IEEE P802.11
Wireless LANs
Liasion letter from MMAC to IEEE802.11

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Author: Tomoki Ohsawa
NEC
1131, Hinode, Abiko Chiba, 270-1198, Japan
Phone: +81-471-85-6732
Fax: +81-471-85-7850
e-Mail: ohsawa@ptl.abk.nec.co.jp

Subject: Modulation scheme for the 5GHz band

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Dear Mr. Victor Hayes,

The 5GHz Ethernet Wireless Access Working Group of the MMAC-PC (Multimedia Mobile Access Communication Systems Promotion Council) has been discussing the physical layer that is suitable for the high bit rate Ethernet wireless access systems since July 1998. There were two proposals for the physical layer. NTT proposed the OFDM (Orthogonal Frequency Division Multiplexing) system that was identical with the IEEE802.11 TGa system in order to realize a global standard for the 5GHz high bit rate wireless LAN system. Showa Electric Wire & Cable Co., Ltd. proposed another modulation scheme that was the D-PPM (Differential Pulse Position Modulation). After the discussion, 5GHz Ethernet Wireless Access WG decided to choose the OFDM scheme as the basic modulation scheme on December 24, 1998. The major parameters of the physical layer are shown below.

Modulation: OFDM, each sub-carrier is modulated by BPSK, QPSK, 16QAM and 64QAM
Demodulation: Coherent detection by pilot tones
Number of sub-carrier: 48
Forward error correction: K=7 and R=1/2,2/3,3/4 convolutional coding and Viterbi decoding
Sampling rate: 20MHz
Channel spacing: 20MHz (4 channel per 100MHz: 5.17, 5.19, 5.21, 5.23GHz)

For the MAC layer protocol, 5GHz Ethernet Wireless Access WG also decided to adopt the IEEE802.11 MAC protocol for the basis of its MAC protocol. Hereafter, we are going to discuss the co-existence issue between 5GHz ATM Wireless Access WG devices, home-link devices and ours.

The MMAC Ethernet Wireless Access WG thanks the IEEE802.11 TGa for its activities of standardization.
Yours sincerely

Tomoki Ohsawa, Chairman of 5GHz Ethernet Wireless Access WG, the MMAC-PC