CC31xx NWP Power Policies

Overview and Application details

This is a sample application demonstrating how to enable different power policies on CC3100 device. These power policy can be used based on the use-case to reduce the current consumption. These policies are applicable in station mode only.

Different power policies supported by CC3100 are:

- **SL_ALWAYS_ON_POLICY**: Always-ON policy - Both WiFi and NWP modules will remain active and will not enter their low power modes. WiFi will not enter 802.11 power save mode.
- **SL_NORMAL_POLICY**: This policy offers best trade off between traffic delivery time and power performance. When connected to AP, WiFi module wakes-up for every beacon reception. WiFi and NWP modules will enter their low power mode after considering current activities and predict future activities. This is the default policy for CC3100.
- **SL_LOW_POWER_POLICY**: In this policy, the trade off tends towards power conservation performance. Device will enter deep sleep immediately without predicting future activities. Almost every communication between host and networking subsystem will take the overhead of waking up the device. However, it will not spend any time in idle mode predicting future events. WiFi module will receive every DTIM and not every beacon. This mode should be used only for TAG applications.
- **SL_LONG_SLEEP_INTERVAL_POLICY**: This policy allows users to configure the desired sleep interval between two consecutive wakeup for beacon reception. WiFi module computes the desired time and wakes up to the next DTIM that does not exceed the specified time. This policy automatically terminates the mDNS and internal HTTP server. The maximum allowed/desired sleep time interval is 2 seconds. This policy only works in client mode. TCP/UDP server initiated by user will lead to unpredictable system behavior and performance. The key limitation when working in **Long Sleep Interval** (LSI) mode is the ability to be responsive to IP networking and broadcast packets (ARP, DHCP, Security etc). Since the device will skip DTIM wake-ups (hence missing broadcasts), it might not answer for ARP request of DHCP request.

  This mode will work well under following conditions only:

  - The STA is connected to external network only (for example cloud server). There shouldn't be any server running on CC3100.
  - mDNS and internal HTTP server is disabled
  - The application pings the server every minute in order to keep the STA registered in the ARP table of the AP
  - Sleep time is around 500mSec

Limitations/Known Issues

None

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