



# PUBLIC NOTICE

Federal Communications Commission  
445 12<sup>th</sup> St., S.W.  
Washington, D.C. 20554

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

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## FCC ENFORCEMENT ADVISORY

### TDWR and U-NII DEVICES

#### Enforcement Bureau Takes Action to Prevent Interference to FAA-Operated Terminal Doppler Weather Radars Critical to Flight Safety

The Enforcement Bureau recently took action against several companies for operating devices that caused interference to Terminal Doppler Weather Radars (TDWRs) maintained by the Federal Aviation Administration (FAA).<sup>1</sup> TDWR systems operating in the 5600-5650 MHz band are used by the FAA to obtain quantitative measurements for gust fronts, wind shear, microbursts, and similar information.

Investigations conducted by the FCC, the FAA, and the National Telecommunications and Information Administration (NTIA) in several areas of the United States and Puerto Rico revealed that much of the interference stems from wireless devices sharing the same band as TDWR systems, and operating outdoors in the vicinity of airports at high elevations that are line-of-sight to the TDWR installations and most are operating inconsistent with the FCC Part 15 Rules.<sup>2</sup> The Enforcement Bureau and the FAA continue to investigate additional areas where interference is reported to TDWR systems, and will continue to take appropriate enforcement action as necessary.

#### What do the rules require?

*Manufacturers, marketers, and users of U-NII devices are hereby cautioned that only devices certified under FCC Part 15, Subpart E of the Rules may be operated as U-NII devices. For those U-NII devices operating as a master device in the 5.25 GHz – 5.35 GHz and 5.47 GHz – 5.725 GHz bands, a Dynamic Frequency Selection (DFS) radar detection mechanism must be enabled.<sup>3</sup> A piece of equipment is no longer certified as required under the FCC rules if it is installed or configured to defeat DFS, to utilize*

<sup>1</sup> *VPNet, Inc.*, Notice of Apparent Liability for Forfeiture and Order, 27 FCC Rcd 2879 (Enf. Bur. 2012); *Argos Net, Inc.*, Notice of Apparent Liability for Forfeiture and Order, 27 FCC Rcd 2786 (Enf. Bur. 2012); *Insight Consulting Group of Kansas City, LLC*, Notice of Apparent Liability of Forfeiture and Order, 26 FCC Rcd 10699 (Enf. Bur. 2011); *Ayustar Corp.*, Notice of Apparent Liability for Forfeiture and Order, 26 FCC Rcd 10693 (Enf. Bur. 2011); *Rapidwave, LLC*, Notice of Apparent Liability for Forfeiture and Order, 26 FCC Rcd 10678 (Enf. Bur. 2011); *AT&T, Inc.*, Notice of Apparent Liability for Forfeiture, 26 FCC Rcd 1894 (Enf. Bur. 2011); *Utah Broadband*, Notice of Apparent Liability for Forfeiture, 26 FCC Rcd 1419 (Enf. Bur. 2011) (forfeiture paid). See also *Ayustar Corp.*, Memorandum Opinion and Order, 25 FCC Rcd 16,249 (Enf. Bur. 2010); *Sling Broadband, LLC*, Forfeiture Order, 26 FCC Rcd 13062 (Enf. Bur. 2011).

<sup>2</sup> 47 C.F.R. §§ 15.1 et seq.

<sup>3</sup> See 47 C.F.R. §§ 15.401 – 15.407. See also Memorandum from Julius Knapp, Chief, Office of Engineering and Technology, FCC, and P. Michele Ellison, Chief, Enforcement Bureau, FCC, to Manufacturers and Operators of Unlicensed 5 GHz Outdoor Network Equipment Re: Elimination of Interference to Terminal Doppler Weather Radar (TDWR) (dated July 27, 2010), available at <http://www.fcc.gov/encyclopedia/weather-radar-interference-enforcement>.

antennas other than those certified for the device, or to make other changes that modify the equipment beyond the configuration that has been certified. Using uncertified U-NII devices, or certified U-NII devices in an unauthorized manner, violates the FCC Part 15 Rules and may result in interference to radio communications services critical to public safety.

Users are also cautioned that operation of the U-NII device must not cause harmful interference, and if harmful interference occurs, the operation must cease immediately.<sup>4</sup> Furthermore, federal law prohibits willful or malicious interference to authorized radio communications.<sup>5</sup>

### **What Should U-NII Operators Do to Comply?**

Users of U-NII devices must ensure certified devices are installed and configured properly. Additionally, if the U-NII devices are installed and operating within 35 km of a TDWR system, users are required to take special precautions on the frequency of operation as described in the OET Guidance 443999.<sup>6</sup> We caution users of U-NII devices, however, that a U-NII device must not cause interference to a TDWR system, regardless of the distance between the U-NII device and the TDWR.

In fact, operators of U-NII devices under FCC Part 15 Rules must not only refrain from causing interference but also must accept interference from licensed devices such as the TDWR systems. Any user causing interference may be required to cease operating the U-NII device, even if the device in use was properly certified and configured, and will not be permitted to resume operation until the condition causing the interference has been corrected.<sup>7</sup> Even if they avoid or fix any interference problems, however, U-NII operators may only operate those devices within authorized frequencies, power limitations, and other technical requirements.

Finally, the FCC encourages users of U-NII devices near the TDWR systems to register in the voluntary database system discussed in the Guidance.

### **What Should Manufacturers and Retailers Do to Comply?**

As noted above, manufacturers must ensure that U-NII devices capable of operating in certain bands have a DFS radar detection mechanism and must not have software configurations that allow users to disable the features.<sup>8</sup> We also require manufacturers of U-NII devices to remind their customers to ensure that the U-NII devices are properly configured and used in an authorized manner and that they do not cause interference to TDWRs as described in the various guidance documents. Moreover, retailers must ensure that the equipment they are marketing complies with FCC rules. We will continue to work with manufacturers and retailers to adopt tools to better educate their customers and other parties about the rules governing U-NII devices.

### **What Are the Penalties that Apply?**

Violations of the FCC Part 15 Rules may subject the responsible party to enforcement action, including substantial monetary forfeitures, seizure of the equipment, and criminal sanctions, including imprisonment. Therefore, this advisory emphasizes the importance of complying strictly with these important legal requirements.

### **Need more information?**

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<sup>4</sup> See 47 C.F.R. § 15.5. Harmful interference is defined as “[a]ny emission, radiation or induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radio communications service.” 47 C.F.R. § 15.3(m).

<sup>5</sup> See 47 U.S.C. § 333.

<sup>6</sup> See OET KDB Publication 443999 available at <http://apps.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?id=41732&switch=P> (OET Guidance).

<sup>7</sup> See 47 C.F.R. § 15.5.

<sup>8</sup> See OET Guidance, *supra* note 6.

To file a complaint regarding noncompliant U-NII devices, visit <http://esupport.fcc.gov/complaints.htm>. For additional information regarding compliance with and enforcement of the rules governing U-NII devices and TDWR systems interference, please contact the Enforcement Bureau at (202) 418-7450. For general information on U-NII devices and TDWR systems, please visit <http://www.fcc.gov/encyclopedia/weather-radar-interference-enforcement> or e-mail [TDWRIX@fcc.gov](mailto:TDWRIX@fcc.gov).

To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to [fcc504@fcc.gov](mailto:fcc504@fcc.gov) or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), (202) 418-0432 (TTY). You may also contact the Enforcement Bureau on its TTY line at (202) 418-1148 for further information about this Enforcement Advisory, or the FCC on its TTY line at 1-888-Tell-FCC (1-888-835-5322) for further information about the rules governing U-NII devices.

Media inquiries should be directed to William Davenport, [William.Davenport@fcc.gov](mailto:William.Davenport@fcc.gov), (202) 418-1034.

Issued by: Chief, Enforcement Bureau

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