



## Sierra Wireless® HL Series Embedded Modules

### UNLIMITED FOTA INCLUDED

Powered by AirVantage®, this cloud-based service makes it easy to keep the module firmware updated and your deployments healthy in the field.



## Compact, Flexible, and Future Proof 2G, 3G, 4G, and LPWA Essential Modules

Sierra Wireless® AirPrime® HL embedded modules offer everything device manufacturers need to meet essential connectivity requirements. Key differentiators include a common form factor, small size, low-power consumption, enhanced RF performance, optional GNSS (GPS and GLONASS), and worldwide coverage.

### COMPACT: THE SMALLEST LPWA, 4G, 3G, 2G FORM FACTOR ON THE MARKET

The HL Series is the smallest module on the market sharing a common form factor across 2G, 3G, 4G, and LPWA technologies. Now, with just one PCB design, device manufacturers can easily integrate voice and data connectivity and deploy in any region, on any wireless mobile network.

### FLEXIBLE: SOLDER DOWN OR SNAP-IN SOCKET OPTIONS

The compact form factor offers the choice of soldering down the module for efficient high-volume production or, using a snap-in socket on the same solder pads for total flexibility in prototyping or smaller volume runs. The innovative snap-in socket allows device manufacturers to deploy or change modules at any point in the production and product life cycles.

### FUTURE PROOF: INTELLIGENT PIN-TO-PIN COMPATIBILITY

The pin-out on the common form factor enables forward and backward compatibility between the different 2G, 3G, 4G, and LPWA module variants. This means that the mechanical pin location delivers the same function across the series. The pin-out of the HL series is compatible with the application processing WP Series.

Sierra Wireless  
HL SERIES  
EMBEDDED MODULES

	HL7618	HL7648	HL7650	HL7688	HL7690	HL7692
<b>Target Region</b>	Americas	Americas	Australia	Americas	Europe	Europe
<b>4G LTE</b>						
<b>Category</b>	Cat-1	Cat-1	Cat-1	Cat-1	Cat-1	Cat-1
<b>Frequency Bands</b>	B4, B13	B2, B4, B12	B3, B5, B8, B28	B2, B4, B5, B17	B3, B8, B20	B3, B8, B20
<b>3G</b>						
<b>Technology supported</b>			HSPA+	HSPA+		
<b>Frequency Bands</b>			B1, B5, B8	B2, B5		
<b>2G</b>						
<b>Technology supported</b>						EDGE, GSM, GPRS
<b>Frequency Bands</b>						900, 1800
<b>DATA SPEED</b>						
<b>Peak Download Rate</b>	10Mbps	10Mbps	10Mbps	10Mbps	10Mbps	10Mbps
<b>Peak Upload Rate</b>	5Mbps	5Mbps	5Mbps	5Mbps	5Mbps	5Mbps
<b>EMBEDDED SOFTWARE</b>						
<b>Secure Boot</b>	✓	✓	✓	✓	✓	✓
<b>Pre-certified Firmware</b>	✓	✓	✓	✓	✓	✓
<b>AUDIO CODECS</b>						
<b>Digital audio</b>	✓	✓	✓	✓	✓	✓
<b>Codec: HR, FR, EFR, AMR</b>	✓	✓	✓	✓	✓	✓
<b>Echo cancellation &amp; noise reduction</b>	✓	✓	✓	✓	✓	✓
<b>DTMF</b>	✓	✓	✓	✓	✓	✓
<b>SYSTEM DRIVERS</b>						
<b>Windows® 7</b>	✓	✓	✓	✓	✓	✓
<b>Windows® 8</b>	✓	✓	✓	✓	✓	✓
<b>Linux Driver: Standard ECM</b>	✓	✓	✓	✓	✓	✓
<b>Android RIL</b>	✓	✓	✓	✓	✓	✓
<b>INTERFACES</b>						
<b>UART</b>	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire
<b>USB</b>	1	1	1	1	1	1
<b>ADC</b>	2	2	2	2	2	2
<b>GPIO</b>	8	8		8	8	8
<b>Tx ON Indicator</b>	1	1	1	1	1	1
<b>SIM Interface 1.8V/3V</b>	1	1		1	1	1
<b>HARDWARE</b>						
<b>CF3™ Form Factor</b>						
<b>LGA</b>	✓	✓	✓	✓	✓	✓
<b>Snap-in socket option</b>	✓	✓	✓	✓	✓	✓
<b>Dimensions</b>	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm
<b>Antenna</b>						
<b>Diversity</b>	✓	✓	✓	✓	✓	✓
<b>TEMPERATURE RANGE</b>						
<b>Industrial Grade</b>	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
<b>APPROVALS</b>						
<b>Regulatory</b>	FCC, GCF	FCC, PTCRB	GCF, RCM,CE	FCC, PTCRB	CE, GCF	CE, GCF
<b>Carrier</b>	Verizon	AT&T, T-Mobile	Telstra, Vodafone	AT&T	KPN	Vodafone
<b>CLOUD SERVICES</b>						
<b>Free Unlimited FOTA upgrades</b>	✓	✓	✓	✓	✓	✓
<b>Device Management option</b>	✓	✓	✓	✓	✓	✓
<b>Application Enablement option</b>	✓	✓	✓	✓	✓	✓
<b>Connectivity Management option</b>	✓	✓	✓	✓	✓	✓

\* Commercially available soon

Sierra Wireless  
HL SERIES  
EMBEDDED MODULES

	HL7518	HL7528	HL7538	HL7539	HL7548	HL7549	HL7588
<b>Target Region</b>	Americas	Korea	Japan	Japan	Americas	Australia	Americas
<b>4G LTE</b>							
<b>Category</b>	Cat-4	Cat-4	Cat-4	Cat-4	Cat-4	Cat-4	Cat-4
<b>Frequency Bands</b>	B4, B13	B1, B3, B5, B7	B1, B11, B18	B1, B19, B21	B2, B4, B5, B17	B3, B7, B28	B2, B4, B5, B13, B17
<b>3G</b>							
<b>Technology supported</b>							HSPA+
<b>Frequency Bands</b>							B2, B5
<b>DATA SPEED</b>							
<b>Peak Download Rate</b>	150Mbps	150Mbps	150Mbps	150Mbps	150Mbps	150Mbps	150Mbps
<b>Peak Upload Rate</b>	50Mbps	50Mbps	50Mbps	50Mbps	50Mbps	50Mbps	50Mbps
<b>EMBEDDED SOFTWARE</b>							
<b>Secure Boot</b>	✓	✓	✓	✓	✓	✓	✓
<b>Pre-certified Firmware</b>	✓	✓	✓	✓	✓	✓	✓
<b>AUDIO CODECS</b>							
<b>Digital audio</b>							✓
<b>Codec: HR, FR, EFR, AMR</b>							✓
<b>Echo cancellation &amp; noise reduction</b>							✓
<b>DTMF</b>							✓
<b>SYSTEM DRIVERS</b>							
<b>Windows® 7</b>	✓	✓	✓	✓	✓	✓	✓
<b>Windows® 8</b>	✓	✓	✓	✓	✓	✓	✓
<b>Linux Driver: Stanard ECM</b>	✓	✓	✓	✓	✓	✓	✓
<b>Android RIL</b>	✓	✓	✓	✓	✓	✓	✓
<b>INTERFACES</b>							
<b>UART</b>	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire
<b>USB</b>	1	1	1	1	1	1	1
<b>ADC</b>	2	2	2	2	2	2	2
<b>GPIO</b>	8	8	8	8	8	8	8
<b>Tx ON Indicator</b>	1	1	1	1	1	1	1
<b>SIM Interface 1.8V/3V</b>	1	1	1	1	1	1	1
<b>HARDWARE</b>							
<b>CF3™ Form Factor</b>							
<b>LGA</b>	✓	✓	✓	✓	✓	✓	✓
<b>Snap-in socket option</b>	✓	✓	✓	✓	✓	✓	✓
<b>Dimensions</b>	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm
<b>Antenna</b>							
<b>Diversity</b>	✓	✓	✓	✓	✓	✓	✓
<b>MIMO</b>	✓	✓	✓	✓	✓	✓	✓
<b>TEMPERATURE RANGE</b>							
<b>Industrial Grade</b>	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
<b>APPROVALS</b>							
<b>Regulatory</b>	FCC, GCF	KC Mark	JRF, JPA	JRF, JPA	FCC, IC, PTCRB	CE, RCM	FCC, PTCRB, IC,GCF
<b>Carrier</b>	Verizon	KT, LGU+, SKT	KDDI	NTT	AT&T, Rogers	Telstra	AT&T, Verizon
<b>CLOUD SERVICES</b>							
<b>Free Unlimited FOTA upgrades</b>	✓	✓	✓	✓	✓	✓	✓
<b>Device Management option</b>	✓		✓	✓	✓	✓	✓
<b>Application Enablement option</b>	✓		✓	✓	✓	✓	✓
<b>Connectivity Management option</b>	✓		✓	✓	✓	✓	✓

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Sierra Wireless  
HL SERIES  
EMBEDDED MODULES

	HL8518	HL8528	HL8529	HL8548	HL8549	HL6528
<b>Target Region</b>	Europe	Americas	Americas	Global	Brazil	Global
<b>3G</b>						
<b>Technology supported</b>	HSPA	HSPA	HSPA	HSPA	HSPA	
<b>Frequency Bands</b>	B1, B8	B2, B5	B2, B5	B1, B2, B5, B6, B8, B19	B1, B2, B5, B6, B8, B19	
<b>2G</b>						
<b>Technology supported</b>	EDGE, GSM, GPRS	EDGE, GSM, GPRS		EDGE, GSM, GPRS	EDGE, GSM, GPRS	GSM, GPRS
<b>Frequency Bands</b>	900, 1800	850, 1900		850, 900, 1800, 1900	850, 900, 1800, 1900	850, 900, 1800, 1900
<b>LOCATION SERVICES</b>						
<b>Satellite Systems</b>				GPS & Glonass Sirf V	GPS & Glonass Sirf V	GPS & Glonass Sirf V
<b>DATA SPEED</b>						
<b>Peak Download Rate</b>	7.2Mbps	7.2Mbps	7.2Mbps	7.2Mbps	7.2Mbps	
<b>Peak Upload Rate</b>	5.76Mbps	5.76Mbps	5.76Mbps	5.76Mbps	5.76Mbps	
<b>EMBEDDED SOFTWARE</b>						
<b>Secure Boot</b>	✓	✓	✓	✓	✓	✓
<b>Pre-certified Firmware</b>	✓	✓	✓	✓	✓	✓
<b>AUDIO CODECS</b>						
<b>Analog audio</b>						✓
<b>Digital audio</b>	✓	✓	✓	✓	✓	✓
<b>Codec: HR, FR, EFR, AMR</b>	✓	✓	✓	✓	✓	✓
<b>Echo cancellation &amp; noise reduction</b>	✓	✓	✓	✓	✓	✓
<b>DTMF</b>	✓	✓	✓	✓	✓	✓
<b>SYSTEM DRIVERS</b>						
<b>Windows® 7</b>	✓	✓	✓	✓	✓	✓
<b>Windows® 8</b>	✓	✓	✓	✓	✓	✓
<b>Linux Driver: Stanard ECM</b>	✓	✓	✓	✓	✓	
<b>Android RIL</b>	✓	✓	✓	✓	✓	
<b>INTERFACES</b>						
<b>UART</b>	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire	1x - 8-wire
<b>USB</b>	1	1	1	1	1	1
<b>ADC</b>	2	2	2	2	2	2
<b>GPIO</b>	8	8	8	8	8	8
<b>Tx ON Indicator</b>	1	1	1	1	1	1
<b>SIM Interface 1.8V/3V</b>	1	1	1	1	1	1
<b>HARDWARE</b>						
<b>CF3™ Form Factor</b>						
<b>LGA</b>	✓	✓	✓	✓	✓	✓
<b>Snap-in socket option</b>	✓	✓	✓	✓		✓
<b>Dimensions</b>	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm
<b>TEMPERATURE RANGE</b>						
<b>Industrial Grade</b>	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
<b>APPROVALS</b>						
<b>Regulatory</b>	CE, GCF	FCC, IC, PTCRB	FCC, IC, PTCRB	Anatel, CE, FCC, GCF, IC, PTCRB	Anatel, CE, FCC, GCF, IC, PTCRB	Anatel, CCC, CE, FCC, GCF, IC, PTCRB
<b>Carrier</b>		AT&T	AT&T	AT&T, NTT, Rogers, Telstra, Vodafone	Vivo	Vodafone
<b>CLOUD SERVICES</b>						
<b>Free Unlimited FOTA upgrades</b>	✓	✓	✓	✓	✓	✓
<b>Device Management option</b>	✓	✓	✓	✓	✓	✓
<b>Application Enablement option</b>	✓	✓	✓	✓	✓	✓
<b>Connectivity Management option</b>	✓	✓	✓	✓	✓	✓
<b>CONNECTIVITY</b>						
<b>Optional Ready-to-Connect Sierra Wireless embedded SIM</b>	✓					

Sierra Wireless  
HL SERIES  
EMBEDDED MODULES

	HL7718	HL7748	HL7749
<b>Target Region</b>	Americas	Americas	Australias
<b>4G LTE</b>			
<b>Technology supported</b>	Cat-M1	Cat-M1	Cat-M1
<b>Frequency Bands</b>	B13	B2, B4, B12	B3, B28
<b>DATA SPEED</b>			
<b>Peak Download Rate</b>	300 Kbps	300 Kbps	300 Kbps
<b>Peak Upload Rate</b>	375 Kbps	375 Kbps	375 Kbps
<b>EMBEDDED SOFTWARE</b>			
<b>Secure Boot</b>			
<b>Pre-certified Firmware</b>	✓	✓	✓
<b>INTERFACES</b>			
<b>UART</b>	1x - 8-wire	1x - 8-wire	1x - 8-wire
<b>USB</b>	1	1	1
<b>ADC</b>	2	2	2
<b>GPIO</b>	8	8	8
<b>SIM Interface 1.8V/3V</b>	1	1	1
<b>HARDWARE</b>			
<b>CF3™ Form Factor</b>			
<b>LGA</b>	✓	✓	✓
<b>Snap-in socket option</b>	✓	✓	✓
<b>Dimensions</b>	22x23x2.5mm	22x23x2.5mm	22x23x2.5mm
<b>TEMPERATURE RANGE</b>			
<b>Industrial Grade</b>	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
<b>APPROVALS</b>			
<b>Regulatory</b>	FCC, GCF	FCC, PTCRB	CE, RCM
<b>Carrier</b>	Verizon	AT&T	Telstra
<b>CLOUD SERVICES</b>			
<b>Free Unlimited FOTA upgrades</b>	✓	✓	✓
<b>Device Management option</b>			
<b>Application Enablement option</b>			
<b>Connectivity Management option</b>	✓	✓	✓
<b>CONNECTIVITY</b>			
<b>Optional Ready-to-Connect Sierra Wireless embedded SIM</b>	✓	✓	✓

**About Sierra Wireless**

Sierra Wireless is building the Internet of Things with intelligent wireless solutions that empower organizations to innovate in the connected world. We offer the industry's most comprehensive portfolio of 2G, 3G, and 4G embedded modules and gateways, seamlessly integrated with our secure cloud and connectivity services. OEMs and enterprises worldwide trust our innovative solutions to get their connected products and services to market faster.

For more information, visit [www.sierrawireless.com](http://www.sierrawireless.com).

