

The FCC's ATSC Tuner Rules Are No Longer Economically Necessary

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I. Introduction

The Federal Communications Commission, based on a rule² adopted in 2002 to facilitate the transition to digital broadcasting,³ requires by regulation that television sets sold in the United States have an Advanced Television Systems Committee (ATSC) tuner. The ATSC tuner rule is still in effect even though the transition to digital broadcasting was largely completed several years ago and the vast majority of American households do not rely on the tuner. Current ATSC tuners enable television sets to receive over-the-air digital signals, although the vast majority of American households do not view television from such signals.⁴

In this paper, I review the ATSC rule and reach the following conclusions:

1. Where markets demonstrably work well without them, regulations that impose costs on consumers are unlikely to make economic sense.
2. Consumer electronics markets are intensely competitive and are unlikely areas for economic regulation.
3. The FCC was assigned responsibility for regulating the transition from analog to digital broadcasting in an environment with a declining number of viewers relying on over-the-air broadcasting.
4. At its inception, the ATSC tuner rule was challenged for reasons independent of its effectiveness.
5. The ATSC tuner rule was adopted in an order that emphasized a “transition,” not a permanent state.

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² 47 C.F.R. 15.117.

³ See FCC 02-230, Docket 00-39, Second Report and Order and Second Memorandum Opinion and Order (“[Second Report and Order](#)”), released August 9, 2002. See also [67 FR 63290](#).

⁴ The FCC, in 2013 in the [Fifteenth Report](#) on Video Competition at paragraph 198, reviewed the percentage of households relying exclusively on over-the-air signals and thus relying on ATSC tuners. According to Nielsen, fewer than 10% of households rely on over-the-air signals. According to the National Association of Broadcasters, more than 17% of households rely on over-the-air signals. In either case, the vast majority of households do not rely on over-the-air signals.

6. The cost-benefit analysis employed during rulemakings relied on market conditions that no longer apply.
7. The ATSC rule is unusual for the FCC in that it requires consumers to purchase a specific portfolio of intellectual property.
8. Consumers have likely lost billions of dollars in welfare under the ATSC tuner rule.
9. The FCC could eliminate the ATSC rule and obtain higher consumer welfare.

II. Where markets demonstrably work well without them, regulations that impose costs on consumers are unlikely to make economic sense

To be economically efficient, the benefits of a regulation must exceed its costs. Government agencies in promulgating typically provide a cost-benefit analysis in which an agency argues that the benefits of the rule will exceed the rule's cost.⁵

Economists have long studied the conditions under which regulation is economically efficient. Generally speaking, these conditions are more likely to be met under either one of two broad circumstances: (1) markets that do not operate efficiently absent regulation; or (2) markets with documented governmental interest in changing outcomes. Externalities, transactions costs, and defining property and contract rights are common examples of market conditions under which government agencies at least argue that regulation has benefits that may exceed their costs. Even where markets operate efficiently, the government may articulate an interest in outcomes that favor one geographic area or one demographic group. Under these and other circumstances, government agencies can plausibly construct a cost-benefit analysis that finds a regulation beneficial.

Oddly enough, when the ATSC tuner rule was adopted, the FCC conducted no clear cost-benefit analysis. The FCC stated that there were no comments in the public record in response to its request in an initial regulatory flexibility analysis.⁶ The Commission did not describe the costs and benefits of the rule on even a short-term basis. Nor did it describe the costs and benefits of the rule on a permanent basis.

⁵ For the purposes of this paper, I stipulate that such cost-benefit analyses are properly conducted. In many specific instances, these analyses are not properly conducted, but that line of argument is beyond the scope of this paper. The FCC rule was challenged at the time of its promulgation for at least three reasons: (1) its legal necessity; (2) its costs on consumers; and (3) the likelihood that market forces would find a solution without regulation.

⁶ "No comments were filed in response to the IRFA." Second Report and Order, Appendix C.

III. Consumer electronics markets are intensely competitive and are unlikely areas for economic regulation

The consumer electronics industry is not a likely candidate for federal regulation because it is one of the most competitive industries in the world. It has many buyers and sellers that compete in a global market. The product life cycle in the industry is short, often measured in months or at most a few years. Producers are constantly innovating, constantly seeking to provide consumers with new products. Although the consumer electronics industry is regulated in some specific areas such as radio frequency interference and consumer safety, the industry generally is lightly regulated. No systematic externalities, no insurmountable transactions costs, and generally no complications defining property and contract rights plague the industry. The industry rarely comes to government seeking more regulation.

Nor are ATSC tuners likely candidates for regulation, at least not permanent regulation. ATSC tuners are widely available at competitive prices in the market. No externalities or transaction costs limit consumer access to ATSC tuners. Yet, as described below, ATSC tuners have a history of regulation for more than a dozen years.

IV. The FCC was assigned responsibility for regulating the transition from analog to digital broadcasting in an environment with a declining number of viewers relying on over-the-air broadcasting

At its inception, television in the United States and around the world was based on an analog technology. Both transmitters and receivers used an analog technology. As digital technologies evolved to offer more efficient transmission and reception, the FCC considered how to transition thousands of transmitters and tens of millions of receivers from analog technology to digital technology. The Telecommunications Act of 1996 and the Balanced Budget Act of 1997 had provisions enabling the FCC to transition broadcasting from analog to digital. The FCC adopted a series of rules for the digital transition.

Although the United States had more than 100 million households and more than 200 million television sets in 2002, perhaps as few as 15% of those households relied on over-the-air broadcast signals.⁷ The other 85% of households relied on cable and satellite for the deliver of broadcast and other video signals. In 2014, the share of households that rely on over-the-air signals is no doubt less than in 2002.

⁷ Second Report and Order. Dissenting statement of Commissioner Martin.

V. At its inception, the ATSC tuner rule was challenged for reasons independent of its effectiveness

The FCC adopted a Further Notice of Proposed Rulemaking in 2001⁸ and an Order in 2002 mandating that the ATSC tuner be included in all television sets sold in the United States on a phased-in schedule between 2004 and 2007.⁹ The FCC rule was challenged at the time for at least three reasons: (1) its legal authority; (2) its costs on consumers; and (3) the likelihood that market forces would find a solution without regulation.

Neither the Telecommunications Act of 1996 nor the Balance Budget Act of 1997 provided the FCC with authority to mandate specific tuner technology. The FCC instead looked backward several decades to find the 1962 All Channel Receiver Act embodied in 47 U.S.C. 303(s).¹⁰ Commissioner Furchtgott-Roth dissented from using that Act as a legal basis for mandating the ATSC tuner.¹¹ The Consumer Electronics Association submitted a white paper in 2002 challenging the legal foundation of the All Channel Receiver Act for the ATSC tuner.¹² Although it rejected the legal interpretation in the CEI White Paper, the FCC was compelled to explain its legal position in more detail.¹³

Other objections were raised regarding to cost of the ATSC tuners to consumers. Commissioner Furchtgott-Roth raised objections to imposing such costs on consumers.¹⁴ Commissioner Tristani raised similar objections.¹⁵ Commissioner Martin dissented from the final order based on the costs to consumers.¹⁶

⁸ FCC 01-24, Docket 00-39, Report and Order and Further Notice of Proposed Rulemaking, ([“Further Notice of Proposed Rulemaking,”](#)) January 19, 2001.

⁹ Second Report and Order. 47 U.S.C. 15.117.

¹⁰ See discussion throughout FCC Docket 00-39.

¹¹ “I also call into question whether the 1962 All Channel Receiver Act, as codified in Section 303(s) of the Act, provides the Commission with the authority to require DTV tuners to be built in all television sets. This particular statute was conceived at a time when digital television was mere science fiction--Congress could not have had DTV technology in mind when it was considering this law.” Furchtgott-Roth Dissenting Statement, Further Notice of Proposed Rulemaking, January 19, 2001.

¹² Consumer Electronics Association, White Paper, submitted in Docket 00-39, July 23, 2002.

¹³ Second Report and Order.

¹⁴ “More specifically, I am apprehensive about requiring DTV tuners to be built into all television sets because of the costs such a policy may impose upon set manufacturers and consumers. I find that government manufacturing standards rarely benefit the public.” Furchtgott-Roth Dissenting Statement, Further Notice of Proposed Rulemaking.

¹⁵ “I write separately to set forth my objection to imposition of mandatory DTV reception capabilities for new television sets. As consumer advocates have repeatedly noted, any mandate that increases the cost of television sets to facilitate the transition to the digital broadcast era, unfairly burdens consumers. A mandate also reduces the likelihood that less expensive options like digital converters will be developed and deployed. The Further Notice of Proposed Rulemaking seeks information from consumers and consumer

Finally, objections were raised that markets rather than regulation would lead to beneficial outcomes. Commissioner Furchtgott-Roth raised such objections in 2001.¹⁷ Commissioner Martin raised objections of relying on regulation rather than markets in 2002.¹⁸

VI. The ATSC tuner rule was adopted in an order than emphasized a “transition,” not a permanent state

Although the FCC adopted a permanent ATSC tuner rule, it was written to support a “transition” to digital television not necessarily a permanent state after the transition was completed. The FCC adopted the ATSC tuner rule in an order that emphasized a transition, not a permanent state.¹⁹ The word “transition” appeared 67 times in the order; the word “conversion” appears 8 times; the word “permanent” did not appear even once. The FCC was focused on “the transition of the broadcast television service from analog to digital transmission technology can progress as smoothly and rapidly as possible

groups regarding the harm that may arise from imposition of mandatory DTV reception capabilities. I believe a well-developed record may demonstrate such a requirement is contrary to the best interests of consumers and may do little to advance the transition to digital broadcast television.” Tristani Separate statement, Further Notice of Proposed Rulemaking.

¹⁶ “Currently, consumers can choose whether to spend the extra money to purchase a television that includes a digital tuner. This Order sets out deadlines by when television manufacturers must include digital tuners, so that all but the smallest televisions will be able to receive digital broadcast signals “over the air.” Today, however, few consumers receive their video programming only through over the air broadcasting. Instead, the vast majority of consumers receive broadcast programming through their cable or satellite provider. Even as the transition to digital is made, these consumers will probably prefer to continue to receive their video programming through cable or satellite. Thus, taking action on digital broadcast tuners alone, as we do to today, confers a real benefit only on the relatively small percentage of consumers (approximately fifteen percent) who do not rely on cable or satellite for broadcast reception. The costs, however, will be borne by every consumer who buys a television. I therefore fear that the costs of this requirement, as an isolated action, exceed the benefits, and I am not persuaded that it is the right step.” Martin dissenting statement, Second Report and Order.

¹⁷ “In general, I have concerns about the government forcing technology on the public rather than letting the marketplace take the lead.” Furchtgott-Roth Dissenting Statement, Further Notice of Proposed Rulemaking.

¹⁸ “Generally, I prefer market-based forces to government regulation, and I am particularly cautious when regulation imposes a cost to consumers or requires consumers to purchase a product they may not use. In such situations, I believe the better course of action usually is to refrain from regulation and instead to provide consumers with a choice. If government intervention is necessary, however, I believe it must be clear that the benefits outweigh the costs.” Martin dissenting statement, Second Report and Order.

¹⁹ Second Report and Order.

towards the target completion date set forth in the Communications Act,²⁰ not on a permanent tuner rule.

VII. The discussion of the ATSC rule during rulemakings relied on market conditions that no longer apply

Even if the FCC had focused on a permanent ATSC tuner rule, which it did not, the FCC relied on market information that is no longer accurate. During its debate on the ATSC tuner, the FCC relied on information from industry that indicated that costs of digital ATSC tuners would not be constant. Outside studies found that the costs of digital ATSC tuners would begin at high levels and would eventually reduce to levels of \$15 to \$200 per receiver.²¹ Most of these estimates were for tuners integrated inside a television set.

Motorola estimated that ATSC tuners would cost an addition \$50 if integrated in a television set.²² Arthur D. Little Inc. submitted a study finding that an ATSC tuner integrated in a television set would eventually add approximately \$15 to the cost of a single-definition television set.²³ Thomson stated that the additional cost of an ATSC tuner in a television set would eventually decline to \$60.²⁴

Surprisingly, the FCC did not address a cost-benefit analysis of imposing the ATSC tuner requirement in its Regulatory Flexibility Analysis.²⁵ No formal analysis was made even though the FCC's record indicated that the cost of television sets would rise at least between \$15 and \$60 per set. Chairman Powell noted that more than 25 million television sets were sold each year (2002 numbers).²⁶ Thus the FCC was knowingly imposing direct costs on American consumers of no less than between \$375 million and \$1.5 billion per year to pay for the ATSC tuners.

In 2002, the assumption was that the only way to make ATSC tuners available was to require them to be embedded in all televisions. At the time the FCC provided little or no discussion of consumers purchasing external ATSC tuners separately as a long-term, viable option. Today, such alternatives are widely available at many online sites. For example, Amazon had 1,957 entries for an ATSC tuner on December 17, 2014. On that date, Amazon had 499 entries for ATSC tuner USB. These ATSC tuners can be used to convert a laptop or other computer into an over-the-air television set. Price ranges were from less than \$10 to more than \$100. Consumers have a wide range of choices of technology, brand, and price.

²⁰ *Ibid.*, paragraph 1.

²¹ *Ibid.*, paragraphs 10-22.

²² *Ibid.*, paragraph 12.

²³ *Ibid.*, paragraph 13.

²⁴ *Ibid.*, paragraph 16.

²⁵ *Ibid.*, Appendix C.

²⁶ *Ibid.*, Chairman Powell separate statement.

The current wide availability of external ATSC tuners obviates the need for a manufacturing regulation. Those consumers who watch television with cable, satellite, or the Internet may have no need for an ATSC tuner, and the government should not compel them to purchase an ATSC tuner when they purchase consumer electronics. On the other hand, those consumers who seek an ATSC tuner can easily purchase one with customer-selected technological and price characteristics.

VIII. The FCC should be particularly careful in mandating the purchase of a particular portfolio of intellectual property

The FCC's ATSC tuner rule does not mandate that consumers purchase just a particular technology. The FCC's rule mandates that consumers purchase a particular set of intellectual property.²⁷ An ATSC tuner, in turn, has a specific set of intellectual property, and that property now has the added advantage of being mandated in every new television set sold in America.²⁸ Consumers cannot bypass the federal mandate. The FCC mandated that all television sets sold in the United States have an ATSC digital tuner.

Often, the federal government can impose a mandate on the characteristics of a product without mandating the specific intellectual property of the product. Thus, the FCC mandates that certain bands of spectrum be used for specific purposes, but the FCC rarely requires a specific technology, much less a specific set of intellectual property. Similarly, the FCC requires that telecommunications carriers offer disability access services but does not mandate a specific technology. The same is true of E-911 services and practically every service or product regulated by the FCC, with the exception of ATSC tuners. Consumers can continue to purchase various services regulated by the FCC. Both manufacturers and consumers are free to choose products with different intellectual property that meets the mandated standard.

The FCC did not address in its rulemaking adopting the ATSC tuner whether it could have adopted a standard that could have been met by competing portfolios of intellectual property as it has done in the vast majority of rulemakings. Nor did the FCC address the challenges of the federal government mandating a specific portfolio of intellectual property.

IX. Consumers have likely lost billions of dollars in welfare under the ATSC tuner rule.

It is possible to calculate the consumer welfare loss from the ATSC tuner rule. The Consumer Electronics Association estimates that approximately 36 million television sets will be sold in the United States in 2014.²⁹ Table 1 presents the annual consumer welfare

²⁷ 47 U.S.C. 15.117

²⁸ atsc.com

²⁹ See Consumer Electronics Association News Release, Consumer Electronics Industry Revenues to Reach All-Time High in 2014, Projects CEA's Semi-Annual Sales and

loss to American consumers for the ATSC tuner by those actually make a purchase. Each row of Table 1 presents a price for the unwanted ATSC tuner required to be purchased ranging between \$15 and \$35. Each column of Table 1 presents the percentage (ranging from 65% to 85%) of the purchased 36 million television sets for which consumers do not use the ATSC tuner. For example, if an ATSC tuner costs \$15 and 65% of television sets purchased do not use the tuner, the annual consumer welfare loss is \$351 million. If the cost of the tuner is \$35 and the percentage of non-users is 85%, the annual consumer welfare loss is more than \$1 billion.

Table 1

Annual Consumer Welfare Losses from Required
Purchase of ATSC tuner by those Who Make Purchase
(in millions of dollars)

	Percentage of television sets not actually using ATSC tuner		
	<u>65%</u>	<u>75%</u>	<u>85%</u>
<u>price of ATSC tuner</u>			
\$15	\$351	\$405	\$459
\$25	\$585	\$675	\$765
\$35	\$819	\$945	\$1,071

Table 1 reflects just the *annual* consumer welfare loss. The ATSC tuner requirement has been in place for many years, and the *total* consumer welfare loss is the sum of the consumer welfare loss in each year the mandate is in place.

There are two other forms of consumer welfare losses from the ATSC tuner rule. First, some consumers will be discouraged from purchasing a television set at all because of the additional cost imposed by the ATSC tuner rule. This calculation would require assumptions about the elasticity of demand for television sets.

Second, the inflated demand for ATSC tuners as a result of the FCC rules has the likely effect of *increasing* the prices for ATSC tuners. All consumers, even those seeking to watch over-the-air signals, are likely paying more for ATSC tuners than they would without the FCC rule.

Five dollars of the price of every ATSC tuner is the royalty rate through MPEG LA, the same royalty rate since 1996, for the portfolio of ATSC patents.³⁰ For the 36 million television sets sold in the United States in 2014, \$180 million went to pay royalties for

Forecasts Report , July 15, 2014, at <http://www.ce.org/News/News-Releases/Press-Releases/2014/Consumer-Electronics-Industry-Revenues-to-Reach-A1.aspx>.

³⁰ See <http://www.mpegla.com/main/programs/ATSC/Documents/atscweb.pdf>, p. 7.

ATSC patents.³¹ Moreover, many of the patents in the ATSC patent portfolio have already expired or are soon to expire.³² As noted the demand for these patents is artificially increased by the government requirement for ATSC tuners in all television sets. Thus, the FCC is requiring consumers to purchase a portfolio of increasingly expired patents in combination with a television set.

X. The FCC could eliminate the ATSC rule and obtain higher consumer welfare

The ATSC tuner rule was written a transition to digital television that was largely met many years ago. The rule makes little sense today. The vast majority of American households and consumers do not use the tuner today. At no additional cost relative to today's equipment, consumers seeking consumer electronics equipment with an ATSC tuner could continue to purchase such equipment without a regulatory mandate either with an integrated tuner or a separable tuner. Those consumers seeking equipment without a tuner could do so at a lower cost than today. Those consumers unsure about whether they might prefer an ATSC tuner in the future could do so at little additional cost.

As noted in the previous section, the cost of the ATSC tuner rule is easily in the hundreds of millions of dollars annually. Eliminating the rule would return these costs to the American consumer. Most consumers would face lower consumer electronics prices, and others would see no change in prices. The net effect for consumers would be unambiguously better consumer welfare.

³¹ This value excludes the royalties for the many other patents in television sets. These other patents, however, are not required by FCC rule.

³² For a list of the ATSC patents, many of which have expired, see <http://www.mpegla.com/main/programs/ATSC/Documents/atsc-att1.pdf>.