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Shri Anil Kumar Bhardwaj,
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Government of India
New Delhi

Subject: ICEA's response reg. proposal of mandating in-built FM Radio in Mobile Phones.

Reference: Question no. 4 of TRAI's Consultation Paper no. 4/2023 reg. FM Radio: "Is there a need to mandate that all the Mobile Handset manufactured/ sold in India will require to have an in-built FM Radio receiver? Please provide detailed justification for your comments"

Dear Shri Anil Kumar Bhardwaj,

ICEA is the apex industry body representing the entire electronics ecosystem in India including components, subassemblies, EMS and finished goods in various ESDM verticals such as Mobile Phones, Consumer electronics, Electric vehicles etc. ICEA is working with the Government of India to make India achieve its vision of establishing a USD 300 billion electronics manufacturing ecosystem by 2025–2026.

We would like to highlight that Mobile phone industry integrated analog FM radio in feature phones in India and still sells approx 60-80 million these devices every year. This implementation was done by the Industry on voluntary basis. The smart phone technology has moved from 2G to 3G to 4G to 5G with complete digitisation and more speed over the past decade whereas radio broadcast industry is still continuing in the analog format. The smartphone structure and configuration has evolved to provide latest technology.

With reference to the subject consultation paper as circulated by TRAI, we have had a detailed deliberations with ICEA members and other industry colleagues and based on this-**ICEA suggests that proposal of mandating inbuilt Analog FM radio in Smart Phones is not practically feasible.** This is due to several compelling technical and economic non-viabilities as mentioned below.

1. The feature of incorporating Analog FM radio in smart phone Chipsets is not available:

All major chipset manufacturers of mobile phones such as Qualcomm, Mediatek etc. has excluded FM radio feature from their chipsets as the world moved to 4G & 5G technologies. Now inclusion of FM radio feature in smart phones will need a separate chipset which need to be designed separately along with amendments in the design of other components and circuit.

Feature phone chipset manufacturers are continuing the FM radio in their products because these phones are still working on the old technology. **This need to be left to the market forces to decide that whether the smart phone brand/manufacturer need to offer such feature.** The FM radio cannot not be made compulsory for all models of mobile phones.



2. Mobile phone is global product

Mobile device is designed for global market and the same model or phone is sold in the market. We are going very aggressive in mobile manufacturing and all the major brands are producing and exporting the phones from India.

The designing and manufacturing of different types of mobile phones one for India and other for the globe will adversely impact the mobile manufacturing efforts. The export projection of mobile phones from India is approx. USD 10 bn and the export target of the nation is approx. USD 52-58 bn. ICEA fears that inclusion of any unwarranted mandate (FM Radio) which is against the market forces will spoil the pace of domestic manufacturing and most importantly exports.

3. Information regarding Mexico and Brazil have mandated inbuilt FM radio in mobile phones is misleading:

Mexico for instance only mandates that all features provided in a mobile phone (including FM radio) should not be blocked and should be available on the discretion of the consumer. This does not mention that all mobile phones should have inbuilt FM radio. Mexico has not mandated that all Smartphones should have FM radio feature¹. Similarly, the Brazil has not mandated the compulsory offering of FM radio in all mobile phones².

4. Inclusion of analog FM radio feature in smart phones will increase the cost of mobile phone device thereby making it expensive for the masses:

The incorporation of in-built FM radio in mobile phones need a change in the basic design of Chips (Integrated Circuits) or addition of new chipsets incorporating design changes at board level and the other circuit components such as antenna, connectors, wires etc. in the mobile phone devices. This will increase the cost of mobile phones thereby making it less affordable for the masses.

5. Issue of space within smart phone device to adjust internal antennas:

The smart phone devices are already very compact with almost no space to incorporate a FM antenna which is generally a space taking component. As devices continue to evolve requiring more space for semiconductors, passives, and modules for advance applications and parallelly the size of the device need to be compact considering Industry perspective, it is difficult to adjust FM antenna which is larger in size. The inbuilt FM radio requires a separate internal antenna in order to accommodate the significant differences between FM signal wavelengths and cellular signal wavelengths. This also required an external wired headset which with advent of Bluetooth technology and advances in reducing E waste have led to dropping this off from smartphone architecture.

¹ <https://www.ift.org.mx/sites/default/files/industria/temasrelevantes/17429/documentos/22-09-13dof-diariooficialdelafederacion.pdf>

² <https://informacoes.anatel.gov.br/legislacao/atos-de-certificacao-de-produtos/2021/1605-ato-1003>



6. Adverse impact on the EMC level of smart phone device:

Electromagnetic Compatibility (EMC) and Radio Frequency (RF) Testing. Electromagnetic Compatibility, also known as EMC, is the interaction of electrical and electronic equipment with its electromagnetic environment, and with other equipment. All electronic devices have the potential to emit electromagnetic fields.

It is significant to mention that putting a long piece of wire onto a set of electronics to act as an antenna causes many issues with respect to EMC levels of the device i.e. Immunity (RF, EMI, ESD etc). this will require a set of costly filters/insulations, thereby further increasing the cost of manufacturing.

7. The advocacy of FM radio as only Disaster management tool is mis-conceptualised:

The idea of mandating FM radio in mobile phones is based on enhancing public safety during disaster situations, is not substantiated and various other feasible options are under active considerations. Dept. of Telecom and MeitY are deliberations to develop a "Mobile broadcast emergency alerting system (Cell Broadcast)" compatible with present and future mobile air interfaces, this will allow the targeted real-time delivery of government-approved alerts.

8. Several applications (apps) providing global FM radio services:

There are various applications in android, iOS etc. which allows mobile phone users to access to global FM radio stations. These apps are available on almost all mobile phones operating systems and may be downloaded and used based on the interest and discretion of the phone users.

This is to reiterate that the proposed mandate of inbuilt analog FM radio will need a complete redesign of the cellular device on component level thereby increasing the cost and other technical considerations in the product besides integrating an older technology. ICEA strongly opposes this proposal of mandating inbuilt FM radio in domestically manufactured Smart Phones.

We and our members understand radio as a mass medium that serves India's one to many messaging needs in the most cost-effective manner. Analog only FM is now dated and due to above reasons is not feasible or practical for the Mobile industry that's moving ahead with Convergence with advent of 5G. In the advent of technologies that embrace platform for broadcast radio that are future ready, enable efficient usage of spectrum; we see a roadmap emerging for adoption based on market forces and consumer interest and adoption. India with its scale and exports of mobile phones can very well lead such initiatives and technologies.

With my best regards,

A handwritten signature in blue ink, appearing to read "Pankaj Mohindroo".

Pankaj Mohindroo