WLAN Authentication and Data Privacy

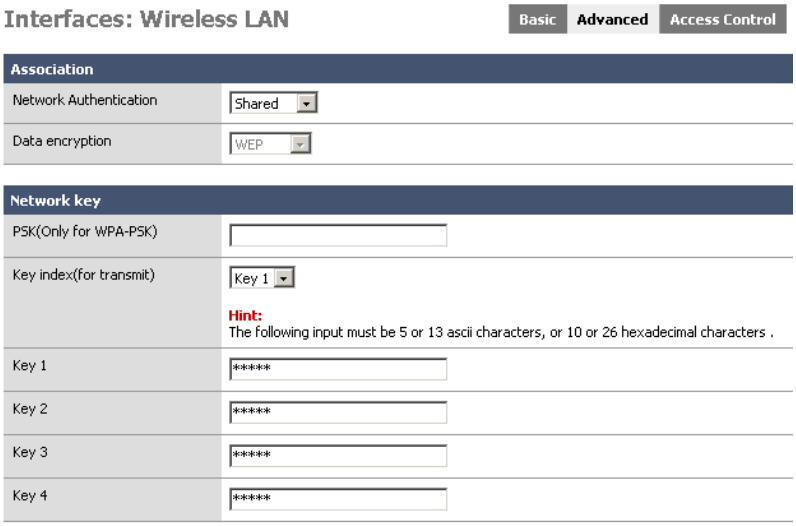
Top Global's MB5000 supports various Wi-Fi security options, including WEP-40/WEP-104 and WPA-PSK. To configure WLAN security on MB5000, you may login to its webGUI by browse MB5000 IP Address, by default, the IP address of MB5000 is 172.16.0.1.

Open System authentication.

When using *Open System* authentication, a wireless station will be able to associate with MB5000 without authentication. When using *Open System* authentication, all wireless stations (clients) can associate with MB5000 and access the network through MB5000 if no other access control be applied. And the traffic data between the MB5000 and all of the wireless stations is unencrypted. To configure MB5000 to work in this mode, you may open "*Interfaces*"->"*Wireless LAN*" page and then select the "*Advanced*" tab. Set "*Network Authentication*" to "*Open*".

Shared Key authentication and WEP encryption.

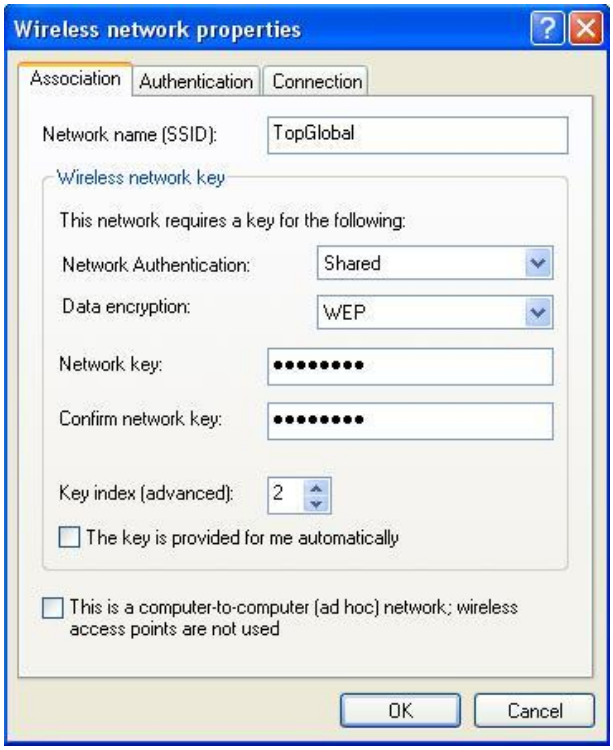
To prevent the unauthenticated users from accessing the network, you may use "Shared Key Authentication", which is defined by IEEE 802.11. IEEE 802.11 defines 4 WEP keys (with index 1 to 4) for WEP encryption and distinguishes WEP encryption to WEP-40 and WEP-104 according to the length of the keys.



Set the "*Network Authentication*" mode to "*Shared*" to indicate MB5000 to use shared key authentication. When this option is selected, MB5000 will authenticate the wireless stations with the pre-configured WEP key. Only the wireless stations that hold the exact WEP keys can associate with MB5000 and access the network and the traffic data between them are encrypted by WEP.

"*Data Encryption*" field indicates the data encryption algorithm that MB5000 uses. There is only one option "*WEP*" available when shared key authentication is selected. All of the 4 WEP keys should be configured to either 5 ASCII characters or 10 hexadecimal (0~9, a~f) characters if you select "40bit" in the *Key Length* domain. And you can either configure 13 ASCII characters or 26 hexadecimal characters for the 4 WEP keys if you select "104 bit" in the *Key Length* domain. The 4 WEP keys should be configured to the fields of "*Key1*" to "*Key4*" respectively. One of the 4 keys should be specified as the default WEP key to encrypt the traffic data in the field of "*Encrypt Data Transmissions using*".

You should also configure the corresponding parameters into the wireless client. The below figure shows the configuration of a Microsoft Windows XP (with SP2) **Wireless Network Properties** dialog box with the above configuration. The "Key index" field here should match the corresponding setting in MB5000.



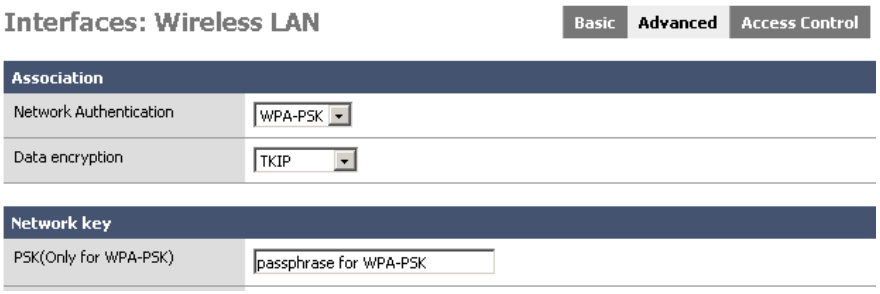
There may be a little difference in appearance of the **Wireless Network Properties** dialog box between the Windows XP service pack 1 and service pack 2, but it does not matter.

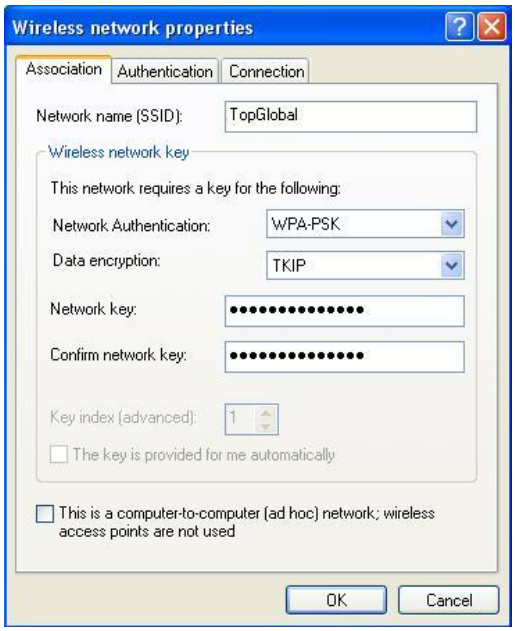
WPA-PSK

WPA (Wi-Fi Protected Access) is a specification of standard-based, interoperable security enhancements that strongly increase the level of data protection and access control for existing and future WiFi systems. WPA utilizes the TKIP (Temporal Key Integrity Protocol) to improve data encryption. The user authentication using 802.1X is called enterprise mode in WPA, which requires a backend authentication service such as RADIUS. For small enterprises that do not have RADIUS deployed and home users, WPA also provides a home mode authentication using the Pre-Shared Key (PSK).

TopGlobal MB5000 supports WPA-PSK to strengthen WLAN security. You may set the

"Network Authentication" type to "WPA-PSK" on the "Wireless LAN" page. When using WPA-PSK to authenticate the users, one of three privacy methods can be applied: TKIP, AES, and TKIP+AES. When "WPA-PSK" is selected, you should also configure a passphrase in the "PSK (Only for WPA-PSK)" field. The passphrase should be 8 to 63 characters in length. Figures below show a typical settings for WPA-PSK on MB5000 and the configuration on a Windows XP.





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