

# Regulatory WLAN Antenna Information (SANTAFE)

(English Language Required for Intel Regulatory Review / Approval)

**(OEM/ODM or antenna vendor is required to complete this document with platform antenna information.  
Remove Intel references and make this your own document)**

|                     |                                                     |
|---------------------|-----------------------------------------------------|
| Brand Name          |                                                     |
| Model Name          | SANTAFE                                             |
| Antenna Vendor      | Amphenol KAE                                        |
| Antenna Part Number | <input type="checkbox"/> Main Antenna: SS-03-03-076 |
|                     | <input type="checkbox"/> Aux Antenna:               |
| With WLAN Module    | <input type="checkbox"/> WM3B2100                   |
| (Check Box)         | <input type="checkbox"/> WM3B2200BG                 |
|                     | <input type="checkbox"/> WM3B2915ABG                |
|                     | <input type="checkbox"/> WM3945ABG                  |

## Antenna Sample / Antenna Data Requirements for worldwide regulatory approval

| Section | Description of Required OEM / ODM Antenna Information                                                                                                                                                              | US / IC  | EU       | Japan    | Taiwan                      | S.Korea                     |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|-----------------------------|-----------------------------|
| 1A      | Part Number for Antenna only                                                                                                                                                                                       | Required | Required | Required | Required                    | Required                    |
| 1B      | Antenna Manufacturer Name                                                                                                                                                                                          | Required | Required | Required | Required                    | Required                    |
| 1C      | Description of Antenna Type                                                                                                                                                                                        | Required | N/A      | N/A      | N/A                         | N/A                         |
| 1D      | Part number of Antenna Assembly / cable impedance, length & diameter.                                                                                                                                              | Required | Desired  | Desired  | Desired                     | Desired                     |
| 1E      | Main & Aux antenna (Peak Gain W/ cable loss)                                                                                                                                                                       | Required | Required | Required | Required                    | Required                    |
|         | 1E OR 1F, 1G, 1H                                                                                                                                                                                                   |          |          |          |                             |                             |
| 1F      | Main & Aux antenna (Peak Gain only)                                                                                                                                                                                | Required | Required | Required | Required                    | Required                    |
| 1G      | VSWR of cable including connector                                                                                                                                                                                  | Required | Required | Required | Required                    | Required                    |
| 1H      | Main & Aux antenna (Cable loss W/ connector)                                                                                                                                                                       | Required | Required | Required | Required                    | Required                    |
| 2       | Dimensioned Photographs <b>and</b> Drawings of main & auxiliary antennas                                                                                                                                           | Required | Required | Required | Required                    | Required                    |
| 3       | Radiation patterns of antennas loaded in the host platform.                                                                                                                                                        | Required | Desired  | Required | N/A                         | Required                    |
| 4       | Platform model name / number - correlated to antenna manufacturer and antenna part number                                                                                                                          | Required | Required | Desired  | Required                    | Desired                     |
| 5       | Photograph(s) or Drawings showing location of antennas in platform. <b>(S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.</b> | Required | Required | Desired  | Required<br><b>(Photos)</b> | Required<br><b>(Photos)</b> |
| 6       | Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement).                                                                               | Required | N/A      | N/A      | N/A                         | N/A                         |
| 7       | Photograph(s) or Drawings showing the location of all antennas (WLAN, BT, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required.   | Required | N/A      | N/A      | N/A                         | N/A                         |
| 8       | Local representative contact information for LMA/ PARS process.                                                                                                                                                    | Required | N/A      | N/A      | N/A                         | N/A                         |

# Antenna Information

## Section 1. Antenna Assembly Specifications

### Antenna Assembly Summary:

| 1A<br>Antenna Part Number           | 1B<br>Manufacture     | 1C<br>Antenna Type | 1D<br>Cable Assembly Part Number and Information                                                       | 1E<br>*Peak Gain W/ Cable loss (dBi) | 1F<br>Peak Gain w/o Cable Loss (dBi) | 1G<br>VSWR               | 1H<br>Cable Loss (dBi)          |
|-------------------------------------|-----------------------|--------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|--------------------------|---------------------------------|
| (P/N: SS-03-03-081)<br>Main antenna | Amphenol KAE Co., Ltd | PIFA               | (P/N: SS-03-03-076)<br>50 ohm Coaxial.<br>length: 160mm<br>diameter: 1.37mm<br>Connector: MHC-231(KAE) | 2400-2500MHz<br>1.71 dBi (peak)      | 2400-2500MHz<br>2.10 dBi (peak)      | 2400-2500MHz<br>1.07 max | 2400-2500MHz<br>0.39 dBi (peak) |
|                                     |                       |                    |                                                                                                        | 5150-5350MHz<br>1.80 dBi (peak)      | 5150-5350MHz<br>2.41 dBi (peak)      | 5150-5350MHz<br>1.19 max | 5150-5350MHz<br>0.61 dBi (peak) |
|                                     |                       |                    |                                                                                                        | 5470-5725MHz<br>4.79 dBi (peak)      | 5470-5725MHz<br>5.45 dBi (peak)      | 5470-5725MHz<br>1.27 max | 5470-5725MHz<br>0.65 dBi (peak) |
|                                     |                       |                    |                                                                                                        | 5725-5850MHz<br>4.79 dBi (peak)      | 5725-5850MHz<br>5.48 dBi (peak)      | 5725-5850MHz<br>1.16 max | 5725-5850MHz<br>0.69 dBi (peak) |
| (P/N: )<br>Auxiliary antenna        |                       |                    |                                                                                                        |                                      |                                      |                          |                                 |
|                                     |                       |                    |                                                                                                        |                                      |                                      |                          |                                 |
|                                     |                       |                    |                                                                                                        |                                      |                                      |                          |                                 |
|                                     |                       |                    |                                                                                                        |                                      |                                      |                          |                                 |

### Antenna Peak Gain Table:

| Frequency (MHz) | Main antenna     |                |                | Aux Antenna      |                |                |
|-----------------|------------------|----------------|----------------|------------------|----------------|----------------|
|                 | Horizontal (dBi) | Vertical (dBi) | Hori+Ver (dBi) | Horizontal (dBi) | Vertical (dBi) | Hori+Ver (dBi) |
| 2400            | 0.94 dB          | -1.71 dB       | 1.71 dB        |                  |                |                |
| 2442            | -0.37 dB         | -2.10 dB       | 0.83 dB        |                  |                |                |
| 2484            | -1.40 dB         | -2.20 dB       | 0.81 dB        |                  |                |                |
| 5150            | -2.24 dB         | 1.77 dB        | 1.80 dB        |                  |                |                |
| 5250            | -2.15 dB         | 1.67 dB        | 1.72 dB        |                  |                |                |
| 5350            | 0.15 dB          | 0.63 dB        | 1.46 dB        |                  |                |                |
| 5470            | 0.30 dB          | 0.92 dB        | 1.99 dB        |                  |                |                |
| 5600            | 0.50 dB          | 1.51 dB        | 3.57 dB        |                  |                |                |
| 5725            | 1.59 dB          | 2.85 dB        | 4.79 dB        |                  |                |                |
| 5850            | 1.74 dB          | 2.56 dB        | 3.85 dB        |                  |                |                |

- Antenna Peak Gain required being test in system basis.
- 1E frame contend absolutely peak antenna gain include H/ V/ H+V.

## Section 2. Dimensioned Photos or Drawings of Antennas

**Include a dimensioned photo and dimensioned drawing of main antenna here.**

### Main Antenna Dimensioned Drawing:

[illegible]

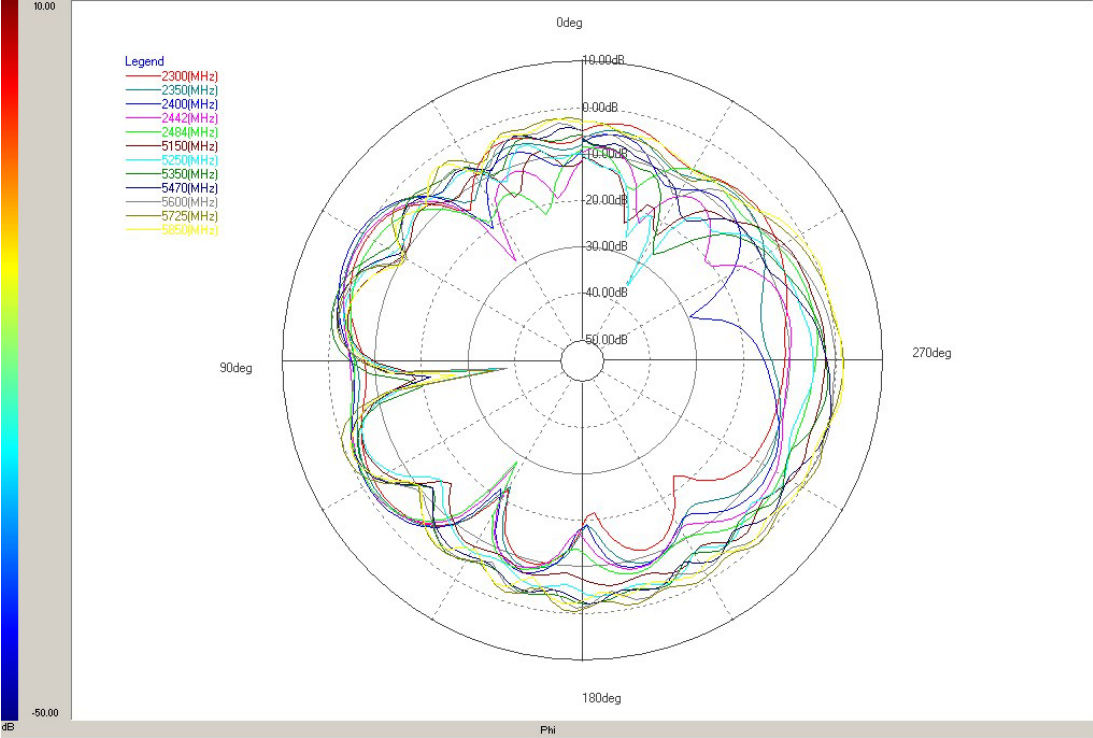
**Main Antenna Photo:**



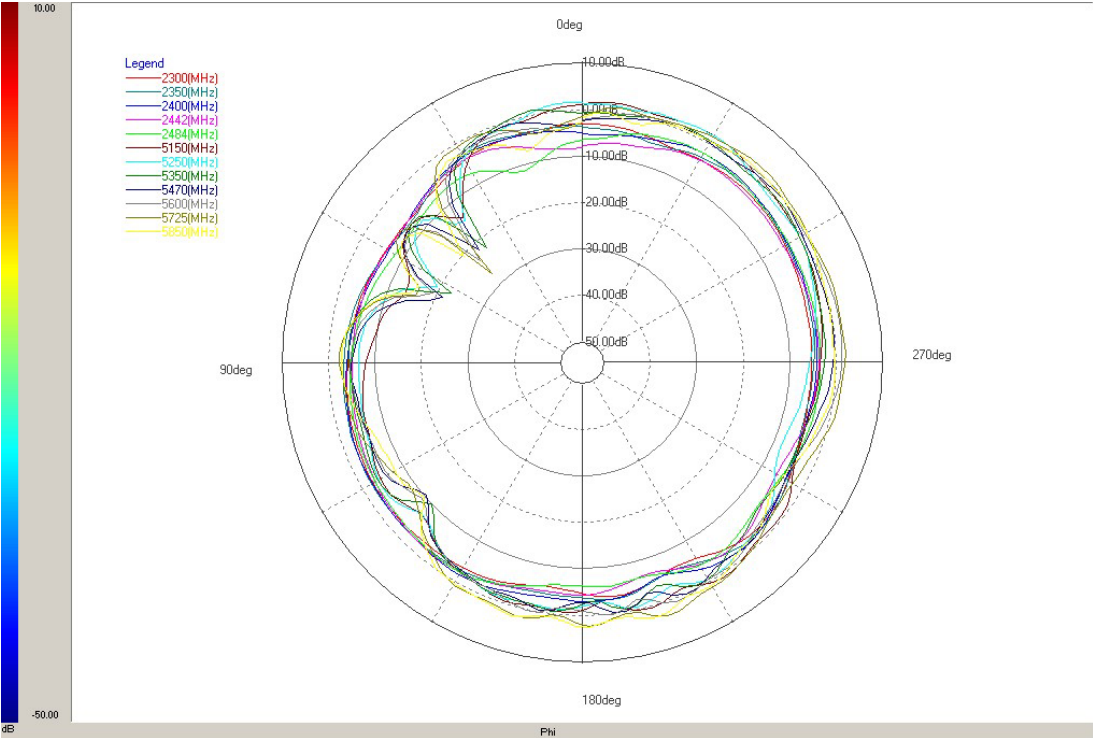
Section 3. Radiation characteristics of antennae Loaded in Host Platform

1. Main antenna Radiation pattern and gain

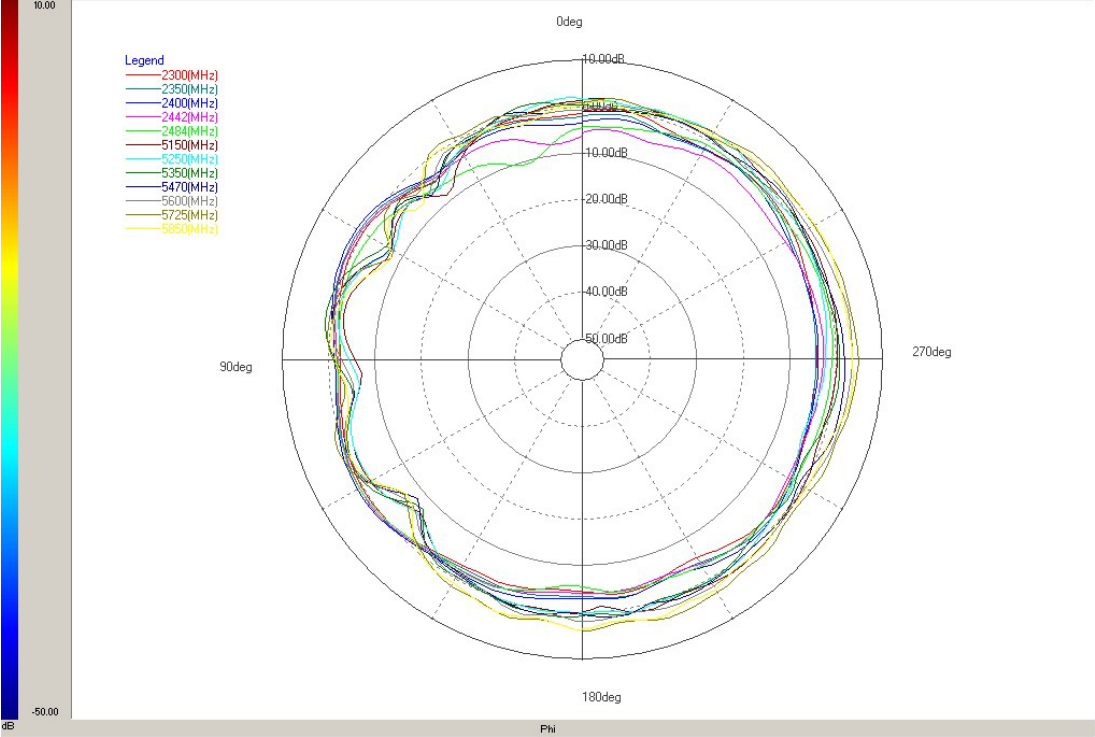
1.1 H-Phi(horizontal)



1.2 H-Theta(vertical)



1.3 H-Phi+ H-Theta



1.4 Peak gain (dBi) summary

| Frequency (MHz) | Horizontal | Vertical | Hori+Ver |
|-----------------|------------|----------|----------|
| 2400            | 0.94 dB    | -1.71 dB | 1.71 dB  |
| 2442            | -0.37 dB   | -2.10 dB | 0.83 dB  |
| 2484            | -1.40 dB   | -2.20 dB | 0.81 dB  |
| 5150            | -2.24 dB   | 1.77 dB  | 1.80 dB  |
| 5250            | -2.15 dB   | 1.67 dB  | 1.72 dB  |
| 5350            | 0.15 dB    | 0.63 dB  | 1.46 dB  |
| 5470            | 0.30 dB    | 0.92 dB  | 1.99 dB  |
| 5600            | 0.50 dB    | 1.51 dB  | 3.57 dB  |
| 5725            | 1.59 dB    | 2.85 dB  | 4.79 dB  |
| 5850            | 1.74 dB    | 2.56 dB  | 3.85 dB  |

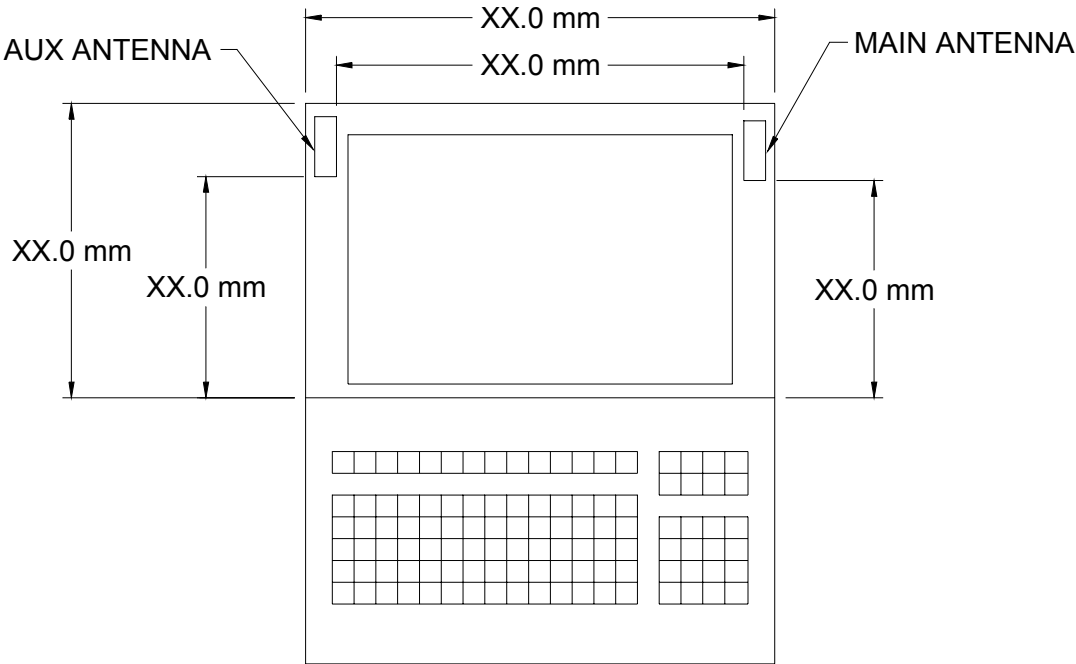
## **Section 4. Host Platform Information**

OEM / ODM Host platform: (XXXXXXX) platform correlated to antenna data  
**Rating Label Photo:**

**Module Location Photo: (if Singapore required)**

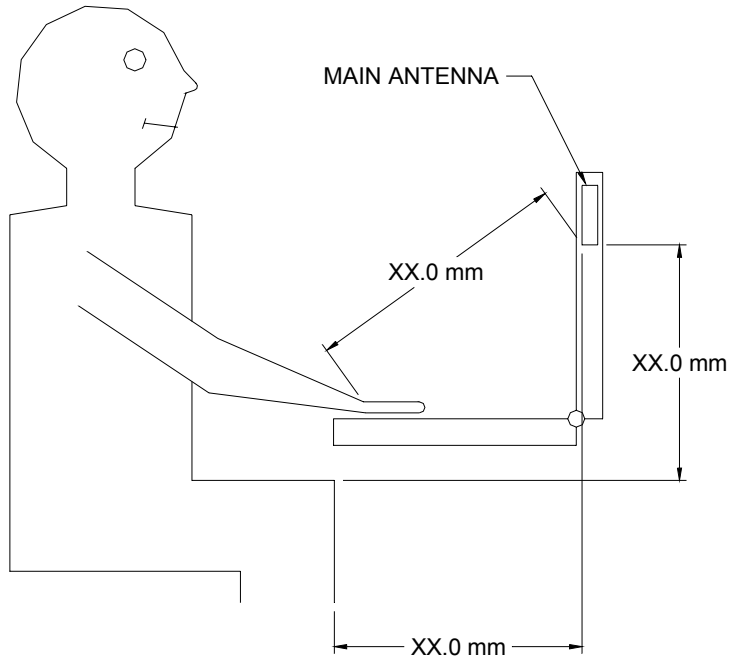
**Section 5. Antenna Host Platform Location Information**

Include a **dimensioned photo or dimensioned drawing** of main and auxiliary antenna placements.



## Section 6. Antenna dimensional information for SAR evaluation

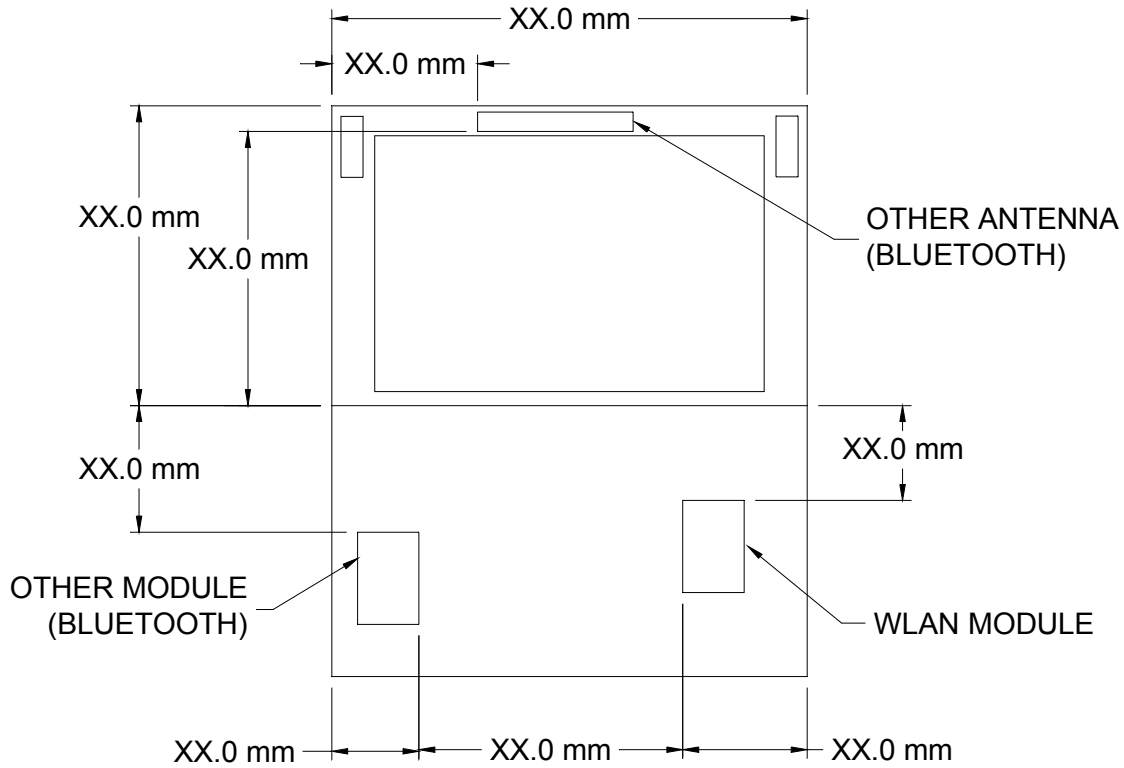
Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between the transmit (main) antenna and the user (excluding hands, wrist, feet, and ankle)



## Section 7. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between WLAN antenna and 2<sup>nd</sup> radiator transmit antenna.

(Note: Due to the evolving rules regarding co-location, each platform will need to be reviewed on a case by case basis)



## Section 8. Local representative contact information

Local representative contact information is required for regulatory support for target countries below.

|             | Local company name | Contact name | Phone number | FAX Number | e-Mail Address | Notes                                               |
|-------------|--------------------|--------------|--------------|------------|----------------|-----------------------------------------------------|
| Argentina   |                    |              |              |            |                |                                                     |
| Brazil      |                    |              |              |            |                |                                                     |
| Indonesia   |                    |              |              |            |                |                                                     |
| Israel      |                    |              |              |            |                |                                                     |
| Malaysia    |                    |              |              |            |                |                                                     |
| Mexico      |                    |              |              |            |                |                                                     |
| Singapore   |                    |              |              |            |                | Telecommunication Equipment Dealer License Required |
| USA, Canada |                    |              |              |            |                |                                                     |