



The AR5002 family of chipsets consists of highly integrated access point and client solutions. The new AR5002AP-2X, AR5002AP-X, AR5002AP-G, and AR5002AP-A access point chipsets feature WiSoC designs that integrate the wireless and wireline functionality needed to implement a complete access point or router. The client chipsets include two-chip solutions: AR5002X 802.11a/b/g for universal wireless connectivity anywhere in the world, AR5002G 802.11b/g for value-priced consumer applications, and AR5002A 802.11a optimized for high-performance consumer electronics and Voice over Internet Protocol (VoIP) applications.

|   | AR5002AP-2X  |                                  |                             | AR5002AP-X  |                             | AR5002AP-G  |                             | AR5002AP-A  |                             | AR5002X  |                             | AR5002G  |                             | AR5002A  |                             |
|---|--|----------------------------------|-----------------------------|---|-----------------------------|---|-----------------------------|---|-----------------------------|--|-----------------------------|--|-----------------------------|--|-----------------------------|
| <b>Frequency Band</b>                               | 4.900 to 5.850 GHz and 2.300 to 2.500 GHz  |                                  |                             | 4.900 to 5.850 GHz and 2.300 to 2.500 GHz   |                             | 2.300 to 2.500 GHz  |                             | 4.900 to 5.850 GHz  |                             | 4.900 to 5.850 GHz and 2.300 to 2.500 GHz  |                             | 2.300 to 2.500 GHz   |                             | 4.900 to 5.850 GHz   |                             |
| <b>Network Standard</b>                             | 802.11a, 802.11b, 802.11g  |                                  |                             | 802.11a, 802.11b, 802.11g   |                             | 802.11b, 802.11g  |                             | 802.11a   |                             | 802.11a, 802.11b, 802.11g  |                             | 802.11b, 802.11g   |                             | 802.11a  |                             |
| <b>Modulation Technology</b>                        | OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK  |                                  |                             | OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK   |                             | OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK   |                             | OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK   |                             | OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK  |                             | OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK  |                             | OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK  |                             |
| <b>FEC Coding Rate</b>                              | 1/2, 1/3, 3/4  |                                  |                             | 1/2, 1/3, 3/4   |                             | 1/2, 1/3, 3/4   |                             | 1/2, 1/3, 3/4   |                             | 1/2, 1/3, 3/4  |                             | 1/2, 1/3, 3/4  |                             | 1/2, 1/3, 3/4  |                             |
| <b>Hardware Encryption</b>                          | AES, TKIP, WEP   |                                  |                             | AES, TKIP, WEP  |                             | AES, TKIP, WEP  |                             | AES, TKIP, WEP  |                             | AES, TKIP, WEP   |                             | AES, TKIP, WEP   |                             | AES, TKIP, WEP   |                             |
| <b>Quality of Service</b>                           | 802.1e draft   |                                  |                             | 802.1e draft  |                             | 802.1e draft  |                             | 802.1e draft  |                             | 802.1e draft   |                             | 802.1e draft   |                             | 802.1e draft   |                             |
| <b>Media Access Technique</b>                       | CSMA/CA  |                                  |                             | CSMA/CA   |                             | CSMA/CA   |                             | CSMA/CA   |                             | CSMA/CA  |                             | CSMA/CA  |                             | CSMA/CA  |                             |
| <b>Host Interface</b>                               |  |                                  |                             |   |                             |   |                             |   |                             | Mini PCI, PC Card, PCI   |                             | Mini PCI, PC Card, PCI   |                             | Mini PCI, PC Card, PCI   |                             |
| <b>Communication Interface</b>                      | Two MIIs, High Speed UART, local bus   |                                  |                             | MII, High Speed UART, local bus   |                             | MII, High Speed UART, local bus   |                             | MII, High Speed UART, local bus   |                             |  |                             |  |                             |  |                             |
| <b>Peripheral Interface</b>                         | GPIOs, LEDs  |                                  |                             | GPIOs, LEDs   |                             | GPIOs, LEDs   |                             | GPIOs, LEDs   |                             | GPIOs, LEDs  |                             | GPIOs, LEDs  |                             | GPIOs, LEDs  |                             |
| <b>Memory Interface</b>                             | FLASH, SDRAM   |                                  |                             | FLASH, SDRAM  |                             | FLASH, SDRAM  |                             | FLASH, SDRAM  |                             | EEPROM   |                             | EEPROM   |                             | EEPROM   |                             |
| <b>Supported Data Rates</b>                         |  |                                  |                             |   |                             |   |                             |   |                             |  |                             |  |                             |  |                             |
| <b>IEEE 802.11a, 802.11b, 802.11g Standard Mode</b> | 1 - 54 Mbps  |                                  |                             | 1 - 54 Mbps   |                             | 1 - 54 Mbps   |                             | 6 - 54 Mbps   |                             | 1 - 54 Mbps  |                             | 1 - 54 Mbps  |                             | 6 - 54 Mbps  |                             |
| <b>Atheros Super A™ Mode</b>                        |  |                                  |                             |   |                             |   |                             | 6 - 108 Mbps  |                             |  |                             |  |                             | 6 - 108 Mbps   |                             |
| <b>Atheros Super G™ Mode</b>                        |  |                                  |                             |   |                             | 1 - 108 Mbps  |                             |   |                             |  |                             | 1 - 108 Mbps   |                             |  |                             |
| <b>Atheros Super A/G™ Mode</b>                      | 1 - 108 Mbps   |                                  |                             | 1 - 108 Mbps  |                             |   |                             |   |                             | 1 - 108 Mbps   |                             |  |                             |  |                             |
| <b>Chip Specifications</b>                          | AR2112   | AR5112                           | AR5312                      | AR5112  | AR2312                      | AR2112  | AR2312                      | AR5102  | AR2312                      | AR5112   | AR5212                      | AR2112   | AR5212                      | AR5102   | AR5212                      |
| <b>Operating Voltage</b>                            | 2.5V +/-5%   | 2.5V +/-5%                       | 1.2V +10%, -5%              | 2.5V +/-5%  | 1.2V +10%, -5%              | 2.5V +/-5%  | 1.2V +10%, -5%              | 2.5V +/-5%  | 1.2V +10%, -5%              | 2.5V +/-5%   | 2.5V +10%, -5%              | 2.5V +/-5%   | 2.5V +10%, -5%              | 2.5V +/-5%   | 2.5V +10%, -5%              |
|   | 3.3V +/-10%  | 3.3V +/-10%                      | 2.5V +/- 10%                | 3.3V +/-10%   | 2.5V +/-10%                 | 3.3V +/-10%   | 2.5V +/-10%                 | 3.3V +/-10%   | 2.5V +/-10%                 | 3.3V +/-10%  | 3.3V +/-10%                 | 3.3V +/-10%  | 3.3V +/-10%                 | 3.3V +/-10%  | 3.3V +/-10%                 |
| <b>Package Dimensions</b>                           | 9mm x 9mm  | 9mm x 9mm                        | 23mm x 23mm                 | 9mm x 9mm   | 15mm x 15mm                 | 9mm x 9mm   | 15mm x 15mm                 | 9mm x 9mm   | 15mm x 15mm                 | 9mm x 9mm  | 15mm x 15mm                 | 9mm x 9mm  | 15mm x 15mm                 | 9mm x 9mm  | 15mm x 15mm                 |
| <b>Package</b>                                      | 64 Leadless Plastic Chip Carrier   | 64 Leadless Plastic Chip Carrier | 484 Plastic Ball Grid Array | 64 Leadless Plastic Chip Carrier  | 233 Plastic Ball Grid Array | 64 Leadless Plastic Chip Carrier  | 233 Plastic Ball Grid Array | 64 Leadless Plastic Chip Carrier  | 233 Plastic Ball Grid Array | 64 Leadless Plastic Chip Carrier   | 196 Plastic Ball Grid Array | 64 Leadless Plastic Chip Carrier   | 196 Plastic Ball Grid Array | 64 Leadless Plastic Chip Carrier   | 196 Plastic Ball Grid Array |
|   | <p><b>AR5112</b><br/>2.4/5 GHz dual band Radio-on-a-Chip</p> <p><b>AR2112</b><br/>2.4 GHz Radio-on-a-Chip</p> <p><b>AR5312</b><br/>Wireless System-on-a-Chip</p> |                                  |                             | <p><b>AR5112</b><br/>2.4/5 GHz dual band Radio-on-a-Chip</p> <p><b>AR2312</b><br/>Wireless System-on-a-Chip</p> |                             | <p><b>AR2112</b><br/>2.4 GHz Radio-on-a-Chip</p> <p><b>AR2312</b><br/>Wireless System-on-a-Chip</p> |                             | <p><b>AR5102</b><br/>5 GHz Radio-on-a-Chip</p> <p><b>AR2312</b><br/>Wireless System-on-a-Chip</p> |                             | <p><b>AR5112</b><br/>2.4/5 GHz dual band Radio-on-a-Chip</p> <p><b>AR5212</b><br/>Multiprotocol MAC/baseband processor</p> |                             | <p><b>AR2112</b><br/>2.4 GHz Radio-on-a-Chip</p> <p><b>AR5212</b><br/>Multiprotocol MAC/baseband processor</p> |                             | <p><b>AR5102</b><br/>5 GHz Radio-on-a-Chip</p> <p><b>AR5212</b><br/>Multiprotocol MAC/baseband processor</p> |                             |