**Kconfig.projbuild**

This code appears to be a configuration menu for a program related to ESPNOW (Espressif's Simple Peripheral Network) on an ESP32 microcontroller. ESPNOW is a protocol designed for low-power, peer-to-peer communication between ESP devices.The provided code is a configuration menu written in Kconfig format, which is often used in the context of building and configuring firmware for embedded systems, particularly when using the ESP-IDF (Espressif IoT Development Framework) for ESP32 development. Let's go through the code line by line:

1) menu "Example Configuration": This line defines the beginning of a configuration menu named "Example Configuration."

2) choice ESPNOW\_WIFI\_MODE

prompt "WiFi mode"

default ESPNOW\_WIFI\_MODE\_STATION

help

WiFi mode(station or softap).

- This block defines a choice configuration named `ESPNOW\_WIFI\_MODE`.

- Users are prompted to choose the WiFi mode, and the default is set to `ESPNOW\_WIFI\_MODE\_STATION`.

- A help message provides information about the available options (station or softap).

3. ```plaintext

config ESPNOW\_WIFI\_MODE\_STATION

bool "Station"

config ESPNOW\_WIFI\_MODE\_STATION\_SOFTAP

bool "Softap"

These configurations are part of the choice block. They define two boolean options under ESPNOW\_WIFI\_MODE: ESPNOW\_WIFI\_MODE\_STATION for station mode and ESPNOW\_WIFI\_MODE\_STATION\_SOFTAP for softap mode.

1. config ESPNOW\_PMK

string "ESPNOW primary master key"

default "pmk1234567890123"

help

ESPNOW primary master for the example to use. The length of ESPNOW primary master must be 16 bytes.

- This block defines a configuration parameter named `ESPNOW\_PMK`.

- It is a string type, representing the primary master key for ESPNOW communication.

- The default value is set to "pmk1234567890123," and a help message provides additional information about the key length.

5. ```plaintext

config ESPNOW\_LMK

string "ESPNOW local master key"

default "lmk1234567890123"

help

ESPNOW local master for the example to use. The length of ESPNOW local master must be 16 bytes.

Similar to the previous block, this one defines a configuration parameter named ESPNOW\_LMK.

It is a string type, representing the local master key for ESPNOW communication.

The default value is set to "lmk1234567890123," and a help message provides information about the key length.

config ESPNOW\_CHANNEL

int "Channel"

default 1

range 0 14

help

The channel on which sending and receiving ESPNOW data.

- This block defines a configuration parameter named `ESPNOW\_CHANNEL`.

- It is an integer representing the channel on which ESPNOW data will be sent and received.

- The default value is set to 1, and the valid range is specified as 0 to 14. A help message provides information about the channel.

7. ```plaintext

config ESPNOW\_SEND\_COUNT

int "Send count"

default 100

range 1 65535

help

Total count of unicast ESPNOW data to be sent.

This block defines a configuration parameter named ESPNOW\_SEND\_COUNT.

It is an integer representing the total count of unicast ESPNOW data to be sent.

The default value is set to 100, and the valid range is specified as 1 to 65535. A help message provides information about the data count.

config ESPNOW\_SEND\_DELAY

int "Send delay"

default 1000

range 0 65535

help

Delay between sending two ESPNOW data, unit: ms.

- This block defines a configuration parameter named `ESPNOW\_SEND\_DELAY`.

- It is an integer representing the delay between sending two ESPNOW data packets, measured in milliseconds.

- The default value is set to 1000, and the valid range is specified as 0 to 65535. A help message provides information about the delay.

9. ```plaintext

config ESPNOW\_SEND\_LEN

int "Send len"

range 10 250

default 10

help

Length of ESPNOW data to be sent, unit: byte.

This block defines a configuration parameter named ESPNOW\_SEND\_LEN.

It is an integer representing the length of ESPNOW data to be sent, measured in bytes.

The default value is set to 10, and the valid range is specified as 10 to 250. A help message provides information about the data length.

config ESPNOW\_ENABLE\_LONG\_RANGE

bool "Enable Long Range"

default "n"

help

When enable long range, the PHY rate of ESP32 will be 512Kbps or 256Kbps

- This block defines a boolean configuration parameter named `ESPNOW\_ENABLE\_LONG\_RANGE`.

- It allows the user to enable or disable long-range mode for ESPNOW communication.

- The default value is set to "n" (indicating disabled), and a help message provides information about the resulting PHY rate on ESP32.

11. ```plaintext

config ESPNOW\_ENABLE\_POWER\_SAVE

bool "Enable ESPNOW Power Save"

default "n"

select ESP\_WIFI\_STA\_DISCONNECTED\_PM\_ENABLE

depends on ESPNOW\_WIFI\_MODE\_STATION

help

With ESPNOW power save enabled, chip would be able to wakeup and sleep periodically

Notice ESP\_WIFI\_STA\_DISCONNECTED\_PM\_ENABLE is essential at Wi-Fi disconnected

- This block defines a boolean configuration parameter named `ESPNOW\_ENABLE\_POWER\_SAVE`.

- It allows the user to enable or disable power-saving mode for ESPNOW communication.

- The default value is set to "n" (indicating disabled).

- The `select` keyword specifies that when this option is enabled, the `ESP\_WIFI\_STA\_DISCONNECTED\_PM\_ENABLE` configuration is also selected.

- The `depends on` keyword indicates that this configuration depends on `ESPNOW\_WIFI\_MODE\_STATION`.

- A help message provides information about the periodic wakeup and sleep behavior when power-saving is enabled.

12. ```plaintext

config ESPNOW\_WAKE\_WINDOW

int "ESPNOW wake window, unit in millisecond"

range 0 65535

default 50

depends on ESPNOW\_ENABLE\_POWER\_SAVE

help

ESPNOW wake window

- This block defines an integer configuration parameter named `ESPNOW\_WAKE\_WINDOW`.

- It represents the wake window for ESPNOW power-saving mode, measured in milliseconds.

- The valid range is specified as 0 to 65535.

- This configuration depends on `ESPNOW\_ENABLE\_POWER\_SAVE`, and a help message provides information about the wake window.

13. ```plaintext

config ESPNOW\_WAKE\_INTERVAL

int "ESPNOW wake interval, unit in millisecond"

range 1 65535

default 100

depends on ESPNOW\_ENABLE\_POWER\_SAVE

help

ESPNOW wake interval

- This block defines an integer configuration parameter named `ESPNOW\_WAKE\_INTERVAL`.

- It represents the wake interval for ESPNOW power-saving mode, measured in milliseconds.

- The valid range is specified as 1 to 65535.

- This configuration depends on `ESPNOW\_ENABLE\_POWER\_SAVE`, and a help message provides information about the wake interval.

14. endmenu: This line marks the end of the configuration menu.

In summary, this code defines a set of configuration options related to ESPNOW communication on an ESP32 device. Users can customize parameters such as WiFi mode, keys, channel, data count, delay, length, long-range mode, power-saving mode, wake window, and wake interval based on their application requirements. The configuration options provide flexibility for adjusting various parameters of the ESPNOW communication protocol.