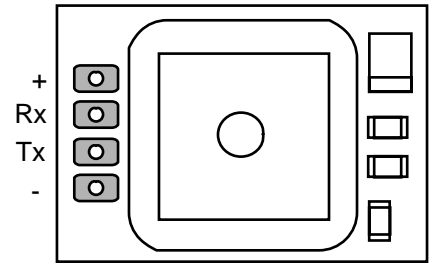


# OPA6B GPS Unit Datasheet

## Features

- MediaTek Single Chip
- Dimension : 16mm x 16mm x 6mm
- Patch Antenna Size : 15mm x 15mm x 4mm
- L1 Frequency, C/A code, 66 channels
- Embedded LNA and SAW filter
- With Active patch antenna
- High Sensitivity : Up to -163 dBm tracking, superior urban performances
- Position Accuracy : < 3m CEP (50%) without SA (horizontal)
- Cold Start is Under 35 seconds (Typical)
- Warm Start is Under 34 seconds (Typical)
- Hot Start is Under 1 second (Typical)
- Low Power Consumption : 48mA @ acquisition, 37mA @ tracking
- Low shut-down current consumption : 15uA, typical
- DGPS(WAAS, EGNOS, MSAS) support (optional by firmware)
- Max. Update Rate : up to 10Hz
- UART Interface
- SMD TYPE
- Support AGPS function ( Offline mode : EPO valid up to 14 days )
- RoHS Compliant



## NMEA Output Sentence

**Table-1** lists each of the NMEA output sentences specifically developed and defined by MTK for use within MTK products

NMEA Output Sentence		Table-1
Option	Description	
GGA	Time, position and fix type data.	
GSA	GPS receiver operating mode, active satellites used in the position solution, and DOP values.	
GSV	The number of GPS satellites in view satellite ID numbers, elevation, azimuth, and SNR values.	
RMC	Time, date, position, course and speed data. Recommended Minimum Navigation Information.	
VTG	Course and speed information relative to the ground.	

# OPA6 GPS Unit Datasheet

## Specifications

<b>General</b>	
Chipset	MTK MT3329
Frequency	L1, 1575.42MHz
C/A Code	1.023 MHz
Channels	66 channels
SBAS	WAAS, EGNOS,MSAS Supported
Datum	WGS84(Default), Tokyo-M, Tokyo-A, User Define
CPU	ARM7EJ-S
<b>Dimensions</b>	
Length/Width/Height	16*16*6 mm
Weight	6g
<b>Performance Characteristics</b>	
Position Accuracy	Without aid : 3.0m 2D-RMS
	< 3m CEP (50%) without SA (horizontal)
	DGPS (RTCM, SBAS (WAAS, EGNOS, MSAS)) : 2.5m
Velocity Accuracy	Without aid : 0.1 m/s
	DGPS (RTCM, SBAS (WAAS, EGNOS, MSAS)) : 0.05m/s
Acceleration Accuracy	Without aid : 0.1 m/s <sup>2</sup>
	DGPS (RTCM, SBAS (WAAS, EGNOS, MSAS)) : 0.05m/s <sup>2</sup>
Timing Accuracy	100 ns RMS
<b>Sensitivity</b>	Acquisition : -148dBm (Cold Start)
	Reacquisition : -157dBm
	Tracking : -163dBm
Maximum Update Rate	Up to 10Hz(Default: 1Hz)
<b>Acquisition (Open sky, stationary)</b>	
Reacquisition Time	Less than 1 second
Hot start	1.0s (Typical)
Warm start	34s (Typical)

# OPA6 GPS Unit Datasheet

Cold start	35s (Typical)
<b>Dynamic</b>	
Altitude	Maximum 18,000m
Velocity	Maximum 515m/s
Acceleration	Maximum 4G
<b>Power</b>	
Input Voltage	DC 3.3V Typical
Power Consumption @ 3.3V	Acquisition : 48mA Typical
	Tracking : 37mA Typical
<b>I/O</b>	
Signal Output	8 data bits, no parity, 1 stop bit
Available Baud Rates	4800/9600/38400/57600/115200 bps(Default : 9600)
Protocols	NMEA 0183 v3.01 (Default : GGA,GSA,GSV,RMC,VTG) RTCM MTK NMEA Command Network Assistance Messages
<b>Environment</b>	
Operating Temperature	-40 °C to 85 °C
Storage Temperature	-50 °C to 90 °C
Operating Humidity	5% to 95% (no condensing)

## DC Characteristics

Parameter	Condition	Min.	Typ.	Max.	Unit
Operation supply Voltage	VCC	3.2	3.3	5.0	V
Operation supply Ripple Voltage	—	—	—	50	mVpp
Backup Battery Voltage	—	2.0	3.0	4.3	V
RXA TTL H Level	VCC=3.3V	2.1	—	VCC	V
RXA TTL L Level	VCC=3.3V	0	—	0.9	V
TXA TTL H Level	VCC=3.3V	2.1	—	2.8	V
TXA TTL L Level	VCC=3.3V	0	—	0.8	V