Wi-Fi/Bluetooth Module
Model Number: AP6275S-1

Product Descrition

The AMPAK Technology® AP6275S-1 is a fully Wi-Fi and Bluetooth functionalities module with seamless roaming capabilities and advance security, also it could interact with different vendors' 802.11a/b/g/n/ac/ax 2x2 Access Points with MIMO standard and can accomplish up to speed of 1200Mbps with dual stream in 802.1ax to connect the wireless LAN. Furthermore AP6275S-1 included SDIO interface for Wi-Fi, UART/ PCM interface for Bluetooth.

In addition, this compact module is a total solution for a combination of Wi-Fi + BT technologies. The module is specifically developed for tablet, OTT box and portable devices.

Product Features

- Lead Free design which is compliant with ROHS requirements.
- TX and RX low-density parity check (LDPC) support for improved range and power efficiency.
- Dual-stream spatial multiplexing up to 1200 Mbps data rate.
- 20, 40, 80 MHz channels with optional SGI (1024 QAM modulation)
- Client MU-MIMO
- Supports standard SDIO v3.0, compatible with SDIO v2.0 HOST interfaces.

Product Specification

Model	AP6275S-1
Product Description	2T2R 802.11 a/b/g/n/ac/ax Wi-Fi + BT 5.3 Module
WiFi Interface	Support SDIO V3.0/2.0
BT Interface	UART / PCM
Operating temperature	-30°C to 85°C
Storage temperature	-40°C to 125°C
Storage temperature	3.3V±10%
Humidity	Operating Humidity 10% to 95% Non-Condensing

NOTICE:

◆please keep this product and accessories attached to the places which children can't touch;
◆do not splash water or other liquid onto this product, otherwise it may cause damage;
◆do not put this product near the heat source or direct sunlight, otherwise it may cause deformation or malfunction;
◆please keep this product away from flammable or naked flame;
◆please do not repair this product by yourself. Only qualified personnel can be repaired.

FCC Statement

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to 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 into 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.

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This module is intended for OEM integrators only. Per FCC KDB 996369 D03 OEM Manual v01r01 guidance, the following conditions must be strictly followed when using this certified module:

KDB 996369 D03 OEM Manual v01r01 rule sections:

2.2 List of applicable FCC rules

This module has been tested for compliance with CFR 47 FCC Part 15 B, CFR 47 FCC Part 15 C (15.247 and DTS) and CFR 47 FCC Part 15 E (NII). It is applicable to the modular transmitter

2.3 Summarize the specific operational use conditions

The module is tested for standalone mobile RF exposure use condition. Any other usage conditions such as co-location with other transmitter(s) will need a separate reassessment through a class II permissive change application or new certification.

Further operation restrictions on the host product include:

*Prohibited for control of or Communications with unmanned aircraft systems.

This radio transmitter FCC ID: 2A2P9-EFPCS24 has been approved by Federal Communications Commission to operate with the integrated FPC antenna. Use of any other antenna is strictly prohibited without filing an application for a new system-specific FCC ID.

This radio transmitter FCC ID: 2A2P9-EFPCS24 has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

The concrete contents to check are the following three points.

1) Must use an antenna such as FPC Antenna with a gain not exceeding the antenna gain value on section 2.7;

2) Should be installed so that the end user cannot modify the antenna;

3) Feed line should be designed in 50ohm

Fine-tuning of return loss etc. can be performed using a matching network.

The antenna shall not be accessible for modification or change by the end user

2.4 The module complies with FCC Part 15.247 / Part 15.407 and applies for Single module approval.

2.5 Trace antenna designs: applicable.
Any deviation(s) from the defined parameters of the antenna trace, as described by the instructions, require that the host product manufacturer must notify the module grantee that they wish to change the antenna trace design. In this case, a Class II permissive change application is required to be filed by the grantee, or the host manufacturer can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application.

The device must be professionally installed.
The intended use is generally not for the general public.
It is generally for industry/commercial use.
The connector is within the transmitter enclosure and can only be accessed by disassembly of the transmitter that is not normally required.
The user has no access to the connector.
Installation must be controlled.
Installation requires special training.

2.6 RF exposure considerations
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment shall be installed and operated with a minimum distance of 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2.7 Antennas
Note 1: Use of other antenna types or the same type of antenna with higher gain than listed above must perform additional testing and appropriate permissive change approval.
Note 2: Additional testing/submission (C2PC) will be required if the device does not meet the antenna and RF exposure requirements.
Note 3: Contact GSD for additional guidance, if choose to use different antenna types or higher/lower gain antennas in the end system.

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

Antenna type and antenna gain:

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2402-2480	FPC	4.13

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	FPC antenna	4.13
2	2412-2462	FPC antenna	3.24

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
1	5150-5850	FPC antenna	5.05
2	5150-5850	FPC antenna	4.65

2.8 Label and compliance information
The final end product must be labeled in a visible area with the following: “Contains FCC ID: 2A2P9-EFPCS24”. The grantee's FCC ID can be used only when all FCC compliance requirements are met.

2.9 Information on test modes and additional testing requirements

This transmitter is tested in a standalone mobile RF exposure condition and any co-located or simultaneous transmission with other transmitters need class II permissive change re-evaluation or new certification.

2.10 Additional testing, Part 15 Subpart B disclaimer

This transmitter module is tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B (unintentional radiator) rule requirement applicable to the final host. The final host will still need to be reassessed for compliance with this portion of rule requirements if applicable.

If all conditions above are met, further transmitter tests will not be required. However, the OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed.

IMPORTANT NOTE: In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

2.11 Note EMI Considerations

The host manufacture is recommended to use D04 Module Integration Guide recommending as "best practice" RF design engineering testing and evaluation in case non-linear interactions generate additional non-compliant limits due to module placement to host components or properties.

2.12 How to make changes

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

Canada Statement

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage;
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Please notice 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: 27618-EFPCS24" any similar wording that expresses the same meaning may be used.
l'appareil hôte doit porter une étiquette donnant le numéro de certification du module d'Industrie Canada, précédé des mots « Contient un module d'émission », du mot «IC: 27618-EFPCS24» ou d'une formulation similaire exprimant le même sens, comme suit

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
Les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;
le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250-5 350 MHz et5 470-5 725 MHz doit se conformer à la limite de p.i.r.e.;

For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate;
le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz)doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment shall be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ouémetteur.
Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

This radio transmitter [IC: 27618-EFPCS24] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.
The concrete contents to check are the following three points.
1) Must use an antenna such as FPC Antenna with a gain not exceeding tye the antenna gain value on section 2.7;
2) Should be installed so that the end user cannot modify the antenna;
3) Feed line should be designed in 50ohm

Fine-tuning of return loss etc. can be performed using a matching network.

Le présent émetteur radio [IC: 27618-EFPCS24] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

Le contenu concret à vérifier sont les trois points suivants.
1) Doit utiliser une antenne telle qu'une antenne FPC avec un gain ne dépassant pas la valeur de gain d'antenne de la section 2.7 ;
2) doivent être installés de façon que l'utilisateur final ne peut pas modifier l'antenne
3) La ligne d' alimentation doit être conçue en 50ohm
Le réglage précis de la perte de rendement, etc. peut être effectué en utilisant un réseau correspondant..

Antenna type and antenna gain:

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2402-2480	FPC	4.13

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	FPC antenna	4.13
2	2412-2462	FPC antenna	3.24

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
1	5150-5850	FPC antenna	5.05
2	5150-5850	FPC antenna	4.65

Notice to OEM integrator

Must use the device only in host devices that meet the FCC/ISED RF exposure category of mobile, which means the device is installed and used at distances of at least 20cm from persons.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
The end user manual shall include FCC Part 15 /ISED RSS GEN compliance statements related to the transmitter as

show in this manual(FCC/ICanada statement).

Host manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 B, ICES 003.
Host manufacturer is strongly recommended to confirm compliance with FCC/ISED requirements for the transmitter when the module is installed in the host.

The use condition limitations extend to professional users, then instructions must state that this information also extends to the host manufacturer's instruction manual.
This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

Any company of the host device which install this modular shall perform the test of radiated & conducted emission and spurious emission etc. according to FCC Part 15C: 15.247 and 15.209 & 15.207, 15B class B requirement, only if the test result comply with FCC part 15C: 15.247 and 15.209 & 15.207, 15B class B requirement. Then the host can be sold legally.
This modular transmitter is only FCC authorized for the specific rule parts (47CFR Part 15.247 and 15.407) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

Host manufacturer is strongly recommended to confirm compliance with FCC/ISED requirements for the transmitter when the module is installed in the host.

Must have on the host device a label showing Contains FCC ID: 2A2P9-EFPCS24 or IC: 27618-EFPCS24.
Both FCC ID and IC ID are not to be placed on the host at the same time and only hosts going into the US can use the FCC ID and only hosts going into Canada can use the IC ID.

Installer shall put it in the manual：
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

l'hôte doit utiliser l'instrument uniquement dans des dispositifs qui répondent à la fcc / (catégorie d'exposition rf mobile, ce qui signifie le dispositif est installé et utilisé à une distance d'au moins 20 cm de personnes.
le manuel de l'utilisateur final doit inclure la partie 15 / (fac rss gen déclarations de conformité relatives à l'émetteur que de montrer dans ce manuel.
le fabricant est responsable de la conformité de l'hôte, le système d'accueil avec le module installé avec toutes les autres exigences applicables du système comme la partie 15 b, ices - 003.
accueillir le fabricant est fortement recommandé de confirmer la conformité avec les exigences de la fcc / (émetteur lorsque le module est installé dans l'hôte.
le dispositif d'accueil doivent avoir une étiquette indiquant contient FCC ID: 2A2P9-EFPCS24，IC: 27618-EFPCS24

Les personnes chargées de l'installation devraient figurer dans le manuel:
Les dispositifs fonctionnant dans la bande de 5 150 à 5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

Doit avoir sur l'appareil hôte une étiquette indiquant Contient l'ID FCC: 2A2P9-EFPCS24 ou IC: 27618-EFPCS24 L'ID FCC et l'ID IC ne doivent pas être placés sur l'hôte en même temps et seuls les hôtes se rendant aux États-Unis peuvent utiliser l'ID FCC et seuls les hôtes se rendant au Canada peuvent utiliser l'ID IC.