

Terminal Mode (TM) / Access Point (AP) Mode with G3 Gateways and XLX299.

Tested 27/08/2024 - by John Wysocki - ZL2TWS

The Icom radios used for this article were the IC-705 and IC-9700.

Similar settings will be used on the ID-4100, ID-50, ID-31 Plus, ID-51 Plus2, ID-52, ID-52A Plus (60th) and IC-905 models.

On your radio do the following:

Menu>Set>My Station>My Call Sign: ZLxxxx (Replace xxxx with your call sign)

Menu>Set>My Station>TX Message: Terminal Mode (Identifies your station after connection)

On the IC-705 Menu>Set>WLAN Set and turn WLAN On.

For Terminal Mode (TM) select Connection Type>Station to (Connect to Network)

For WiFi Access Point (AP) select Access Point (Connect to Phone, PC) (IC-705 only)

Connection Settings (Station)>Access Point and wait for WiFi signals to be scanned.

Choose the WiFi connection to use and enter the password. (IC-705 only)

Note:

Access Point for WiFi connection should not be confused with AP Mode used by the radio.

Push the exit button a few times to return to the radio dashboard.

Menu>DV GW>Gateway Select>Internal Gateway (WLAN) or External Gateway USB (B)

Note:

External Gateway USB (B) is used with Android Phone RS-MS3A App, Windows PC RS-MS3W APP, Windows PA7LIM Doozy program, and all via the USB (B) type cable.

Internal Gateway Settings>Gateway Repeater (Server IP/Domain) enter in the G3 gateway address. For example w6hro.dstargateway.org

Internal Gateway Settings>Terminal/AP Call Sign enter your registered TM or AP call sign with suffix A or F. (ZLxxxx A or ZLxxxx F) These A and F suffix call signs need to be registered.

Internal Gateway Settings>Gateway Type select Global

Internal Gateway Settings>UDP Hole Punch. Use if you have difficulty forwarding via port 40000 to 40002. Hole punch is supposed to automate this.

The following are G3 Gateways that can be entered into a compatible Icom D-Star radio using the “Gateway Repeater (Server IP/Domain)” section of the “Internal gateway Settings” menu.

Note: The G3 gateway router required ports 40000, 12345 and 12346 to be open to the gateway.

ZL2VH: 123.255.47.67

ZL3CHD: zl3chd.dstargateway.org

VK3RWN: vk3rwn.dstar.fun

VK5RWN: vk5rwn.arez.org.au

ZL1ZLD: spamnz.zapto.org

VE7RCK: ve7rck.dstargateway.org

W6HRO: w6hro.dstargateway.org

After connection to a G3 gateway the radio can have /ZL2VH C entered as a direct UR: or selected from the "Gateway CQ" > "Oceania" menu.
If your radio has the "MONI" function (RPT MONI), then enable this.

Note: To use RPT MONI a file called Repeater List has to be downloaded from Icom.
Download the IP address list file (Example: RepMoni_sample.csv) from the Icom website.
<https://www.icomjapan.com/support/>
For IC-705:
https://www.icomjapan.com/support/firmware_driver/3709/
For IC-9700:
https://www.icomjapan.com/support/firmware_driver/3746/

You can monitor a repeater that is selected in "TO" (Destination) through the Internet. While monitoring, you can receive traffic from a repeater that is selected in "FROM." You need a microSD card and an Internet connection to use the DV Repeater Monitor function. You can use this function while displaying the Destination Repeater (DR) screen or in TM mode. Some repeaters cannot be monitored however I did add XLX299 xlx299.nz and XRF757 xrf757.openquad.net to the bottom of the RepMoni_sample.csv list and reinserted into the IC-705. MONI became live when I use /XLX299J in the "TO" as a Direct Input (RPT) entry.

How to load this file after download and editing:

Copy the RepMoni_sample.csv file into the "IC-705" > "RptMoni" folder on the microSD card. Insert the microSD card into the transceiver.
Power on the transceiver.
Open the "Connection IP Address List" screen by doing the following:
SET >DV Repeater Monitor Set >Connection IP Address List.
Touch the file to use then to close the DV REPEATER MONITOR SET screen, push EXIT several times.

IC-705 and IC-9700 have this option providing the firmware for IC-705 has V1.32 and IC-9700 has >V1.40) (Currently at V1.44)
MONI allows any traffic on the local repeater to pass directly to the radio otherwise RF users typically need to push RX>CS to return the call. Remote user is linked as a DPlus DV Dongle.

If a valid G3 server connection is established the connection will show as a Remote User>Type DV Dongle and MONI will illuminate to show the network is valid.
On the destination gateway your call sign will be seen as a listening remote DV Dongle user.
When using the RS-MS3W (V1.31) the DV Dongle remote user connection is not shown.

When using the IC-705 or IC-9700, first key up and watch the gateway dashboard to check for a gateway link to be established.
If passing through the G3 network to other gateways and a red **X** is seen at any time, (the top section next to the cloud icon), then this will indicate a network error connecting to that gateway.

PTT to hear yourself talking out of ZL2VH C via one of the Gateway servers or when directly connected to ZL2VH.

Note: While editing a message "The Terminal Mode is Running" might be displayed. Turn this off by selecting "<<Normal Mode>>" to complete editing. Then select "<<Terminal Mode>>" again.

Icom RS-MS3W (V1.31) - Windows or RS-MS3A (V1.41) - Android phone App

This software can be used via a USB cable to a PC or phone. The information on screen is better to understand and use than displayed on the Icom radios. Any errors messages can be seen and gateway IP address easily changed from the keyboard. Once any problems are sorted then the same settings can be transferred to the radio set-up. You might prefer to use the radio directly via WiFi and not the USB cable arrangement.

Using Doozy software by David PA7LIM

<https://www.pa7lim.nl/doozy/>

This works perfectly on ZL2VH C after host file has ZL2VH 123.255.47.67 added to the Documents>Doozy>DPlus_Host.txt (Doozy is a substitute Hotspot equivalent)

Note: Doozy must be restarted before using it in order to load the changed host files.

Access Point Mode converts the radio into a high powered hotspot. An antenna is required and another D-Star radio such as an ID-51, ID-50 or ID-52 is used to remotely operate.

The preliminary setup for **Terminal Mode** is required to be done first, as above.

For more information download the appropriate advanced manual for the radio to be used.

XLX299: To use this reflector enter xlx299.nz as the Internal Gateway Settings> Gateway Repeater (Server IP/Domain)

In the "Direct Input (RPT)" /XLX299J should be entered or direct If XLX299 has been added to the "RptMoni" folder on the microSD card this will also be available to use.

Private Call to Call: While connected to a G3 server such as ZL2VH two stations can QSO by replacing the Gateway CQ such as /ZL2VH B with the callsign of the station you want to QSO with. For example ZL2TWS is added in the "TO" field of the radio operated by ZL2TWT. In the radio operated by ZL2TWS the "TO" field has ZL2TWT added.

The result is that these stations can QSO without appearing on the G3 dashboard or being heard on any of the gateway repeaters. This is effectively a private channel using G3 gateways only. No module number is involved so it's callsign to callsign only.

Note: Some radios may need the / in front of callsigns for the Call to Call to work. XLX299 requires /XLX299J or /XLX299B and so on to work. /XRF757A also works after entering Internal Gateway Setting IP: xrf757.openquad.net.

References:

<https://www.icomjapan.com/lineup/options/RS-MS3W/>
<https://www.icomjapan.com/support/manual/3063/>