



PMTK command packet

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PMTK command packet

Rev.A00

Preamble	TalkerID	PktType	DataField	*	CHK1	CHK2	CR	LF
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Maximum packet length is restricted to 255 bytes.

Field	Length	Type	Description
Preamble	1 byte	Character	"\$"
TalkerID	4 byte	Character string	"PMTK"
PktType	3 byte	Character string	From "000" to "999", an identifier used to tell the decoder how to decode the packet
DataField	Variable		A "," must be inserted before each data field to help decoder process the DataField
*	1 byte	Character	The star symbol is used to mark the end of DataField
CHK1, CHK2	2 byte	Character string	Checksum of the data between preamble "\$" and "*"
CR, LF	2 byte	Binary data	Used to identify the end of a packet

Sample Packet: \$PMTK000*32<CR><LF>

In order to inform the sender whether the receiver has received the packet, an acknowledge packet PMTK_ACK should return after the receiver receives a packet.

Pkt Type	Abbreviation / Syntax	Data Field	Meaning / Example / Return
000	PMTK_TEST	None	Test Packet \$PMTK000*32<CR><LF>
001	PMTK_ACK PMTK001, Cmd, Flag	Cmd: Command / packet type the acknowledge responds Flag: 0 = Invalid command / packet 1 = Unsupported command / packet type 2 = Valid command / packet, but action failed 3 = Valid command / packet, and action succeeded	Acknowledge of PMTK command \$PMTK001,604,3*32<CR><LF>
010	PMTK_SYS_MSG PMTK001,Msg	Msg: System message. 0: Unknown 1: Startup	Output system message \$PMTK010,001*2E<CR><LF>

Notice:

When the power of device (module) is removed, this modified setting will be recovered to original setting, if the device (module) has the backup power supply for setting sustaining (VBACKUP or coin battery), like PAX series, it will keep the modified setting until the backup power is exhausted.

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Packet Type: 101 PMTK_CMD_HOT_START

Packet Meaning:

Hot Restart: Use all available data in the NV Store.

DataField:

None

Example:

```
$PMTK101*32<CR><LF>
```

Packet Type: 102 PMTK_CMD_WARM_START

Packet Meaning:

Warm Restart: Don't use Ephemeris at re-start.

DataField:

None

Example:

```
$PMTK102*31<CR><LF>
```

Packet Type: 103 PMTK_CMD_COLD_START

Packet Meaning:

Cold Restart: Don't use Time, Position, Almanacs and Ephemeris data at re-start.

DataField:

None

Example:

```
$PMTK103*30<CR><LF>
```

Packet Type: 104 PMTK_CMD_FULL_COLD_START

Packet Meaning:

Full Cold Restart: It's essentially a Cold Restart, but additionally clear system/user configurations at re-start. That is, reset the receiver to the factory status.

DataField:

None

Example:

```
$PMTK104*37<CR><LF>
```



Packet Type: 220 PMTK_SET_NMEA_UPDATERATE

Packet Meaning:

Set NMEA port update rate

DataField:

Position fix interval(msec). The possible interval values range between 200 and 10000 msec.

Example:

```
$PMTK220,1000*1F<CR><LF>
```

Note :

1000(msec) = 1(sec) → 1pps = 1Hz

200(msec) = 0.2(sec) → 1/0.2 pps = 5 Hz

Packet Type : 251 PMTK_SET_NMEA_BAUDRATE

Packet Meaning :

Set NMEA port baudrate

DataField :

PMTK251, Baudrate

Baudrate setting : 4800,9600,14400,19200,38400,57600,115200

Example :

```
$PMTK251,38400*27<CR><LF>
```

Note :

27 is checksum

CR, LF : Two bytes binary data

The two bytes are used to identify the end of a packet

Packet Type: 300 PMTK_API_SET_FIX_CTL

Packet Meaning:

API_Set_Fix_Ctl

This parameter controls the rate of position fixing activity.

DataField:

PMTK300,FixInterval,0,0,0,0

FixInterval: Position fix interval [msec]. Must be larger than 200.

Example :

```
$PMTK300,1000,0,0,0,0*1C<CR><LF>
```



Packet Type: 313 PMTK_API_SET_SBAS_ENABLED

Packet Meaning:

API_Set_Sbas_Enabled

Enable to search a SBAS satellite or not.

DataField:

Enabled: Enable or disable

'0' = Disable, '1' = Enable

Example:

```
$PMTK313,1*2E<CR><LF>
```

Packet Type: 319 PMTK_API_SET_SBAS_Mode

PMTK319,Mode

Packet Meaning:

API_Set_Sbas Mode_Selection

Choose SBAS satellite test mode

DataField:

Mode=0: testing mode

Mode=1: Integrity mode

Example:

```
$PMTK319,0*25<CR><LF>
```

```
$PMTK319,1*24<CR><LF>
```

Packet Type: 413 PMTK_API_Q_SBAS_ENABLED

Packet Meaning:

API_Query_Sbas_Enabled

DataField:

None

Return:

PMTK_DT_SBAS_ENABLED

Example:

```
$PMTK413*34<CR><LF>
```



Packet Type: 513 PMTK_DT_SBAS_ENABLED

Packet Meaning:

Enable to search a SBAS satellite or not.

DataField:

Enabled: Enable or disable

'0' = Disable, '1' = Enable

Example:

```
$PMTK513,1*28<CR><LF>
```

Packet Type: 390 PMTK_API_SET_USER_OPTION

Packet Meaning:

Write the user setting to the flash to override the default setting. Maximum 8 times without erase the chip. This feature may not be available.

API_Set_Flash_User_Option

PMTK390, Lock, Update_Rate, Baud_Rate, GLL_Period, RMC_Period, VTG_Period, GSA_Period, GSV_Period, GGA_Period, ZDA_Period, MCHN_Period, Datum, DGPS_Mode, RTCM_Baud_Rate

DataField:

Lock: nonzero: freeze the setting; 0: allow further setting

Update_Rate: 1~5 (Hz)

Baud_Rate: 115200, 57600, 38400, 19200, 14400, 9600, 4800

RTCM_Baud_Rate: 115200, 57600, 38400, 19200, 14400, 9600, 4800

XXX_Period: NMEA sentence output period

DGPS_Mode: 0 (disable), 1 (RTCM), 2 (SBAS)

Datum: We support more than 200 datum. Please refer to Appendix A for the supported datum list.

The typical value is: 0 (WGS84), 1 (Tokyo-M), 2 (Tokyo-A)

Example:

```
$PMTK390,1,1,38400,1,1,1,1,1,1,1,0,0,2,9600*B<CR><LF>
```