Mac Home Automation
MacMania 11
Feb 2011

Home Automation

Using a Mac

Recent Magazine Articles

Mac Life - March 2010

Used by permission from Future Publications

Recent Magazine Articles

Mac Life - March 2010

Automate lights & heating >

What we will cover in this seminar...

- What? - What is Home Automation?
- Where? - Systems it can control
- Why ? - Practical Uses
- When? - Past, Present & Future(?)
- Who? - Who's making the systems?
- How? - Protocols & Methods
- Exploring scripting examples using the XTension software
- Add-Ons - Weather, etc.
- Web Interface
- Questions

What is Home Automation?

Original Wiki Definition:

Home automation (also called **domotics**) may designate an emerging practice of increased automation of household appliances and features in residential dwellings, particularly through electronic means that allow for things impracticable, overly expensive or simply not possible in recent past decades.

What is Home Automation?

A Better Definition:

The essence of home automation is using specialized equipment that can control your lamps, appliances, heater, and air conditioning, and perhaps sense where in the house people are located.

- Gordon Meyer - *Smart Home Hacks*

Used by permission from O'Reilly Publications

X10 Manual Control

X10 Manual Controller

- - - - - - - >

X10 Module

Home Automation

Computer

X10 Interface

- - - - - - - >

X10 Module

Where it can be used? - What Systems can it connect to?

- Lighting & Appliances
- Heating & Air Conditioning
- Security Systems
- TV & Entertainment
- Sprinkler & Drip Irrigation
- Other - If it can be controlled, it can be automated.

Why add it to your home?

All of the biggest technological inventions created by man - the airplane, the automobile, the computer - says little about his intelligence, but speaks volumes about his laziness. ~Mark Kennedy

- Convenience - Control anything from anywhere.
- Safety - Automatic lighting, systems monitoring, alerts
- Security - Make house seem occupied when it's not.
- Cost Savings - Energy management, automatic setbacks
- Fun - Challenging solutions

When - A Brief History

For generations, scientists and marketeers have been promising flying cars, robots, and the automated home. Of these, only the automated home is within reach today. - Gordon Meyer - Smart Home Hacks

X10 (a brief history)

- 1970s - Pico Engineering developed the first single chip calculators. (Eight different calculator projects)
- 1974 - Joint development with BSR to build remote control device for record changers - Accutrac (9th project, X-9)
- 1975 - Extended the idea to remote control of lights & appliances - (10th project, BSR X-10)
- 1978 - Started selling BSR X-10 @ RadioShack
- Late 1980s - CP290 computer interface unit
- 1996 - Sand Hill Engineering released Xtension for Mac

Who - Mac Software Vendors

- Sand Hill Engineering - XTension
- Always Thinking - Thinking Home
- Perceptive Automation - Indigo
- Shion - Shion Touch
- Wayne Dalton - Houseport
- Non DIY - Control 4, Savant

XTension - Sand Hill Engineering

- X10 wired & wireless
- UPB support
- Direct I/O - Weeder, Barionet, WGL Assoc, others
- RFXCon - Oregon sensors, Cent-a-meter, etc
- S/W Add-Ons- WeatherMan, Database, Video Pitcher
- IR Controls - ZephIR

Indigo - Perceptive Automation

- X10
- Insteon (including X10 Mode)
- Insteon controllers - thermostats, Sprinklers, I/O
- Indigo iPhone App

Thinking Home - Always Thinking

- X10 wired & wireless
- Insteon - basic modules only

Shion Touch - Shion

- Online subscription service
- X10
- Insteon - just added
- "New kid on the block"

Houseport - Wayne Dalton

- Z-Wave
- Z-Wave specialty modules - thermostats, drapery, etc.

How - Protocols & Methods

- All systems (except Z-Wave) support X10
- All systems (except Z-Wave) communicate over power lines
- UPB is a similar protocol to X10
- Insteon includes an X10 mode
- Important to understand X10 as principles apply to others

X10 Controllers

Original BSR X10

Current X10

X10 Modules

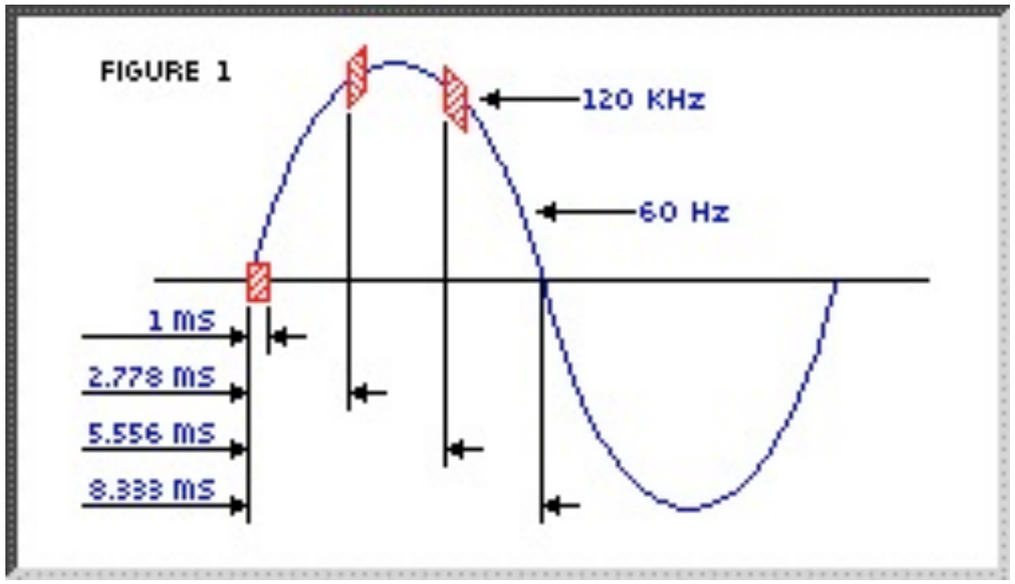
APPLIANCE
MODULE
HOUSE CODE
UNIT CODE

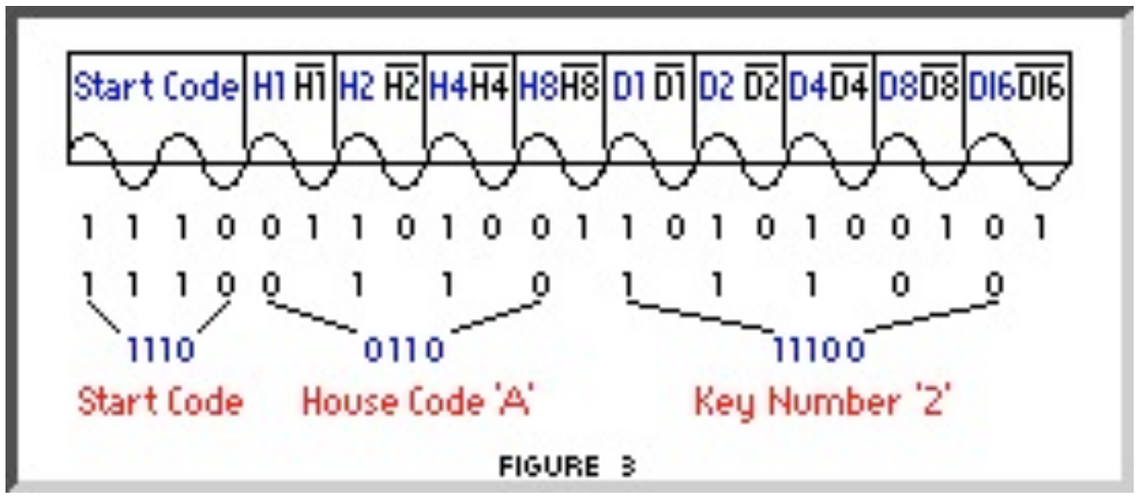
LISTED
340F
REMOTE SWITCH
120 VOLTS AC 60 Hz
INCANDESCENT LAMPS ONLY
500 WATTS MAX.

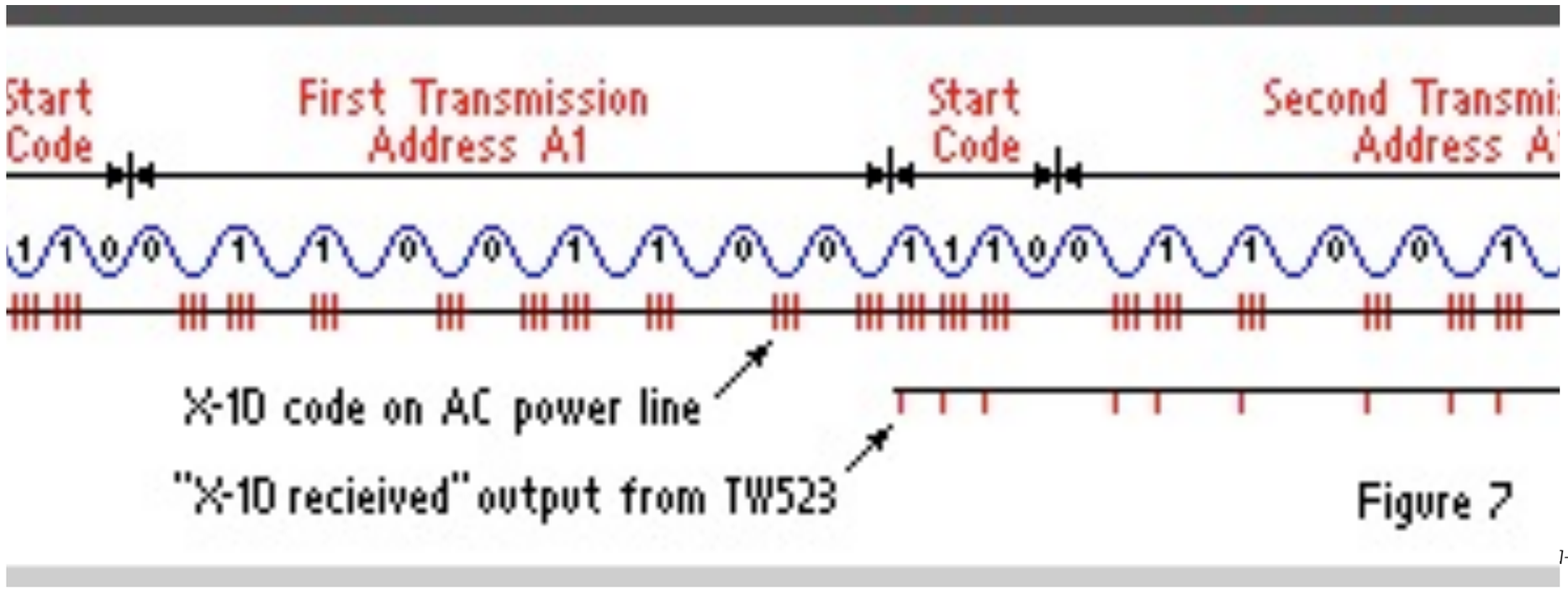
X10 POWERHOUSE
UNIT
HOUSE
Appliance Module

X10 Protocol

X10 communicates between transmitters and receivers by sending and receiving signals over the power line wiring.
These signals involve short RF bursts which represent digital information.







X10 House Wiring

Most houses are wired such that 220v (240V) is brought into the breaker panel and then split into 2 phases of 110v (120V) each. The signals from the Controller are transmitted onto one phase and have to travel all the way out to the pole transformer to couple across to the other phase. The amplitude of signal on the "other" phase can, therefore, be greatly reduced.

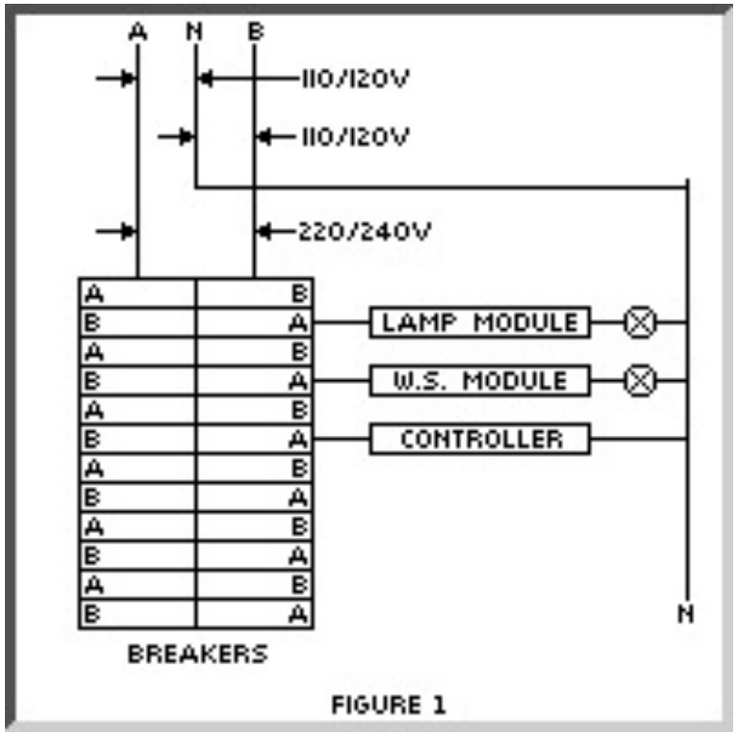


FIGURE 1

X10 House Wiring

Signals can be "coupled" to the other phase by installing a 0.1 microfarad (0.1µF), 600VDC capacitor across the two phases in the panel, i.e. by connecting the capacitor across any 220V breaker

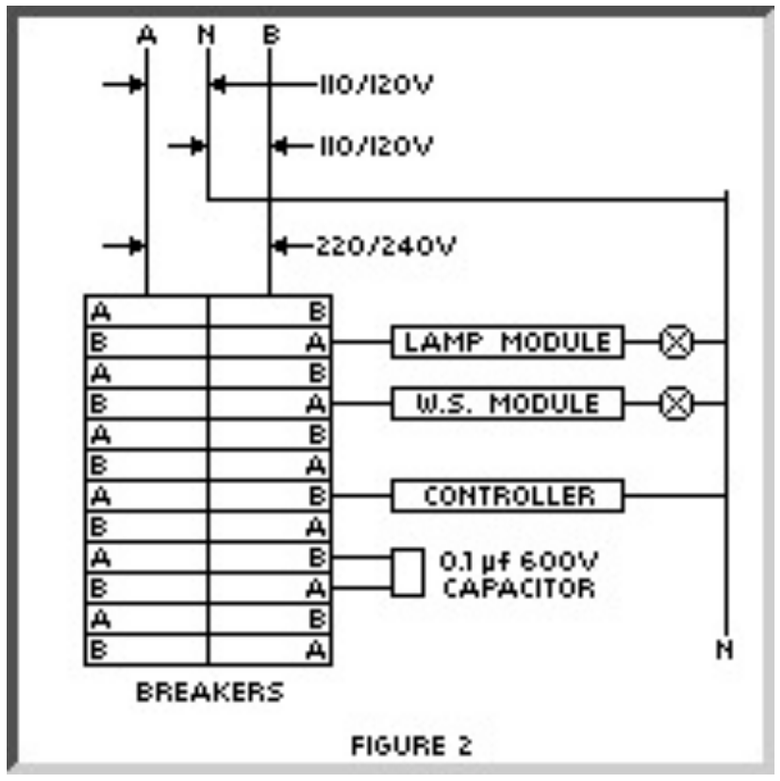


FIGURE 2

A Passive Coupler is a better device for transferring X10 signals from one phase to another. They are also typically tuned to pass only 121kHz signals so they will reduce (but not eliminate) the noise that is coupled.

If you have a large house (the rule of thumb is over 3000 sq. ft.) or you have a lot of electronic equipment in your house (stereos, TVs, computers, etc) then you might be better off with a Coupler-Repeater

X10 Concerns

- X10 is a one-way protocol
- [without bridge or amplifier] Works in parts of house
- Intermittent or not reliable in some places
- Lights turn on by themselves (without command)
- Slow to respond ~ 3/4 seconds

Making X10 Reliable

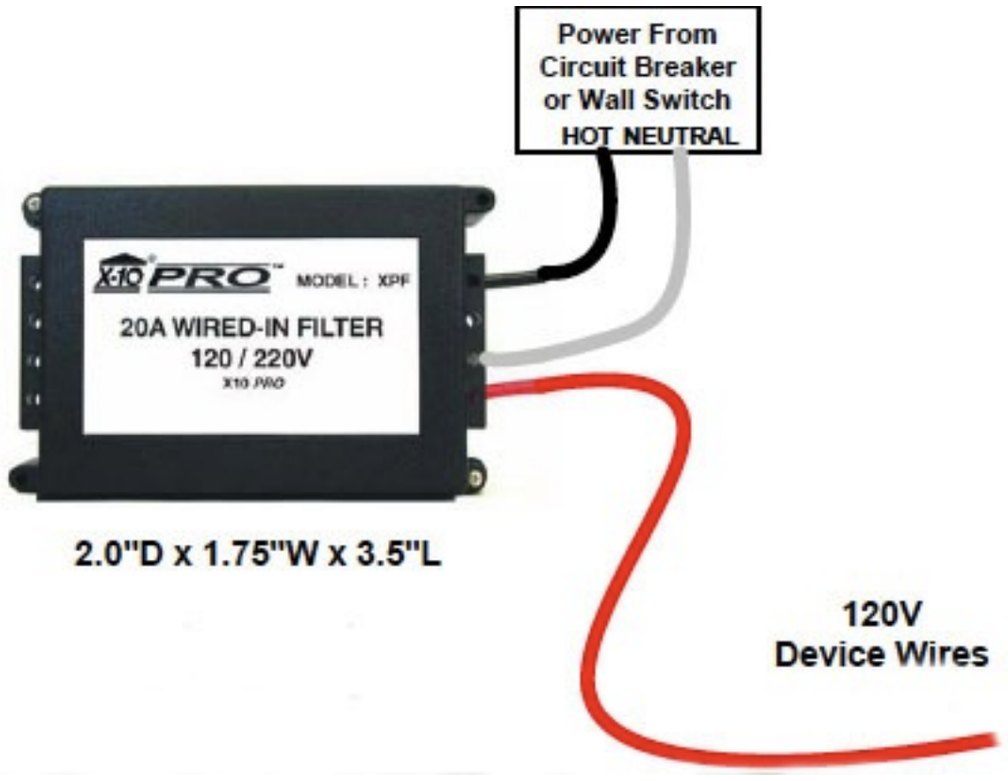
- Install either Phase Coupler or Bridging Amplifier
- Use X10 filters for computers, electronic devices, & UPS
- Make sure wiring is well connected (especially neutral wires)
- Be wary of noise generated by some CFLs & fluorescents

X10 Filters

5 Amp Plug in

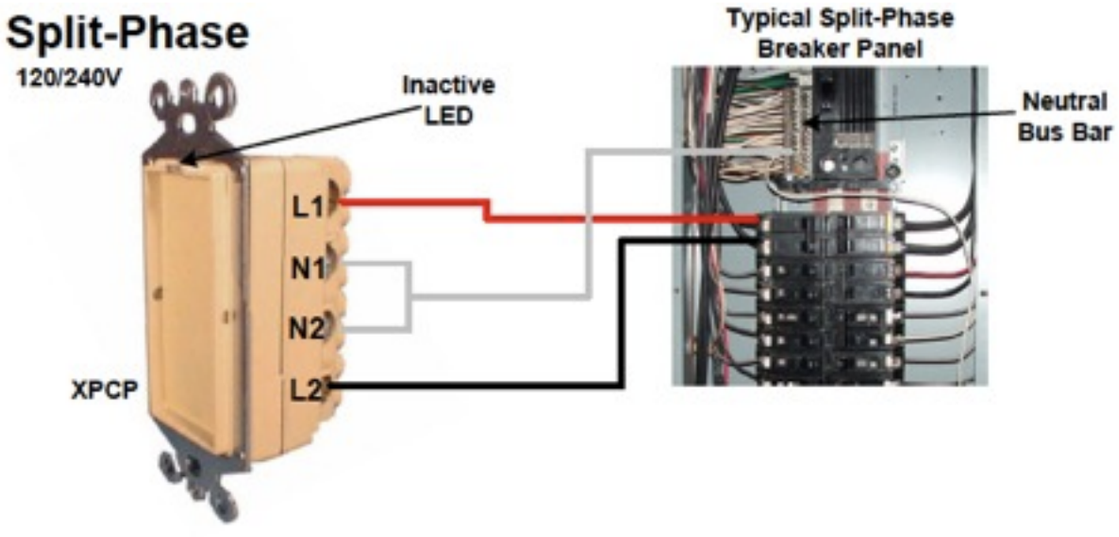
10 Amp Plug in

15 Amp Plug in



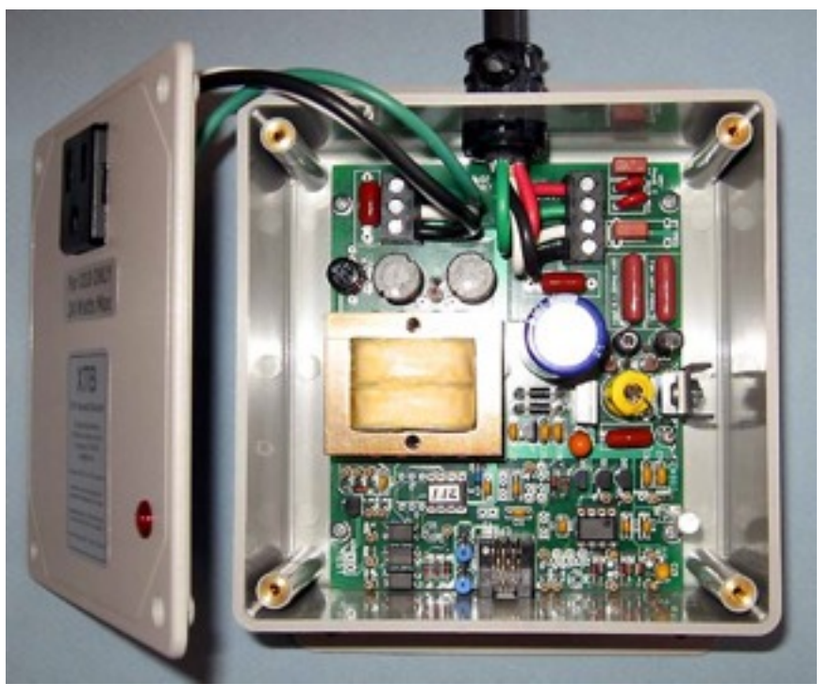
20 Amp Wired
(for permanent installs)

X10 Couplers & Bridge Amplifiers



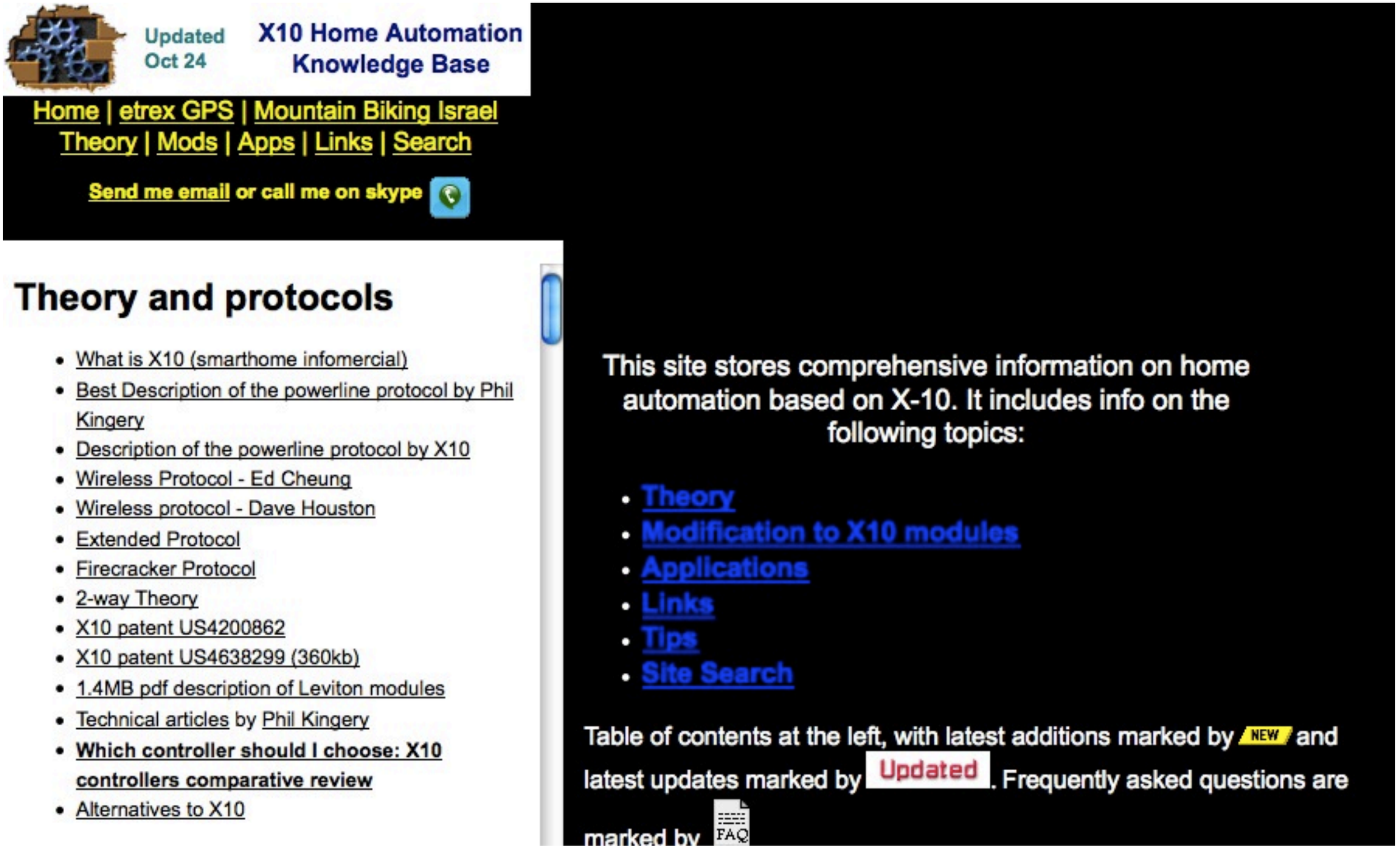
Phase Coupler

X10 Amplifier



Booster - Repeater

X10 Hacks


Updated
Oct 24
X10 Home Automation
Knowledge Base
Home | etrex GPS | Mountain Biking Israel
Theory | Mods | Apps | Links | Search
Send me email or call me on skype
Theory and protocols
What is X10 (smarthome infomercial)
Best Description of the powerline protocol by Phil Kingery
Description of the powerline protocol by X10
Wireless Protocol - Ed Cheung
Wireless protocol - Dave Houston
Extended Protocol
Firecracker Protocol
2-way Theory
X10 patent US4200862
X10 patent US4638299 (360kb)
1.4MB pdf description of Leviton modules
Technical articles by Phil Kingery
Which controller should I choose: X10 controllers comparative review
Alternatives to X10
This site stores comprehensive information on home automation based on X-10. It includes info on the following topics:
Theory
Modification to X10 modules
Applications
Links
Tips
Site Search
Table of contents at the left, with latest additions marked by NEW and latest updates marked by Updated. Frequently asked questions are marked by FAQ

X10 Hacks

Module modifications

- UnorthodoX-10: 220/240/277v, 50Hz and triple-phase systems
also featured in Hometoys

- 110v-220v modification principles

- Alignment for optimal reliability and range: principles

Appliance Module Modification
Modifying 110v to 220v
Modifying for momentary operation
Modifying for SILENT momentary operation
Modifying for local control

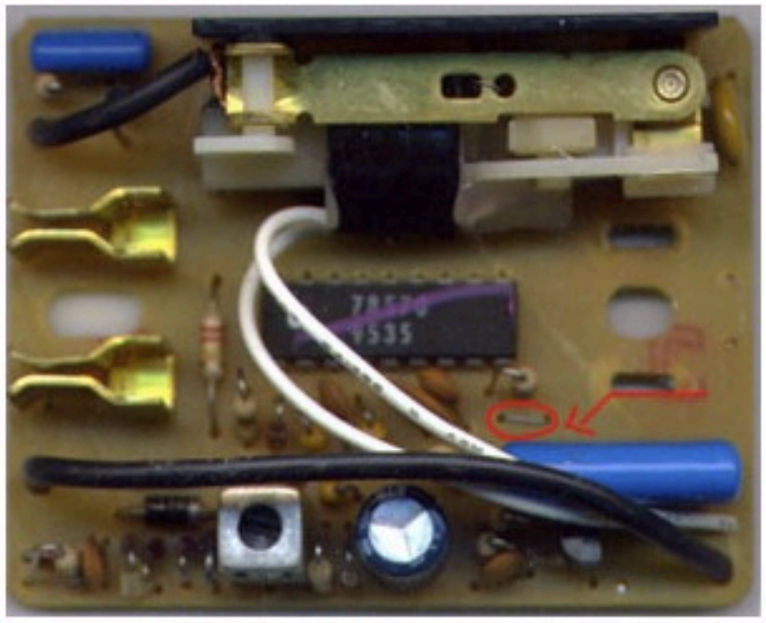
Defeating current sensing
Deafeating local control on newer modules
Fixing modules that randomly turn on
Increasing range and reliability
6375 Appliance module
Schem: 220v modification
Schem: S.M. Bloom

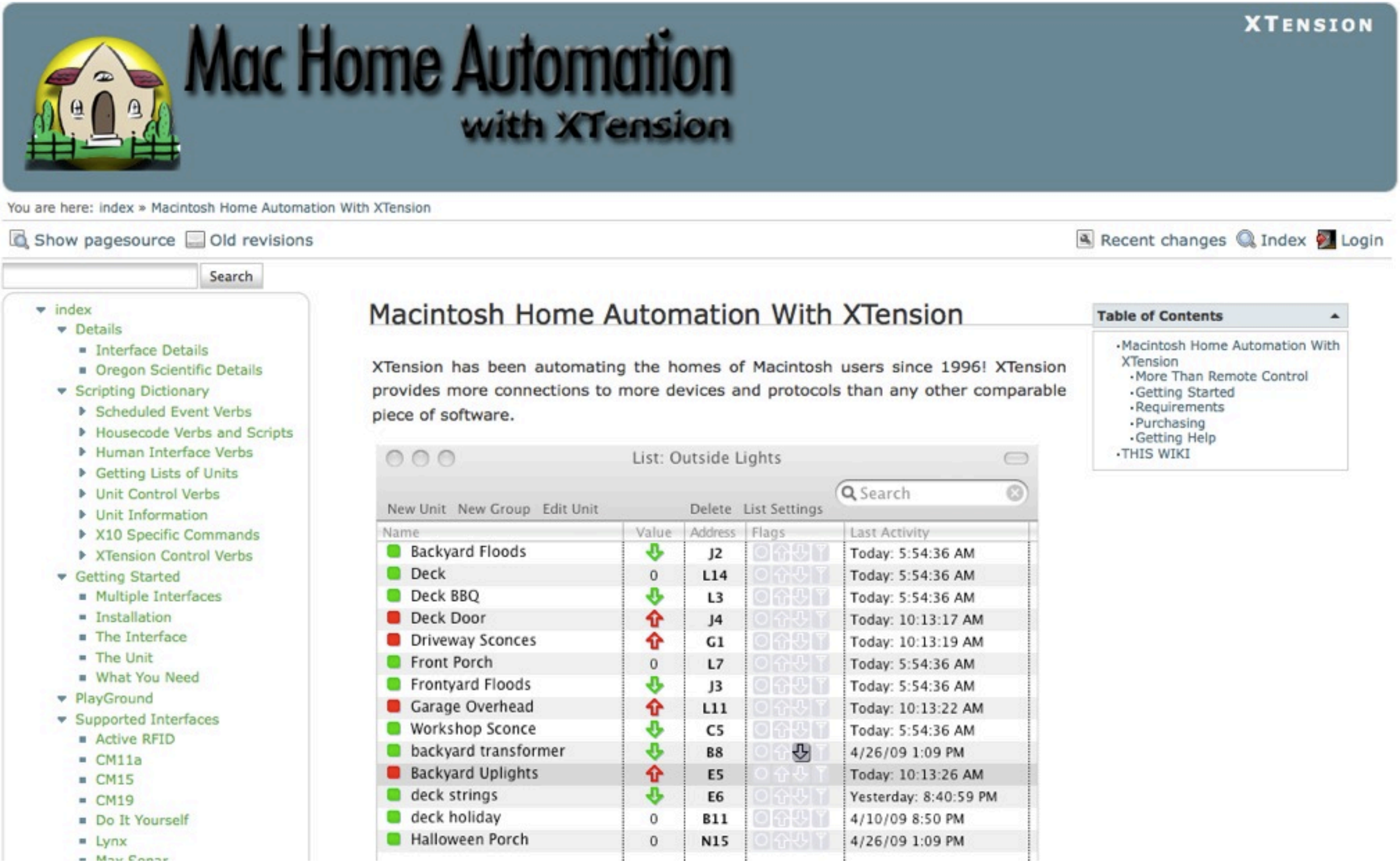
Wire-in Appliance module (6375)
Schematic: Mitch Orysh

Lamp Module Modification
Modifying 110v to 220v

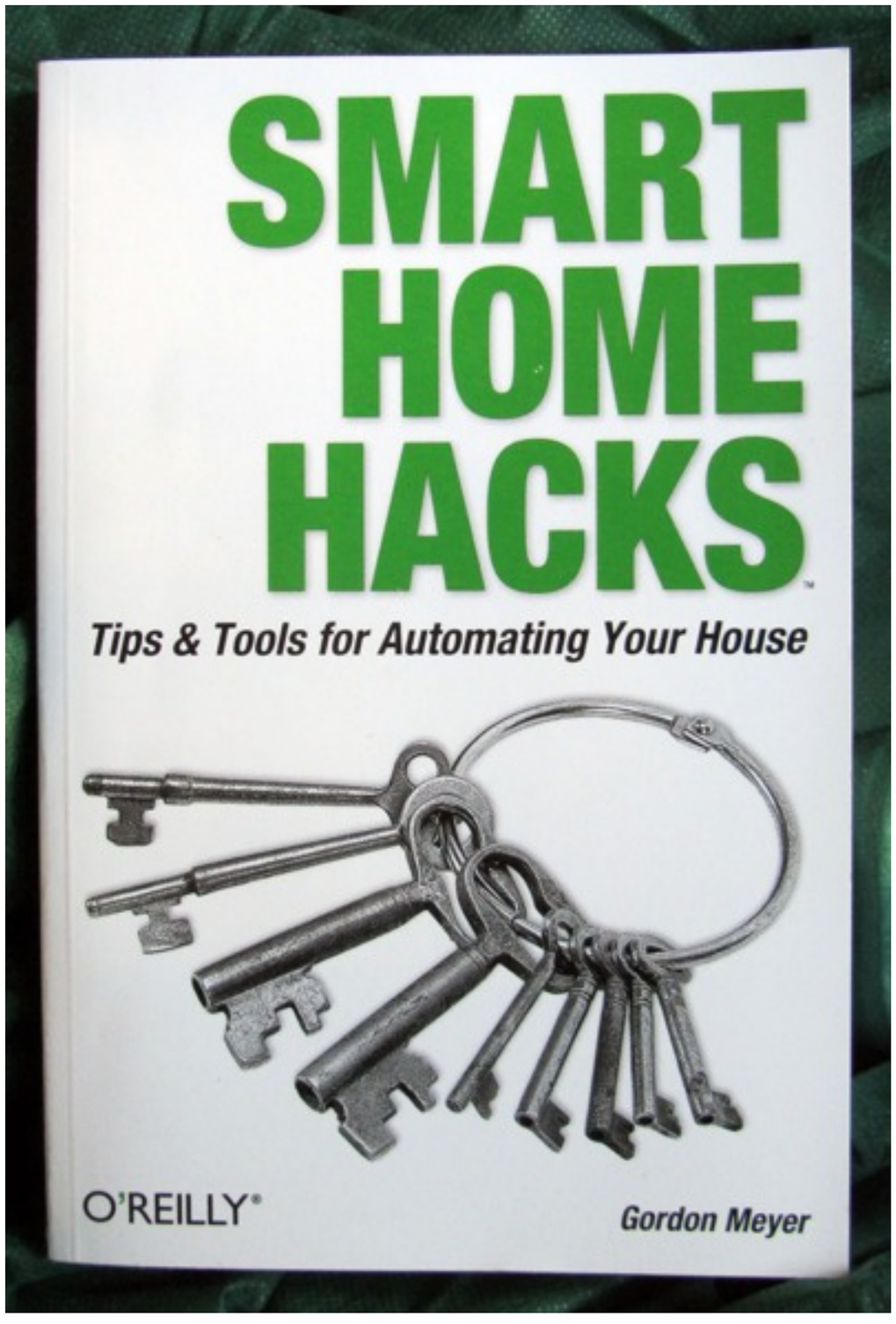
X10 Hacks

Disabling local control on the newer appliance module

1. 
2. Disassemble the module
3. Locate the small jumper close to the large blue capacitor (see picture)
4. Snip the jumper
5. Reassemble


XTENSION
Mac Home Automation
with XTension
You are here: index » Macintosh Home Automation With XTension
Show pagesource
Old revisions
Recent changes
Index
Login
Search
index
Details
Interface Details
Oregon Scientific Details
Scripting Dictionary
Scheduled Event Verbs
Housecode Verbs and Scripts
Human Interface Verbs
Getting Lists of Units
Unit Control Verbs
Unit Information
X10 Specific Commands
XTension Control Verbs
Getting Started
Multiple Interfaces
Installation
The Interface
The Unit
What You Need
PlayGround
Supported Interfaces
Active RFID
CM11a
CM15
CM19
Do It Yourself
Lynx
Macintosh Home Automation With XTension
XTension has been automating the homes of Macintosh users since 1996! XTension provides more connections to more devices and protocols than any other comparable piece of software.
List: Outside Lights
Search
New Unit
New Group
Edit Unit
Delete
List Settings
Name
Value
Address
Flags
Last Activity
Backyard Floods J2 Today: 5:54:36 AM
Deck 0 L14 Today: 5:54:36 AM
Deck BBQ L3 Today: 5:54:36 AM
Deck Door J4 Today: 10:13:17 AM
Driveway Sconces G1 Today: 10:13:19 AM
Front Porch 0 L7 Today: 5:54:36 AM
Frontyard Floods J3 Today: 5:54:36 AM
Garage Overhead L11 Today: 10:13:22 AM
Workshop Sconce C5 Today: 5:54:36 AM
backyard transformer B8 4/26/09 1:09 PM
Backyard Uplights E5 Today: 10:13:26 AM
deck strings E6 Yesterday: 8:40:59 PM
deck holiday 0 B11 4/10/09 8:50 PM
Halloween Porch 0 N15 4/26/09 1:09 PM
Table of Contents
Macintosh Home Automation With XTension
More Than Remote Control
Getting Started
Requirements
Purchasing
Getting Help
THIS WIKI

Planning Your System



Chapter 1
Includes Introduction to
XTension & Indigo Software

Chapter 2 - 6
Examples of Scripts for Inside
& Outside Controls

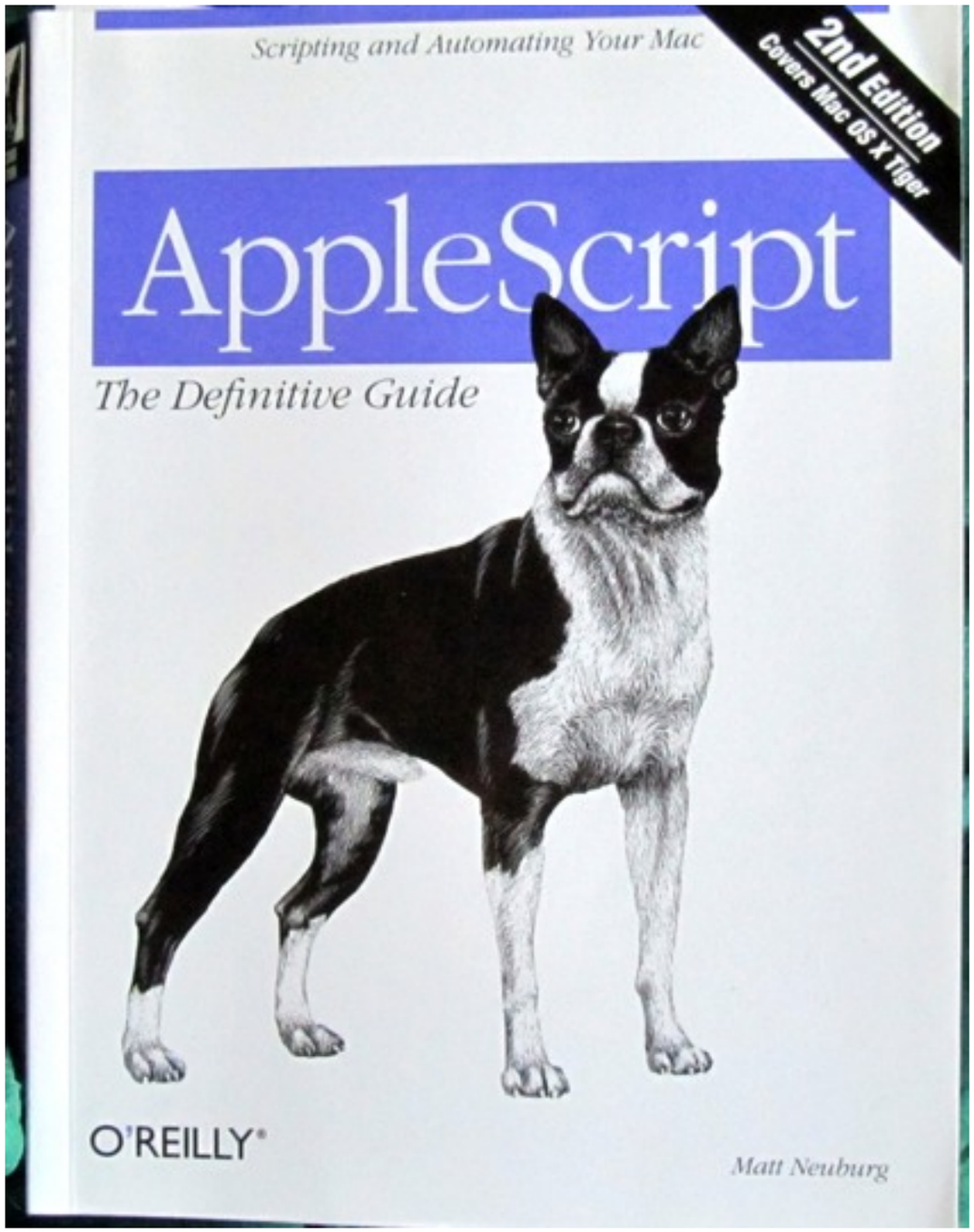
Chapter 7
Some Advanced Techniques
to Consider Later

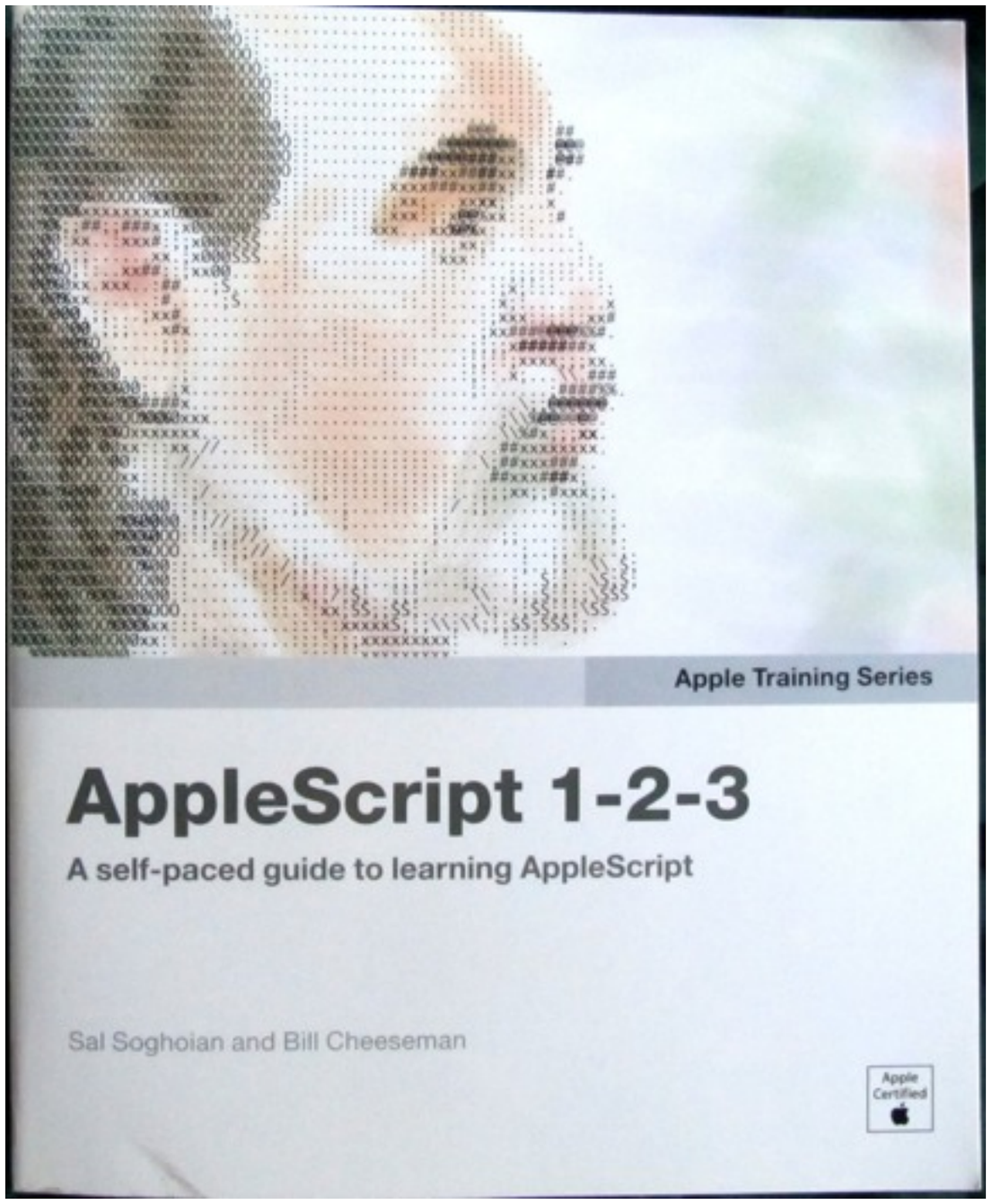
Features I Consider Important

(Or why I chose XTension from Sand Hill Engineering)

- X10
- Newer Protocols
- Direct I/O
- Other types of sensors like temperature
- S/W Add-Ons
- Web Interface
- Programmable
- Both wired & wireless
- Includes UPB (but not Insteon)
- Weeder, Barionet, WGL Assoc
- RFXCon - Oregon sensors, Cent-a-meter, etc
- WeatherMan, Database, Video
- X2Web - Web & iPhone Screens
- Based on AppleScript

Additional References



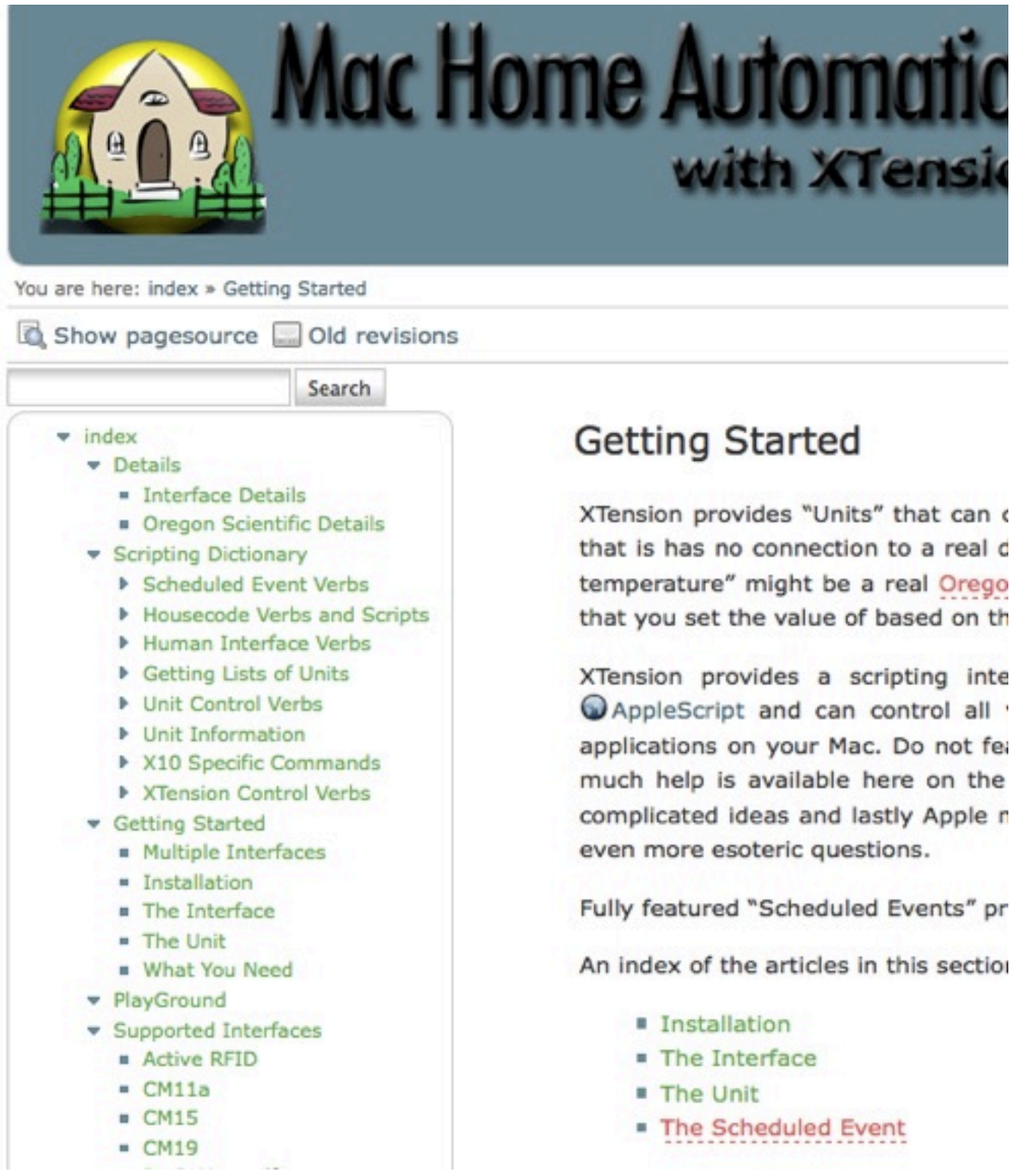


Getting Started

Before Installing XTension

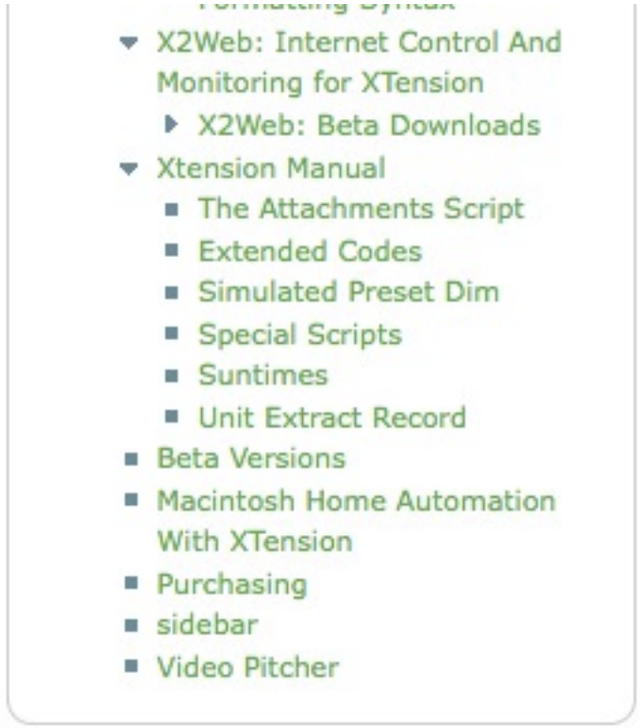
Read sections about getting started on the new XTension web site www.MacHomeAutomation.com

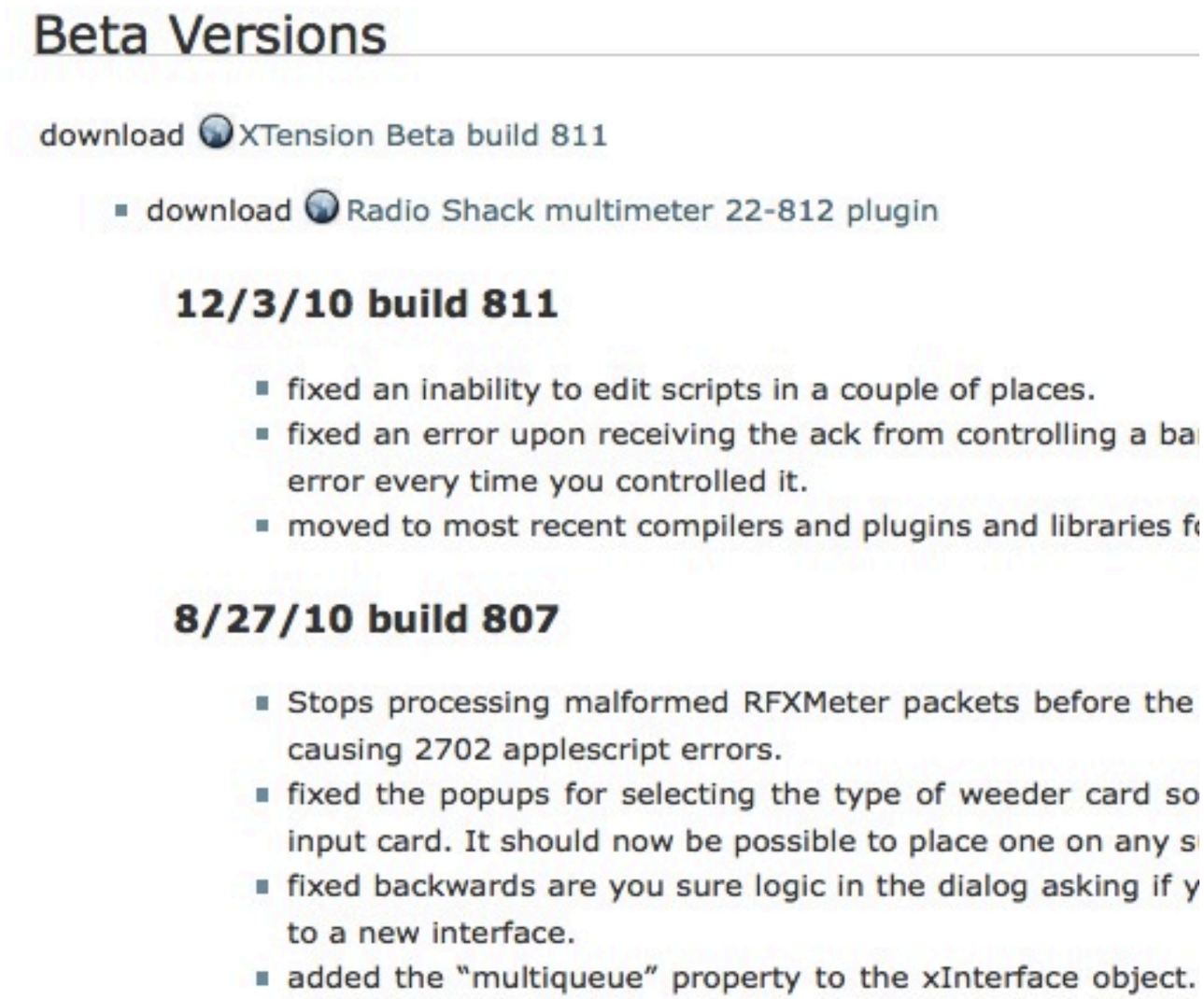
> > > >



Getting Started

Downloading the latest version





Getting Started

For a downloadable manual go to the original site - Shed.com

Home | How to order | XTension | Download Page | Home Automation | Ideas | Sand Hill | Links | Mailing List

FREE DOWNLOAD GOODIES

The latest OSX release supports
17 automation controllers including
the Barionet and all RFXcom RF receivers !

• **Download the Application** •

And do visit Mac Home Automation
where you can find the latest copies of X2Web, XTdb, and Video Pitcher !

• **Manual Only** •

• **This version will run in Lite mode until serialized.** •
• **You can create up to 5 units in the database.** •

• **Peek at some screen shots ?** •

Getting Started with XTension

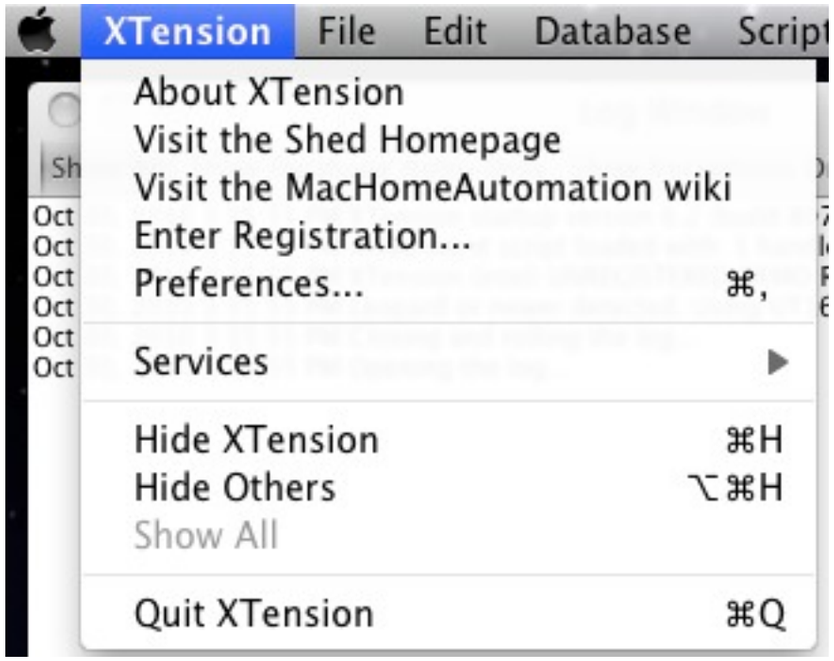
Setting up the Physical Interface

Older CM11 (will need serial adapter)

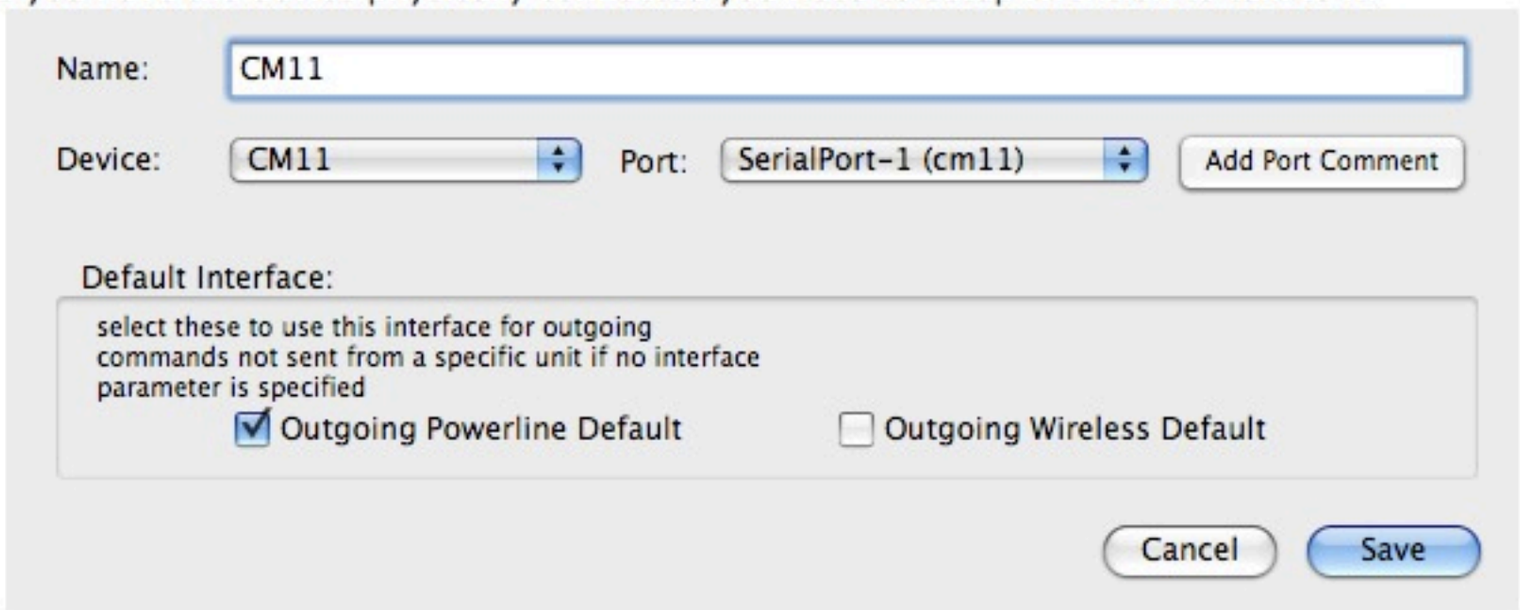
Newer CM15A (USB)

Getting Started

Installing the Physical Interface

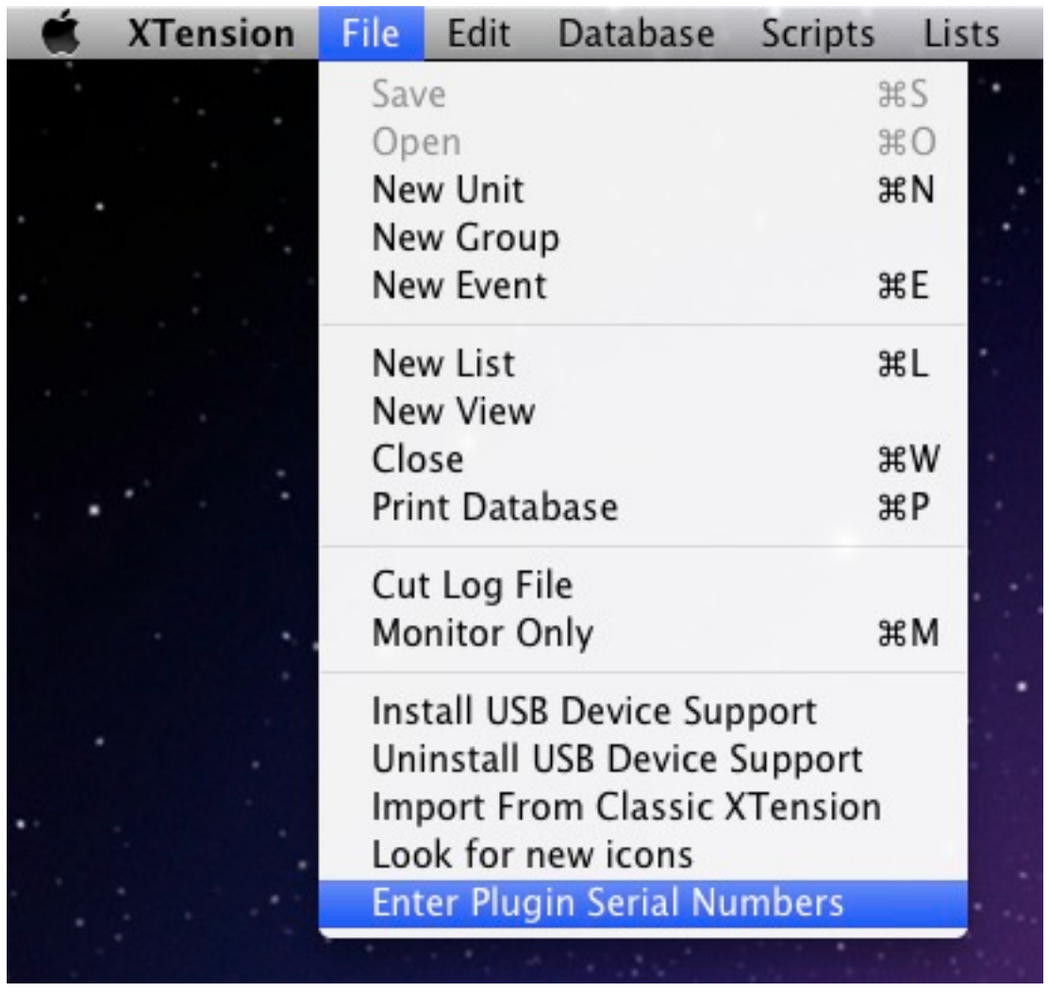


To connect a cm11 you'll probably need a usb serial adaptor as most modern machines dont have any serial ports anymore. Once you have the device physically connected you need to setup XTension to talk to it.



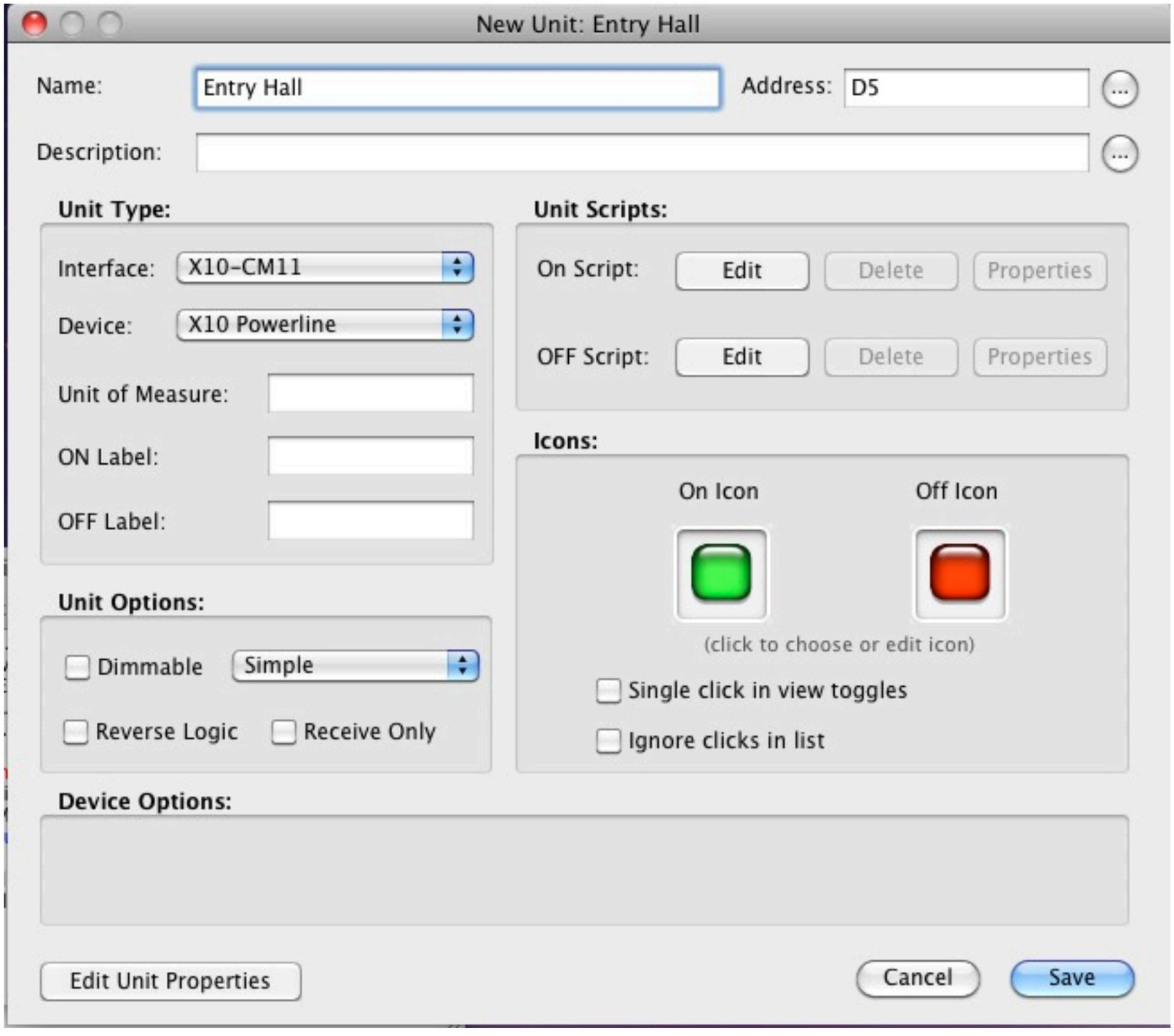
Getting Started

Installing the X10 Units



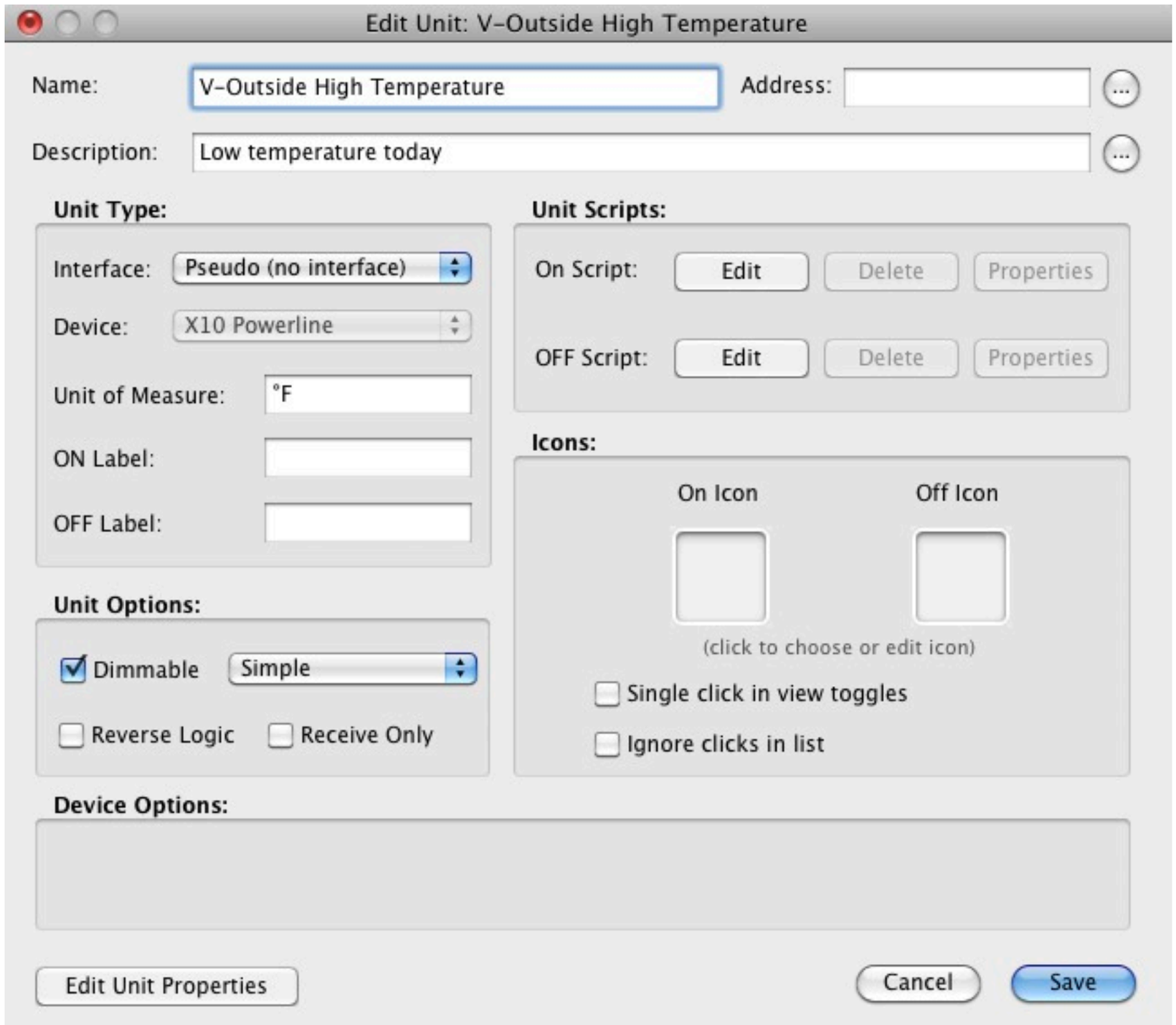
Getting Started

Installing the X10 Units



Getting Started

Adding Pseudo Units - Flags & Variables



Getting Started

Viewing the Master List

Master List

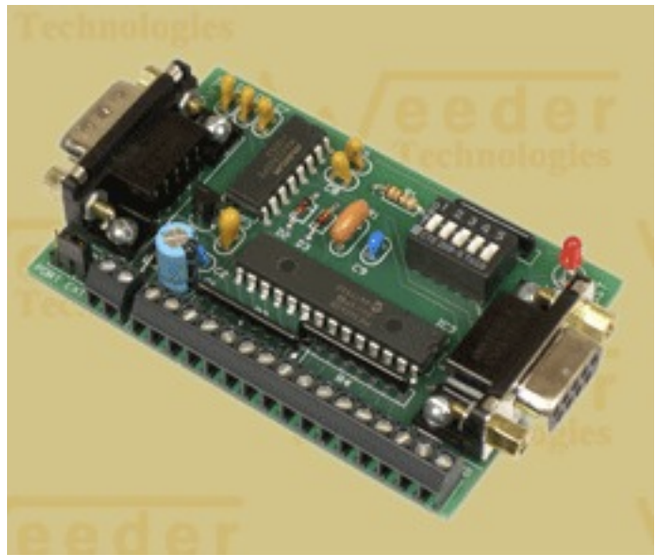
Name	Value	Address	Flags	Last Activity	Interface	Description
R-Sprinkler-C	↓	A3		Tue 6:30 AM	Weeder A	
R-Sprinkler-D	↓	A4		Tue 6:30 AM	Weeder A	
R-WB8-Spare	↓	B8		10/31/10 12:58 PM	Weeder B	
S-Davis Humidity	53%			Today: 12:38:51 PM		Weather data from Vantantage Pro 2
S-Davis Pressure	30.15psi			Today: 12:38:51 PM		
S-Davis Temperature	58°F			Today: 12:38:51 PM		Weather data from Vantantage Pro 2
S-Davis Wind Dir	161°			Today: 12:38:51 PM		Weather data from Vantantage Pro 2
S-Davis Wind Speed	5mph			Today: 12:38:51 PM		Weather data from Vantantage Pro 2
S-Kitchen Outdoor Temp	58.1°F	P5		Today: 12:41:17 PM	RFX	Temperature sensor Outside Kitchen
S-Oregon Humidity Sensor	46%	J7		Today: 12:41:15 PM	RFX	Oregon Humidity Sensor
S-Oregon Temp Sensor	59.36°F	J7		Today: 12:39:18 PM	RFX	Oregon Temperature Sensor
S-Power A	20			11/22/10 11:10 AM	RFX	Input from Cent-a meter
S-Power Weight	0	K1		11/22/10 9:57 AM	RFX	
Security Lights	↓	(8)		11/4/10 12:55 PM		Used for GhostWalk
SP-All LED Off	↓			11/30/10 3:55 PM		Indicator All LEDs off (call using Off)
SP-Blue LED	↑			11/30/10 3:55 PM		Indicaor Blue LED on/off
SP-Green LED	↑			11/30/10 3:55 PM		Indicator Green LED on/off
SP-Pink LED	↓			11/30/10 3:53 PM		Indicator Pink LED on/off
SP-White LED	↑			11/30/10 3:55 PM		Flag to turn on/off White LED
SP=Red LED	↓			11/30/10 3:53 PM		Indicator Red LED on/off
SP=Yellow LED	↓			11/30/10 3:53 PM		
Sprinkler Zones	↓	(10)		11/9/10 11:04 AM		All sprinkler zones
V-D-DrpZone	4			Today: 10:21:00 AM		Plant Drip Zone
V-D-PlantLength	9			Today: 3:00:00 AM		Length of back drips for plants
V-Humidity	47			Today: 12:38:51 PM		(soon to be) Outside humidity
V-Outside High Temperature	57.92°F			Today: 12:38:51 PM		Low temperature today

Search

Getting Started

Installing other Interfaces

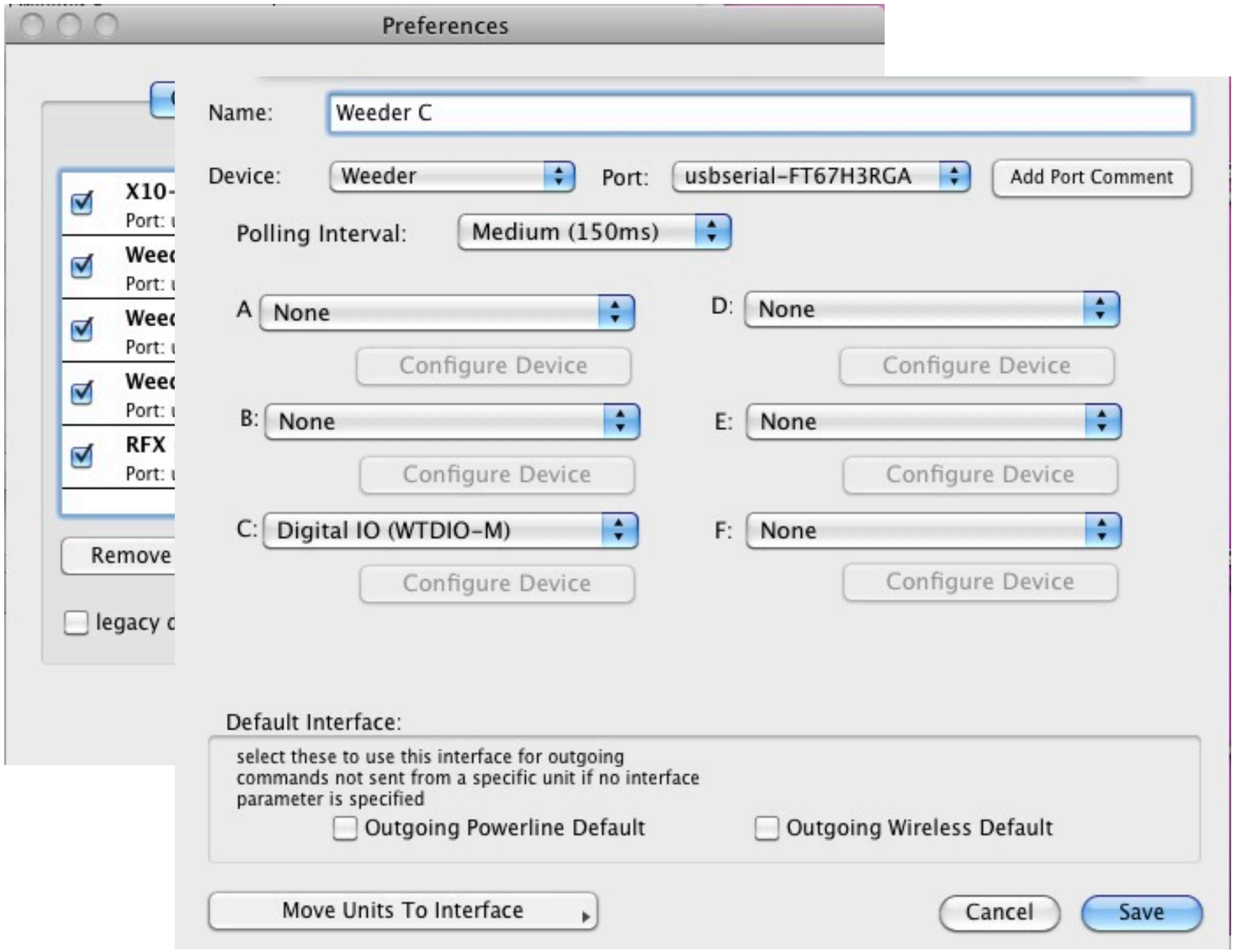
Weeder Technologies
Digital I/O



RFXCom
Dual Receiver

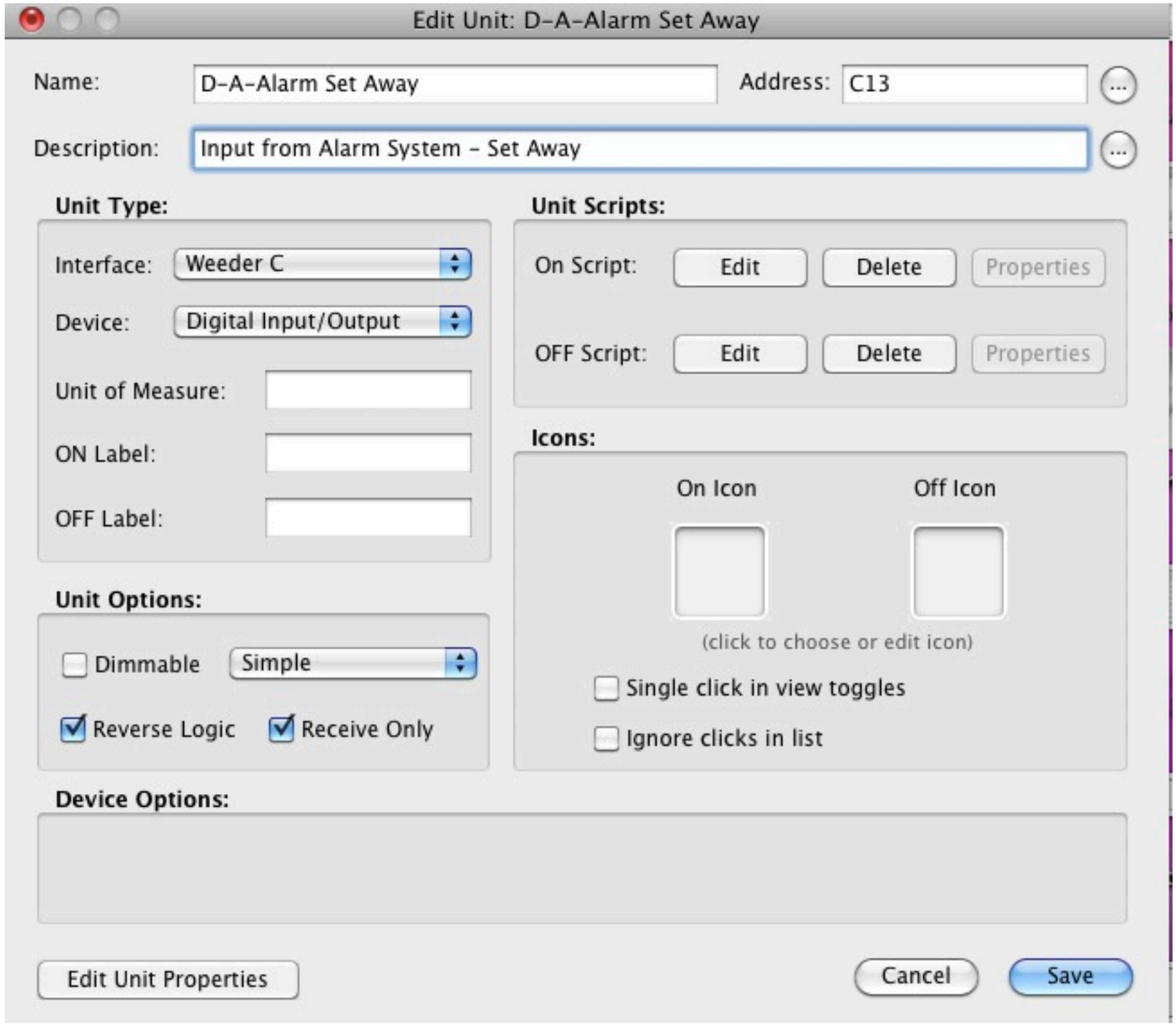
Getting Started

Installing other Interfaces



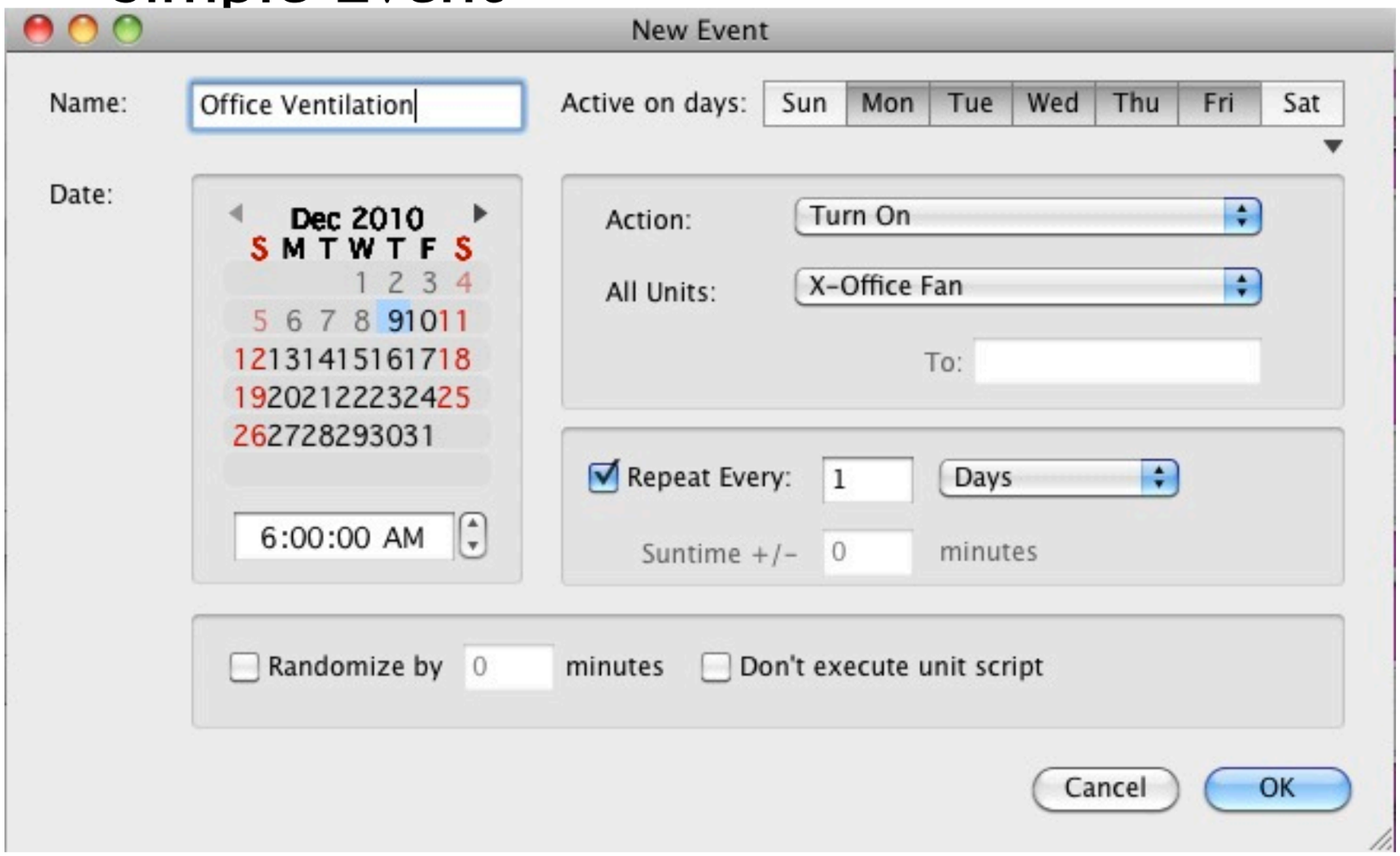
Getting Started

Installing other Interfaces

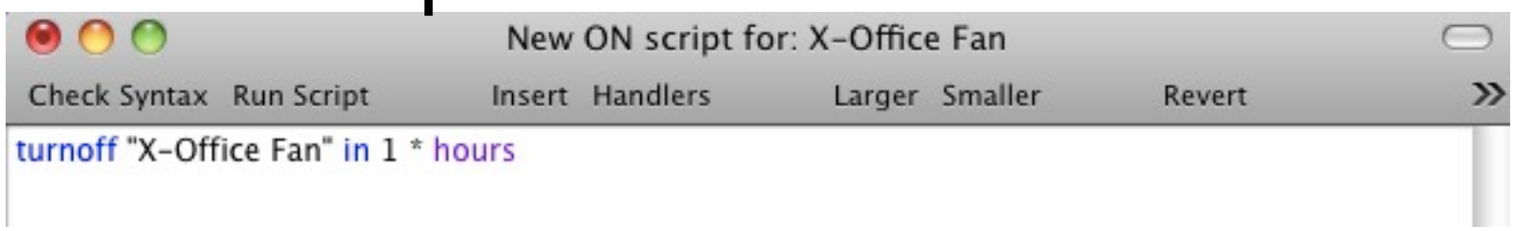


Events & Scripting

Simple Event

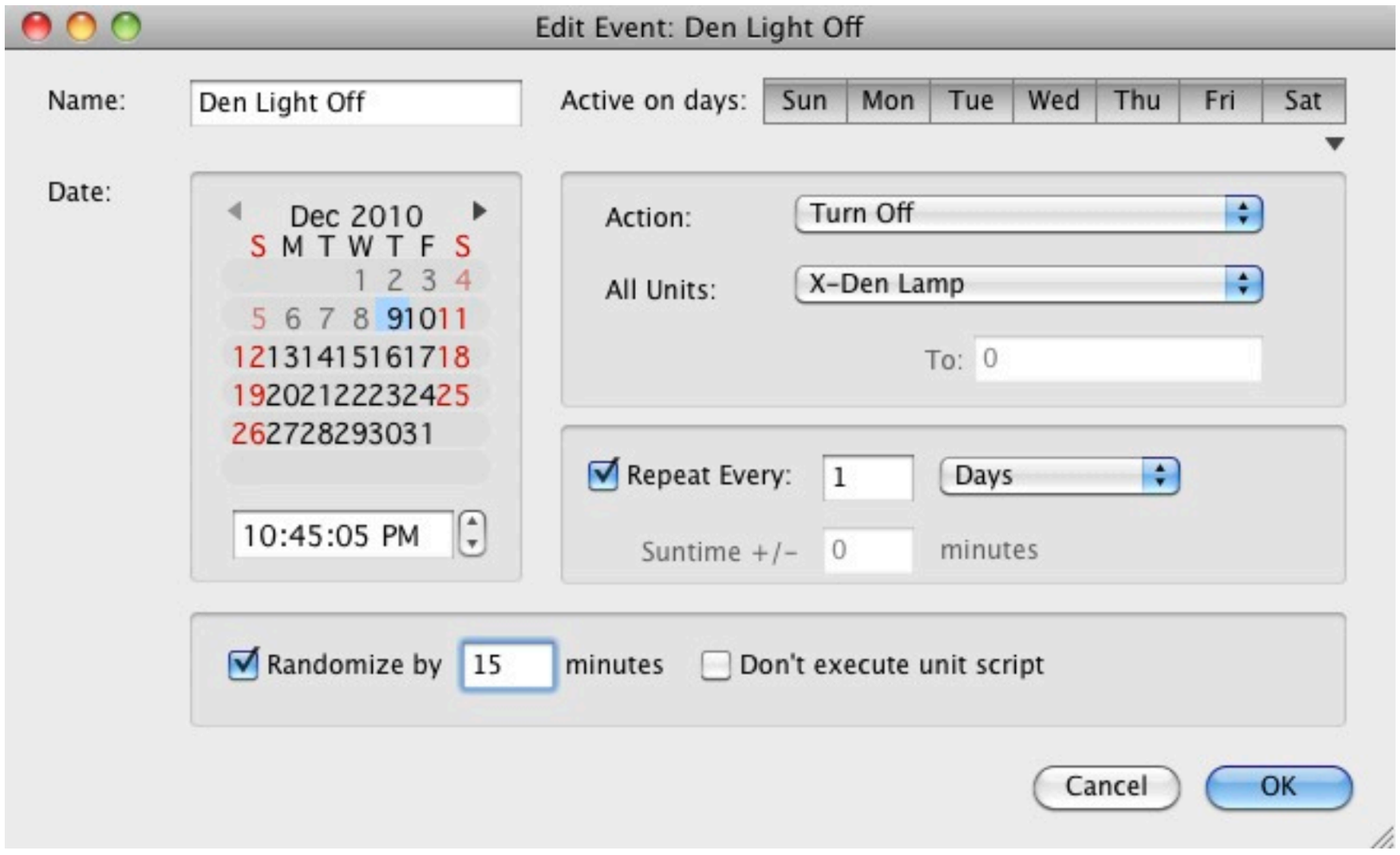


Unit Script



Events & Scripting

Event with Randomized Timing

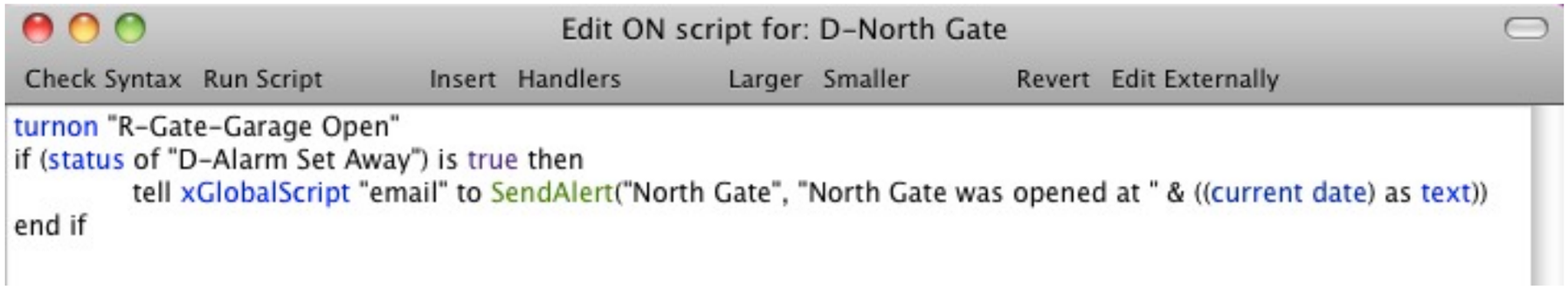


Events & Scripting

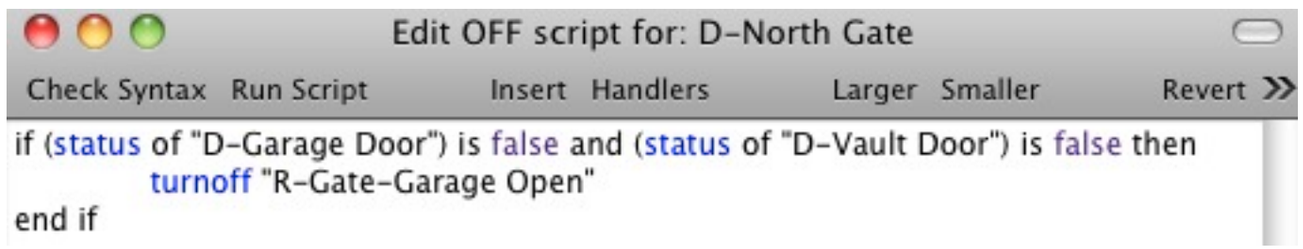
Unit Initiating Script

Gate-Garage Open [Indictor] =
North Gate Open
OR
Garage Door Open
OR
[Rain Water] Vault Door Open

Unit On Script



Unit Off Script

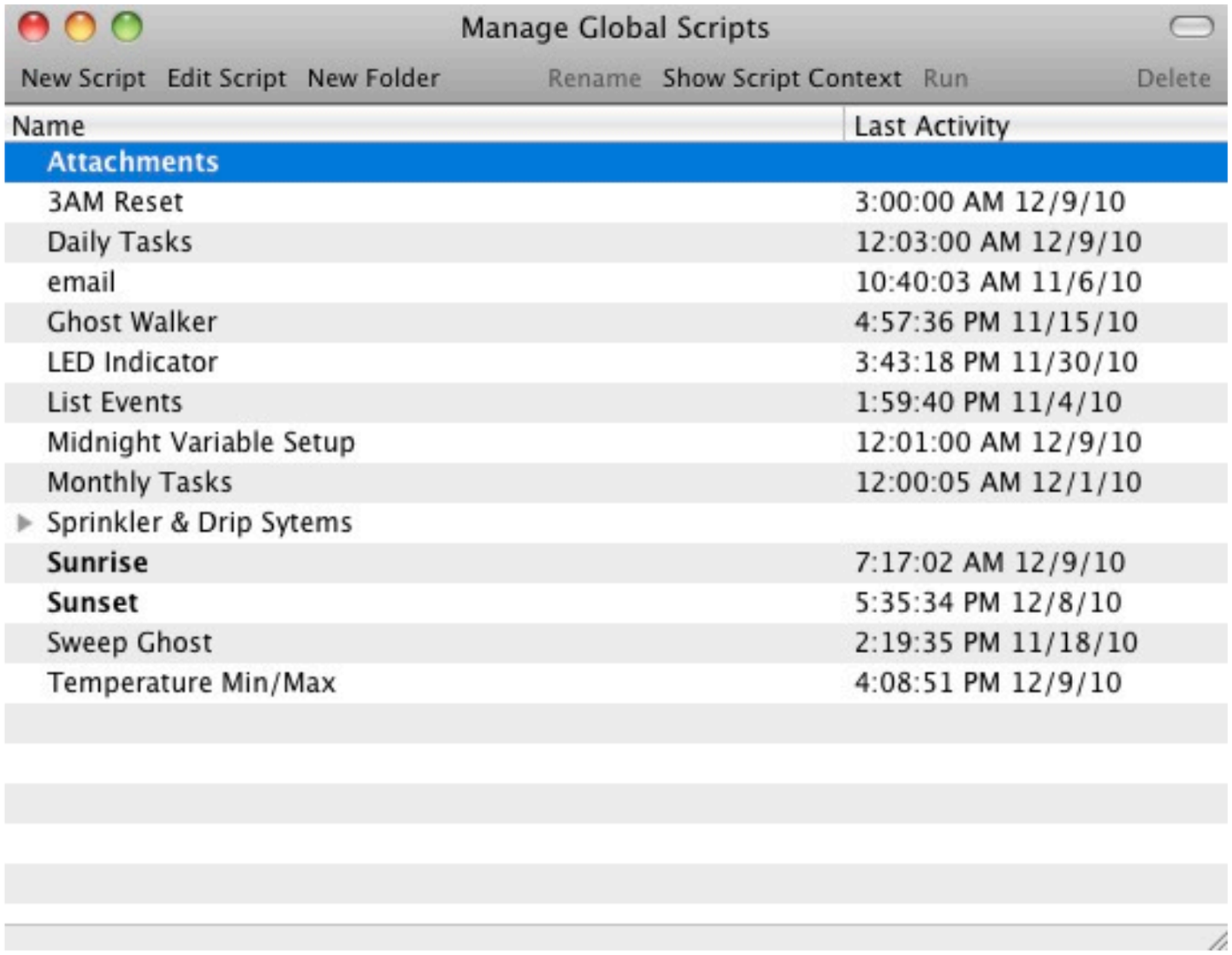


Global Scripts

A *global script* is an AppleScript that a scheduled event can execute or another script can call. In XTension, global scripts are the glue that ties your whole automation system together.

- Gordon Meyer - *Smart Home Hacks*

Global Scripts



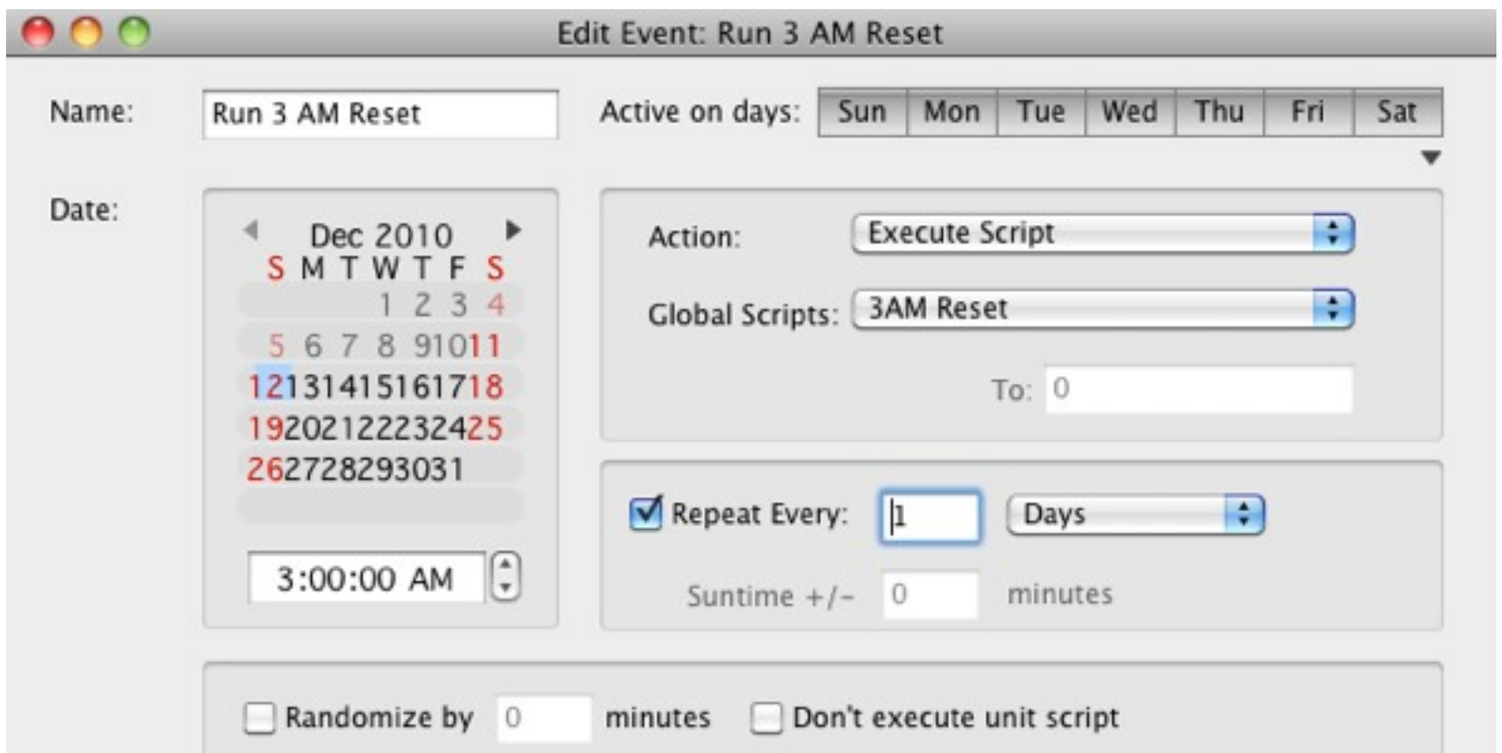
Global Scripts

Simple Event Script

Edit Global Script: 3AM Reset

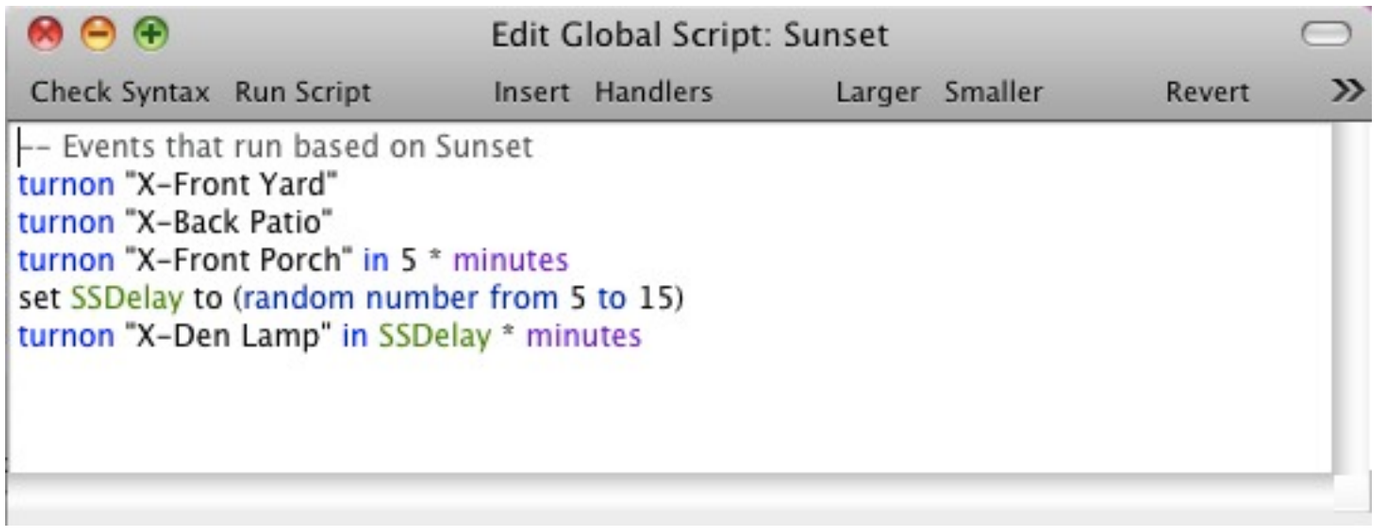
Check Syntax | Run Script | Insert | Handlers | Larger | Smaller | Revert

```
-- Events that occur early morning - 3AM
--make sure all inside lights off
all units off "B"
all units off "D"
all units off "E"
all units off "F"
turnoff "F-TV Simulator Setup Flag"
turnoff "X-TV Simulator"
-- any additional resets
execute script "Season Setup for Sprinkler Times"
```



Global Scripts

System Event Script



Global Scripts

Scripts using Handler Calls for passing parameters

Script "email" for sending emails

Edit ON script for: D-North Gate

Check Syntax | Run Script | Insert | Handlers | Larger | Smaller | Revert | Edit Externally

```
turnon "R-Gate-Garage Open"
if (status of "D-Alarm Set Away") is true then
        tell xGlobalScript "email" to SendAlert("North Gate", "North Gate was opened at " & ((current date) as text))
end if
```

Global Scripts

Scripts using Handler Calls for passing parameters

Script "email" for sending emails

Edit Global Script: email

Check Syntax Run Script Insert Handlers Larger Smaller Revert Edit Externally

```
on DoEmail(TheSubject, TheBody, TheName, theAddress)

        tell application "Mail" -- this sends the event to the recipients
                set newMessage to make new outgoing message with properties {subject:TheSubject, content:TheBody & return & return}
                tell newMessage
                        set visible to true
                        -- set sender to theSender
                        set sender to TheName
                        make new to recipient at end of to recipients with properties {name:TheName, address:theAddress}
                        send newMessage
                end tell
        end tell
end DoEmail

on SendAlert(TheSubject, TheMessage)
        DoEmail(TheSubject, TheMessage, "XTension", "billl@zipcon.net")
        -- DoEmail(TheSubject, TheMessage, "XTension", "my@iphone")
end SendAlert
```

Taken from "Tutorials"
section on the
MacHome Automation Web Site

Global Scripts

Scripts using Handler Calls for passing parameters

Script "email" for sending emails

Edit ON script for: D-North Gate

Check Syntax Run Script Insert Handlers Larger Smaller Revert Edit Externally

```
turnon "R-Gate-Garage Open"
if (status of "D-Alarm Set Away") is true then
        tell xGlobalScript "email" to SendAlert("North Gate", "North Gate was opened at " & ((current date) as text))
end if
```

From: Bill Lundell
Subject: **North Gate**
Date: January 9, 2011 1:31:06 PM CST
To: XTension <billl@zipcon.net>

North Gate was opened at Sunday, January 9, 2011 1:31:06 PM

Global Scripts

Making a house look "occupied"

Script "GhostWalker" for turning lights on & off at random times

Hack #72 - Gordon Meyer - *Smart Home Hacks*

Setting up:

Add lights (units) to a Group (or Groups)

Create the Ghost Walker script

Add repeating event to rerun the GhostWalker script

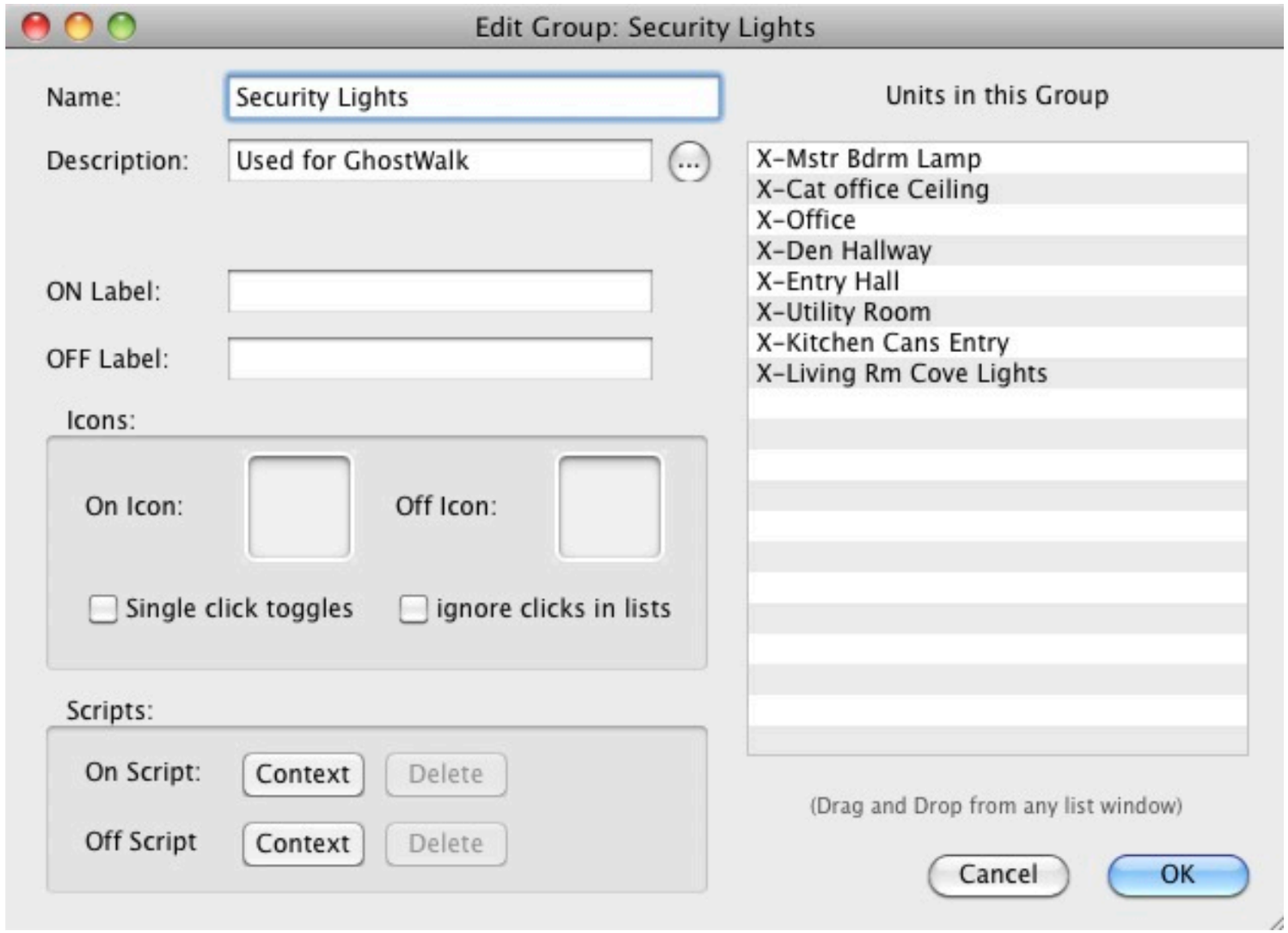
Add event to trigger GhostWalker script

Add event to turn off GhostWalker Script

Global Scripts

Making a house look "occupied"

Adding units to a [New] Group "Security Lights"



Global Scripts

Making a house look "occupied"

Enter GhostWalker Script

```
-- Ghost Walk Script
-- Randomly turns on & off lights & TV simulator to make house seem occupied
--set seed to (random number 1 to 2) -- a 50% chance anything will happen this time
--if seed is equal to 1 then
if (status of  "D-Alarm Set Away" ) is true then -- only if occupants are away
        if time of (current date) < (23 * hours) and time of (current date) > (5 * hours + 59 * minutes) then
                -- not during midnight to 6AM
                if (daylight) is false then -- make sure it is dark outside
                        set randLights to all of group "Security Lights"
                        set uname to some item of randLights
                        set EventNum to (random number from 1 to 1000) as string
                        set InTime to (random number from 1 to 10)
                        set OnTime to (random number from 7 to 50)
                        set EventOnName to "Ghost Light On" & EventNum
                        set EventOffName to "Ghost Light Off" & EventNum
                        create event EventOnName that turnson unit uname in InTime * minutes
                        create event EventOffName that turnsoff unit uname in OnTime * minutes
                        write log "Ghost Walk Scheduled: " & uname
                        if time of (current date) > (18 * hours) and time of (current date) < (22 * hours) then --only in evening
                                if (status of "F-TV Simulator Setup Flag") is false then
                                        set InTime to (random number from 1 to 50)
                                        set EventOnName to "Ghost Light On TV"
                                        create event EventOnName that turnson unit "X-TV Simulator" in InTime * minutes
                                        turnon "F-TV Simulator Setup Flag"
                                end if
                        end if
                        if time of (current date) > (22 * hours) and (status of "F-TV Simulator Setup Flag") is true then
                                set OnTime to (random number from 1 to 30)
                                set EventOffName to "Ghost Light Off TV"
                                create event EventOffName that turnsoff unit "X-TV Simulator" in OnTime * minutes
                                turnoff "F-TV Simulator Setup Flag"
                        end if
                end if
        end if
        execute script "Ghost Walker" in (random number from 35 to 50) * minutes
        -- rerun script later in 35 - 50 minutes
end if
```

Global Scripts

Making a house look "occupied"

Starting GhostWalker Script

Edit ON script for: D-Alarm Set Away

Check Syntax | Run Script | Insert | Handlers | Larger | Smaller | Revert | Edit Externally

```
tell xGlobalScript "email" to SendAlert("Security Set", "Security System was set at " & ((current date) as text))
execute script "Ghost Walker"
if (daylight) is false then
        turnon "X-Driveway Lights" for 5 * minutes
end if
```

Global Scripts

Making a house look "occupied"

Stopping (& Cleaning up after) GhostWalker Script

```
-- sweep out the ghosts after occupants return
set EventList to all events
repeat with x from 1 to count of items in EventList
        set e to item x in EventList
        if e contains "Ghost Light" then
                remove event e
        end if
end repeat
turnoff "F-TV Simulator Setup Flag"
turnoff "X-TV Simulator"
```

Edit OFF script for: D-Alarm Set Away

Check Syntax | Run Script | Insert | Handlers | Larger | Smaller | Revert | Edit Externally

```
tell xGlobalScript "email" to SendAlert("Security Off", "Security System was reset at " & ((current date) as text))
execute script "Sweep Ghost"
turnon "X-Entry Hall" for 5 * minutes
turnon "X-Utility Room" for 5 * minutes
```

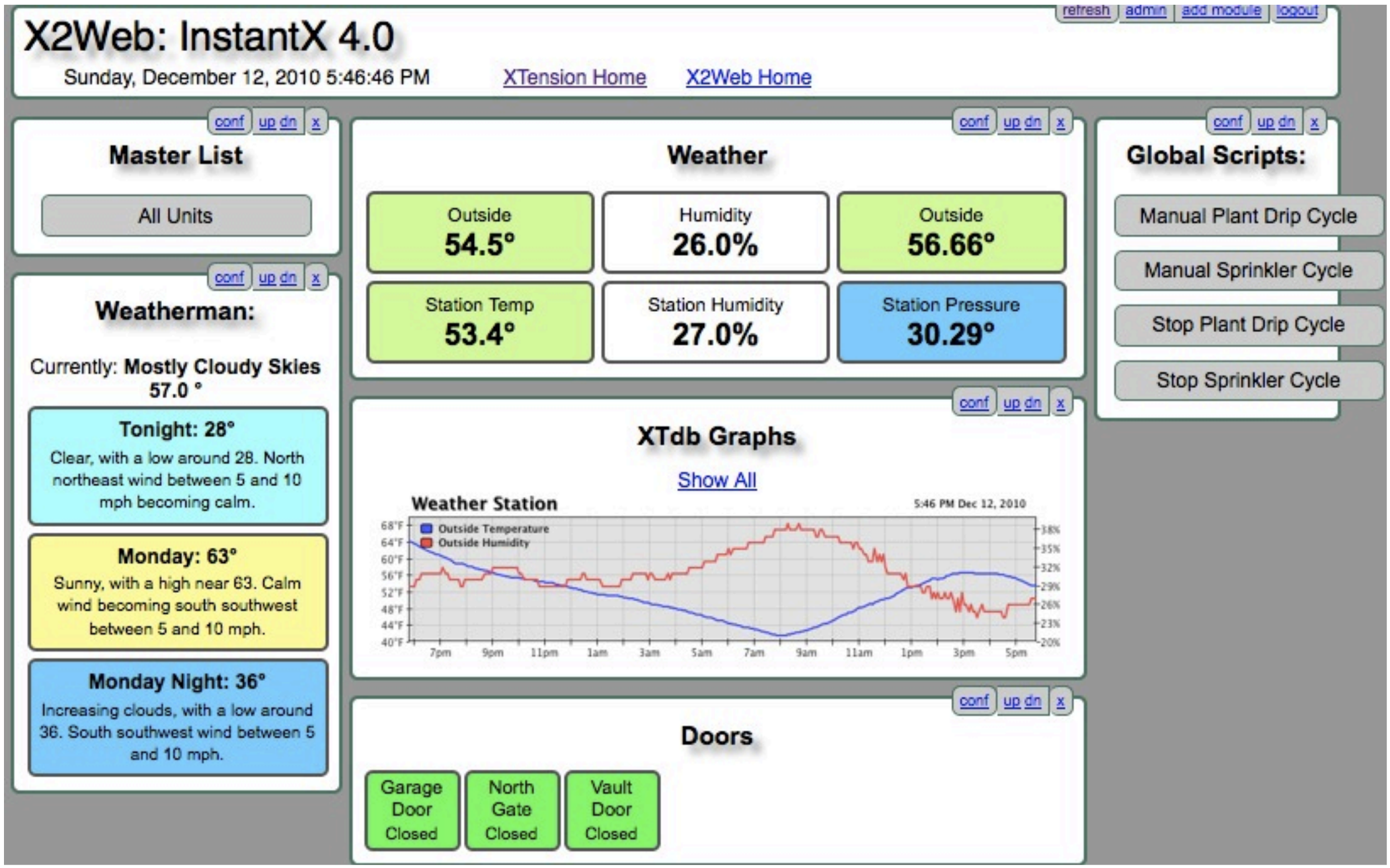
External Add-On Programs
Add Additional Features to XTension

- WeatherMan - Adds access to local weather forecasts
- Weather Tracker - Connection to physical weather station
- XTdb - Database for XTension Events
- VideoPitcher - Add video clips for viewing events
- X2Web - Web Interface for Monitoring & Control
- External Scripts

Web Interface - X2Web

Add-On web interface for XTension

Remote monitor and control



Web Interface - X2Web

Add-On web interface for XTension

All Units - no configuration

Home refresh logout

Unit List: All Units

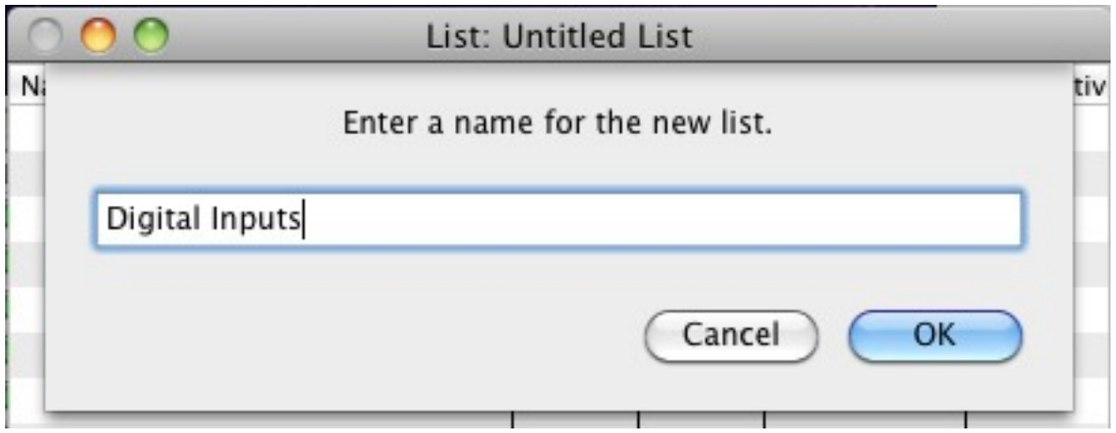
Sunday, December 12, 2010 5:50:29 PM

All Units

CAM Amps	34.0	5:50:19 PM	On more Off
CAM Cents per Hour	46.0	5:50:19 PM	On send more Off
CAM kW	3.74	5:50:19 PM	On send more Off
CAM Update Secs	12.0	5:50:19 PM	On send more Off
D-Alarm Set Away	On	Yesterday: 12:06:14 PM	On more Off
D-Any Alarm	Off	Sunday, 10/31/10 2:45:55 PM	On more Off
D-Front Porch Sensor	Off	Sunday, 10/31/10 5:39:27 PM	On more Off
D-Garage Door	Off	Sunday, 11/14/10 11:22:04 AM	On more Off
D-North Gate	Off	Yesterday: 12:12:23 PM	On more Off
D-RS-Garage Hi	Off	Sunday, 10/31/10 5:15:23 PM	On more Off
D-RS-Garage Lo	Off	Sunday, 10/31/10 5:15:24 PM	On more Off
D-RS-NW Hi	Off	Sunday, 10/31/10 5:16:21 PM	On more Off
D-RS-NW Lo	Off	Sunday, 10/31/10 5:16:21 PM	On more Off
D-RS-Patio Hi	Off	Sunday, 10/31/10 5:17:27 PM	On more Off
D-RS-Patio Lo	Off	Sunday, 10/31/10 5:17:54 PM	On more Off
D-RS-Pressure OK	Off	Sunday, 10/31/10 5:00:39 PM	On more Off
D-RS-Pump Detect	Off	Sunday, 10/31/10 2:44:54 PM	On more Off
D-RS-Tanks Full	Off	Sunday, 10/31/10 5:16:57 PM	On more Off
D-RS-Water Detect	Off	Sunday, 10/31/10 2:43:31 PM	On more Off
D-S-Rain Sense	Off	Sunday, 10/31/10 2:10:53 PM	On more Off
D-S-Stop PB	Off	Sunday, 10/31/10 2:42:16 PM	On more Off
D-Vault Door	Off	Saturday, 11/13/10 7:05:55 PM	On more Off
Daily kWh	7.2109248E+4	5:50:19 PM	On send more Off
F-D-1-Patio	Off	Yesterday: 10:09:00 AM	On more Off
F-D-2-Porch	Off	Yesterday: 10:12:00 AM	On more Off

Web Interface - X2Web

Separate Lists



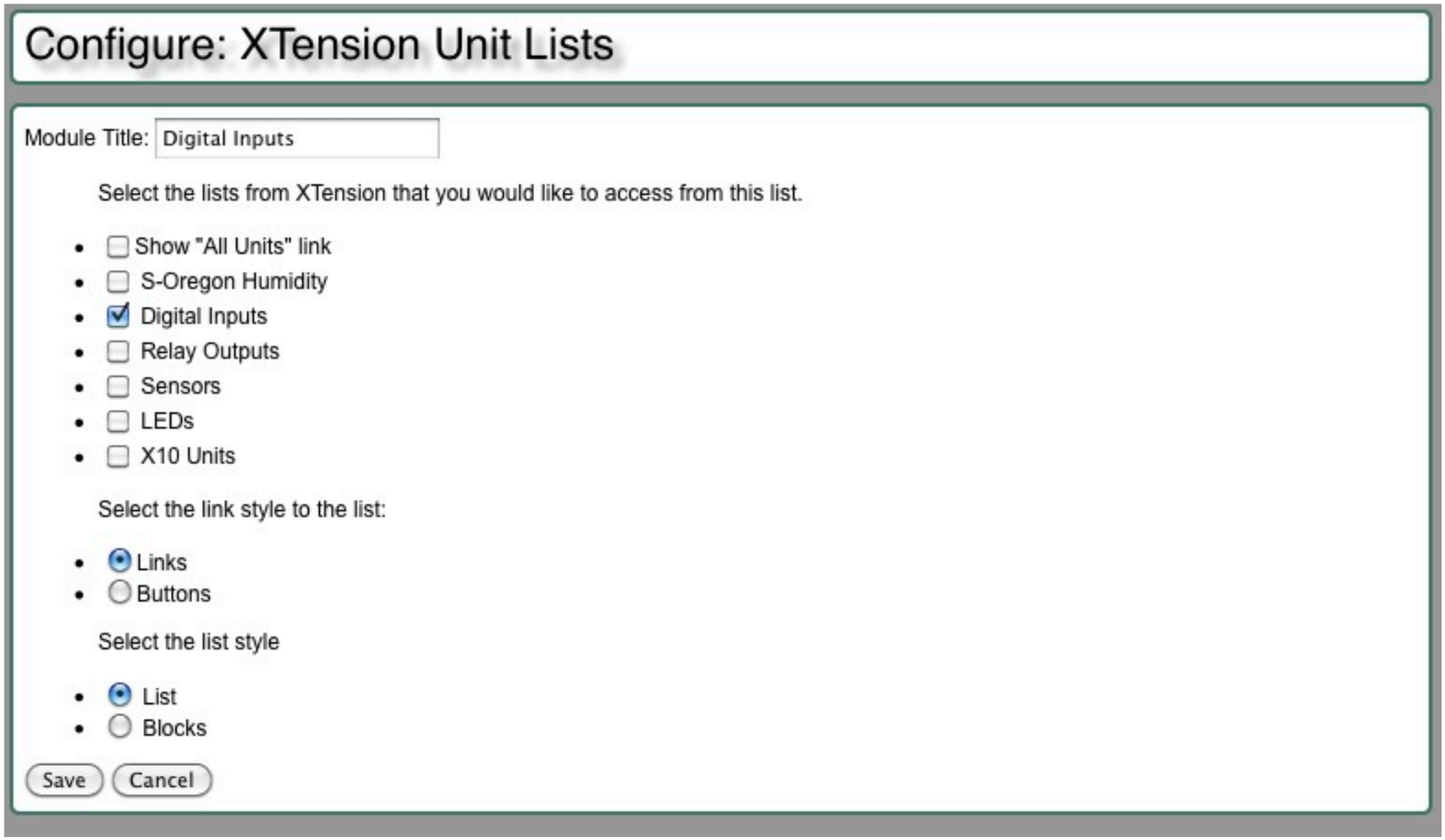
List: Digital Inputs

Name	Value	Address	Flags	Last Activity	Interface
D-Any Alarm	↓	C14		10/31/10 2:45 PM	Weeder C
D-Front Porch Sensor	↓	A14		10/31/10 5:39 PM	Weeder A
D-Garage Door	↓	A11		1/16/11 11:36 AM	Weeder A
D-North Gate	↓	A12		1/9/11 2:06 PM	Weeder A
D-RS-Garage Hi	↓	B9		1/17/11 3:43 PM	Weeder B
D-RS-Garage Lo	↓	B10		10/31/10 5:15 PM	Weeder B
D-RS-NW Hi	↓	B11		10/31/10 5:16 PM	Weeder B
D-RS-NW Lo	↓	B12		10/31/10 5:16 PM	Weeder B
D-RS-Patio Hi	↓	B13		10/31/10 5:17 PM	Weeder B
D-RS-Patio Lo	↓	B14		10/31/10 5:17 PM	Weeder B
D-RS-Pressure OK	↑	C10		1/11/11 11:30 AM	Weeder C
D-RS-Pump Detect	↓	C11		10/31/10 2:44 PM	Weeder C
D-RS-Tanks Full	↓	C9		10/31/10 5:16 PM	Weeder C
D-RS-Water Detect	↓	C12		10/31/10 2:43 PM	Weeder C
D-S-Rain Sense	↓	A9		10/31/10 2:10 PM	Weeder A
D-S-Stop PB	↓	A10		10/31/10 2:42 PM	Weeder A
D-Vault Door	↓	A13		1/9/11 2:06 PM	Weeder A

Search

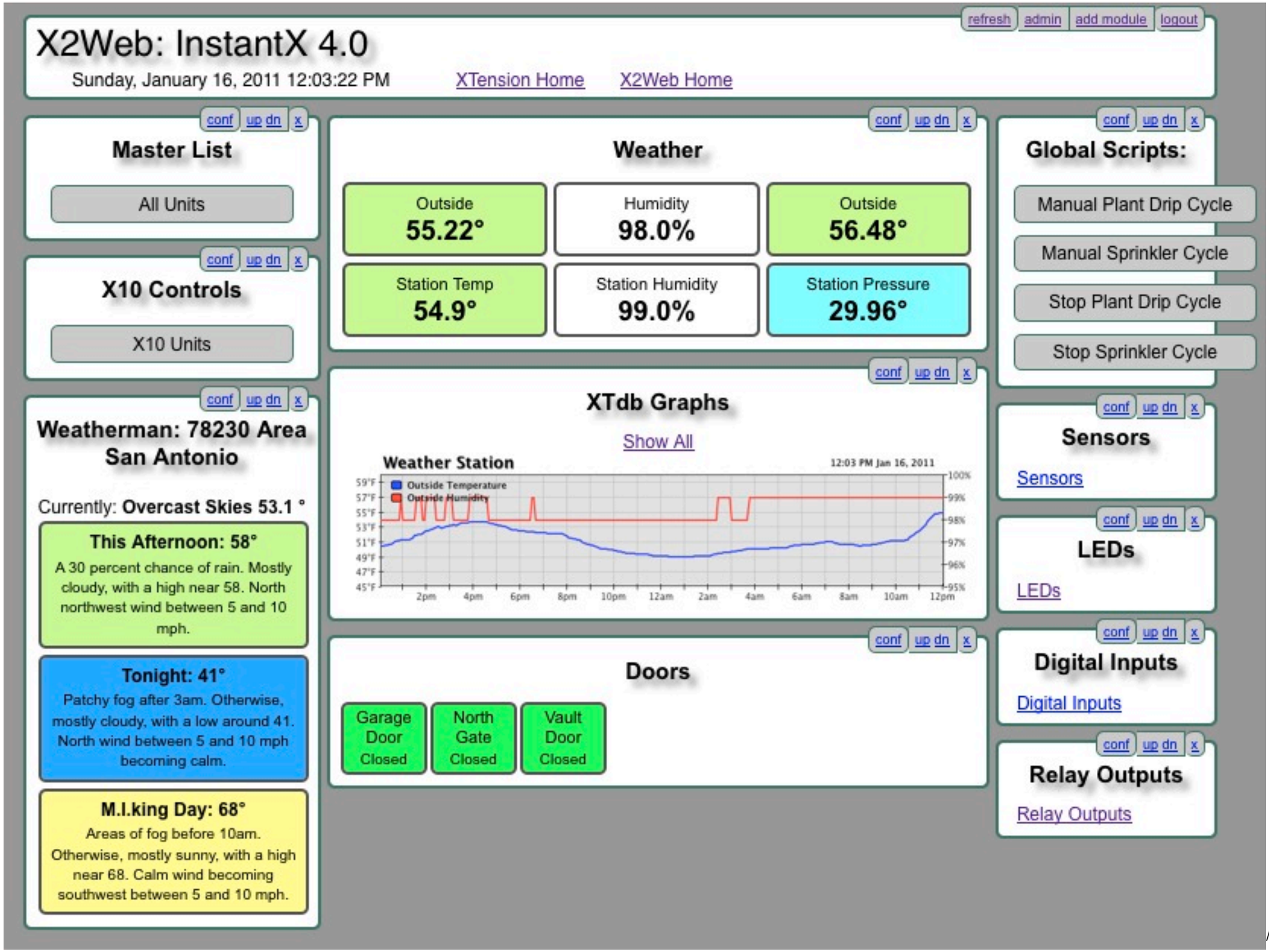
Web Interface - X2Web

Separate Lists



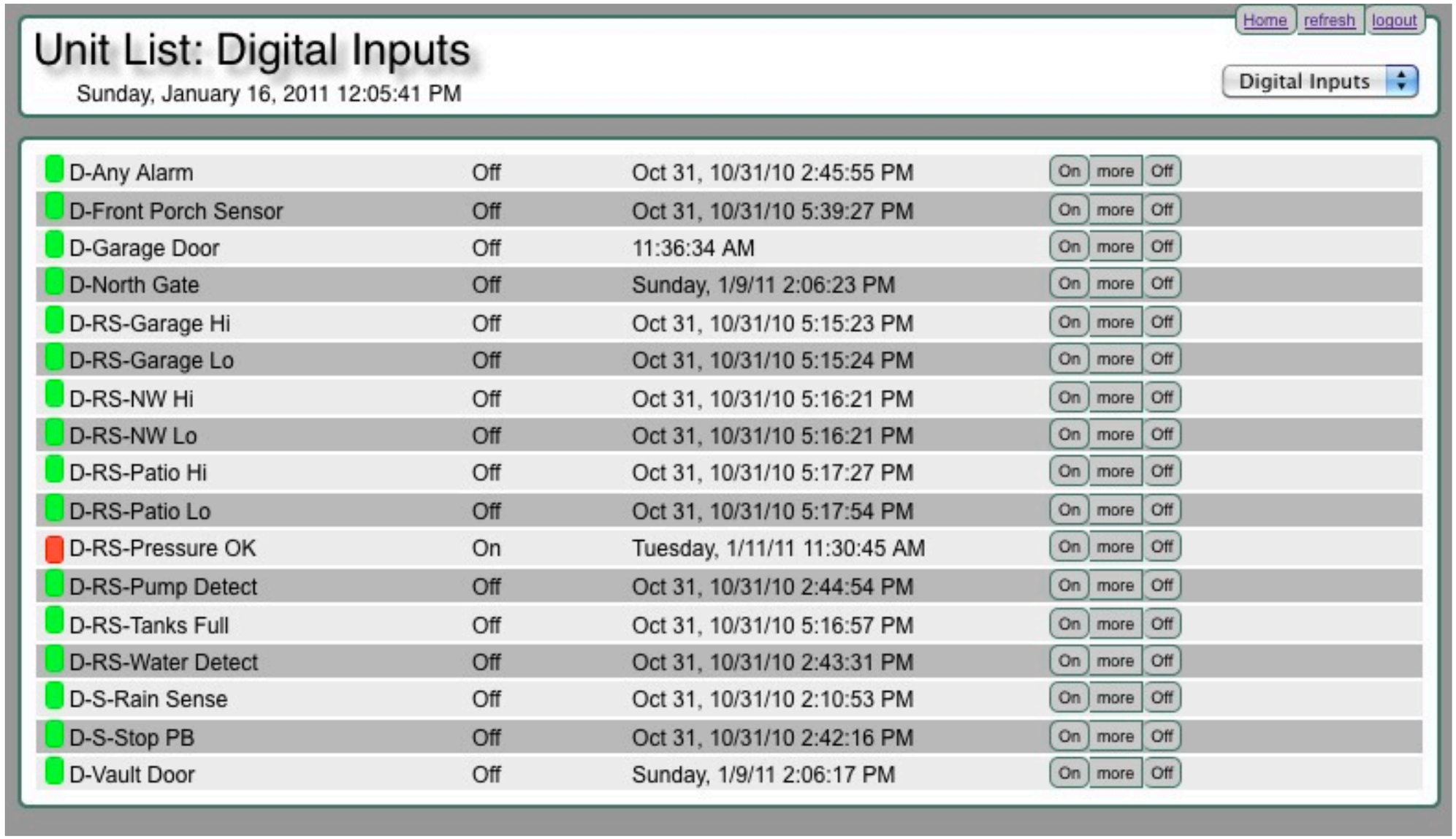
Web Interface - X2Web

Separate Lists



Web Interface - X2Web

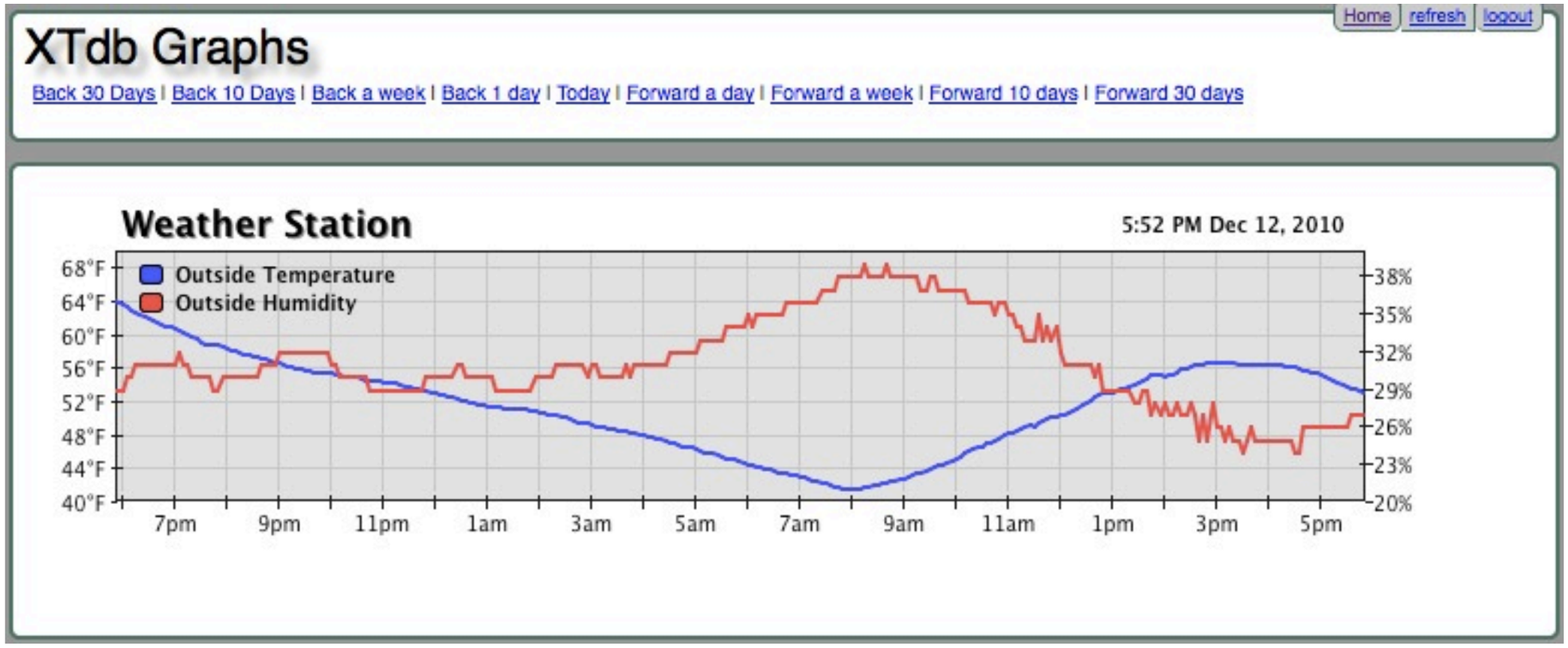
Separate Lists



Web Interface - X2Web

Add-On web interface for XTension

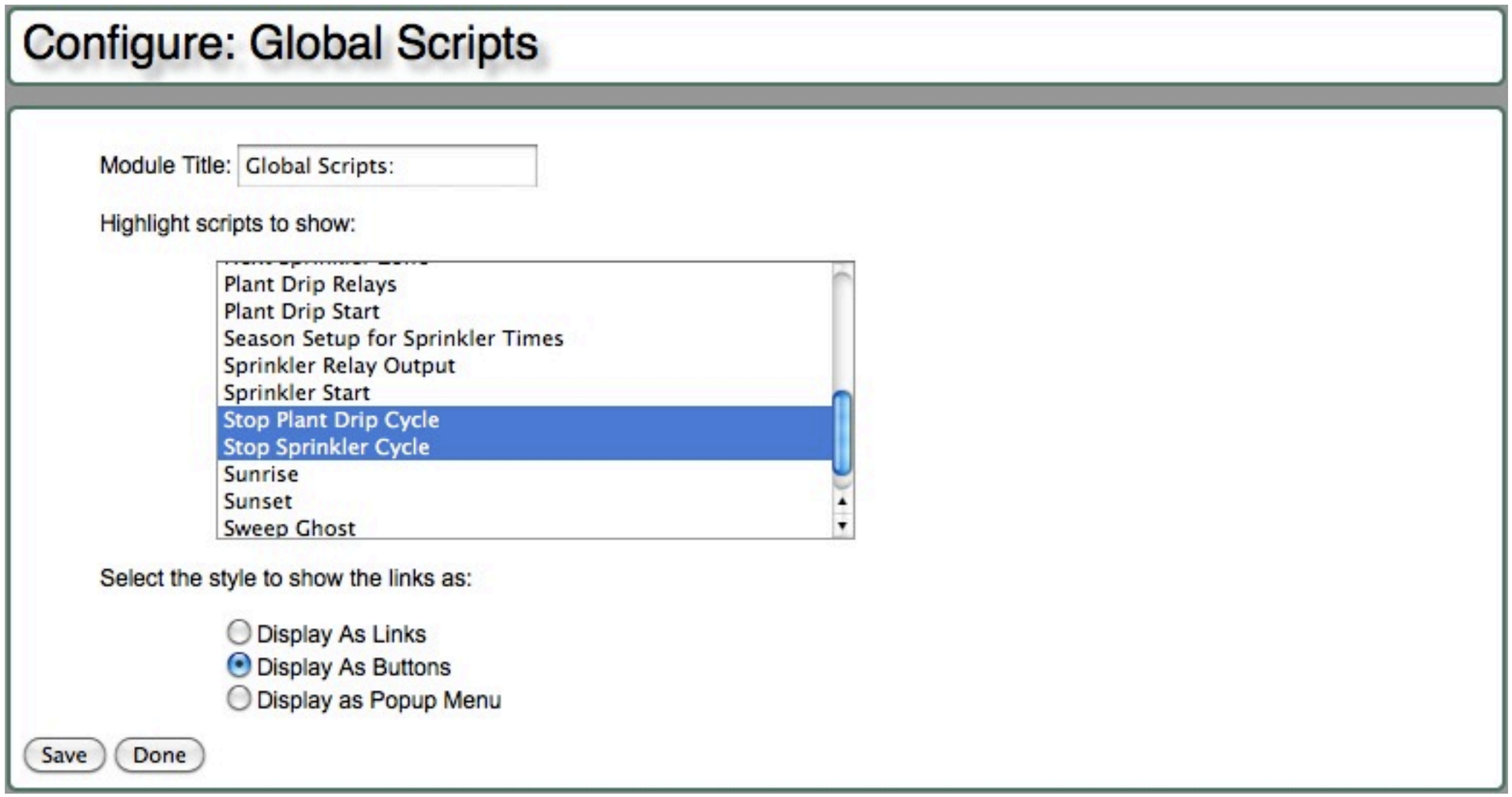
Adding graphs from XTdb



Web Interface - X2Web

Add-On web interface for XTension

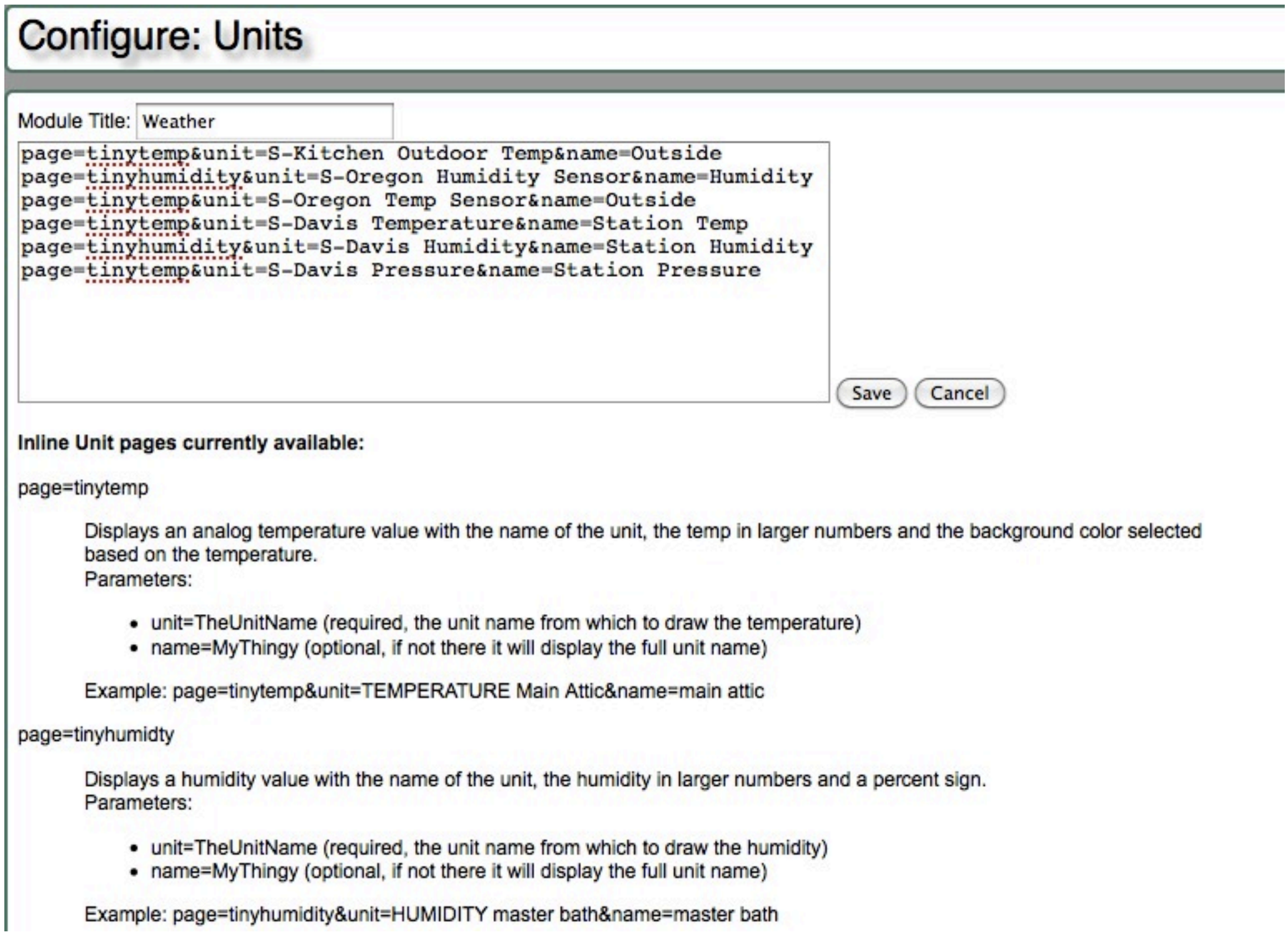
Adding Global Scripts



Web Interface - X2Web

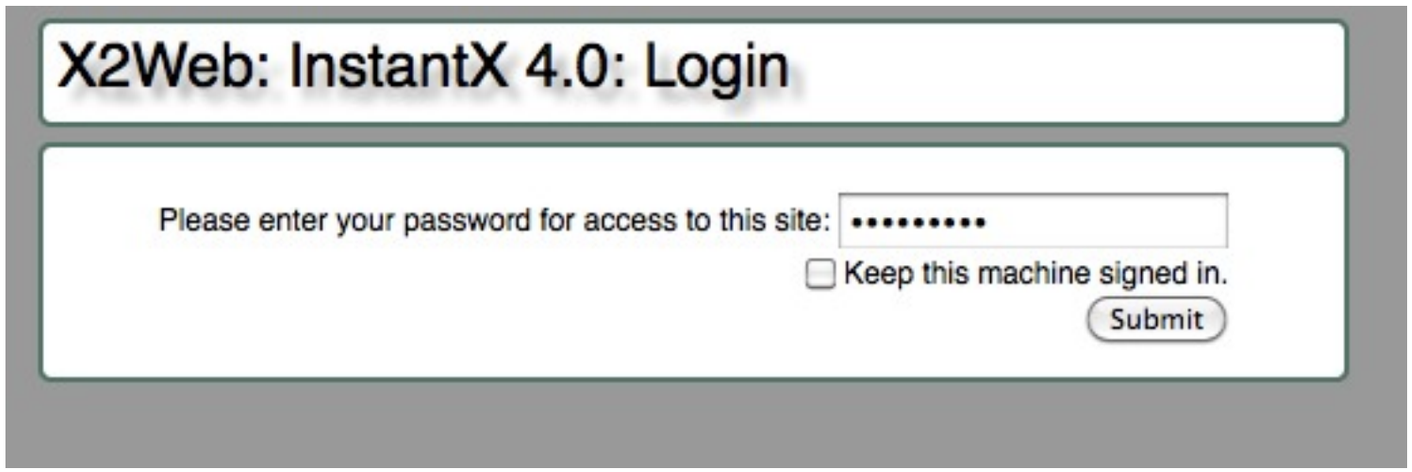
Add-On web interface for XTension

Configuring action buttons for Units

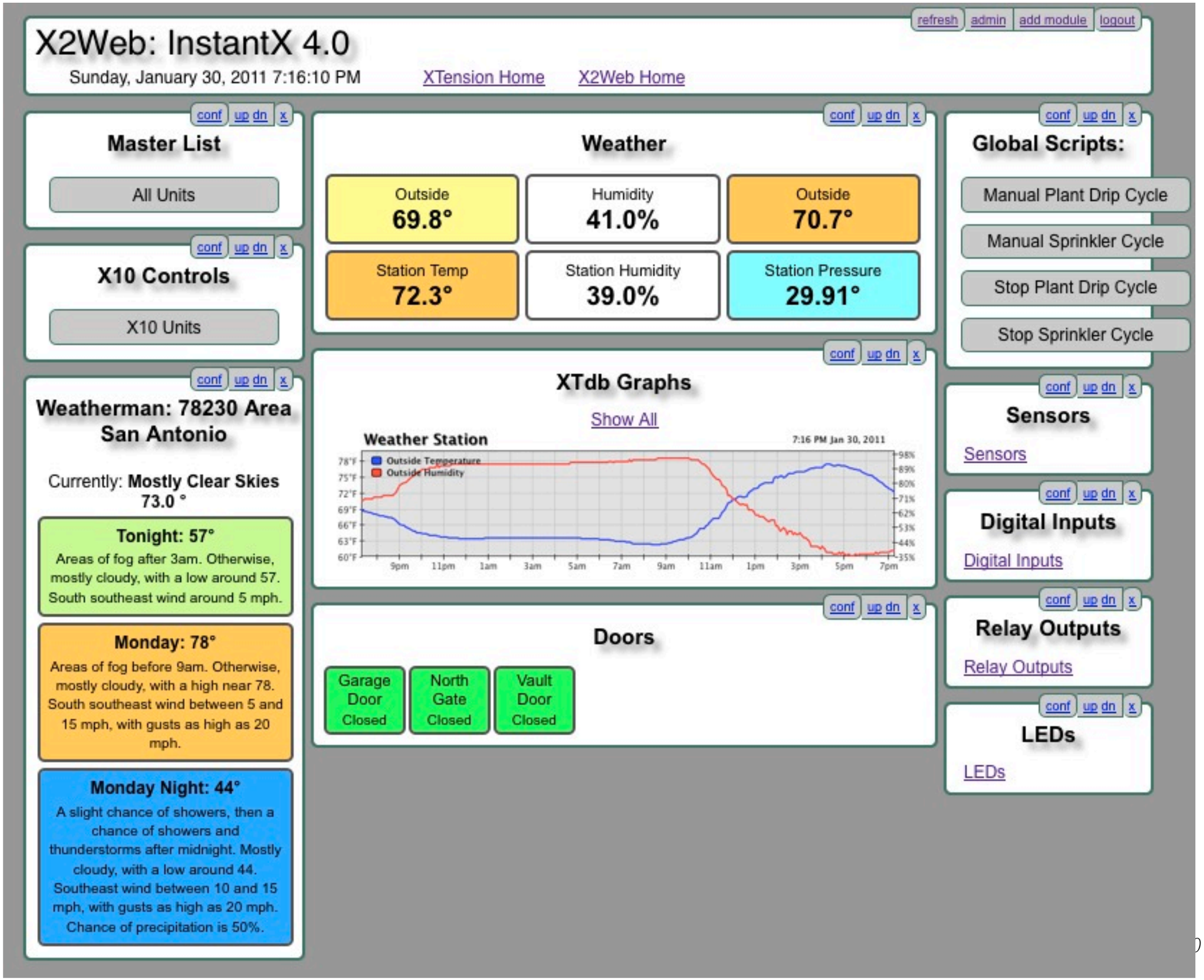


Web Interface - X2Web

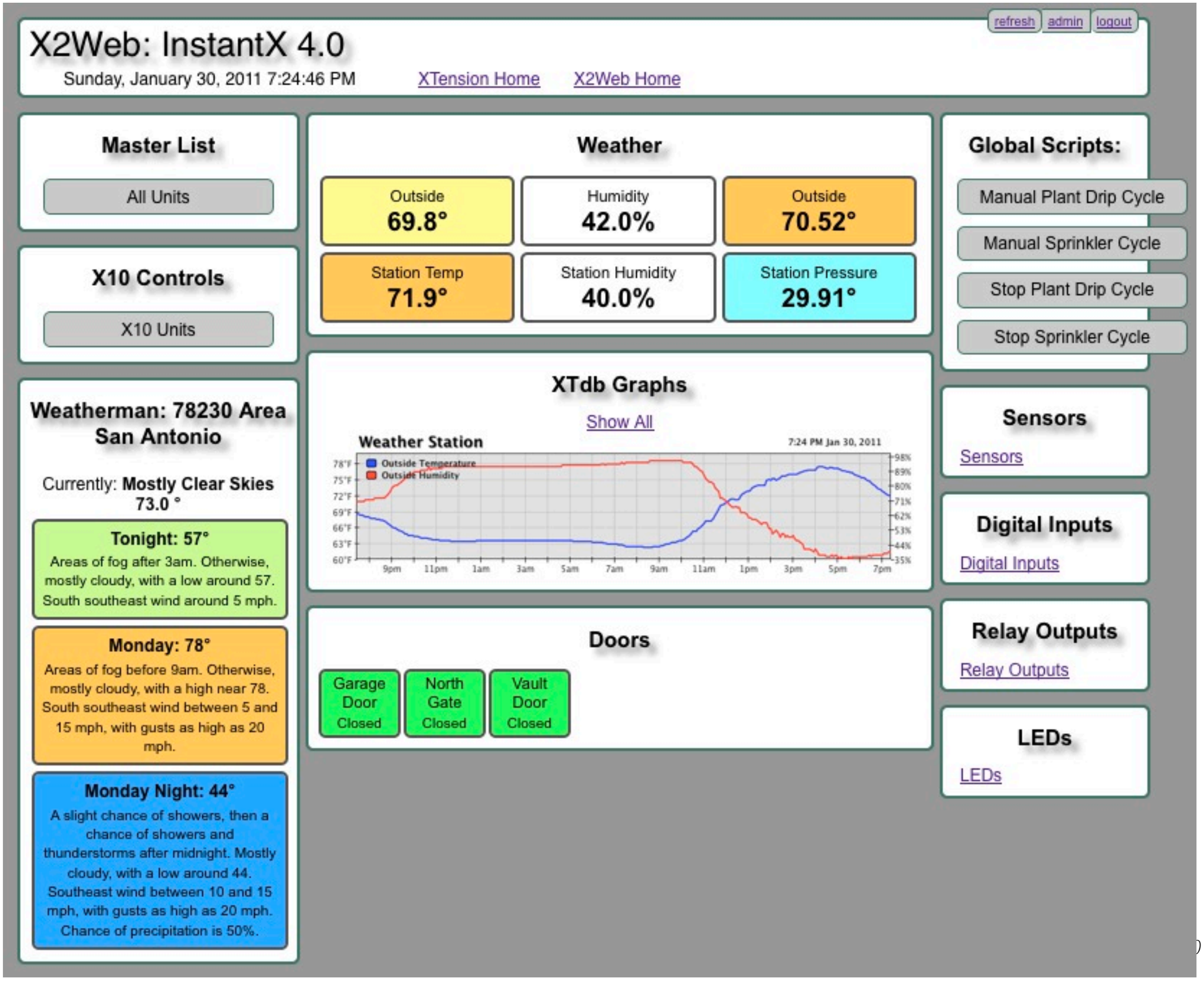
Login Screen



Web Interface - X2Web



Web Interface - X2Web



Thank You

Home Automation for Mac - Links

Smart Home Hacks Book
Although *Smart Home Hacks* has a copyright of 2004, the information contained in it is still relevant for today's home automation designer. And it is a good introduction for both XTension and Indigo software.
Available in Paperback & Kindle Editions
http://www.amazon.com/Smart-Home-Hacks-Tools-Automating/dp/0596007221

O'Reilly Information on *Smart Home Hacks*
http://oreilly.com/catalog/9780596007225/

PDF "Best of Smart Home Hacks" from the author
http://www.g2meyer.com/osxcon/BestSmartHomeHacks.pdf

System Software

XTension
For X10, UPB (in beta), as well as wired & wireless interfaces
New Site:
http://www.machomeautomation.com
Original Site:
http://www.shed.com/
To join XTension discussion list
http://lists.shed.com/mailman/listinfo/xtensionlist
Archive of XTension Discussion List
http://lists.shed.com/pipermail/xtensionlist/
Searchable database of XTension DiscussionList
http://void.nothingness.org/archives/xtension/index.php

Add-Ons & Plugins for XTension
http://sentman.com/Software.html

Indigo
If you plan to use Insteon devices, Indigo is probably your best software choice
http://www.perceptiveautomation.com/
Indigo User Forum
http://www.perceptiveautomation.com/userforum/
Indigo How-To Wiki
http://www.perceptiveautomation.com/wiki/doku.php

Thinking Home
X10 and (recently added) basic Insteon
http://alwaysthinking.com/thinkingHome.html
Thinking Home Forum
http://alwaysthinking.com/support/community/
To join mailing list
http://alwaysthinking.com/webpages/mailinglist.html

Comparison of Thinking Home, XTension, Indigo
http://alwaysthinking.com/FeatureComparison.html

Shion Online
https://www.shiononline.com/
New arrival to home automation - Their offerings are just becoming available

Software Add-Ons

WeatherMan & WeatherTracker Software
WeatherMan can be interfaced to XTension to provide local weather information.
WeatherTracker is a way to get information from you own weather station into XTension
http://www.afterten.com/

Hardware

X10 Site
For X10 information (and the latest specials), go to the source
http://www.x10.com/
X10 - How It Works
http://www.x10.com/technology1.htm
X10 Wiki
http://kbase.x10.com/wiki/
Wikipedia on X10
http://en.wikipedia.org/wiki/X10_(industry_standard)

UPB (PulseWorx) Controllers & Modules
UPB is a faster, 2-way protocol over power lines.
http://pulseworx.com/products_.htm
UPB Technology
http://pulseworx.com/UPB_.htm

UPB Simply Automated Controllers & modules
http://www.simply-automated.com/
UPB Technology
http://www.simply-automated.com/UPB_Technology.php

Insteon
http://www.insteon.net/
Insteon used a dual technology - both power lines and radio frequency
How Insteon Works
http://www.insteon.net/about-howitworks.html

Hardware Add-Ons

JV Digital Engineering
http://jvde.us/
The best X10 repeater available.
XTB-IIR X10 Transmit Booster / Repeater
http://jvde.us//xtb/XTB-IIR_description.htm

RFXCom Receivers
Use 415 MHz receiver for Oregon Scientific and others
Use 310 MHz receiver for X10 sensors (or X10 CM-15 or WGL W800)
http://www.cheapertronics.com/products.php?category_id=64

WGL & Associates

Modules & Sprinkler Controllers
WGL products include a UPB sprinkler module
http://www.wgldesigns.com/

FTDI Serial Drivers
If your design uses serial ports, try to use an FTDI deigned interface or adapter.
For the latest drivers, go the the source:
http://www.ftdichip.com/Drivers/VCP.htm

(Single) USB - Serial adapter
This is one example of an FTDI serial port adapter:
http://www.easysync-ltd.com/product/526/es-u-1001-r100.html

8-Port USB - Serial Adapter
If you end up using lots of serial ports, here is an 8-port box that uses FTDI drivers.
http://www.vscom.de/617.htm
(There is also 4-port version by the same company.)
The cheapest price I've found was on Amazon.
http://wwwa.amazon.com/VSCom-8-port-Serial-Adapter-RS232/dp/B000NZPJJ4

Serial Cables - Inexpensive (but well made)
http://www.cablesforless.com/c-500-db9-male-to-female.aspx

Weeder Technologies
Input/Output Serial Modules
http://weedtech.com/
For use with XTension, only the WTDIO (digital) and the WTADC (analog) modules are supported.
http://sentman.com/Weeder_Plugin_files/weader readme.pdf

BarioNet IP Enabled Interface
Another device that is supported by XTension is the BarioNet controller
Interfaced via ethernet, it has contact closure inputs, relay outputs & 1-wire support
http://www.barix.com/Barionet_50/1351/
US Distributor:
http://www.datanab.com/

~~~~~~~~

Although not discussed in this seminar, another home automation protocol is Z-Wave
For completeness, I have included a few Z-Wave links

Z-Wave
An RF-only home automation system -
http://www.waynedaltonstore.com/index.php
Z-Wave interface to Mac
http://www.waynedaltonstore.com/product/741714108971.html

Vera - a Stand-alone box to control Z-Wave (including Schlage locks)
http://micasaverde.com/vera.php

Schlage locks & deadbolts (Z-Wave secure)
http://link.schlage.com/Products/Pages/DeadboltStarterKit.aspx

~~~~~~~~~~~~~~~~~~

And if you have an extra 10-20K that you want to spend
and don't want to do it yourself:
(But good for ideas)

Savant
http://www.savantav.com/residential_solutions.aspx

Control4
http://www.control4.com/residential/