



PUBLIC NOTICE

Federal Communications Commission
45 L Street NE
Washington, DC 20554

News Media Information 202 / 418-0500
Internet: <https://www.fcc.gov>
TTY: 1-888-835-5322

DA 21-550

Released: May 11, 2021

WIRELESS TELECOMMUNICATIONS BUREAU SEEKS COMMENT ON THE IMPACT OF THE GLOBAL SEMICONDUCTOR SHORTAGE ON THE U.S. COMMUNICATIONS SECTOR

WT Docket No. 21-195

Comments Due: June 10, 2021

Reply Comments Due: June 25, 2021

In this Public Notice, the Wireless Telecommunications Bureau seeks comment to help assess the potential impacts of a continuing global shortage of semiconductors on the U.S. communications industry and on Federal Communications Commission priorities and initiatives.

Both the Administration and Congress¹ have acknowledged challenges facing the semiconductor industry in the United States, including a current shortage. The cause of the shortage has been attributed to a number of factors, including pandemic-related slowdowns in global production, unanticipated spikes in demand, the temporary closure of several large U.S. semiconductor manufacturing facilities due to severe weather,² and a recent fire in an overseas semiconductor wafer fabrication plant.³ Complex supply chains are involved in the production of these chips, and while the current shortage so far has had an outsized impact on automakers,⁴ reverberations are being reported throughout the U.S. economy as a whole, including in the communications sector.⁵

The U.S. government is taking steps to address these challenges. On January 1, 2021, Congress passed the Creating Helpful Incentives to Produce Semiconductors for America Act (CHIPS Act) into law as part of the National Defense Authorization Act for Fiscal Year 2021.⁶ The CHIPS Act establishes incentives to promote and support investment in U.S. semiconductor manufacturing, research and development, and supply chain security. On February 24, 2021, President Biden issued an executive order on America's Supply Chains which states that the United States "needs resilient, diverse, and secure

¹ See Remarks by President Biden at Signing of Executive Order on Supply Chains (Feb. 24, 2021) and Press Release, Office of Congress Michael McCaul, *Bipartisan, Bicameral Support for the CHIPS Act* (Mar. 17, 2021).

² Ina Fried, *Texas power outages force chipmakers to halt production*, AXIOS (Feb. 18, 2021) and Alan Patterson, *Chipmakers Halt Production in Texas After Power Outages*, EE Times (Feb. 18, 2021).

³ Eimi Yamamitsu, *Renesas says normal production at fire-hit chip plant to take 100-120 days*, Reuters (Mar. 29, 2021) and Yang Jie, *Fire at Giant Auto-Chip Plant Fuels Supply Concerns*, Wall Street Journal (Mar. 23, 2021).

⁴ Jack Ewing & Neal E. Boudette, *A Tiny Part's Big Ripple: Global Chip Shortage Hobbles the Auto Industry*, New York Times (Apr. 23, 2021).

⁵ Don Clark, *'It's a Roller-Coaster Ride': Global Chip Shortage is Making Industries Sweat*, New York Times (Apr. 15, 2021) (noting that the semiconductor shortage is affecting "the server systems and PCs used to deliver and consume internet services").

⁶ William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, 134 Stat. 3388, Div. H, Title XCIX - Creating Helpful Incentives to Produce Semiconductors for America §§ 9901-9908 (Jan. 1, 2021) (CHIPS Act).

supply chains to ensure our economic prosperity and national security” and notes that shortages of critical components such as semiconductors “can reduce critical manufacturing capacity and the availability and integrity of critical goods, products, and services.”⁷ In order to strengthen the resilience of such critical supply chains, and to move forward with addressing current shortages of certain critical manufacturing components, the executive order directs the Secretary of Commerce to produce a report “identifying the risks in the semiconductor manufacturing and advanced packaging supply chains.”⁸ The executive order also directs the Secretary of Commerce and the Secretary of Homeland Security to produce a report on supply chains “for critical sectors and subsectors of the information and communications technology industrial base,” recognizing the importance of this industry to the U.S. economy.⁹

A shortfall in the global supply of semiconductors can have consequences for the U.S. communications industry and for Commission priorities and initiatives. These consequences could take a variety of different forms, including increased lead times (the duration between when an order for a semiconductor is placed and when it is actually filled)¹⁰ or cost increases. Ensuring reliable access to semiconductors is essential for Commission initiatives as well as the nation’s continued advancement in next-generation technologies like fifth-generation (5G) wireless services, Wi-Fi, Open Radio Access Networks (Open RAN), satellites, and connected devices, to name a few. It is also important for communications capabilities that are key to the nation’s national and economic security.

Accordingly, the Wireless Telecommunications Bureau seeks comment on the impact of semiconductor supply chain constraints and other supply chain challenges on the communications sector, on Commission priorities and initiatives, and on steps the Commission can take to ensure a resilient supply chain for communications technologies now and in the future.

- Has the global semiconductor shortage spread to the communications sector? If so, to what segments? What are the impacts on lead times and costs of communications equipment and devices? Are there other industry trends that are relevant?
- What is the nature and extent of semiconductor shortages or shortages of other components that are critical to the communications sector? What is the short- and long-term capacity of manufacturers of semiconductors and semiconductor components to keep up with the communication sector’s demand? How long is the current shortage expected to last?
- Which semiconductor technology nodes in particular have been impacted or are expected to be impacted by the shortage? Which technology nodes are important to the short- and long-term needs of the communications sector?
- What are the factors impacting the supply of semiconductors and other manufacturing components which are critical to the communications sector? Commenters should consider the ongoing COVID-19 pandemic, the availability of materials, manufacturing capacity, shipping, rapidly increasing demand for particular types of products, excessive reliance on certain manufacturers for critical semiconductor components, and any other factors impacting these markets.

⁷ Exec. Order No. 14017: America’s Supply Chains, 86 FR 11849, Section 1 (Mar. 1, 2021).

⁸ *Id.* at Section 3(b)(i). This report is due June 4, 2021.

⁹ *Id.* at Section 4(a)(iii). This report is due June 4, 2021.

¹⁰ Ian King, Debby Wu, & Demetrios Pogkas, *How a Chip Shortage Snarled Everything from Phones to Cars*, Bloomberg (Mar. 29, 2021) (noting that lead times for orders from one manufacturer have reached record levels and are nearly double what they were in February 2020).

- To what extent are supply constraints impacting different uses of semiconductors, such as systems-on-a-chip, microprocessors, memory chips, and standard chips?
- What are the impacts of shortages of semiconductors or other critical components on the communications sector, including on consumers, enterprise system users, private network operators (such as critical infrastructure), and service providers? To what extent are these shortages driving changes to stakeholders' plans and priorities and resulting in changes to the communications industry more broadly?
- What are the impacts of these shortages on the public interest? How do these challenges affect the security of the United States and its competitiveness in the global economy? How do these challenges impact the deployment of next-generation networks and technologies? How do these challenges affect communities of color, economically distressed areas, and small businesses?
- What are the effects of semiconductor shortages on remote learning, telehealth, and other services that have moved online during the pandemic?
- What are the potential impacts of the failure to sustain reliable access to semiconductors for the communications sector, including the impact on key vertical markets?
- What steps can be taken by the Commission, either working on its own or in concert with Federal partners, to help address these current challenges?
- What steps can be taken to prevent similar challenges in the future, particularly those challenges related to unanticipated, catastrophic, global events? How can the Commission help to ensure that the benefits of United States leadership in semiconductor manufacturing will flow to all Americans?

Interested parties may file comments on or before **June 10, 2021**. Comments in reply to the initial round of comments should be filed by **June 25, 2021**. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing.
- Filings can be sent by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.
 - Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
 - U.S. Postal Service first-class, Express, and Priority mail must be addressed to 45 L Street, NE, Washington, DC 20554.
- Effective March 19, 2020, and until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect the health and safety of individuals, and to mitigate the transmission of COVID-19.
- During the time the Commission's building is closed to the general public and until further notice, if more than one docket or rulemaking number appears in the caption of a proceeding, paper filers need not submit two additional copies for each additional docket or rulemaking number; an original and one copy are sufficient.

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Availability of Documents. Comments, reply comments, and *ex parte* submissions will be available via ECFS. Documents will be available electronically in ASCII, Microsoft Word, and/or Adobe Acrobat.

This matter shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.¹¹ Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one- or two-sentence description of the views and arguments presented generally is required.¹² Other requirements pertaining to oral and written presentations are set forth in section 1.1206(b) of the Commission's rules.¹³

For further information regarding this public notice, contact Paul Powell, Associate Division Chief, Mobility Division, Wireless Telecommunications Bureau, at (202) 418-1613 or Jon Markman, Attorney Advisor, Mobility Division, Wireless Telecommunications Bureau, at (202) 418-7090. All media inquiries should be directed to Cecilia Sulhoff at (202) 418-0587 or Cecilia.Sulhoff@fcc.gov.

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¹¹ 47 C.F.R. § 1.1200 *et seq.*

¹² *See* 47 C.F.R. § 1.1206(b)(2).

¹³ 47 C.F.R. § 1.1206(b).