










	Standard Precision				Ultra Low Power & Multi-Constellation		High Precision
	YIC31009EBGG	YIC51009EBGG-33	YIC31612EBGG	YIC51612EBGG-33	YIC51009EBGGB	YIC51612EBGGB	YIC51009EBGGBL5
Physical							
Image							
Dimension (mm)	10.1 x 9.7 x 2.5		16 x 12.2 x 2.2		10.1 x 9.7 x 2.5	16 x 12.2 x 2.2	10.1 x 9.7 x 2.5
Temperature Range							
Operating Temperature	-40°C ~ +85°C		-40°C ~ +85°C		-40°C ~ +85°C		-40°C ~ +85°C
Interface							
UART / TTL	V		V		V		V
I2C					⊙		⊙
Connect to Host							
SMD	V		V		V		V
Cable Connector							
Cable Soldering							
GNSS							
GPS / QZSS	L1	L1	L1	L1	L1	L1	L1 / L5
GLONASS	L1	L1	L1	L1	L1	L1	L1
Galileo	E1	E1	E1	E1	E1	E1	E1 / E5
Beidou					B1	B1	B1 / B2
Electrical Characteristics							
Supply Voltage (V)	2.8 ~ 4.3	2.8 ~ 4.3	2.8 ~ 4.3	2.8 ~ 4.3	2.8 ~ 3.6	3.0 ~ 3.6	3.0 ~ 3.6
Current Consumption (Acquisition)	38 mA	26 mA	39 mA	26 mA	12 mA	12 mA	12 mA
Current Consumption (Tracking)	36 mA	23 mA	37 mA	23 mA	10 mA	12 mA	14 mA
GNSS Performance							
Chip	Goke	MediaTek/Airoha	Goke	MediaTek/Airoha	MediaTek/Airoha		MediaTek/Airoha
Baud Rate (Default)	9600 bps	9600 bps	9600 bps	9600 bps	115200 bps	115200 bps	115200 bps
Update Rate (Default)	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz
A-GNSS	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Sensitivity (Acquisition)	-148 dBm	-148 dBm	-148 dBm	-148 dBm	-149 dBm	-149 dBm	-155 dBm
Sensitivity (Tracking)	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm
Sensitivity (Reacquisition)	-156 dBm	-156 dBm	-156 dBm	-156 dBm	-158 dBm	-158 dBm	-158 dBm
TTFF (Cold Start)	35 s	35 s	35 s	35 s	25 s	25 s	25 s
TTFF (Warm start)	30 s	30 s	30 s	30 s	20 s	20 s	20 s
TTFF (Hot Start)	1 s	1 s	1 s	1 s	1 s	1 s	1 s
Horizontal Position Accuracy (Autonomous)	2.5 m CEP	2.5 m CEP	2.5 m CEP	2.5 m CEP	1.5 m CEP	1.5 m CEP	1 m CEP
Acceleration Accuracy (Without aid)	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²
Additional LNA / SAW	V	V	V	V	V	V	V
Accuracy of 1 PPS Signal	±15 nS	±10 nS	±15 nS	±10 nS	±10 nS	±10 nS	±20 nS
Build in Antenna							

	Standard Precision					Ultra Low Power & Multi-Constellation	
	YIC31513PGMGG	YIC51513PGMGG-33	YIC31616MSGG	YIC31818GMGG-C	YIC51818GMGG-33-C	YIC51513PGMGB	YIC51818GMGB
Physical							
Image							
Dimension (mm)	15 x 13 x 6.8	16 x 16 x 6.9	16 x 16 x 6.9	18 x 18 x 6.8	18 x 18 x 6.8	15 x 13 x 6.8	18 x 18 x 6.8
Temperature Range							
Operating Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Interface							
UART / TTL	V	V	V	V	V	V	V
I2C						⊙	⊙
Connect to Host							
SMD		V					
Cable Connector				V			V
Cable Soldering	V					V	V
GNSS							
GPS / QZSS	L1	L1	L1	L1	L1	L1	L1
GLONASS	L1	L1	L1	L1	L1	L1	L1
Galileo	E1	E1	E1	E1	E1	E1	E1
Beidou						B1	B1
Electrical Characteristics							
Supply Voltage (V)	2.8 ~ 4.3	2.8 ~ 4.3	2.8 ~ 4.3	2.8 ~ 4.3	2.8 ~ 4.3	2.8 ~ 3.6	2.8 ~ 3.6
Current Consumption (Acquisition)	34 mA	31 mA	33 mA	35 mA	31 mA	11 mA	11 mA
Current Consumption (Tracking)	28 mA	24 mA	29 mA	31 mA	24 mA	12 mA	12 mA
GNSS Performance							
Chip	Goke	MediaTek/Airoha	Goke	Goke	MediaTek/Airoha	MediaTek/Airoha	MediaTek/Airoha
Baud Rate (Default)	9600 bps	9600 bps	9600 bps	9600 bps	9600 bps	115200 bps	115200 bps
Update Rate (Default)	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz
A-GNSS	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Sensitivity (Acquisition)	-148 dBm	-148 dBm	-148 dBm	-148 dBm	-148 dBm	-149 dBm	-149 dBm
Sensitivity (Tracking)	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm
Sensitivity (Reacquisition)	-156 dBm	-156 dBm	-156 dBm	-156 dBm	-156 dBm	-158 dBm	-158 dBm
TTFF (Cold Start)	35 s	35 s	35 s	35 s	35 s	24 s	24 s
TTFF (Warm start)	30 s	30 s	30 s	30 s	30 s	20 s	20 s
TTFF (Hot Start)	1 s	1 s	1 s	1 s	1 s	1 s	1 s
Horizontal Position Accuracy (Autonomous)	2.5 m CEP	2.5 m CEP	2.5 m CEP	2.5 m CEP	2.5 m CEP	1.5 m CEP	1.5 m CEP
Acceleration Accuracy (Without aid)	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.01 m/s ²	0.01 m/s ²
Additional LNA / SAW	V	V	V	V	V	V	V
Accuracy of 1 PPS Signal	±15 nS	±10 nS	±15 nS	±15 nS	±10 nS	±10 nS	±20 nS
Build in Antenna	V	V	V	V	V	V	V

⊙ : Specifiable

Standard Precision							
	GT-302MGG	GU-302MGG	GT-502MGG	GU-502MGG	GR-502MGG	GT-504GG	GU-504GG
Physical							
Image							
Dimension (mm)	45 x 38 x 13.5					36 x 36 x 13.5	
Temperature Range							
Operating Temperature	-40°C~ +85°C					-40°C~ +85°C	
PPS							
PPS Output	V		V		V	V	
LED Light						V	V
Interface							
UART / TTL	V		V			V	
USB		V		V			V
RS232					V		
GNSS							
GPS / QZSS	L1	L1	L1	L1	L1	L1	L1
GLONASS	L1	L1	L1	L1	L1	L1	L1
Galileo	E1	E1	E1	E1	E1	E1	E1
Beidou							
Electrical Characteristics							
Supply Voltage (V)	3.0 ~ 5.5	4.5 ~ 5.5	3.0 ~ 5.5	4.5 ~ 5.5	3.0 ~ 5.5	3.0 ~ 5.5	4.5 ~ 5.5
Current Consumption (Acquisition)	40 mA	40 mA	45 mA	45 mA	50 mA	45 mA	45 mA
Current Consumption (Tracking)	36 mA	37 mA	40 mA	40 mA	45 mA	40 mA	40 mA
GNSS Performance							
Chip	Goke		MediaTek/Airoha			MediaTek/Airoha	
Baud Rate (Default)	9600 bps	9600 bps	9600 bps	9600 bps	9600 bps	9600 bps	9600 bps
Update Rate (Default)	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz	1 Hz
Sensitivity (Acquisition)	-147 dBm	-147 dBm	-146 dBm	-146 dBm	-146 dBm	-148 dBm	-148 dBm
Sensitivity (Tracking)	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm
Sensitivity (Reacquisition)	-156 dBm	-156 dBm	-156 dBm	-156 dBm	-156 dBm	-156 dBm	-156 dBm
TTFF (Cold Start)	35 s	35 s	35 s	35 s	35 s	35 s	35 s
TTFF (Warm start)	30 s	30 s	30 s	30 s	30 s	30 s	30 s
TTFF (Hot Start)	1 s	1 s	1 s	1 s	1 s	1 s	1 s
Horizontal Position Accuracy (Autonomous)	2.5 m CEP	2.5 m CEP	2.5 m CEP	2.5 m CEP	2.5 m CEP	2.5 m CEP	2.5 m CEP
Acceleration Accuracy (Without aid)	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²	0.1 m/s ²
Additional LNA / SAW	V	V	V	V	V	V	V
Accuracy of 1 PPS Signal	±15 nS	±15 nS	±15 nS	±15 nS	±15 nS	±15 nS	±15 nS
Build in Antenna	V	V	V	V	V	V	V
IP Rating							
IP67						V	V
IPX5	V	V	V	V	V		
Mount							
Adhesive						V	V
Adhesive + Magnetic	V	V	V	V	V		

	Multi-Constellation					High Precision & Dead Reckoning				RTK & Dead Reckoning	
	GT-502MGGB	GU-502MGGB	GT-504GGB	GR-504GGB	GU-504GGB	GT-505GGBL5-DR	GR-505GGBL5-DR	GT-605GGBL5-DR	GR-605GGBL5-DR	GT-605GGBL5RK-DR	GR-605GGBL5RK-DR
Physical											
Image											
Dimension (mm)	45 x 38 x 13.5		36 x 36 x 13.5			52.7 x 57.6 x 20.7				52.7 x 57.6 x 20.7	
Temperature Range											
Operating Temperature	-40°C~-+85°C		-40°C~-+85°C			-40°C~-+85°C				-40°C~-+85°C	
PPS											
PPS Output	V		V	V	V	V	V	V	V	V	V
LED Light			V	V	V						
Interface											
UART / TTL	V		V			V		V		V	
USB		V			V						
RS232				V			V		V		V
GNSS											
GPS / QZSS	L1	L1	L1	L1	L1	L1 / L5	L1 / L5	L1 / L5	L1 / L5	L1 / L5	L1 / L5
GLONASS	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1
Galileo	E1	E1	E1	E1	E1	E1 / E5	E1 / E5	E1 / E5	E1 / E5	E1 / E5	E1 / E5
Beidou	B1	B1	B1	B1	B1	B1 / B2	B1 / B2	B1 / B2	B1 / B2	B1 / B2	B1 / B2
NavIC (IRNSS)										L5	L5
Electrical Characteristics											
Supply Voltage (V)	3.0 ~ 5.5	4.5 ~ 5.5	3.0 ~ 5.5	3.0 ~ 5.5	4.5 ~ 5.5	3.0 ~ 5.5	3.0 ~ 5.5	3.0 ~ 5.5	3.0 ~ 5.5	3.0 ~ 5.5	3.0 ~ 5.5
Current Consumption (Acquisition)	30 mA	30 mA	30 mA	30 mA	30 mA	45 mA	45 mA	45 mA	45 mA	20 mA	20 mA
Current Consumption (Tracking)	32 mA	32 mA	32 mA	32 mA	32 mA	56 mA	56 mA	56 mA	56 mA	28 mA	28 mA
GNSS Performance											
Chip	MediaTek/Airoha		MediaTek/Airoha			MediaTek/Airoha		Beken		Beken	
Baud Rate (Default)	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps
Update Rate (Default)	10 Hz	10 Hz	10 Hz	10 Hz	10 Hz	10 Hz	10 Hz	10 Hz	10 Hz	10 Hz	10 Hz
Sensitivity (Acquisition)	-149 dBm	-149 dBm	-149 dBm	-149 dBm	-149 dBm	-155 dBm	-155 dBm	-155 dBm	-155 dBm	-148 dBm	-148 dBm
Sensitivity (Tracking)	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm
Sensitivity (Reacquisition)	-158 dBm	-158 dBm	-158 dBm	-158 dBm	-158 dBm	-158 dBm	-158 dBm	-158 dBm	-158 dBm	-159 dBm	-159 dBm
TTFB (Cold Start)	25 s	25 s	25 s	25 s	25 s	25 s	25 s	25 s	25 s	28 s	28 s
TTFB (Warm start)	20 s	20 s	20 s	20 s	20 s	20 s	20 s	20 s	20 s	23 s	23 s
TTFB (Hot Start)	1 s	1 s	1 s	1 s	1 s	1 s	1 s	1 s	1 s	5 s	5 s
Horizontal Position Accuracy (Autonomous)	1.5 m CEP	1.5 m CEP	1.5 m CEP	1.5 m CEP	1.5 m CEP	1 m CEP	1 m CEP	1 m CEP	1 m CEP	GNSS: 1 m CEP RTK: 1 cm CEP	GNSS: 1 m CEP RTK: 1 cm CEP
Acceleration Accuracy (Without aid)	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²	0.01 m/s ²
Additional LNA / SAW	V	V	V	V	V	V	V	V	V	V	V
Accuracy of 1 PPS Signal	±10 nS	±10 nS	±10 nS	±10 nS	±10 nS	±10 nS	±10 nS	±20 nS	±20 nS	±20 nS	±20 nS
Build in Antenna	V	V	V	V	V	V	V	V	V	V	V
IP Rating											
IP67			V	V	V	V	V	V	V	V	V
IPX5	V	V									
Mount											
Adhesive			V	V	V	V	V	V	V	V	V
Adhesive + Magnetic	V	V									