How to Discover a 28/48/68 Unknown IP Address

NOTE: Keep the Lumistar Device connected to the Ethernet so the Gigabit Ethernet TCP/IP offload engine (TOE) will show an **ip** ddress other than 0.0.0.0. Additionally, if the TOE was put in the DHCP Mode, and it is copnnected to a Network without a DHCP Server, it won't be assigned an **ip** address and will show 0.0.0.0.

If you cannot connect to your Lumistar LS-28DRSM, LS48M or LS-68M (28/48/68), launch a CMD prompt and enter **ipconfig** to determine your network subnet.



Here we see the computer **ip** address and the Subnet used.

Type arp -a.



C:\Users\WayneRettig>

If you don't see your expected device **ip** address listed, the device ip address is likely on a different subnet. Connect a USB-A to USB-B cable between the computer and the 28/48/68 P12 USB dongle.

Open the Windows Device Manager and expand the Ports (COM & LPT) list.

📇 Device Manager	_	\times
<u>File Action View H</u> elp		
🗢 🔿 🛛 🖬 🖬 🖓 💭		
> 💻 Computer		
> 👝 Disk drives		
> 🏣 Display adapters		
> 🎽 Firmware		
> 🖓 Human Interface Devices		
> 🚡 Imaging devices		1
> 🔤 Keyboards		- 1
> II Mice and other pointing devices		- 1
> 🛄 Monitors		- 1
> 🖵 Network adapters		- 1
> 📮 Portable Devices		- 1
🗸 🛱 Ports (COM & LPT)		- 1
🛱 Prolific USB-to-Serial Comm Port (COM4) 🔵		- 1
> 🚍 Print queues		- 1
> 🚍 Printers		- 1
> 🔲 Processors		- 1
> IP Security devices		
> Provide Software components		
> 🧧 Software devices		- 1
> 4 Sound, video and game controllers		- 1
> 🍇 Storage controllers		- 1
> 🏣 System devices		- 1
> 🏺 Universal Serial Bus controllers		- 1
> 🏺 Universal Serial Bus devices		
> 🏺 USB Connector Managers		
S S WSD Print Provider		

Make note of the COM Port to which the **Prolific SB-to-Serial Comm Port** is showing (connected).

Launch the C:\Lumistar\LS28M\UserTools\LumistarDevice.exe application, you may see the following warning.

Ethernet	Error	×
×	No Lumistar Devices found.	
	ОК	

Click the **OK** button.

			Do	ouble Click Device to Select		
index MA	IC Address	IP Address	Device ID	Device Name	Serial Number	User Note
Query Devic	e at IP Address: [Query Device	0 . 0 . () . 0	Query Device		
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Ensure the proper COM Port is entered above. Next click the **Query Device** button.

We see in the Banner below, this is a LS-28M device.

RSSI: -76.5 -91	.8 FSPLCK 🔘 🔘 🔘	CARRLCK \varTheta 🝚 🝚	Carrier Frequency:	69,835,496	69,827,028	-196,891	Status	MS-PCMFM/GMSK
Mod Idx: 0.39 0.3		SYMBLCK 😐 😐 😐	Symbol Rate:	2,019,307	1,962,237	2,023,252	Blink LEDs	Operational Mode
Mod Idx: 0 0			Symbol UA Rate:				Save	Allow Saving Setups:
			Consolidated Sta	tus UCP Socket	Local: localho	st::0	Current	Use Setups at Boot
					Remote: 0.0.0.	0::5013	Jetap	CH1: CH2: CH3
					Consolida	ated Status	Eb/No:	
					exception has	hs are not being re been created for e	ceived, verify the each instance of l	LumistarDevice.exe.
tup Receiver 1 Setup Receiv	er 2 Setup Combiner Setup	Modulator Rcv & Xmt	BERTs Simulator	IRIG Time FSP/	Decom CH1 FSF	Decom CH2 FSP	Decom CH3 D	QM/DQE System
	SS/MS/Video/	CM Receiver 0x1200 Co	mmand			Ref Clock		x1007 Cmd
5120.5 MHz Ser	d	Standard RF Modu	ulator IF BB Bitsync	50,000 ~	Normal	External	CHI	Video Out Off
Tuning Frequency		Analog Source		AM Filter	Invert AM			
B1 5091 MHz - 5150 MHz	B6 70 MHz - 70 MHz	10.000.000 × 125	5 000 × 100 us	ers V Off	Off	PCM/Pm	Receiver 0x120	1 Aux Command
B2 4400 MHz - 4940 MHz	B7 0 MHz - 0 MHz	IFBW Filter Vide	eo Filter AGC TC	Select FRZ	AGCZERO	No Averaging	Filtered A	veraging Send
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B4 1755 MHz - 1850 MHz	B9 0 MHz - 0 MHz	IFBW K Vide		atrolled	Mode	-110	• 10 •	0.0 -4.0
B5 1435 MHz - 1535 MHz	B10 0 MHz - 0 MHz	Factor Fact	tor		Linear	Lower dBm U Value V	pperdBm Star alue Volt	rting Ending tage Voltage
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Click on the **System** Tab.

RSSI: -107.5 -89.8	FSPLCK O O) CARRLCK 🧉		Carrier Frequency:	70,117,590	69,953,499	-196,547	Status	MS-P	CMFM/GMSk
4 Mod Idx: 0.39 0.39	FRMLCK O O	SYMBLCK		Symbol Rate:	1,967,020	1,998,343	1,986,521	Blink LEDs	Oper	rational Mode
4 Mod Idx: 0 0	-	SYMBUALCK		Symbol UA Rate:				Save	Allow S	aving Setups
	-			Consolidated St	atus UCP Socket	Local: localho	ost::0	Current	Use S	etups at Boo
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						exception has	been created for	eceived, verify to each instance of	nat a wind fLumistarD	lows Firewall levice.exe.
tup Receiver 1 Setup Receiver	2 Setup Combiner Se	tup Modulator	Rcv & Xmt	BERTs Simulator	IRIG Time FSP	Decom CH1 FSF	P/Decom CH2 FS	P/Decom CH3	DQM/DQE	System
			Sys	stem Physical Values						
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Digital 3.3 V Rail: 3.3 V	CH2 Anaio	g 5.5 V Rail: 5	<u>v</u>	CH2 Analo	g 5.0 v Rail: 5	0.1 V 🔍	CH2 Analog -5.	.0 V Rail: -5.1		
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Use the Slider to go to the bottom of this System Window.

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You will find the LS-28M Device ip at the indicated location above. You see this **ip** is on a different subnet, **192.168.1.XXX**, than your current computer subnet **192.168.15.XXX**.

To fix this, you will need to change your Network Interface Card (NIC) setting to operate on the **192.168.1.XXX** subnet. Hit the key and type **Control Panel**:



Select Network and Sharing Center.



Select Change adapter settings.



Like above, you may have a number of Internet connections. Determine the connection you are using to communicate with the Lumistar devioces, in my case **Ethernet 2**. Right-Click on **Ethernet 2**.



Select Properties.

Connect using:			
🕎 Intel(R) 82579	LM Gigabit Network Co	nnection	
		Config	gure
This connection uses	the following items:		
🗹 🐙 Client for Mi	crosoft Networks		^
🗹 😨 File and Prin	ter Sharing for Microsol	t Networks	
🗹 🖳 DNE Lightw	/eight Filter		
🗹 🏆 Npcap Pack	ket Driver (NPCAP)		
🗹 🏆 QoS Packel	Scheduler		
🗹 🟆 Bridge Drive	1		
🗹 🔔 Internet Pro	tocol Version 4 (TCP/IP	v4)	~
<			>
	<u>U</u> ninstall	Prope	rties
I <u>n</u> stall			
Install Description			
Install Description Transmission Cont	rol Protocol/Internet Pro	itocol. The de	fault
Install Description Transmission Cont wide area network	rol Protocol/Internet Pro	ntocol. The de communicatio	efault n

Select Internet Protocol Vesion 4 (TCP/Pv4) then click Properties.

ternet Protocol Version 4 (TCP/IP)	.4) Properties X
ieneral	
You can get IP settings assigned au this capability. Otherwise, you need for the appropriate IP settings.	tomatically if your network supports I to ask your network administrator
Obtain an IP address automati	cally
Use the following IP address:	
IP address:	192 . 168 . 15 . 103
Sybnet mask:	255.255.255.0
Default gateway:	192.168.15.1
Obtain DN5 server address au	tomatically
Use the following DNS server a	addresses:
Preferred DNS server:	8.8.8.8
Alternate DN5 server:	8.8.4.4
Validate settings upon exit	Adyanced

Ensure the **Use the following IP address:** Rado button is selected. Next change to the Subnet where your **28/48/68** is located by entering the values shown below:

Internet Protocol Version 4 (TCP/IPv4)	Properties	\times
General		
You can get IP settings assigned autorr this capability. Otherwise, you need to for the appropriate IP settings.	atically if your network supports ask your network administrator	
O Obtain an IP address automatical	У	
• Use the following IP address:		
IP address:	192.168.1.103	
Sybnet mask:	255.255.255.0	
Default gateway:	192.168.1.1	
Obtain DN5 server address autom	atically	
Use the following DNS server add	esses:	
Preferred DNS server:	8.8.8.8	
Alternate DN5 server:	8.8.4.4	
Validate settings upon exit	Advanced	
	OK Cancel	

Finally click the **OK** button.

Click the **Close** button on the Windows below.

Ethernet 2 Properties	х
Networking Sharing	
Connect using:	
Intel(R) 82579LM Gigabit Network Connection	
Configure	Ī
Install Uninstall Properties Description Allows your computer to access resources on a Microsoft network.	
Close Cancel	

Note: at this time you will lose all previous internect connecions because you changed Subnets.

If your computer has a Gigabit Port, you can connect a regular CAT-5 cable between your **28/48/68** device and your computer, it will automatically swap to a Null Modem connection. If you don't have a Gigabit Port, you will need to use a null modem network connection.

Launch an Internet Browser like Micosoft Edge.



Enter the Lumistar Device ip address into the Browser search TextBox.

	b 192.168.1.	123	×									
← C ()	192.168.1.123											
2 10 🗖 Lum	nistar Configuration Server 🛛 🗙	+								-		×
← C ▲ Not sec	ure 192.168.1.123				A	☆	Cþ	₹⁄≡	Ē	×		0
LU	MISTAR										Î	٩
												0
> Informa	ation > Network											0
	Informa	tion										+
Cu	irrent Settings											
	Version Serial Number	2.08 - 2.08 6971										
	MAC Address	00-50-c2-a7-b8-9a										
	IP Address	192.168.1.123										
	Gateway	192.168.1.1										
Ac	cess Control	_										
	Enable Password											
	Administrator Password	Update										
		© Cop	vright 201	7 Lumistar, Inc.					.		-	ŝ

Click on the **Network** Tab.

~ 8 ~

← C ▲ Not secure 192.168.1.123/network.html A ☆ □ ☆ @ @ … C
LUMISCAR >http://work
>Information >Network
Network Settings
IP Settings
Fixed IP Address 192 168 15 123
Fixed Subnet Mask 255 255 0
Update
© Copyright 2017 Lumistar, Inc.

Enter your desired **ip** address and **Fixed Gateway** as shown above. Click the **Update button.** Your Browser will freeze as the Lumistar Device is now unreachable on its new Subnet.

Reset your NIC card settings by following the insturctions on the bottom of page 5 to the top of page 7. Only this time reset the **ip** and **Default Gateway** to the same as shown on the Figure in the middle of page 6.

Reconnect your Computer and Lumistar Device to the LAN (or keep it in a Peer-to-Peer connection if desired).

Launch the LS28_App, it should be able to find your Lumistar Device now.



Click the **OK** button.



You are now back online.

LumistarDevice Window for an LS-68M

 \times

Launch the C:\Lumistar\LS28M\UserTools\LumistarDevice.exe application, you may see the following warning.



🔏 LumistarDevice Double Click Device to Select Index MAC Address IP Address Device ID Device Name Serial Number User Note Query Device at IP Address: 0.0.0.0 Query Device Query Device on Serial com Port Com Port: COM4 \sim Modular Defaults Baud Rate: 57600 \sim Query Device Parity: No parity \sim Stop Bits: 1 stop bit \sim Cancel Ensure the proper COM Port is entered above.

Next click the **Query Device** button.

LumistarDevice show the LS68M is seen in the banner below.

ommand & Status TCP Socket n Port: COM4 @ 57600	Consolidated Sta Local: localh Remote: 0.0.0.	atus UDP Socket ost::0 0::5013	Use C	onsolidated Sta	atus	If UDP that create	Datagra a Windo d for eac	ams are r ows Firev ch instan	not being vall exce ce of Lur	preceive ption ha mistarDe	ed, verif is been vice.ex	ÿ e.			Blink
P/Decom 1 FSP/Decom 2 FSP/De	com 3 Bit Sync E	BERT Simulator	1 Simulator 2	IRIG Time	System Va	alues			Data ta	Eile .					
Maine Sync Pattern 0x2104 Status Message			ê.	STR1	Λ			e Decon		rie		Send	0x1002	Comman	d (Start)
FSP Lock O	PLock Control Playor Frame Control Control Playor Frame Control Control Playor Frame Control			Save DSP Header to .CSV File					Reque	Request Decom Streaming Data					
ESP Dead Major Frame							Deco	m Strean	ning Data	a Socket	Details				
Clock:	Lock:			I	.ocal:					Re	mote:				
Bit Stuffs	Bit Slips			/											
Bit Stuffs	Fresenta	Bit Slips				0.	De	commut	ator Ret	urned Va	alues				
Frame Count		Frame Count		Standard	Datagrag	Dei Dei	com Stre	aming Ca 056	se: Un	e Minor I Num	of Mine	er Datagi r Frames	ner Dat	agram.	1
				Last	Datagran	n Size:	1	056		Num	of Data	igrams pe	r Minor I	Frame:	1
Frame Count			-					T -11		· ·					
		biddic						Curre	ent value	e l'able					
Read 0x2104 Statu	s Continu	ious 0x2104 Statu	s				<u> </u>					-			
Frame Sync Patt	ern 0x1104 Setup 0	Command			H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	
Dicabled 4096	and ND	71		F1										_	
Frame Length in bits	(Decimal) Inp	ut PCM Code	Invert	F2											
	()			F3											
FE6B28400000000 Fran	ne Sync Pattern (He	xadecimal, 64-bits	;)	F4											
1111 1110 0110 1011 0010 1000 010			0000 0000	F5											
	.1 1111 0000 0000 00		0000 0000	56	_	_	_	_	_	_			_	_	
Frame Sync Pattern Mask				10	_	_	_	_	_	_		_	_	_	
2 2 2 0 2		÷ _0 ÷		F7											
Check to Verify to Out of Search Lock Lock Bit		U F8													
Error Max	< Max			F9											
Enable Enable	Invert	Normal		F10											
Primary Invert Primary Normal	Invert Data	Auto Data				Decen		0+1100	Cohun M	lord Att	ibutos (Command			
Enable Enable	Clock	Invert Enable				Decon	mutator	0X1109	Setup W	ora Att	ioutes (Lommand			
				512	Set	16		Set	2		Set	msb Firs	T	8272	Send

Click on the System Values Tab.



Use the Slider to go to the bottom of this System Window.

Command & Status TCP Socket mm Port: COM4 @ 57600	Consolidated S Local: loca Remote: 0.0.	Status UDP Socket host::0 0.0::5013	Use Consolidated	d Status	If UDP Datagrams are not being received that a Windows Firewall exception has created for each instance of LumistarDev	, verify been ice.exe.	Blink L	
SP/Decom 1 FSP/Decom 2 FS	P/Decom 3 Bit Sync	BERT Simulato	or 1 Simulator 2 IRIG Time	System V	alues			
Select Target EEPROM and Completely TURN OFF all Anti-Virus and Anti-Malware software.	2: 0 20231012 :	2: O 20231012 : 1 Decom, 2 Super Sims ModeUnknown 8: O 00000000 : Unused						
	3: 00000000 :	3: () 00000000 ; Unused 9: () 00000000 ; Unused						
	4: 000000000 :	4: () 00000000 ; Unused 10: () 00000000 ; Unused						
	5: 00000000 :	Unused		1	11: 🔿 00000730 : Unused			
						Browse	oad	
			Version	ns				
Serial Number: 2008-2	052		DSP Board PCB Reviso	on: 2	DSP1 Fw Ver: 20240123	FIO FPGA Fw Ver: 202212	215	
Device ID: WR 68M	4 SN2052		FPGA Board PCB Revisio	on: 2	DSP2 Fw Ver: 20240123	Bridge FPGA Fw Ver: 201808	328	
Product Model ID Strin Customer Nar Purchase Order Numb	gs: ne: er:		DHCP Enable	ed: U PC Chass Engineering	UDP Time to Live: 32 Save	R	lead	
Invert External Sources		J12 User I/O	Selections	-	Select Operational Mode			
Invert External Source 1 Clock:	□ J12-P2:	SIM	2 SE2 PCM CLK 🗸 🗸	 2 BitSyncs, 3 Decoms, 2 Sims Mo 		le: 🔽		
Invert External Source 1 Data:		Output ~ SIM	2 SE2 PCM DATA		1 BitSync, 2 Decoms, 1 Sim, 1 Super Sim Moo	le: 🗌		
Invert External Source 2 Clock:	0				1 Decom, 2 Super Sims Moo	le:		
invert External Source 2 Data:	J12-P4:	Input v	OM1 SE3 CLK					
		DEC	OM1 SE3 DATA					
Invert External Source 3 Clock: Invert External Source 3 Data:	112-P6\P18-	DEC	OM1 DIFF2 A SCLK+/- V					
Invert External Source 3 Clock: Invert External Source 3 Data:	512104 10.	Output V						
Invert External Source 3 Clock: Invert External Source 3 Data:	J12-P8\P20:	DEC	COM1 DIFF2 B SDAT+/- V					

Shown above is the **ip** adress of the LS-68M above