

## GSM & WCDMA Modules Frequency and Supported Operators

| Module                       | Country/Region                            | Operator*                     | Frequency                   |
|------------------------------|---|-------------------------------|-----------------------------|
| GSM Module                   | All GSM supported countries and regions** | All GSM supported operators** | 850/900/1800/1900 MHz       |
|                              | USA                                       | AT&T                          | 850/1900MHz                 |
| WCDMA Module-A               | Canada                                    | Rogers                        | 850/1900MHz                 |
|                              |   | Bell                          | 850/1900MHz                 |
|                              |   | Telcus                        | 850/1900MHz                 |
|                              | Mexico                                    | Telcel                        | 850/1900MHz                 |
|                              | Most of the South America Countries       | /                             | 850/1900MHz or 1900MHz only |
| WCDMA Module-E               | China                                     | Unicom                        | 2100MHz                     |
|                              | China Taiwan                              | Chunghwa Telecom              | 2100MHz                     |
|                              |   | Taiwan Mobile                 | 2100MHz                     |
|                              |   | FETnet                        | 2100MHz                     |
|                              |   | TSTAR                         | 2100MHz                     |
|                              | China Hong Kong                           | /                             | 2100MHz                     |
|                              | Thailand                                  | AIS                           | 900/2100MHz                 |
|                              | South Korea                               | SKT                           | 2100MHz                     |
|                              |   | KT                            | 2100MHz                     |
|                              | Japan                                     | Softbank                      | 900/1500/2100MHz            |
|                              | Most of the Asia Countries                | /                             | 2100MHz or 900/2100MHz      |
|                              | Ukraine                                   | /                             | 2100MHz                     |
| Russia                       | /   | 900/2100MHz                   |                             |
| Most of the Europe Countries | /   | 2100MHz or 900/2100MHz        |                             |
| Brazil                       | Nextel                                    | 2100MHz                       |                             |
| South Africa                 | Vodacom                                   | 2100MHz                       |                             |
|                              | MTN                                       | 2100MHz                       |                             |
| Australia                    | Vodafone                                  | 900/2100MHz                   |                             |
|                              | Optus                                     | 900/2100MHz                   |                             |
| WCDMA Module-T               | Thailand                                  | True Move                     | 850/2100MHz                 |
|                              |   | DTAC                          | 850/2100MHz                 |
|                              | Brazil                                    | Claro                         | 850/1900/2100MHz            |
|                              |   | Teleming                      | 850/1900/2100MHz            |
|                              |   | Vivo                          | 850/1900/2100MHz            |
|                              |   | TIM                           | 850/2100MHz                 |
|                              |   | Nextel                        | 2100MHz                     |
|                              | Australia                                 | Telstra                       | 850/2100 MHz                |

\*If your operators are not listed here, please check with them for the frequency they support before purchasing.

\*\*2G GSM network has been shut down in some countries and more and more operators plan to phase out GSM network. It's wise to check with your local operator for GSM support and sunset plan. Please note that network shutdown carried out by operators will not be covered by the warranty.

## 4G LTE Module Band and Operators

| Module               | Country/Region     | Operator*            | LTE Band Support |
|----------------------|--------------------|----------------------|------------------|
| 4G LTE Module-E      | China Hong Kong    | 3 (Three)            | B3               |
|                      |                    | China Mobile, CSL    | B3, B7           |
|                      |                    | SmarTone             | B3, B8           |
|                      | Thailand           | True Move, DTAC      | B1               |
|                      |                    | AIS                  | B1, B3, B8       |
|                      | South Korea        | SKT                  | B1, B3, B5       |
|                      |                    | KT                   | B1, B3, B8       |
|                      |                    | LGU+                 | B1, B5, B7       |
|                      | Other Asia Regions | /                    | /                |
|                      | Italy              | 3 (Tre)              | B3, B7           |
|                      |                    | Vodafone             | B3, B20          |
|                      |                    | Wind                 | B7, B20          |
|                      |                    | TIM, TISM, H3G       | B3, B7, B20      |
|                      | UK                 | 3 (Three), O2        | B3, B20          |
|                      |                    | EE                   | B3, B7, B20      |
|                      |                    | Vodafone             | B1, B3, B7, B20  |
|                      | Spain              | Yoigo                | B3               |
|                      |                    | Movistar, Orange     | B3, B7           |
|                      |                    | Telefonica, Vodafone | B3, B7           |
|                      | France             | Free                 | B7               |
| Orange, SFR          |                    | B7, B20              |                  |
| Bouygues Télécom     |                    | B3, B7, B20          |                  |
| Russia               | Yota               | B7, B20              |                  |
|                      | MegaFon, Beeline   | B7, B20              |                  |
|                      | VimpelCom, MTS     | B7, B20              |                  |
|                      | Tele2              | B3, B7, B20          |                  |
| Other Europe Regions | /                  | B1, B3, B7, B8, B20  |                  |
| South Africa         | Cell C             | B1                   |                  |
|                      | MTN, NeoTel        | B3                   |                  |
|                      | Vodacom            | B3                   |                  |
| 4G LTE Module-A      | USA                | U.S. Cellular        | B12              |
|                      |                    | AT&T                 | B2, B4           |
|                      |                    | Cricket Wireless     | B2, B4           |
|                      |                    | H2O Wireless         | B2, B4           |
|                      |                    | Google Project Fi    | B2, B4, B12      |
|                      |                    | T-Mobile, Ting       | B2, B4, B12      |
|                      |                    | Lycamobile           | B2, B4, B12      |

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| Module                      | Country/Region   | Operator*            | LTE Band Support     |    |
|-----------------------------|------------------|----------------------|----------------------|----|
| 4G LTE Module-A             | Canada           | Rogers Wireless      | B4                   |    |
|                             |                  | Bell Wireless        | B4                   |    |
|                             |                  | Videotron, Fido      | B4                   |    |
|                             |                  | Public Mobile        | B4                   |    |
|                             |                  | Virgin Mobile        | B4                   |    |
|                             |                  | Telus                | B2, B4, B12          |    |
| 4G LTE Module-AU            | China Taiwan     | T Star               | B8                   |    |
|                             |                  | APT                  | B8, B28              |    |
|                             |                  | FarEasTone           | B3, B28              |    |
|                             |                  | Taiwan Mobile        | B3, B28              |    |
|                             |                  | Chunghwa Telecom     | B3, B7, B8           |    |
|                             | Australia        | TPG                  | B7                   |    |
|                             |                  | NBN & Co             | B40                  |    |
|                             |                  | Vodafone             | B3, B5               |    |
|                             |                  | Telstra              | B1, B3, B28          |    |
|                             |                  | Optus, Virgin Mobile | B1, B3, B7, B28, B40 |    |
|                             | New Zealand      | 2degrees             | B3                   |    |
|                             |                  | Spark, Vodafone      | B3, B7, B28          |    |
|                             | 4G LTE Module-AU | Argentina            | Nextel AR            | B4 |
|                             |                  |                      | Telecom Personal     | B4 |
|                             |                  |                      | Movistar AR          | B4 |
| Brazil                      |                  | Claro, Oi, Vivo      | B7                   |    |
|                             |                  | Nextel               | B3                   |    |
|                             |                  | TIM                  | B3, B7               |    |
| Chile                       |                  | Claro, Entel         | B7                   |    |
|                             |                  | Movistar             | B7                   |    |
|                             |                  | WOM                  | B4                   |    |
| Mexico                      |                  | Telcel, Nextel       | B4                   |    |
|                             |                  | Movistar             | B2                   |    |
| Other South America Regions |                  | /                    | B2, B3, B4, B7, B28  |    |
| 4G LTE Module-J             | Japan            | NTT DoCoMo           | B1, B19              |    |
|                             |                  | Softbank             | B1, B8               |    |
|                             |                  | KDDI                 | B1, B18              |    |
| 4G LTE Module-CE            | China            | CMCC                 | B38, B39, B40, B41   |    |
|                             |                  | Unicom               | B1, B3, B5, B8       |    |
|                             |                  | Telecom              | B1, B3, B5, B8       |    |
|                             | India            | Aircel               | B3, B40              |    |
|                             |                  | Bharti Airtel        | B3, B40              |    |

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