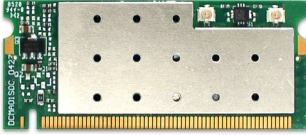




## 802.11 a/b/g 108Mbps wifi mini-PCI module, half-size, MB62/AR5414A

### Model: CM10



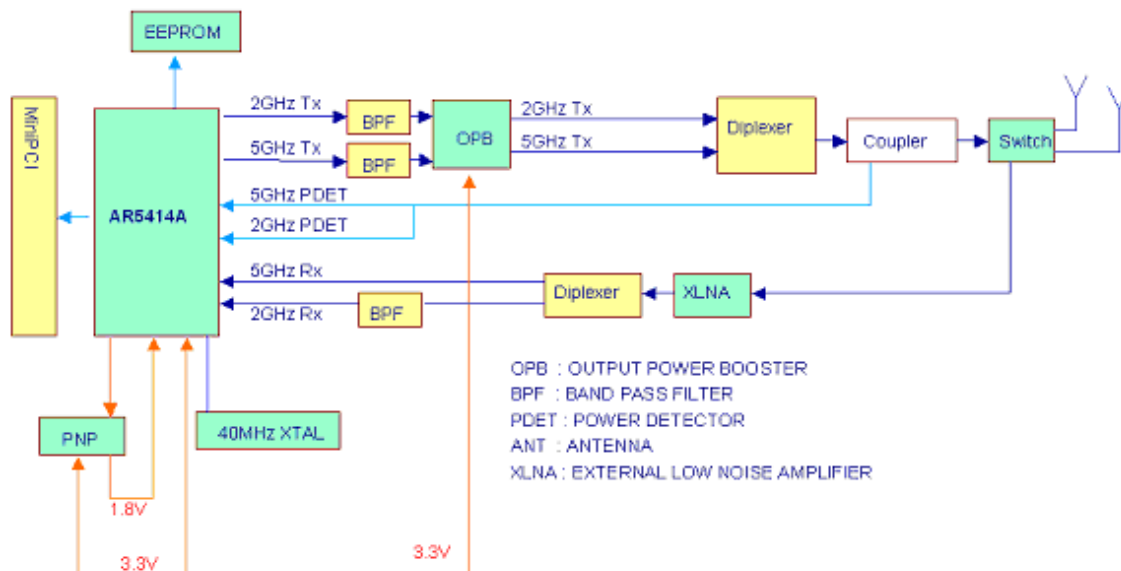
CM10 is an IEEE802.11a/b/g 108Mbps wifi mini-PCI module in half-size type IIIA form factor designed specifically for integration in performance-critical applications with space limitation. Providing 108Mbps connection speed, reliability, security, and low power consumption required for business-critical applications, CM10 has the capability of full size mini-PCI in half-size IIIA form factor. It is ideal for embedding into new or existing ergonomic devices such as notebooks, APs, and application-specific devices (ASDs) used in vertical market.

Optional WinCE 4.2/5.0 drivers enable ASD manufacturers to provide products that enjoy improved innovation and time to market through trouble-free WiFi integration.

### Key Features:

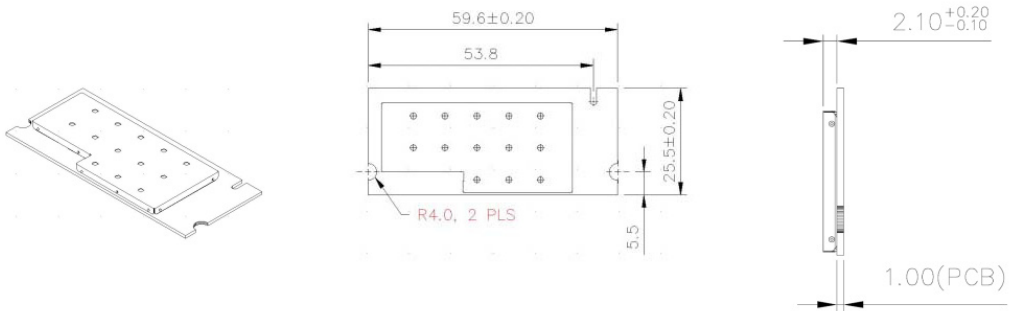
- Half-size mini-PCI Type IIIA form factor is ideal for embedding into new or existing performance-critical applications with space limitation.
- Windows 98SE/ME/2000/XP driver and comprehensive client utility supports provide immediate 11a/b/g wifi and management capability.
- Supported by MADWiFi providing Linux kernel drivers for industrial, academic, or personal projects at highest flexibility and lowest cost.
- Optional WinCE4.2/5.0 drivers assure trouble-free WiFi integration.
- Supports universal 802.11a/11g/11b auto fallback data rate and seamless roaming among 802.11a, 802.11b, and 802.11g multiple AP wifi networks.
- SuperA/G supports data rate up to 108 Mbps in 802.11a turbo mode and 802.11g super mode; 54 Mbps in standard 802.11a and 802.11g mode.
- Off/normal/maximum power management options minimize system power consumptions.
- Country code selector provides flexibility to change regulatory domains.
- Hardware radio on/off mechanism provides highest design flexibility for integrators.
- Hardware encryption of WEP/WPA/WPA2 security is ideal for performance-critical devices.
- Supports WEP/WPA/WPA2, IEEE802.1x (EAP-TLS, EAP-PEAP, LEAP), and LEAP/CCX3.0 providing advanced level of LAN security.
- Supports eXtended Range (XR) technology improves wireless coverage.
- Dual Hirose U.FL antenna connectors enable transmit and receive diversity for flexible RF design.
- RoHS 2002/95/EC compliance meets environment-friendly requirement.

### Hardware Block Diagram



**Mechanical Outline**


Unit: mm



<b>Specifications:</b>	
<b>Standard conformance</b>	IEEE 802.11a, 802.11b, 802.11g
<b>Frequency Range</b>	<ul style="list-style-type: none"> <li>▪ A mode:               <ul style="list-style-type: none"> <li>◦ 5.15 ~ 5.35GHz &amp; 5.725 ~ 5.825GHz for US</li> <li>◦ 4.9 ~ 5.25GHz for Japan</li> <li>◦ 5.15 ~ 5.35GHz &amp; 5.47 ~ 5.725GHz for ETSI</li> </ul> </li> <li>▪ B/G mode:               <ul style="list-style-type: none"> <li>◦ 2.400 ~ 2.4835GHz for US, Canada, ETSI and Japan</li> <li>◦ 2.471 ~ 2.497GHz for Japan</li> </ul> </li> </ul>
<b>Interface</b>	32-bit mini-PCI Type IIIA
<b>Operation Voltage</b>	3.3V +/-10% DC
<b>Modulation Technique</b>	<ul style="list-style-type: none"> <li>▪ 802.11a: OFDM with BPSK, QPSK, QAM, 64QAM</li> <li>▪ 802.11b: DSSS with CCK, DQPSK, DBPSK</li> <li>▪ 802.11g: OFDM with BPSK, QPSK, QAM and 64QAM DSSS with CCK, DQPSK, DBPSK</li> </ul>
<b>Data Rate</b>	<ul style="list-style-type: none"> <li>▪ 802.11a (Normal mode): 54, 48, 36, 24, 18, 12, 9, 6Mbps, auto-fallback</li> <li>▪ 802.11a (Turbo mode): 108,96,72,48,36,24,18,12 Mbps, auto-fallback</li> <li>▪ 802.11b/g: 11, 5.5, 2, 1 Mbps, auto-fallback, up to 54 Mbps</li> <li>▪ 802.11g (Super mode): up to 108 Mbps</li> </ul>
<b>Operating Range (subject to the environment)</b>	<ul style="list-style-type: none"> <li>▪ 802.11a               <ul style="list-style-type: none"> <li>◦ Outdoor: over 350m@6Mbps</li> <li>◦ Indoor: 35 ~ 100m@6Mbps</li> </ul> </li> <li>▪ 802.11b               <ul style="list-style-type: none"> <li>◦ Outdoor: over 350m@11Mbps</li> <li>◦ Indoor: 35 ~ 100m@11Mbps</li> </ul> </li> <li>▪ 802.11g               <ul style="list-style-type: none"> <li>◦ Outdoor: over 350m@6Mbps</li> <li>◦ Indoor: 35 ~ 100m@6Mbps</li> </ul> </li> </ul>
<b>Operating Channels</b>	<ul style="list-style-type: none"> <li>▪ 802.11a               <ul style="list-style-type: none"> <li>◦ US/Canada: 12 non-overlapping channels (5.15 ~ 5.35GHz, 5.725 ~ 5.825GHz)</li> <li>◦ Europe: 19 non-overlapping channels (5.15 ~ 5.35GHz, 5.47 ~ 5.725GHz)</li> <li>◦ Japan: 4 non-overlapping channels (5.15 ~ 5.25GHz)</li> </ul> </li> <li>▪ 802.11b/g               <ul style="list-style-type: none"> <li>◦ US/Canada: 11 (1 ~11)</li> <li>◦ Major European country: 13 (1 ~ 13)</li> <li>◦ France: 4 (10 ~ 13)</li> <li>◦ Japan: 14 for 11b (1 ~ 13 or 14th), 13 for 11g (1 ~ 13)</li> </ul> </li> </ul>

<b>Specifications:</b>	
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>▪ 802.11a mode:               <ul style="list-style-type: none"> <li>◦ FTP Tx: 310mA (typical) ~ 360mA (max)</li> <li>◦ FTP Rx: 290mA (typical) ~ 330mA (max)</li> <li>◦ Stand by: 270mA (typical) ~ 300mA (max)</li> </ul> </li> <li>▪ 802.11b mode:               <ul style="list-style-type: none"> <li>◦ FTP Tx: 300mA (typical) ~ 360mA (max)</li> <li>◦ FTP Rx: 270mA (typical) ~ 300mA (max)</li> <li>◦ Stand by: 230mA (typical) ~ 250mA (max)</li> </ul> </li> <li>▪ 802.11g mode:               <ul style="list-style-type: none"> <li>◦ FTP Tx: 300mA (typical) ~ 350mA (max)</li> <li>◦ FTP Rx: 280mA (typical) ~ 310mA (max)</li> <li>◦ Stand by: 290mA (typical) ~ 330mA (max)</li> </ul> </li> <li>▪ Maximum:               <ul style="list-style-type: none"> <li>◦ 802.11a mode &lt;18dBm output&gt;, Tx: 470mA (typical) ~ 540mA (max)</li> <li>◦ 802.11b mode &lt;17dBm output&gt;, Tx: 270mA (typical) ~ 320mA (max)</li> <li>◦ 802.11g mode &lt;17dBm output&gt;, Tx: 310mA (typical) ~ 360mA (max)</li> </ul> </li> <li>▪ Power saving:               <ul style="list-style-type: none"> <li>◦ 35mA (typical) ~ 55mA (max)</li> </ul> </li> <li>▪ Radio off:               <ul style="list-style-type: none"> <li>◦ 40mA (typical) ~ 50mA (max)</li> </ul> </li> </ul>
<b>Antenna</b>	two UFL ultra-miniature coaxial antenna connectors for diversity receive at both 2.4GHz and 5GHz. Use Hirose pigtail to connect to a standard antenna.
<b>Transmit Power Settings</b>	<ul style="list-style-type: none"> <li>▪ 802.11a:               <ul style="list-style-type: none"> <li>◦ +17.5 dBm@6, 9, 12, 18, 24Mbps</li> <li>◦ +16 dBm@36Mbps</li> <li>◦ +14.5 dBm@48Mbps</li> <li>◦ +13 dBm@54Mbps</li> </ul> </li> <li>▪ 802.11b:               <ul style="list-style-type: none"> <li>◦ +17 dBm@1, 2, 5.5, and 11Mbps</li> </ul> </li> <li>▪ 802.11g:               <ul style="list-style-type: none"> <li>◦ +16.5 dBm@6, 9, 12, 18, 24Mbps</li> <li>◦ +16 dBm@36Mbps</li> <li>◦ +14.5 dBm@48Mbps</li> <li>◦ +13.5 dBm@54Mbps</li> </ul> </li> </ul>
<b>Sensitivity</b>	<ul style="list-style-type: none"> <li>▪ 802.11a: -88dBm@ 6Mbps, -68dBm @ 54Mbps</li> <li>▪ 802.11b: -91dBm@ 1Mbps, -85dBm @ 11Mbps</li> <li>▪ 802.11g: -86dBm@ 6Mbps, -69dBm @ 54Mbps</li> </ul>
<b>MAC Protocol</b>	CSMA/CA with ACK architecture 32-bit MAC
<b>Security</b>	<ul style="list-style-type: none"> <li>▪ 64-bit, 128-bit, 152-bit WEP Encryption</li> <li>▪ 802.1x Authentication</li> <li>▪ AES-CCM &amp; TKIP Encryption</li> <li>▪ WPA, WPA2</li> </ul>
<b>Operation Systems Supported</b>	Windows 98 SE, Windows Me, Windows 2000, Windows XP, MADWiFi Linux
<b>WHQL</b>	Windows XP (Windows 2000 support)
<b>Radio Option</b>	hardware radio on/off support
<b>Dimension</b>	59.75mm(L) x 25.50mm (W)
<b>Storage Temperature Range</b>	-20°C ~ 80°C
<b>Operation Temperature Range</b>	0°C ~ 70°C
<b>EMC Certificate</b>	<ul style="list-style-type: none"> <li>▪ Telec (Japan)</li> <li>▪ ETSI, EN301893, EN60950 (Europe)</li> </ul>
<b>Environment-Friendly Compliance</b>	RoHS

<b>Ordering Information:</b>	
<b>CM10</b>	<b>802.11 a/b/g 108Mbps wifi mini-PCI module, half-size, MB62/AR5414A</b>
<b>CM10-JP</b>	<b>802.11a/b/g 108Mbps wifi mini-PCI module, half-size, RoHS compliance, Japan version.</b>

	<h2>Unex Technology Corp.</h2> <p>- Durable Bridge to Wireless</p>	<p>Sales-a@unex.com.tw  <a href="http://www.unex.com.tw">http://www.unex.com.tw</a></p>
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