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**The Ghost in the Computer: Radio Frequency Interference  
and the Doctrine of Federal Preemption**

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# **The Ghost in the Computer: Radio Frequency Interference and the Doctrine of Federal Preemption**

*by*  
*Ralph H. Brock\**

The “Police Blotter” feature in a local Texas newspaper sets the scene. A man had reportedly complained to the police that a neighbor’s use of a citizens’ band (CB) radio was interfering with his business. He could hear the neighbor’s CB radio transmissions on his telephone and through his computer speakers.<sup>1</sup> After installing filters on his telephone and complaining to the FCC, the man had filed a criminal mischief complaint with the local police.<sup>2</sup> Unfortunately for him, though, the local police have no jurisdiction.

## **I. INTRODUCTION**

The ghost haunting the man’s computer and telephone is Radio Frequency Interference (RFI), which arises “when a signal radiated by a transmitter is picked up by an electronic device in such a manner that it prevents the clear reception of another and desired signal or causes malfunction of some other electronic device (not simply a radio or television receiver).”<sup>3</sup> Simply put, RFI is any unwanted interaction between electronic systems,<sup>4</sup> or any unwanted

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1. *See Police Blotter*, LUBBOCK AVALANCHE-JOURNAL, Feb. 7, 1998, at 11A.
2. *See id.*
3. H.R. CONF. REP. NO. 97-765, 97TH CONG., 2D SESS. (1982), *reprinted in* 1982 U.S.C.C.A.N. 2261, 2276.
4. *See* MICHAEL TRACY, CONSUMER INFORMATION PAMPHLET ON RADIO FREQUENCY INTERFERENCE (1995); *see also* ARRL Web: *Consumer General Information About RFI/EMI* (last modified Mar. 9, 2000) <<http://www.arrl.org/tis/info/rfigen.html>>.

signal that prevents reception of the best possible signal from the desired source.<sup>5</sup>

RFI affects not just radios, televisions, computers, and telephones, but also other electronic devices, including audio systems, security systems, automatic garage-door openers, electronic organs, and public-address systems.<sup>6</sup> Taking many forms — from static caused by vacuum-cleaner motors to unwanted voices on a telephone — it falls into three common categories:

- (1) electromagnetic noise sources such as defective neon signs, thermostats, appliances, and switches on computer systems;
- (2) overload by a properly transmitted radio signal that is so strong that home electronic equipment cannot reject it; and
- (3) spurious emissions caused by a nearby radio transmitter inadvertently transmitting weak signals on a frequency not assigned to that transmitter.<sup>7</sup>

While often attributed to amateur radio or CB radio signals,<sup>8</sup> RFI is not

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5. See FCC Compliance & Information Bureau, *Interference Handbook* (visited May 18, 1998) <<http://www.fcc.gov/cib/Publications/tvibook.html>>; see also FCC Compliance & Information Bureau, *Telephone Interference Bulletin* (visited June 18, 1998) <<http://www.fcc.gov/cib/Publications/phone.html>>.

6. See H.R. CONF. REP. NO. 97-765 at 2266.

7. See TRACY, *supra* note 4; see also H. Conf. Rep. No. 97-765, 1982 U.S.C.C.A.N. at 2265-66.

8. See H.R. CONF. REP. NO. 97-765, 1982 U.S.C.C.A.N. at 2276. The Citizens Band Radio Service and the Amateur Radio Service are distinct. Citizen Band operators are not licensed, and must comply with several limitations, including being limited to 40 channels in the 27 MHz (11 meter) band. See 47 C.F.R. §§ 95.404 (CB Rule 4) (licensing), 95.407 (CB Rule 7) (limitation to 40 channels); see also *id.* §§ 95.413(a)(9) (CB Rule 13), 413(a)(11) (CB Rule 13), 95.408 (CB Rule 8). Unlicensed radio operation is also allowed on 14 channels in the Family Radio Service (FRS) band. See 47 C.F.R. § 95.627(a). But because FRS power output is limited to 0.500 watt, FRS transmissions are unlikely to cause RFI. See 47 C.F.R. § 95.639(d).

Amateur radio operators, on the other hand, must pass examinations and be licensed, and they are subject to fewer limitations. See 47 C.F.R. §§ 97.5, 97.117, 97.301.

limited to those sources. Indeed, the most common form of RFI results when home electronic equipment cannot filter or reject unwanted signals. Typically, such RFI appears as obliterated reception on some television channels; replacement of the programming on a channel by an interfering station; television reception accompanied by “snow,” sound surges, shadows, and wavy pictures; similar interference with VCR reception; and interference heard on telephones, computers, stereos, tape players, musical instruments with speakers, satellite systems, and baby monitors.<sup>9</sup>

For many years, the cures for this type of interference have been well known. Often, the interference can be reduced or even eliminated with an inexpensive filter in the lead from the antenna to the television receiver. For the other electronic devices, installing inexpensive capacitors may solve the problem.<sup>10</sup>

Despite these well-known solutions, the FCC receives thousands of complaints each year about interference to home electronic equipment.<sup>11</sup> Some complainants lodge their grievances first with local authorities; others take them there after getting no relief from the FCC.<sup>12</sup> But through the Communications Act of 1934, as amended, Congress has completely preempted any state or local regulation of RFI.<sup>13</sup> Therefore, any appeal to local authorities is misplaced.

This article focuses on the legal issues raised by RFI to home electronic equipment. First, it briefly reviews the doctrine of federal preemption and explains how, to the complete exclusion of state and local authorities, the FCC has occupied the entire field of RFI regulation. Next, it examines how the federal preemption doctrine applies to local attempts to regulate RFI. Then, the article reviews the FCC’s decision not to impose RFI standards for home electronic equipment, and its requirement that home electronic equipment “must accept any interference received.”<sup>14</sup> Finally, the article concludes that owners

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9. See, e.g., *Smith v. Calvary Educ. Broad. Network*, 783 S.W.2d 533, 533 (Mo. App. 1990) (alleging all of these forms of RFI).

10. See H.R. CONF. REP. NO. 97-765, 1982 U.S.C.C.A.N. at 2266.

11. See FCC Public Notice, *FCC Policy for Handling Complaints of Interference to Home Electronics Equipment* (Apr. 5, 1996) <[http://www.fcc.gov/cib/Public\\_Notices/heeel.html](http://www.fcc.gov/cib/Public_Notices/heeel.html)>.

12. See *Police Blotter*, *supra* note 1.

13. See 47 U.S.C. § 151 *et seq.*

14. Although the statute does not define “home electronic equipment and systems,” the FCC is authorized to establish minimum performance standards to reduce their susceptibility to interference from radio frequency energy. See 47 U.S.C. § 302a(a). The Conference Report notes that FCC authority applies only to “home electronic equipment and systems” likely to be found in a private

of home electronic equipment should solve RFI problems, instead of seeking to rely on local regulations or private lawsuits.

## II. FEDERAL PREEMPTION UNDER THE COMMUNICATIONS ACT

Most RFI complaints properly lodged with the FCC are never resolved because the FCC deems the interference to be caused by the design or construction of the complainant's equipment, and not by any violation of FCC rules. For the equipment owner bothered by RFI, however, this is counterintuitive. The owner typically feels entitled to the same right of peaceable and quiet enjoyment of personal property as of real property. At first blush, then, one might classify RFI as a common-law nuisance or trespass, to be abated or enjoined. But RFI is really more like a neighbor's unwanted yard light, shining through the windows of a house. Instead of insisting that the neighbor turn off the light, the homeowner typically hangs a curtain.

In one way, however, the two annoyances — RFI and a bright light — are different. If a neighbor installed a mercury vapor light outside the homeowner's bedroom window, then there might be some recourse in the local courts to abate the nuisance. Not so when a radio signal interferes with a piece of home electronic equipment. Under the doctrine of federal preemption, there is no recourse to local authorities or local courts, even if the transmitter is operating illegally.

Preemption of state law by federal statute or regulation is generally not favored "in the absence of persuasive reasons — either that the nature of the regulated subject matter permits no other conclusion, or that the Congress has unmistakably so ordained."<sup>15</sup> If there is no specific preemption provision, a court will invoke the implied-preemption analysis articulated in *Cipollone v. Liggett Group, Inc.*<sup>16</sup> Under that analysis, state law is preempted if it actually conflicts with federal law,<sup>17</sup> or if federal law so thoroughly occupies a legislative

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residence and intended for residential use, such as radio and television sets, burglar-alarm and security systems, automatic garage-door openers, electronic organs, record turntables, and stereo or high-fidelity amplifier systems. See H.R. CONF. REP. NO. 97-765, 1982 U.S.C.C.A.N. at 2276.

15. *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 142 (1963), *quoted in Blackburn v. Doubleday Broad. Co.*, 353 N.W.2d 550, 554 (Minn. 1984).

16. 505 U.S. 504 (1992).

17. See *Texas & Pacific Ry. Co. v. Abilene Cotton Oil Co.*, 204 U.S. 426, 446 (1907) (striking down a state common-law claim challenging a rail carrier's

field “as to make reasonable the inference that Congress left no room for the States to supplement it.”<sup>18</sup>

Nothing in the Federal Communications Act expressly preempts state regulation of RFI matters.<sup>19</sup> Indeed, the Act concludes with a provision that the chapter does not “in any way abridge or alter the remedies now existing at common law or by statute, but the provisions of this chapter are in addition to such remedies.”<sup>20</sup> Such a provision has been construed as congressional intent to preserve all existing rights that are not inconsistent with those created by the statute, including existing state remedies.<sup>21</sup>

Nevertheless, the legislative history of the 1982 amendment to the Communications Act demonstrates that Congress intended to completely preempt the regulation of RFI:

The Conference Substitute [§ 302a] is further intended to clarify the reservation of *exclusive* jurisdiction to the Federal Communications Commission over matters involving RFI. Such matters *shall not be regulated* by local or state law, nor shall radio transmitting apparatus be subject to local or state regulation as part of any effort to resolve an RFI complaint. The Conferees believe that radio transmitter operators *should not* be subject to fines, forfeitures or other liability imposed by any local or state authority as a result of interference appearing in home electronic equipment or systems. Rather, the Conferees intend that regulation of RFI phenomena shall be imposed *only* by the Commission.<sup>22</sup>

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rate, despite a savings clause in the act to regulate commerce, because rate regulation was within the exclusive jurisdiction of the Interstate Commerce Commission and the state action “would be absolutely inconsistent with the provisions of the act”), *cited in* Blackburn, 353 N.W.2d at 554-55; *cf.* Nader v. Allegheny Airlines, Inc., 426 U.S. 290, 298-300 (1976) (construing a savings clause identical to § 414, discussed below).

18. Cipollone v. Liggett Group, Inc., 112 S. Ct. 2608, 2617 (1992), *quoted in* Broyde v. Gotham Tower, Inc., 13 F.3d 994, 997 (6th Cir. 1994).
19. *Cf. Broyde*, 13 F.3d at 997; *Blackburn*, 353 N.W.2d at 554.
20. 47 U.S.C. § 414.
21. Pennsylvania Ry. v. Puritan Coal Mining Co., 237 U.S. 121, 129 (1915).
22. H.R. CONF. REP. NO. 97-765, 97th CONG., 2D SESS. (1982), *reprinted in* 1982 U.S.C.C.A.N. at 2277 (emphasis added). The Conference Report also clarified that “the exclusive jurisdiction over RFI incidents (including preemption of state and local regulation of such phenomena) lies with the FCC.” *Id.* at 2267.

Long before § 302a was added to clarify the FCC's jurisdiction over RFI matters, the Supreme Court recognized as "clearly exclusive" the FCC's jurisdiction "over technical matters" associated with the transmission of radio signals.<sup>23</sup> As the Conference Report makes clear, § 302a was intended to clarify that the FCC has exclusive jurisdiction over matters involving RFI.<sup>24</sup> Given this explicit pronouncement, the Act's objectives would be frustrated by local efforts to regulate RFI through statute or common-law nuisance actions.<sup>25</sup> Not only would such local efforts conflict with the FCC's regulation of RFI — meeting the first preemption test under the *Cipollone* analysis — but the committee report indicates that Congress clearly intended to fully occupy the field.<sup>26</sup>

The Supreme Court has recognized that state law may be preempted by the FCC's duly promulgated rules and regulations. In *Capital Cities Cable, Inc. v. Crisp*,<sup>27</sup> the Court held that FCC regulations preempted Oklahoma's requirement that cable-station operators delete all advertisements for alcoholic beverages in out-of-state signals carried by Oklahoma cable operators.<sup>28</sup> As the Court explained, an agency's statutorily authorized regulations preempt any state or local law that conflicts with them or frustrates their purpose. Beyond that, in proper circumstances, the agency may determine that its authority is exclusive and preempts any state effort to regulate in the forbidden area.<sup>29</sup>

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23. *Head v. New Mexico Bd. of Exam'rs in Optometry*, 374 U.S. 424, 430 n.6 (1963), *quoted in Broyde*, 13 F.3d at 997; *see also* *Gagliardo v. United States*, 366 F.2d 720, 723 (9th Cir. 1966) (noting that CB radio transmissions, which have a normal range of 10 to 25 miles, "have a substantial enough effect on interstate commerce to empower Congress to regulate all citizens' band radio").
  24. *See* H. Conf. Rep. No. 97-765, 1982 U.S.C.C.A.N. at 2277.
  25. *See Broyde*, 13 F.3d at 998.
  26. *Cf. Blackburn*, 353 N.W.2d at 556. Nor did the Telecommunications Act of 1996 alter the federal preemption of RFI regulation granted by earlier legislation. *See Southwestern Bell Wireless, Inc. v. Johnson County Bd. of County Comm'rs*, 199 F.3d 1185, 1193 (10th Cir. 1999); *cf. Freeman v. Burlington Broadcasters, Inc.*, No. 97-9141, 2000 WL 204526, at \*11-12 (2d Cir. Feb. 23, 2000) (concluding that 1996 provisions preserving some local zoning authority over placement of wireless services transmitters, 47 U.S.C. § 332(c)(7)(A), and preserving state authority to protect public safety, 47 U.S.C. § 253(b), have nothing to do with RFI).
  27. 467 U.S. 691 (1984).
  28. *See id.* at 708.
  29. *See City of New York v. FCC*, 486 U.S. 57, 64 (1988).

Citing § 302a, the FCC did just that in *In re 960 Radio, Inc.*<sup>30</sup> There, the FCC declared that the “federal power in the area of radio frequency interference is exclusive; to the extent that any state or local government attempts to regulate in this area, [its] regulations are preempted.”<sup>31</sup> As the FCC concluded, “the proposed federal regulatory scheme is so pervasive that it is reasonable to assume that Congress did not intend to permit states to supplement it.”<sup>32</sup> State and federal decisions since 1982 have consistently recognized the federal preemption of RFI matters.

Having clearly preempted the field of RFI regulation, Congress has recently considered relinquishing some authority. In fact, the Senate actually passed legislation that would permit some local regulation of illegal CB operation, with FCC oversight.<sup>33</sup> But similar legislation died in the House.<sup>34</sup> Presently, federal preemption of RFI regulation is complete, and the proposed legislation — which would require the FCC to provide guidance to local governments — would have no effect on legal radio transmissions.<sup>35</sup>

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30. *See* F.C.C. 85-578, 1985 FCC Lexis 2342 (Oct. 29, 1985).

31. *Id.*

32. *Id.*; *see* *In re Mobilecomm of New York, Inc.*, 2 F.C.C.R. 5519 (1987).

33. *See* S. 1618, 105th Cong. (1998).

34. *See* H.R. 2612, 105th Cong. (1998). A new House bill has been introduced in the 106th Congress. *See* H.R. 2346, 106th Cong. (1999).

35. Arguably, an officer who arrests or threatens to arrest a radio operator or confiscate equipment for causing RFI could be liable for violating the operator’s civil rights under 42 U.S.C. § 1983, because preexisting law would make apparent the unlawfulness of the officer’s conduct. *See* *Anderson v. Creighton*, 483 U.S. 635, 640 (1987). Even if the officer enjoys qualified immunity because the legal rules were not clearly established, the city, county, or state that employs the officer does not enjoy similar qualified immunity. *See* *Owen v. City of Independence*, 445 U.S. 622, 638 (1980); *Laughlin v. Olszewski*, 102 F.3d 190, 194 (5th Cir. 1996).



### III. APPLICATION OF THE PREEMPTION DOCTRINE TO RFI CASES

Federal regulations do not preempt everything that touches radio communications. For example, a state may prohibit optometrists from advertising the price of eyeglasses on broadcast radio, even though the radio station is engaged in interstate commerce.<sup>36</sup> Likewise, a broadcast licensee may sue in state court to enforce a contract claim arising from the sale of a radio station, even though the FCC has ordered the breaching party to repudiate the contract as a condition for renewing the license.<sup>37</sup> Finally, local authorities may impose minimal practical limits on the height of amateur radio towers,<sup>38</sup> despite partial FCC preemption of the field.<sup>39</sup>

Before the 1982 amendment of the Communications Act, at least one court had rejected a federal preemption challenge to a local RFI ordinance. In *Bynum v. Winslow Township*,<sup>40</sup> the local ordinance made it a criminal offense to transmit a radio signal that caused interference to other electronic equipment. Area residents complained that Bynum's amateur radio transmissions interfered with their enjoyment of television, stereos, and other electronic devices. In response, Bynum sought a prerogative writ to prevent his prosecution under the

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36. *See* *Head v. New Mexico Bd. of Exam'rs in Optometry*, 374 U.S. 424, 429 (1963).

37. *See* *Regents of the Univ. Sys. v. Carroll*, 338 U.S. 586 (1949); *see also* *Minnesota-Iowa Television Co. v. Watonwan T.V. Improvement Ass'n*, 294 N.W.2d 297 (Minn. 1980) (holding that a state court may enjoin enforcement of a contract right, even though the order would prevent a translator station from broadcasting material that it had an FCC license to broadcast); *cf.* *Radio Station WOW, Inc. v. Johnson*, 326 U.S. 120 (1944) (holding that a common-law fraud claim could be litigated in state court, even though the state court's order could terminate a broadcast station by separating the leased station property from the broadcast license).

38. *See, e.g., Pentel v. City of Mendota Heights*, 13 F.3d 1261, 1264 (8th Cir. 1994).

39. *See* 47 C.F.R. § 97.15(e). Local authorities may adopt regulations on the placement, screening, or height of antennas if the regulations are based on health, safety, or aesthetic concerns and if they reasonably accommodate amateur communications. *See* PRB-1, 101 F.C.C. 2d 952 (1985). But local authorities cannot regulate antennas in an effort to prevent interference with home electronic equipment. *See Letter from Ralph A. Haller, Chief, Private Radio Bureau [FCC] to Board of Zoning Appeals, Town of Hempstead* (Oct. 25, 1994) <<http://www.arrl.org/field/regulations/rfi-legal/haller.html>>.

40. 436 A.2d 532 (N.J. Super. Ct. App. Div. 1981).

RFI ordinance.<sup>41</sup>

The *Bynum* court acknowledged federal preemption “to the extent that the federal regulations control assignment of frequencies, licensure and content of broadcasts.”<sup>42</sup> But it found no express or implied intent by Congress to exercise exclusive control over the actual operation of amateur radio transmission.<sup>43</sup> To the contrary, it found authority for local regulation in the following federal regulatory provision: “Transmission of radio communication or messages by an amateur radio station for any purpose or in connection with any activity which is contrary to federal, state or *local* law is prohibited.”<sup>44</sup> Because the transmission itself — not the communication or messages contemplated by the regulation — violated local law, the court reasoned that the transmission could be prohibited locally.

#### A. Commercial Broadcasters

*Bynum* has never been followed, and since 1982 an unbroken line of authority has affirmed the doctrine of federal preemption in the field of RFI regulation. In *960 Radio*,<sup>45</sup> for instance, the radio station proposed to relocate its antenna and filed for a conditional use permit from the Klamath County, Oregon zoning board.<sup>46</sup> The County granted the conditional use permit, subject to restrictions against producing electronic interference to existing television translators at the site.<sup>47</sup> The radio station then petitioned the FCC for a declaration that the requirement to protect existing facilities was void.<sup>48</sup>

After reviewing the doctrine of federal preemption, the FCC concluded that the “federal power in the area of radio frequency interference is exclusive; to the extent that any state or local government attempts to regulate in this area,

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41. *See id.* at 534.

42. *Id.*

43. *See id.*

44. *Id.* at 534 (quoting 47 C.F.R. § 97.116 (repealed) (emphasis in quotation)).

45. *In re 960 Radio, Inc.*, F.C.C. 85-578, 1985 FCC Lexis 2342, ¶ 2 (Oct. 29, 1985).

46. *See id.* ¶ 2.

47. *See id.* ¶ 3.

48. *See id.* ¶ 1.

[its] regulations are preempted.”<sup>49</sup> Moreover, the Klamath County regulations were inconsistent with federal policy because they provided more protection to the TV translators — which are licensed on a secondary basis — than they enjoyed under FCC rules.<sup>50</sup>

In *Freeman v. Burlington Broadcasters, Inc.*,<sup>51</sup> based on similar facts, the Second Circuit recently reached the same conclusion. There, the FCC had licensed Burlington Broadcasters to operate a radio station, WIZN, from a 199-foot tower in Charlotte, Vermont. WIZN sought a permit from Charlotte to build the tower and broadcast from it.<sup>52</sup> At a hearing, WIZN represented that it would cause no interference with home electronic devices, and that if any interference occurred, it would be remedied.<sup>53</sup> The Charlotte Zoning Board issued the permit, on the condition that “any interference with reception in homes in the area because WIZN began broadcasting will be remedied by WIZN.”<sup>54</sup>

In response to “a considerable number” of residents’ complaints about RFI, the Charlotte zoning administrator issued a notice of violation, alleging that WIZN had caused long-term and continuous RFI, thus violating the condition of its permit.<sup>55</sup> After a hearing, the zoning board found that WIZN had violated a permit condition, but concluded that its authority to enforce that condition was preempted by the FCC’s occupation of the field of RFI regulation.<sup>56</sup>

The residents began a state administrative appeal, but WIZN removed the case to federal district court and moved to dismiss for failure to state a claim.<sup>57</sup> The district court concluded that federal law conferred exclusive jurisdiction on the FCC to regulate RFI and dismissed the case for failure to state a claim.<sup>58</sup> The Second Circuit agreed, following the FCC’s decisions in *960 Radio* and *In re*

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49. *See id.* ¶ 7.

50. *See id.* ¶ 8 (explaining that translators provide a secondary service and are required to accept the consequences of harmful interference from primary users of spectrum space) (citing *Springfield Television v. F.C.C.*, 710 F.2d 620, 627 (10th Cir. 1983)).

51. No. 97-9141, 2000 WL 204526 (2d Cir. Feb. 23, 2000).

52. *See id.* at \*1.

53. *See id.*

54. *Id.*

55. *See id.* at \*2.

56. *See id.*

57. *See id.*; FED. R. CIV. P. 12(b)(6).

58. *See Freeman v. Burlington Broadcasters, Inc.*, No. 97-9141, 2000 WL 204526, at \*2 (2d Cir. Feb. 23, 2000).

*Mobilecomm of New York*.<sup>59</sup>

Courts have likewise refused to allow private lawsuits against commercial broadcasters to abate RFI problems. In *Broyde v. Gotham Tower, Inc.*,<sup>60</sup> the plaintiffs brought a common-law nuisance action in state court against five commercial radio broadcasters whose signals allegedly interfered with the operation of their home electronic equipment. Gotham Tower maintained an 800-foot radio tower from which the other defendants, licensed by the FCC, broadcast commercial FM radio signals.<sup>61</sup> The plaintiffs alleged that the intensity of those signals exceeded the federal standard for FM blanketing interference, interfered with television and radio reception, activated garage-door openers, and rendered certain telephones, stereos, and recording equipment unusable.<sup>62</sup>

The defendants removed the case to federal district court, which dismissed the complaint for failure to state a claim upon which relief could be granted.<sup>63</sup> Quoting the 1982 Conference Report, the Sixth Circuit affirmed, concluding that in light of such an “explicit congressional pronouncement, enforcement of the plaintiffs’ state law nuisance action would frustrate the objectives of the [Communications] Act.”<sup>64</sup>

Similarly, in *Blackburn v. Doubleday Broadcasting Co.*,<sup>65</sup> the Minnesota Supreme Court held that the Communications Act preempted the plaintiffs’ nuisance claim against five radio stations that had allegedly distorted the plaintiffs’ reception of other stations.<sup>66</sup> The plaintiffs attempted to avoid federal preemption by arguing that there was a distinction between distortion and interference, and that a state-court nuisance claim would lie for distortion. This argument failed, in part because the 1982 Conference Report noted that RFI

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59. *See id.* at \*9; *see In re 960 Radio, Inc.*, F.C.C. 85-578, 1985 FCC Lexis 2342 (Oct. 29, 1985); *In re Mobilecomm of New York*, 2 F.C.C.R. 5519 (1987).

60. 13 F.3d 994 (6th Cir. 1994).

61. *See id.* at 996.

62. *See id.*

63. *See* FED. R. CIV. P. 12(b)(6).

64. *Broyde v. Gotham Tower, Inc.*, 13 F.3d 994, 998 (6th Cir. 1994) (relying in part on cases dismissing common-law nuisance claims against an amateur radio operator).

65. 353 N.W.2d 550 (Minn. 1984).

66. *See id.* at 553; *accord* *Smith v. Calvary Educ. Broad. Network*, 783 S.W.2d 533 (Mo. App. 1990).

“arises when a signal radiated by a transmitter is picked up by an electronic device in such a manner that it prevents the clear reception of another and desired signal.”<sup>67</sup> Thus, distortion was synonymous with interference, and the plaintiffs’ nuisance claim was preempted.<sup>68</sup>

## B. CB and Amateur Radio Communications

Federal preemption also protects amateur and CB radio operators from attempts by state or local governments to statutorily regulate radio transmissions. In *People v. Vogler*,<sup>69</sup> a case of first impression in New York,<sup>70</sup> the defendant was charged with the state-law misdemeanor of aggravated harassment for repeatedly using profane and obscene language on a CB radio.<sup>71</sup> The defendant argued that the federal government had preempted state regulation of such communications on CB radio, and the court agreed.<sup>72</sup> As the court noted, not only do the FCC regulations governing CB radio prohibit

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67. *Blackburn v. Doubleday Broad. Co.*, 353 N.W.2d 550, 553 (Minn. 1984) (quoting H.R. CONF. REP. NO. 97-765, 97th Conf., 2d Sess. (1982), *reprinted in* 1982 U.S.C.C.A.N. 2261, 2265.

68. *See id.* Alternatively, the plaintiffs alleged that even if distortion and interference were the same, the interference was caused by “blanketing” — an area over which the FCC lacked jurisdiction because it had not established technical rules in that area. *See id.* at 553-54. An area is “blanketed” whenever the station’s signal is so strong that it partly or completely blocks the reception of other broadcast stations on different frequencies. *See id.*

This argument failed because it confused the failure to exercise jurisdiction with lack of jurisdiction. *See id.* at 553. Since *Blackburn*, the FCC has exercised jurisdiction over “blanketing” by defining FM “blanketed areas” and the licensee’s responsibility for remedying interference complaints within it. *See* 47 C.F.R. § 73.318; *see also id.* § 73.88 (AM broadcast stations); *id.* § 73.612 (television broadcast stations); *id.* § 22.353 (public mobile service); and *Freeman v. Burlington Broad., Inc.*, No. 97-9141, 2000 WL 204526, at \*13 (2d Cir. Feb. 23, 2000) (noting that when blanketing interference occurs, federal regulations impose a continuing duty on the broadcaster to provide technical assistance to residents within the blanketing-interference area to resolve RFI problems and that residents may file with the FCC informal requests for action).

69. 395 N.Y.S.2d 881 (N.Y. Town Ct. 1977).

70. *See id.* at 882.

71. *See id.*

72. *See id.* at 884.

obscene, indecent, or profane communications,<sup>73</sup> but Congress has also made it a federal offense to broadcast obscene language by means of a radio.<sup>74</sup> Later, the FCC General Counsel similarly concluded in an opinion letter that a township ordinance prohibiting radio transmissions that interfere with home electronic equipment was preempted by the Communications Act.<sup>75</sup>

For the same reason, no private civil action for common-law damages or injunctive relief will lie against amateur radio operators for causing RFI.<sup>76</sup> In *Still v. Michaels*,<sup>77</sup> for example, the Stills sued Michaels, a licensed amateur radio operator,<sup>78</sup> in a private nuisance action, alleging that his radio transmissions interfered with the Stills' radio and television interception. The trial court found that the FCC had exclusive jurisdiction over the matter and dismissed the Stills' complaint.<sup>79</sup> Citing § 302a, the appellate court affirmed, concluding "that the FCC's regulation is exclusive in the area of amateur radio operations."<sup>80</sup>

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73. See 47 C.F.R. § 95.83(a)(2) (repealed); *id.* § 95.413(a)(2) (current CB Rule 13).

74. See 18 U.S.C. § 1464.

75. Letter from Jack D. Smith, FCC General Counsel, to Christopher D. Imlay, legal counsel to the American Radio Relay League (a national organization of amateur radio operators) (March 23, 1986) (copy on file with the *Computer Law Review and Technology Journal*); see also Letter from Robert L. Pettit, FCC General Counsel, to Christopher D. Imlay (Feb. 14, 1990) <<http://www.arrl.org/field/regulations/rfi-legal/pettit.html>> (stating that a city ordinance "empowering the City Inspector to investigate and prohibit emissions by radios and other electronic devices [that] cause interference to television or radio reception" was preempted).

76. *But cf.* *Winfield Village Coop. v. Ruiz*, 537 N.E.2d 331, 333 (Ill. App. Ct. 1989) (concluding that an FCC licensee had contracted away the federal preemption protection by voluntarily signing a contract with his landlord, which protected tenants' rights to be free from unreasonable nuisance).

77. 803 P.2d 124 (Ariz. App. 1990).

78. See 47 C.F.R. § 97.1 *et seq.*

79. See *Still v. Michaels*, 803 P.2d 124 (Ariz. App. 1990).

80. *Id.* at 125. *But see* *Kings County Repeater Ass'n, Inc. v. Busacco*, 54 Rad. Reg. 2d (P & F) 1106 (N.Y. Sup. Ct. 1983) (denying injunction but allowing amateur radio operators to recover damages from an unlicensed operator who deliberately interfered with their transmissions; reasoning that while FCC regulations prohibit willful or malicious interference, 47 C.F.R. § 97.125 (repealed, now 47 C.F.R. § 97.101(d)), "the issue of damages is left unregulated" — thus apparently overlooking § 302a of the Communications Act).

Undeterred, the Stills brought a similar action in federal district court, adding claims for reduced property values and health hazards caused by the electromagnetic fields generated by the radio system.<sup>81</sup> Because all three claims still sounded in nuisance, the federal court held that under *res judicata* or claim preclusion, it was bound by the state-court judgment dismissing the Stills' complaint.<sup>82</sup> The court added, however, that even if the state-court decision were not binding, it would reach the same result. As the federal court observed, there was a direct conflict between the nuisance claim and the FCC's authority over RFI matters — authority that “should be left exclusively with the FCC.”<sup>83</sup>

### C. Emergency Communications

Federal preemption extends even to interference with local emergency communications. In *Helm v. Louisville Two-Way Radio Corp.*,<sup>84</sup> the Jefferson County police chief sued a commercial radio paging service, seeking injunctive relief for interference with police communications.<sup>85</sup> The police chief alleged that the interference was a dangerous nuisance that threatened the life and safety of citizens and police officers alike.<sup>86</sup> The Kentucky Supreme Court held that: (1) the common-law nuisance theory “would necessarily involve prohibiting or controlling radio transmission”; (2) Congress and the federal government were the sole regulators of radio interference; and (3) a common-law nuisance action was not sufficient to confer jurisdiction on the state court.<sup>87</sup>

More recently, in *Southwestern Bell Wireless, Inc. v. Johnson County Board of Commissioners*,<sup>88</sup> Southwestern Bell sued for a declaration that federal law preempted a county zoning regulation prohibiting communication towers

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81. *See Still v. Michaels*, 791 F. Supp. 248, 250 (D. Ariz. 1992). In the interim, the FCC rejected Still's request to modify its rules for the Amateur Radio Service and to place the burden on amateur service licensees to resolve interference problems. *See* Letter from Robert H. McNamara, Chief, Special Services Division [FCC], to Arthur R. Still (Nov. 27, 1991) <<http://www.arrl.org/field/regulations/rfi-legal/mcnamara.html>>.

82. *See Still*, 791 F. Supp. at 250-51.

83. *Id.* at 253.

84. 667 S.W.2d 691 (Ky. 1984).

85. *See id.*

86. *See id.* at 692.

87. *Id.* at 693.

88. 199 F.3d 1185 (10th Cir. 1999).

and antennae from interfering with public-safety communications. Discussing the preemption doctrine and the cases cited here, the court concluded that “Congress intended federal regulation of RFI issues to be so pervasive as to occupy the field”; thus, the regulation was “void as preempted.”<sup>89</sup> In response to the county’s contention that preemption left it with no remedy, the court noted not only that adequate administrative remedies were available, but also that the FCC had entered into memoranda of understanding with industry associations “to dramatically streamline the Commission’s compliance and enforcement process in the resolution of interference complaints.”<sup>90</sup>

If RFI involving official communications is preempted, private emergency facilities must likewise look to the FCC for a remedy. In *Kings County Repeater Ass’n v. Busacco*,<sup>91</sup> an association of amateur radio operators maintained a system that permitted its members to make emergency 911 calls with their radios. When the system received interference from an unlicensed operator, the licensed amateur operators sought an injunction in state court to abate the interference. There, these licensed operators — who typically wield the federal preemption doctrine like a sword to defend against RFI complaints — suddenly found their weapon turned against them. Although the unlicensed operator admitted that he had deliberately caused interference to harass the association members,<sup>92</sup> the court denied the injunction based on federal preemption.<sup>93</sup>

As the *Southwestern Bell Wireless* court recognized, this is not to say that public safety and emergency communications should be vulnerable to RFI. While the Communications Act preempts state and local regulation of RFI problems — even those involving emergency communications — the FCC has procedures in place to respond to public-safety interference complaints, and such complaints are given the Commission’s highest priority.<sup>94</sup> Still, based on

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89. *Id.* at 1193.

90. *Id.* n.4.

91. 54 Rad. Reg. 2d (P & F) 1106 (N.Y. Sup. Ct. 1983).

92. *See id.* at 1109.

93. *See id.* at 1111.

94. *See* Letter from David L. Furth, Chief, Commercial Wireless Division, Wireless Telecommunications Bureau, FCC, to Roger Kroh, Director of Planning and Development, Johnson County [Kansas] Office of Planning, Development and Codes (July 2, 1997) <<http://www.fcc.gov/wtb/letters/kroh.htm>>; *see also* FCC Compliance and Information Action Report No. CI 98-3, “FCC Closes Down Unlicensed Radio Operation that Threatened Air Safety at Sacramento Airport: Fourth Airport Interference Incident in Five Months” (March 20, 1998) <[http://www.fcc.gov/cib/News\\_Releases/nrci8004.html](http://www.fcc.gov/cib/News_Releases/nrci8004.html)>; FCC Compliance and Information Action Report No. CI 98-5, “FCC



federal preemption, state and local attempts to protect public-safety and emergency communications, like any other attempt to regulate RFI, must yield to the authority of the Communications Act.<sup>95</sup>

#### IV. FCC REGULATION OF RFI INVOLVING HOME ELECTRONIC EQUIPMENT

RFI often occurs in home electronic equipment that is not designed to operate near radio transmitters. RFI results when the equipment improperly begins to function as a radio receiver.<sup>96</sup> Section 302a of the Communications Act not only authorizes the FCC to regulate RFI, but also provides that the Commission may establish minimum performance standards for home electronic equipment and systems to reduce their susceptibility to RFI.<sup>97</sup> Despite

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Closes Down Unlicensed Radio Operation in Cleveland Causing Interference to Public Radio Station” (Apr. 15, 1998) <[http://www.fcc.gov/cib/News\\_Releases/cleve.html](http://www.fcc.gov/cib/News_Releases/cleve.html)>.

95. The scope of FCC regulation of RFI extends even to public utility companies whose improperly maintained power lines generate RFI. In November 1999, the FCC notified Pacific Gas & Electric that failure to correct such a problem “may be a violation of FCC rules and could result in a monetary forfeiture for each occurrence.” *FCC Intervenes in Power Line Noise Complaints*, 18 ARRL LETTER ONLINE, No. 47 (Dec. 3, 1999) <<http://www.arrl.org/arrlletter/99/1203/#fccintervene>>. The complete text of the FCC’s form letter, which instructs the utility company to resolve the case within 90 days, may be found at ARRL Web, *FCC Power-Utility Letter* (last modified Dec. 2, 1999) <[http://www.arrl.org/tis/info/fcc\\_utility\\_letter.html](http://www.arrl.org/tis/info/fcc_utility_letter.html)>.

96. See *FCC Interference Handbook*, *supra* note 5.

97. See 47 U.S.C. § 302a(a). Specifically, § 302a(a) provides:

The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations (1) governing the interference of potential devices which in their opinion are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference . . . ; and (2) establishing minimum performance standards for home electronic equipment and systems to reduce their susceptibility to interference from radio frequency energy. Such regulations shall be applicable to the manufacture, import, sale, offer for sale, or shipment of such devices and home electronic equipment and systems, and to the use of such devices.

that authority, the FCC has done nothing to establish such standards.<sup>98</sup> Since most users of home electronic equipment do not experience RFI, the FCC has hesitated to impose on all users the additional costs of reducing susceptibility.<sup>99</sup> Nevertheless, in the early 1990s, the FCC placed the burden on manufacturers to build products that are more resistant to interference.<sup>100</sup>

In the past, manufacturers had often saved costs by omitting features that could eliminate RFI—such as electronic filters.<sup>101</sup> But modern home electronic equipment usually includes enough filtering and shielding to ensure proper performance under average conditions.<sup>102</sup> Further, many manufacturers will provide, without charge, filters to eliminate specific RFI problems.<sup>103</sup> Consequently, the FCC takes the position that when home electronic equipment will

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98. The Conference Committee report anticipated that possibility:

[T]he Conferees believe that Commission authority to impose appropriate regulations on home electronic equipment and systems is now necessary to insure that consumers' home electronic equipment and systems will not be subject to malfunction due to RFI. However, the legislation does not mandate [that the] Commission exercise this authority; that decision is well within the technical expertise of the agency.

H.R. CONF. REP. NO. 97-765, 97TH CONG. 2D SESS. (1982), *reprinted in* 1982 U.S.C.C.A.N. 2261, 2276. Even though Congress limited the FCC's standard-setting authority to home electronic equipment, that limited authority concerns devices that *receive* RFI, and it does not limit the FCC's occupation of the field of regulating RFI emissions that *cause* interference. *See Freeman v. Burlington Broad., Inc.*, No. 97-9141, 2000 WL 204526, at \*10 (2d Cir. Feb. 23, 2000) (addressing this argument and noting that "Congress explicitly granted the FCC authority to regulate RFI emissions causing interference").

99. *See* Letter from Robert H. McNamara, *supra* note 81.

100. *See* W5YI Report, *FCC Shifting Focus to Causes of RFI and TVI* (Apr. 15, 1992) <[www.w5yi.org/report.htm](http://www.w5yi.org/report.htm)>.

101. *See FCC Interference Handbook*, *supra* note 5.

102. *See ARRL Web: Consumer Pamphlet on RFI*, *supra* note 4.

103. For further information, contact the Consumer Electronics Manufacturers Association (CEMA), at 2500 Wilson Blvd., Arlington, VA 22205-3834, telephone (703)907-7626, e-mail <[www.cemacity.org/](http://www.cemacity.org/)>.

not reject the unwanted signal, “the cause of this interference is the design or construction of these products and not a violation of any FCC rule.”<sup>104</sup>

This policy is reflected in the FCC’s requirement that manufacturers label most home electronic equipment with the following statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.<sup>105</sup>

Not only must home electronic equipment accept undesirable interference, but such equipment, including cordless telephones (low-power transmitters classified as Part 15 devices), must be taken out of operation if they cause interference to licensed services.<sup>106</sup> Because the home electronic equipment is required to accept any interference it receives, the FCC does not routinely investigate complaints of interference to telephones and home electronic equipment. Indeed, it investigates only when it receives a written complaint that

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104. *FCC Policy*, *supra* note 11. Nevertheless, the FCC credits the industry for reducing the RFI susceptibility of home electronic equipment:

The issue of interference to home electronic equipment is being addressed by [the] industry. A committee has been formed under the auspices of the American National Standards Institute to develop voluntary standards to reduce the susceptibility of this equipment to interference. The Commission’s long-standing policy, as well as that of the Federal Government in general, is to rely on private industry voluntary standards whenever possible. At our encouragement, the Electronics Industries Association (EIA) developed, in 1984 and 1987, two susceptibility standards for television receivers.

These standards were developed using American National Standards Institute procedures. Recent figures provided by the EIA indicate that virtually all new color televisions and VCRs voluntarily comply with these standards. Additionally, the number of complaints we receive about interference to home electronic equipment has dropped significantly since 1982.

Letter from Robert H. McNamara, *supra* note 81.

105. 47 C.F.R. § 15.19(a)(3).

106. *See ARRL Web: RFI-Regulatory Information* (visited Apr. 2, 2000) <<http://www2.arrl.org/field/regulations/rfi-legal/>>.

includes specific details of an FCC rule violation and when “convincing evidence” demonstrates that the interference results from the violation.<sup>107</sup> Even then, the investigation is given “low priority.”<sup>108</sup>

Interestingly, while courts have not afforded the owners of home electronic equipment any relief from RFI, the caselaw has consistently been grounded in the federal preemption doctrine rather than the more specific FCC requirement that home electronic equipment “must accept any interference received.” In *Mobilecomm of New York, Inc.*,<sup>109</sup> Mobilecomm operated a pager service in Wilton, Connecticut, where the town code prohibited any radio frequency operation that “produces any perceptible electromagnetic interference with normal radio or television reception in any area within or without the town.”<sup>110</sup> The City of Wilton claimed that this regulation was within its police power and was not an attempt to regulate radio or wire communications.<sup>111</sup> Applying the analysis of the *960 Radio* order,<sup>112</sup> the FCC declared the local regulation void.<sup>113</sup> Once again, the court concluded that federal power to regulate RFI is exclusive, and to the extent that any state or local government attempts to regulate in this area, the regulations are preempted.<sup>114</sup>

## V. CONCLUSION

Although home electronic equipment is immersed in a sea of radio frequency energy from myriad sources, most of it functions as intended. The FCC has the authority to virtually eliminate RFI problems by requiring manufacturers to implement design features and filtering that would make all home electronic equipment “bullet proof.” Instead, it has chosen to require such equipment to accept any interference it receives, while relying on the marketplace to compel manufacturers to produce serviceable merchandise.

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107. F.C.C. National Call Center, *Top 50 Consumer Issues* ¶ 22 (visited May 18, 1998) <<http://www.fcc.gov/cib/ncc/top50.html#tp6>>.

108. *Id.*

109. *In re Mobilecomm of New York, Inc.*, 2 F.C.C.R. 5519 (1987).

110. *Id.* ¶ 3 n.3.

111. *See id.* ¶¶ 5, 7.

112. *In re 960 Radio, Inc.*, F.C.C. 85-578, 1985 FCC Lexis 2342 (Oct. 29, 1985).

113. *See Mobilecomm of New York, Inc.*, 2 F.C.C.R. 5519 ¶ 9.

114. *See id.* ¶ 8.

Historically, local authorities have attempted to regulate RFI as a common-law nuisance or trespass. But as courts have consistently concluded, Congress has completely preempted the field of RFI regulation, thus precluding local regulation and state-law claims. Although legislation has been proposed that would yield some limited authority to local governments to regulate illegal CB operations, such legislation has not been enacted.

City, county, and private attorneys who understand how federal preemption applies in RFI matters can prevent potential litigants, beset by RFI problems, from filing ineffective lawsuits. Attorneys should also help their clients to understand that under current law, RFI is properly viewed as the equipment's inability to reject unwanted signals, not as transmitter interference. The focus of eliminating RFI can then properly shift to improving the filtering capabilities of home electronic equipment. Unless the law changes, this approach is the only reliable method of exorcizing the ghost in the computer.