

THE 2.4GHz WIRELESS SPIRAL

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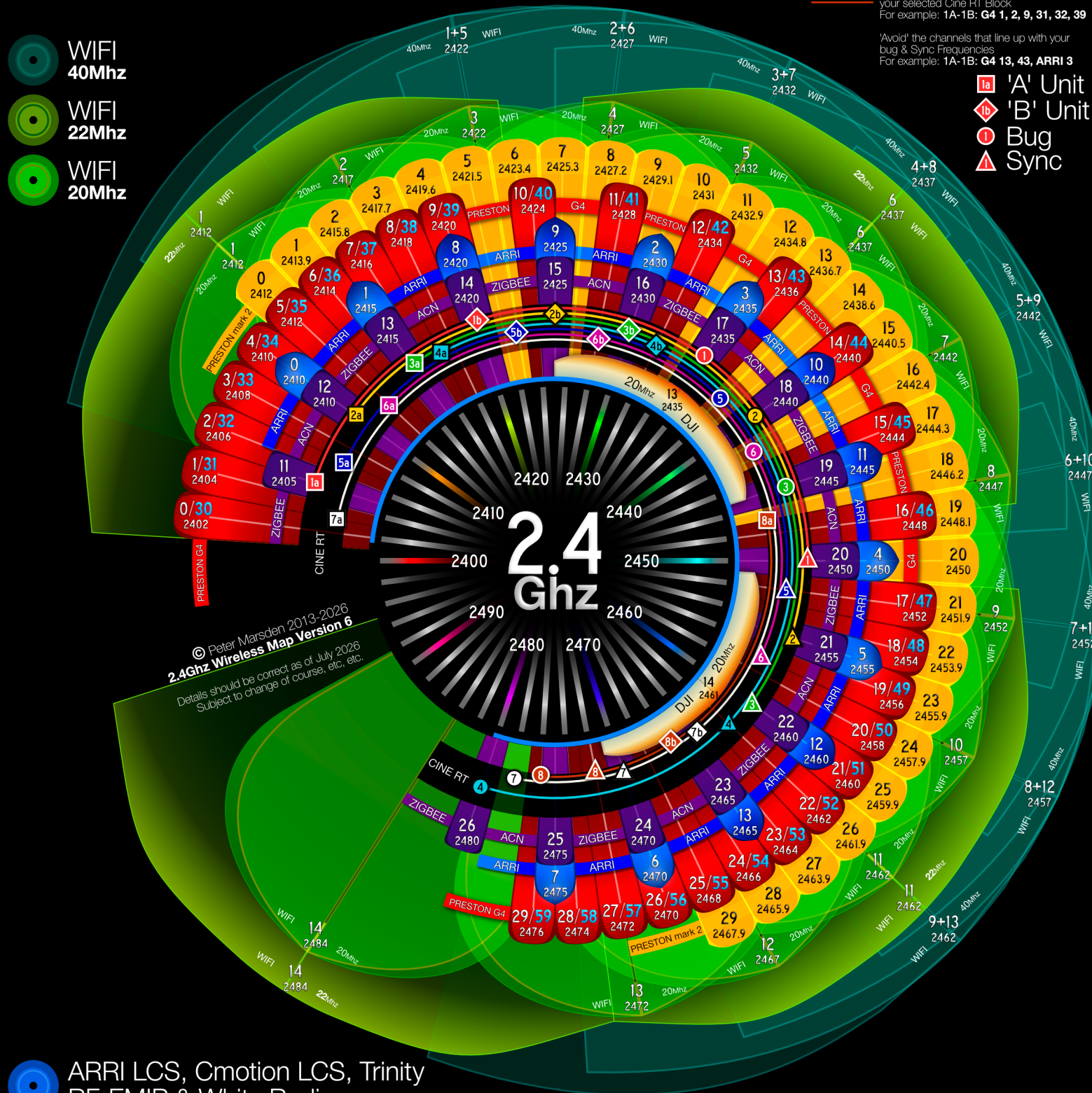
Focusbug Cine RT

'Do not use' the channels that line up with your selected Cine RT Block
For example: 1A-1B: G4 1, 2, 9, 31, 32, 39

'Avoid' the channels that line up with your bug & Sync Frequencies
For example: 1A-1B: G4 13, 43, ARRI 3

1a 'A' Unit
1b 'B' Unit
1 Bug
1 Sync

WIFI 40Mhz
WIFI 22Mhz
WIFI 20Mhz



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2.4GHz Wireless Map Version 6
Details should be correct as of July 2026
Subject to change of course, etc, etc.

ARRI LCS, Cmotion LCS, Trinity
RF-EMIP & White Radio

RF-2400 Orange Ring & ERM-2400 works on a frequency-hopping spread spectrum technology 2400-2483.5Mhz, 100 channels, but not fixed to a specific channel.
RF-900 Grey Ring & ERM-900 is similar but works on 902-928Mhz, only certified for North America & Canada, 100 channels, but not fixed to a specific channel.

ACN - Ambient Communication Network (Timecode)
also Zigbee Channels for 'IOT' devices (Zigbee also present in 868Mhz, 900Mhz)

DJI Video Transmitters
20Mhz, Channels 1-12 use 5Ghz

Bluetooth
79 x 1Mhz frequency-hopping Channels

Preston LCS
Mark 2 (HU2)

Preston LCS
G4 (HU3+, Lightranger, MDR3+)

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Teradek Video Transmitters

THE 6GHz PLAYGROUND

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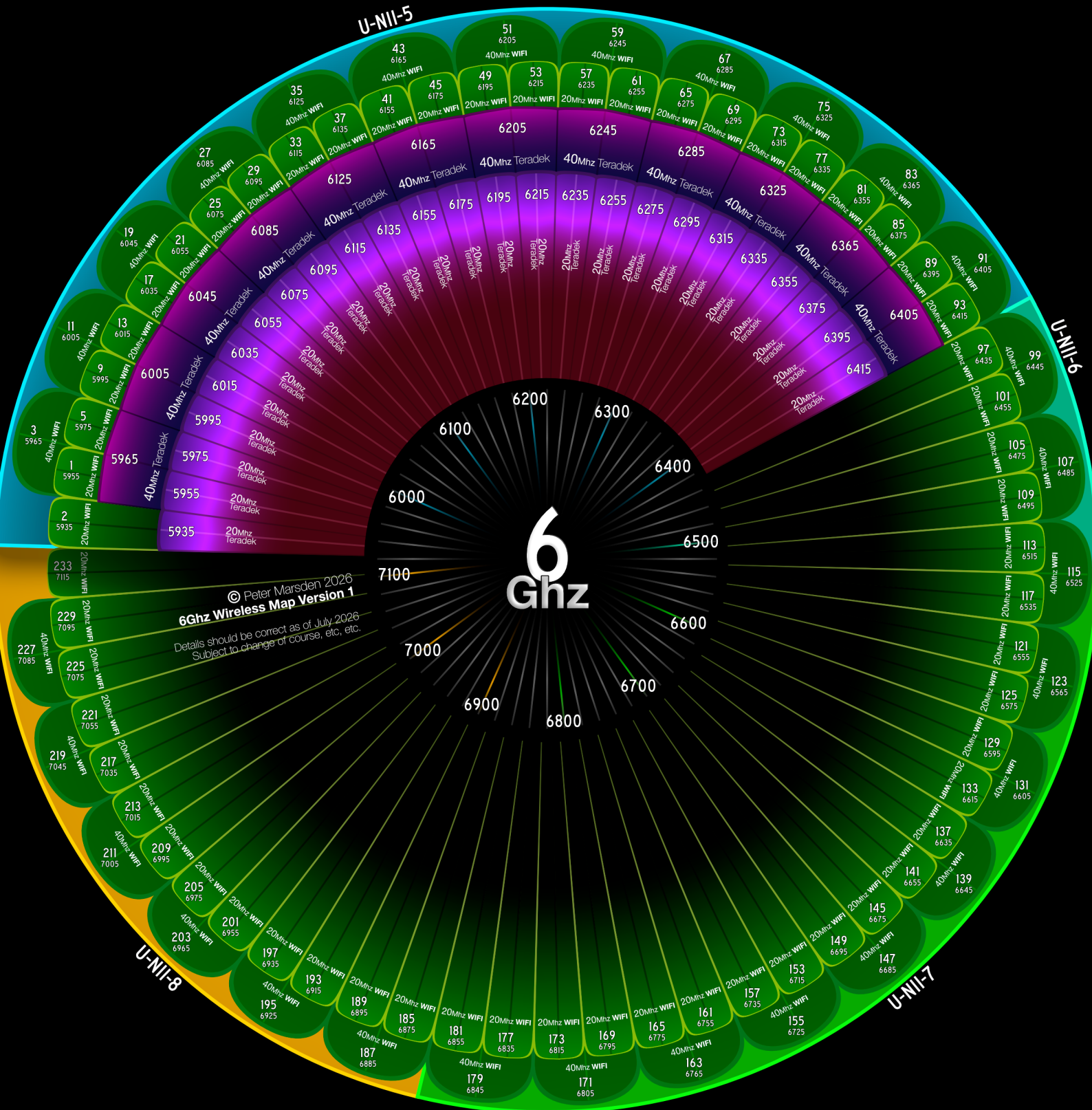
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Teradek **Bolt6** Video Transmitters
20Mhz setting

Teradek **Bolt6** Video Transmitters
40Mhz setting



Peter's Notes - based on experiences

For the individual that does not possess a scanner of the airwaves, the best use of this map is a process of elimination & experimentation.

For example, I'm having problems with my **PRESTON G4** on **Channel 4**. Maybe it could be someone nearby using **ARRI Channel 0**, perhaps if I move beyond **PRESTON G4 Channel 10**, it might work better?

Or is it WIFI? If I'm having issues on **ARRI Channel 4**, could it be that **WIFI Channel 9** is busy? If I move to **ARRI Channel 5**, I might have the same problem.

It's also useful for noting how the channels are allocated - For example, **PRESTON G4 Channel 22** is using the same frequency - 2462 Mhz - as **WIFI Channel 11** & **CINE RT Block 4 Sync**; the **PRESTON G4** channels use the same frequencies 0-29 as 30-59; the ARRI channel numbers aren't in frequency order; WIFI generally looks messy to us non-IT professionals.

Filming in a studio complex & production have some control on **WIFI**? Get them to group their channels at one end of the numbers, while you keep your channels at the opposite end?

Sometimes keeping your channel closer/on the **WIFI** channels might help - **WIFI** is designed to co-exist with each other, so the 100 crew members' phones with bluetooth turned on may want to avoid that area if it appears to be busy to the devices.

Bluetooth devices, Cordless Phones, Headset Systems will 'hop' quickly across the spectrum, & not lock to a frequency. Lots of home 'IOT' devices use the Zigbee channels.

Our Lighting Teams will use 2.4Ghz for various systems, such as 'Lumenradio', using frequency-hopping, and are sometimes able to allocate 'space' in their systems to incorporate one or two lens control channels, so they don't 'hop' across that channel.

WIFI in 2.4Ghz spectrum generally uses 20Mhz of bandwidth, some older devices 22Mhz and may bond with other channels to create a 40Mhz channel.

5Ghz can be more complex to use due to the presence of Military, Aviation, Weather Radar & other 'Mission Critical' infrastructure. Devices may need to use **DFS** - 'Dynamic Frequency Selection' - where they need to vacate a DFS channel quickly. It also requires scanning time (typically one minute) before it can set itself to a DFS channel.

Channel use Legality & Power limits vary around the world, if in doubt, please research further detail with your local authority.

For **Teradek** Systems, set your Region using the Bolt Manager or check on the **Teradek** website. Only channels permitted in that region will be accessible to the device in that instance.

Paired devices with mis-matched regions may be more unreliable, especially if the transmitter needs to vacate from a **DFS** channel and lands on a channel that one device can't access.

Some Video Transmitters appear to be more reliable if there is no WIFI networks in channels 36-40.

Each Country, Each city, Each Film Location & Studio will have different challenges & unexpected radio traffic that will affect the reliability of Video Transmitters.

A good working practise is to not fix Video Transmitters to a channel, but it'll vary depending on the manufacturer's concept. It's good not to fill the bulk of the radio channels with WIFI networks either.

Look around the location, Look around the studio, how many WIFI access points are present, and especially don't park your Video Receiver in front of an Access Point unless you want breakup (usually due to signal strength, not frequency).

Look at the local map, what's nearby? Is there a weather station, an airport, or a building complex down the street that looks a bit suspicious?

Do your own tests. Every set, sound stage, shed & location has different RF nightmares.

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2.4Ghz Wireless Map Version 6
5Ghz Wireless Map Version 1
6Ghz Wireless Map Version 6

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