Smart Device Datasheet

Model No.型号: JMDD

版本 Version：V0.3

公布日期 Release Date: 2019-02-20

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版本变更说明 Document Revision History

Revision 版本	Date 日期	Author 作者	Checked by 审核	Description 描述
V0.1	2018-09-17	zzhjiang	Jianli Liang	Draft release.
V0.2	2018-09-19	zzhjiang	Jianli Liang	Add FCC Statement
0.3V	2019-02-20	zzhjiang	Jianli Liang	update antenna gain

Table of Contents

1. General Descriptions

The JMDD Module support Android systems, The highly integrated board ,based on MT8516 platform, reserve a lot of peripheral interfaces, such as USB, dmic, I2S, etc, and makes the possibilities of web browsing, VoIP, Bluetooth applications. With seamless roaming capabilities and advanced security, also could interact with different vendors' IEEE 802.11a/b/g/n/ac Access Points in the wireless LAN. This compact module is a total solution for a combination of Wi-Fi 2T2R and Bluetooth V5.0 technologies.

2. Platform Features

- MT8516 platform
- 8GB eMMC flash
- 4Gbit DDR3L

3. RF Features

- Supports 2*2 11a/b/g/n/ac dual-band WI-FI
- Supports Bluetooth v5.0/v4.2 (LE) and be backwards compatible with v2.1+ EDR
- Supports WLAN-Bluetooth coexistence and ISM-LTE coexistence.
- Supports Bluetooth for class1 and class2 power level tx without external PA
- 3 external antenna(WI-FI *2 + BT *1)

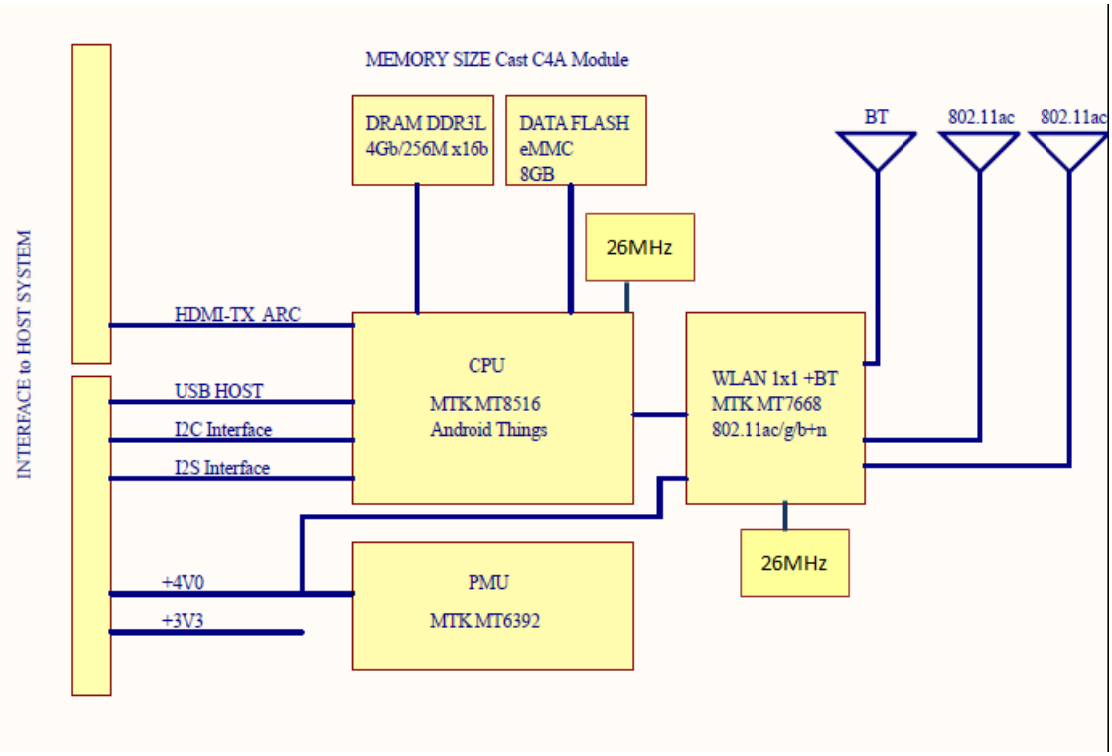
4. Power

- Integrated Multiple PMU
- single 4V dc power supply

5. Peripheral interfaces

- micro USB for debug/programming use
- support dual dmic inputs
- Serial Interfaces: UART, SPI, I2C

6. Block Diagram



7. Appearance

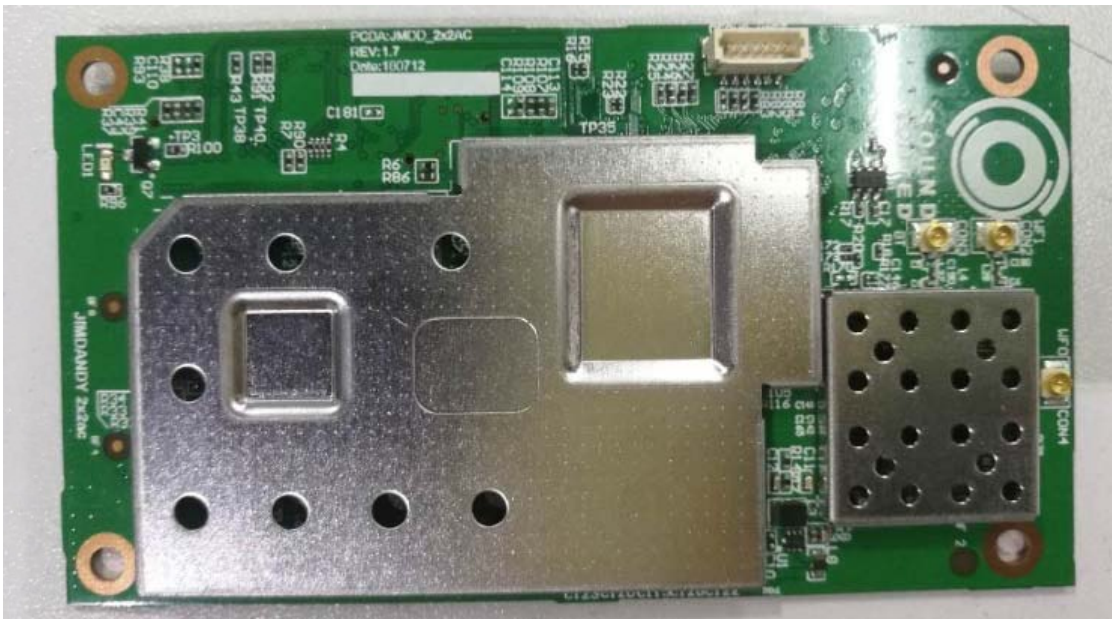


Figure 7-1: Top View Appearance

Figure 7-2: Bottom View Appearance

8. Electrical Characteristics

8.1 Basic information

Supply Voltage	3.6-4.2V DC
Working current	max 1.4A
Dimensions	91mm (L) × 51mm (W)
Weight	~24g
Operating temperature	0 ~ 45 ℃

Table 8-1: Basic information

8.2 Core Components

8.2.1 MT8516

MT8516A is a highly integrated connected audio platform incorporating application processing and connectivity subsystems designed to enable connected audio applications. The chip integrates a Quad-core ARM® Cortex-A35 MPCore operating up to 1.3 GHz. The MT8516A interfaces to NAND flash memory, LPDDR2, LPDDR3, DDR3, DDR3L and DDR4 for optimal performance and also supports booting from eMMC to minimize the overall BOM cost. In addition, an extensive set of interfaces such as TDM/PDM inputs are included for microphone voice input control / search applications on connected audio products.

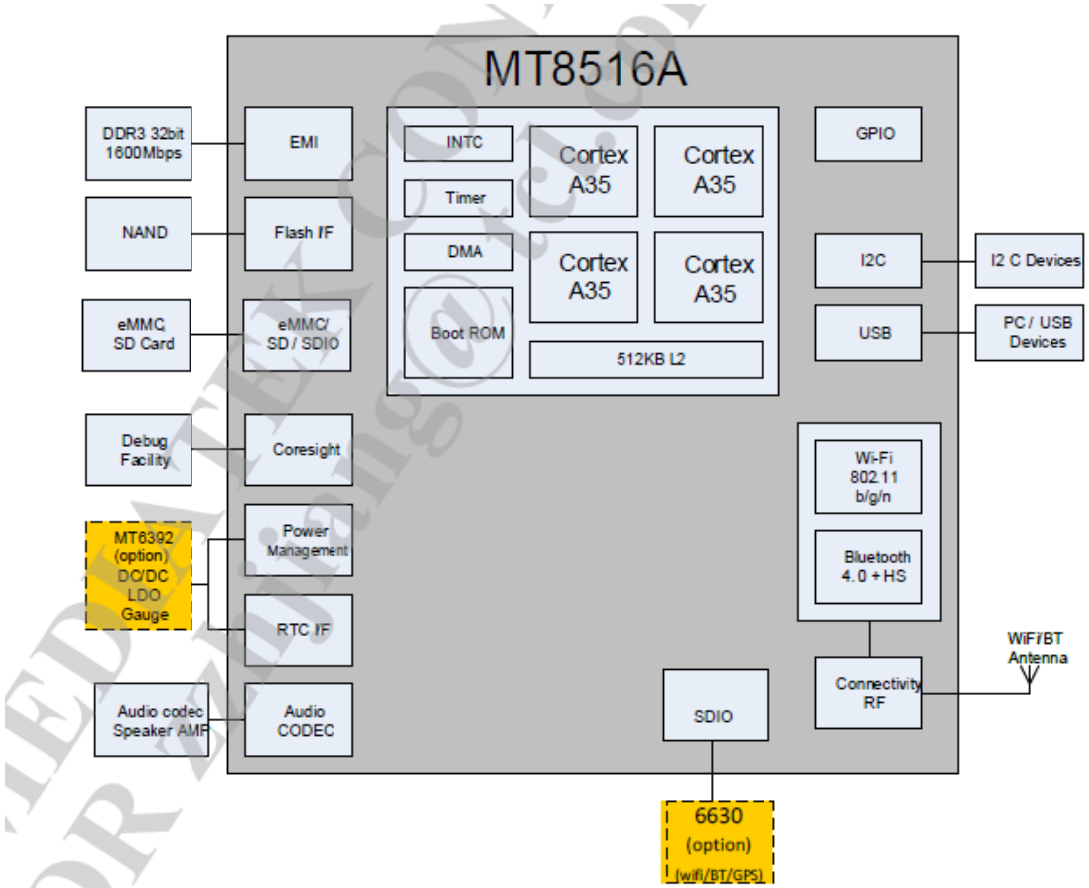


Figure 8-1: MT8516 Block Diagram

8.2.2 MT7668

MT7668B is highly integrated single chip which features a low power 2x2 11a/b/g/n/ac dual-band Wi-Fi subsystem and a Bluetooth subsystem. The Wi-Fi subsystem contains the 802.11a/b/g/n/ac radio, baseband, and MAC that are designed to meet both the low power and high throughput application. MT7668B has a 32-bit RISC MCU that handles Wi-Fi and Bluetooth tasks, and an ARM Cortex-R4 MCU that could offload data frame processing in Wi-Fi host driver. The Bluetooth subsystem contains the Bluetooth radio, baseband, link controller. It also uses the 32-bit The host interface SDIO3.0 are integrated between the host platform and MT7668B.

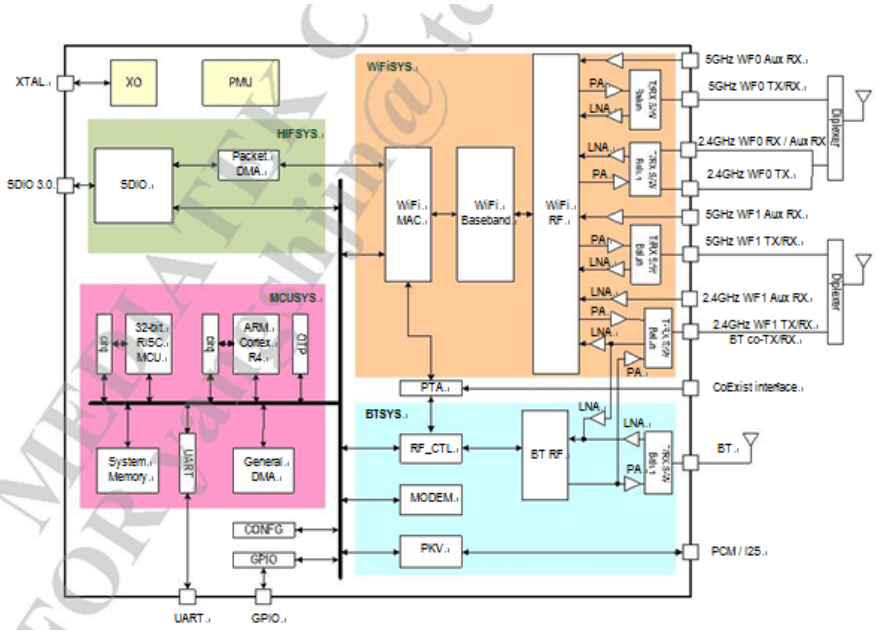


Figure 8-2: MT7668 Block Diagram

8.2.3 MT6392

MT6392 is a power management system chip optimized for tablet and other portable systems, containing three buck converters and 23 LDOs. MT6392 adopts SPI interface and one SRCLKEN control pins to control buck converters, LDOs, and various drivers; it provides enhanced safety control and protocol for handshaking with BB.

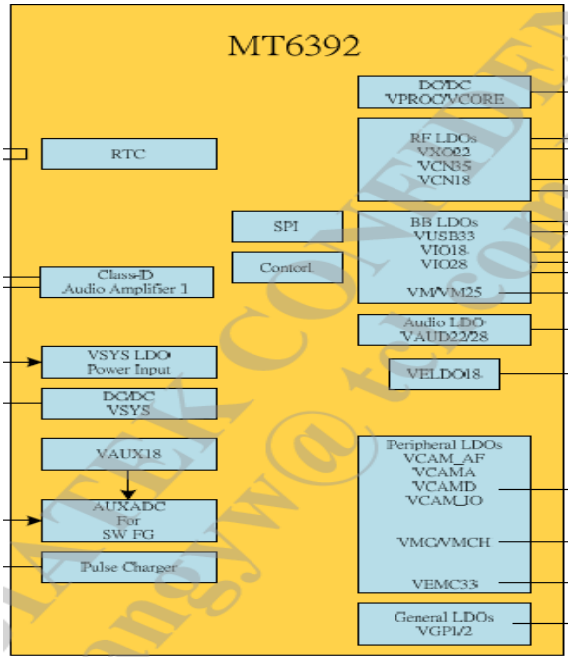


Figure 8-3: MT6392 Block Diagram

8.3 Interfaces and Connectors

8.3.1 80pin 0.5mm Connector

- Part Reference：JCN1

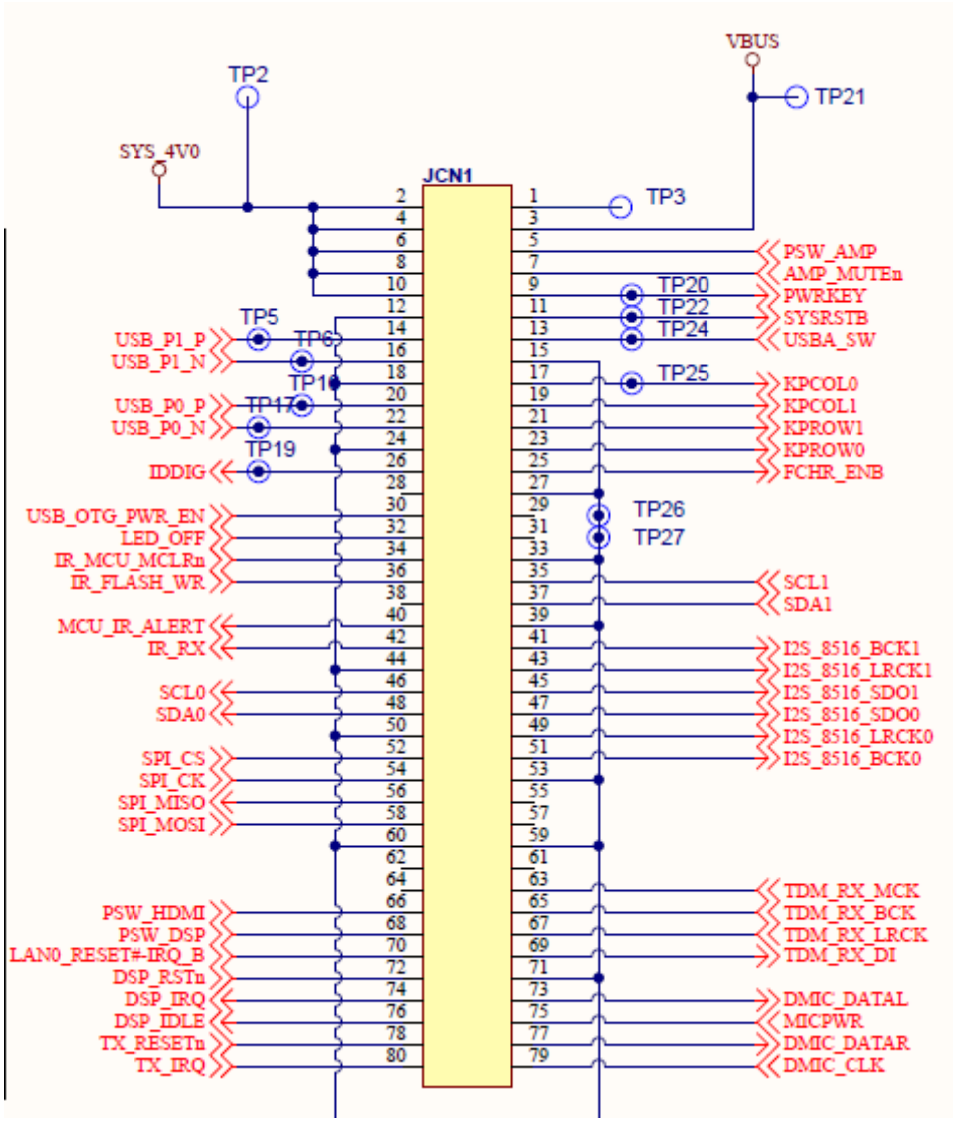


Figure 8-4: JCN1

■ Part Reference：JCN2

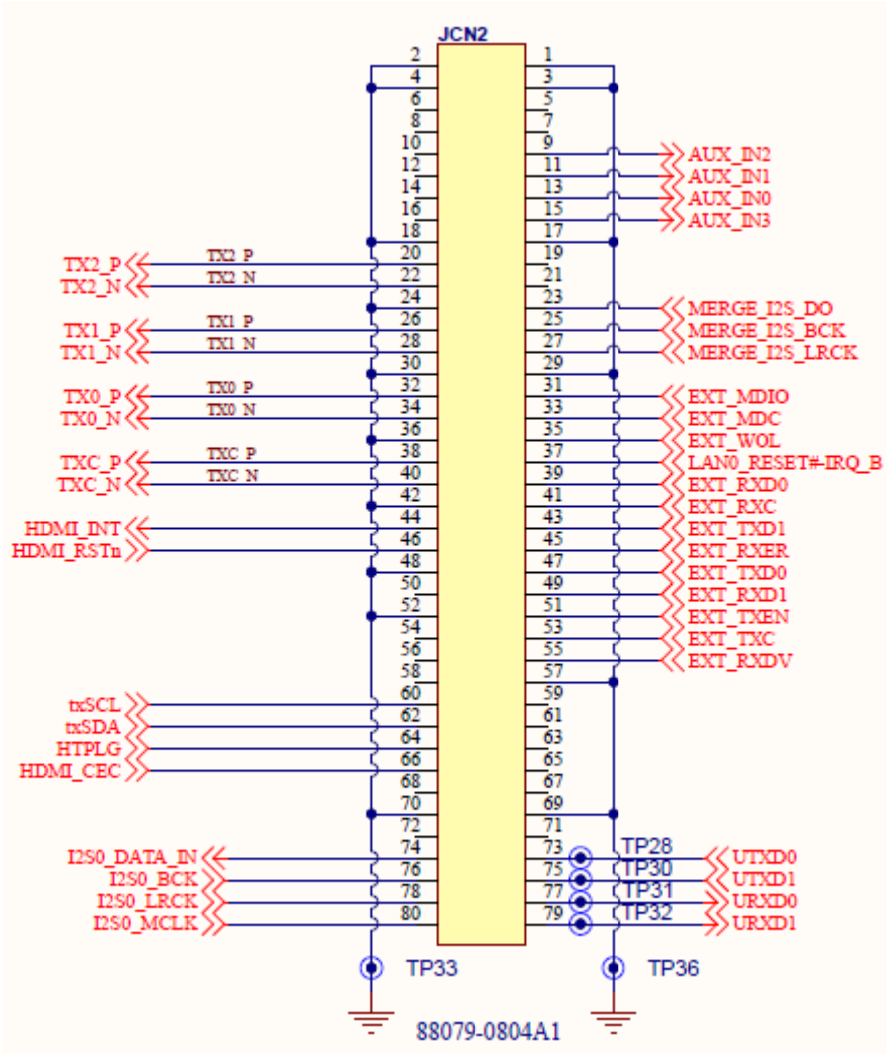


Figure 8-5: JCN2

9. RF Performance

NA

10. Certification & Regulation

NA

11. Package &Ordering Information

NA

12. Green Policy

This module can meet ROHS & REACH compliance.

13. ESD Protection

ESD CAUTION

The JMDD Module is ESD(electrostatic discharge) sensitive device and may be damaged with ESD or spike voltage. Although the Module is with built-in ESD protection circuits, please handle with care to avoid the permanent malfunction or the performance degradation.

FCCStatement

Thisdevice complieswithpart 15 oftheFCCrules.Operation issubjectto thefollowing twoconditions:(1) thisdevicemay notcauseharmfulinterference,and(2)thisdevicemustacceptanyinterferencereceived,includinginterferencethatmay causeundesiredoperation.

Changesormodificationsnotexpresslyapprovedbythe partyresponsible forcompliancecouldvoidthe user'sauthority tooperatetheequipment.

NOTE: thisequipment hasbeen testedandfound tocomply with thelimits fora ClassBdigitaldevice,pursuant topart15 of theFCCRules.Theselimitsaredesignedtoprovidereasonableprotectionagainstharmfulinterferenceina residentialinstallation.Thisequipmentgenerates usesandcan radiateradiofrequencyenergyand,if notinstalledandusedinaccordance withtheinstructions,maycauseharmfulinterferencetoradio communications. However,thereisno guarantee that interferencewillnotoccurinaparticular installation. Ifthisequipment doescauseharmfulinterferencetoradio or television reception,whichcan be determinedbyturningthe equipmentoff andon,the user isencouraged to trytocorrect theinterference by oneormoreofthe followingmeasures:

- Reorientofrelocatethereceivingantenna.
- Increase the separationbetweenthe equipment andreceiver.
- Connecttheequipmentintoanoutletonacircuit differencefromthat towhichthereceiverisconnected.
- Consultthedealer oran experienced radio/TVtechnician forhelp.

ImportantNote:

RadiationExposureStatement

Thisequipmentcomplies withFCC radiationexposurelimits setforthforanuncontrolledenvironment. Thisequipmentshouldbe installed andoperated withminimumdistance 20cmbetweenthe radiator andyour body.

Thistransmittermustnotbeco-located oroperating inconjunction withanyotherantenna ortransmitter.

Country Codeselection feature tobedisabled forproductsmarketedtotheUS/Canada.

1. Theantennamust beinstalled suchthat20cmismaintainedbetween the antenna andusers,and
2. Thetransmittermodulemaynotbeco-locatedwithanyothertransmitterorantenna.

As long as thethree conditions abovearemet, further transmittertesting will notbe required.However, theOEM integrator isstillresponsiblefortesting theirend-productforanyadditionalcompliancerequirementsrequiredwiththismoduleinstalled.

ImportantNote:

Intheeventthatthesecondition scannotbemet (for examplecertainlaptopconfigurations or co-locationwithanothertransmitter), thentheFCCauthorizationisnolonger consideredvalidandtheFCCIDcannotbeusedonthefinalproduct.Inthesecircumstances,theOEMintegrator willberesponsibleforre-evaluatingthe endproduct(includingthetransmitter) andobtaining a separateFCC authorization.

EndProductLabeling:

The finalend productmustbelabeled inavisible areawiththe following"Contains FCCID: IPUJMDD"

ManualInformationtotheEndUser:

TheOEM integrator has tobeaware not provideinformationtotheenduser regardinghowto installorremove thisRF modulein the user'smanual of theendproduct which integrates this module.

Theendusermanualshallincludeall requiredregulatoryinformation/warning asshowinthismanual.

Antennainformation

The JMDD module has been designed to pass certification with the antenna listed below.The required antenna impedance is 50 ohms.

Model	Type	Connector	Peakgain(dBi)				
			2400-2483.5 MHz	5150-5250 MHz	5250-5350 MHz	5470-5725 MHz	5725-5850 MHz
ANT 0	PIFA	RF-SMA	4.03	-	-	-	-
ANT 1	PIFA	RF-SMA	4.1	2.39	1.65	2.97	3.9
ANT 2	PIFA	RF-SMA	3.17	2.91	3.12	4.5	3.56

ISEDStatement

- English:ThisdevicecomplieswithIndustryCanadalicense-exemptRSSstandard(s).
Operationissubjecttothefollowingtwoconditions:(1)Thisdevicemaynotcauseinterference,and
(2)Thisdevicemustacceptanyinterference,includinginterferencethatmaycauseundesiredoperationofthedevice.Thedigit alapparatuscomplieswithCanadianCANICES-3(B)/NMB-3(B).
- French:LeprésentappareilestconformeauxCNRd'IndustrieCanadaapplicablesauxappareils
radioexemptsdelicence.L'exploitationestautoriséeauxdeuxconditionssuivantes:(1)l'appareilnedoitpasproduiredebrouillage,et (2)l'utilisateurdel'appareildoitaccepertoutbrouillageradioélectriquesubi,mêmesilebrouillageestsusceptibled'encompromettr elefonctionnement.

Thisradiotransmitter(ISEDcertificationnumber: 10392A-JMDD)hasbeenapprovedbyIndustryCanadatooperatewiththe maximumpermissiblegainindicated.Strictlyprohibitedforusewiththisdevicewithmaximumantennagain.
Leprésentémetteurradio(ISEDcertificationnumber: 10392A-
JMDD)aétéapprouvéeparindustriecanadapourfonctionneraveclegainmaximalindiqué.strictementinterditepourutilisation aveccedispositifaveclemaximumdegaind'antenne.

Antennainformation

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Model	Type	Connector	Peakgain(dBi)				
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ANT 2	PIFA	RF-SMA	3.17	2.91	3.12	4.5	3.56

Radiation ExposureStatement

ThisequipmentcomplieswithCanadaradiationexposurelimitssetforthforanuncontrolledenvironment.Thisequipmentshouldbeinst alledandoperatedwithminimumdistance20cmbetweentheradiatorandyourbody.

Déclarationd'exposition auxradiations

CetéquipementestconformeCanadalimitesd'expositionauxradiationsdansunenvironnementnoncontrôlé.
Cetéquipementdoitêtreinstalléetutiliséàdistanceminimumde20cmentreleradiateuretvotrecorps.

ThisdeviceisintendedonlyforOEMintegratorsunderthefollowingcondition:
Thetransmittermodulemaynotbeco-locatedwithanyothertransmitterorantenna.
Aslongastheconditionaboveismet,furthertransmittertestwillnotberequired.However,theOEMintegratorisstillresponsiblef ortestingtheirend-productforanyadditionalcompliancerequirementsrequiredwiththismoduleinstalled.Cetappareilestconç uuniquementpourlesintégrateursOEMdanslesconditionssuivantes:
Lemoduleémetteurpeutnepasêtrecoïmplantéavecunautreémetteurouantenne.
Tantqueles1conditionci-dessussontremplies,desessaissupplémentairessurl'émetteurneserontpasnécessaires.Toutefois,l'intégr ateurOEMesttoujoursresponsabledesessaissursonproduitfinalpourtoutesexigencesdeconformitésupplémentairesrequispource moduleinstallé.

ImportantNote:

Intheeventthattheseconditionscannotbemet(forexamplecertainlaptopconfigurationsorco-locationwithanothertransmitter),th entheCanadaauthorizationisnolongerconsideredvalidandtheICcannotbeusedonthefinalproduct.Inthesecircumstances,theOE Mintegratorwillberesponsibleforre-evaluatingtheendproduct(includingthetransmitter)andobtainingaseparateCanadaauthoriz ation.

NoteImportante:
Danslecasoùcesconditionsnepeuventêtresatisfaites(parexemplepourcertainesconfigurationsd'ordinateurportableoudecertainesco-localisationavecunautreémetteur),l'autorisationduCanadan'estplusconsidérécommevalideetl'ICnepeutpasêtreutilisésurleproduitfinal.Danscescirconstances,l'intégrateurOEMserachargéderéévaluerleproduitfinal(ycomprisl'émetteur)etl'obtentiond'uneautorisationdistincteauCanada.

End Product Labeling
Thefinalendproductmustbelabeledinavisibleareawiththefollowing:ContainsIC: 10392A-JMDD.
Plaquesignalétique duproduitfinal
Leproduitfinaldoitêtreétiquetédansunendroitvisibleavecl'inscriptionsuivante:ContientdesIC: 10392A-JMDD.

ManualInformationtotheEndUser
TheOEMintegratorhastobeawarenottoprovideinformationtotheenduserregardinghowtoinstallorremovethisRFmoduleintheuser’smanualoftheendproductwhichintegratesthismodule.
Theendusermanualshallincludeallrequiredregulatoryinformation/warningasshowinthismanual.

Manueld'informationàl'utilisateurfinal
L'intégrateurOEMdoitêtreconscientdenepasfournirdesinformationsàl'utilisateurfinalquantàlafaçond'installeroudesupprimercemoduleRFdanslemanueldel'utilisateurduproduitfinalquiintègrecemodule.
Lemanueldel'utilisateurfinaldoitincluretouteslesinformationsréglementairesrequiseset avertissementscommeindiquédanscemanuel.
Caution:
(i) Thedevicefor operationintheband5150–5250MHzisonlyforindooruse toreducethepotentialforharmfulinterferencetoco-channelmobilesatellitesystems;
(ii) Fordeviceswithdetachableantenna(s),themaximumantennagainpermittedfordevicesinthebands5250-5350MHzand5470-5725MHzshallbesuchthattheequipmentstillcomplieswiththeEIRPlimit;
(iii) Fordeviceswithdetachableantenna(s),themaximumantennagain permittedfordevicesintheband5725-5850MHzshallbesuchthattheequipmentstill complieswiththe EIRPlimits specifiedfor point-to-pointand non-point-to-point operation asappropriate;andoperationsinthe5.25-5.35GHz bandare restricted toindoorusageonly.

Avertissement:
(i) lesdispositifsfonctionnantdans labandede5150à5250MHzsontréservésuniquementpouruneutilisationàl'intérieurafinde réduirelesrisquesdebrouillagepréjudiciableauxsystèmesdesatellitesmobilesutilisant lesmêmescanaux;
(ii) pour lesdispositifsmunisd'antennesamovibles, legain maximald'antennepermis pour lesdispositifsutilisantles bandesde5250à5350MHzetde5470à5725MHzdoitêtreconformeàlalimitedelap.i.r.e;
(iii) pour lesdispositifsmunisd'antennesamovibles, le gain maximald'antennepermis (pour lesdispositifsutilisantla bandede5725à5850MHz)doitêtreconformeà lalimitedelap.i.r.e.spécifiée pourl'exploitationpointà pointet l'exploitationnon pointàpoint,selonlecas;Lesopérationsdanslabandede5.25-5.35GHzsontlimitésàunusageintérieurseulement.

----------**END**----------