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SEMNOX SOLUTIONS PVT LTD

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[PARAFIT HARDWARE MANUAL]

The Document describes the Introduction of PARAFIT, Functionality of PARAFIT HARDWARE and Provide Technical Support.

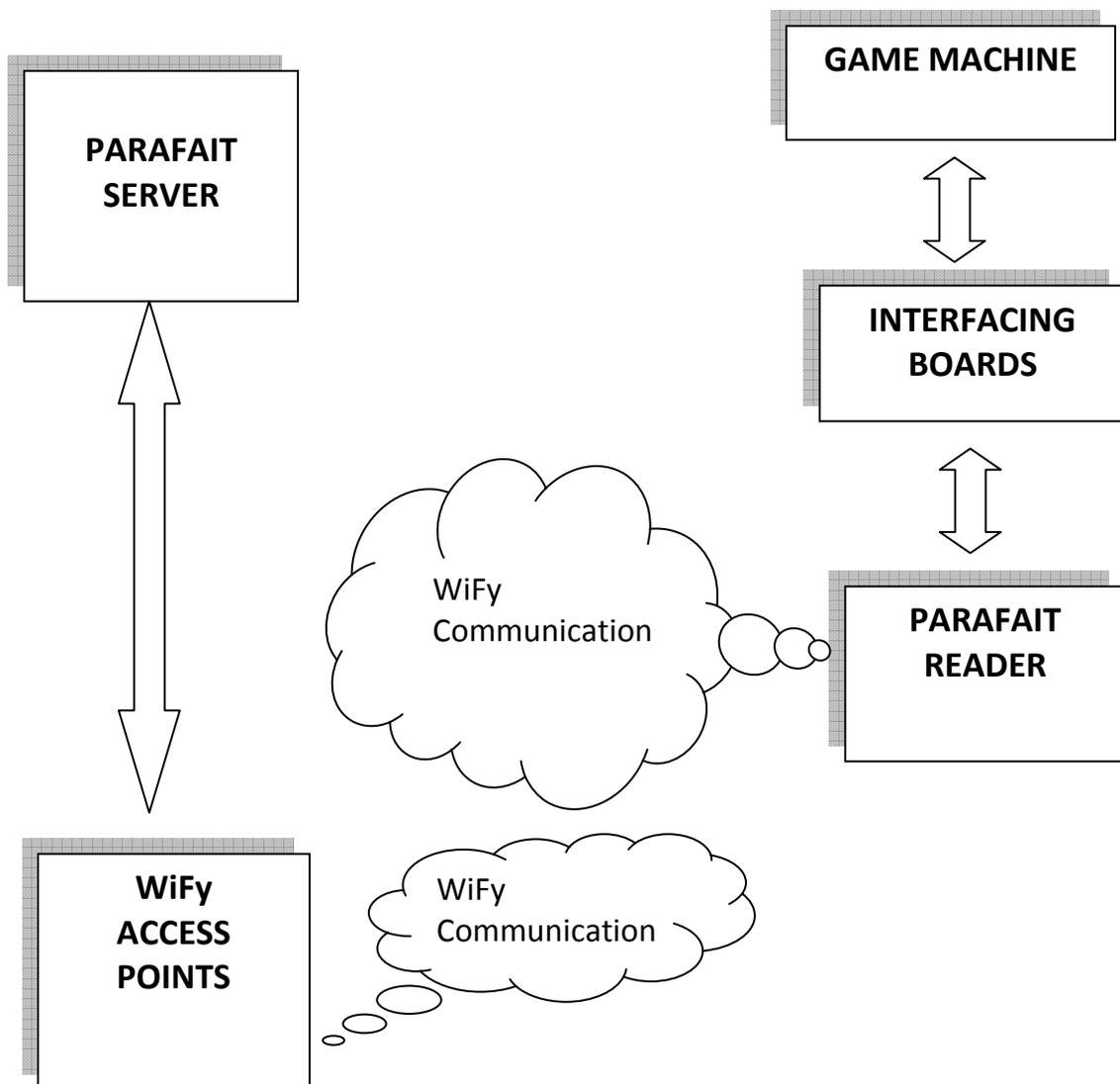
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Introduction

PARAFAIT is cashless solution for Entertainment centers. The System is 100% Wireless and very low power consumption using advanced technologies. The System has fully-fledged interfacing option which can support any types of machines.

Block Diagram



Reader

Functionality

Reader is used to interface between the user, server and the game machine. It generates the commands necessary to communicate with the Access Point wirelessly, pulses necessary to start the Game Machine and count the Ticket Dispensing from Game Machine.



Hardware Connection

Connectors	Descriptions
J4	10 Pins FRC Connector from Interfacing Board which has power supply (+5v), Back light power supply (+10v) and interfacing logic signals (connecting to the machine)
J5	10 Pins FRC Connector from Configuration Keyboard which is used for Configuring the reader

There are two ways to configure the wi-fi chip

1. Enter through the reader – This is done by pressing the config buttons appropriately as defined in the Reader Configuration documents. But it has

been concluded that this is extremely cumbersome for the users and alternate mechanism has to be developed

2. Enter through setting up the ADHOC network - Adhoc is considered as a point-to-point network in which each wi-fi device is linked directly to every other wi-fi device on the adhoc network. In Adhoc mode the module itself creates an "On Demand" network to which we can connect our computer as we connect other networks. IP Addresses are usually assigned through Auto IP. In our case

- a. When the wifi device is taken into ADHOC network mode, it'll setup network parafait_:xx:xx – where xx:xx are the last 4 digits of the MAC Address of the wi-fi chip
- b. The laptop is used to connect to this ADHOC network. It'll be assigned an IP in the range 169.254.x.x by the device
- c. The below specified program will then telnet to the wi-fi device and configure the parameters as entered by the user.

Connecting to the Adhoc network from the computer

1. Go to network connections and select view wireless networks.
2. Select the parafait_: XX: XX where XX: XX are the last 4 digits of the MAC Address.
 - a. This will be an open network which does not ask for a pass phrase or pass key.
 - b. It will take some time for windows to auto assign an IP and get connected to the network. The IP address assigned by windows auto IP must be on the subnet 169.254.x.y (this can be checked by going to the command prompt and giving the command ipconfig).Obtaining the ip address in the range(169.254.x.y) ensures that the user has got connected to the ADHOC network.

Application Details:

1. Click on the wi-fi configuration application to launch the software.
 - a. As the software loads, a status message will be displayed to the user on the connection status (whether the user is connected to the adhoc network).
 - b. The IP address has been set to 169.254.1.1. Click the connect button.
 - c. The application communicates with the device and if the communication is successful, it will take the device to the command mode and the user will be able to view the parameters which have already been set in the reader. Corresponding messages will be displayed to the user (on the connection status, parameter retrieval status etc.).The MAC address of the device too will be displayed to the user.
 - d. For the parameters retrieved, the user has the option to modify the parameters.
 - e. The user has to enter the parameter in the respective text box and click on the apply button to set the parameter. In order to save the changes, the user has to click the save button so that the changes made by him will be stored in the device permanently. The status messages will be shown to the user after he clicks the save button thereby confirming whether the changes have been saved successfully.
 - f. Once the configuration is completed we need to POWER ON the reader.

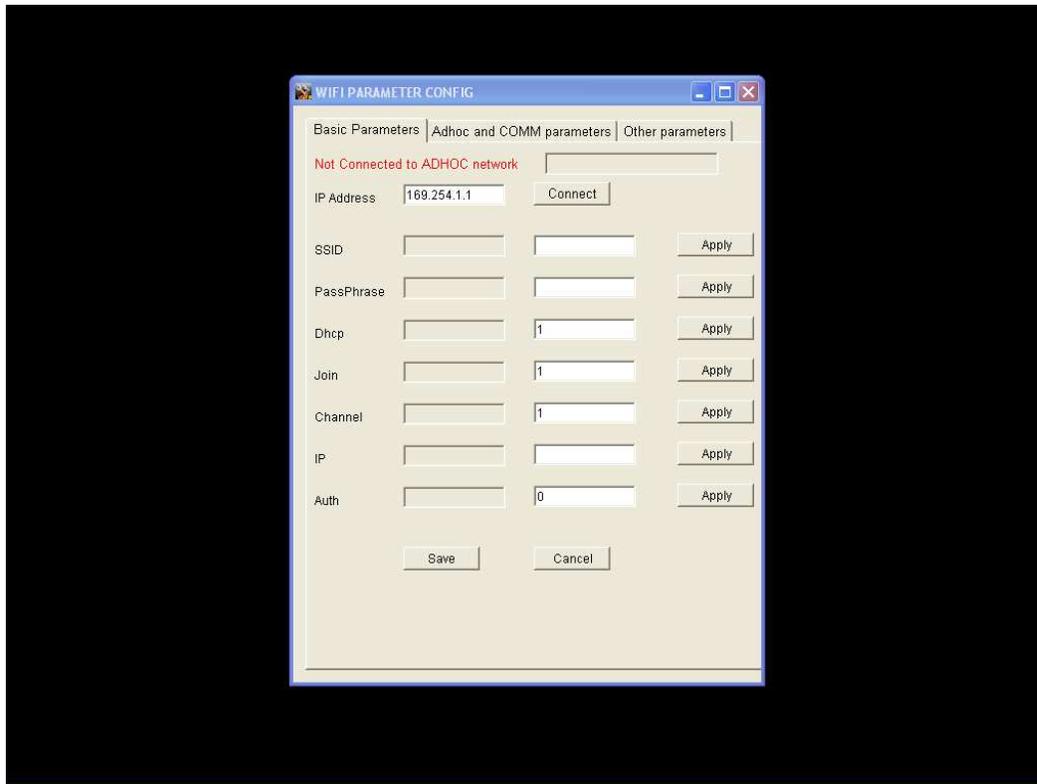
Setting the device to the ADHOC mode:

1. When the reader loads, hold the DOWN button pressed. Then press the UP button to enter the ADHOC mode. Press the UP button again to enter the ADHOC setup.
2. Once the wifi device enters the ADHOC setup, the following configuration settings will be applied to it.

Parameter Name	Value
SSID	parafait_ :xx:xx
Join	4
Channel	1
IP DHCP	OFF
IP Address	169.254.1.1
IP Net Mask	255.255.0.0

3. Reset the reader.
4. **While configuring the parameters from the application, hold the reader in the ADHOC mode. This can be accomplished by holding the DOWN button when the reader loads and then pressing the UP button to enter the ADHOC mode and then pressing the DOWN button again to enter the ADHOC HOLD mode.**

Application Screenshot:



Messages

The below gives you the clear information about messages displayed.

Messages	Descriptions
Normal Price : xx VIP Price : xx	Shows the price of the game. When Card reaches the determined threshold the Card becomes the VIP Customer, which is defined by the Management.
Card Read Processing ...	Validating the Card Swipe. This indicates that the card has been read and is being validated at the server
Balance : XXX.XX Play Game. Enjoy...	Have sufficient balance to play game, shows the amount remaining in the card. Game

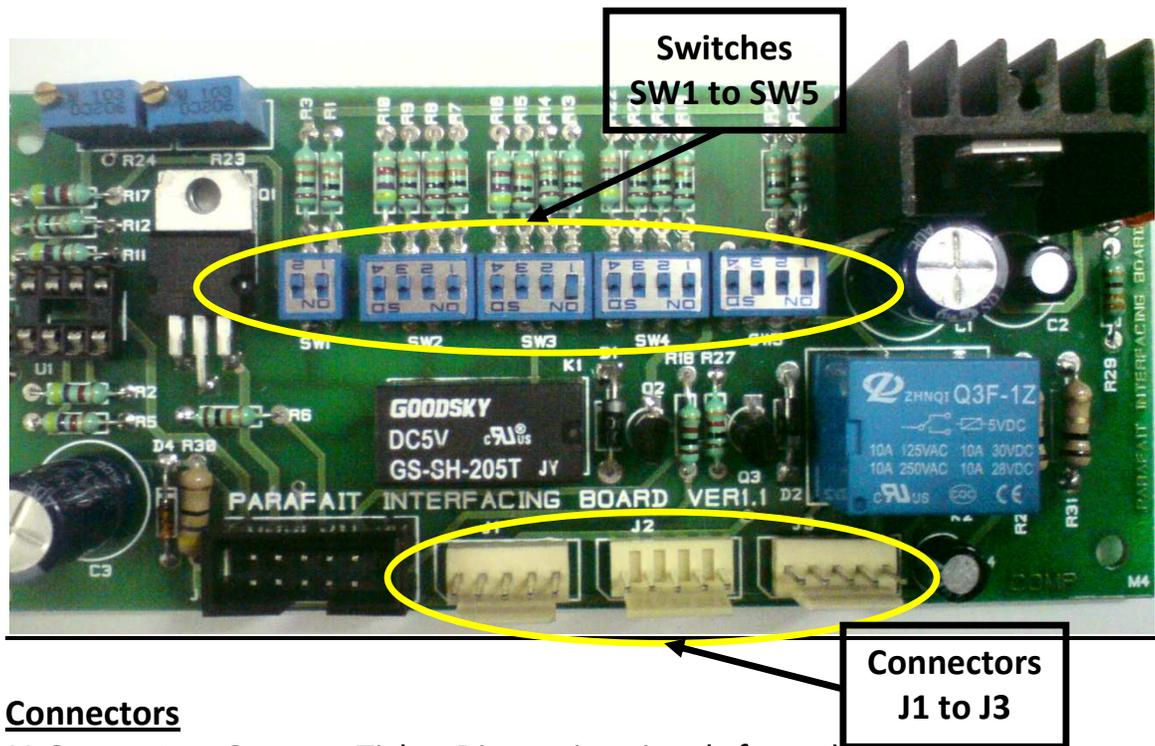
	machine is activated
Invalid Card Please Retry	Card is not valid, please check with the cashier
Low Balance Please recharge	Card doesn't have sufficient balance, card needs to be recharged.
Tickets updated Play your way	Ticket updated at the server. The tickets are recorded against the card used to play the game.
Time Remaining XX Mins XX Secs	For timer based machines, message gives you the remaining time
Time out Tap card to play	For timer based machines, message tells you the end of the game.
Please Tap Card Then feed tickets	For Ticket Eater, Swipe card to feed the tickets. Please refer the Configuration settings of Reader to set the reader as Ticket Eater.
Time left: XX Secs Tickets counted XX	This indicates the time within which the ticket has to be fed after the last ticket. If no tickets are fed, it's assumed that the tickets have been fed and tickets are updated against the swiped card.
Time Elapsed Tickets counted XX	For Ticket Eater, Time out for counting the ticket & shows the total ticket count.
Time left: XX Secs Pls tap card...	For Ticket Eater, Time left out to swipe card to load the Counted ticket to server. User has provision to feed the tickets and then swipe the card. Once the last ticket is fed, the reader shows amount of time the user has to tap the card. Otherwise, the tickets counted are abandoned (as there is no card to associate with)
Check Balance Please tap card	For Check Balance, Customer can check the status of the Card. Gives the details of Credits, Courtesy, Bonus, Tickets, Games, Time Remaining. Please contact Semnox to set the reader as Check Balance.
Card Read	For Check Balance, checking the status of the

Checking Balance...	card at the server.
Credits: XX	For Check Balance, Balance values of the card.
Courtesy: XX	
Time: XX	Games is usually for Technician Card.
Tickets: XX	
Games: XX	

Interfacing Board

Functionality

Interfacing Board is used to deliver power & interface needed machine signal to PARAFAIT Reader. Primarily there are three connectors and five switches



Connectors

J1 Connector: Connect Ticket Dispensing signals from the game machine (Activation & Sensor Pulse)

J2 Connector: Connect Ticket Dispensing signals from Ticket Dispenser (Activation & Sensor Pulse)

J3 Connector: Connect Coin signals from the game machine

J4 Connector: Connect the FRC Connector from Reader, which carries the power supply & control signals.

Switch

SW1: Output Sensor pulse pull ups. This is used to generate the sensor pulse in e-ticket mode.

SW2: Input Activation signal pull ups. This is used to reduce the noise in the signal.

SW3: Output Activation signal pull ups. This is used for proper termination to Ticket Dispenser in e-Ticket mode.

SW4: Input Sensor Pulse signal pull ups. This is used to reduce the noise in the signal.

SW5: Output Coin pulse pull ups. This is used to generate the Coin pulse to start the game.

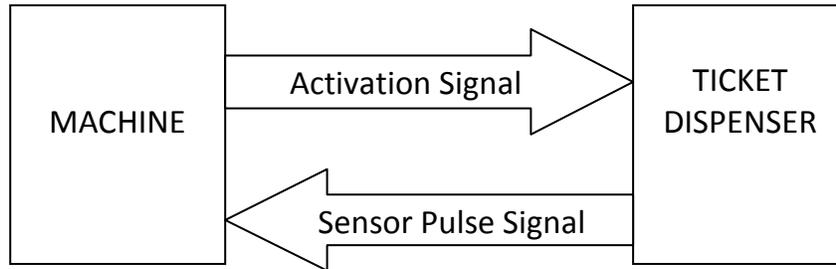
Interfacing boards can be configured in 3 ways.

1. Non Redemption Machine: In this configuration Parafait Reader control the Game play when a valid tap happens.
The only connection required (apart from the power and ground) is the coin pulse. The coin pulse wire is tapped and connected to the interface board using the **connector J3**. See below table to get detailed pin description.
2. Redemption Machine: In this configuration Parafait Reader Control the Game plays when valid tap happens & controls the ticket out. Use **connectors J1, J2, J3** to interface the machine with interfacing board. See below table to get detailed pin descriptions.
3. Ticket Eater: In this configuration Parafait Reader will function as ticket eater and count the tickets and load to the respective card. Use connectors J1 & J2 to interface the machine with Interfacing Board. See below table to get detailed pin descriptions.

Hardware Connection

Connectors	Pin Details	Descriptions
J1	1 -> Activation Signal (Input to ticket dispenser from machine) 2 -> Ground 3 -> 12Volt 4 -> Sensor Pulse Signal (output from ticket dispenser to machine) 5 -> NC	For Ticket Interface, disconnect the ticket dispenser from the machine. Connect the machine signal to J1.
J2	1 -> Activation Signal (Input to ticket dispenser from machine) 2 -> Ground 3 -> 12Volt 4 -> Sensor Pulse Signal (output from ticket dispenser to machine) 5 -> NC	For Ticket Interface, disconnect the ticket dispenser from the machine. Connect the ticket dispenser signal to J2.
J3	1 -> 12 Volt 2 -> Coin Pulse 1 3 -> Ground 4 -> Coin Pulse 2 5 -> 5 Volt	For Coin interface, Connect the coin signal to coin pulse 1 & coin pulse 2 is optional. 5 Volt is optional which we can use for Parafait Reader with Character Display, Please don't use for color display.
J4	1 -> 5 Volt 2 -> Ground 3 -> Backlight (10 Volt) 4 -> Activation Input 5 -> Sensor Input 6 -> Sensor Pulse Output(In e-Ticket Mode)	Crimp FRC 10 Pin cable with FRC Crimping standard(Arrow on the FRC Female connector denote the first pin, So on both side 1 st wire of the cable should connect

7 -> Ticket Mode	to 1 st pin of FRC Female Connector. Crimping reverse will damage the Reader)
8 -> Coin Pulse	
9 -> Ground	
10 -> 5 Volt	



Configuration Settings

Switch settings are used to configure the different types of machines to Parafait Interfacing Board. Depends on the machine signals need to set switch setting on the interfacing board. Below table will give a brief description on the Switch Settings.

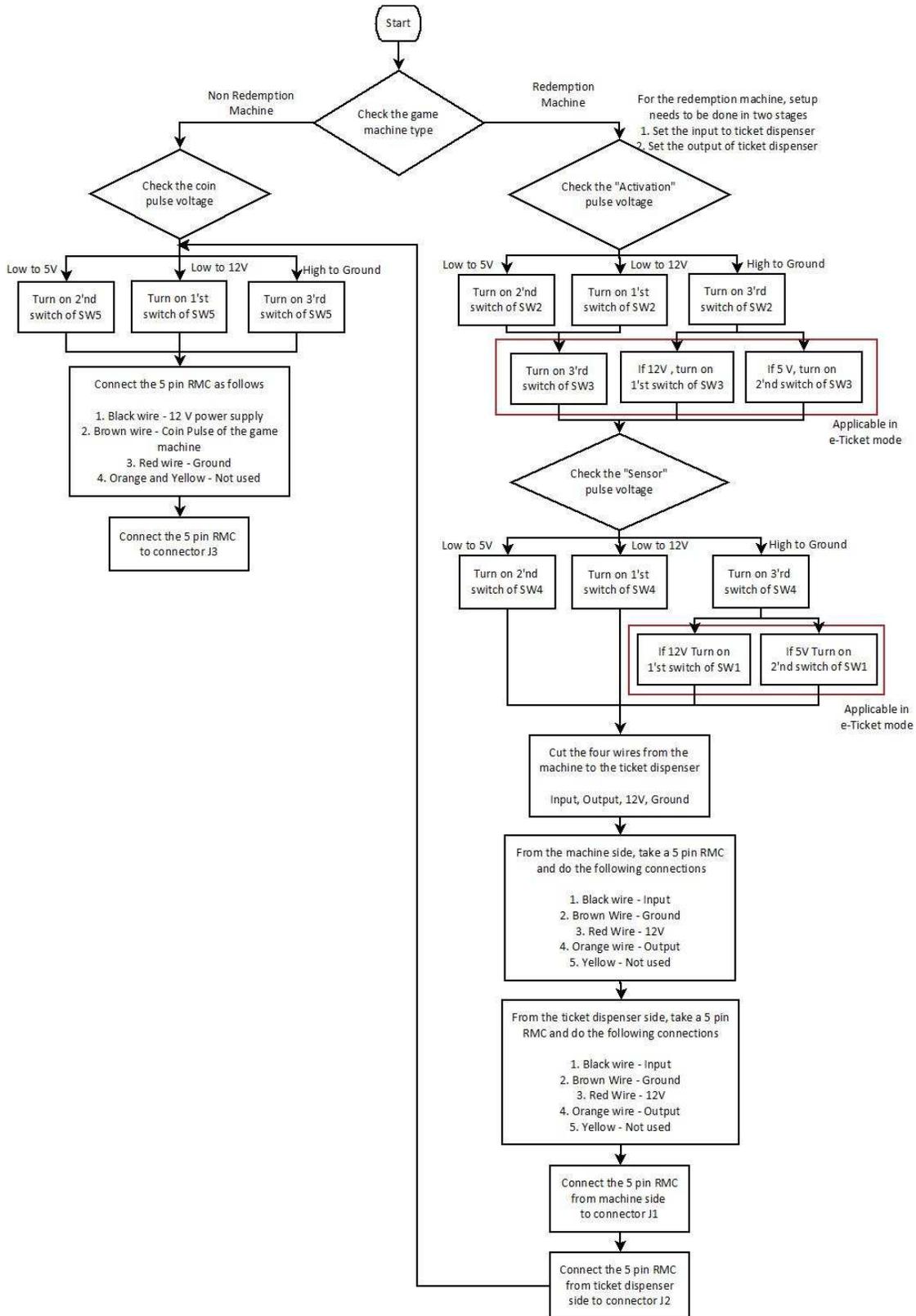
Switch	Switch Details	Descriptions
SW1	1 -> 5 Volt pull up 2 -> 12 Volt pull up	For e-Ticket, Parafait Reader will generate the Sensor Pulse for machine. Check the voltage level of the Sensor Pulse by default & use the respective pull up.
SW2	1 -> 12 Volt pull up 2 -> 5 Volt pull up 3 -> Pull down (Connected to ground through 10K) 4 -> Pull down (Connected to ground through 4.7K)	To isolate the noise in Activation Signal. When board is configured in Non Redemption machine SW2.2 should be set, so that Activation Signal will be terminated properly.
SW3	1 -> 12 Volt pull up 2 -> 5 Volt pull up 3 -> Pull down (Connected to ground through 10K)	In e-Ticket mode the ticket dispenser will be open so to terminate set the switch. Check the Activation Signal by default

	4 -> Pull down (Connected to ground through 4.7K)	& use the respective pull up.
SW4	1 -> 12 Volt pull up 2 -> 5 Volt pull up 3 -> Pull down (Connected to ground through 10K) 4 -> Pull down (Connected to ground through 4.7K)	To isolate the noise in Sensor Pulse. When board is configured in Non Redemption machine SW2.2 should be set, so that activation signal will be terminated properly.
SW5	1 -> 5 Volt pull up 2 -> 12 Volt pull up 3 -> Short to Ground 4 -> Short to Ground	To generate correct Coin pulse set this switch. Check the default voltage level of the coin pulse. For ex: For coin logic active low signal on the SW5.3 or SW5.4. When the switches are TURNED ON Coin Pulse 2(J3.4) shouldn't be connected, and Vice -versa.

Interface Board – Game Machine

Below section details how the interface board needs to be connected to the game machine. There are two scenarios

1. Coin machine (non ticket) – Here the objective is to generate the coin pulse so that the game machine starts operating.
2. Redemption machine (ticket) – Beyond generating the coin pulse, the ticket dispensing needs to be handled. This needs to handle two modes of operation
 - a. Physical mode – Here the machine dispenses physical tickets. This needs to be counted by the Parafait system
 - b. E-Ticket mode – Here the machine will not dispense physical tickets. We need to give appropriate pulses to the game machine so that the game machines considers that the tickets have been dispensed



Installation Process

1. Decide wireless access point positions
 - Access point should be installed in free space, preferably on ceiling. It is to be installed away from pillars, beams or any other heavy metal structures to deliver maximum signal strength.
 -
 2. Machine level hardware interface
 - Decide the location on the machine to fix tap reader
 - Refer flow chart for interface board connections
 - Connect the reader to the interface board using 10 pin Flat Ribbon Cable (FRC). There are 2 connectors in a reader.
 - P** - Connect reader to interface board
 - C** - Connect reader to configuration PCB while configuring the machine
 - On connecting the interface board to power, the LED on the interface board should glow
 - On connecting the FRC between the reader and the interface board, the interface board LED should glow and display should come up
 3. Install Parafait Server in server computer
 - Refer Parafait Software installation instruction manual to install Parafait Server.
- 
Acrobat Document
4. Connect Server to Wi Fi Access Point
 - Connect WiFi access point to server computer and configure.
 5. Enter Game machine details in Parafait Management Studio

- Login to Parafait Management Studio.
 - Open **Games**, open **Game Profile**.
Categorize the games depending on their types.
 - Open **Games**
Enter details of games
 - Open **Machines**
Enter details of the machines like access point name, machine address etc. Mention MAC address of the reader which is installed in the game machine.
6. Turn on Parafait Primary Server
- Double click on Parafait Primary server shortcut in server computer to start the server
7. Configure machines to communicate with the access points
Refer page 4 for more on reader wifi chip configuration.
8. Issue 2 technician cards for testing
- Issue 2 tech cards from Parafait Management Studio
 - One is Physical ticket card another E-ticket card
9. Testing
- Swipe physical ticket card and play games. In case of redemption games, check whether physical ticket dispensed and e-ticket count in the reader are in sync.
 - Play games using E-ticket card. Check whether e-ticket update is proper. Machine should not through Ticket Error in case of proper e-ticket update. Physical ticket will not be dispensed in this case.

Product Details

Product Name : Parafait Reader Wireless

Model Number : PARARDR001

FCC Id : G7H-SPRW001

IC Id : 10387A-SPRW001

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.

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 equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Part 15B compliance statements for digital devices:

NOTE: 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 or more 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.

This Class B digital apparatus complies with Canadian ICES-003.

This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions

- 1) This device may not cause interference, and
- 2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage adioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with radio frequency exposure limits set forth by Industry Canada for an uncontrolled Environment. This equipment should be installed and operated with minimum distance 20 cm between the device and the user or bystanders.

Cet équipement est conforme aux limites d'exposition aux radiofréquences définies par Industrie Canada pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre le dispositif et l'utilisateur ou des tiers.

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 or more 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.

Cet équipement a été testé et jugé conforme aux limites de Classe B pour un appareil numérique, en vertu de l'article 15 de la réglementation de la FCC. Ces limites ont été instaurées pour fournir une protection raisonnable contre toute interférence nuisible dans une installation résidentielle. Cet équipement génère, utilise et peut émettre de l'énergie radiofréquence. S'il n'est pas installé et utilisé conformément aux instructions, il peut provoquer des interférences sur les communications radio. Cependant, il n'est pas garanti que des interférences ne se produiront pas dans certaines installations. Si cet équipement cause des interférences à la réception radio ou télévisée (ce qui peut être vérifié en éteignant l'appareil puis en le remettant sous tension), l'utilisateur peut tenter de les résoudre en suivant une ou plusieurs des mesures ci-après : Réorienter ou déplacer l'antenne réceptrice. Augmenter l'espace entre l'appareil et le récepteur. Brancher l'appareil à une prise de courant différente de celle sur laquelle le récepteur est branché. Pour obtenir de l'aide, contacter le vendeur ou un technicien radio/télévision expérimenté.

REMARQUE : Toute modification non autorisée expressément par le fabricant responsable de la conformité peut annuler le droit de l'utilisateur à faire fonctionner le produit.

