



The

Broadcasters' Desktop Resource

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... edited by Barry Mishkind – the Eclectic Engineer

Broadcast Operations

The Truth About 5G Filters, and Why You Should Hold on to Your Wallet



By Karen Johnson

[May 2020] The C-Band changes are coming. The FCC is not going to stop now. As you get ready, preventing interference from the new 5G signals will be important. Should you get a filter now?

You have probably already seen them: targeted ads on the Internet urging you to protect your network by allowing said company, for a fee, to install a 5G filter for you.

These types of ads ramped up in earnest in January 2020, after the Federal Communications Commission (FCC) adopted an Order of Proposed Modification to share the Mid-Band (or C-Band spectrum) with broadcasters. Over the next five years C-Band Earth stations must either clear the spectrum or move to the upper part of the bandwidth, while 5G broadband will be in the lower 280 MHz – with 20 MHz of bandwidth as guard band in between.

In spite of a guard band being specified between 5G and C-Band users, new filters are considered a must-have for any C-Band users staying on the Mid-Band spectrum. No wonder, then, that ads

are popping up, offering to supply and install these filters to owners of C-Band downlinks.

Under the circumstances, it is a natural reaction to want to simply take care of the problem now, before interference becomes an issue.

PUMP THE BRAKES

May I offer a bit of advice? Do not fall for these advertisements; they might be a scam.

Those companies are counting on uninformed and/or overworked network engineers to jump at their offer. Their marketing is designed to tap into a sense of fear and urgency, with messages telling you, “5G is at C-Band’s doorstep. Act now!”

FULL STOP

Instead: Stop! Take a deep breath, and consider this: you may not need to spend money on a 5G filter, or even pay for a filter to be installed.

Here is why:

If your uplink and downlinks are registered with the FCC, your filters will be free.

NO CHARGE

Remember the FCC's big push in the Summer and Fall of 2018 for the registration of all C-Band downlinks in the US? Satellite operators paid a filing fee for each of the several thousand downlink antennas registered, with the understanding that these dishes would be protected from any 5G interference.

The FCC released their Order earlier this year with details as to how 5G and C-Band would share the Mid-Band frequency. Exactly how the FCC would protect C-Band incumbents was spelled out to include whatever your antenna may need – a filter, a repaint, a complete antenna replacement (if necessary), even the costs for the installer.

To reiterate: if your downlink antenna is registered, *any and all costs* associated with the re-pack – including, but not limited to a 5G filter, will be tracked by your network provider and *paid for by the FCC* with funds raised via the C-Band auction.

NOT READY FOR PRIME TIME YET

They might be touting them as 5G filters, but they are not.

They cannot be – yet.

When the FCC first approached the C-Band Alliance (CBA) about what would be needed to offset the overwhelming 5G signals in comparison to C-Band, the CBA put in months, even *years*, into developing unique design specifications for the development of these units.

And while, yes, the filter prototypes have been tested and are now in production, these highly engineered filters – specifically designed to mitigate the effects of 5G interference – have yet to be released.

When they *are* available (by mid-summer, more than likely), they will go *first* to the satellite companies, to be disbursed amongst the Earth station operators who registered their C-Band uplink and downlinks in 2018 with the FCC.

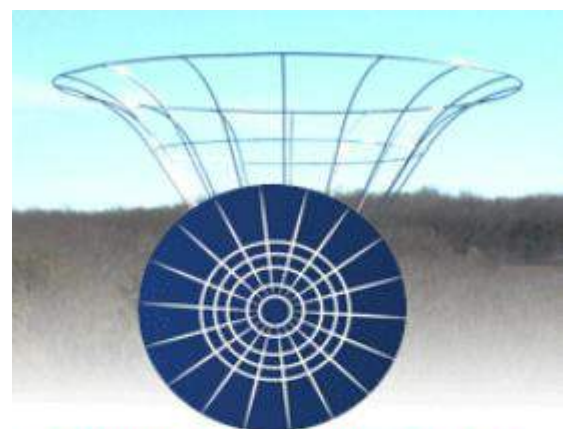
NO URGENCY

Even if 5G filters were available, there is really no urgency for you to buy one now.

The FCC has tasked the four major space station owners with repacking a large chunk of C-Band spectrum. It is a mammoth task and, in spite of an agreed upon accelerated timeline, will not be completed for years.

Satellite owners know that it will take every moment between now and scheduled clearing date of September 30, 2023, to relocate current C-Band users – first from 3.7-3.82 GHz, then 3.82-4.0 GHz.

The actual auction for the first stage of C-Band frequencies will happen in December 2020, but the first round of filter installations and – any repaints that are necessary – is not scheduled to be completed until December 2021. Then a second sweep will see the clearing of the remaining 180 MHz.



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AND PERHAPS THERE IS NO NEED!

Depending on where your antennas are located, there even is a chance you may never need a 5G filter.

It is just an educated guess, but I am thinking that 5G and their promises to connect *all* of America is just a fable, a falsehood, a pig in a poke.

By and large, broadband has indicated they will be investing in 5G in the top 46 markets. Why? Because building out the 5G infrastructure to utilize the Mid-Band spectrum requires installation of 5G equipment on telephone poles placed every 2,000 feet.

Even with subsidies from the US government, it is hard to imagine that every rural community will have access to 5G - at least in the foreseeable future.

If your uplink or downlinks are not operating in one of the top 46 markets, chances are good (again, at least for a while) that your C-Band network will not experience 5G interference. No interference? No need for a fancy new filter.

OUR BEST ADVICE

If you did not register your downlink antenna with the FCC, watch and wait.

To repeat: the C-Band auctions in the top 46 markets will be happening in stages, so – depending on what market(s) your downlink is located – it may be as late as the Fall of 2023 before you will need to purchase and install a 5G filter.

Perhaps you have downlink antennas outside the top 46 market? *If* 5G becomes an issue in your neck of the woods, it will likely be well after the auctions have been completed. By that time you can feel confident that the 5G filters on the market supplied by reputable filter companies have been field-tested and proven reliable.

More information on the C-Band changes and other satellite information can be found on the [LinkUp web site](#).

A broadcaster and entrepreneur, Karen has spent two decades championing the power of satellite to deliver broadcast-quality radio and video that is live and immediate.

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