

TV RAMACHANDRAN

## IT'S TIME TO RESOLVE THE SPECTRUM CONUNDRUM

India needs a balanced policy that can protect the spectrum rights of the incumbent broadcasting sector and also accommodate the 5G players



Price sensitivity is a critical characteristic of Indian consumers, making the affordability of communication media crucial in the field of information and broadcasting. Undoubtedly, broadcasting serves as a highly cost-effective and reliable source of entertainment, information, and knowledge for the masses. Moreover, it plays a significant role in expanding the reach of education and awareness to rural, remote, and economically disadvantaged citizens. Governments also utilise broadcasting for public

welfare and promoting socioeconomic development. Hence, it merits considerable importance in the communication landscape.

The Cable and Satellite (C&S) sector holds significant importance for the nation as it caters to communication and entertainment services for 207 million TV households, including both rural and urban areas. With nearly 900 registered TV channels transmitted through satellites using the C-Band radio spectrum (4-8 GHz)



5G players have been allocated sufficient spectrum in several bands, including the sub-GHz band, mid-band and millimetre wave bands.

The extended C band and the upper Ku band have traditionally been used by broadcasters and MSOs to offer cable and satellite services in India.

## BROADCASTING SPECTRUM BANDS

Spectrum Band	Frequency Band	Quantum of Spectrum
UHF/VHF Band –Terrestrial	470-582 MHz	112 Mhz
Extended VHF band –Terrestrial	582-612 Mhz	30 Mhz
Extended C band	3700-4200 MHz	500 MHz
Lower Ku Band	12.2-12.7 Ghz	500 Mhz
Lower Ka bands	(i) 18.3-18.8 Ghz	500 Mhz
	(ii) 19.7-20.2 Ghz	500 Mhz
Total Spectrum		2142 Mhz (2.142 GHz)

and Ku Band (11-13 GHz), the sector is served by 1,701 registered distribution platform operators (DPOs) across India.

Notably, the sector also provides direct and indirect employment to nearly two million people. The per capita media consumption through television has grown at a 7% CAGR from 2020 to 2022 and is projected to grow at an even faster rate in the future. Given these figures, the significance of nurturing and fostering the sector cannot be overstated.

### THE BIG SPECTRUM DEBATE

The radio spectrum is universally acknowledged as a finite natural resource that serves as the backbone of all wireless communications, including satellite-based communications and broadcasting. With the exponential rise of new applications and services in both broadcasting and communications, there is an increasing demand for additional spectrum allocation. To ensure the healthy growth of the sector, a balanced spectrum policy that is forward-looking, sustainable, and harmonious, while safeguarding the legitimate rights of incumbents, holds utmost significance.

To achieve an optimal spectrum policy that balances the interests of incumbent broadcast users and caters to the future needs of other services desiring to utilise the same spectrum band, it is crucial to consider the recommendations of international regulatory and standards bodies. Additionally, assessing the spectrum availability in the country and the potential for co-existence between new and incumbent services is essential. Aligning India's stance on a particular spectrum band with global trends and best practices is also necessary for a well-rounded approach.

The emergence of advanced mobile services in spectrum bands presently utilised by incumbent broadcasters, specifically the extended C and Ku bands, has sparked intense debate over the competing use of spectrum by two different but essential segments: Satellite and Broadcasting, versus the new 'kids on the block', the 5G players in the mobile telecommunications sector. Various strategies, such as splitting the band or proposing mixed-use of the spectrum, are being suggested to accommodate both sets of players. However, these proposals come with significant adverse implications and compromise the status of each segment.

The Out of Band Emissions (OBE) from the 5G transmitters can interfere with the incumbent satellite broadcasting signals, both in the C and Ku bands.



## IN SHORT

- The broadcasting sector is crucial for providing affordable communication and entertainment to Indian consumers.
- The Cable and Satellite sector plays a significant role in reaching TV households in rural and urban areas.
- Protecting the extended C band and Ku Band is vital to prevent interference and ensure quality of service.
- The decision to auction the C-band and the Ku Band spectrum used by broadcasting, can impact the broadcasting sector severely.
- A sustainable spectrum policy, based on ITU-led Radio Regulations, should consider the rights of existing players and the public good.

The table Broadcasting Spectrum Bands illustrates the frequency-wise status of the spectrum band.


## STATUS QUO IS THE SOLUTION

The extended C band, spanning from 3.67 to 4.2 GHz, and the upper Ku band (12.2-12.7 GHz), have traditionally been, and continue to be utilised by broadcasters and MSOs to offer cable and satellite services in India as well as across the world. This practice is not only aligned with the guidelines of the global apex body ITU, it is in conformance with India's National Frequency Allocation Plan (NFAP) for over two decades.

If this extended C band and the Ku band were to be left exclusively for the broadcasters as they were today, both services could flourish and grow healthily without any difficulty. The current arrangement includes a separation or guard band of more than 30 MHz between the two services. This ensures that there is no interference between the 5G services in the lower C band and the broadcast services in the upper part of the C band.

Such interference prevention is vital as any disruption between frequencies of different technologies, like satellite broadcasting and terrestrial in this case, would directly harm the quality of service for customers relying on the incumbent satellite broadcasting service. This scenario would lead to an unacceptable conflict, violating the fundamental principles of radio regulations, which aim to provide full protection to incumbents while encouraging the introduction of new services. Additionally, such an approach would not guarantee an interference-free spectrum, which could harm the customers and business interests of the new licensees.

Given the socioeconomic importance of the broadcasting sector, the operations in the extended C band and the Ku Band should be fully protected by preventing any interference in this part of the band from any new services. The ongoing advocacy to claim the use of extended C band and Ku Band for 5G, has caused much concern and dismay in the C&S sector. The genuine concern is that the inevitable Out of Band Emissions (OBE) from the 5G transmitters would interfere with the



India has already allotted as much as 3.77 GHz for 5G, which is 75% higher than what is made available for broadcasting.

incumbent satellite broadcasting signals, both in the C and Ku bands.

#### TIME FOR A BALANCED APPROACH

5G mobile services are also undoubtedly important for economic growth and development and we need to ensure that adequate spectrum resources are made available for the concerned new players. However, it would be unfair and incorrect to evict existing occupants forcibly and give it to new entrants who have a plethora of other options and are having only 30% of the identified 5G spectrum assigned to them. As against this, broadcasting is already working with 75% of the spectrum identified by ITU for them.

It should be noted that 5G players have been allocated sufficient spectrum in several bands, including the sub-GHz band, mid-band and millimetre wave bands. In fact, ITU (WRC-19) has identified a substantial 12.25 GHz spectrum for 5G use, which is 600% or six times more than the spectrum available for broadcasting. Furthermore, India has already allotted as much as 3.77 GHz for 5G, which is 75% higher than what is made available for broadcasting. This allocation encompasses all bands, including the mid-bands and millimetric wave bands, making a compelling case for not reducing the extended C band (3.67-4.2 GHz) and Ku Band in favour of the crucial broadcasting sector.

A sustainable spectrum policy resolution should be sought, ideally based on ITU-led Radio Regulations that emphasise providing full protection to incumbent users while accommodating new ones. The new policy must

strike the right balance between equity and respect for the rights of existing players while embracing progress through the adoption of new technologies. It is essential to avoid any disruptions or disturbances to the existing legal occupants of the spectrum band and their customers.

If the government proceeds with its decision to auction the C-band and the Ku Band spectrum used by broadcasting, experts warn of a potentially serious setback to the sector. It is worth noting that the country's apex court upheld, in its advisory jurisdiction regarding the order in the 2G case, that "Auction, as a method of disposal of natural resources, cannot be declared a Constitutional mandate under Article 14 of the Constitution of India." The Supreme Court further emphasised that "Auction may maximise revenue, but it may not always be the best way to serve the public good."

Broadcasting serves as an affordable public utility for the masses, and they could collectively voice their concerns to convince policymakers and shape public opinion against the move. Broadcasting stands as the most accessible and popular medium for millions of Indians and forms the backbone of the promising Indian M&E industry. 🌟

*The author is Hon. FIET(London) and President of Broadband India Forum.*

*Views are personal.*

*Research Inputs by Debashish Bhattacharya.*

*feedbackvnd@cybermedia.co.in*