EXTRON USER MANUAL

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EXTRON WI-FI TRANSCEIVER MODULE
P/N: 20-2052-01LF

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1 FEATURES

- IEEE 802.11 a,b,g,n, compliant.
- Miniature footprint: 27.5 mm x 24 mm.
- Terminal for PCB/Chip antenna feeds.
- RoHS compliant.

2 DESCRIPTION

The Extron Wi-Fi Transceiver Module (20-2052-01LF) module is a high performance 2.4/5.5 GHz IEEE 802.11 a/b/g/n, radio in a cost effective, pre-certified footprint.

Figure 1: Front and Back of Extron Wi-Fi Transceiver Module (P/N: 20-2052-01LF)

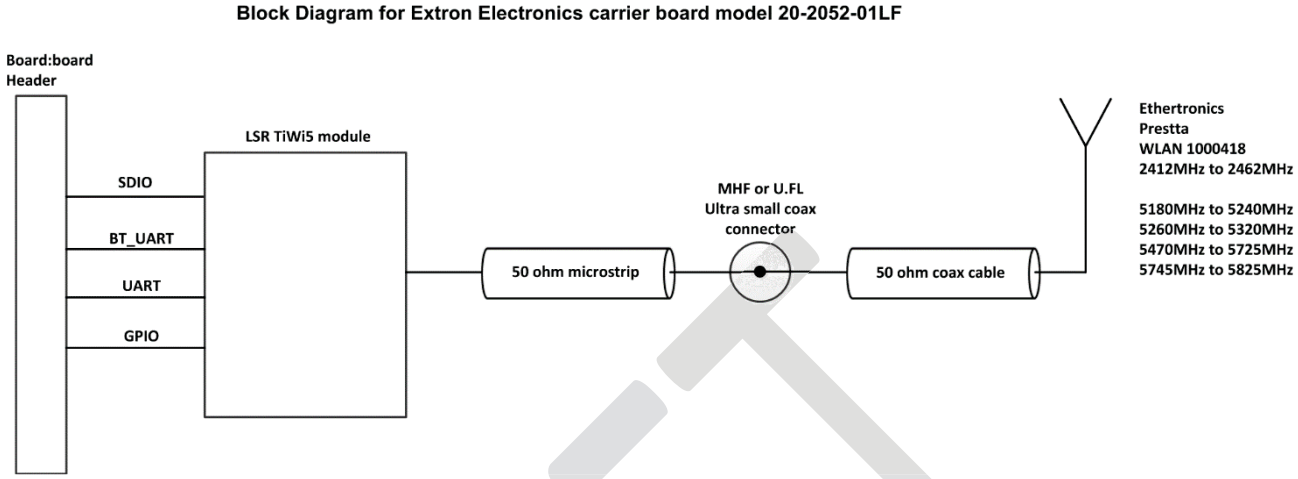
The module realizes the necessary PHY/MAC layers to support WLAN applications in conjunction with a host processor over a SDIO interface.

3 WI-FI TRANSCEIVER MODULE ACCESSORIES

	Order Number	Description
	**001-0009**	2.4/5.5 GHz Dual-Band Dipole Antenna with Reverse Polarity SMA Connector
	**080-0001**	U.FL to Reverse Polarity SMA Bulkhead Cable 105mm

Table 1: Module Accessories

4 BLOCK DIAGRAM



NOTE: *The Bluetooth (BT) functionality has not been activated.*

Figure 2: Block Diagram for Extron Electronics Wi-Fi Transceiver Module – Model 20-2052-01LF

5 FCC CLASS B NOTICE

NOTE: This device 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.

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 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. There is no guarantee that interference will not occur. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, you are 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.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications

made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

ATTENTION:

- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm (7.9 inches) between the radiator and your body.
- Cet équipement est conforme aux limites de radiation de la FCC établies pour un environnement non géré. Il doit être installé et contrôlé à une distance minimale de 20 cm (7,9 inches) entre le radiateur et votre corps.

NOTE: For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics see the "**Extron Safety and Regulatory Compliance Guide**" on the Extron website.

6 ELECTRICAL SPECIFICATIONS

The majority of these characteristics are based on controlling and conditioning the tests using the Extron Wi-Fi Transceiver Module (20-2052-01LF) control software application. Other control conditions may require these values to be re-characterized by the customer.

Absolute Maximum Ratings

Parameter	Min	Max	Unit
Power supply voltage (VBAT)	-0.5	+5.5	V
Digital supply voltage (VIO)	-0.5	2.1	V
Voltage on any GPIO	-0.5	VIO + 0.5	V
Voltage on any Analog Pins	-0.5	2.1	V
RF input power, antenna port		+10	dBm
Operating temperature	-40	+85	°C
Storage temperature	-55	+125	°C

Table 2: Test Equipment

Recommended Operating Conditions

Parameter	Min	Typ	Max	Unit
V_{BAT}	3.0	3.6	4.8	V
V_{IO}	1.62	1.8	1.921	V
V_{IH}	0.65 x VIO	-	VIO	V
V_{IL}	0	-	0.35 x VIO	V
V_{OH} @ 4, 8 mA	VIO – 0.45	-	VIO	V
V_{OL} @ 4, 8 mA	0	-	0.45	V
Ambient temperature range	-40	25	85	°C

Table 3: Recommended Operating Conditions

General Characteristics

Parameter	Min	Typ	Max	Unit
WLAN RF frequency range 1	2412		2472	MHz
WLAN RF frequency range 2	4910		5835	MHz
WLAN RF data rate	1	802.11 a/b/g/n rates supported	65	Mbps
BT RF frequency range	2402		2480	MHz

Table 4: General Characteristics

Power Consumption – WLAN 2.4 GHz

Parameter		Min	Typ	Max	Unit
CCK (802.11b) TX Current	2437 MHz, V_{BAT} =3.6V, T_{amb}=+25°C Po=18.3 dBm, 11 Mbps CCK L=1200 bytes, t_{delay} (idle)=4 µS	-	247	-	mA
OFDM (802.11g) TX Current	2437 MHz, V_{BAT} =3.6V, T_{amb}=+25°C Po=14.4 dBm, 54 Mbps OFDM L=1200 bytes, t_{delay} (idle)=4 µS	-	180	-	mA
OFDM (802.11n) TX Current	2437 MHz, V_{BAT} =3.6V, T_{amb}=+25°C Po=12.5 dBm, 654 Mbps OFDM L=1200 bytes, t_{delay} (idle)=4 µS	-	166	-	mA
CCK (802.11b) RX Current		-	93	-	mA
OFDM (802.11g) RX Current		-	93	-	mA
OFDM (802.11n) RX Current		-	93	-	mA
Dynamic Mode [1]		-	<1.2	-	mA

[1] Total Current from V_{BAT} for reception of Beacons with DTIM=1 TBTT=100 mS, Beacon duration 1.6ms, 1 Mbps beacon.

Table 5: 2.4 GHz WLAN Power Consumption

Power Consumption – WLAN 5 GHz

Parameter	Test Conditions	Min	Typ	Max	Unit
OFDM 9 Mbps (802.11a) TX Current	5745 MHz, V_{BAT} =3.6V, T_{amb}=+25°C Po=17.6 dBm, 9 Mbps OFDM L=1200 bytes, t_{delay} (idle)=4 µS	-	296	-	mA
OFDM 54 Mbps (802.11a) TX Current	5745 MHz, V_{BAT} =3.6V, T_{amb}=+25°C Po=15.0 dBm, 54 Mbps OFDM L=1200 bytes, t_{delay} (idle)=4 µS	-	235	-	mA
MCS0 6.5 Mbps (802.11a) TX Current	5745 MHz, V_{BAT} =3.6V, T_{amb}=+25°C Po=18.0 dBm, MCS0 OFDM L=1200 bytes, t_{delay} (idle)=4 µS	-	298	-	mA
MCS7 65 Mbps (802.11a) TX Current	5745 MHz, V_{BAT} =3.6V, T_{amb}=+25°C Po=13.2 dBm, MCS7 OFDM L=1200 bytes, t_{delay} (idle)=4 µS	-	219	-	mA
54/65 Mbps (802.11a/n) RX Current		-	100	-	mA
Dynamic Mode [1]		-	<1.2	-	mA

[1] Total Current from V_{BAT} for reception of Beacons with DTIM=1 TBTT=100 mS, Beacon duration 1.6ms, 1 Mbps beacon.

Table 6: 5 GHz WLAN Power Consumption

DC Characteristics – General Purpose I/O

Parameter	Test Conditions	Min	Typ	Max	Unit
VIO Current			-	16	mA
Logic input low, V_{IL}		0	-	0.35 x VIO	V
Logic input high, V_{IH}		0.65 x VIO	-	VIO	V
Logic output low, V_{OL} (Full Drive)	Iout = 8 mA	0	-	0.45	V
	Iout = 4 mA	0	-	0.45	V
Logic output low, V_{OL} (Reduced Drive)	Iout = 1 mA	0	-	0.112	V
	Iout = 0.09 mA	0	-	0.01	V
Logic output high, V_{OH} (Full Drive)	Iout = -8 mA	VIO – 0.45	-	VIO	V
	Iout = -4 mA	VIO – 0.45	-	VIO	V
Logic output high, V_{OH} (Reduced Drive)	Iout = -1 mA	VIO – 0.112	-	VIO	V
	Iout = -0.3 mA	VIO – 0.033	-	VIO	V

[1] Total Current from V_{BAT} for reception of Beacons with DTIM=1 TBTT=100 mS, Beacon duration 1.6ms, 1 Mbps beacon.

Table 7: DC Characteristics General Purpose I/O

WLAN RF Characteristics

WLAN Transmitter Characteristic 2.4 GHz
(TA = 25°C, VBAT = 3.6 V)

Parameter	Test Conditions	Typ EVM	Min	Typ	Max	Unit
11 Mbps CCK (802.11b) TX Output Power	11 Mbps CCK , 802.11(b) Mask Compliance, 35% EVM RMS power over TX packet	1.1	-	18.3	-	dBm
9 Mbps OFDM (802.11g) TX Output Power	9 Mbps OFDM , 802.11(g) Mask Compliance, -8 dB EVM RMS power over TX packet	-24	-	18.0	-	dBm
54 Mbps OFDM (802.11g) TX Output Power	54 Mbps OFDM, 802.11(g) Mask Compliance, -25 dB EVM RMS power over TX packet	-34	-	14.4	-	dBm
6.5 Mbps OFDM (802.11n) TX Output Power	6.5 Mbps OFDM, 802.11(n) Mask Compliance, -5 dB EVM RMS power over TX packet	-24	-	18.2	-	dBm
65 Mbps OFDM (802.11n) TX Output Power	65 Mbps OFDM, 802.11(n) Mask Compliance, -28 dB EVM RMS power over TX packet	-35	-	12.5	-	dBm

Table 8: WLAN 2.4 GHz Transmitter RF Characteristics

WLAN Transmitter Characteristic 5 GHz
(TA = 25°C, VBAT = 3.6 V)

Parameter	Test Conditions	Typ EVM	Start Freq	Min	Typ	Max	End Freq	Unit
9 Mbps TX Output Power	9 Mbps OFDM, 802.11(a) Mask Compliance, -8 dB EVM RMS power over TX packet	-31	5170	-	13.0	-	5240	dBm
		-28	5260		15.6		5700	
		-21	5745		17.8		5825	
54 Mbps TX Output Power	54 Mbps OFDM, 802.11(a) Mask Compliance, -25 dB EVM RMS power over TX packet	-31	5170	-	13.0	-	5240	dBm
		-30	5260		14.6		5700	
		-28	5745		15.2		5825	
MCS0 6.5 Mbps TX Output Power	MCS0 OFDM, 802.11(a) Mask Compliance, -5 dB EVM RMS power over TX packet	-31	5170	-	13.1	-	5240	dBm
		-28	5260		15.7		5700	
		-21	5745		18.2		5825	
MCS7 65 Mbps TX Output Power	MCS7 OFDM, 802.11(a) Mask Compliance, -27 dB EVM RMS power over TX packet	-31	5170	-	12.5	-	5240	dBm
		-31	5260		12.8		5700	
		-29	5745		13.5		5825	

Table 9: WLAN 5 GHz Transmitter RF Characteristics

WLAN Receiver Characteristic 2.4 GHz
(TA = 25°C, VBAT = 3.6 V) [1]

Parameter	Test Conditions	Min	Typ	Max	Unit
1 Mbps CCK (802.11b) RX Sensitivity	8% PER	-	-97	-	dBm
11 Mbps CCK (802.11b) RX Sensitivity	8% PER	-	-88	-	dBm
9 Mbps OFDM (802.11g) RX Sensitivity	10% PER	-	-89	-	dBm
54 Mbps OFDM (802.11g) RX Sensitivity	10% PER	-	-74	-	dBm
6.5 Mbps OFDM (802.11n) RX Sensitivity	10% PER	-	-89	-	dBm
65 Mbps OFDM (802.11n) RX Sensitivity	10% PER	-	-72	-	dBm
11 Mbps CCK (802.11b) RX Overload Level	8% PER	-	-	-10	dBm
9 Mbps OFDM (802.11g) RX Overload Level	10% PER	-	-	-17	dBm
54 Mbps OFDM (802.11g) RX Overload Level	10% PER	-	-	-17	dBm
65 Mbps OFDM (802.11n) RX Overload Level	10% PER	-	-	-17	dBm

[1] Up to 2 dB degradation at Channel 13 for 11g/n modes and up to 2 dB degradation at Channel 14 for 11b/g/n modes

Table 10: WLAN 2.4 GHz Receiver RF Characteristics

WLAN Receiver Characteristic 5 GHz
(TA = 25°C, VBAT = 3.6 V) [1]

Parameter	Test Conditions	Min	Typ	Max	Unit
9 Mbps (802.11a) RX Sensitivity	10% PER	-	-87	-	dBm
54 Mbps (802.11a) RX Sensitivity	10% PER	-	-72	-	dBm
MCS0 6.5 Mbps (802.11a) RX Sensitivity	10% PER	-	-88	-	dBm
MCS7 65 Mbps (802.11a) RX Sensitivity	10% PER	-	-70	-	dBm
Max Input Level (3) OFDM (11a or 11n)	<10% PER	-	-	-17	dBm

[1] Up to 2 dB degradation at Channel 13 for 11g/n modes and up to 2 dB degradation at Channel 14 for 11b/g/n modes

Table 11: WLAN 5 GHz Receiver RF Characteristics

7 CLEANING

In general, cleaning the populated modules is strongly discouraged. Residuals under the module cannot be easily removed with any cleaning process.

- Cleaning with water can lead to capillary effects where water is absorbed into the gap between the host board and the module. The combination of soldering flux residuals and encapsulated water could lead to short circuits between neighboring pads. Water could also damage any stickers or labels.
- Cleaning with water can lead to capillary effects where water is absorbed into the gap between the host board and the module. The combination of soldering flux residuals and encapsulated water could lead to short circuits between neighboring pads. Water could also damage any stickers or labels.
- Ultrasonic cleaning could damage the module permanently.

8 OPTICAL INSPECTION

After soldering the Module to the host board, consider optical inspection to check the following:

- Proper alignment and centering of the module over the pads.
- Proper solder joints on all pads.
- Excessive solder or contacts to neighboring pads, or vias.

9 HANDLING

The Extron Wi-Fi Transceiver Module (20-2052-01LF) modules contain a highly sensitive electronic circuitry. Handling without proper ESD protection may destroy or damage the module permanently.

10 AGENCY CERTIFICATES

FCC ID: **2AE3WEXT2052CB**
IC ID: **10862A-EXT2052CB**

CE: Compliant to standards EN 60950-1, EN 300 328, EN 301 489, and EN 301 893.

11 AGENCY STATEMENTS

Federal Communication Commission Interference 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 of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the 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 device 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.

UNII devices operating within 5.15-5.25 GHz are to be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations.

FCC 15.407(c) states: The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

Description to meet FCC 15.407(c):

Data transmission is always initiated by software, which is then passed down through the MAC, through the digital and analog baseband, and finally to the RF transceiver. Several special packets (ACKs, CTS, PSPoll, etc) are initiated by the MAC. These are the only ways the digital baseband portion will turn on the RF transmitter, which it then turns off at the end of the packet. Therefore, the transmitter will be on only while one of the aforementioned packets are being transmitted.

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.

Industry Canada Statement

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.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

This device has been designed to operate with the antenna(s) listed below, and having a maximum gain of 2.0 dBi. Antennas not included in this list or having a gain greater than 2.0 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

List of all Antennas Acceptable for use with the Transmitter:

- Extron P/N: 37-000-01LF

UNII devices operating within 5.15-5.25 GHz are to be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations.

IC RSS-247 A9.4 (4) states: The device shall automatically discontinue transmission in case of absence of information to transmit, or operational failure. A description of how this is done shall accompany the application for equipment certification. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

Description to meet IC RSS-247 A9.4(4):

Data transmission is always initiated by software, which is then passed down through the MAC, through the digital and analog baseband, and finally to the RF transceiver. Several special packets (ACKs, CTS, PSPoll, etc) are initiated by the MAC. These are the only ways the digital baseband portion will turn on the RF transmitter, which it then turns off at the end of the packet. Therefore, the transmitter will be on only while one of the aforementioned packets are being transmitted.

French Translation:

L'opération est soumise aux deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences quipeuvent causer un mauvais fonctionnement de l'appareil.

Pour réduire le risque d'interférence aux autres utilisateurs, le type d'antenne et son gain doiventêtre choisis de manière que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pascelle permise pour une communication réussie.

Cet appareil a été conçu pour fonctionner avec l'antenne (s) ci-dessous, et ayant un gain maximum de 2,0 dBi. Antennes pas inclus dans cette liste ou présentant un gain supérieur à 2,0 dBi sont strictement interdits pour une utilisation avec cet appareil. L'impédance d'antenne requise est de 50 ohms.

Liste de toutes les antennes acceptables pour une utilization avec l'émetteur.

- Extron 37-000-01LF antenne

Dispositifs UNII opérant dans 5.15-5.25 GHz doivent être limitées à des opérations à l'intérieur afin de réduire tout risque d'interférences nuisibles à la co-canal exploitation du MSS.

IC RSS-247 A9.4 (4): le dispositif doit automatiquement cesser d'émettre en cas d'absence d'informations à transmettre, ou l'échec opérationnel. Une description de la façon dont cela est fait doit accompagner la demande d'homologation du matériel. Notez que ce n'est pas pour objet d'interdire la transmission de contrôle ou de signalisation d'informations ou l'utilisation de codes répétitifs requis par la technologie.

Description de rencontrer IC RSS-247 A9.4 (4):

La transmission de données est toujours initiée par le logiciel, qui est ensuite transmis à travers la MAC, à travers la bande de base numérique et analogique et, enfin, à l'émetteur-récepteur RF. Plusieurs paquets spéciaux (ACK, CTS, PSPoll, etc) sont initiées par le MAC. Ce sont les seuls moyens de la partie bande de base numérique se met en marche l'émetteur RF, ce qui lui puis s'éteint à la fin du paquet. Par conséquent, l'émetteur sera sur que lorsque l'un des paquets ci-dessus sont transmises.

12 OEM RESPONSIBILITIES TO COMPLY WITH FCC AND IC REGULATIONS

The Extron Wi-Fi Transceiver Module (20-2052-01LF) has been certified for integration into products only by OEM integrators under the following conditions:

This device is granted for use in Mobile only configurations in which the antennas used for this transmitter must be installed to provide a separation distance of at least 20cm from all person and not be co-located with any other transmitters except in accordance with FCC and Industry Canada multi-transmitter product procedures.

As long as the two conditions above are met, further transmitter testing 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 (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions cannot be met (for certain configurations or co-location with another transmitter), then the FCC and Industry Canada authorizations are no longer considered valid and the FCC ID and IC Certification Number 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 and Industry Canada authorization.

French Translation:

Le module Extron Wi-Fi Transceiver Module (20-2052-01LF) a été certifié pour l'intégration dans des produits uniquement par des intégrateurs OEM dans les conditions suivantes:

Ce dispositif est accordé pour une utilisation dans des configurations mobiles seul dans lequel les antennes utilisées pour cet émetteur doit être installé pour fournir une distance de séparation d'au moins 20cm de toute personne et ne pas être colocalisés avec les autres émetteurs, sauf en conformité avec la FCC et de l'Industrie Canada, multi-émetteur procédures produit.

Tant que les deux conditions précitées sont réunies, les tests de transmetteurs supplémentaires ne seront pas tenus. Toutefois, l'intégrateur OEM est toujours responsable de tester leur produit final pour toutes les exigences de conformité supplémentaires requis avec ce module installé (par exemple, les émissions appareil numérique, les exigences de périphériques PC, etc.)

NOTE IMPORTANTE: Dans le cas où ces conditions ne peuvent être satisfaites (pour certaines configurations ou de co-implantation avec un autre émetteur), puis la FCC et Industrie autorisations Canada ne sont plus considérés comme valides et l'ID de la FCC et IC numéro de certification ne peut pas être utilisé sur la produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'un distincte de la FCC et Industrie Canada l'autorisation.

13 OEM LABELING REQUIREMENTS FOR END-PRODUCT

The Extron Wi-Fi Transceiver Module (20-2052-01LF) module is labeled with its own FCC ID and IC Certification Number. The FCC ID and IC certification numbers are not visible when the module is installed inside another device, as such the end device into which the module is installed must display a label referring to the enclosed module. The final end product must be labeled in a visible area with the following:

"**Contains Transmitter Module FCC ID: 2AE3WEXT2052CB"**

"**Contains Transmitter Module IC: 10862A-EXT2052CB"**

or

"**Contains FCC ID: 2AE3WEXT2052CB"**

"**Contains IC: 10862A-EXT2052CB"**

The OEM of the Extron Wi-Fi Transceiver Module (20-2052-01LF) module must only use the approved antenna(s) listed above, which have been certified with this module.

French Translation:

Le module de Extron Wi-Fi Transceiver Module (20-2052-01LF) est étiqueté avec son propre ID de la FCC et IC numéro de certification. L'ID de la FCC et IC numéros de certification ne sont pas visibles lorsque le module est installé à l'intérieur d'un autre appareil, comme par exemple le terminal dans lequel le module est installé doit afficher une etiquette faisant référence au module ci-joint. Le produit final doit être étiqueté dans un endroit visible par le suivant:

"Contient Module émetteur FCC ID: 2AE3WEXT2052CB "

"Contient Module émetteur IC: 10862A-EXT2052CB "

ou

"Contient FCC ID: 2AE3WEXT2052CB "

"Contient IC: 10862A-EXT2052CB "

Les OEM du module Extron Wi-Fi Transceiver Module (20-2052-01LF) ne doit utiliser l'antenne approuvée (s) ci-dessus, qui ont été certifiés avec ce module.

14 OEM END-PRODUCT USER MANUAL STATEMENTS

The OEM integrator should not to provide information to the end user regarding how to install or remove this RF module or change RF related parameters in the user manual of the end product.

The user manual for the end product must include the following information in a prominent location:

This device is granted for use in Mobile only configurations in which the antennas used for this transmitter must be installed to provide a separation distance of at least 20cm from all person and not be co-located with any other transmitters except in accordance with FCC and Industry Canada multi-transmitter product procedures.

Other user manual statements may apply.

French Translation:

L'intégrateur OEM ne devraient pas fournir des informations à l'utilisateur final sur la façon d'installer ou de supprimer ce module RF ou modifier les paramètres liés RF dans le manuel utilisateur du produit final.

Le manuel d'utilisation pour le produit final doit comporter les informations suivantes dans unendroit bien en vue:

Ce dispositif est accordé pour une utilisation dans des configurations mobiles seule dans laquelle les antennes utilisées pour cet émetteur doit être installé pour fournir une distance de séparation d'au moins 20cm de toute personne et ne pas être co-localisés avec les autres émetteurs, sauf en conformité avec FCC et Industrie Canada, multi-émetteur procédures produit.

Autres déclarations manuel de l'utilisateur peuvent s'appliquer.

15 EUROPE

CE Notice

This device has been tested and certified for use in the European Union. See the Declaration of Conformity (DOC) for specifics.

If this device is used in a product, the OEM has responsibility to verify compliance of the final product to the EU standards. A Declaration of Conformity must be issued and kept on file as described in the Radio and Telecommunications Terminal Equipment (R&TTE) Directive.

□□□□□□mark must be placed on the OEM product per the labeling requirements of the Directive.

Declaration of Conformity (DOC)

This DOC can be downloaded from extron.com.

16 MECHANICAL DATA

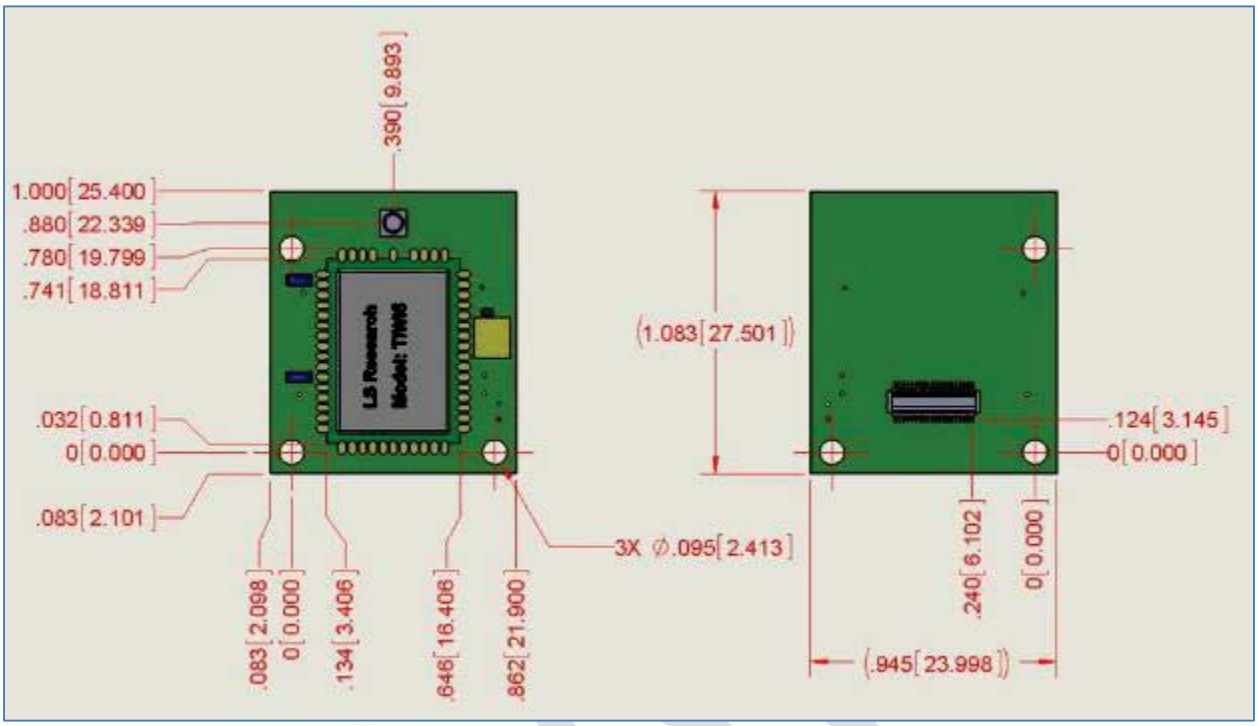


Figure 3: Module Mechanical Dimensions

17 MARKINGS

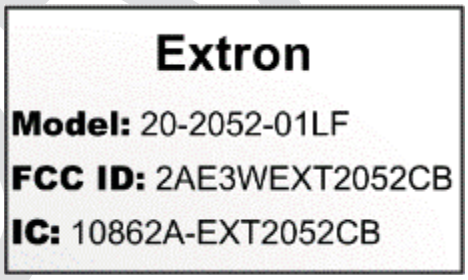


Figure 4: Extron Wi-Fi Transceiver Module Label

18 CONTACT INFORMATION

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