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User Manual 

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Samsung Electronics AI LITE ACAU710R WiFi Transceiver Module



Specifications

- Product Name: ACAU710R
- Wireless Standards: IEEE802.11a.b.g.n.ax, Bluetooth 5.2
- Chipset: Realtek SDA8702EAH
- Wi-Fi Frequency Range: 2412- 2472MHz, 5180- 5825MHz
- Bluetooth Frequency Range:2402- 2480MHz
- Output Power Tolerance: +/-1dB

Wi-Fi Data Modulation:

ACAU710R supports WLAN(802.11b/g/n/ax_HT20/HE20) with DSSS, OFDM, and OFDMA modulation.

Bluetooth Data Modulation:

For Bluetooth, the module supports BDR/EDR with GFSK, /4DQPSK, 8DPSK modulation, and BLE with GFSK modulation.

RF Characteristics:

- RF Frequency Range: 2.402 – 2.48 GHz
- TX Output Power [BDR]: -45 dBm (min) – 6 dBm (typ) – 6 dBm (max)
- TX Output Power [EDR]: 6 dBm (typ)
- TX Output Power [LE]: 6 dBm (typ)

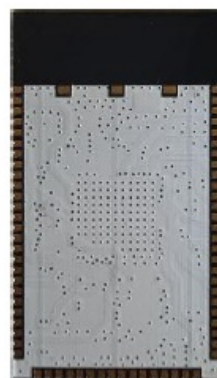
Introduction

- ACAU710R is a Wi-Fi / Bluetooth IoT module compliant with IEEE802.11 a.b.g.n.ax
- MAC/baseband/radio and Bluetooth 5.2 optimized for low-power applications.
- The core chipset is from Realtek part number SDA8702EAH.

Product Photos



[TOP]



[BOTTOM]

- Product Details
- WIFI
 - > Data Modulation: WLAN(802.11b/g/n/ax_HT20/HE20)_DSSS, OFDM, OFDMA
 - > Frequency Range: 2412- 2472MHz, 5180- 5825MHz (Channel 12, 13 sedisabled in FCC/IC only.)

> Module power output

Mode	Frequency	Target Power [dBm]				
		a	b	g	n	ac
2.4 GHz	2412 ~ 2462 MHz		17.5	16.0	16.0	
	2467 MHz		15.5	11.5	11.5	
	2472 MHz		12.5	9.0	9.0	
5 GHz (20 MHz)	5180 ~ 5720 MHz	16.0			15.0	15.0
	5745 ~ 5825 MHz	11.0			11.0	11.0

Mode	Frequency	Target Power [dBm]			
		26T	52T	106T	242T / SU
2.4 GHz	2412 MHz	12.0	14.5	16.0	15.0
	2437 MHz	16.0	16.0	16.0	16.0
	2442 MHz	13.0	16.0	16.0	16.0
	2462 MHz	10.0	14.5	16.0	15.0
	2467 MHz	10.0	13.0	13.0	10.5
	2472 MHz	0.0	3.0	5.0	7.0
5 GHz (20 MHz)	5180 ~ 5200 MHz	12.5	15.0	15.0	15.0
	5240 MHz	6.0	8.0	11.0	15.0
	5260 MHz	12.5	15.0	15.0	15.0
	5280 MHz	12.0	15.0	15.0	15.0
	5320 MHz	12.0	14.0	15.0	15.0
	5500 ~ 5720 MHz	13.0	15.0	15.0	15.0
	5745 ~ 5825 MHz	11.0	11.0	11.0	11.0

- Output Power tolerance
- Output power +/-1dB
- Bluetooth & Bluetooth Low Energy
- Data Modulation: Bluetooth(BDR/EDR)_GFSK, $\pi/4$ DQPSK, 8DPSK
- Bluetooth(BLE)_GFSK
- > Frequency Rang2402- 2480MHzMHz
- > Module power output

Parameter	Min	Typ.	Max	Unit
RF Characteristics				
RF Frequency Range	2.402		2.48	GHz
TX Output Power [BDR]		6		dBm
TX Output Power [EDR]		6		dBm
TX Output Power [LE]		6		dBm

TX Frequency Tolerance	-45	0	45	KHz
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Approval Statement

- FCC approval statement
- RF Software restrictions

1. Contention-Based Protocol, as demonstrated in the FCC test report, is permanently embedded in the module and is not host-dependent and can't be changed by anyone.
2. Operation of transmitters in the 5.25-5.35GHz, 5.47-5.725GHz bands in this Modular device will only associate and connect with a low-power indoor access point or subordinate device and never directly connect to other client devices.
This feature is included in its firmware and can't be changed by anyone.
3. Operation of transmitters in 5.25- 5.35GHz55.47- 5.725GHz25GHz bands in this Modular device will always initiate transmission through the control of a low-power indoor AP or subordinate, except for brief transmissions before joining a network. These short messages will only occur if the client has detected an indoor AP or subordinate operating channel.

These brief messages will have a time-out mechanism such that if it does not receive a response from an AP it will not continually repeat the request.

This device complies with Part 15 of the FCC's Rules. Operations subject to the following two Conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesirable operation.

To satisfy FCC exterior labeling requirements, the following text must be placed on the exterior of the end product.

Contains Transmitter module FCC ID: A3LACAU710R

This equipment has been tested and found to comply with the limits for a Class B digital device, under part 15 of the FCC Rules. These limits are designed to provide reasonable

protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- The OEM integrator is responsible for ensuring the end-user has no manual instructions to remove or install the module.
- The module is limited to installation in mobile or fixed applications.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

RF exposure considerations

The module has been certified for integration into products only by OEM integrators under the following conditions

- The antenna(s) must be installed such that a minimum separation distance of at least 20cm is maintained between the radiator(antenna) and all persons at all times.
- The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.
- This device can support Ad-hoc and Wi-Fi Direct for 2.4GHz, UNII 1, and UNII 3 bands.

- The device operates strictly as a client in DFS channels (with passive scan). It does not support ad-hoc, Wi-Fi Direct Group Owner, Hotspot, or any other peer-to-peer modes that may initiate a network in DFS channels (U NII2-2A and UNII2-2C band)
- OEM/Host manufacturer responsibilities
- OEM/Host manufacturers are ultimately responsible for the compliance of the Host and Module.

The final product must be reassessed against all the essential requirements of the FCC rule such as FCC Part 15 Subpart B before it can be placed on the US market. This includes reassessing the transmitter module for compliance with the Radio and EMF essential requirements of the FCC rules. This module must not be incorporated into any other device or system without retesting for compliance as multi-radio and combined equipment.

IMPORTANT: The final host product must have an integral antenna that is not removable by the end user.

• 2.4G WiFi

Antenna	Frequency(MHz)	Antenna Type	MAX Antenna Gain(dBi)
1	2400-2480	Chip Antenna	-0.10dBi

• 5G WiFi

Antenna	Frequency(MHz)	Antenna Type	MAX Antenna Gain(dBi)
1	5150-5850	Chip Antenna	0.90dBi

- Canada IC approval statement

IC approval

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS (s). Operation is subject to the following two conditions:

1. This device may not cause interference
 2. This device must accept any interference, including interference that may cause undesired operation of the device
- **Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
 - Please note that if the ISED certification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains IC: 649E-ACAU710R" Any similar wording that expresses the same meaning may be used.
 - The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.
 - Users should also be advised that high-power radars are allocated as primary users (i.e., priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.
 - The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.
 - This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

IMPORTANT: The final host product must have an integral antenna that is not removable by the end user.

Frequently Asked Questions

1. What is the FCC approval statement for ACAU710R?

The FCC approval statement ensures that the device complies with Part 15 of the FCC's Rules and meets specific operational requirements regarding frequency bands and interference.

2. Can the RF Software restrictions be modified by users?


No, the Contention-Based Protocol and operational restrictions related to frequency

bands are permanently embedded in the module’s firmware and cannot be altered by users.

3. What should users do if they experience interference with radio or television reception?

If interference occurs, users are encouraged to try turning the equipment off and on. If the issue persists, they should take measures to correct the interference, such as adjusting the placement of the equipment or consulting with technical support.


Documents / Resources

	Samsung Electronics AI LITE ACAU710R WiFi Transceiver Module [pdf] User Manual AI LITE ACAU710R WiFi Transceiver Module, AI LITE ACAU710R, WiFi Transceiver Module, Transceiver Module, Module
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References

- [User Manual](#)

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 AI LITE ACAU710R, AI LITE ACAU710R WiFi Transceiver Module, Module, Samsung Electronics, Transceiver Module, WiFi Transceiver Module

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