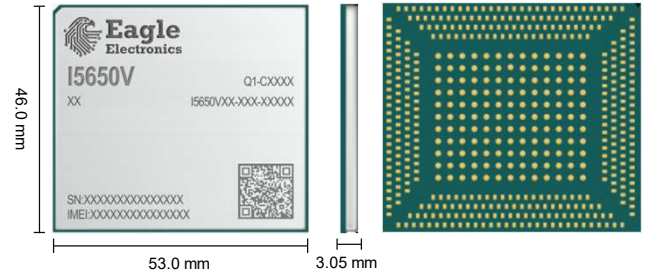


# Eagle I5650V

## IoT/ eMBB-Optimized 5G Sub-6 GHz LGA Module SDX72 Chipset



Eagle I5650V modules are 5G LGA modules optimized specially for IoT and eMBB applications. Adopting the 3GPP Rel-17 technology and leveraging the Qualcomm SDX72 chipset, they support both 5G NSA and SA modes with Option 3x/ 3a/ 3 and Option 2 network architectures, and are backward compatible with the 4G/ 3G networks. The module can meet customers' different application demands for high speed, large capacity, low latency, and high reliability.

I5650V series modules are industrial-grade intended for industrial and commercial applications only.

I5640V series support IZat™ location technology and Gen9C Lite (GPS, GLONASS, BDS, Galileo and QZSS). The integrated GNSS receiver greatly simplifies product design and provides quicker, more accurate and more dependable positioning capability.

A rich set of Internet protocols, industry-standard interfaces (USB 2.0/ 3.0/ 3.1, PCIe 3.0, PCM, UART, etc.) and abundant functionalities (USB drivers for Windows, Linux and Android) extend the applicability of the module to a wide range of IoT and eMBB applications such as business routers, home gateway, STB, industrial laptops, consumer laptops, industrial PDA, rugged tablet PCs and video transmission.



## Key Features

- ✓ 5G/ 4G/ 3G multi-mode module with LGA package, optimized for IoT and eMBB applications
- ✓ 5G, LTE-A and 3G coverage
- ✓ 5G NSA and SA modes
- ✓ Multi-constellation GNSS receiver (optional) available for applications requiring fast and accurate fixes in any environment
- ✓ Feature refinements: FOTA and VoNR / VoLTE (optional)



5G NR Sub-6 GHz



LTE Cat 20 (DL)  
LTE Cat 18 (UL)



Max. 42 Mbps (DL)  
Max 5.76 Mbps (UL)



Embedded Abundant  
Protocols



VoNR/VoLTE  
(optional)



Multi-constellation  
GNSS (optional)



PCIe 3.0  
Interface



USB 3.1  
Interface



Enhanced AT  
Commands

# Eagle I5650V

5G NR		I5650V-NA
Region/Operator		North America
Dimensions		46.0 mm × 53.0 mm × 3.05 mm
Weight		Approx. 17.3 g
<b>Temperature Range</b>		
Operating Temperature		-30 °C to +75 °C
Extended Temperature		-40 °C to +85 °C
<b>Frequency Bands</b>		
5G	5G NR	3GPP Rel-17 NSA/ SA operation, Sub-6 GHz
	5G NR SA	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 29/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78
	5G NR NSA	n2/ 5/ 7/ 12/ 13*/ 14/ 25/ 26/ 29*/ 30/ 38/ 41/ 48*/ 66/ 70*/ 71/ 77/ 78
	DL 4 × 4 MIMO 8RX* (optional)	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 29/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78 n38/ 41/ 48/ 77/ 78
LTE	LTE Category	Cat 20 (DL)/ Cat 18 (UL)
	LTE-FDD	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 29/ 30/ 66/ 71
	LTE-TDD	B38/ 41/ 42/ 43/ 48
	DL 4 × 4 MIMO	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 29/ 30/ 38/ 41/ 42/ 43/ 48/ 66/ 71
WCDMA		-
GNSS (optional)		GPS/ GLONASS/ BDS/ Galileo/ QZSS
<b>Certifications</b>		
Regulatory		Global: GCF
		North America: PTCRB
		America: FCC
		Canada: IC
Carrier		America: Verizon/AT&T/T-Mobile
Others		RoHS
<b>Data Transmission (Theoretical Max)</b>		
5G SA Sub-6		2.8 Gbps (DL)/900 Mbps (UL)
5G NSA Sub-6		2.4 Gbps (DL)/500 Mbps (UL)
LTE-FDD		1.6 Gbps (DL)/200 Mbps (UL)
WCDMA		384 kbps (DL)/384 kbps (UL)
<b>Interfaces</b>		
(U)SIM		1.8/ 3.0 V × 1; 1.8 V × 1 (eSIM external)
USB 2.0/3.0/3.1		× 1
UART		× 3
PCIe 3.0		2-Lane × 2, 1-Lane × 1
I2C		× 2
SPI		× 2
Digital Audio (PCM)		× 2
ADC		●
RESET_N		●
GPIO		●
Antenna		Sub-6 GHz: x 8; GNSS: x 1

# Eagle A5555Q-GL

5G NR	I5650V-NA
<b>Audio</b>	
Digital Audio	●
VoLTE	●
VoNR (optional)	●
<b>Enhanced Features</b>	
FOTA	●
DTMF	●
(U)SIM Detection	●
<b>Drivers</b>	
USB Serial Driver	Windows 7/8/8.1/10/11, Linux 2.6–6.5, Android 4.x–13.x
GNSS Driver	Android 4.x–13.x
RIL Driver	Android 4.x–13.x
USB NDIS Driver	Windows 7/8/8.1/10/11
USB MBIM Driver	Windows 7/8/8.1/10/11, Linux 3.18–6.5
USB GobiNet Driver	Linux 2.6–6.5
USB QMI_WWAN Driver	Linux 3.4–6.5
USB RNDIS Driver	Windows 7/8/8.1/10/11, Linux 2.6–6.5
PCIe MHI Driver	Linux 3.10–6.5
<b>Electrical Features</b>	
Supply Voltage Range	3.3–4.4 V, typ. 3.8 V
Output Power	5G NR: <ul style="list-style-type: none"> <li>- Class 1.5 (29 dBm +2/ -3 dB) for n38/ 41/ 77/ 78</li> <li>- Class 2 (26 dBm +2/ -3 dB) for n2/ 5/ 7/ 25/ 38/ 41/ 66/ 71/ 77/ 78</li> <li>- Class 3 (23 dBm ±2 dB) for Other Sub-6 GHz bands</li> </ul> LTE: <ul style="list-style-type: none"> <li>- Class 2 (26 dBm +2/ -3 dB) for B38/ 41/ 42/ 43</li> <li>- Class 3 (23 dBm ±2 dB) for Other LTE bands</li> </ul>
Power Consumption (Typ.)	TBD @ Power off TBD @ Sleep TBD @ Idle

●: supported.