

Global Guide to Radio-Frequency Equipment Regulation

Revised Second Edition

Your Comprehensive Guide for Ensuring
Connected Devices Comply
in the Age of the Internet of Things



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Global Guide to Radio-Frequency (RF) Equipment Regulation:
*Your Comprehensive Guide for Ensuring Connected Devices Comply in
the Age of the Internet of Things (IoT)*

Second Edition
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Federal, State, and International laws and regulations governing communications are subject to change through legislation, court decisions, and regulatory decisions, policy shifts and rulemakings. Many such changes are often subject to adequate advance public notice before taking effect allowing time to adjust to any new requirements. However, recently, some changes are being effected with little or no advance notice. Before any major initiatives are undertaken the most prudent practice is to check on the current status of any applicable laws and regulations that may apply. Some of the content on this document may be considered Attorney Advertising under the applicable rules of certain states. Prior results do not guarantee a similar outcome.

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SAMPLE

INTRODUCTION



Businesses of all kinds are rapidly realizing that new value is to be had by connecting traditional **products to the Internet**. The **Internet of Things ("IoT")** (*i.e.*, physical devices that can connect to the Internet wirelessly) is everywhere — in cars, in household appliances, even our bodies. We are in the midst of new developments that offer tremendous market potential. The Federal Trade **Commission ("FTC") estimates** that by 2020 more than 50 billion connected devices will be part of the IoT.

The exponential growth of IoT is the result of manufacturers adding wireless modules into all manner of products, which subjects those **products to radiofrequency ("RF") equipment** regulation by countries all over the world. In all nations, regulatory authorities can, and often do, impose significant penalties on manufacturers, importers, and other responsible parties that supply non-compliant RF products to the market. Ignorance of the regulations is no excuse.

Accordingly, we have prepared this Guide, which provides high-level regulatory overviews of RF equipment regulations and compliance requirements in many parts of the world. The current Guide summarizes RF equipment regulatory requirements in: the United States, Australia, Brazil, Canada, China, the European Union (Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK), India, Japan, New Zealand, Russia, South Africa, South Korea, and Taiwan.

Virtually all devices that radiate RF energy and are manufactured, imported, and/or marketed in the subject nations are subject to stringent rules. The country summaries in this Guide provide valuable information concerning the pertinent RF equipment regulations in each country (or, in the case of the European Union, region). But, the country-specific rules are varied and complex. Accordingly, this Guide is for informational purposes only and does not constitute legal advice.¹

¹ This is not intended to create an attorney-client relationship between and you and Marshlian & Donahue, PLLC. Do not rely on the information provided in this Guide to determine your legal rights and obligations.

The crux of all RF equipment rules is to ensure that proper safeguards are in place to prevent RF devices from causing harmful interference to other devices and communications operations in general. As such, each nation enforces rules to ensure that RF devices are properly tested for conformity with the applicable technical standards, authorized, and labeled before they are imported or marketed therein.

Failure to comply with the applicable regulations could result in substantial fines, equipment **confiscation, and even in some cases, the banning of a company's products from the market.** Therefore, all potentially responsible parties should ensure that their equipment is in compliance with the applicable regulations at all times.

The information in this Guide will help the responsible parties understand and comply with applicable regulations. But, the compliance process itself is quite complex and time-consuming. Accordingly, enlisting the services of an experienced and efficient legal counsel or consultant for support through the necessary regulatory procedures is highly recommended.

This Guide is current as of the date of publication. Because all the rules described herein are subject **to change, we advise regular review of the respective regulatory agency's rules and updates.** Subsequent editions of this Guide will include regulatory updates in the subject countries, and include additional country summaries.



About The CommLaw Group

The *CommLaw* Group is unique among its peers, offering clients a scope of capabilities rarely found in boutique law firms. With a headcount rivaling the Telecom Practice Groups of most major law firms, we boast a team of attorneys, paraprofessionals and consultants possessing the skills, focus, and resources necessary to serve the communications law needs of Fortune 100 companies, all without **sacrificing the range of services and affordability which makes us the "go-to" firm for new entrants and service providers of all sizes.**

In association with [The Compliance Group](#), which specializes in fixed-fee licensing and compliance services tailored to the communications industry, The *CommLaw* Group offers businesses the "Full Spectrum" of legal, regulatory, administrative, and consultative services.

You should seek the advice of a qualified attorney before attempting to market RF devices internationally or if you have any questions or concerns about your rights and compliance obligations.

The *CommLaw* Group was recently profiled in The Wall Street Journal as one of the [Capital Region's Premier Law Firms](#).

Contact Us for Assistance

If you would like additional information concerning RF equipment regulatory issues or are interested in a legal consultation with Marshlian & Donahue, please feel free to call us at (703) 714-1305 or email Ronald E. Quirk, Jr. at reg@commlawgroup.com or Alexander I. Schneider at ais@commlawgroup.com. Consultation with knowledgeable counsel and/or consultants would be helpful to any company looking to avail itself of the opportunities in this marketplace. Successful ventures depend not only on solid business planning, but also proactive regulatory compliance to avoid being caught in the crosshairs of a regulatory enforcement body.

SAMPLE



17 'INTERNET OF THINGS' FACTS **EVERYONE SHOULD READ**

By: Bernard Marr

The Internet of Things is **here and it's growing rapidly**. Internet of Things (IoT) or Internet of Everything (IoE) refers to devices or objects that are connected to the Internet, like your smartwatch, Fitbit, or even your refrigerator. These devices are able to collect and transmit data via the Internet, contributing to our big data world.

Smart, connected devices are already transforming our world and the competitive forces in business. To demonstrate how fast this sector is growing and what an impact it will have on our lives and **business, I've rounded up 17 of the most mind-boggling IoT numbers and stats** that prove that the phenomenon is here and here to stay.

1. The majority of people (87%) **have not heard of the term 'Internet of Things'**.
2. ATMs are considered some of the first IoT objects, and went online as far back as 1974.
3. Back in 2008, there were already more objects connected to the Internet than people.
4. This year, we will have 4.9 billion connected things.
5. And some predict that by 2020, the number of Internet-connected things will reach or even exceed 50 billion.
6. In 2015, over 1.4 billion smart phones will be shipped and by 2020 we will have a staggering 6.1 billion smartphone users.
7. The IoT will connect many of the devices we have in our homes, from smart thermostats to smart fridges. Companies like Google and Samsung understand this. Google bought smart thermostat maker, Nest Labs, for \$3.2 billion, and Samsung purchased connected home company SmartThings for \$200 million.
8. By 2020, a quarter of a billion vehicles will be connected to the Internet, giving us completely new possibilities for in-vehicle services and automated driving.
9. In fact, we already have cars that can drive on their own – **Google's self-driving cars** currently average about 10,000 autonomous miles per week.
10. The global market for wearable devices has grown 223% in 2015, with Fitbit shipping 4.4 million devices and Apple selling 3.6 million Apple Watches.
11. And yes, Internet-connected clothing is coming. Estimates predict that 10.2 million units of smart clothing will ship by 2020, compared to a meager 140K units in 2013.
12. Today, the market for Radio Frequency Identification (RFID) tags, used for transmitting data to identify and track objects, is worth \$11.1 billion. This is predicted to rise to \$21.9 billion in 2020.
13. Machine-to-machine (M2M) connections will grow from 5 billion at the beginning of this year to 27 billion by 2024, with China taking a 21% share and the U.S. 20%.
14. **GE believes that the "Industrial Internet" (their term for IoT) will add \$10 to \$15 trillion to global GDP in the next 20 years.**
15. According to estimations by the McKinsey Global Institute, the IoT will have a total economic impact of up to \$11 trillion by 2025.

16. Having a connected kitchen could save the food and beverage industry as much as 15% annually.
17. CISCO believes the IoT could generate \$4.6 trillion over the next ten years for the public sector, and \$14.4 trillion for the private sector.

The IoT is only going to grow. I believe that currently less than 0.1% of all the devices that could be connected to the Internet, are connected to the Internet. Just think of the tremendous potential and limitless opportunities this brings for business and society.

Bernard Marr is a best-selling author, keynote speaker and business consultant in big data, analytics and enterprise performance.

The *CommLaw* Group Wants You to Read a Few More Facts About the 'Internet Of Things' ...

18. **Virtually every single IoT device that connects to the Internet ("Connected Device") is a device that emits "Radio-Frequency" (RF) energy.**
19. All RF-emitting Connected Devices are subject to diverse and stringent Regulatory Requirements, not just here in the United States, but around the globe.
20. The Rules, Regulations and Governmental policies governing the licensing, authorization, import/export, and marketing of RF-emitting Connected Devices are complex and the consequences of non-compliance are severe.

The *CommLaw* Group's **Global Guide to Radio-Frequency (RF) Equipment Regulation** should be every IoT company's first stop to ensure the Connected Devices they manufacture, market and sell are in compliance with the U.S. and international rules, regulations and policies associated with their products and services.

ABOUT THE AUTHORS

Ronald E. Quirk, Jr., Senior Managing Attorney at Marashlian & Donahue, PLLC, The *CommLaw* Group, focuses his practice primarily on federal, state, and international telecommunications regulation and policy, with a particular expertise in assisting clients navigate the complex labyrinths of radiofrequency ("RF") equipment authorization and enforcement processes around the world. Mr. Quirk brings extensive legal experience to his current client representation. His career spans more than 20 years, including several years at AMLAW 100 firms and the Federal Communications Commission ("FCC"). He has successfully represented clients ranging from solo proprietorships to Fortune 500 corporations, in matters before the FCC, Department of Justice ("DoJ"), Department of Transportation ("DoT"), Food and Drug Administration ("FDA"), state public utility commissions ("PUCs"), international regulatory entities, and state and federal courts.

Alexander I. Schneider is an Associate Attorney at Marashlian & Donahue, PLLC, The *CommLaw* Group, specializing in regulatory law analysis and compliance. Mr. Schneider's practice focuses on assisting The *CommLaw* Group's wide range of communications clients with compliance with laws and regulations related to the introduction of new products and services, ongoing compliance, and corporate transactions. Specific matters include information privacy and data protection, telecommunications regulation, universal service compliance, audits and investigations, corporate transactions, and e-commerce. Mr. Schneider is a Certified Information Privacy Professional/United States (CIPP/US).

Marashlian & Donahue, PLLC, [The CommLaw Group](#), is not your ordinary law firm. Together with [The Compliance Group](#), its affiliated consultancy, The *CommLaw* Group is a professional services "organization" that was specially designed and staffed to service the full-range of legal, consulting and compliance needs of the telecommunications, broadcast, information technology and Internet services and manufacturing industries. Boasting a vibrant and diverse communications law practice, The *CommLaw* Group currently serves hundreds of clients throughout the U.S. and internationally. The firm's loyal base includes clients of all shapes and sizes, from start-ups to Fortune 100 enterprises, and from practically every sector of the communications and info tech industries. The firm also serves the intellectual property, privacy, cyber-security, litigation and general business law needs of its clientele.

In 2005, anticipating the seismic shift in the market for effective, yet affordable legal services, The *CommLaw* Group set out to engineer its one-of-a-kind, "Full Spectrum" professional services business model. The ground-breaking processes developed by the firm enable it to provide value-driven, high-quality professional services that deliver business-savvy solutions for reasonable, predictable, task appropriate costs; all provided with the customer-friendly approach that has become the firms' hallmark characteristic.

The *CommLaw* Group is led by its founder and managing partner, Jonathan S. Marashlian, an AV Preeminent Rated, nationally-recognized expert in the areas of communications taxes, regulatory fees, regulatory litigation, audits, advocacy and defense. Winner of a SmartCEO Executive Management Award for his innovation and leadership in the legal profession, Mr. Marashlian also earned multiple [Client Choice Awards](#) by Lexology/International Law Office; named overall winner in the Telecommunications Law – USA category.

The *CommLaw* Group is the recipient of several ACQ Law and ACQ Global Awards and was named "Customer Service Law Firm of the Year" and "Best Communications Law Firm of the Year" in the U.S., and was profiled in the Wall Street Journal as one of Washington D.C.'s [Premier Law Firms](#).

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SAMPLE

COUNTRY-SPECIFIC RF EQUIPMENT REGULATORY REQUIREMENTS

UNITED STATES

This section delineates the Federal Communications Commission's ("FCC" or "Commission") rules for the authorization and marketing of radiofrequency ("RF") equipment. The FCC has very strict and specific rules to ensure that RF devices are properly tested for conformity with the Commission's technical requirements, then authorized and labeled before they are marketed in the U.S.²

FCC WARNS: COMPLY BEFORE YOU MARKET!

The FCC has a very broad and comprehensive definition of "marketing" RF devices, including: "Sale or lease, or offering for sale or lease, including advertising for sale or lease,³ or importation, shipment, or distribution for the purpose of selling or leasing or offering for sale or lease."⁴ Strict compliance with the FCC's regulations is essential before marketing of RF devices may commence.

The FCC has, and will continue to, impose substantial fines and other sanctions on entities that market or operate RF devices in violation of the federal Communications Act and/or Commission rules. There is a base sanction of \$10,000 for willful violation of the Communications Act,⁵ as well as a \$500 per day fine for willful violation of FCC rules.⁶ Each non-compliant RF device that is marketed constitutes a separate violation.⁷

In recent years, the FCC has not been reticent about levying large financial sanctions on companies that market non-compliant RF devices; some of which have totaled in the hundreds of thousands of dollars.⁸ The FCC has also been actively using its authority to order unauthorized or illegal RF devices off the market.⁹ Accordingly, it is critical that all responsible parties (as defined below) have a solid understanding of the FCC's rules and ensure compliance with them before introducing their RF devices to the U.S. market.

FCC Requirements and Equipment Classification

The testing and authorization requirements respecting RF devices vary considerably, depending on the FCC's regulatory classification of a given device. The more interference potential a device has, the more stringent the authorization requirements.

² See 47 U.S.C. §302(b).

³ "Advertising" includes traditional media advertising and other types of communications; even extending to a mere mention of the availability of a device on a company's website.

⁴ 47 C.F.R. §2.803(a).

⁵ 47 U.S.C. §302(b).

⁶ 47 U.S.C. §501.

⁷ See 47 U.S.C. §502.

⁸ See e.g., *ABC Fulfillment Services LLC et al.*, 32 FCC Rcd. 7300 (2017); *ASUSTEK Computer, Inc.*, 29 FCC Rcd. 9974 (2014); *Pilot Travel Centers, LLC*, 19 FCC Rcd. 23113 (2004).

⁹ See e.g., *Phong Le Company*, 28 FCC Rcd. 08188 (2013).