

Starlink 12 volt and WiFi Router Delete Square Dishy

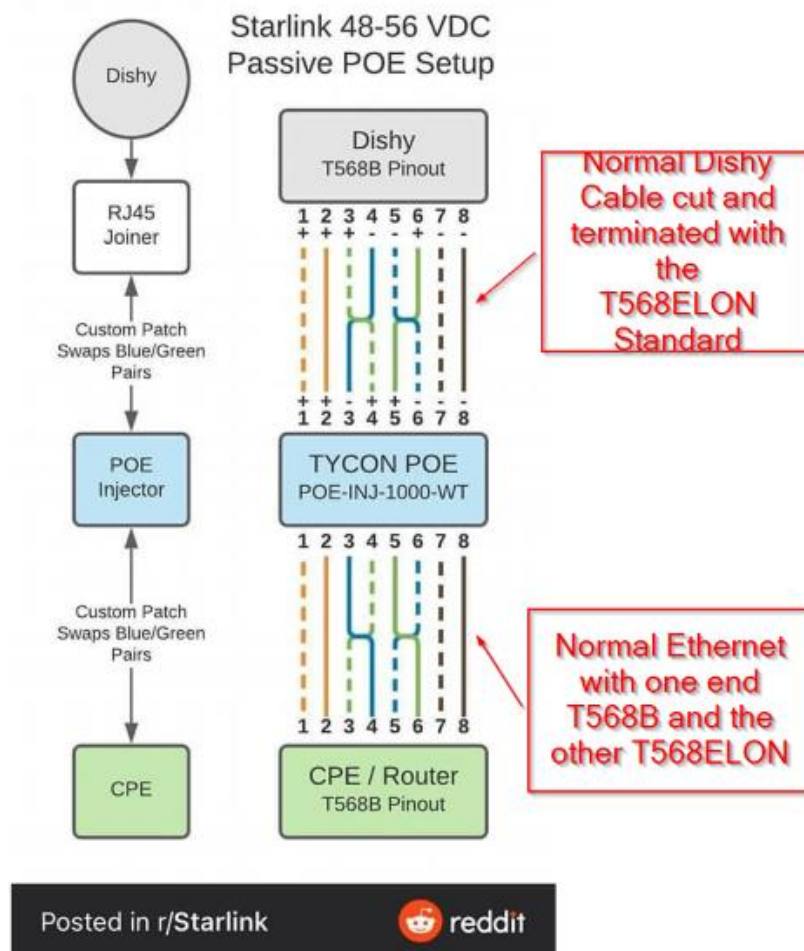
(updated 6/12/2022)

Intro

You may not know, but you can eliminate the Starlink router, and power your square Dishy with 12 volts DC or 120 volts AC as long as you convert it to 48 volts DC. This is great for Boaters or RV'ers.

Wiring

Most of this information is floating around Facebook Groups, and Reddit. I did not figure out the RJ45 pinouts. I modified the picture from Reddit that explains the connectors a bit better. Most of the world uses the RJ45 standard T568B, but to get Power over the correct pairs using Power over Ethernet (PoE), then you need to swap pairs of wires going into and out of the PoE. I call this new standard T568ELON.



Most PoE's are not a match for Starlink, so you need to swap wires 3,4 and 5,6 to get the correct polarity, but then the cable will not work for data. So you swap those pairs before the PoE injector, and then swap them back after the PoE injector. That way the pinouts will be correct on both the far ends for data transfer.

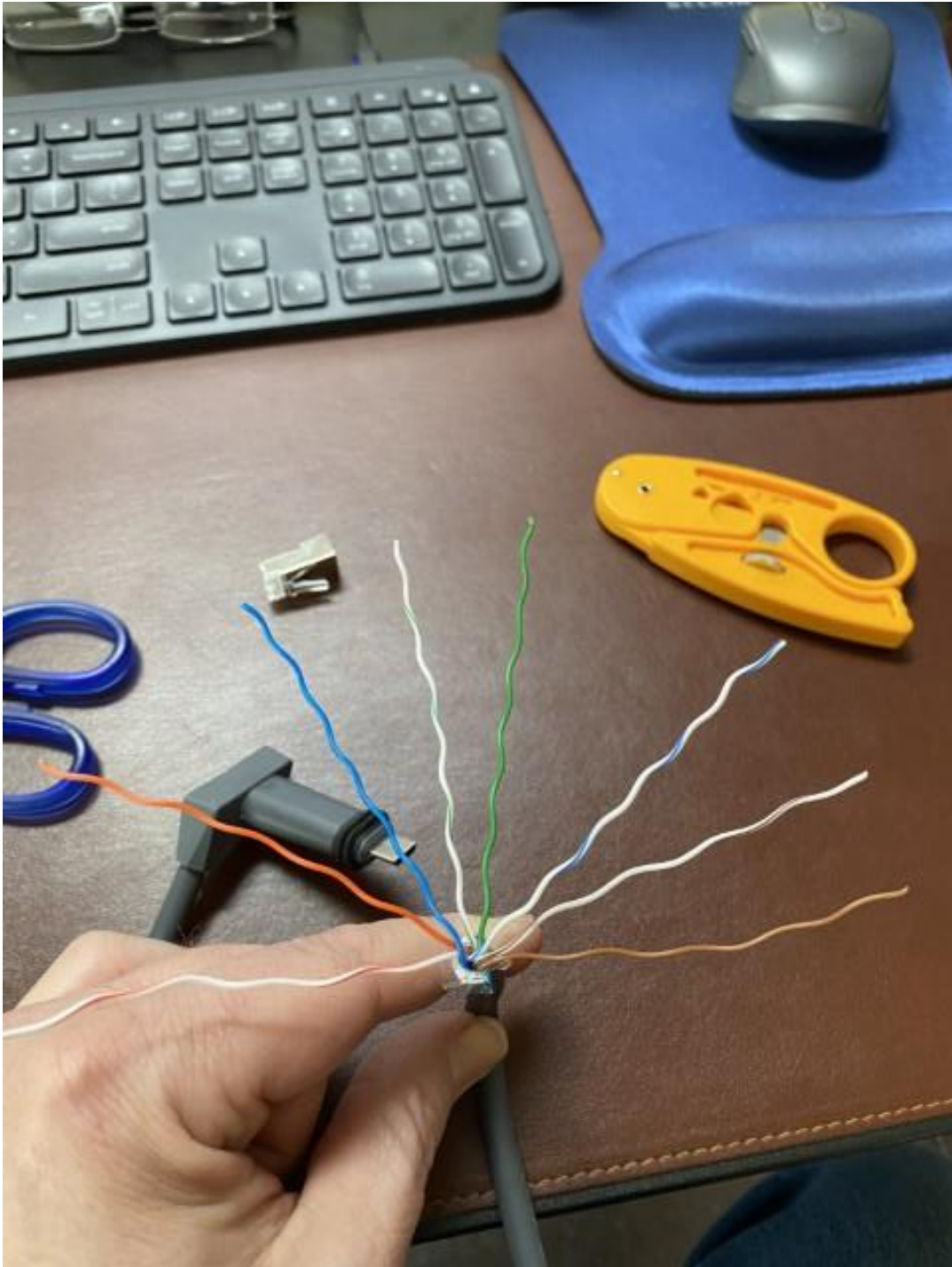
Cut and Exposed

I cut the wire about 2' from the router end. It is shielded twisted pair ethernet. Here is what it looks like before trimming back the shielding and clear plastic coat.



Layout of the T568ELON standard

This wire is the 2' chunk going into the old Starlink router. This makes a great one to practice on. I'm doing this so I can use a shielded RJ45 coupler, and connect the wire back together in case I want to use the Starlink router again.



Specs are for the square dishy

Specs are for the square dishy are 95w but others that have tested found it to peak in the 70-ish watt range. There's a good post on Reddit with data tracking the draw with a similar setup.

From left to right. With the clip down and pointing away from you.

T-568ELON

Orange-White

Orange

Blue

Green-White

Green

Blue-White

Brown-White

Brown

=====

Normal is T-568B

Orange-White

Orange

Green-White

Blue

Blue-White

Green

Brown-White

Brown

Pig tail for the original SL Router

My Starlink Router to inline coupler pig tail is done. Again this will only be used if I want to go back to using the system like it came from the factory.



Pig tail for my Personal Router

I made a pig tail from a commercial shielded ethernet cable. I just cut one end off and put on an RJ45 end with the T568ELON standard. This will connect from the PoE to my personal Asus Router.



The Dishy Cable

This is the other end of my, now, 73' cable. With RJ45 end using the T568ELON standard.



Power!!

This is the 12 volt to 48 volt Power supply, and PoE Injector I got off of Amazon. The dishy needs 48 Volts. I have had problems with not enough amps on my 12v input. If you have problems test your 48 voltage during a dish boot up.


7:50

Search Amazon

Visit the uxcell Store

★★★★☆ 20

uxcell NEW BIG-SIZE Waterproof DC 12V Step-Up to DC 48V 8A 384W Car Power Supply Module Voltage Booster Converter Regulator



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📍 Deliver to James - Burns 82053

Only 3 left in stock - order soon


7:50

Search Amazon

Brand: Tycon Systems

★★★★★ 3

Tycon Systems POE-INJ-1000-WT High PoE 4 Pair Injector



\$19⁰²

& FREE Return

Try saying, 'Alexa, add this to my list'

Get a \$100 Amazon Gift Card instantly upon approval for the Amazon Prime Rewards Visa Card. No annual fee.

120 V AC Version

Do the same thing but use 120 volt AC to power your dishy, just swap out the power supply, and use the same POE injectors. I'm using this for my 120 Volt applications, like in my house, and even in my RV using the inverter.



Roll over image to zoom in

MEAN WELL LED Driver Single Output Switching Power Supply - Output Voltage and Current Adjustable by Internal Pot, 48V 5A 240W - HLG-240H-48A

Brand: MEAN WELL

★★★★★ 19 ratings

\$71²³

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Item Package Quantity: 1

1	2	3	4
\$71.23 ✓prime	1 option from \$244.39	1 option from \$368.09	\$491.78 (\$122.95 / Item)

Brand	MEAN WELL
Output Wattage	240 Watts
Wattage	240 watts

About this item

- Primary Output Voltage (VDC): 48
- Output Current (Amps): 5
- Maximum Output Power (Watts): 240
- Input Voltage (VAC): 90 to 305
- Input Frequency (Hz): 47 to 63

\$71²³

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FREE delivery **Tuesday, June 14.**
Order within **15 hrs 24 mins**

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Not all POE's are the same

Make sure the POE you are purchasing is getting power on all four pairs.

Tycon Systems POE-INJ-1000-WT High PoE 4 Pair Injector

Brand: Tycon Systems
★★★★★ 4 ratings

\$20⁹⁸

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Get a **\$125 Amazon.com Gift Card** upon approval for the Amazon Business Prime American Express Card. Terms apply.

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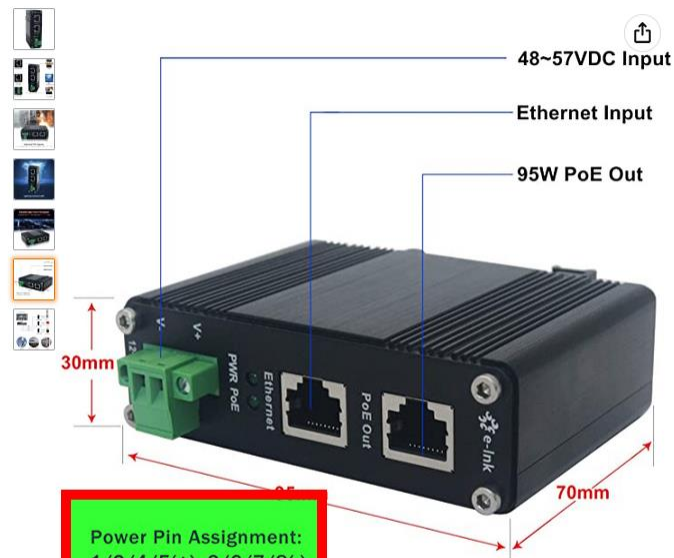
High power shielded design uses all 4 pairs

- 10 & 10/100, 100 & 10/100, 1000Mbps compatible
- Removable wire terminal connector
- 5 to 58VDC power over Ethernet
- Power on LED indicator applications & #58;

Compare with similar items

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Roll over image to zoom in

E-link Industrial Gigabit PoE++ Injector 48V DC PoE++ 95W up to 100 Meters Output DIN Rail Mount Hardened High Power PoE Adapter -40°C to 80°C IP40

Visit the E-link Store
★★★★★ 5 ratings | 17 answered questions

\$159⁷⁰

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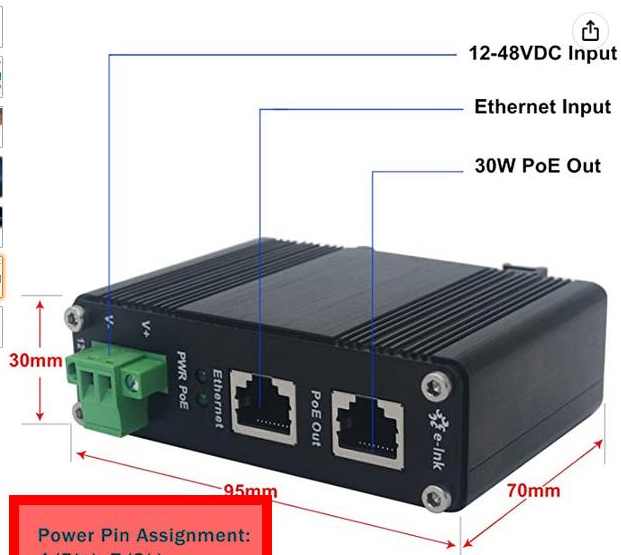
Eligible for **amazon smile** donation.

Color: 95W Gigabit PoE++



Current Rating	2 Amps
Operating Voltage	48 Volts
Brand	E-link
Switch Type	Temperature Switch
Terminal	2_p_6_t
Material	Aluminum

See more



Power Pin Assignment:
4/5(+), 7/8(-)

Roll over image to zoom in

Will not work

E-link Hardened Industrial Gigabit PoE+ Injector, 12~48V Input PoE+ Adapter, IEEE802.3af/at 30W Output up to 328ft, Din-Rail and Wall-Mount Installation

Visit the E-link Store

★★★★★ 5 ratings | 17 answered questions

\$129⁷⁰

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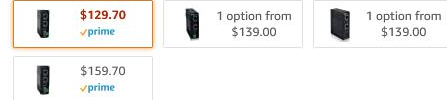
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Color: 30W Gigabit PoE++

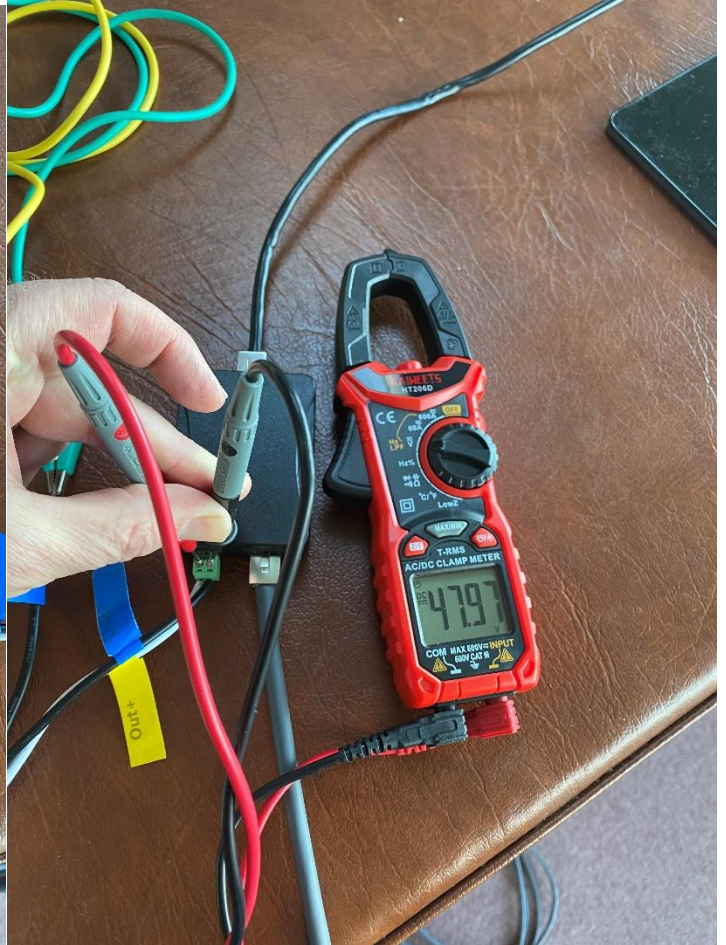
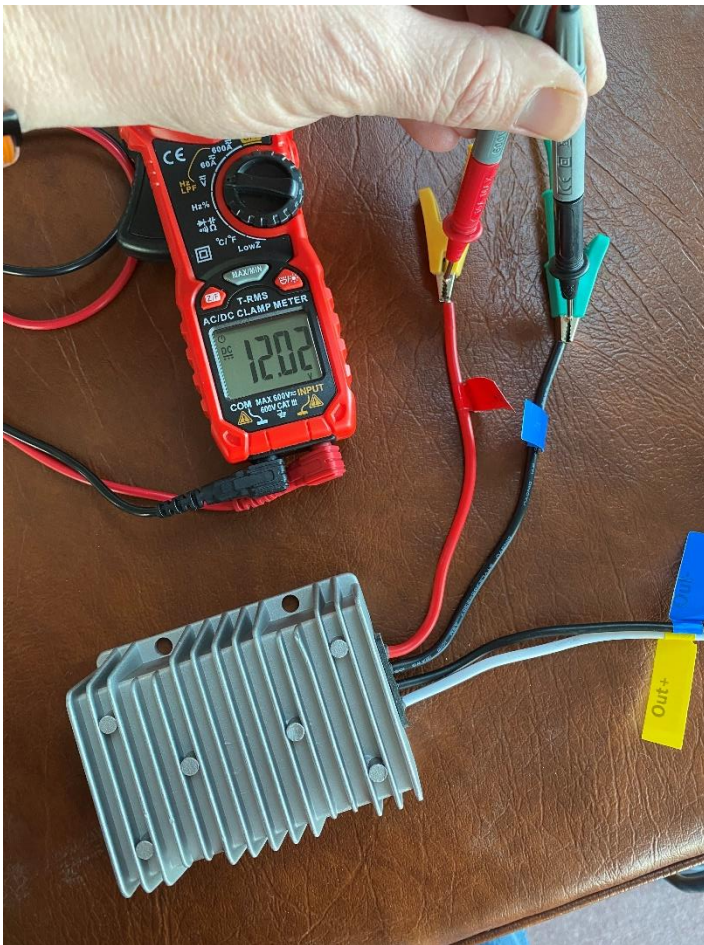


Operation Mode	12v
Current Rating	0.65 Amps
Operating Voltage	24 Volts
Connector Type	Lightning
Brand	E-link
Switch Type	Temperature Switch

See more

Testing

Hook up and testing power before powering the dishy. 12.02v DC in and 47.97v out... I will take it!

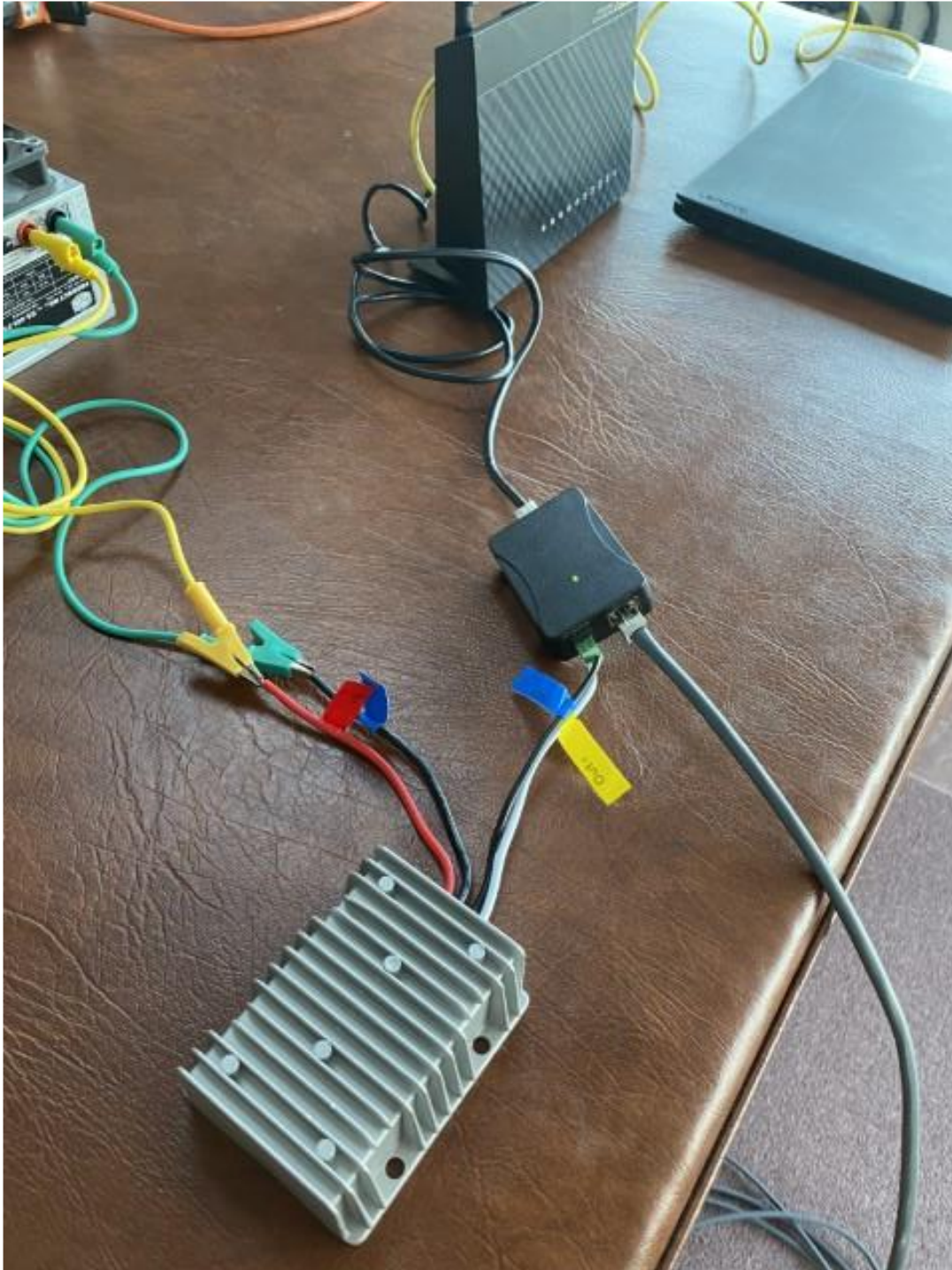


Hooked up!

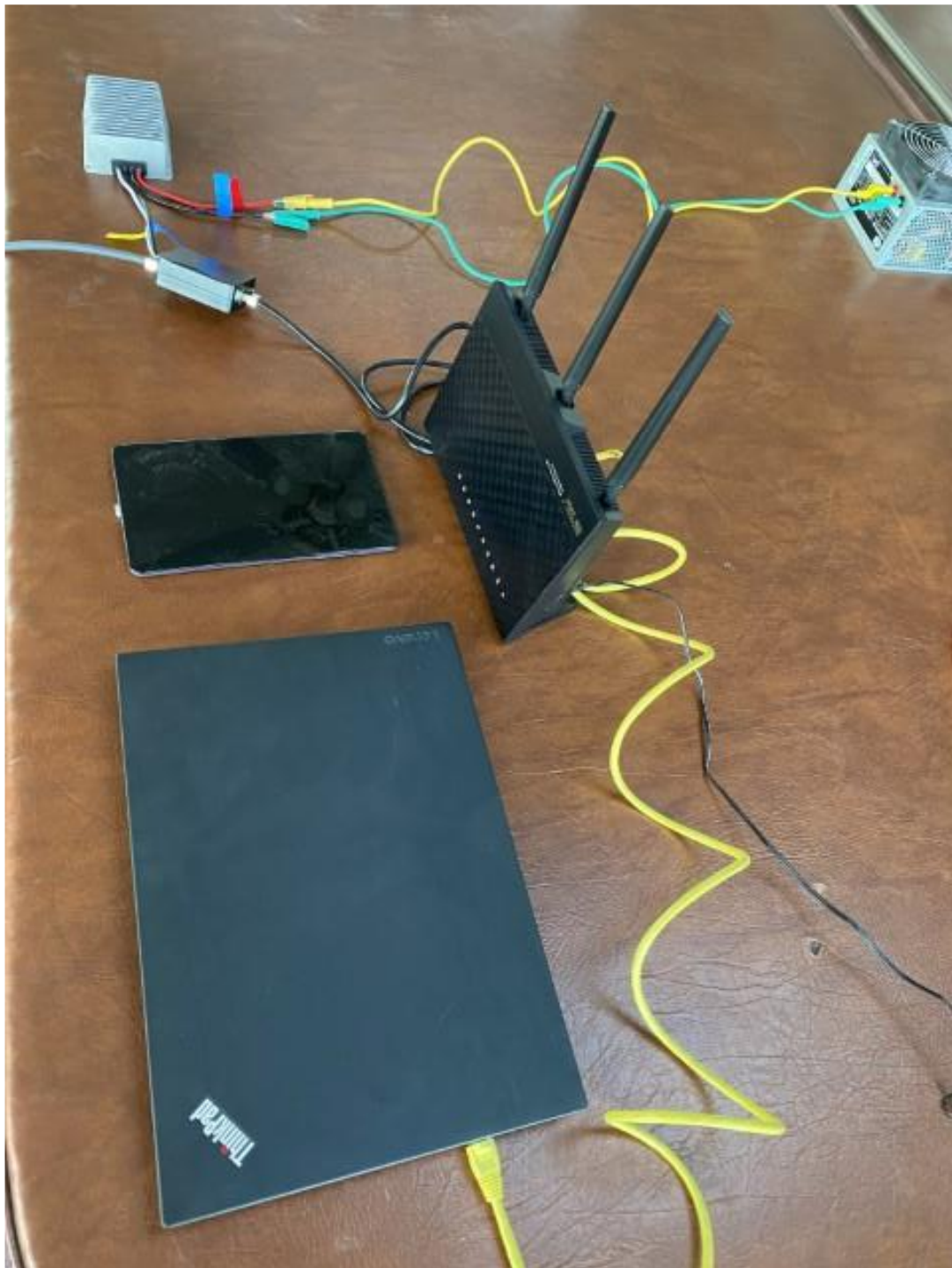
I'm using a 120V AC to 12V DC power supply for testing before putting into the RV.

12v Power supply into my 12V to 48V step up power supply, and then from there connected to my PoE injector.

DATA: The original 73' cable is leaving the POWERED side of the PoE injector going to dishy. The short ethernet pig tail is going to my WAN connection on my WiFi router.

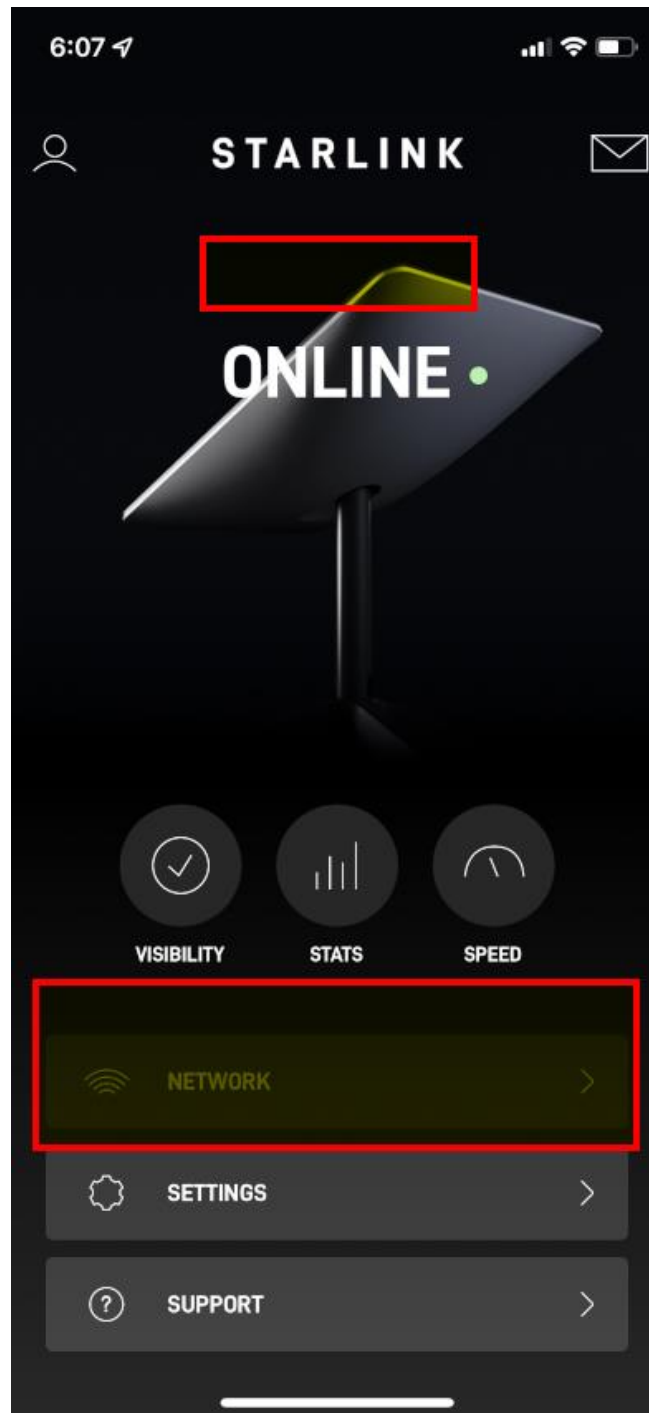


I have my laptop plugged into the LAN connection of my Asus router, and I have a tablet connecting to my Asus router.

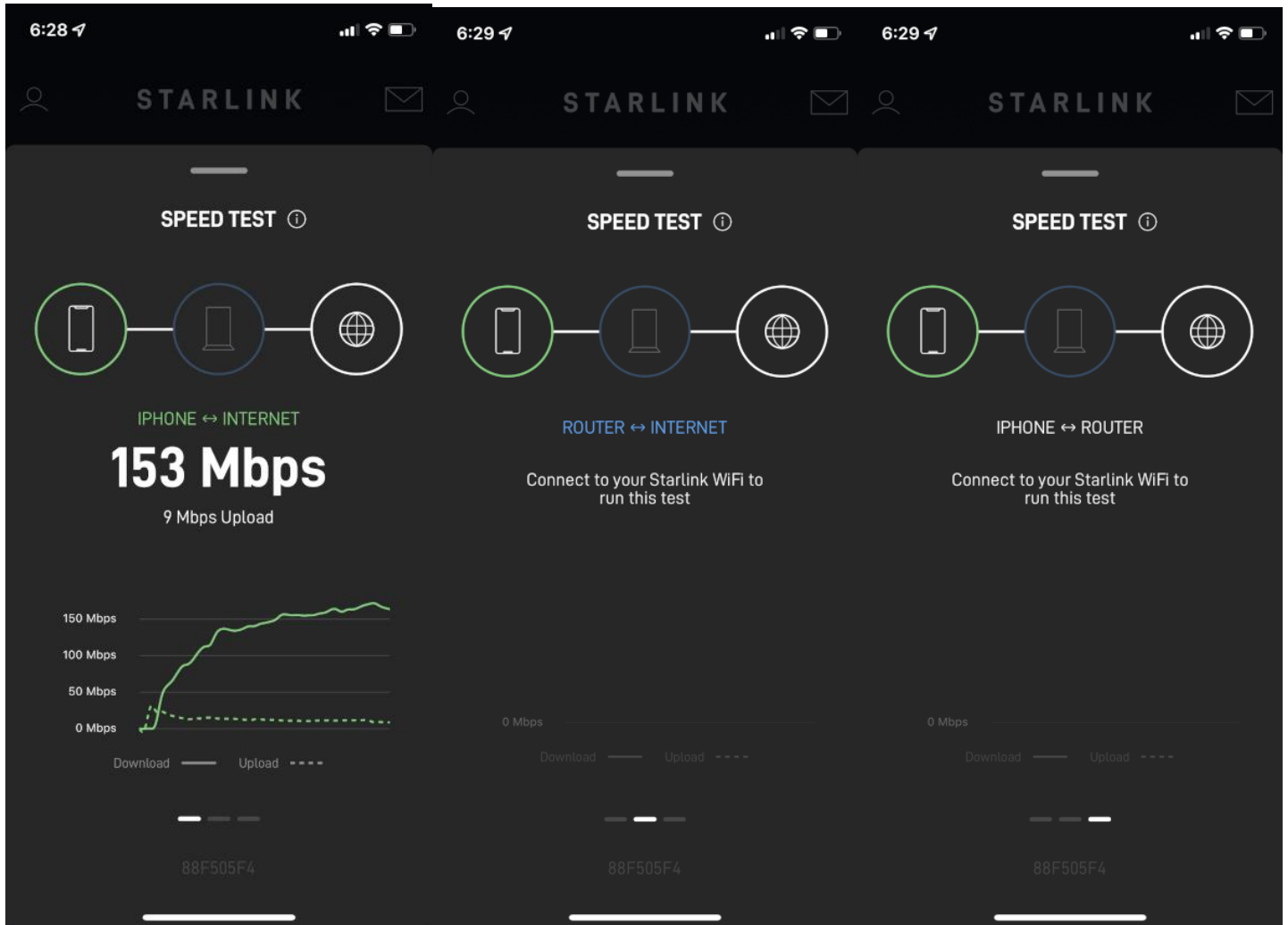


The Starlink App

The Starlink app still works, but the NETWORK settings and the name of the WiFi SSID does not show up (of course).



The Speed test works, but only for the Phone to the Internet. Since Starlink doesn't know your router, it can't give you ROUTER to INTERNET and PHONE to ROUTER speeds.



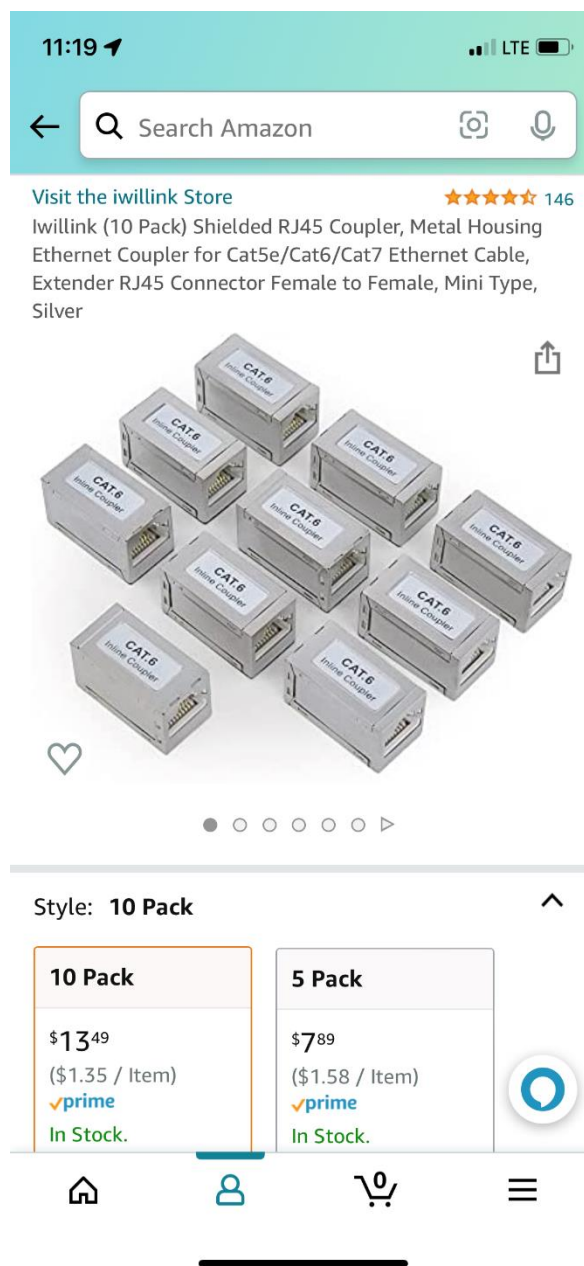
Back to factory

Here it is setup like factory. The only difference is that I have a shielded RJ45 inline coupler connecting my two RJ45 ends using the T568ELON standard.



Connectors

Here are the shielded connectors I used.



Summary

I had my own RJ45 crimper, if you don't have one you will need to get one. I don't like to use RJ45 passthrough connectors, but if you are not experienced in putting RJ45 ends on, I would suggest you get passthrough connectors. The wires slide in the connector extra long and then get cut off during the crimping process. It is a lot easier to handle long wires and get them in the correct order.

If you wanted to run this in your house, so you didn't have to have the Starlink Ethernet port adapter, you would need to get a powered PoE that can supply 48volts and enough amps to run the dish.

I'm very happy with this, as I will use it in my RV, along with a Pepwave router/cell modem, that also runs on 12V, so that I can have redundancy with two cellular providers and my Starlink. The cell providers give me internet as I go down the road, and Starlink will give me fast unlimited data internet at my camp site. Using 12v means I don't have to turn on my inverter to have internet.

I have used the Pepwave Max BR1 Mini LTE Router with much success, but it is only 2.4G wifi. I now use the Pepwave Max Transit Duo Router. It will stay connected to both cell providers at the same time and has 2.4 and 5G WiFi. 5gstore.com and mobilemusthave.com are two good places to get Pepwaves.

Update for 6/12/2022

This has been updated, with typed color RJ45 layout, information on good POE's and bad POE's, and a good 120V AC power supply.

JBAT