

4.9 GHz PUBLIC SAFETY BAND

WHAT IS THIS NEW FREQUENCY BAND AND WHAT IS SOLECTEK'S PRODUCT PLAN?

4.9 GHz public safety band

In 2004, the FCC finalized the regulatory details of the newly opened 4.9 GHz Public Safety frequency band. The rules make available 50 MHz of spectrum, from 4.940 GHz to 4.990 GHz, for the use of broadband wireless data, voice and video communications in public safety applications.

Eligibility

All state or local governmental entities are eligible for 4.9 GHz licensing. Private entities performing public safety functions may negotiate sharing agreements with the local licensees. The federal government can also operate a 4.9 GHz network in conjunction with state and local public safety systems. Sharing of systems must be by written agreement between the licensee and the party sharing the system and all communications by the non-licensee must be in support of public safety, related to the protection of life, health or property.



Licensing

Licenses granted by the FCC allow for operation across the entire 50 MHz spectrum and within the legal jurisdiction of the licensee or government entity sponsoring the non-government organization. These licenses apply to (a) base and mobile networks or (b) temporary fixed stations operating for less than 12 months.

For permanent, fixed point-to-point stations, the FCC will issue licenses for individual sites, to be issued on a secondary, non-interference basis to the primary uses described above.

Applications

With the exception of air based applications, there are no specific limitations regarding licensee use of the 4.9GHz band, so long as it is in support of public safety.

Common examples include:

- ◆ Short range wireless LAN for first responders to emergency.
- ◆ Mobile data for off-site workers
- ◆ Video security, monitoring, or surveillance systems
- ◆ Voice communication via VoIP
- ◆ Intranet or Internet data transfer
- ◆ T1 line replacement

Band Plan

The following channel center frequencies are permitted. For large bandwidth applications, up to four 5 MHz channel blocks can be aggregated to form larger channel sizes, i.e. 10, 15, or 20 MHz. The maximum bandwidth of a 4.9 GHz channel is 20 MHz.

Center Frequency (MHz)	Channel Nos.	Channel Bandwidth
4940.5	1	1 MHz
4941.5	2	1 MHz
4942.5	3	1 MHz
4943.5	4	1 MHz
4944.5	5	1 MHz
4947.5	6	5 MHz
4952.5	7	5 MHz
4957.5	8	5 MHz
4962.5	9	5 MHz
4967.5	10	5 MHz
4972.5	11	5 MHz
4977.5	12	5 MHz
4982.5	13	5 MHz
4985.5	14	1 MHz
4986.5	15	1 MHz
4987.5	16	1 MHz
4988.5	17	1 MHz
4989.5	18	1 MHz

Product Requirements

The FCC will grant approvals for products under two different sets of requirements:

Low power devices will be certified under the DSRC-A RF spectrum mask. This mask applies to devices operating at typical 802.11 WLAN power levels (12-18 dBm) and was introduced to leverage the extensive product development devoted to WLAN devices.

High power devices will be certified under the DSRC-C RF spectrum mask. This mask allows longer ranges for devices operating with higher output power, but requires better protection against emission in adjacent channels.

The following is a table that describes the power limits according to channel bandwidth for both low and high power devices:

Channel Bandwidth (MHz)	Low Power Mask - Peak transmitter power (dBm)	High Power Mask - Peak transmitter power (dBm)
1	7	20
5	14	27
10	17	30
15	18.8	31.8
20	20	33

Low power devices can use omni or directional antenna gains up to 9 dBi at maximum transmit power. Directional antenna gain may exceed 9 dBi, if transmit power is reduced by the amount, in dB, that the antenna gain exceeds 9 dBi.

High power devices used for point-to-point or multipoint operation may use transmit antennas with a directional gain up to 26 dBi, at maximum transmit power output. Directional antenna gain may exceed 26 dBi, if transmit power is reduced by the amount, in dB, that the antenna gain exceeds 26 dBi.

Solectek 4.9 GHz Product Line

Solectek has long been a leader in the development of high power, broadband wireless systems. In October of 2005, Solectek introduced SkyWay 4000 Series point-to-point and multipoint radios in the 4.9 GHz spectrum.

Being a high power OFDM device certified under the FCC's *high power* regulations, the new products, featuring the industry best 400mW radio, will offer best in class distance, throughput and near line-of-sight operation. With integrated QoS features, it will be ideal for mixed mode networks transporting voice, video and data. Typical applications include: video monitoring, VoIP distribution and backhaul, backbone data transfer and T1 line replacement.

For More Information...

Technical information on Solectek's SkyWay 4000 product line is now available. To discuss your application and for further product details, please email sales@solectek.com or call 858.450.1220 for more information.

Solectek Corporation, headquartered in San Diego, California, designs, manufactures and markets a full line of wireless interconnectivity products. Through technical innovation and steady revenue growth, Solectek has become a recognized leader in the wireless LAN/WAN connectivity market and the industry market leader in wireless bridges. Founded in 1989, Solectek has over 40,000 installations worldwide. The Solectek product line of wireless bridges and routers is the most flexible, reliable and secure in the industry. For more information visit www.solectek.com.

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