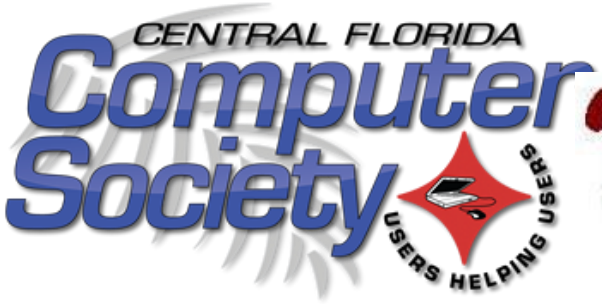
1--CONTROLLING AN ANDROID CELL PHONE FROM A WINDOWS.. OR LINUX.. COMPUTER

by Francis Chao

fchao2@yahoo.com



Web location for this presentation:

http://aztcs.apcug.org

Click on

"Meeting Notes"

SUMMARY

Using two no-cost software apps, an Android cell phone will show up in a Windows 11 or 10 computer or in a Linux computer as a window that looks exactly like the screen of the Android phone. From this window, you can make and receive phone calls and text messages and operate all of the apps that are inside the cell phone.

TOPICS

- Apps for Using Computers To Control Android Cell Phones
- Short Demo of Microsoft's "Phone Link"
- Advantages of Controlling An Android Phone From A Computer
- Lots of Misinformation to Mislead You!
- Locating "Link to Windows" In A Phone
- Locating "Phone Link" in a Windows 11 or 10 Computer
- Detailed Steps for Using "Phone Link"

APPS FOR USING COMPUTERS TO CONTROL CELL PHONES

- "Phone Link" in Windows 11 or 10 computers can control Android 7 or higher cell phones
- "scrcpy" in Windows 11 or 10, macOS, or Linux computers can control Android 5 or higher cell phones

APPS FOR USING COMPUTERS TO CONTROL CELL PHONES (continued)

- We failed to get various editions of "scrcpy" to run in "Windows 7 Home Premium" and "Windows 7 Professional".
- We attempted to use versions of "scrcpy" from 2018 to present.
- We attempted to use both 32 and 64-bit versions of the Windows 7..

DEMOS

- "scrcpy" in "Ubuntu desktop" Linux 22.04
- "scrcpy" in "Windows 11"
- "Phone Link" in "Windows 11"

DEMO OF "PHONE LINK" IN WINDOWS 11

- Microsoft's bundled "Phone Link" app in a "Windows 11" laptop
  controls
  a Samsung cell phone running Microsoft's free
  "Link to Windows" app:

Phone Link

Phone Link -
Shortcut

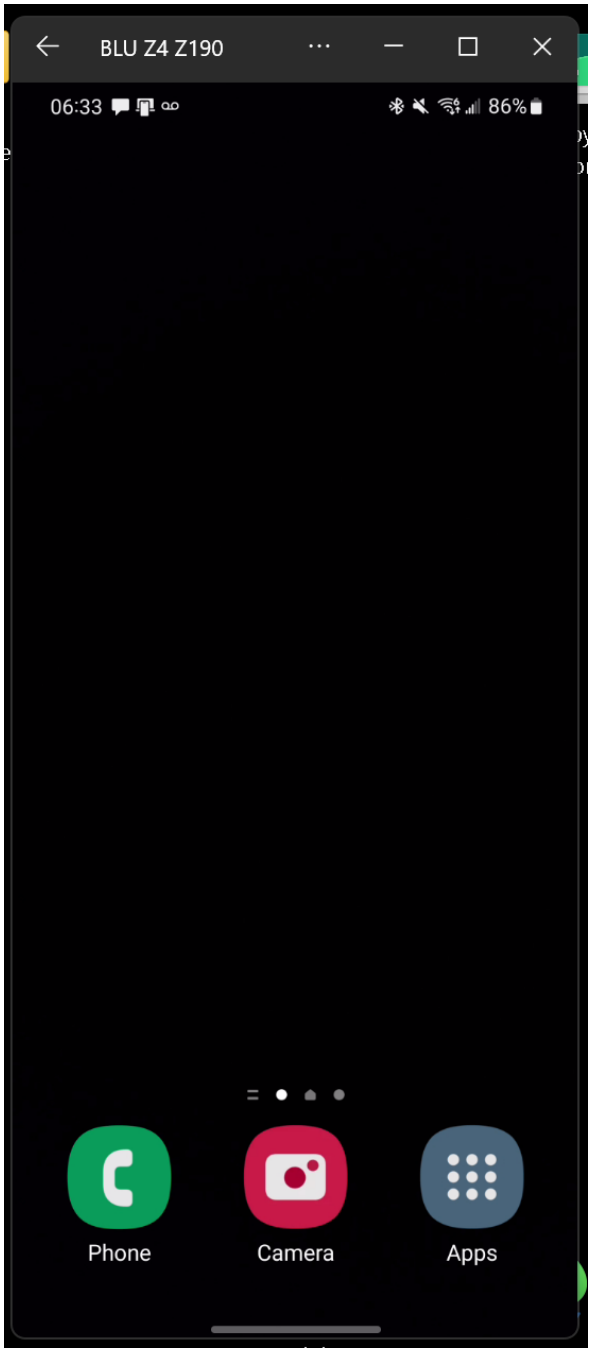
Who is | Access Linux | ScanDoc | chrome-q... | Ubuntu | SMS from | Google | KDE Conne

Phone Link

Messages 3 | Calls | Apps | Photos

Start a new conversation or select one to reply

Network messaging and data rates may apply.


BLU Z4 Z190
06:33
86%
Phone
Camera
Apps

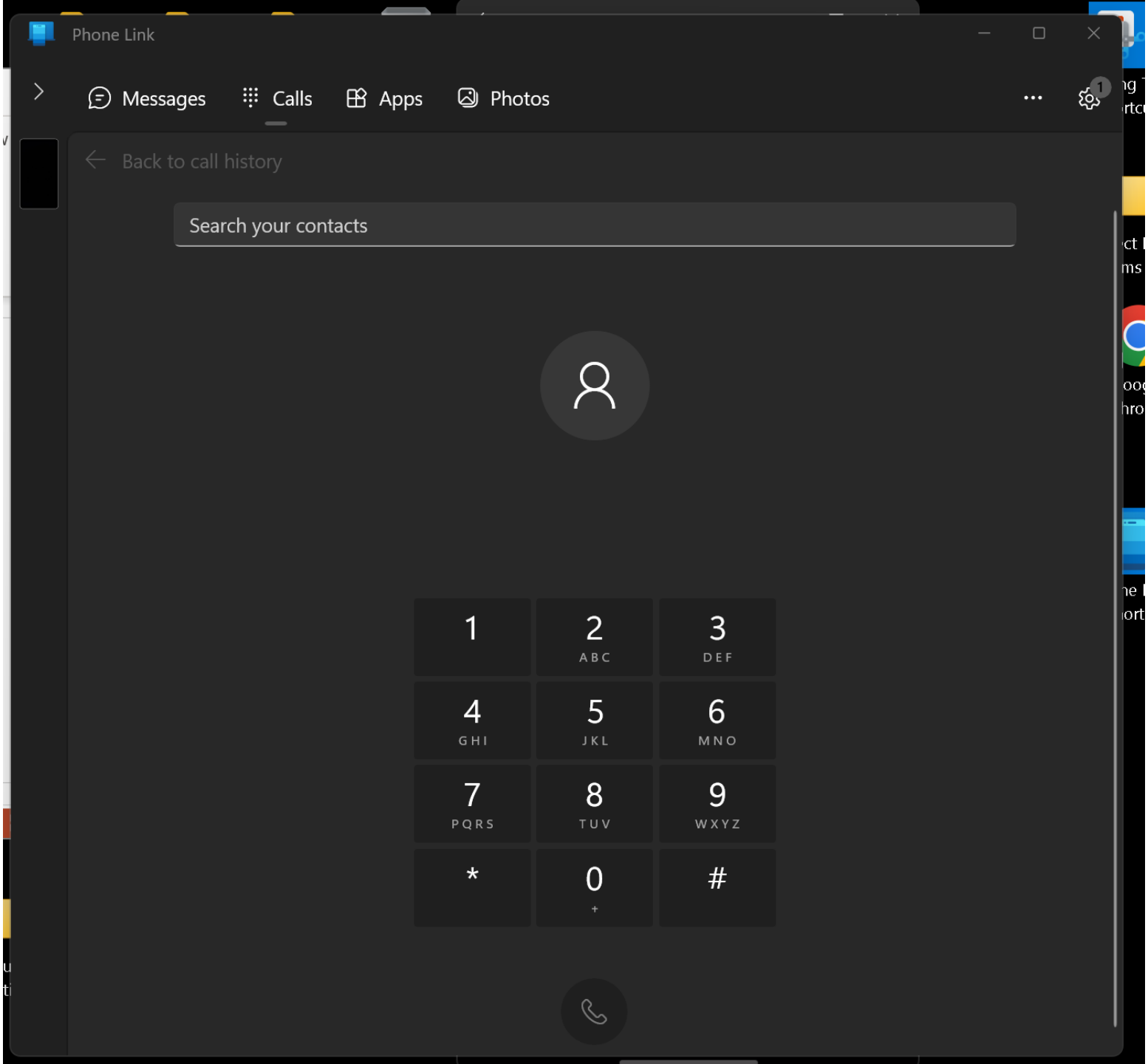
Who is | Access Linux | ScanDoc | chrome-q... | Ubuntu | SMS from | Google | KDE Conne

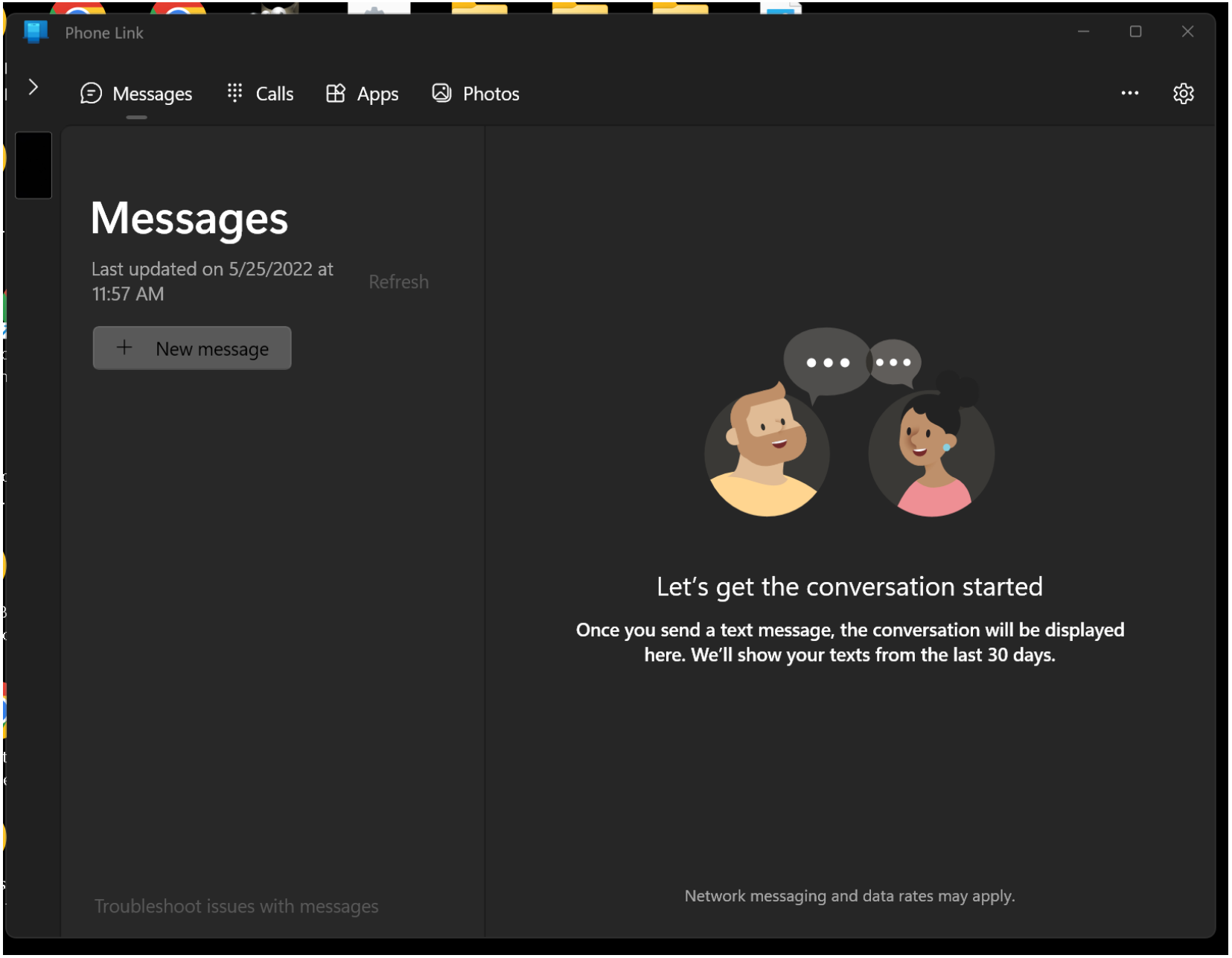
Phone Link

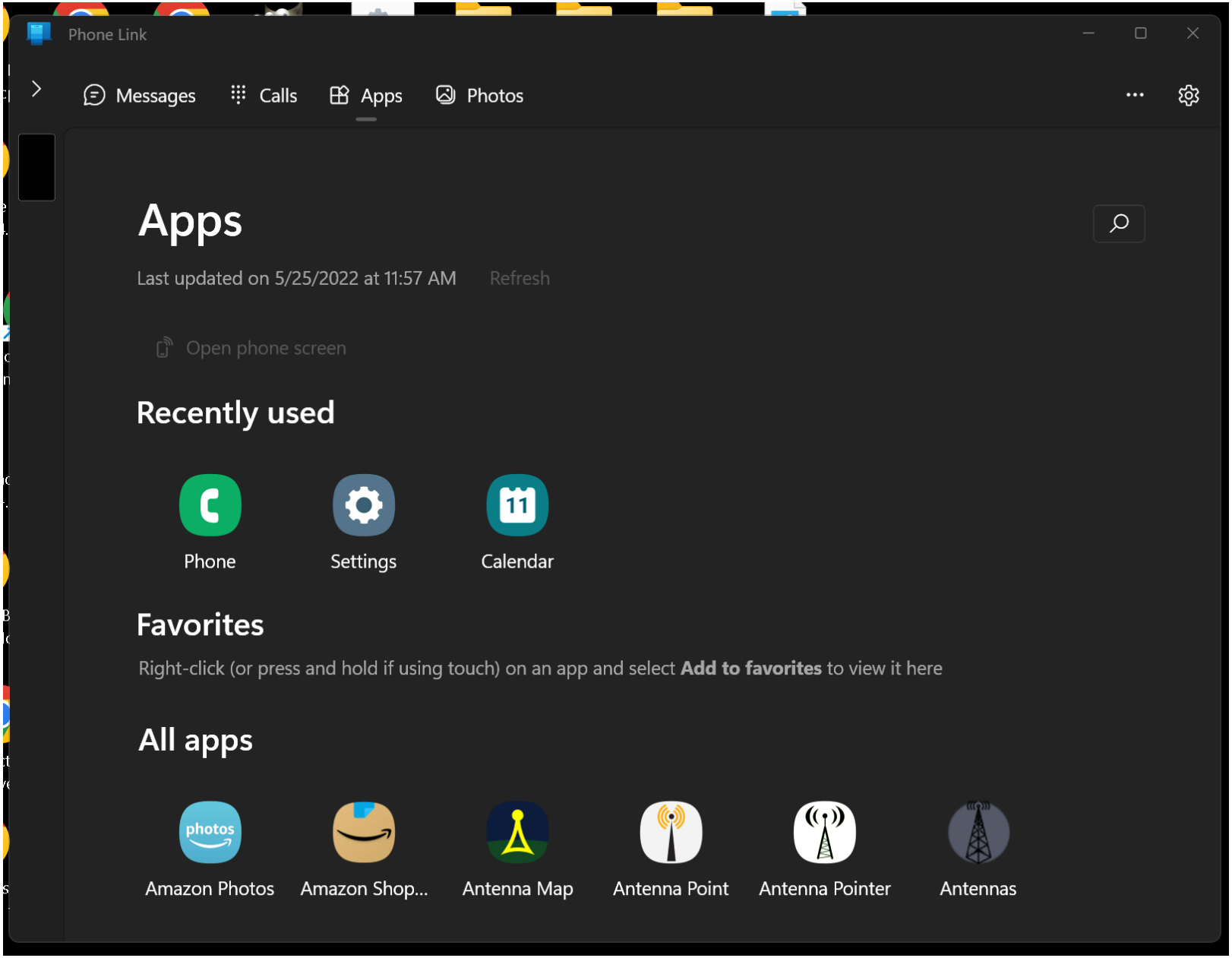
Messages 3 | Calls | Apps | Photos

Start a new conversation or select one to reply

Network messaging and data rates may apply.


Phone Link
Messages
Calls
Apps
Photos
Back to call history
Search your contacts
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
*
0 +
#


Phone Link
Messages
Calls
Apps
Photos
Messages
Last updated on 5/25/2022 at 11:57 AM
Refresh
New message
Troubleshoot issues with messages
Let's get the conversation started
Once you send a text message, the conversation will be displayed here. We'll show your texts from the last 30 days.
Network messaging and data rates may apply.

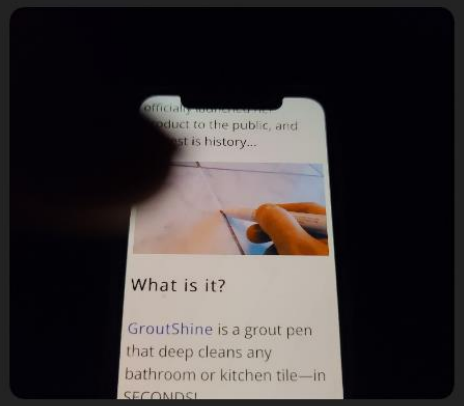

Phone Link
Messages
Calls
Apps
Photos
Apps
Last updated on 5/25/2022 at 11:57 AM
Refresh
Open phone screen
Recently used
Phone
Settings
Calendar
Favorites
Right-click (or press and hold if using touch) on an app and select Add to favorites to view it here
All apps
Amazon Photos
Amazon Shop...
Antenna Map
Antenna Point
Antenna Pointer
Antennas

Phone Link

Messages Calls Apps Photos

Photos

Last updated on 5/25/2022 at 11:54 AM Refresh



Phone number
1-714-369-7925

Model name
Galaxy S20 Ultra 5G

Model number
SM-G988U1

Serial number
R3CN20B87MR

369-

ADVANTAGES OF CONTROLLING A CELL PHONE FROM A COMPUTER

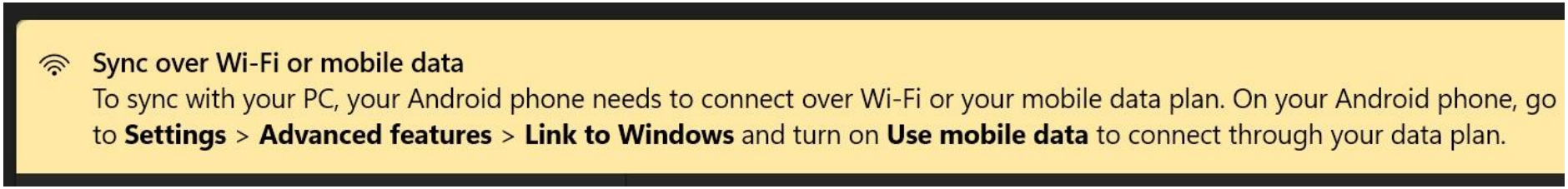
- Larger screen
- Can use keyboard and mouse
- Faster to take screen shots of a cell phone from a computer
- Can show a sharper image of the screen of cell phone via Zoom (relative to using a Webcam)

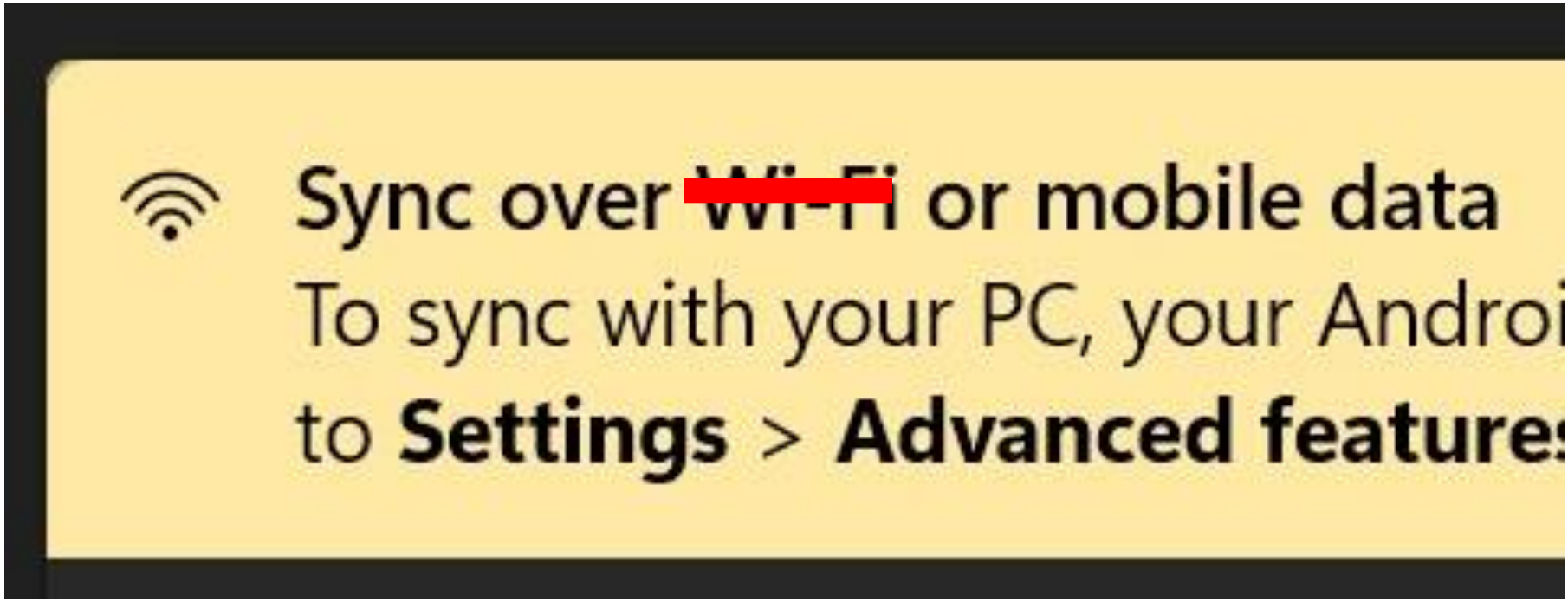
ADVANTAGES OF CONTROLLING A CELL PHONE FROM A COMPUTER (continued)

- Websites for sending text messages are not reliable (while sending from a cell phone is very reliable)
- Using your email account to send text messages to cell phones is not reliable (while using a computer linked to a cell phone to send out text messages is very reliable)

LOTS OF MISINFORMATION TO MISLEAD YOU!

- Misleading information on Web sites (both Microsoft and others)
- Misleading information in the "Phone Link" app in Windows..
- Misleading information in the "Link to Windows.." app in an Android cell phone


Sync over Wi-Fi or mobile data
To sync with your PC, your Android phone needs to connect over Wi-Fi or your mobile data plan. On your Android phone, go to Settings > Advanced features > Link to Windows and turn on Use mobile data to connect through your data plan.


Sync over Wi-Fi or mobile data
To sync with your PC, your Androi
to Settings > Advanced features

LOTS OF MISINFORMATION TO MISLEAD YOU! (continued)

- "Totally erroneous info about connecting both Android cell phone and computer to the same "Wireless Access Point":
  It should say "Sync by connect to the same local router or meshed set of routers".

BLU Z4 Z190
Connect to the same Wi-Fi
To use Phone screen on your PC, make sure your Android device and PC are connected to the same Wi-Fi.
Try again
Learn more

Connect to the same Wi-Fi
To use Phone screen on your PC, make sure your Android device and PC are connected to the same Wi-Fi.
Try again
Learn more

LOTS OF MISINFORMATION TO MISLEAD YOU! (continued)

- "Totally erroneous info about connecting both Android cell phone and computer to the same "Wireless Access Point":
  It should say "Connect to the same local router or meshed set of routers".

SETTING UP A "PHONE LINK" TO "LINK TO WINDOWS" LINK

- Locate or install "Link to Windows" in the Android cell phone
- Locate or install "Phone Link" in the Windows 11 or 10 computer
- Either connect the phone and the computer to the same local router or configure "Link to Windows" in the cell phone to "Use data plan"
- Start "Link to Windows" in the phone
- Start "Phone Link" in Windows 11 or 10

SETTING UP A "PHONE LINK" TO "LINK TO WINDOWS" LINK (continued)

- Microsoft's "official" instructions are located at https://support.microsoft.com/en-gb/topic/phone-link-app-requirements-and-setup-cd2a1ee7-75a7-66a6-9d4e-bf22e735f9e3

LOCATING "PHONE LINK" IN A WINDOWS 11 OR 10 COMPUTER

- ..in the "Start Menu" of a Windows 11 or 10 computer:
  In "Windows 11", you usually have to click on the "All apps" button of the "Start Menu" before you can locate "Phone Link" or you can usually find it in "Search" or "Type here to search"

LOCATING "PHONE LINK" IN A WINDOWS 11 OR 10 COMPUTER (continued)

- "Phone Link" might be present under one of it's now obsolete names:
  Inside Windows 10 and 11, over the past three years,
  "Your Phone Companion"
  morphed into
  "Your Phone"
  which morphed into
  "Phone Link"

LOCATING "LINK TO WINDOWS" IN AN ANDROID CELL PHONE

- All recent Android cell phones will have the free "Link to Windows" app somewhere on their "Apps" screens
- In Samsung cell phones, the "Link to Windows" shows up in two places:
  the "Quick Settings" screens and the "Apps" screens

LOCATING "LINK TO WINDOWS" IN AN ANDROID CELL PHONE (continued):

- If "Phone Link" is missing, you can get it for free from the "Play Store" app in an Android cell phone or, **alternatively**, from the "Galaxy Store" app in a Samsung cell phone
or, **alternatively**, from the "App Center" app in an "ASUS cell phone

IT IS EASIER TO USE "PHONE LINK" IN A WINDOWS 11 OR 10 COMPUTER IF YOU CREATE A DESKTOP SHORTCUT..

- ..for it. Since "Phone Link" is a "Universal Windows Platform" app, please follow the instructions at https://aztcs.apcug.org/meeting_notes/winhardsig/software/remote-assistance/Making-Shortcuts-to-apps-in-Win11&10&8.pdf

"PHONE LINK" CONNECTS TO "LINK TO WINDOWS"

- FIRST AND MANDATORY:
  "PHONE LINK" IN WINDOWS 11 OR 10
  "LINKS" (WITH TWO POSSIBLE PATHS)
  TO "LINK TO WINDOWS" IN ANDROID CELL PHONE

"PHONE LINK" CONNECTS TO "LINK TO WINDOWS" (continued)

- SECOND AND OPTIONAL:
  "PHONE LINK" IN WINDOWS 11 OR 10
  MAKES A DIRECT "BLUETOOTH" CONNECTION
  TO GET SPEAKER AND MIC SOUND FROM
  "LINK TO WINDOWS" IN PHONE

"Phone Link" app

in "Windows.." computer

connects either through a local router or over the Internet to the

"Link to Windows" app

in Android cell phone.

Then you optionally can connect the sound controller of the computer to the audio of the cell phone.

If "Link to Windows" app
in Android cell phone

connects to

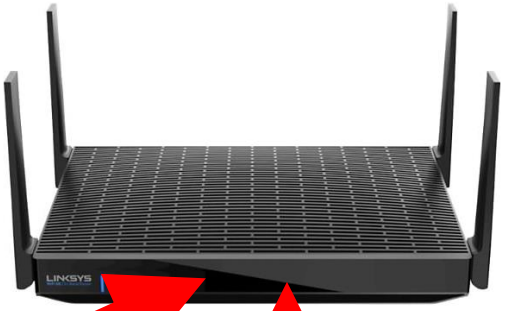
Local Router

connects to

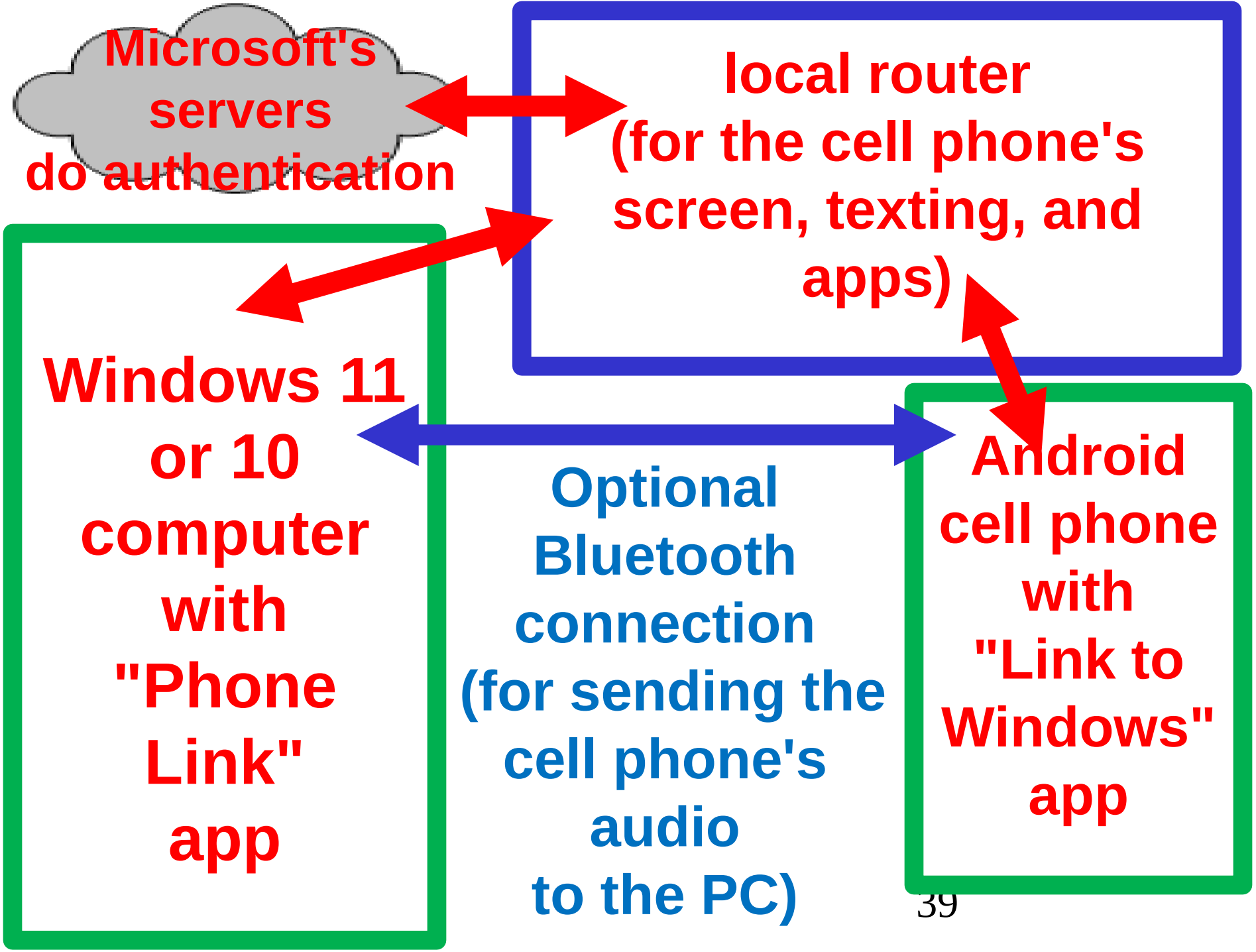
"Phone Link" app
in "Windows.." computer

with Microsoft's servers only doing authentication:

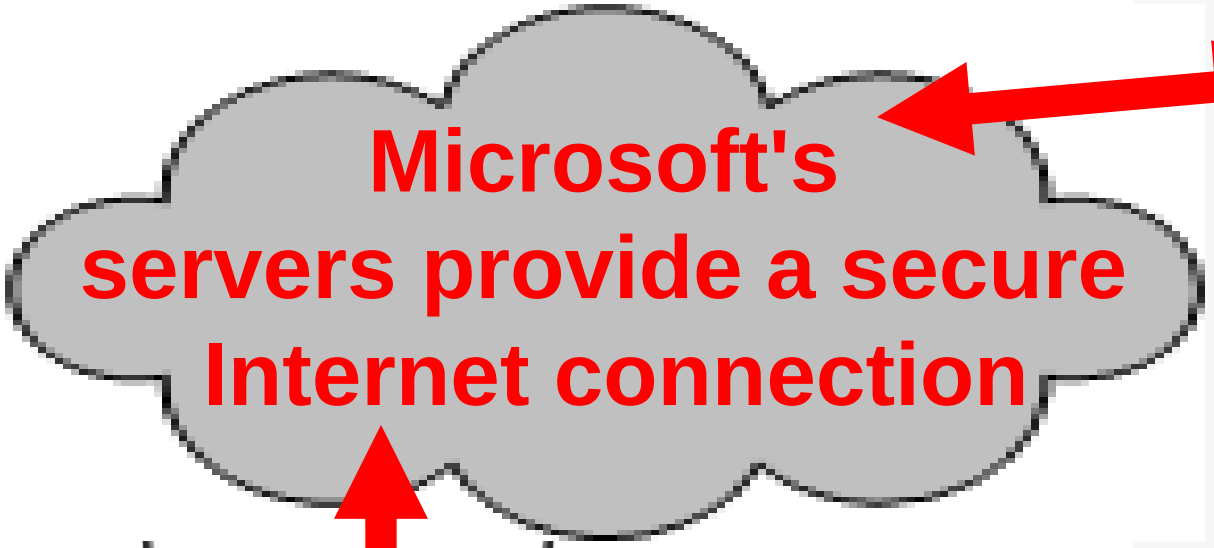
Microsoft's servers (do authentication)

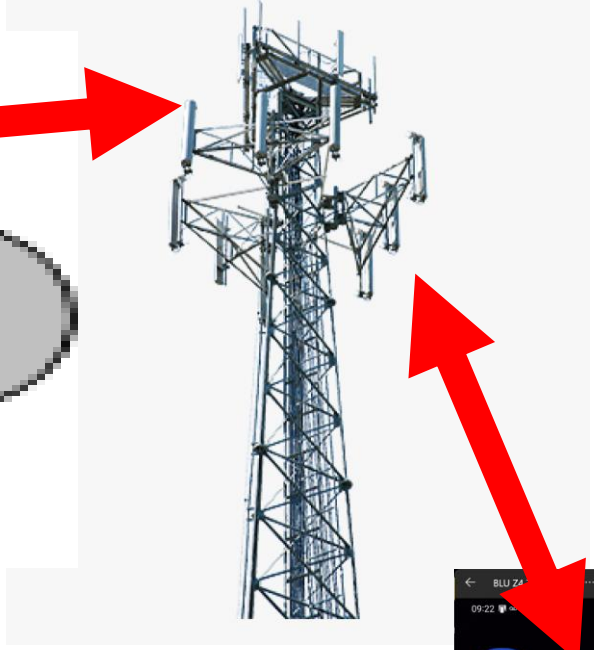


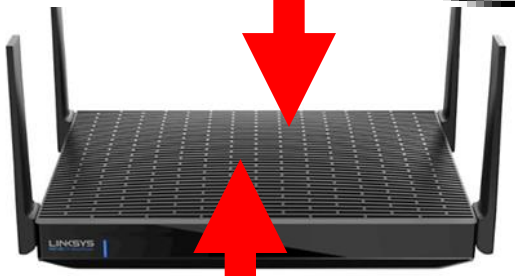
Optional Bluetooth connection (for sending the cell phone's audio to the PC)

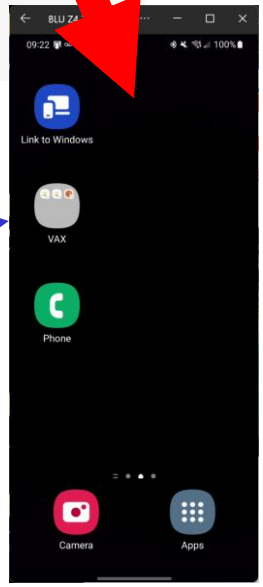

Microsoft's servers do authentication
local router (for the cell phone's screen, texting, and apps)
Windows 11 or 10 computer with "Phone Link" app
Optional Bluetooth connection (for sending the cell phone's audio to the PC)
Android cell phone with "Link to Windows" app

If "Link to Windows" app
in Android cell phone
connects via a data plan to
cell phone towers
which connects via over the Internet to
"Phone Link" app
in "Windows.." computer:

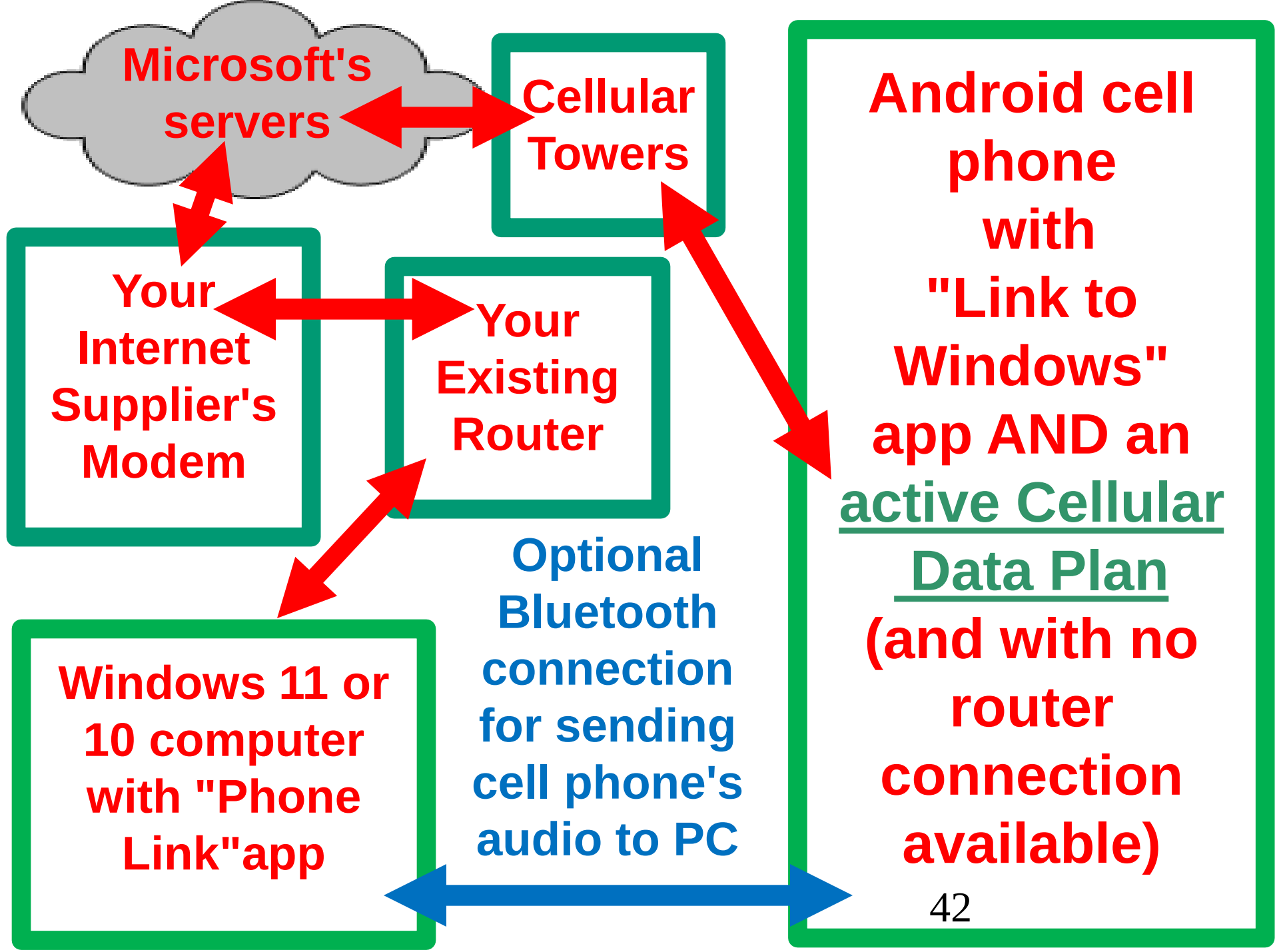








Optional Bluetooth connection (for sending the cell phone's audio to the PC)

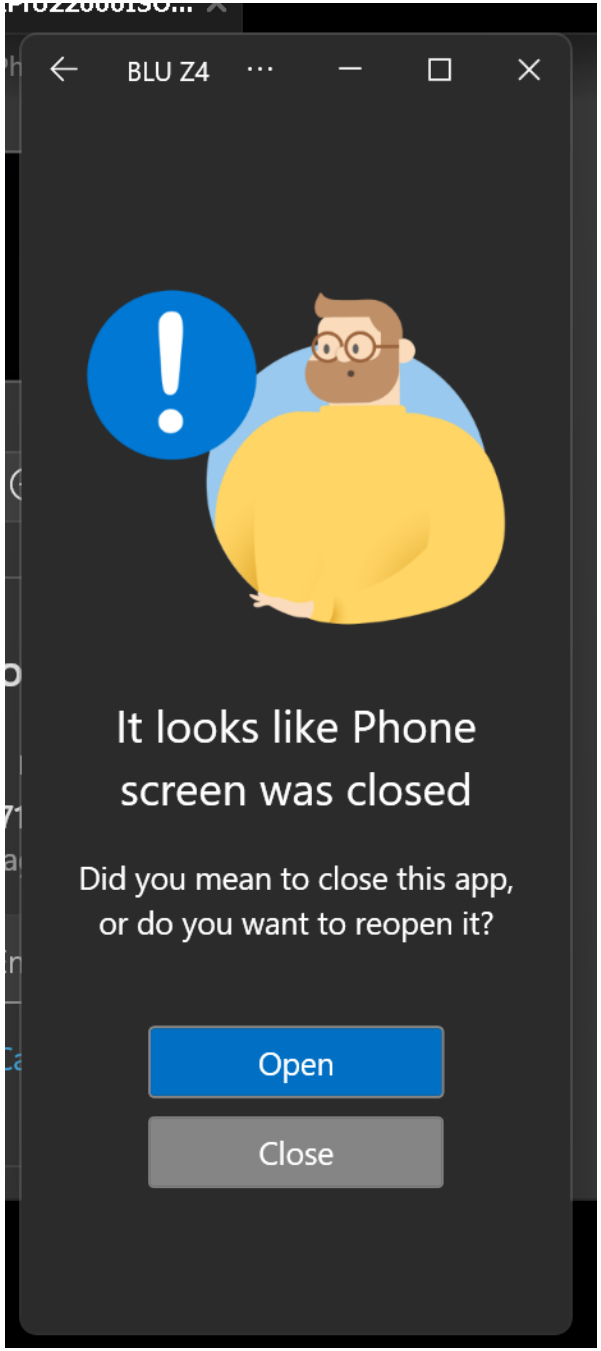

Microsoft's servers
Cellular Towers
Android cell phone with "Link to Windows" app AND an active Cellular Data Plan (and with no router connection available)
Your Internet Supplier's Modem
Your Existing Router
Optional Bluetooth connection for sending cell phone's audio to PC
Windows 11 or 10 computer with "Phone Link"app

IF "PHONE LINK" IS MISSING FROM YOUR "WINDOWS 10 OR 11..

- If your cell phone and your Windows.. computer cannot find each other via a wireless or wired router connection, they will attempt to connect over the Internet through a Microsoft server (if you have given the cell phone permission to do so):

"scrcpy" AS AN OPTIONAL APP

- For a small percentage of Windows 11 and 10 computers, "Phone Link" fails to display the screen of the Android cell phone:


BLU Z4
It looks like Phone screen was closed
Did you mean to close this app, or do you want to reopen it?
Open
Close

"scrcpy" AS AN OPTIONAL APP (continued)

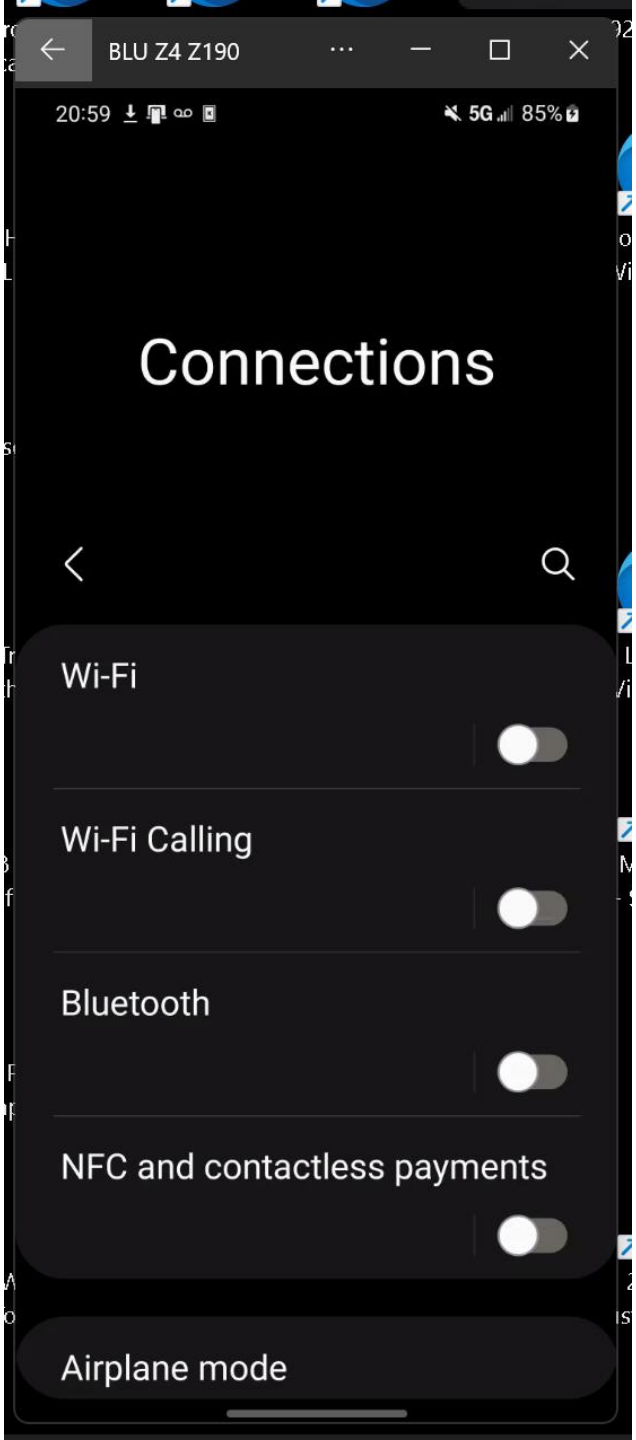
- When "Phone Link" fails, you can run the free "scrcpy" app in your Windows 11 or 10 computer instead (to connect your Windows 11 or 10 computer to an Android cell phone):

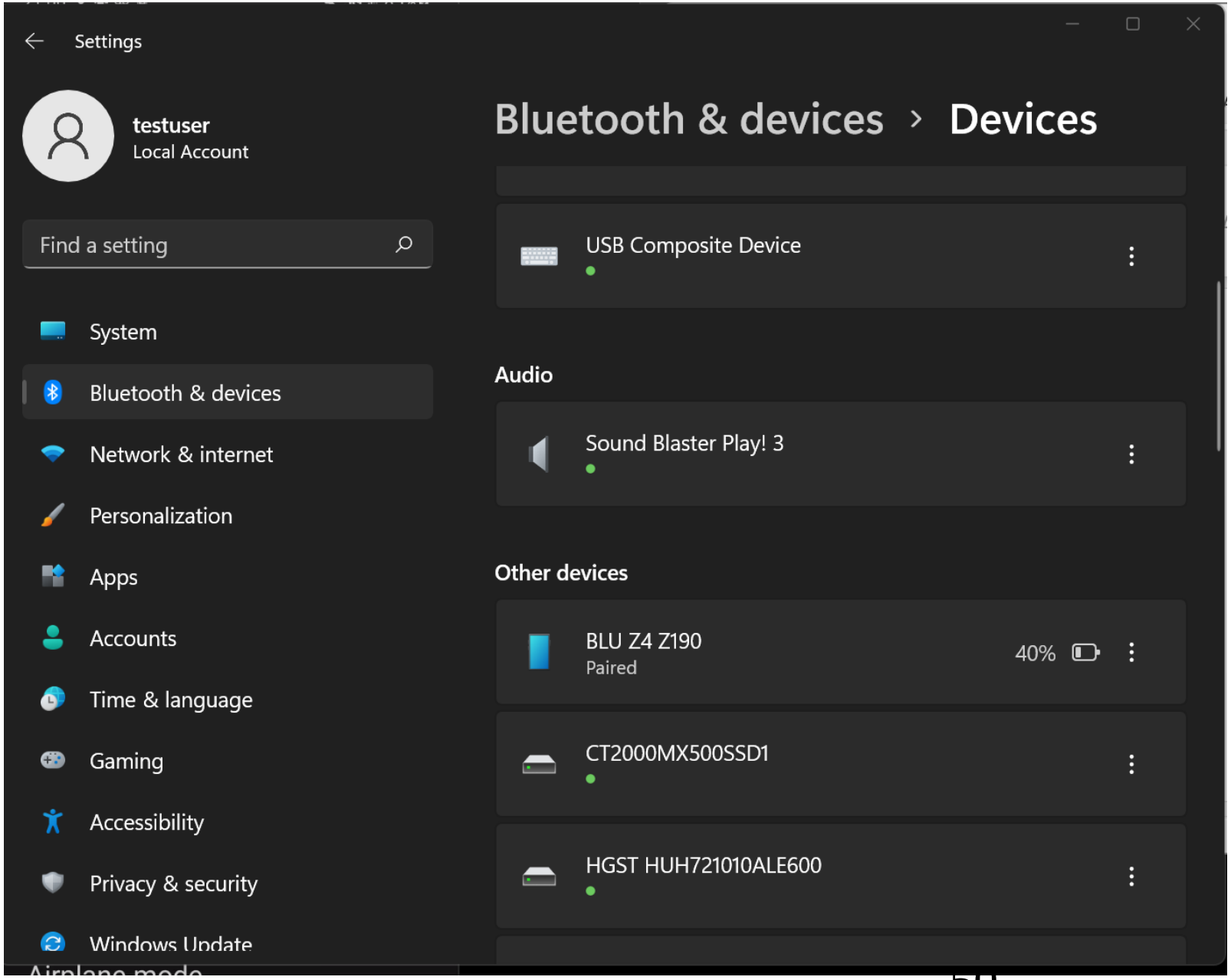
MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10"

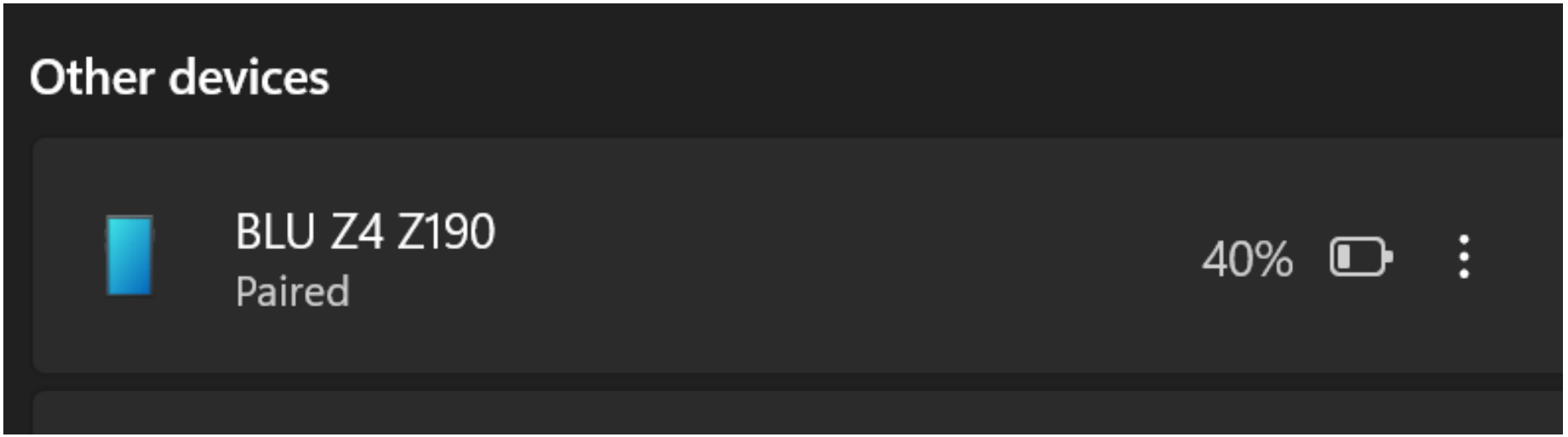
- Must also pair phone with Windows.. PC using Bluetooth if you want to use the PC's speaker and Microphone audio for phone calls.
- Must use the "Calls" tab of "Phone Link" app in Windows.. PC if you want to use the PC's speaker and Microphone audio for phone calls.

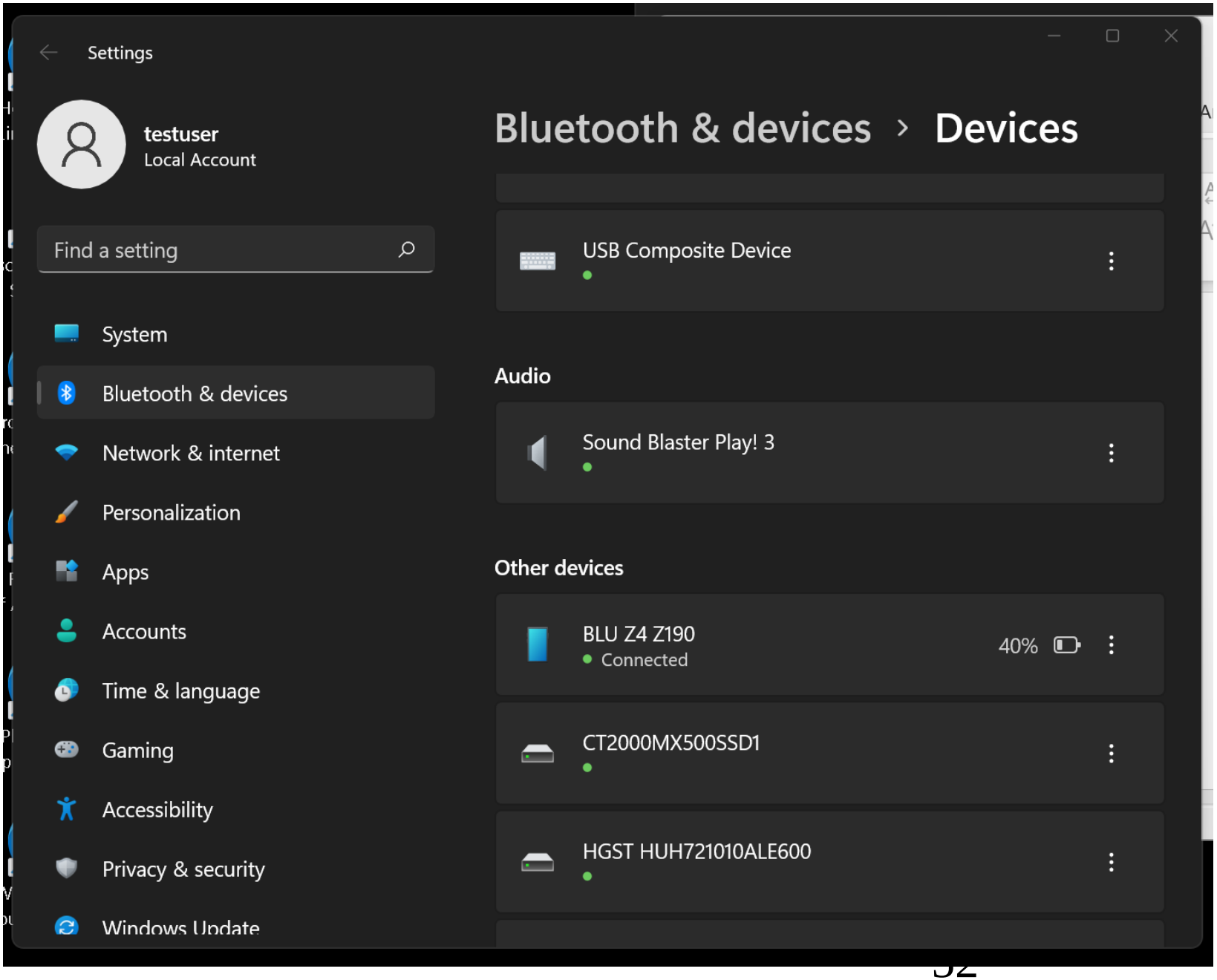
MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10"

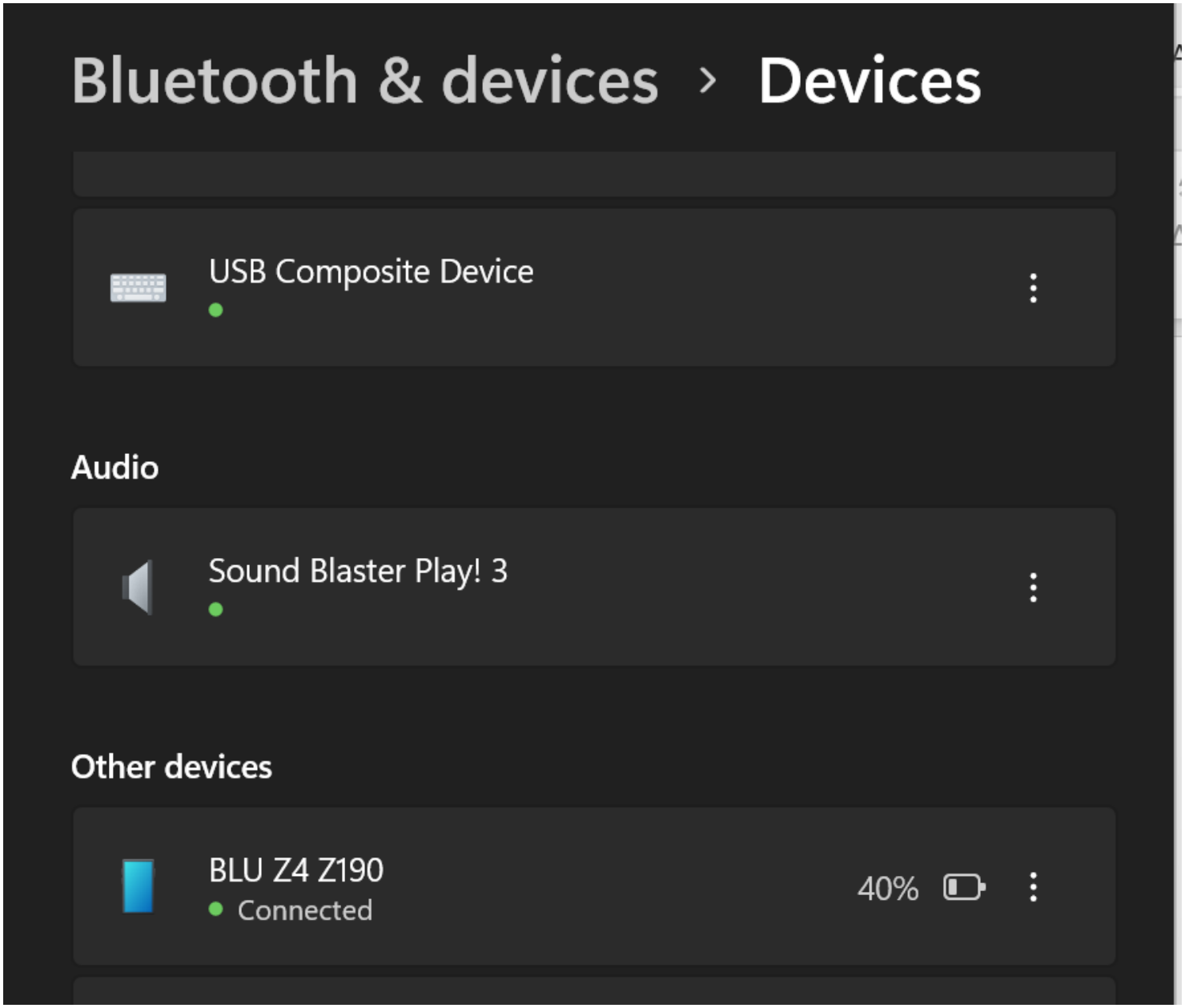
- "Paired" does not imply "connected": "Paired" means that a Bluetooth connection is possible. "Connected" means that an actual Bluetooth connection between the computer and the cell phone exists. To get the cell phone's audio into the sound card of the computer, "Connected" is required.

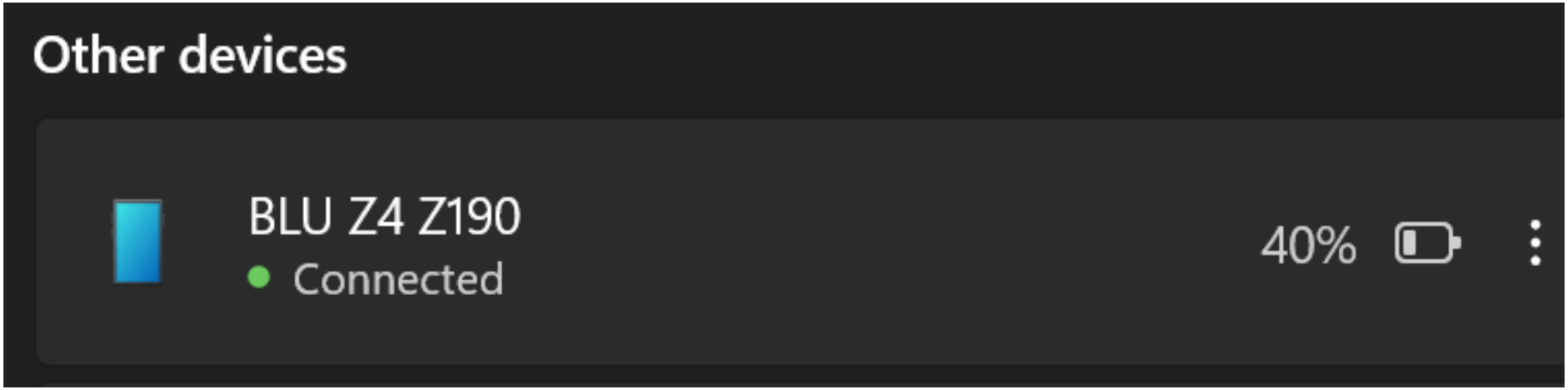

BLU Z4 Z190
20:59
5G 85%
Connections
Wi-Fi
Wi-Fi Calling
Bluetooth
NFC and contactless payments
Airplane mode


Settings
testuser
Local Account
Find a setting
System
Bluetooth & devices
Network & internet
Personalization
Apps
Accounts
Time & language
Gaming
Accessibility
Privacy & security
Windows Update
Bluetooth & devices › Devices
USB Composite Device
Audio
Sound Blaster Play! 3
Other devices
BLU Z4 Z190
Paired
40%
CT2000MX500SSD1
HGST HUH721010ALE600


Other devices
BLU Z4 Z190
Paired
40%

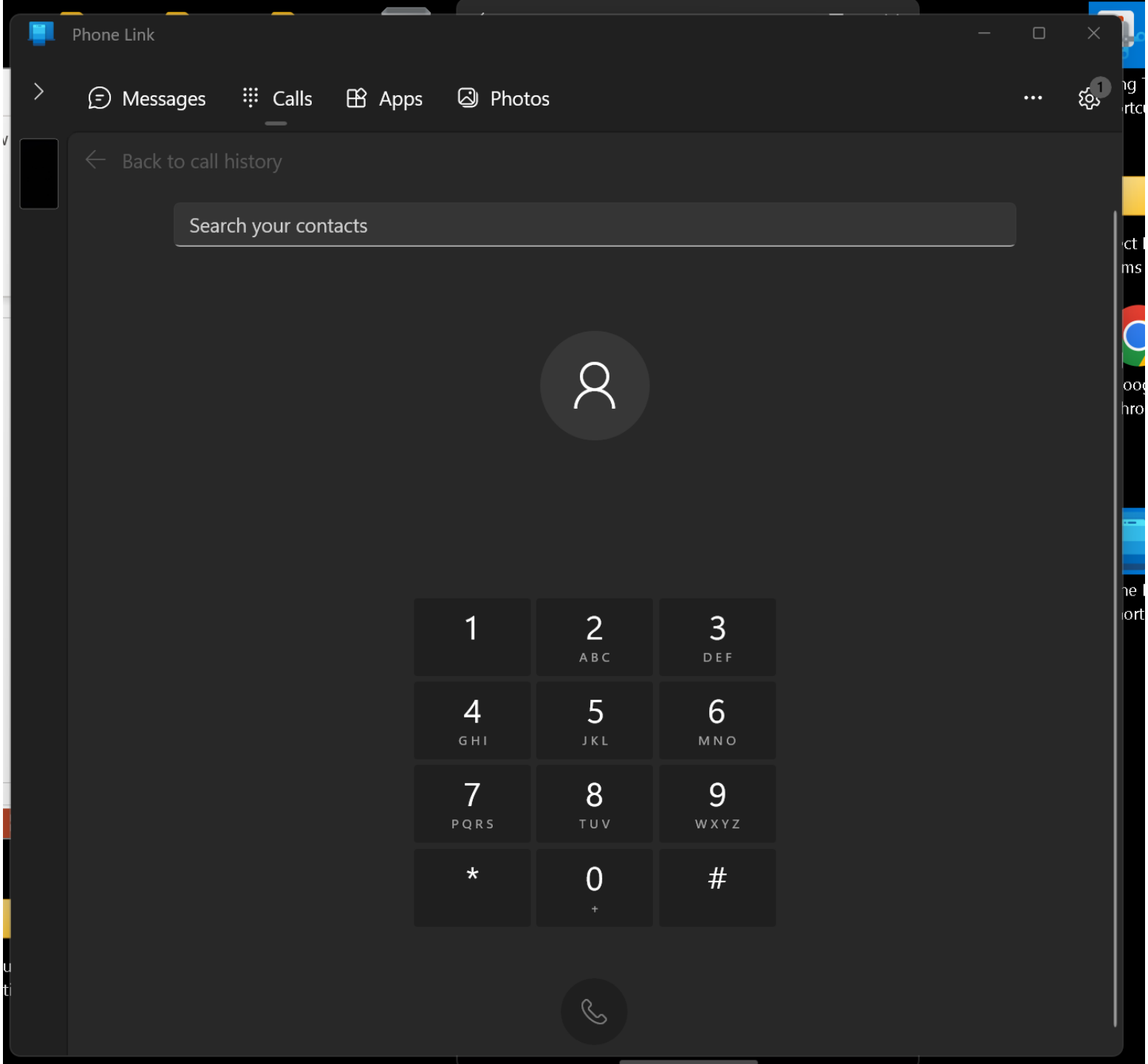

Settings
testuser
Local Account
Find a setting
System
Bluetooth & devices
Network & internet
Personalization
Apps
Accounts
Time & language
Gaming
Accessibility
Privacy & security
Windows Update
Bluetooth & devices › Devices
USB Composite Device
Audio
Sound Blaster Play! 3
Other devices
BLU Z4 Z190
Connected
40%
CT2000MX500SSD1
HGST HUH721010ALE600


Bluetooth & devices › Devices
USB Composite Device
Audio
Sound Blaster Play! 3
Other devices
BLU Z4 Z190
Connected
40%


Other devices
BLU Z4 Z190
Connected
40%

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10"

- When you click on the "Calls" tab, if the computer and the cell phone are "paired" already as part of a "Bluetooth" "Personal Area Network", they will become "connected" and a keypad will be displayed in the "Calls" tab:

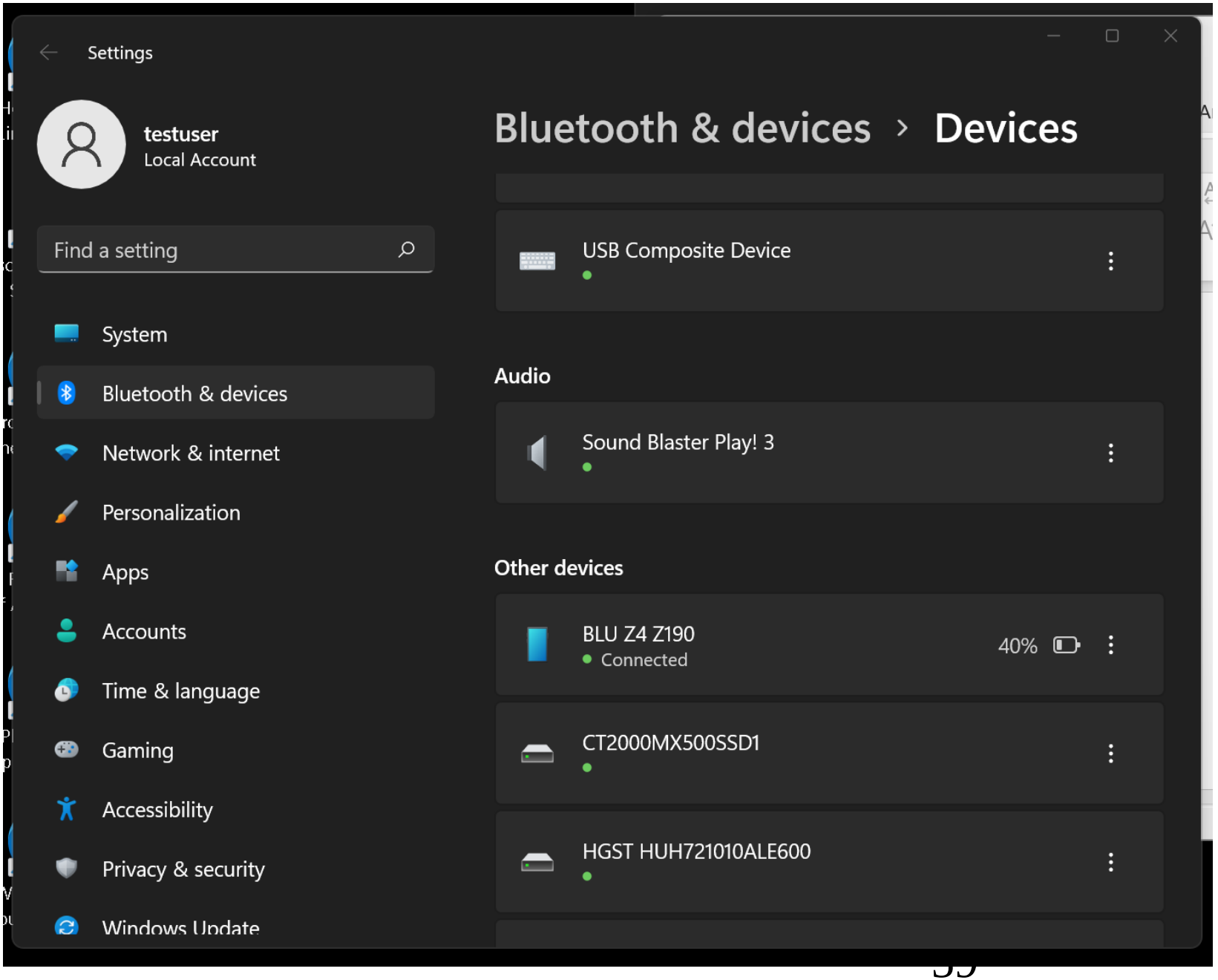

Phone Link
Messages
Calls
Apps
Photos
Back to call history
Search your contacts
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
*
0 +
#

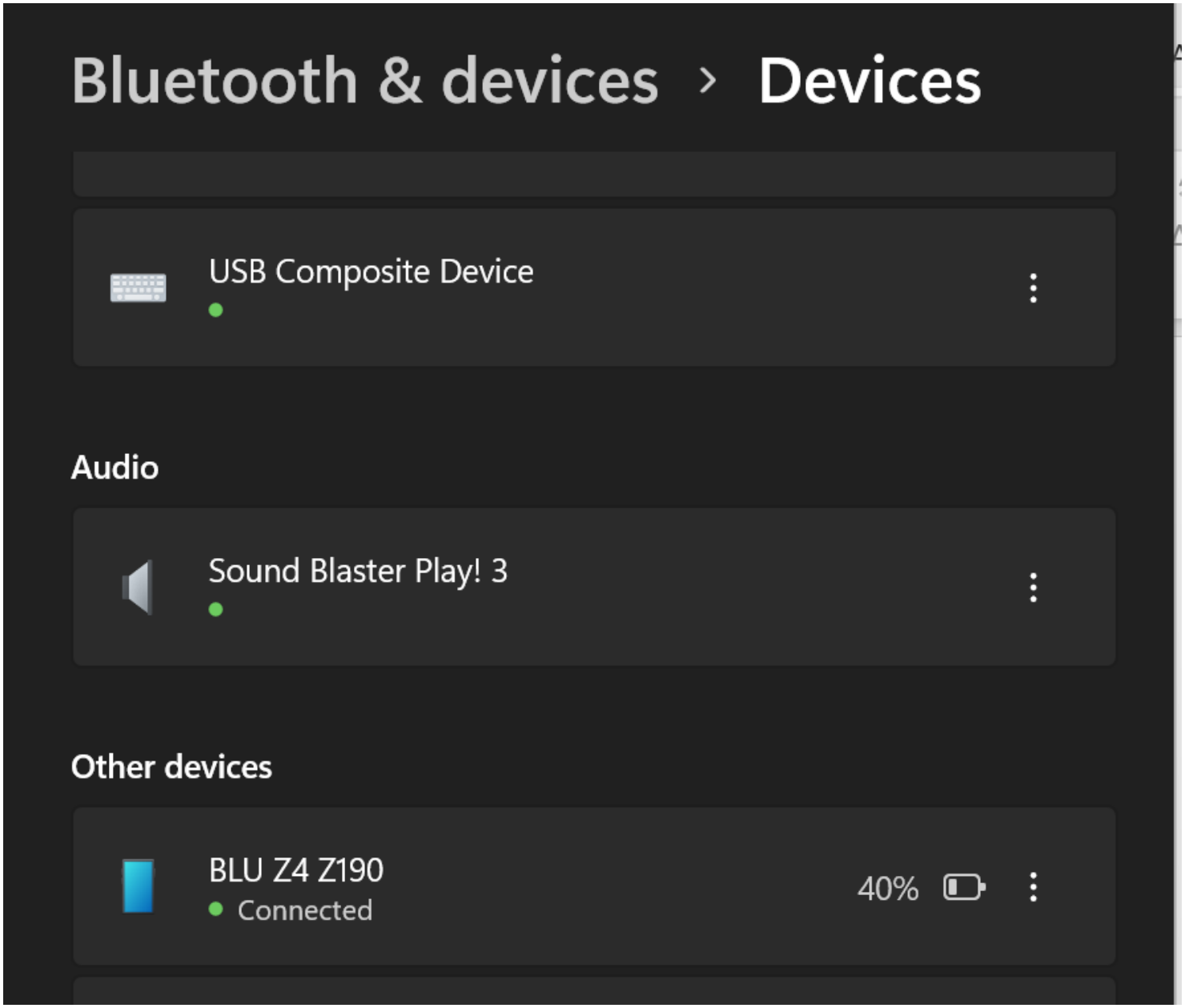
MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10"

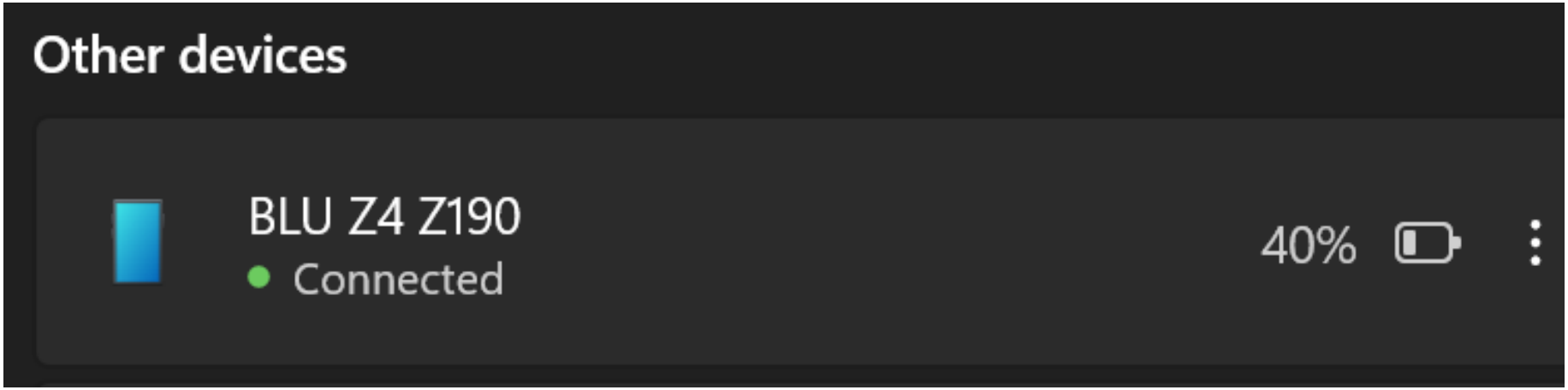
- When you click on the "Calls" tab and no keypad is displayed there, it means:
  1. There is no Bluetooth connection between the cell phone and the PC.
  2. The cell phone's speaker and microphone audio is not being routed to the sound card of the PC.

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10"

- Some of the optional apps that are installed into Android phones will block Bluetooth connection attempts between the phone and a computer so you might need to uninstall them: "Airdroid", "MyAsus", "Samsung Dex", etc.


Settings
testuser
Local Account
Find a setting
System
Bluetooth & devices
Network & internet
Personalization
Apps
Accounts
Time & language
Gaming
Accessibility
Privacy & security
Windows Update
Bluetooth & devices › Devices
USB Composite Device
Audio
Sound Blaster Play! 3
Other devices
BLU Z4 Z190
Connected
40%
CT2000MX500SSD1
HGST HUH721010ALE600


Bluetooth & devices › Devices
USB Composite Device
Audio
Sound Blaster Play! 3
Other devices
BLU Z4 Z190
Connected
40%


Other devices
BLU Z4 Z190
Connected
40%

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10"

- Cannot initiate phone calls from the phone screen image in "Phone Link" if you want to use the PC's speaker and Microphone audio for phone calls.
- If you initiate phone calls from the phone screen image in "Phone Link", you will have to use the phone's speaker and microphone

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

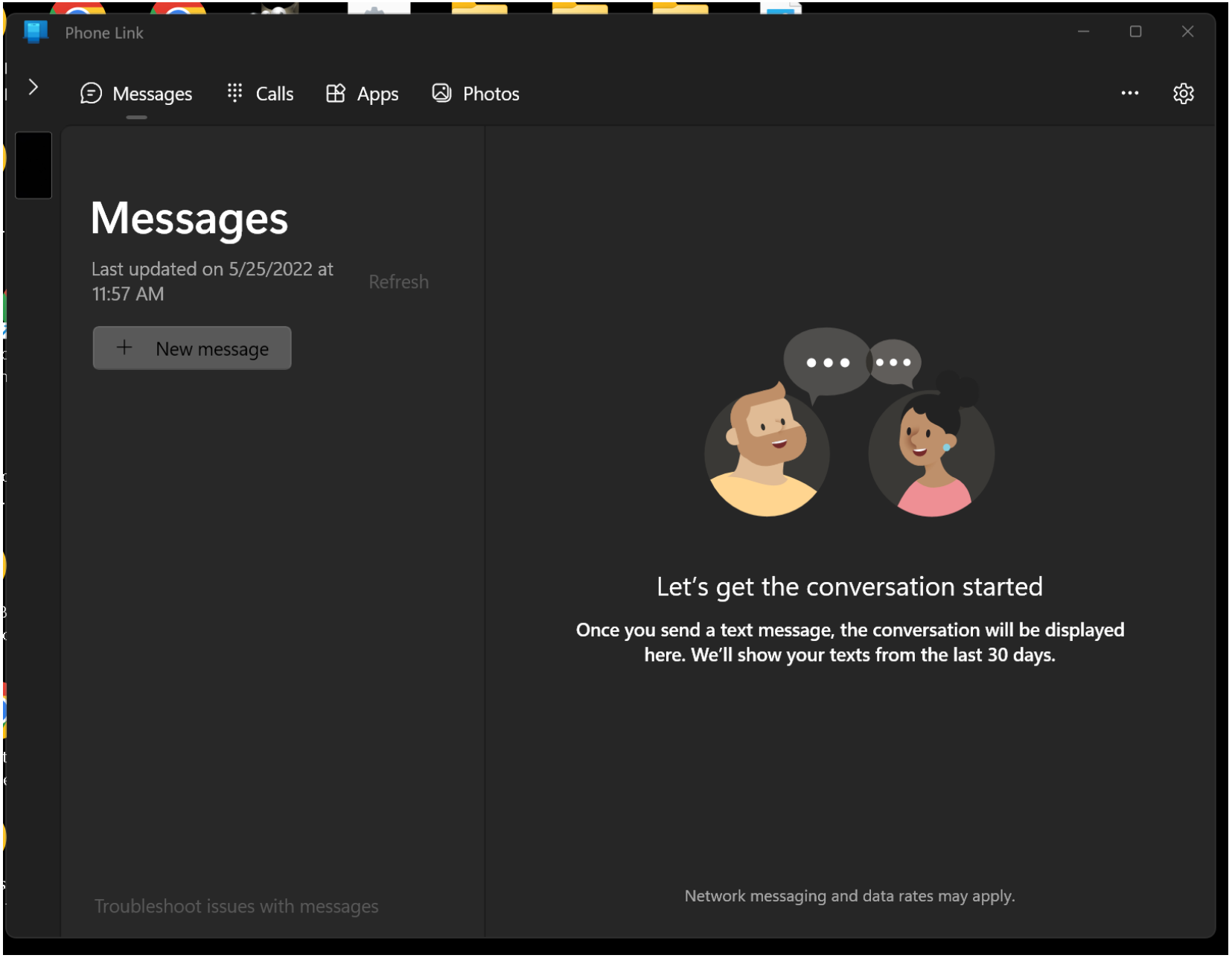
- Prior to using the "Phone Link"/"Link to Windows" app pair: Make sure that "Bluetooth" is turned on in Settings/Connections inside the Android Phone.
  Then make sure that Bluetooth is active in the Windows.. computer

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- From inside the Windows.. computer, start up the bundled "Phone Link" app:
  You get 4 tabs:
  Messages, Calls, Apps, Photos:

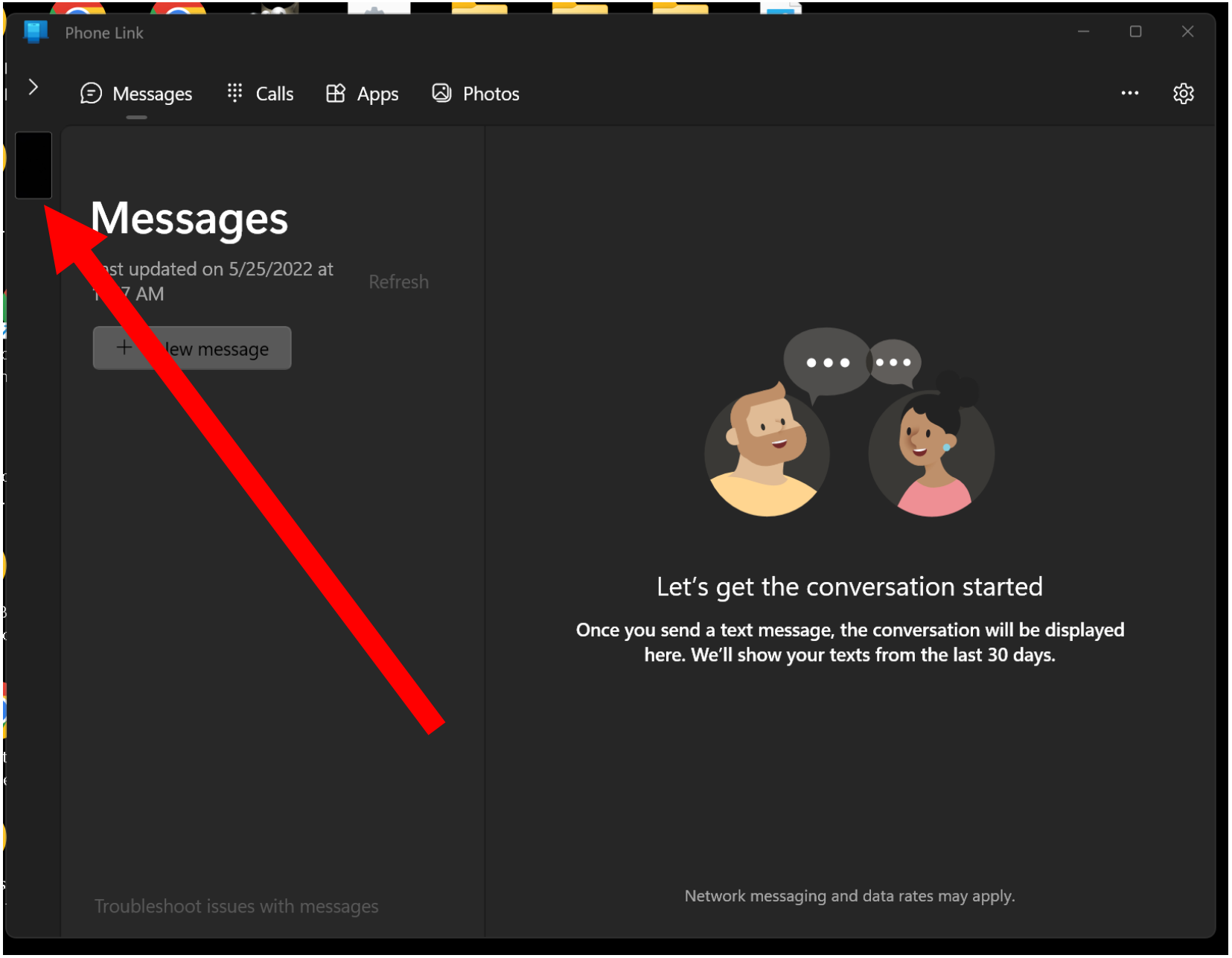
MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

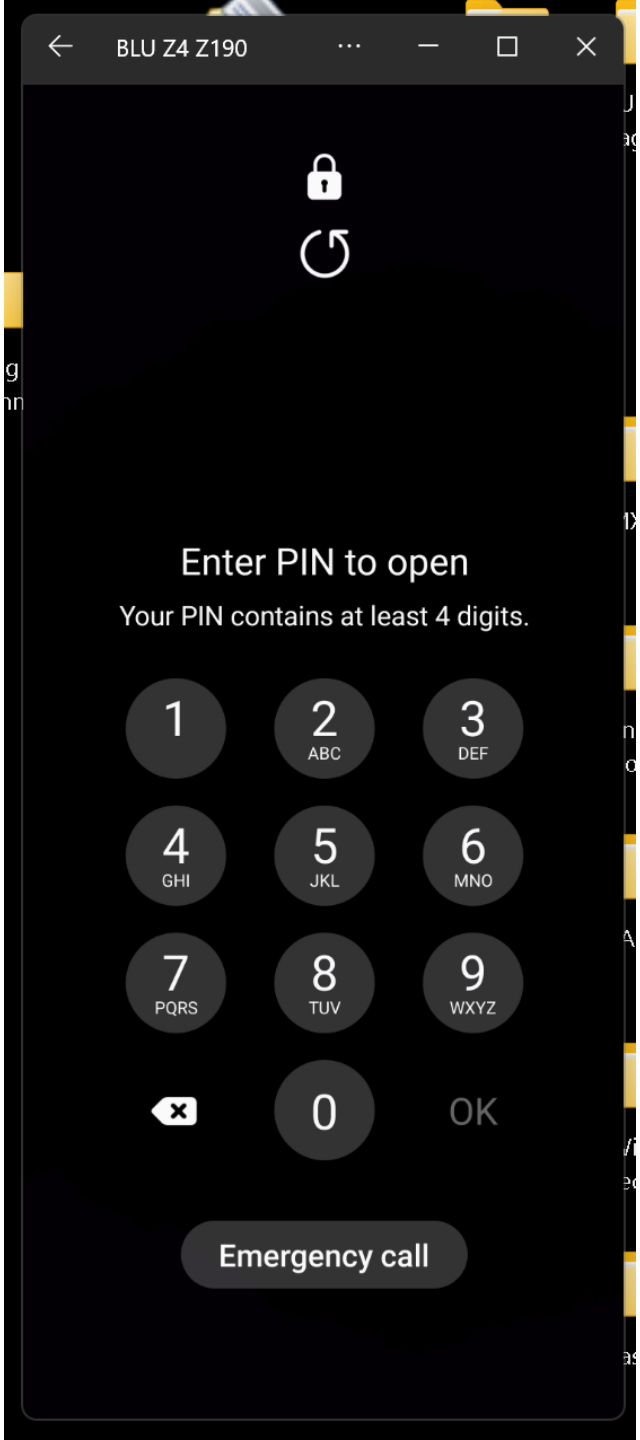
- From inside the Windows.. computer, start up the bundled "Phone Link" app:
  You get 4 tabs:
  Messages, Calls, Apps, Photos:

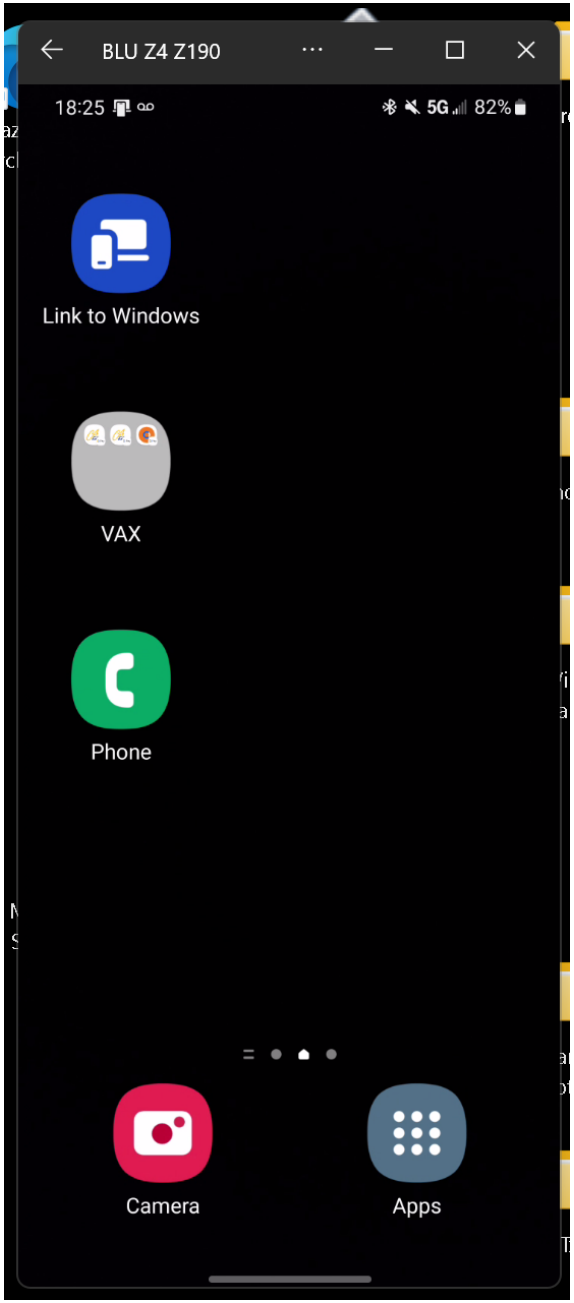

Phone Link
Messages
Calls
Apps
Photos
Messages
Last updated on 5/25/2022 at 11:57 AM
Refresh
New message
Troubleshoot issues with messages
Let's get the conversation started
Once you send a text message, the conversation will be displayed here. We'll show your texts from the last 30 days.
Network messaging and data rates may apply.

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- To get a display of the phone's screen click on the dark rectangle in the upper-left corner of the window:

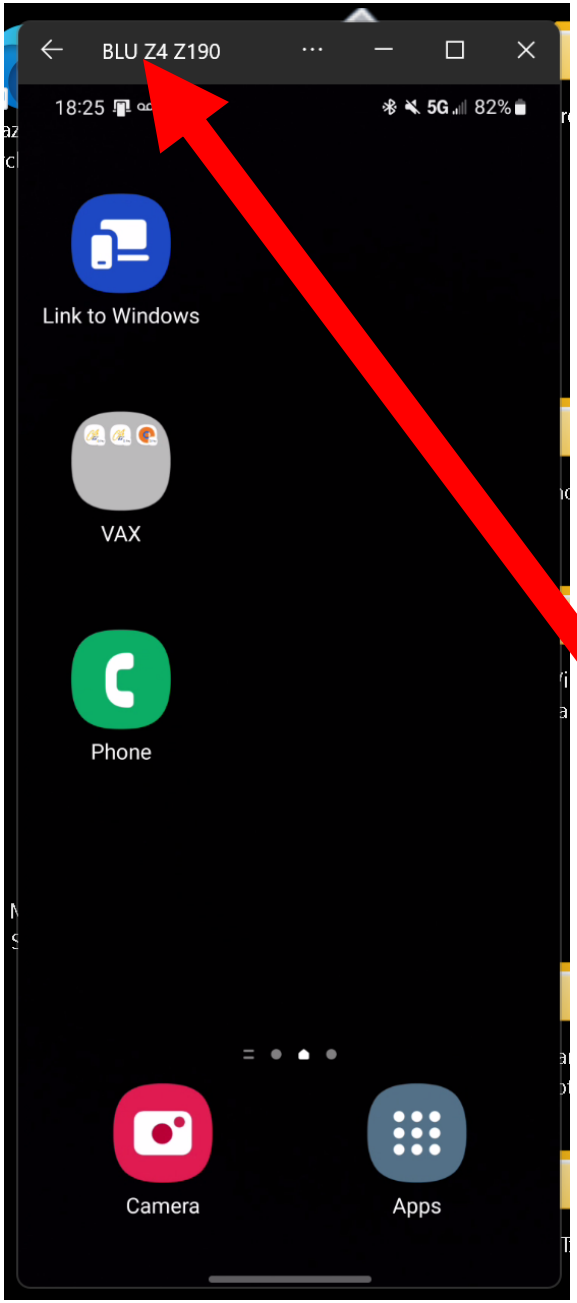

Phone Link
Messages
Calls
Apps
Photos
Messages
st updated on 5/25/2022 at
7 AM
Refresh
lew message
Troubleshoot issues with messages
Let's get the conversation started
Once you send a text message, the conversation will be displayed here. We'll show your texts from the last 30 days.
Network messaging and data rates may apply.


BLU Z4 Z190
Enter PIN to open
Your PIN contains at least 4 digits.
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
0
OK
Emergency call


BLU Z4 Z190
18:25
5G
82%
Link to Windows
VAX
Phone
Camera
Apps

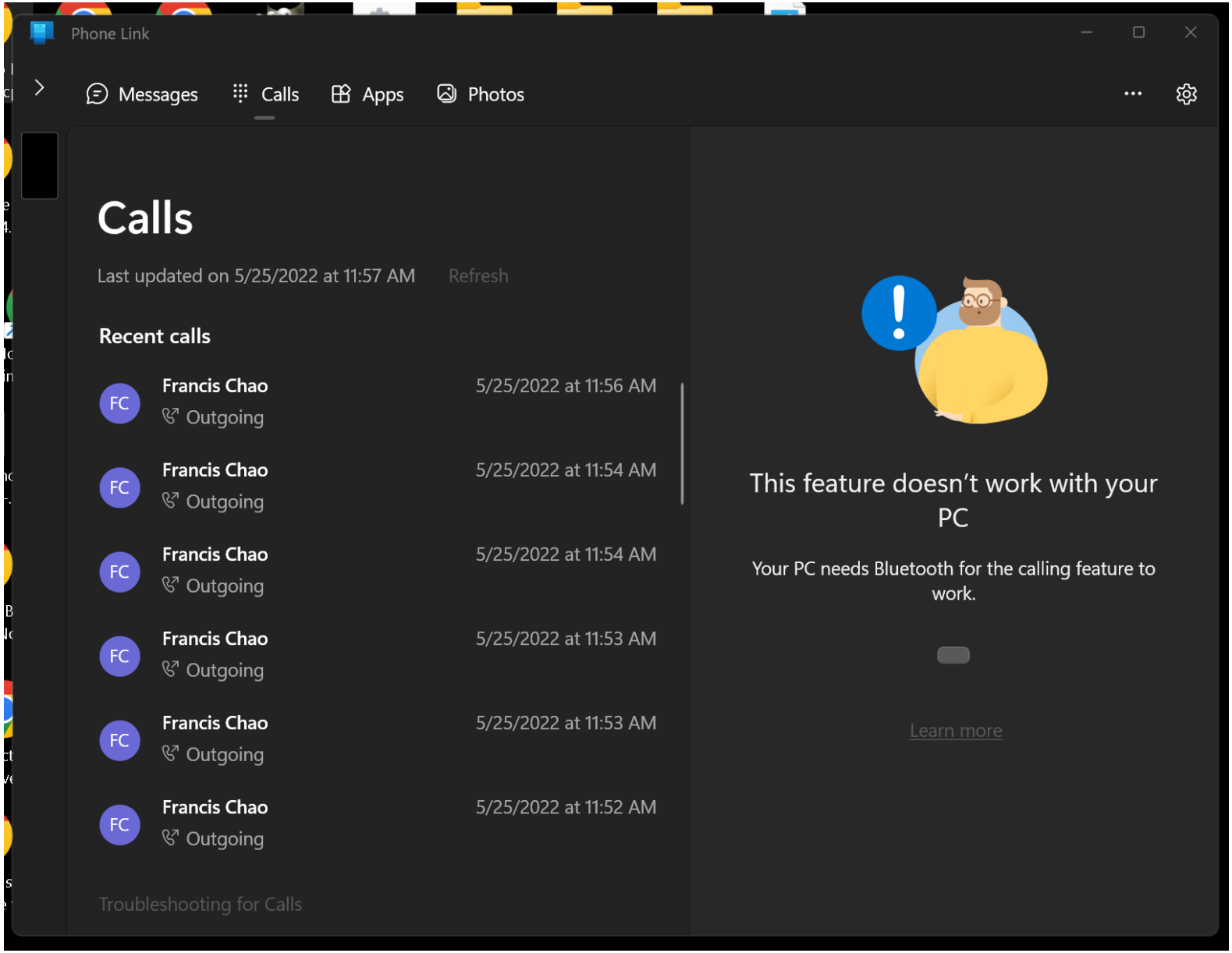
MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- To move the phone screen windows, drag the name of the phone:


BLU Z4 Z190
18:25
5G
82%
Link to Windows
VAX
Phone
Camera
Apps

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

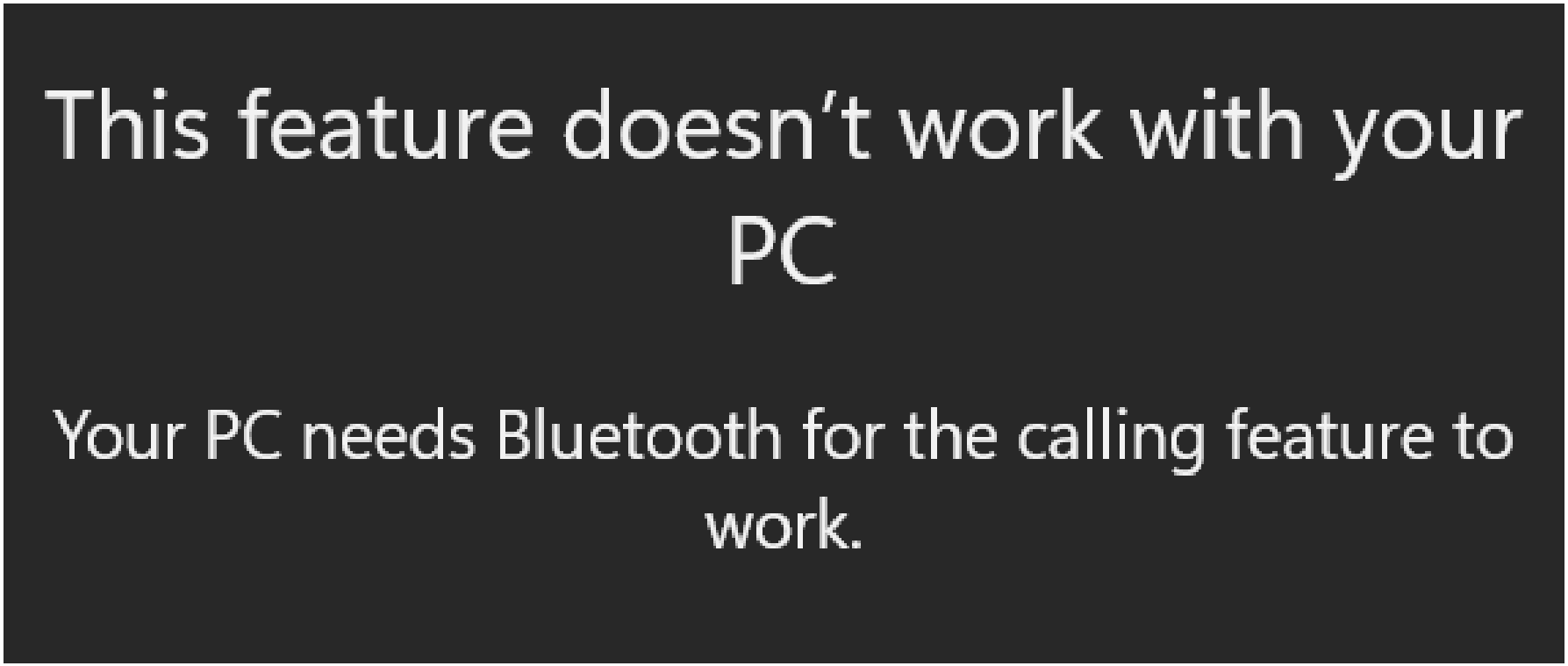
- When you click on the "Calls" tab of the "Phone Link" app, it only shows you it's large key pad when you the "Phone Link" app is able to send the phone's microphone and speaker audio to the microphone and speaker of your computer.


Phone Link
Messages
Calls
Apps
Photos
Calls
Last updated on 5/25/2022 at 11:57 AM
Refresh
Recent calls
FC
Francis Chao
Outgoing
5/25/2022 at 11:56 AM
FC
Francis Chao
Outgoing
5/25/2022 at 11:54 AM
FC
Francis Chao
Outgoing
5/25/2022 at 11:54 AM
FC
Francis Chao
Outgoing
5/25/2022 at 11:53 AM
FC
Francis Chao
Outgoing
5/25/2022 at 11:53 AM
FC
Francis Chao
Outgoing
5/25/2022 at 11:52 AM
Troubleshooting for Calls
This feature doesn't work with your PC
Your PC needs Bluetooth for the calling feature to work.
Learn more

This feature doesn't work with your PC

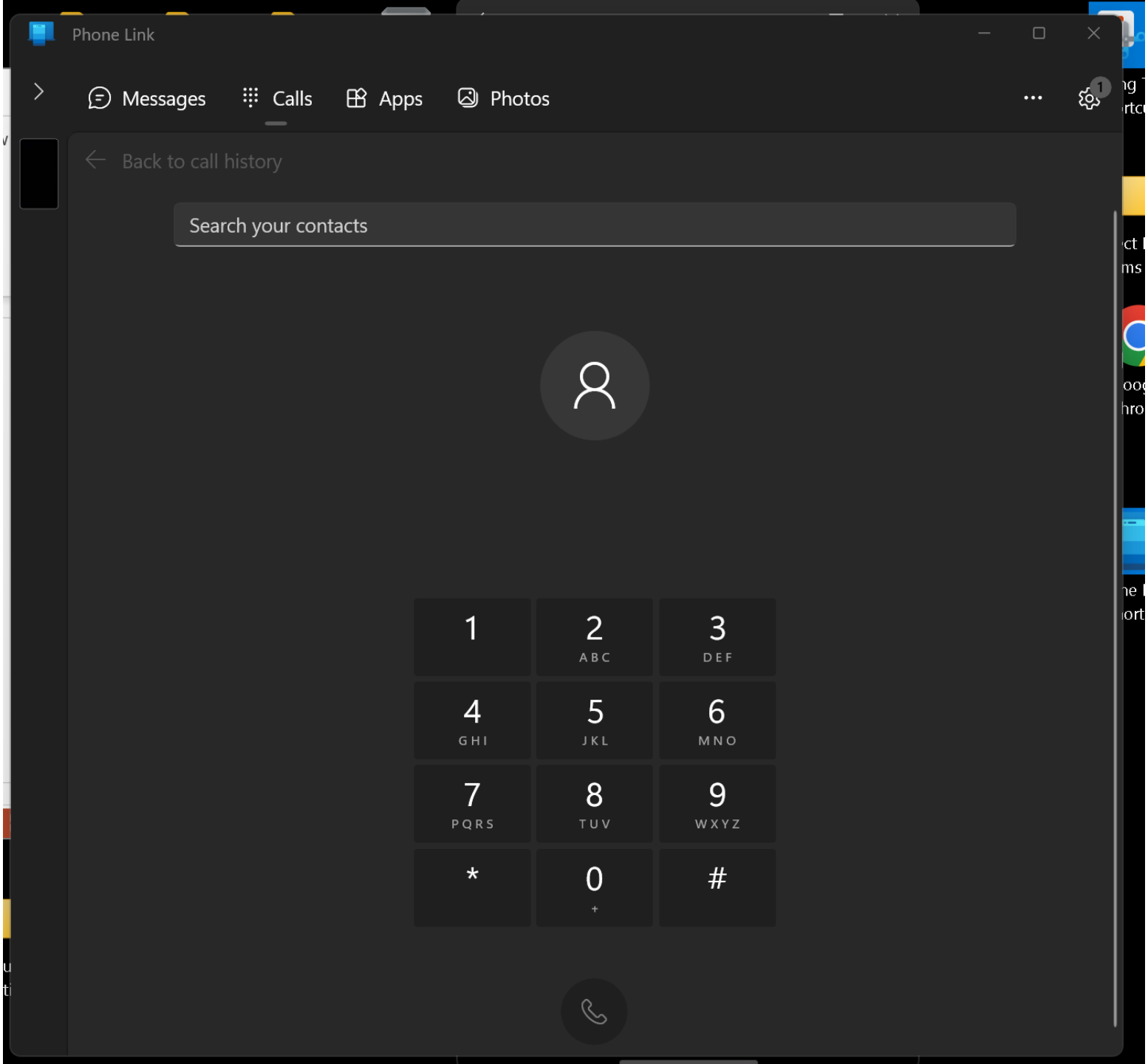
Your PC needs Bluetooth for the calling feature to work.

Learn more


This feature doesn’t work with your PC
Your PC needs Bluetooth for the calling feature to work.

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- When you click on the "Calls" tab of the "Phone Link" app, you will be asked if you wish to connect the phone to the PC via Bluetooth. If you do so, the speaker and microphone audio of the phone is active via Bluetooth for making and receiving phone calls from the microphone and speaker of your


Phone Link
Messages
Calls
Apps
Photos
Back to call history
Search your contacts
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
*
0 +
#

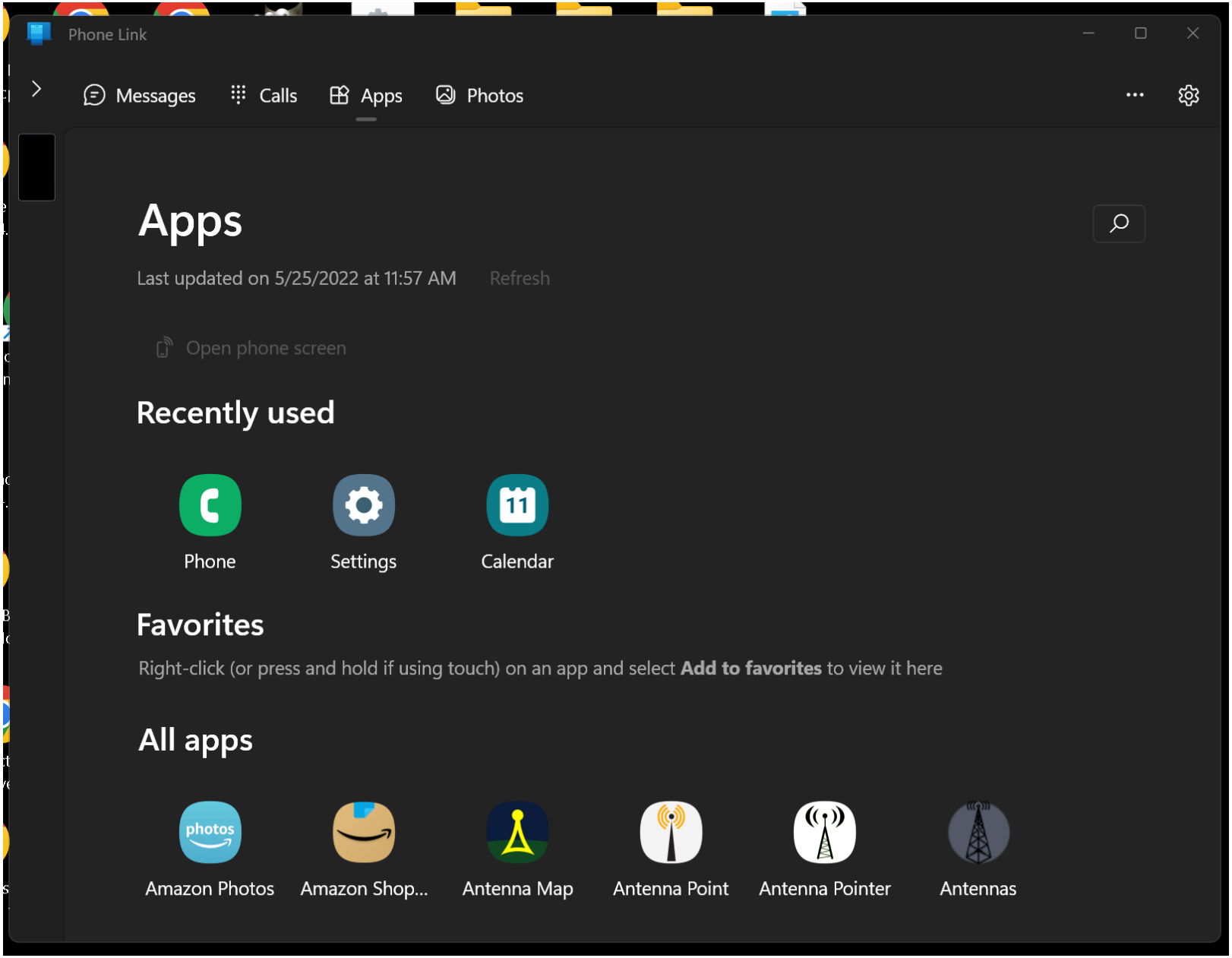
MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- If you grant this request, the actual hardware speaker and microphone of the phone will be muted when you use the keypad in the Calls tab and you will have to use the microphone and speakers of the computer to talk and listen to the audio of the phone

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10"

- If you click on an app inside the Apps tab, a usable screen image of the app will be displayed. However, do not click on the "Phone" app, since you should use the "Phone" app from either the Calls tab or the phone screen that is displayed when you click on the "Phone screen" button.

(continued)


Phone Link
Messages
Calls
Apps
Photos
Apps
Last updated on 5/25/2022 at 11:57 AM
Refresh
Open phone screen
Recently used
Phone
Settings
Calendar
Favorites
Right-click (or press and hold if using touch) on an app and select Add to favorites to view it here
All apps
Amazon Photos
Amazon Shop...
Antenna Map
Antenna Point
Antenna Pointer
Antennas

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

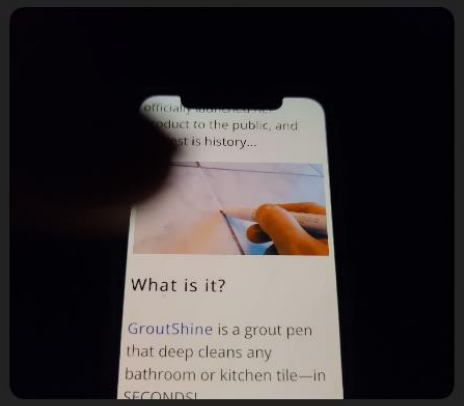
- Enable "Cross device copy or paste" to copy photos from the PC to the default "Photos" location in the cell phone

Phone Link

Messages Calls Apps Photos

Photos

Last updated on 5/25/2022 at 11:54 AM Refresh



Phone number
1-714-369-7925

Model name
Galaxy S20 Ultra 5G

Model number
SM-G988U1

Serial number
R3CN20B87MR

369-

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- From the "Photos" tab, by default, you can copy photos from the cell phone to your computer.

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- Enable "Cross device copy or paste" to copy photos from the PC to the default "Photos" location in the cell phone:
  Click on "Settings".
  Click on "Features".
  Turn on "Cross-device copy and paste.

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- If you close the window of the "Phone Link" app, you will have to re-start the "Phone Link" app. Some Windows.. users will find it handy to have a shortcut to the "Phone Link" app on the Desktop:

MICROSOFT'S "PHONE LINK" FROM INSIDE "WINDOWS 11" OR "..10" (continued)

- To make a shortcut to "Phone Link" on the Windows "Desktop":
- Right click on the Start button, click on "Run", type in shell:appsfolder
  Click on "OK"
  Left click on "Phone Link"
  Click on "Create shortcut"

TEXTING FROM THE "PHONE LINK" APP IN WINDOWS 11 OR 10

- Three ways:
  1. From the "Messages" tab where the Enter key of the keyboard sends the text message
  2. From the "Apps" tab
  3. From the phone screen display when the Enter key just drops you down to a new line

"PHONE LINK" WORKS OVER A CELLULAR DATA PLAN

- "Phone Link" works through Microsoft's servers over a cellular data plan if your cell phone does not have a Wi-Fi connection to a Wi-Fi router
- "Phone Link" over cellular data plan only works if Wi-Fi setting is disabled in cell phone's "Settings"

MISINFORMATION CORRECTED!

- "Totally erroneous info about connecting both Android cell phone and computer to the same "Wireless Access Point":
  It should say "Connect to the same local router" instead:

BLU Z4 Z190
Connect to the same Wi-Fi
To use Phone screen on your PC, make sure your Android device and PC are connected to the same Wi-Fi.
Try again
Learn more

Phone Link

Messages Calls Apps Photos

Sync over Wi-Fi or mobile data
To sync with your PC, your Android phone needs to connect over Wi-Fi or your mobile data plan. On your Android phone, go to **Settings** > **Advanced features** > **Link to Windows** and turn on **Use mobile data** to connect through your data plan.

Messages

Refresh

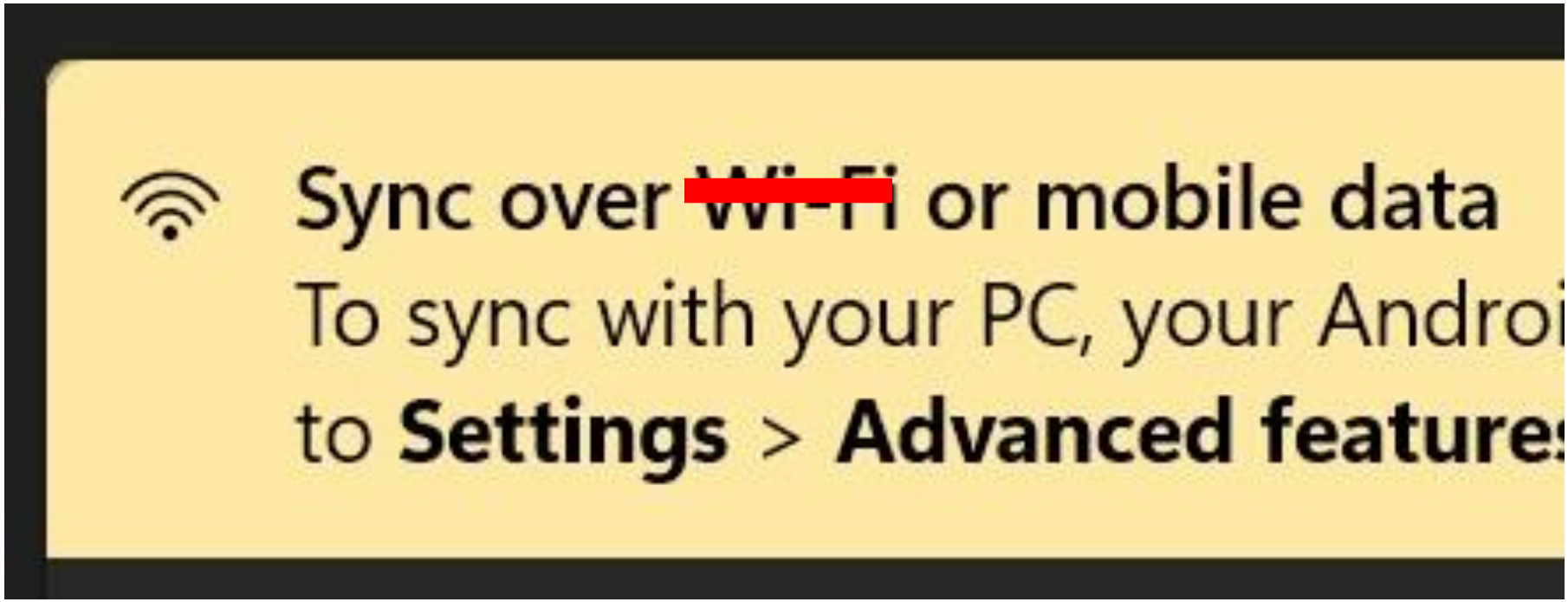
+ New message

Let's get the conversation started

Once you send a text message, the conversation will be displayed here. We'll show your texts from the last 30 days.

Troubleshoot issues with messages

Network messaging and data rates may apply.


Sync over Wi-Fi or mobile data
To sync with your PC, your Androi
to Settings > Advanced features

ADDITIONAL POSSIBILITIES

- https://www.howtogeek.com/430466/how-to-mirror-and-control-your-android-phone-on-any-windows-pc/