000000000000000000	BACKU	PARTH
					Test-123		10-10-2014 10 10 13	1010-2014 11:30-24	1000000000000000000000075	BACKU	PARTH
					Test-123		10-10-2014 10:10:11	1010-2014 11:30:25	12340000000000000000075	BACKU	PARTH
					Test-123		10-10-2014 10:10:13	1010-2014 11:30:25	1234000000000000000076	SACKU	PARTH
					Test 123		10:10:2014 10:10 13	10 10 2014 11:00 25	000000000000000000000000000000000000000	BACKU	PARTH
					Test-123		10-10-2014 10 10 11	1010-2014 11:30:25	345600000000000000000000	BACKU	PARTH
					Test-123		10-10-2014 10:09:12	1010-2014 11:30:25	100000000000000000000077	BACKU	PARTH
					Test-122		10-10-2014 10:09:12	1010-2014 11:30:26	30083382D6D9014000300000	BACKU	PARTH
					Test-123		10-10-2014 10:05:12	10-10-2014 11:30-26	12340000000000000000078	BACKU	PARTH
					221						
			PCieto								8
SAVE RECOR	25 Clea	r All Fleconds	19-1	192.168.25.1	T Masie	255 255 295.0		READER CO	N/NG WRITE USER	SET GPO	SO CAND SPACE
			IF2	192 168 25 1	10 Mark	255 255 255 0		EREADER OF	THI WOITE ERC	OFTOP	SDCARD EDEMAT
								The sector of		the first of	

6. Choose and press button "READER CONFIG" from PC Software.

7.Input the default.ini location, where the destination the Default Setting file (default.ini) will be copied to. After that choose and press "Get default.ini from Reader".

READER ID :052	206_DEMO_22JAN
Stop Reading (Enter Maintenance Mode)	Get default ini from Reader
Start Reading	Send default in to Reader
REBOOT Reader (Enter Operation Mode)	Edt default in
default ini Instation C.\Users\steve tooi\Deskti	op\CS208 Teet\2014_02_22\defaut.ini

8. The Default Setting file (default.ini) is copied from CS208 to the target directory.

Organize 🛪 📑 Open 🛪	Share with + Print Burn New folder	
🙀 Favorites	name *	Uste modifie:
📖 Desktop	CS208CommissioningAndFedUpgradeL0.5.0	22/2/2014 10:
Urophex	🔒 CS208 PC Demo 1.6	22/2/2014 10:
📃 Recent Places	CS208 Device 1.0 50-DEBUG np	10/1/2014 1/5
😹 Downloads	CS200 Device 1.0.37-D6.zp	17/1/2014 34
	CS200 Device 1.0.30-DB.zip	17/1/2014 13:
词 Libraries	CS206LOG-20140117153643.TKT	17/1/2014 15:
Documents	CS208-PC Demo-L6.rip	17/1/2814 10:
🚽 Music	(a) default ini	24/2/2014 11:
E Pictures	factory.dct	17/1/2014 15:
🔠 Subversion	1 (A) (A)	
Viduas.		
Computer		
& Windows7_OS (Ci)		
No Lenovo Recovery (Q.)		

5.5.2 Set modes to send data via GPRS and Ethernet

Please backup default.ini before doing any modification on mode setting (GPRS / LAN) to send data. User may use the copy to recover CS208 for wrong setting of the default.ini file.

5.5.2.1 CS208 sends data via Ethernet

1.In default.ini, find the section [DEVICEID], set communication mode by setting CommMode: NETWORK.

Image: Second Second

2. In the [SERVER] section, set static IP for target PC to be used. Normally ServerIP1 is

used for setting static IP for target PC. Therefore BackendServer is set to 1.

default.ini - Notepad	THE OWNER PROPERTY AND ADDRESS OF TAXABLE PARTY.
File Edit Format View Help	
[SM5] PhoneNumber = AutoSwitchoverTime = 60 AuthorizedSender1 = AuthorizedSender3 = AuthorizedJser1 = AuthorizedJser2 = AuthorizedJser3 = AuthorizedPassword1 = AuthorizedPassword2 = AuthorizedPassword3 =	; Phone number of Backend control center ; Time of switching to SMS when network connection fails (minute) ; SMS authorized sender 1 ; SMS authorized sender 2 ; SMS authorized sender 3
[SERVER] BackendServer = 1 ServerIP1 = 192.168.25.141 ServerIP2 = 192.168.25.108 Port = 9092 SynchronizationInterval = 60 DataResendTime = 5	; 5elect Backend Server (1/2) ; Backend Server IP 1 ; Backend Server IP 2 ; Backend Server Port number ; Keepalive interval time (minute). Reader will send keep alive p ; Resend Tag data to backend server if reader does not receive dat
[DATA] ReadTag = N Access Password = 00000000 TagAuthenticationMask = MultiBank1 = NONE Offset1 = 0 Count1 - 0 MultiBank2 = NONE offset2 = 0 Count2 = 0 TagScanningCyCle = 1 TagScanningCyCle = 10 TagScanningTime - 10 TagDuplicaterilterTime = 10	<pre>Read Tag at power up or restart ; Tag Password ; Authenticated TAG Mask (bit mask 1 = 1, 0 = 0, * = wildcard) ; First additional data Offset ; First additional data length (word) ; Second additional data length (word) ; Second additional data length (word) ; Second additional data length (word) ; Tag scanning cycle (minute), 0 = continuous read ; Tag scanning time (second) ; Tag duplicate filter time (second)</pre>

ServerIP1: Set the IP address where the PC (in static IP) receive the data

Port: Default is 9092 for Demo App

SynchronizationInterval: Reader will send keep alive packet per this time in minute (To the PC as server)

3.In the section [NETWORK], set DHCP, IP, Subnet, Gateway and DNS for CS208 reader

default.ini - Notepad	
File Edit Format View Help	
[DEVICEID] Model = CS208 ID = SerialNumber CommMode = NETWORK	; Model Name ; Device ID (default set to CS208 Reader internal serial number ii ; Communication mode (GPRS / NETWORK / USB / SMS / SERIAL)
[NETWORK] DHCP = N TP = 192.168.25.208 Subnet = 255.255.255.0 Gateway = 192.168.25.1 DNS1 - 192.168.25.1 DNS2 = 192.168.25.1	; Ethernet DHCP N/Y (N means Static IP) ; Ethernet IP Address, Static IP ; Ethernet Subnet ; Ethernet Gateway ; First DNS ; Second DNS
[GSM] Antenna = 0	; 0 = Auto select, 1 = Antenna Back Side, 2 = Antenna Front Side
[GPRS] APN - CMNET PHONENUMBER = *99#	; GPRS APN (CMNET in China, CMHK in HK, rcomnet in India) (APN 5' ; Dialup network phone number
[SMS] PhoneNumber = AutoSwitchOverTime = 60 AuthorizedSender1 - AuthorizedSender2 - AuthorizedSender3 =	: Phone number of Backend control center ; Time of switching to SMS when network connection fails (minute) ; SMS authorized sender 1 ; SMS authorized sender 2 ; SMS authorized sender 3

Please ensure that the CS208 reader and the target PC are configured in the same subnet address. For example, if the ServerIP1 (target PC IP Address) is set to 192.168.12.163, the network setting can be set as follow:

IP = 192.168.12.208 Subnet = 255.255.255.0 Gateway = 192.168.12.1 DNS = 192.168.12.1

4.Save and Close default.ini

and press "Send default.ini to Reader".

5.Copy the updated default.ini file from the directory back to CS208 using READER CONFIG again. Please note the default.ini location should remain unchanged. Choose

READER ID :CS2	208_DEMO_22JAN
Sop Reading (Enter Maintenance Mode)	Get default in from Reader
Sart Reading	Send default inito Reader
REBOOT Reader (Enter Operation Mode)	Edt defaut ini

6.When the default.ini is copied to CS208 reader, a success message will be displayed. Press OK and quit Reader Config.

Stop Reader	rg G	let default in from Reader
Start Read	Update Default.ini : OK	felault in to Reader
REBOOT R	ОК	Endeatin

7. Reboot CS208 after default.ini file is changed

MO_22JAN		
default inifrom Reader		
Send default in to Reader		
Edit default in		

8. Check the IP address setting in target PC / Server

neral	
ou can get IP settings assigne his capability. Otherwise, you or the appropriate IP settings	ad automatically if your network supports need to ask your network administrator
Use the following IP addre	2521
IP address:	192 . 168 . 25 . 141
Sybnet mask:	255 . 255 . 255 . 0
Default gateway:	
Obtain DNS server addres	as automatically
() Use the following DNS ser	ver addresses:
Preferred DNS server:	
Alternate DNS server:	14 I I
Validate settings (pop er	dt Advanced

9. Open PC Software "CS208BackendServer.exe" in the target PC. Wait until the CS208 reader appears and tag data is received.

HAMMAN	Madaia	1P	Mar.		Reader ID	Detected time	Serverreceive	Data	Operat	tion								
ed-123	LAN	152.161.2	00.05 78 85 00 03		Test-123	10-10-2014 10:11-12	10-10-2014 11:30-22	3456300000000000000000000	BACKI	IPARTH								
	100411		State encodes and		Test-123	10-10-2014 10:11:12	10 10 2014 11:30 22	320810010000100112347890	BACKI	IP/ARTH								
					Tett-123	10-10-2014 10-11-12	10-10-2014 11:30:22	1234100000000000000000000000000000000000	BACKI	IPURTH								
					Test-123	10-10-2014 10:11-12	10 10 2014 11:30 22	300833820DD9014000000000	BACKI	IPWRTH								
					Text-123	10-10-2014 10:11:12	10-10-2014 11:30:23	100000000000000000000000000000000000000	BACK	PARTH								
					Test-123	10-10-2014 10:10:15	10-10-2014 11:30:23	C9010AAAAA010000000A57A3	BACKI	IPMRTH								
					Test-123	10-10-2014 10:10:15	10:10:2014 11:30:23	E2009033110900990730C851	BACKI.	IPARTH								
					Test 123	10/10/2014 10:10:13	10-10-2014 11:30-23	1234100060000000000007A	BACKL	IPARTH								
			Test-123	10-10-2014 10:10:13	10-10-2014 11:30-24	22229655855665555555555	BACKI.	PARTH										
			Test-123	10/10/2014 10:10:13	10-10-2014 11:30:24	320810010000100112347590	BACKL	РИВТН										
			Test 125	10-10-2014 10-10-13	10 10 2014 11:30 24	1234100000000000000000000000000000000000	BACKL	IPWRTH										
			Test 123	10 10 2014 10 10 13	10 10 2014 11:30 24	100010001000100000000000000000000000000	BACKI.	IPMRTH										
													Test-123	10-10-2014 10:10:13	10-10-2014 11:30:25	12341000000000000000075	BACKL	IPWRTH
							Test-123	10-10-2014 10:10:13	10-10-2014 11:30:25	1234300060006000000076	BACKL	IPARTH						
					Ted-123	10-10-2014 10:10:13	10-10-2014 11:30:25	300833820DD901400000000	BACKU	IPARTH								
							Ted-123	10-10-2014 10:10:13	10-10-2014 11:30:25	34563000000000000000000000	BACKU	IPARTH						
							Ted-123	10-10-2014 10:09:12	10-10-2014 11:30:25	100030000000000000000073	BACKU	IPARTH						
					Test-123	10-10-2014 10:09:12	10-10-2014 11:30:26	300833B20DD9014000003000	BACKL	IPIARTH								
					Ted-123	10-10-2014 10:09:12	10-10-2014 11:30:26	123430000000000000000076	BACKL	IPARTH								
				1			1	H.)										
SAVE RECOR	DS Own	Al Encorte	PC Into				Cocaperace	WRITEUSER	017.030									
TOFILE		/ Televine	IP1	161 25.141	Mark 255.255.255.0		READER CO	MIPA MATE COL	SELOPO	SUCAPU SPACE								
			IP2	2.168.25.180	Mask 255.255.255.0		READER DE	TAIL WRITE EPC	GET GPI	SD CARD FORMAT								

5.5.2.2 CS208 sends data via GPRS

- 1. Before configure CS208 sends data in GPRS mode, please ensure that that SIM card is inserted to CS208 and the GPRS data service is enabled.
- Please consult with Internet Service Provider or MIS in the company for the External IP address. Also Port Forwarding configuration is required so that the data will be map to PC with internal IP address. Below is an example:

External IP address (from Internet Service Provider): 218.103.18.229 port: 9092 map to Internal IP address (target PC / Server): 192.168.25.141 (FIXED IP) DNS1: 8.8.8.8 (Google Public DNS) DNS2: 8.8.4.4 (Google Public DNS)

3. In default.ini, find the section [DEVICEID], set communication mode by setting CommMode: GPRS.

File Edit Format View Help				
[DEVICEID] Model - C5208	: Model Name Device TD (default set to CE208 Deader internal conial number i			
ComnMode = GPR5	; Communication mode (GPRS / NETWORK / USB / SMS / SERIAL)			
[NETWORK] DHCP - N IP = 192.168.25.208 Subnet = 255.255.255.0 Gateway - 192.168.25.1 DNS1 = 192.168.25.1 DNS2 = 192.168.25.1	: Ethernet DHCP N/Y (N means Static IP) : Ethernet IP Address, Static IP : Ethernet Subnet : Ethernet Gateway : First DMS ; Second DNS			
[G5M] Antenna – O	; 0 - Auto select, 1 - Antenna Back Side, 2 - Antenna Front Side			

4. In the section [GPRS], set APN according to the country / region where CS208 is used

default.ini - Notepad	and the second s
File Edit Format View Help	
[DEVICEID] Model = CS208 ID = SerialNumber CommMode = GPRS	; Model Name ; Device ID (default set to C5208 Reader internal serial number if ; Communication mode (GPRS / NETWORK / US8 / SMS / SERIAL)
[NETWORK] DHCP = N IP = 192.168.25.208 Subnet = 255.255.255.0 Gateway = 192.168.25.1 DNS1 = 192.168.25.1 DNS2 = 192.168.25.1	; Ethernet DHCP N/Y (N means Static IP) ; Ethernet IP Address, Static IP ; Ethernet Subnet ; Ethernet Gateway ; First DNS ; Second DNS
[GSM] Antenna = 0	; 0 = Auto select, 1 = Antenna Back Side, 2 = Antenna Front Side
[GPRS] APN = CMHK PHONENUMBER = *99#	; GPRS APN (CMNET in China, CMHK in HK, rcomnet in India) (APN st ; Dialup network phone number
[SMS] PhoneNumber = AutoSwitchoverTime = 60 AuthorizedSender1 = AuthorizedSender2 = AuthorizedSender3 =	; Phone number of Backend control center ; Time of switching to SMS when network connection fails (minute) ; SMS authorized sender 1 ; SMS authorized sender 3

5. In the [SERVER] section, set static IP for target PC to be used. Normally ServerIP2 is used for setting Internet IP address target PC / Server is connected. Therefore BackendServer is set to 2. ServerIP1 can be ignored when ServerIP2 is used. Please note that if user set invalid IP address in ServerIP2, CS208 will change to make connection with PC with IP address set as ServerIP1 and send data.

; Phone number of Backend control center ; Time of switching to SMS when network connection fails (minute) ; SMS authorized sender 1 ; SMS authorized sender 2 ; SMS authorized sender 3
; Select Backend Server (1/2) Backend Server IP 1 Backend Server IP 2 Backend Server Port number Resend Server Port number Resend Tag data to backend server if reader does not receive data acknowlegement from PC serve
Read Tag at power up or restart Tag Password Authenticated TaG Mask (bit mask 1 = 1, 0 = 0, * = wildcard) First additional data offset First additional data length (word) Second additional data length (word) Second additional data length (word) Second additional data length (word) Tag scanning cycle (minute), 0 - continuous read Tag scanning cycle (minute), 0 - continuous read Tag duplicate filter time (second)

ServerIP2: Set the Internet IP address provided by the Internet Service Provider in CS208 test site.

Port: Default is 9092 for Demo App

SynchronizationInterval: Reader will send keep alive packet per this time in minute (To the PC as server)

- 6. Save and Close default.ini
- Copy the updated default.ini file from the directory back to CS208 using READER CONFIG again. Please note the default.ini location should remain unchanged. Choose and press "Send default.ini to Reader".

Stop Reading (Enter Maintenance Mode)	Get default in from Reader
Start Reading	Send defaut inito Reader
REBOOT Reader (Enter Operation Mode)	Edit default ini

 When the default.ini is copied to CS208 reader, a success message will be displayed. Press OK and quit Reader Config.

Stop Read		let default ini from Reader
ILLING Manichary		<u> </u>
Start Read	Update Default.ini : OK	felault in to Reader
REBOOT R	OK	Ere dea tra

9. Reboot CS208 after default.ini file is changed.

READER ID :CS	208_DEMO_22JAN
Stop Reading (Enter Mointenance Mode)	Get default inifrom Reader
Start Reading	Send default in to Reader
REBOOT Reader (Enter Operation Mode)	Edit default ni

10. Manually input the TCP/IP properties to target PC / Server:

IP address: 192.168.25.141 Subnet Mask: 255.255.255.0 Gateway: 192.168.25.2 DNS1: 8.8.8.8 DNS2: 8.8.4.4

eneral						
You can get IP settings assigned a this capability. Otherwise, you new	sutomatically if your network suppor ed to ask your network administrato					
for the appropriate 19 settings.						
💮 Obtain an IP address automa	itically					
() Use the following IP address						
IP address:	192 .168 . 25 .141					
Sybnet mask:	255.255.255.0					
Default gateway:	192 .168.25.2					
🗇 Obtain DNS server address a	utomatically					
🛞 Use the following DNS server	addresses :					
Breferred DNS server:	8.8.8.8					
Alternate DNS server:	8.8.4.4					
🔄 Validate settings upon exit	Ad <u>v</u> anced.					

11. Open PC Software "CS208BackendServer.exe" in the target PC. Wait until the CS208 reader appears and tag data is received.

Namo	Interface	iP	Mae		Reader ID	Detected time	Server receive	Dete	Operation					
23	LAN	152 168 2	00.05.78.85.00.03		Test-123	10-10-2014 10:11:12	10-10-2014 11:30.22	3456000000000000000000000	BACKUPIARTH					
					Test-123	10-10-2014 10:11:12	10-10-2014 11 30 22	320810010000100112347850	BACKUPIARTH					
					Test-123	10-10-2014 10:11:12	10-10-2014 11:30.22	123400000000000000000000000	BACKUPIARTH					
					Test-123	10-10-2014 10:11:12	10-10-2014 11:30:22	300833820.00901400000000	BACKUPIARTH					
					Test-123	10-10-2014 10:11:12	10-10-2014 11:30:23	100000000000000000000000000000000000000	BACKUPIARTH					
					Test-123	10-10-2014 10:10:15	10-10-2014 11:30:23	C5010AAAAA000000000A57A3	BACKUPIARTH					
					Test-123	10-10-2014 10:10:15	10-10-2014 11:30.23	E2009033110900990730C851	BACKUPIARTH					
					Test-123	10-10-2014 10:10:13	10-10-2014 11:30:23	123400000000000000000007A	BACKUPIARTH					
			Test-123	10-10-2014 10:10:13	10-10-2014 11 30 24	222266666666666655555555	BACKUPIARTH							
			Test-123	10-10-2014 10:10:13	10-10-2014 11 30.24	320810010000100112347890	BACKUPIARTH							
			Test-123	10-10-2014 10:10:13	10-10-2014 11:30:24	1234000000000000000000000000000000000000	BACKUPIARTH							
					Test-123	10-10-2014 10:10:10	10-10-2014 11:30:24	100000000000000000000000000000000000000	BACKUPIARTH					
					Test-123	10-10-2014 10:10:13	10-10-2014 11:30:25	12340000000000000000075	BACKUPIARTH					
								Test-123	10-10-2014 10:10:13	10-10-2014 11:30.25	12340000000000000000076	BACKUPIARTH		
										Test-123	10-10-2014 10:10:13	10-10-2014 11:30:25	30083382000901400000000	BACKUPIARTH
								Test-123	10-10-2014 10:10:13	10-10-2014 11:30:25	34560000000000000000000	BACKUPIARTH		
										Test-123	10-10-2014 10:09:12	10-10-2014 11:30:25	100000000000000000000000000000000000000	BACKUPIARTH
					Test-123	10-10-2014 10:09:12	10-10-2014 11:30.26	300833E20/CC9614000000000	BACKUPIARTH					
					Test-123	10-10-2014 10:06:12	10-10-2014 11:30.25	123400000000000000000076	BACKUPIARTH					
				-		1								
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5.6 CS208 Firmware Upgrade

5.6.1 Firmware Upgrade Overview

User can have an overview of the files required for the firmware upgrade of the CS208 and the upgrade procedure in sequence. The CSL CS208 Firmware Upgrade procedure is important for users for their CS208 RFID Reader upgrade. Incorrect firmware upgrade procedure may lead to system halt and may not be unrecoverable.

5.6.1.1 CS208 Firmware Upgrade Flow Diagram

The flow diagram below shows the priority of firmware upgrade steps starting from device application, operating system and bootloader. User MUST follow the sequence for multiple firmware upgrades.



5.6.2 Firmware Upgrade Procedure

Below is the firmware list of CS208 RFID reader:

Firmware	File Name
Device Application	CS208DeviceXX.XX.XX.zip (e.g. CS208 Device 2.0.1-DB.zip)
Operating System	CS208_wince_fa_XXXXXXXXXXX_S32mhz_nk.nb0 (CS208_wince_fa_20140407_1642_532mhz_nk)
Bootloader	u-boot_532M_vX.X.X.X_XXXXXXX.bin (u-boot_532M_v1.0.0.5_20140206.bin)

Below is the PC software list for firmware upgrade of CS208 RFID reader:

CS208 Upgrade	PC Software File Name		
Device Application: version after 1.0.16	CS208CommissioningAndFwUpgrade1.0.6.exe		
Operating System: All version	CS208CommissioningAndFwUpgrade1.0.6.exe		
Bootloader: All version	CS208CommissioningAndFwUpgrade1.0.6.exe		

5.6.2.1 PC IP Configuration before CS208 firmware upgrade

Before firmware upgrade, user should check the IP configuration and firewall setting in PC.

1. Go to Local Area Connection Properties. Find Internet Protocol Version 4 (TCP/IPv4) and choose Properties.



2. Choose "Use the following IP address".

Set IP address (**192.168.25.100**), Subnet mask (**255.255.255.0**), Default gateway (**192.168.25.1 for direct connect to CS208 reader**). Click OK after set.

u can get IP settings assigned a is capability. Otherwise, you ne r the appropriate IP settings. Obtain an IP address automi	automatically ed to ask you atically	if your n r networ	etwork su k adminis	ipports trator
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Subnet mask:	255 .	255,25	5.0	
Default gateway:	192 .	168 . 2	5.1	
🔿 Obtain DNS server address a	automatically			1.10
Use the following DNS serve	r addresses:			
Preferred DNS server:				
Alternate DNS server:	1 23	24	8 . - 1	
Validate settings upon exit			Advar	red

3. Ensure the Windows Firewall is turned off.



 Open Command Prompt and do ping test ("Ping 192.168.25.208" <- default CS208 IP address). Reply message will received for successful network connection.



5.6.2.2 CS208 Device Application firmware upgrade via Ethernet

- 5. After CS208 RFID reader is power up, wait 1 minute.
- In PC, Open Command Prompt and run ping test ("Ping 192.168.25.208" <- Default CS208 IP address). Check the network connection of CS208 reader.



 "CS208CommissioningAndFwUpgrade1.0.6" is used for Device Application upgrade. Run CS208CommissioningAndFwUpgrade.exe (version 1.0.6) provided in the CS208 software package. Wait until CS208 Serial ID is displayed. (Around 30 seconds)

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8. Choose "Upgrade Application and Keep old default.ini file" in the drop down list.

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9. Click "..." to choose the latest Device Firmware for upgrade (CS208 Device 2.0.1-DB.zip).



10. Click "Upgrade" button to start upgrade

🚽 CS208 Commissioning & Firmware Upgrade 1.0.6.0	***	All some set	ALTER PART	ARE AN	
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11. Wait until progress bar status reach 100%, a download complete message box is displayed when the upgrade process is finished.

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12. CS208 RFID Reader reboot automatically after firmware upgrade. Keep the PC upgrade software ON and WAIT until the CS208 reconnected again.

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5.6.2.3 CS208 Operating System firmware upgrade via Ethernet

- 4. After CS208 RFID reader is power up, wait 1 minute.
- 5. In PC, Open Command Prompt and run ping test ("Ping 192.168.25.208" <- Default CS208

IP address). Check the network connection of CS208 reader.



 "CS208CommissioningAndFwUpgrade1.0.6" is used for OS firmware upgrade. Run CS208CommissioningAndFwUpgrade.exe (version 1.0.6) provided in the CS208 software package. Wait until CS208 Serial ID is displayed. (Around 30 seconds)

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For new CS208, this PC must be set IP 192 168 25.100 and firewall must be turned off, then connect CS208 by ethemet to the PC	
Connected from ST12345678	
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7. Choose "Upgrade OS kernel" in the drop down list.



8. Choose the latest OS Firmware for upgrade (example:

CS208_wince_fa_20140407_1642_532mhz_nk.nb0)

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9. Click "Upgrade" button to start upgrade.

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10. Wait until progress bar status reach 100%, a download complete message box is displayed when the upgrade process is finished.

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11. CS208 RFID Reader reboot automatically after firmware upgrade. Keep the PC upgrade software ON and WAIT until the CS208 reconnected again.

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5.6.2.4 CS208 Bootloader firmware upgrade via Ethernet

- 1. After CS208 RFID reader is power up, wait 1 minute.
- 2. In PC, Open Command Prompt and run ping test ("Ping 192.168.25.208" <- Default CS208

IP address). Check the network connection of CS208 reader.



 "CS208CommissioningAndFwUpgrade1.0.6" is used for OS firmware upgrade. Run CS208CommissioningAndFwUpgrade.exe (version 1.0.6) provided in the CS208 software package. Wait until CS208 Serial ID is displayed (Around 30 seconds).

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Connected from ST12345678	
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4. Choose "Upgrade Bootloader" in the drop down list.

🥶 CS208 Commissioning & Firmware Upgrade 1.0.5.0	
for new CS208, this PC must be set IP 152 168 25.100 and firewall must be turned off, then connect CS208 by ethemet to the PC	
Connected from ST12345678	
Upgrade Application and Keep old default ini file	
Upgrade Application and Keep old default.ini file Upgrade Application and use new factory default file Upgrade OS kernel Upgrade Default File (default.ini)	
Upgrade Bootloader	<u>x</u>
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5. Choose the latest Bootloader Firmware for upgrade (example: u-boot_532M_v1.0.0.5_20140206.bin)

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6. Click "Upgrade" button to start upgrade

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7. Wait until progress bar status reach 100%, a download complete message box is displayed when the upgrade process is finished.

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8. CS208 RFID Reader reboot automatically after firmware upgrade. Keep the PC upgrade software ON and WAIT until the CS208 reconnected again.

on CS206, the PC must be set P1 152, 168,25, 100 and hervalling connect C5208 by ethemet to the PC	at be harved of	
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5.6.3 Firmware Upgrade via USB connection

5.6.3.1 Firmware Upgrade via USB connection (Window 7)

1. Since CS208 cannot do firmware upgrade in Normal mode. Restart CS208 and check CS208 enters Self Test Mode.



2. In the menu of Self Test Mode, choose "Q: Exit Program"



- 3. If user is using Window 7, check Windows Mobile Device Centre is opened.
- 4. Connect CS208 to PC via USB and wait until "connected" status is displayed.



5. In Windows Mobile Device Centre, choose "Connect without setting up your device". Then choose "File Management" > "Browse the contents of your device"



6. A new drive "CS208" is found. Choose "Storage Card" where the CS208 application and default setting files are stored and can be upgraded.



 In the directory ""\CS208\Storage Card", check "\cs208Device". Here the user can upgrade the files CS208Device.exe, CSLibrary.dll, default.ini, etc directly by COPY and REPLACE with new version files.

🔾 🗢 🕌 Computer	\CS208\Storage Card\cs208Device		- 4- Search	cs209D evice	-	3
Organize 🔻				855 🔻	C]	0
	Name	Туре	Size	Modified		C
Libraries	CS208Device.exe	Application	73 KB	9/12/2013 9:17		9/
Documents	CSLibrary.dll	Application extension	253 KB	9/12/2013 9:17		9/
J Music	default.def	Export Definition File	3 KB	9/12/2013 9:17		9/
Pictures	default.ini	Configuration settings	3 KB	9/12/2013 9:17		9/
Subversion	ICSharpCode,SharpZipLib.dll	Application extension	192 KB	9/12/2013 9:17		9/
Videos	🚳 OpenNETCF.Net.Ras.dll	Application extension	39 KB	9/12/2013 9:17		9/
Computer						
Windows7_OS (C						
😽 Lenovo_Recovery						
CS208						
👝 NANDFlash						
- Network						
🕳 Storage Card						
Storage Card2						

8. Unplug USB cable and reboot CS208 manually.

5.6.3.2 Firmware Upgrade via USB connection (Window XP)

1. Since CS208 cannot do firmware upgrade in Normal mode. Restart CS208 and check CS208



2. In the menu of Self Test Mode, choose "Q: Exit Program".

3. If user is using Window XP, check Microsoft ActiveSync is opened. Connect CS208 to PC via USB.



4. When CS208 is connected the first time, Microsoft Active Sync may ask for set up a partnership. Choose "No" and press "Next".



cel

5. Check CS208 is automatically connected shown as below. User can also check the connection settings for CS208 connecting to ActiveSync automatically.

🖲 Microsoft AchveSync		© Connection Settings	
File Yiew Tools Help		O Device connected	17 A.M.
🔕 Smar 🕒 Schedicke 🔯 Explore		-	Goun
Guest	0	🔽 Show status icon in taskbar	
Connected	S	Allow USB connections	
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	Hide Details 🕱	(COM) 🔀	-
Information Tuna Status	The second of the	This computer is connected to:	
chothouse type		Automatic	
		Given ActiveSync when my device connects	
		<u>Help</u>	Ca
			_

6. Choose "Mobile Device" in "My Computer".



7. In "Mobile Device", choose "Storage Card" where the CS208 application and default setting files are stored and can be upgraded.



 Check the directory "\Storage Card\cs208Device". Here the user can upgrade the files CS208Device.exe, CSLibrary.dll, default.ini, etc directly by COPY and REPLACE with new version files.



9. Unplug USB cable and reboot CS208 manually.

5.6.4 Reset CS208 to Factory Setting

Please refer to **4.4.5.1 RESET TO FACTORY SETTING (SHIFT-0)** to reset CS208 to factory setting.

6 Remote access CS208 via Ethernet and USB using Remote Desktop

User can remote access the CS208 Integrated RFID Reader via Ethernet or USB interface using Remote Desktop.

6.1 Remote access CS208 via Ethernet

1. Run the Remote Desktop Tool "cerhost.exe".



2. In the form "Remote Display Control for Window CE", Choose "File > Connect...".



3. Wait several seconds until the active target device is displayed in the list. If no device is found in the list, please check the power of the reader and the Ethernet connection between the reader and the PC.

Check the IP address of the target reader.

10. Choose the target reader in the list and press "OK" to confirm.

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🔆 Favorites	Name	Date modified	Туре	Size
📃 Desktop	🗑 cerhost.exe	03-10-2014 19:58	Application	25 KB
😻 Dropbox	@ cerhost_as.exe	03-10-2014 19:58	Application	15 KB
📜 Recent Places	Generalization			
Downloads	B Remote Display			
	File Zoom Disp	ilay Tools Help		
🛜 Libraries	(
Documents	Connect			
J Music	Active target of	levices		
Pictures	SMDK64103	6/10101		
Subversion				
Videos				
💻 Computer				
🕌 Windows7_0S (C:)				
📕 Seagate Backup Plus Di		*		
DVD RW Drive (E:) LAN	L 102 107	2 25 120		
😽 Lenovo_Recovery (Q:)	192 . 168	J _ 20 _ 12U		
CS208	ОК	Cancel		
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FTP_SERVER	L			
CNE-CA53FAAD685				

11. The Window CE Desktop of CS208 reader is ready for use.

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😌 Dropbox	cerhost_as.exe	03-10-2014 19:58	Application	15 K
E Recent Places	Commencement			
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	File Zoom	Display Tools Help		
Jubraries	CS208			
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DVD RW Drive (E) LAN			347	
DVD RW Drive (E) LAN Lenovo_Recovery (Q:)		22		

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6.2 Remote access Application via USB

1. Run the Remote Desktop Tool "cerhost_as.exe".

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🚺 Downloads					
🕽 Libraries 🔋 Documents					
👌 Music	E				
E Pictures					
🗟 Subversion					
Videos					

2. The form "Active Sync Remote Display Control for CS208" is displayed, wait several seconds.

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👽 Dropboa	B cerhost as exe	63 18-2014 19:58	Application	15 K
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Subversion				
M Videos				
💻 Computer				
🏭 Windows7_OS (C;)				
Seagate Backup Plus D				
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😚 Lenovo_Recovery (Q:)				
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💱 Dropbox	cerhost_as.exe	03-10-2014 19:58	Application	15
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😽 Lenovo_Recovery (Q:)				
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3. The Window CE Desktop of CS208 reader is ready for use.

7 Software Tools for CS208 setup

7.1 Wireshark - network protocol analyzer

Wireshark is a network protocol analyzer which can help to capture the IP packet exchanges between the user PC and the RFID reader.

User can download Wireshark from http://www.wireshark.org/download.html. It is a freeware.

Below is the procedure for setting up the diagnosis of IP packet exchanges of the RFID reader:

- 😋 🕒 🖉 + Control Parel + Sydem and Security + Westewa Frewell - +-Control Fanal Horne Help protect your computer with Windows Firewall Adout a program or feature through Windows Tirovall Windows Rewall can help prevent hackers or maticipus toffware fitter gaining as through the internet or a relevent. G Change notification settings Here does a filment help protect my computer? Turn Windows Remultion as What are natural locate For your tecurity, cores settings are rearranged by your system advises S Rotore defaults Azonosd settings Update your Filewall settings Troubleshoot my Indows Forwall is not using the recommended. Attrigo to protect your computer. E Use record ful an the mianufaiteed settings! Domain networks Connected Networks at a containere that are attached to a domain Medews Prevell state: DH Block of currection int of allowed group in my local intification states Natify the when Hindows Firewall block: a new program Home or work (private) networks Not Connected Public networks Not Connected Action Cen Network and Sharing Center
- 5. Turn on Wireshark capture

4. Turn off PC Firewall



6. Choose **Capture > Options** in the menu bar



7. In **Options**, set the Capture File destination with filename (*.pcapng). The captured data will be written to the file created.

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8. Press "Start" button in **Options**. Wireshark starts capture data of IP packet exchanges.

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- 9. Power on RFID Reader. Check the IP of reader is set and recorded before use.
- 10. Turn on demo app software for CS208 RFID reader (CS208BackendServer.exe).



11. In Wireshark, set "ip.addr == 192.xxx.xxx (CS208 device IP address)" in the Filter box, the IP packet exchanges data record of RFID reader and PC is seen. Column "Source" shows the IP address of RFID reader (IP address = 192.168.25.209 in the example below) and PC (IP address = 192.168.25.147 in the example below).

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ilten ip.addr == 192.168.25.209		Expression Clear Appl	y Save	
. Time	A Source	Destination	Protocol Length	Info
350 98.846533000	192,168,25,209	255.255.255.255	LIDP	346 Source port: 49152 De
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401 108.848292000	192.168.25.209	255.255.255.255	UDP	346 Source port: 49152 De
422 113.849195000	192.168.25.209	255.255.255.255	UDP	346 Source port: 49152 De
432 118.849985000	192,168,25,209	255.255.255.255	UDP	346 Source port: 49152 De
453 123.853216000	192,168.25.209	255.255.255.255	UDP	346 Source port: 49152 De
465 126. 232854000	192.168.25.209	192.168.25.147	NBN5	92 Name query NBSTAT "<00
468 126, 233436000	192.168.25.147	192.168.25.209	NBN5	217 Name query response NB
469 126, 236746000	192.168.25.209	192.168.25.147	TCP	62 49201 > XmlipcRegSvc [
470 126, 236809000	192.168.25.147	192.168.25.209	TCP	62 XmlipcRegSvc > 49201 [
471 126,237519000	192,168,25,209	192.168.25.147	TCP	60 49201 > xmlipcRegsvc [
472 126, 371971000	192,168,25,209	192.168.25.147	TCP	110 49201 > XmlipcRegSvc [
473 126. 588940000	192.168.25.147	192.168.25.209	TCP	54 XmlIpcRegSvc > 49201 [
477 128.855663000	192.168.25.209	255.255.255.255	UDP	346 source port: 49152 De
504 133.858239000	192.168.25.209	255.255.255.255	UDP	346 Source port: 49152 De
536 138, 859988000	192.168.25.209	255.255.255.255	UDP	346 Source port; 49152 De
537 139.287577000	192,168.25.209	192.168.25.147	TCP	130 49201 > xmlipcRegsvc [
538 139, 308107000	192.168.25.147	192.168.25.209	TCP	122 xmlipcRegSvc > 49201 [
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- Capturing from Local Area Connection (Wireshark 110.2 (SVN Rev 51934 from /trunk-1,10) Eile Edit View Go Capture Analyze Statistics Telephony Tools Internals Help Filter: 19791dr == 192.168.25.209 Expression... Clear Apply Save inc interprets 4912 Destination port: 346 Source port: 49152 Destination port: 100 49201 > xmllpckegSvc [Ack] Seq-46 60 49201 > xmllpckegSvc [Ack] Seq-568 Ac 346 Source port: 49152 Destination port:
 Source
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 No. UDP UDP TCP TCP UDP UDP UDP TCP TCP UDP TCP TCP TCP UDP UDP UDP TCP TCP TCP UDP UDP UDP TCP TCP TCP TCP TCP 192.168.25.147 7024 1315.825235000 192.168.25.209 7057 1320.847768000 192.168.25.209 7083 1325.848899000 192.168.25.209 7095 130.255090000 192.168.25.209 7096 1330.258146000 192.168.25.147 7097 1330.470725000 192.168.25.209 7102 1330.849714000 192.168.25.209 192.168.25.147 192.168.25.209 192.168.25.147 255.255.255.255 E Frame 6103: 122 bytes on wire (976 bits), 122 bytes captured (976 bits) on interface 0 E Ethernet II, Src: Flextron_b9:58:2a (00:21:cc:b9:58:2a), Dst: e0:aa:c8:de:63:51 (e0:aa:c8:de:63:51) E Internet Protocol Version 4, Src: 192.168.25.147 (192.168.25.147), Dst: 192.168.25.209 (192.168.25.209) I Transmission control Protocol, Src Port: xmlppcRegSvc (9092), Dst Port: 49201 (49201), Seq: 4149, Ack: 4769, Len: 68 E Data (68 bytes)
- 12. User can press "Stop" icon to stop data capture when necessary.

13. User can find the saved capture file (*.pcapng) in the directory user defined in Step 4.

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Witwork				
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7.2 Port Forwarding

(To be defined)

8 Regulatory Information

8.1 Federal Communications Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 1m between the radiator & your body.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. This product must be installed by a professional technician/installer.

Appendix A. CS208 GPIO Simple Test Circuit



GPI Test Circuit



Appendix B. SMS ERROR code list

1 - "Unassigned (unallocated) number"

This cause indicates that the destination requested by the Mobile Station cannot be reached because, although the number is in a valid format, it is not currently assigned (allocated).

8 - "Operator determined barring"

This cause indicates that the MS has tried to send a mobile originating short message when the MS's network operator or service provider has forbidden such transactions.

10 - "Call barred"

This cause indicates that the outgoing call barred service applies to the short message service for the called destination.

21 - "Short message transfer rejected"

This cause indicates that the equipment sending this cause does not wish to accept this short message, although it could have accepted the short message since the equipment sending this cause is neither busy nor incompatible.

27 - "Destination out of service"

This cause indicates that the destination indicated by the Mobile Station cannot be reached because the interface to the destination is not functioning correctly. The term "not functioning correctly" indicates that a signalling message was unable to be delivered to the remote user; e.g., a physical layer or data link layer failure at the remote user, user equipment off-line, etc.

28 - "Unidentified subscriber"

This cause indicates that the subscriber is not registered in the PLMN (i.e. IMSI not known).

29 - "Facility rejected"

This cause indicates that the facility requested by the Mobile Station is not supported by the PLMN.

30 - "Unknown subscriber"

This cause indicates that the subscriber is not registered in the HLR (i.e. IMSI or directory number is not allocated to a subscriber).

38 - "Network out of order"

This cause indicates that the network is not functioning correctly and that the condition is likely to last a relatively long period of time; e.g., immediately reattempting the short message transfer is not likely to be successful.

41 - "Temporary failure"

This cause indicates that the network is not functioning correctly and that the condition is not likely to last a long period of time; e.g., the Mobile Station may wish to try another short message transfer attempt almost immediately.

42 - "Congestion"

This cause indicates that the short message service cannot be serviced because of high traffic.

47 - "Resources unavailable, unspecified"

This cause is used to report a resource unavailable event only when no other cause applies.

50 - "Requested facility not subscribed"

This cause indicates that the requested short message service could not be provided by the network because the user has not completed the necessary administrative arrangements with its supporting networks.

69 - "Requested facility not implemented"

This cause indicates that the network is unable to provide the requested short message service.

81 - "Invalid short message transfer reference value"

This cause indicates that the equipment sending this cause has received a message with a short message reference which is not currently in use on the MS-network interface.

95 - "Invalid message, unspecified"

This cause is used to report an invalid message event only when no other cause in the invalid message class applies.

96 - "Invalid mandatory information"

This cause indicates that the equipment sending this cause has received a message where a mandatory information element is missing and/or has a content error (the two cases are indistinguishable).

97 - "Message type non-existent or not implemented"

This cause indicates that the equipment sending this cause has received a message with a message type it does not recognize either because this is a message not defined or defined but not implemented by the equipment sending this cause.

98 - "Message not compatible with short message protocol state"

This cause indicates that the equipment sending this cause has received a message such that the procedures do not indicate that this is a permissible message to receive while in the short message transfer state.

99 - "Information element non-existent or not implemented"

This cause indicates that the equipment sending this cause has received a message which includes information elements not recognized because the information element identifier is not defined or it is defined but not implemented by the equipment sending the cause. However, the information element is not required to be present in the message in order for the equipment sending the cause to process the message.

111 - "Protocol error, unspecified"

This cause is used to report a protocol error event only when no other cause applies.

127 - "Interworking, unspecified"

This cause indicates that there has been interworking with a network which does not provide causes for actions it takes; thus, the precise cause for a message which is being send cannot be ascertained.

0...127 - Other values in this range are reserved, defined by GSM 04.11 Annex E-2 values

- 128 Telematic interworking not supported x
- 129 Short message Type 0 not supported x x
- 130 Cannot replace short message x x
- 143 Unspecified TP-PID error x x
- 144 Data coding scheme (alphabet) not supported x
- 145 Message class not supported x
- 159 Unspecified TP-DCS error x x
- 160 Command cannot be actioned x
- 161 Command unsupported x
- 175 Unspecified TP-Command error x
- 176 TPDU not supported x x
- 192 SC busy x

- 193 No SC subscription x
- 194 SC system failure x
- 195 Invalid SME address x
- 196 Destination SME barred x
- 197 SM Rejected-Duplicate SM x
- 198 TP-VPF not supported X
- 199 TP-VP not supported X
- 208 SIM SMS storage full x
- 209 No SMS storage capability in SIM x
- 210 Error in MS x
- 211 Memory Capacity Exceeded X
- 212 SIM Application Toolkit Busy x x
- 255 Unspecified error cause

128...255 - Other values in this range are reserved, defined by GSM 03.40 subclause 9.2.3.22 values

-
- 300 ME failure
- 301 SMS service of ME reserved
- 302 operation not allowed
- 303 operation not supported
- 304 invalid PDU mode parameter
- 305 invalid text mode parameter
- 310 SIM not inserted
- 311 SIM PIN required
- 312 PH-SIM PIN required
- 313 SIM failure
- 314 SIM busy
- 315 SIM wrong
- 316 SIM PUK required
- 317 SIM PIN2 required
- 318 SIM PUK2 required
- 320 memory failure
- 321 invalid memory index
- 322 memory full
- 330 SMSC address unknown
- 331 no network service
- 332 network timeout

- 340 no +CNMA acknowledgement expected
- 500 unknown error
- 256...511 Other values in this range are reserved
- 512... manufacturer specific

Appendix C. Technical Support

System integrators setting up the CSL CS208 Integrated Reader may encounter some problems. To quickly solve that, they are welcome to send the symptoms and configuration files back to techsupport@convergence.com.hk for support. Please send the following:

- 1) CS208 Factory Serial Number best to take a photo of the label at the back of the reader and send the photo to CSL technical support team.
- 2) Current firmware versions of reader.
- 3) Current library version on PC side.
- 4) Brief description of problems.
- 5) Check Firewall setting in user PC. Turn it off when test RFID reader.
- 6) Capture the IP packet exchanges using Wireshark (See "5.1 Wireshark network protocol analyzer"). Save the captured file (*.pcagng) and send to CSL.
- 7) Screen capture of command window of Control Port and Debug Port.
- 8) Screen capture of CS208 Back End Server window.
- 9) Photos of the overall site (if that can be released).

Send the above sets of data to techsupport@convergence.com.hk

Appendix D. RFID Basics

Passive tag RFID technology involves the reader, the antenna and the tag.

The reader sends out energy in the relevant frequency band to the antenna via RF cables, and the antenna radiates the energy out. This energy impinges on an RFID tag.

The RFID tag consists of an antenna coupled to an RFID IC. This IC converts the AC voltage it receives at the antenna port to DC voltage that in turn is used to empower the digital circuit inside.

The digital circuit then turns on and off some components connected to the antenna port, thereby changing its scattering behavior, in a pre-designed clock rate.

This changing of antenna port parameters then causes a "modulation" of the back-scattered RF energy.

This modulated back-scattered energy is detected by the reader and the modulation is captured and analyzed.

Appendix E. Operation Profiles for RFID

Profile	0	1	2	3	4	5
R-T Modulation	DSB-ASK	DSB-ASK	PR-ASK	PR-ASK	DSB-ASK	PR-ASK
Tari (µs)	25.00	12.50	25.00	25.00	6.25	25.00
R-T speed (kbps)	40	80	40	40	160	40
PIE	2:1	2:1	1.5:1	1.5:1	1.5:1	1.5:1
Pulse Width (uS)	12.50	6.25	12.50	12.50	3.13	12.50
T-R LF (kbps)	40	160	250	300	400	250
T-R Modulation	FM0	Miller-2	Miller-4	Miller-4	FM0	Miller-2
Divide Ratio	8	8	64/3	64/3	8	64/3
T-R Data Rate	40	80	62.5	75	400	125
(kbps)						

Region 2: FCC

Appendix F. RFID channels

Channel	Frequency	Channel	Frequency	Channel	Frequency
number	(MHz)	number	(MHz)	number	(MHz)
1	902.75	18	911.25	35	919.75
2	903.25	19	911.75	36	920.25
3	903.75	20	912.25	37	920.75
4	904.25	21	912.75	38	921.25
5	904.75	22	913.25	39	921.75
6	905.25	23	913.75	40	922.25
7	905.75	24	914.25	41	922.75
8	906.25	25	914.75	42	923.25
9	906.75	26	915.25	43	923.75
10	907.25	27	915.75	44	924.25
11	907.75	28	916.25	45	924.75
12	908.25	29	916.75	46	925.25
13	908.75	30	917.25	47	925.75
14	909.25	31	917.75	48	926.25
15	909.75	32	918.25	49	926.75
16	910.25	33	918.75	50	927.25
17	910.75	34	919.25		

Region 2: FCC