Sozib Al Mamun

Embedded Software Engineer

1. RTC (Real-Time Clock) Functions:

- **Initialization and Format Handling:**
  - `RtcInit()`: **Initializes the RTC.**
  - `intTimeFormet()`: **Internal function to format the time display.**
  - `save_time_format(bool is_12_hour)`: **Allows switching between 12-hour and 24-hour time formats.**
- **Time and Date Setting and Retrieval:**
  - `RtcSetDate(day, month, weekday, year)`: **Sets the date.**
  - `RtcSetTime(sec, min, hour)`: **Sets the time.**
  - `RtcReadBuffer()`: **Reads RTC buffer data.**
- **Data Read/Write:**
  - `RtcDataWrite(eRtcDataType, data)`: **Writes data to RTC for specific data types.**
  - `RtcDataRead(eRtcDataType)`: **Reads data from the RTC based on specified type.**
  - `RTCWriteByte(ByteData)`, `RTCReadByte()`: **Write and read individual**

bytes to/from RTC.

- **Start/Stop RTC and Format Conversion:**
  - `RTCStop()`, `RTCStart()`**: Functions to stop and start the RTC.**
  - `Dec2BCD(dec)`, `BCD2Dec(bcd)`**: Helper functions to convert between decimal and BCD formats.**

2. PWM Control:

- `PwmInt(ledc_channel_config_t *ledc_channel, gpio_num_t pinNo)`**: Initializes PWM settings using the specified LED control channel and GPIO pin.**

3. Dynamic CPU Frequency Control:

- **Configuration and Control:**
  - `configure_dynamic_frequency()`**: Sets up dynamic CPU frequency scaling.**
  - `reduce_cpu_frequency()`**: Lowers the CPU frequency to save power.**
  - `restore_cpu_frequency()`**: Returns the CPU frequency to its original state for performance.**