IAdea GPIO Extender Application Note

Contents

Introduction

Digital Input and Digital Output are both common applications when user wants to create interactive and automated scenario. IAdea GPIO extender intends to give Digital Signage user the freedom to create unlimited scenarios.

This document will firstly brief the GPIO applications can be deployed in the field. With the basic understanding user can start to plan and set up the project by referencing the easy understanding instructions.

What is GPIO Extender?

Digital Input allow you to connect the IAdea players to external devices such as motion sensors, sound sensors, door detectors, buttons , alarm systems. With appropriate software setup, IAdea signage players can react to different inputs based on customer configurations.

Digital Output allow you to connect IAdea players to external devices such as LED light, door control, speaker, or even another IAdea player to create fully interactive Digital Signage experience.

Digital Input and Output Applications

Kiosk

Kiosk is the most conventional usage for input applications. By connecting buttons or other trigger source, the signage system can star to display the requested information.

Education

By connecting the alarm system, the signage system in campus can be used as emergency alert device to protect the children safety.

Hospitality

By connecting the interactive buttons, the signage system in the hotel lobby will turn into a fully interactive navigator. User can check the floor plan, conference room information, store map and cuisine information on DEMAND.

Retail

By connecting the motion sensor, the signage system can display different content based on the distance between customer and signage board. In the close spot, a point of purchase commercial can be displayed to attract user to grab something near to them. In the far spot, the general store discount information can be displayed.

Imagine looking for a PLUG in the home depot, the category sign hang up in the air looks all similar and confusing. By connecting the button as input device and LED light as output device, customer can quickly find the correct category of what they need and be indicated by flashing LED light.

Car Entrance

By connecting the external License Plate Recognize system, the host information can be displayed in the screen to create a dynamic welcome sign.

Power Saving

By connecting the motion sensor, the signage system can turn on the monitor display once when user approaches. This robust the power efficiency in all kind of deployments.

Door Contact

By connecting the door contact as input device, the signage system can

display whatever interests to user. Imagine in squash courts, while user enter the court, the signage display can start to showcase the eclipsed time based on their lease plan.

Wiring Instructions

Wiring is easy and simple for IAdea GPIO extender.

Wiring Input/Output cable :

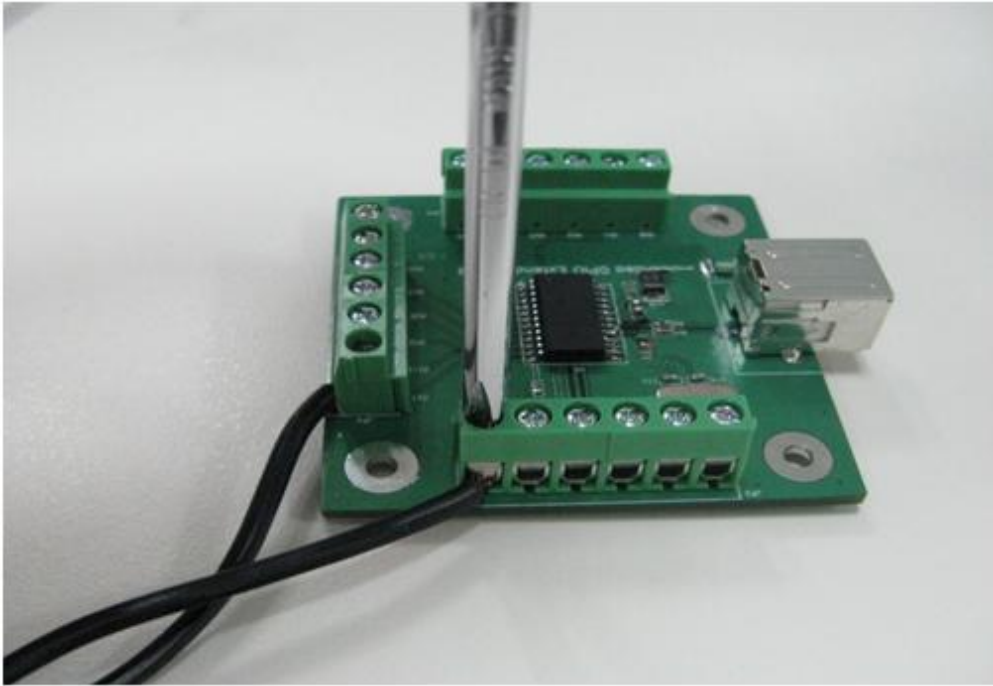1. Lose the terminal block with screw driver :

2. Attach the cable :

3. Fasten the terminal block with screw driver

Wiring Ground Cable:

Wiring ground cable to GPIO extender works exactly as wiring signal cable.

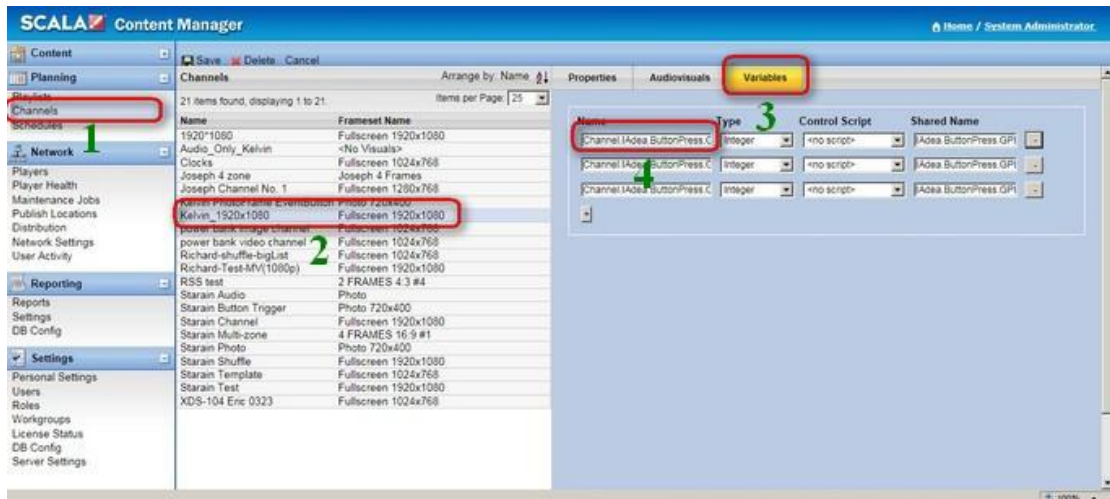Please note IAdea GPIO extender is a common ground point design.

Software Instructions

For Scala User

Prerequisite: Bridge Server 2.5.3 or above

(1) Add channel variable in Scala content manager

    1. Go to Planning → Channel

    2. Select channel

    3. Go to Variables tab

    4. Add variable for each Input port in Name field follow this format:
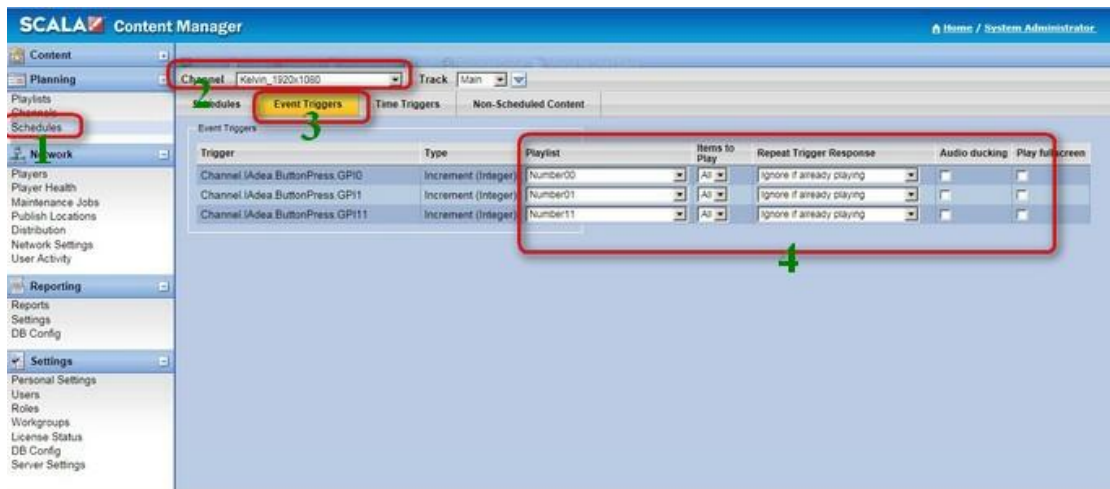
GPIO Variable format

    Name : Channel.IAdea.ButtonPress.GPI0

    [valid value =0 … 11, represent 12 input ports]

    Type : Integer

(2) Add Event Triggers in Scala content manager

    1.Go to planning → Schedule

    2.Select channel

    3.Go to Event Triggers tab
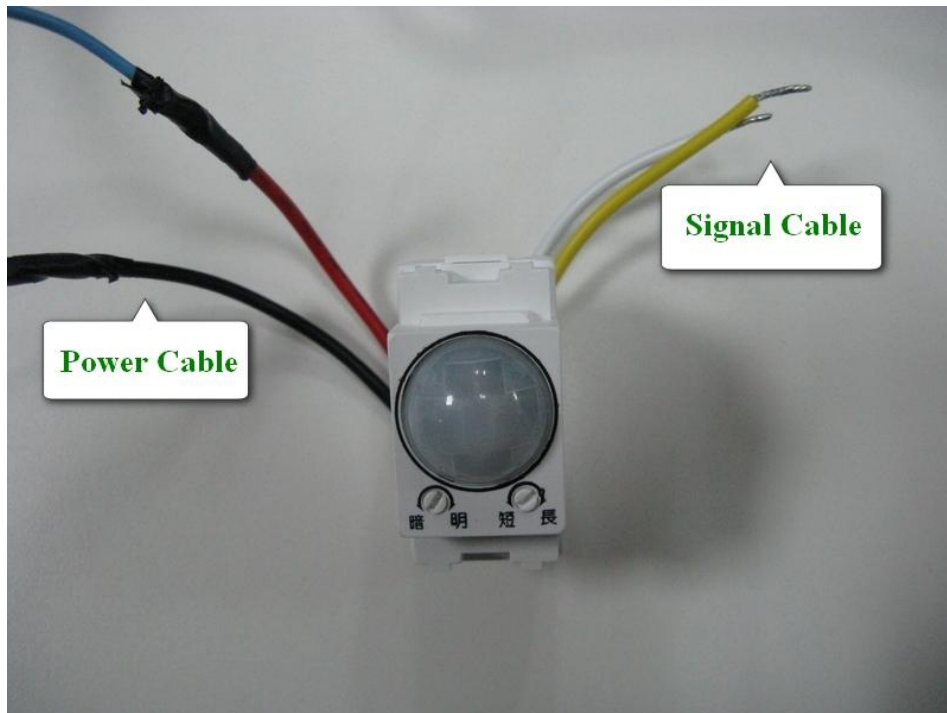
    4.Custom action for each trigger source

For SMIL User

Please check http://www.a-smil.org/index.php/Interactivity. A simple SMIL code triggering 4 media items to play on button press can be as short as 30 lines of code.
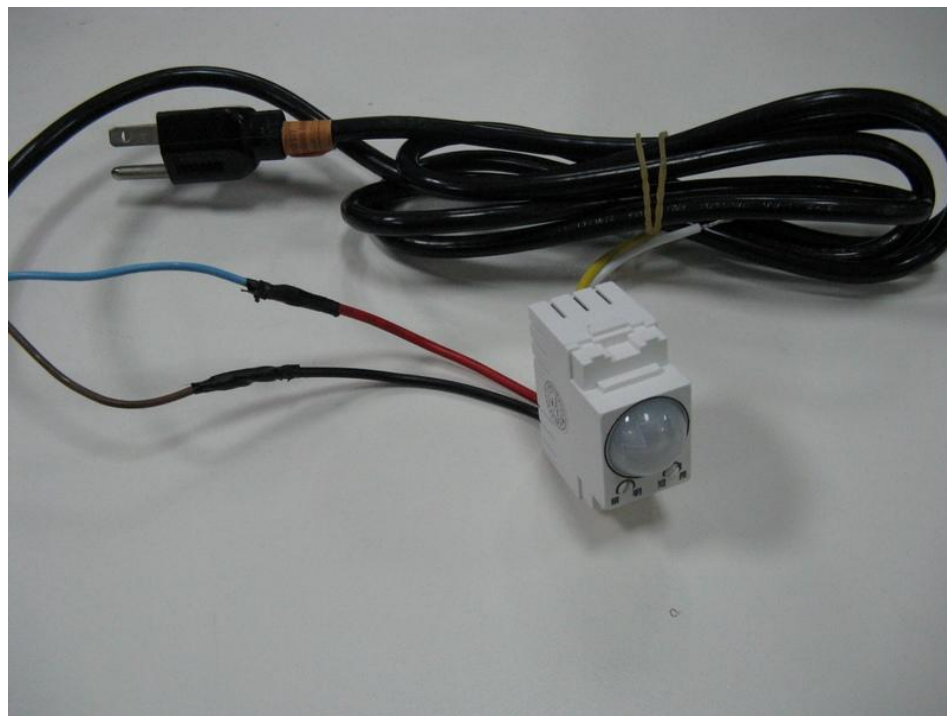
Setup Example – Motion Sensor Application

This section brings user a setup example for Motion Sensor Application.
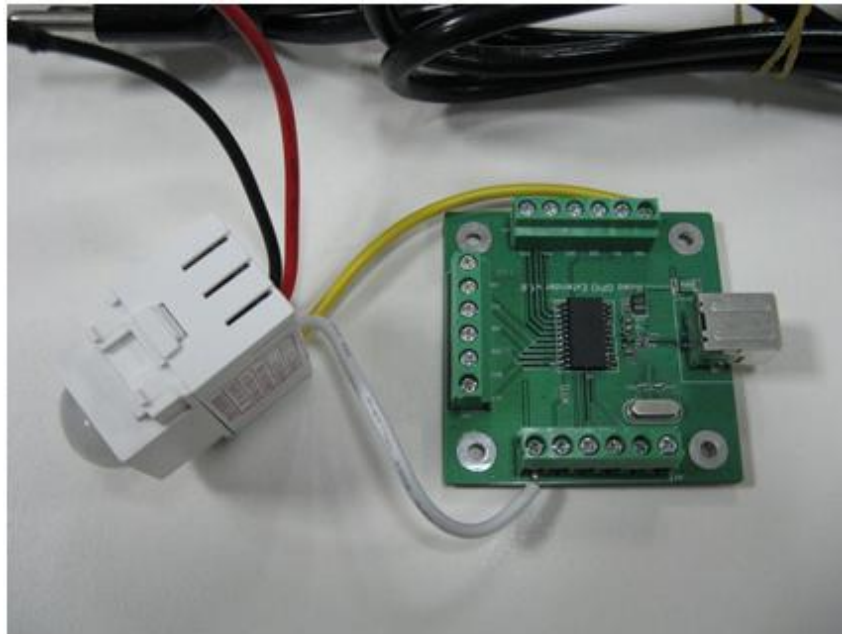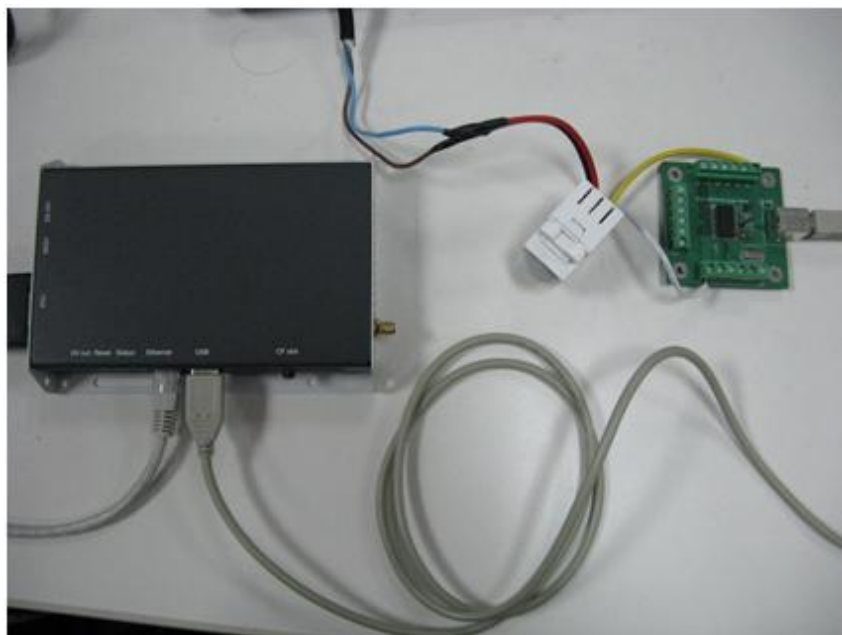
Close look of Motion Sensor

Wiring

(1)Attach power cord to the sensor

(2)Connect motion sensor to IAdea GPIO extender, in this setup, IN0 port is used.

(3)Connect GPIO extender to IAdea player USB port **before power on player.**

Software Setup

Please follow the instruction in previous section to configure software.

Standby video:

Display image when motion trigger:

Technical Specification

For use with

- IAdea XMP-320, 330, 340
- IAdea XDS-195, 245

Ports

- 10 input ports: short to ground for "on", free floating for "off"
- 4 output ports: short to ground for "on", high-impedance for "off" (open-drain)
- 5V: output range 4V-5V, max 250mA, for powering small sensors and LEDs
- GND: ground port

Package includes

- GPIO module x 1
- USB cable x 1 (type A-B, 3 ft/1M)

Connectors

- 10 input ports: pull to 5V or free floating for "on", short to ground for "off"
- Euro-type terminals, pitch 5mm, wire gauge: 16-22 AWG

Maximum ratings

- Input range: 0 to 5V DC
- Output current: 20mA per port
- Total output port current: 50mA
- DC power current: 250mA

Exceeding maximum rating on the I/O ports can void your warranty permanently damage the I/O module and media appliance.

Input requirement

- OFF (inactive state): open (high-impedance) or 4V to VCC
- ON (active state): 0V to 0.7V

Output current limits
- Max output from VCC: 400mA
- Max sink to output pin: 20mA

Environmental

- Operating temperature: 0 to 40° C
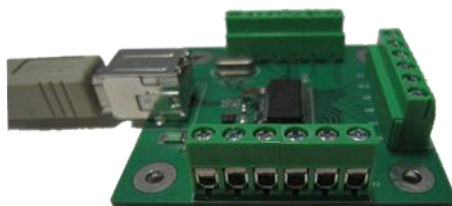- Humidity 5 – 85% @ 40° C non-condensing

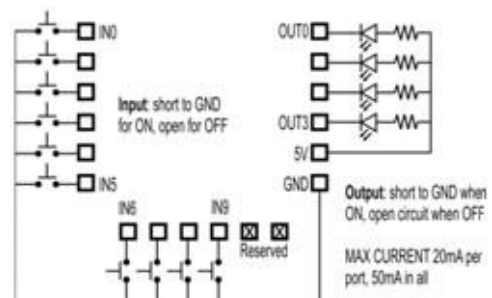### Dimensions (WxDxH)

- 2.7" x 2.4" x 0.6" (68mm x 60mm x 16 mm)

Weight

- 0.07 lbs. (0.15kg)

Warranty

1-year limited parts & labor

Euro-type terminal blocks

Application circuit