

2021 UPDATE

# SMART HOME PREWIRE QUICK GUIDE

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A reference for low voltage wiring.

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## INTRODUCTION

Thanks for downloading our Prewire Quick Guide. We created it to be a helpful resource for our friends and Clients who want to try their hand at prewiring their own homes. Be sure to check out our [Prewire Ebook](#), and [Prewire Design Services](#) as well.

We started getting request to help design prewires, and walk Clients through their own prewires a couple years ago. It's evolved a bit since. Today our full time gig is designing systems for Clients and consulting with you on the right tech for your home.

If you have questions about the wiring for your home, be sure to contact us. We'd love to help.

A handwritten signature in blue ink that reads 'Matt Montgomery'. The signature is fluid and cursive, with a long, sweeping tail on the 'y'.

Matt Montgomery  
Co-founder and Lead Designer at Tym

**A NOTE ON WIRELESS** - We're often asked if it's still worth it to prewire your home with all the advances in wireless technology. Yes! PREWIRE, PREWIRE, PREWIRE™!

Wireless has come a long way, and we use it in almost every Smart Home but we still want the wire to do the heavy lifting. It's like Trucks and Cars. Trucks do the heavy lifting, and cars do the light work.

So the items in this Quick Guide, and in our Ebook, are the items we recommend prewiring. Best of luck!

**CAT6** - There's a healthy debate out there on Ca5e, Cat6, Cat6a, Cat7, etc. We've specified Cat6a where we think it matters most. Everywhere else we've shown Cat6. If you want to use Cat5e or Cat7, go for it. See the latest Youtube Video for our thoughts on it [here](#).

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# AUDIO

**SPEAKERS:** Run (1)16/4 speaker wire from the Media Rack to the first speaker in the room. Create a jumper cable between the first speaker and the second speaker in the room, using (1)16/2 speaker wire.

**DUAL VOICE COIL SPEAKERS:** Run (1)16/4 from the Media Rack to a single dual voice coil speaker.

**NOTE:** 14, and 12 Gauge wire can also be used for speakers

**IN-LINE VOLUME CONTROLS:** Run (1)16/4 speaker wire from the Media Rack to the Room's Volume Control location. Run (1)16/4 from the Volume Control to the first speaker in the room, and your (1)16/2 for your jumper from the first to second speaker.

**DIGITAL VOLUME CONTROLS:** Run (1)Cat6 from the Media Rack to the Digital Volume Control location.

*\*Digital Volume Controls are usually specific to manufacturer. It's best to decide on a system before you prewire.*

**LANDSCAPE SPEAKERS:** Run (1)16/4 speaker wire from the Media Rack to the exterior of the home. (1)16/4 wire powers one zone of landscape speakers -- 4-8 speakers and a subwoofer.

SPEAKERS  
16/4 & 16/2

DUAL VOICE COIL SPEAKERS  
16/4

IN-LINE VOLUME CONTROLS  
16/4

DIGITAL VOLUME CONTROLS  
Cat6

LANDSCAPE SPEAKERS  
16/4 PER ZONE

**NOTE ON SPEAKER BRACKETS:** Speaker brackets allow you to line up speakers with can lights, and leave a template for the sheetrock company to cut out for you. They're specific to speaker brands, so you have to decide on speakers in advance. You can also use 'Hanger Strap' found in the plumbing section at Home Depot, and then cut out speakers yourself at finish.



# VIDEO

**TV's:** Run (1)Cat6a (for Video Distribution), (2)Cat6 (for Network & Control), and (1)RG6/Coaxial Cable from the Media Rack, to each TV in the home.

**PRIMARY TV:** Run Conduit and Fiber (OM3 Multimode Duplex Fiber)

**PROJECTOR:** Run 1.5" Flex Conduit to the projector, along with (2)Cat6a, and (1)Fiber (om3 multimode duplex fiber)

**SATELLITE PREWIRE:** Run (4) Coaxial Cables from the Media Panel to the soffit nearest the Satellite Location. For snowy climates, run (1)18/2 for a heater to melt the snow from the Satellite. *\*We recommend contacting your local Satellite Provider for their recommendations on wire requirements.*

**DEMARICATION:** Run (2)Cat6, (2)RG6/Coaxial Cables, and (1)16/4 from the Media Panel, to the Demarcation. We also recommend running conduit for fiber.

TVs  
(1)Cat6a, (2)Cat6, (1)RG6

PRIMARY TV  
1.5" Conduit, Fiber

PROJECTOR  
Conduit, (2)Cat6a, (1)Fiber

SATELLITE PREWIRE  
(4)RG6 Coaxial & (1)18/2

DEMARICATION  
(2)Cat6, (2)RG6 & (1)16/4



# SURROUND SOUND

**PRIMARY SURROUND SOUND:** For the main Theater area in your home, we recommend pulling (1) 14/2 wire to each speaker location. Speakers can be in-wall, in-ceiling, or floor standing. Pull the wire from the media rack to the speaker location.

**SECONDARY SURROUND SOUND:** For rooms like your Master, Great room, or Back Deck, we recommend running (1) 16/2 for each speaker. Pull the wire from the media rack to the speaker location.

**FLOOR STANDING SUBWOOFER:** Run (1)RG6/Coaxial cable from the Media Rack to the location of the Floor standing subwoofer. Keep the wire close to the electrical outlet, so that the subwoofer covers the outlet at finish.

**IN-WALL SUBWOOFER:** Run (1)14/2 from the media rack to the in-wall Subwoofer location. Make sure it's a study bay that's 16" on center or larger, and that no electrical wires are running through the section of the wall where the sub will rest.

**IN-CEILING SUBWOOFERS:** Run (1)14/2 for the subwoofer, but you need to select the in-ceiling subwoofer before prewiring. Each manufacturer does it differently and has different requirements for placement. \*Some Manufacturers require (2) In-ceiling subwoofers, so be sure to check before prewiring.

PRIMARYSUROUNDSOUND  
14/2

SECONDARYSUROUNDSOUND  
16/2

FLOORSTANDINGSUBWOOFER  
RG6 Coaxial

IN-WALL SUBWOOFER  
14/2 or 16/2

IN-CEILING SUBWOOFER  
14/2



# SECURITY

**SECURITY KEYPADS:** Run (1)22/4 from the Media Panel to the Security Keypad Location. We recommend placing the keypad at a height of 5', and stacked above the light switch for the room. We usually place them in the Mudroom, and in the Master Bedroom.

**MOTION SENSORS:** Run (1)22/4 from the Media Panel to the location of the Motion Sensor. We place our motions in the corner of rooms, and at a height of 7'.

**GLASS BREAK SENSORS:** Run (1)22/4 from the Media panel to the location of the glass break sensor. Place Glass break sensors in the ceiling, 10-15' from windows. Windows need to be in line of site.

**DOOR SENSORS:** Run (1)22/2 from the Media Panel to the Door. Pull the 22/2 wire through the frame of the door, on the non-hinged side, using a 3/8" hole.

**WINDOW SENSORS:** Run (1)22/2 from the Media Panel to the window. You'll use surface mount window sensors. So run the wire just to the edge of the window frame. You'll have a small amount of wire exposed at finish, and after the sensor is installed.

**VIDEO DOORBELL:** Run (1)Cat6 from the Media rack to the doorbell location. Have the electricians wire up their part of the doorbell as normal.

**SURVEILLANCE CAMERAS:** Run (1)Cat6 from the Media Rack to the Camera location.

\*For specialty sensors like flood sensors, humidity sensors, temp sensors, etc, run (1)22/4 wire.

SECURITY KEYPADS  
22/4

MOTION SENSORS  
22/4

GLASS BREAK SENSORS  
22/4

DOOR SENSORS  
22/2

WINDOW SENSORS  
22/2

VIDEO DOORBELL  
Cat6

SURVEILLANCE CAMERAS  
Cat6



# ACCESSORIES & INTEGRATION

**AUTOMATED BLINDS:** Run (1) Cat6 and (1) 16/2 from the Shade power supply to the Blind location. Some blinds do require high voltage, so it's good to decide on blinds you're going to use before prewiring.

**FIREPLACE SWITCH:** Run (1) 22/4 from the Media Rack to the Fireplace switch.

**POOL & SPA CONTROL:** Run (1) Cat6 from the Media Rack to the pool control location.

**TOUCHSCREENS:** Run (1) Cat6 from the Media Panel to the Tablet location.

**LUTRON LIGHTING:** If you're planning to use Lutron Lighting, you'll want to run (1) Cat6 to each 'Lutron Repeater.'

**SERIAL INTEGRATION:** When in doubt, run (1) Cat6 from the Media Rack to the device in question.

**NETWORK HOTSPOTS:** We run (1) Cat6 from the media rack to each Hotspot location.

**MEDIA RACK:** Have the electricians leave you a dedicated 20Amp outlet for the Media Rack.

**LOW VOLTAGE CAN OR MEDIA PANEL:** Have the electricians leave you an outlet inside the Can, and just outside the can.

**JUMPER CONDUIT:** Run jumper conduit from low voltage panel to the media rack.

BLINDS  
(1)Cat6, (1)16/2

FIREPLACE SWITCH  
22/4

POOL & SPA  
Cat6

TOUCHSCREEN  
Cat6

LUTRON REPEATER  
Cat6

SERIAL INTEGRATION  
Cat6

NETWORK HOTSPOTS  
Cat6

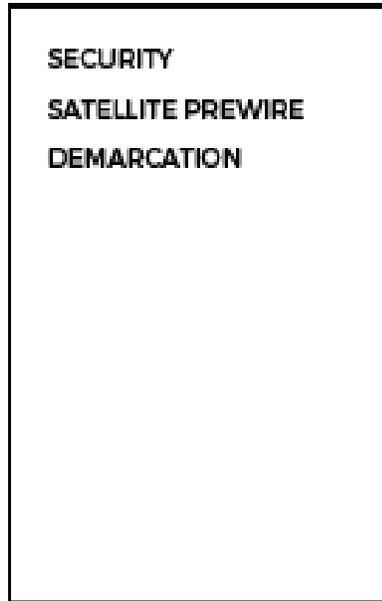
MEDIA RACK  
20 Amp outlet

JUMPER CONDUIT  
Conduit

## LOW VOLTAGE PANEL

### LOCATION:

Typically located in the mechanical room.



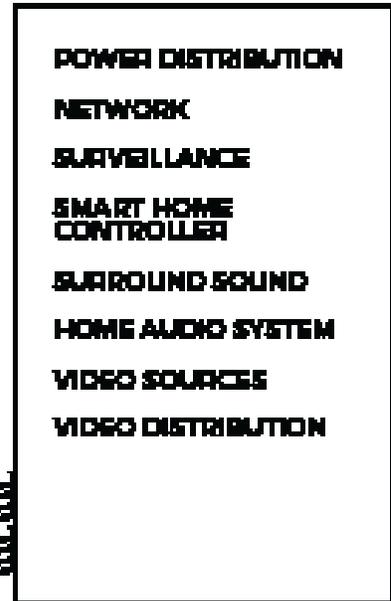
### POWER REQUIREMENTS:

Low voltage panel requires (1) outlet within and (1) outlet below.

## MEDIA RACK

### LOCATION:

Typically located in a dedicated AV closet or the mechanical room. Ventilation recommended.



### POWER REQUIREMENTS:

Media Rack requires a minimum of (1) 20AMP dedicated outlet.

JUMPERS  
(4) BNC/COAX & (4) Cat5

The diagram shows a series of curved lines representing jumper cables connecting the two panels. The cables are labeled as (4) BNC/COAX and (4) Cat5.

NOT TO SCALE

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Award-winning home technology designer Matt Montgomery details step-by-step instructions — on over 70 pages — how to prewire you home for audio/video and smart home automation.

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