

Modification Recommended Service Note

Supersedes: NONE

L4490A 2U RF/Microwave Switch Platform

Serial Numbers: MY56460538 - MY56460741

The Problem – Devices found to have duplicate MAC addresses can cause an IP conflict when connected on the same local network.

Parts Required:

P/N Description Qty.

NONE

ADMINISTRATIVE INFORMATION

ACTION CATEGORY:	[[]] ON SPECIFIED FAILURE [X] AGREEABLE TIME	STANDARDS LABOR: 0.5 Hours
LOCATION CATEGORY:	[X] CUSTOMER INSTALLABLE [[]] ON-SITE (active On-site contract required) [[]] SERVICE CENTER [[]] CHANNEL PARTNERS	SERVICE: [[]] RETURN USED [[]] RETURN INVENTORY: [[]] SCRAP PARTS: [[]] SCRAP [[]] SEE TEXT [[]] SEE TEXT
AVAILABILITY	: PRODUCT'S SUPPORT LIFE	NO CHARGE AVAILABLE UNTIL: 31 March 2020
	[[]] Calibration Required [X] Calibration NOT Required	PRODUCT LINE: BL AUTHOR: AK

ADDITIONAL INFORMATION:



Situation:

Media Access Control (MAC address) is a hardware address that uniquely identifies each instrument on a network. Each of the L4490A instruments must have a unique MAC address. Due to a software bug, some L4490A's have been shipped with the same MAC address [80-09-02-07-29-FF]. When L4490A's that have the same MAC address are connected to the same local area network, an IP conflict occurs.

Solution/Action:

- 1. Connect the L4490A instrument to a PC controller either using GPIB cable or LAN cable.
- 2. Power on the Instrument. If the LAN cable is used for communication, please ensure the LAN LED on the instrument's front panel turns yellow before proceeding to the next step.



3. Open "Keysight Connection Expert" to ensure a connection with the instrument is established. Take note of the **instrument's model number, serial number** and the **visa address** (GPIB or LAN address) from the "Keysight Connection Expert" tool. These three items will be used in the "L449XALANMAC.exe" application as a user input.

Keysight Connection Expert 2018	�?_□×
Instruments PXI/AXIe Chassis	
ly Instruments + Add 2 🗄 🕇	Details for Agilent Technologies L4490A
V LAN (TCPIPO)	2 @ x 💷 🔤 🛀
L4490A, Agilent Technologies	Check Edit Remove Interactive IO Monitor Command Status IO Expert
V LAN (TCPIP1)	Manufacturer: Agilent Technologies Model: L4490A
Instruments found on local subnet, click [+Add] to add to your list.	Serial Number: US55460004
✓ LAN (TCPIP2)	Firmware Version: 2.51-2.43-0.00-0.00
Instruments found on local subnet, click [+Add] to add to your list.	Web Information: Product Page
✓ COM (ASRL0)	Connection Strings
No Instruments Found	
✓ COM (ASRL7)	VISA Address Aliases
No Instruments Found	TCPIP0::169.254.44.88::inst0::INSTR .
✓ USB (USB0)	

4. Launch Keysight Interactive IO tool within Connection Expert and verify the MAC address of the instrument using SCPI command:



(a) "SYST:COMM:LAN:MAC?" : query the instrument's LAN MAC address.

- 5. If the MAC address is [80-09-02-07-29-FF], please proceed to step 6. Else, the instrument is not affected by the MAC address issue and no further action is required.
- 6. Create a new folder directory with the name "ABELANMAC" on the PC controller's C:\ drive.
- 7. Go to URL: http://ftp.keysight.com/mpusup/L449XALANMAC
- 8. Place L449XALANMAC.exe, L449XAMAC.csv and Agilent.TMFramework.InstrumentIO.dll files from step 7 inside the "C:\ABELANMAC" folder.



9. Open the "L449XALANMAC" application to launch the test program.



10. The "L449XALANMAC" main window will appear as shown below.

		Outcome Status :	
Clear	Assign MAC	 	

11. The location of the source files is shown at the Source Files tab for user's reference.

O ABE LAN MAC Address	- 0	×
Scan/Enter The DUT Details To Reassign LAN MAC	Revision : 2.0	
Unit's Model Number : E.g.: L4491A		
Unit's Serial Number : E.g.: MY12345678		
Unit's GPIB or IP Address :	E.g.1: 169.254.44.88 E.g.2: GPIB0::9::INSTR E.g.3: TCPIP0::169.254.44.88::inst0::INSTR	
	Outcome Status :	
Clear Assign MAC Address		
Clear Assign MAC Address		
Clear Assign MAC Address Result Log Source Files		
	Revision : 2.0 Developer: NAI	

12. Enter the instrument's details, i.e. model number, serial number, and GPIB or IP address, into the text box fields accordingly. *Refer to step 3 on page 2*.

	0100 00001	anigty. Refe		011 00	.902.		
O ABE LAN MAC Address					-		×
<u>Scan/Er</u>	nter The DUT	Details To Rea	assign LAN MA	C Addre	Revisio	n : 2.0	
Unit's Mo	del Number :	L4490A	E.g.: L4491A				
Unit's Se	rial Number :	US55460004	E.g.: MY12345678				
Unit's GPIB or	IP Address :	169.254.44.88		E.g.2: GF	69.254.44.88 PIB0::9::INSTR CPIP0::169.254.44.88::inst0:	::INSTR	
					Outcome Status :		
Clear		Assign MAC	Address				
L							
Result Log Source File	25						
Date	Model Number	Serial Number	Old MAC A	ddress	New MAC Address	Statu	s
<							>

- 13. Click the "Assign MAC Address" button to update the instrument's Keysight LAN MAC address, or the "Clear" button to clear the user input.
- 14. The Outcome Status box will display as "Completed" if the instrument has successfully been assigned with the new Keysight LAN MAC address, passed the self-test check, and passed the query error check. The Result Log displays the details of the outcome.

ABE LAN MAC Address					-	
<u>Scan/En</u>	iter The DUT	Details To Rea	assign LAN M	AC Addre	Revision	1 : 2.0
Unit's Moo	del Number :	L4490A	E.g.: L4491A			
Unit's Ser	ial Number :	US55460004	E.g.: MY1234567			
Unit's GPIB or	IP Address :	169.254.44.88		E.g.2: G	i9.254.44.88 PIB0::9::INSTR :PIP0::169.254.44.88::inst0:	INSTR
New MA	C Address :	"80-09-02-01-C8-2F"	·			
					Outcome Status :	
Clear		Assign MAC	Address		Completed	
Result Log Source Files						
Date	Model Number	Serial Number	Old MAC	Address	New MAC Address	Status
14/Mar/2019 - 12:35:28:	L4490A	US55460004	"80-09-02	-07-29-FF"	"80-09-02-01-C8-2F"	PASS
<						>
<						>

15. If the instrument already has a valid(non-duplicate) Keysight LAN MAC address assigned, the status will display as "**Unchanged**" when the "Assign MAC Address" button is clicked as shown below.

	Coop/End		Dataila Ta Dagaa				evision : 2	2.0
	Scan/En	er The DUT	Details To Reass	ign lan mac	; Addres	<u>55</u>		
	Unit's Mod	el Number :	L4490A E	g.: L4491A				
	Unit's Seri	al Number :	US55460004 E	g.: MY12345678				
Unit	's GPIB or I	P Address :	169.254.44.88		E.g.2: GP	9.254.44.88 IB0::9::INSTR PIP0::169.254.44.88::i		
						Outcome State	us :	
	Clear		Assign MAC A	ddress		Outcome State		
	Clear		Assign MAC A	ddress				
Result Log	Clear Source Files		Assign MAC A	ddress				
Result Log Date		Model Number	Assign MAC A	ddress Old MAC Ac	ddress		ed	Status
Date		Model Number L4490A				Unchang	ed s	Status PASS

- 16. The Test program returns "FAIL" as the outcome status if either the new LAN MAC address update is unsuccessful, instrument failed self-test, or there is an error in the instrument's error queue.
- 17. The auto-generated soft copy of the test log files are saved here:
 - a. C:\ABELANMAC\ folder as "Sernum.txt" for the test summary, and
 - b. C:\ABELANMAC\Log\ folder as "ReAssignMAC *ModelNumber-SerialNumber*.txt" for the test detail output.

Note: *ModelNumber* is the instrument's model number, and *SerialNumber* is the instrument's serial number. Example for this instrument is "ReAssignMAC L4490A-US55460004.txt"

	- 0	×	14/3/2019/L4490A/US55460004/"80-09-02-07-29-FF"/"80-09-02-01-C8-2F"/PASS/PASS 14/3/2019/L4490A/US55460004/"80-09-02-01-C8-2F"/"80-09-02-01-C8-2F"/PASS/PASS/UNCH	
File Home Share View	-	~ 0	ReAssignMAC L4490A-US55460004 - Notepad —	×
⊢ → ∽ ↑ 🖡 > This PC > OSDisk (C:) > ABELANMAC	ໍ ບັ Search AB		Ele Edit Format View Help 14/Mar/2019 (Thursday) 12:35:28:PM	,
Quick access Name Log	Type File folder	Siz	01d MAC Address: "80-90-02-07-20-FF" New MAC Address: "80-90-02-01-C8-2F" SelfTest Check: PASS Error Check: PASS	
Agilent.TMFramework.InstrumentIO.dll AkyALANMAC L449XALANMAC L449XALANMAC Semum	Application exter Application Microsoft Excel C Text Document	ns	Error (neck : MASS) Vorsil Status: PASS	
24man	text bocument		14/Mar/2019 (Thursday) 12:36:39:PM	
< litems			FAIL 014 MAC Address: "80-09-02-01-C8-2F" FAIL Not MAC Address: "80-09-02-01-C8-2F" SelFTest Check : PASS Foro Check : PASS	

- 18. Close those files and the "L449XALANMAC" application.
- 19. Remove the entire "ABELANMAC" folder from the PC controller's C:\ drive.

Other Outcome Status

This session will describe the other outcome status displayed based on possible occurrence.

A. Test program displays a "Test Timed Out!" prompt and closes the application.

ABE LAN MAC Address					_	
Scan/Ente	er The DUT	Details To Rea	ussign LAN MA	C Address	Revision	: 2.0
Unit's Mode	Number :	L4490A	E.g.: L4491A			
Unit's Seria	Number :	US55460004	E.g.: MY12345678			
Unit's GPIB or IP	Address :	169.254.8.4		E.g.1: 169.254.4 E.g.2: GPIB0::9: E.g.3: TCPIP0::1		INSTR
Clear	Test	Timed Out!	ect to instruments, or N	X MAC file issue	come Status :	
Date I	Model Number	Serial Number	Old MAC A	ddress Ne	ew MAC Address	Status
<						>

<u>Possible Cause 1:</u> The connection between the PC controller and GPIB or LAN cable is not established.

<u>Possible Cause 2:</u> Incorrect instrument's GPIB or IP address entered at the program text box. <u>Possible Cause 3:</u> Instrument is not powered on when the program is running.

<u>Possible Cause 4:</u> When connecting with the LAN cable, the LAN LED on the instrument's front panel is not yellow.

<u>Possible Cause 5:</u> Missing "L449XAMAC.csv" file according to the Source Files location. Default location for the "L449XAMAC.csv" file is C:\ABELANMAC\.

Possible Cause 6: The "L449XAMAC.csv" file is opened.

Solution 1: Ensure GPIB cable or LAN cable is connected between user's PC and instrument. **Solution 2:** Enter the instrument's correct GPIB or LAN IP address, referring to the Keysight Connection Expert or Keysight Interactive IO tools.

Solution 3: Power on the instrument before running the "L449XALANMAC.exe" application. **Solution 4:** Refer to Solution 1 stated above and try to reboot the instrument. Wait for the LAN LED to turn yellow. If the problem persists, contact the Keysight Technical Support team.

Solution 5: Perform step 6 until step 8 in page 3 of this document.

Solution 6: Close the "L449XAMAC.csv" file.

B. Test program displays a warning "Mismatched Input" prompt, and "INVALID" outcome status.

Model Number Serial Number Old MAC Address New MAC Address Status		Mismatched Input		×	
ABE LAN MAC Address – C × Revision : 2.0 Scan/Enter The DUT Details To Reassign LAN MAC Address Unit's Model Number : [4491A E.g: L4491A Unit's Serial Number : [US55460004 E.g: MY12345678 Unit's GPIB or IP Address : [169.254.44.88 E.g.3: TCPIP0::169.254.44.88 E.g.3: TCPIP0::169.254.44.88:inst0::INSTR Clear Assign MAC Address Outcome Status : INVALID Result Log Source Files Date Model Number Serial Number Old MAC Address New MAC Address Status		Unit's Model or Serial Num	ber doesn't match with user inp	but!	
Scan/Enter The DUT Details To Reassign LAN MAC Address Privation of the state of th			ОК		
Scan/Enter The DUT Details To Reassign LAN MAC Address Unit's Model Number : L4491A Unit's Serial Number : US55460004 E.g.: MY12345678 Unit's GPIB or IP Address : 169254.44.88 E.g.2: GPIB0.9:INSTR E.g.3: TCPIPO::169254.44.88 E.g.3: TCPIPO::169254.44.88:inst0:INSTR Outcome Status : Clear Assign MAC Address New MAC Address Result Log Source Files Vale Model Number Serial Number Old MAC Address New MAC Address Status	ABE LAN MAC Address			-	
Unit's Serial Number : US55460004 E.g.: MY12345678 Unit's GPIB or IP Address : 169.254.44.88 E.g.2: GPIB0::9:INSTR E.g.3: TCPIP0::169.254.44.88:inst0:INSTR Outcome Status : Clear Assign MAC Address Nate Model Number Serial Number Old MAC Address New MAC Address Status Status	Scan/Enter Th	ne DUT Details To Reassi	gn LAN MAC Addre		: 2.0
Unit's GPIB or IP Address : 169.254.44.88 E.g.2: GPIB0::9:INSTR E.g.3: TCPIP0::169.254.44.88 E.g.2: GPIB0::9:INSTR E.g.3: TCPIP0::169.254.44.88:inet0::INSTR Clear Outcome Status : INVALID Result Log Source Files Date Model Number Serial Number Old MAC Address New MAC Address Status	Unit's Model Nu	mber : L4491A E.	g.: L4491A		
Unit's GPIB or IP Address : 169.254.44.88 E.g.2: GPIB0:9:INSTR E.g.3: TCPIPD::169.254.44.88:inet0:INSTR Clear Assign MAC Address Assign MAC Address Outcome Status : INVALID Result Log Source Files Vate Model Number Serial Number Old MAC Address New MAC Address Status	Unit's Serial Nu	mber : US55460004 E.	g.: MY12345678		
Line Line Line Line Line Line Line Line	Unit's CDIR or ID Adv	tropp - 169 254 44 88			
Clear Assign MAC Address INVALID Result Log Source Files Invalid Control of Con		103.234.44.00			NSTR
Clear Assign MAC Address INVALID Result Log Source Files Invalid Control of Con					
Result Log Source Files Model Number Old MAC Address New MAC Address Status				Outcome Status :	
Result Log Source Files Model Number Serial Number Old MAC Address New MAC Address Status	Clear	Assign MAC A	ddress	INVALID	
Model Number Serial Number Old MAC Address New MAC Address Status					
Model Number Serial Number Old MAC Address New MAC Address Status					
	Result Log Source Files				
	Date Mode	Number Serial Number	Old MAC Address	New MAC Address	Status
>					

Possible Cause: The user entered the wrong model number or serial number, versus the actual instrument's model number and serial number.

Solution: Enter the correct model number and serial number of the instrument.

C. Test program displays a "Default Fresh Instrument" prompt and "--- FRESH INSTRUMENT ----" at the Result Log.

<u>Possible Cause</u>: Instrument has a default Keysight LAN MAC address assigned. **Solution**: Contact the Keysight Technologies' Customer Contact Center at <u>www.keysight.com/find/contactus</u>.

Revision History: Date	Service Note Revision	Author	Reason for Change	
21 Mar 2019	01	AK	As Published	