

AIROC™ Cloud Connectivity Manager (CCM)

version 0.6.0

1 CCM Documentation	1
1.1 Cloud Connectivity Manager (CCM)	1
1.1.1 Supported kits	1
1.1.2 Hardware setup	1
1.1.3 Software setup	1
1.1.4 Entering AIROC™ CCM AT commands	1
1.1.5 Wi-Fi onboarding	2
2 Cloud Connectivity Manager(CCM) AT commands	3
2.1 Enable/Disable Logging	3
2.1.1 Command	3
2.1.1.1 Parameter	3
2.1.2 Response	3
2.1.3 Sample command and response messages	4
2.2 PING	4
2.2.1 Command	4
2.2.1.1 Parameter	4
2.2.2 Response	4
2.2.3 Sample command and response messages	4
2.3 ECHO	4
2.3.1 Command	5
2.3.1.1 Parameter	5
2.3.2 Response	5
2.3.3 Sample command and response messages	5
2.4 SCAN	5
2.4.1 Command	5
2.4.1.1 Parameter	5
2.4.2 Response	5
2.4.3 Sample command and response messages	5
3 Sample command sequences	7
3.1 Configure Wi-Fi credentials.	7
3.2 Configure AWS Endpoint address	7
3.3 Connect to Wi-Fi and AWS IoT cloud	7
3.4 Check Connection status	7
3.5 Configure Root Topic	7
3.6 Configure Topics	8
3.7 Subscribe to configured Topics	8
3.8 Publish on configured Topics	8
3.9 Publish on any non configured Topics	8
3.10 Check for events	8
3.11 Check for messages on subscribed topics	8
3.12 Unsubscribe from subscribed Topics	8

3.13 Disconnect from AWS IoT cloud	8
3.14 Check Connection status	8
4 Document History	9
4.1 Document history	9

Chapter 1

CCM Documentation

1.1 Cloud Connectivity Manager (CCM)

AIROC™ Cloud Connectivity Manager (CCM) is a connectivity module that adheres to [AWS IoT Expresslink](#) specification. The module is connected via serial interface (UART based) that uses an abstracted Application Programming Interface (API) to connect any host application to AWS IoT Core and its services. In so doing, an CCM module is offloading complex and undifferentiated workload such as authentication, device management, connectivity, and messaging from the application (host) processor.

1.1.1 Supported kits

- [AIROC™ Cloud Connectivity Manager module \(IFW956810\)](#)

1.1.2 Hardware setup

This example uses the board's default configuration. See the kit user guide [Getting started with AIROC™ IFW56810 Cloud Connectivity Manager](#) to ensure that the board is configured correctly. Before running the AIROC™ CCM application, Register provisioned device certificate in the AWS portal by following the registration steps provided in [Getting started with AIROC™ IFW56810 Cloud Connectivity Manager](#).

1.1.3 Software setup

Install a terminal emulator if you don't have one. Instructions in this document use [Tera Term](#).

1.1.4 Entering AIROC™ CCM AT commands

AIROC™ CCM module supports execution of [AWS IoT Expresslink](#) AT commands through USB serial device COM port. The user can enter the commands a line at a time by typing, or by pasting the command in the serial window and pressing **Enter**.

The list of AT commands supported by AIROC™ CCM module is available [here](#).

Refer [AIROC™ CCM module Sample command sequences](#) for sample AT command sequence to communicate with AWS IoT cloud.

1.1.5 Wi-Fi onboarding

AIROC™ CCM module supports Wi-Fi SoftAP onboarding. To enable this feature user is expected to use *CONF-MODE* command as described in [AWS IoT ExpressLink Programmers Manual](#). After enabling Wi-Fi SoftAP onboarding, user needs to use *Cirrent Wi-Fi Onboarding* mobile app to onboard the AIROC™ CCM module. To evaluate this feature, download the *Cirrent Wi-Fi Onboarding* mobile app which is available for [iOS](#) and [Android](#).

1. Start the *Cirrent Wi-Fi Onboarding* mobile app.
2. Follow the instructions on the mobile app to send Wi-Fi credentials to the CCM module.
3. If the device certificate is registered with AWS IoT and EndPoint is configured in CCM module, then post Wi-Fi onboarding CCM module will connect to AWS IoT.

NOTE The Wi-Fi credentials from the onboarding process are stored by the CCM module and will be used to connect to the network every time the CCM boots.

Chapter 2

Cloud Connectivity Manager(CCM) AT commands

AIROC™ CCM module supports the AT commands specified in [AWS IoT ExpressLink Programmers Manual](#).

Additionally the CCM module supports below diagnostic commands, which assists the developer to perform diagnostics and debugging.

2.1 Enable/Disable Logging

By default logging is disabled in CCM module.

2.1.1 Command

```
AT+DIAG LOG X\n
```

2.1.1.1 Parameter

X - Log Level

```
0. "LOG_OFF"  
1. "LOG_ERR"  
2. "LOG_WARNING"  
3. "LOG_NOTICE"  
4. "LOG_INFO"  
5. "LOG_DEBUG0"  
6. "LOG_DEBUG1"  
7. "LOG_DEBUG2"  
8. "LOG_DEBUG3"  
9. "LOG_DEBUG4"
```

2.1.2 Response

```
OK\n
```

2.1.3 Sample command and response messages

Command

```
AT+DIAG LOG 4\n
```

Response

```
OK\n
```

2.2 PING

Initiate ping to a given IPv4 address from CCM module.

2.2.1 Command

```
AT+DIAG PING x.x.x.x\n
```

2.2.1.1 Parameter

x.x.x.x - IPv4 address

2.2.2 Response

```
OK Received ping response in Yms\n
```

2.2.3 Sample command and response messages

Command

```
AT+DIAG PING 8.8.8.8\n
```

Response

```
OK Received ping response in 34ms\n
```

2.3 ECHO

By default command echo is disabled in CCM module. Enable command echo by using below command.

2.3.1 Command

AT+DIAG ECHO\n

2.3.1.1 Parameter

NA

2.3.2 Response

OK\n

2.3.3 Sample command and response messages

Command

AT+DIAG ECHO\n

Response

OK\n

2.4 SCAN

Initiates a SCAN of nearby Wi-Fi access points with a timeout of X seconds from CCM module.

2.4.1 Command

AT+DIAG SCAN X\n

2.4.1.1 Parameter

X - Seconds

2.4.2 Response

OK SSID :XXXXX DB :YY Channel :ZZ\n

2.4.3 Sample command and response messages

Command

AT+DIAG SCAN 5\n

Response

OK SSID :IFX_AP_01 DB :-74 Channel :11\n OK SSID :IFX_AP_02 DB :-71 Channel :11\n

Chapter 3

Sample command sequences

Below are the list of AT commands which a user can use to connect with AWS IoT and test MQTT publish and subscribe.

3.1 Configure Wi-Fi credentials.

```
AT+CONFIG SSID=AnyRouter  
AT+CONFIG Passphrase=AnyPassword
```

3.2 Configure AWS Endpoint address

```
AT+CONF EndPoint=EndPoint_address
```

3.3 Connect to Wi-Fi and AWS IoT cloud

```
AT+CONNECT
```

3.4 Check Connection status

```
AT+CONNECT?
```

3.5 Configure Root Topic

```
AT+CONF TopicRoot=Room1
```

3.6 Configure Topics

```
AT+CONFIG Topic1=Light1
AT+CONFIG Topic2=/Central_AC
```

3.7 Subscribe to configured Topics

```
AT+SUBSCRIBE1
AT+SUBSCRIBE2
```

3.8 Publish on configured Topics

```
AT+SEND1 ON
AT+SEND2 OFF
```

3.9 Publish on any non configured Topics

```
AT+SEND state Hello world
```

3.10 Check for events

```
AT+EVENT?
```

3.11 Check for messages on subscribed topics

```
AT+GET1
AT+GET2
```

3.12 Unsubscribe from subscribed Topics

```
AT+UNSUBSCRIBE1
AT+UNSUBSCRIBE2
```

3.13 Disconnect from AWS IoT cloud

```
AT+DISCONNECT
```

3.14 Check Connection status

```
AT+CONNECT?
```

Chapter 4

Document History

4.1 Document history

Document Version	Description of Change
0.6.0	Initial version

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