Technical Note

RADIO INTERFERENCE AND POLYCOM SYSTEMS

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The increasing use of radio transmitters in personal communications is resulting in growing problems with other electronic devices. 802.11 network interfaces, cellular telephones, personal data assistants, and other kinds of wireless devices contain transmitters that are powerful enough to cause interference in many common systems such as telephones, stereo systems, speakerphones, personal computers, and others. Polycom systems, with their sensitive microphones and electronics, are not immune to this effect.

The industry, in general, is aware of this increasing problem, which is often most apparent in systems with sensitive microphones in close proximity to offending devices. At present there is no defined consensus enabling measurement or determining the likelihood or level of this specific radiated interference. As a result of this Polycom and other major industry members have initiated and are spearheading a forum to resolve the need for standards to address this issue. This forum, of which Polycom is a founding member, is working under the umbrella of ANSI as C63 SC5 and is beginning the initial investigative work . In addition to complying with the mandatory standards, Polycom equipment also complies with the voluntary worldwide standard CISPR 24, which includes radiated immunity requirements. In the future Polycom intends to apply additional requirements based upon C63/SC5 work as soon as practicably possible.

While Polycom is reducing its susceptibility to offending devices, interference of this nature can normally also be reduced or eliminated by taking some simple precautions.

a. Keep any transmitters as far from sensitive components, such as microphones or consoles, as possible. The “field strength” at one foot away is *ten times* that at three feet away, and much more likely to cause trouble. Whenever possible, maintain at least a three-foot separation.

b. The strength of personal wireless transmitters can differ by over 2000 times from device to device. Many Bluetooth devices operate at power levels of 1 milliwatt (0.001 watt), while some personal information managers and cellphones can run at 2 watts. A two-watt transmitter at one foot produces as much signal as a major FM radio station only 100 feet away! When using a high-powered device, provide extra distance from sensitive components.

c. Some wireless systems, such as access points, are designed with directional antennas that concentrate the signal in a particular direction. Try to point these antennas away from conferencing equipment and microphones.

d. Most wireless devices are in at least occasional communication, even when nothing apparent is happening. A cellphone, for example, will transmit a strong signal when it is called, even if it is set to “silent,” and this kind of signal can produce a “bz-t-bz-bz” sound from a nearby loudspeaker. Keep cellphones away even when they’re not being actively used.

e. Cellphones and other devices are very intelligent these days, and know how to turn up their transmit power when they are in a weak reception area. A cellphone in a well-shielded building, such as a metal or concrete building, is likely to transmit at a much higher level than a cellphone in the open. Again, extra separation from those audio components is beneficial.

A little care in placement of wireless devices relative to Polycom systems will usually result in satisfactory performance for both wireless and conferencing users.