MediaTek GPS Chipset
NMEA Packet User Manual

Rev.A00

Date: 2009/10/09

Title: This document is described the MTK NMEA Packet Format

Content:

MTK NMEA Packet Format

Preamble	TalkerID	PktType	DataField	*	CHK1	CHK2	CR	LF

Packet Length:

The maximum length of each packet is restricted to 255 bytes

Packet Contents:

Preamble:	One byte character, “$”
TalkerID:	Four bytes character string, “PMTK”
PktType:	Three bytes character string, from “000” to “999”
DataField:	The DataField has variable length depending on the packet type. A comma symbol “,” must be inserted ahead each data field to help the decoder process the DataField. The “*” symbol is used to mark the end of DataField.
CHK1, CHK2:	Two bytes character string. CHK1, CHK2 are the checksum of the data between Preamble and “*”.
CR, LF:	Two bytes binary data. <CR> = 0x0D, <LF> = 0x0A

Packet List:

101	PMTK_CMD_HOT_START
102	PMTK_CMD_WARM_START
103	PMTK_CMD_COLD_START
251	PMTK_SET_NMEA_BAUDRATE
314	PMTK_API_SET_NMEA_OUTPUT

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Packet Type: 101 PMTK_CMD_HOT_START

Packet Meaning:

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

Data Field:

None

Example:

$PMTK101*32<CR><LF>

Packet Type: 102 PMTK_CMD_WARM_START

Packet Meaning:

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

Data Field:

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.

Data Field:

None

Example:

$PMTK103*30<CR><LF>

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Packet Type: 251 PMTK_SET_NMEA_BAUDRATE

Packet Meaning:

Set NMEA port baudrate

Data Field:

Baudrate:

0 – default
4800
9600
14400
19200
38400
57600
115200

Example:

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

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Packet Type: 314 PMTK_API_SET_NMEA_OUTPUT

Packet Meaning:

Set NMEA sentence output frequencies

Data Field:

There are totally 19 data fields that present output frequencies for the 19 supported NMEA sentences individually.

Supported NMEA Sentences

0	NMEA_SEN_GLL,	//	GPGLL interval – Geographic Position
1	NMEA_SEN_RMC,	//	GPRMC interval – Recommended Minimum Specific GNSS Sentence
2	NMEA_SEN_VTG,	//	GPVTG interval – Course Over Ground and Ground Speed
3	NMEA_SEN_GGA,	//	GPGGA interval – GPS Fix Data
4	NMEA_SEN_GSA,	//	GPGSA interval – GNSS DOPS and Active Satellites
5	NMEA_SEN_GSV,	//	GPGSV interval – GNSS Satellites in View
6	NMEA_SEN_GRS,	//	GPGRS interval – GNSS Range Residuals
7	NMEA_SEN_GST,	//	GPGST interval – GNSS Pseudorange Errors Statistics
13	NMEA_SEN_MALM,	//	PMTKALM interval – GPS almanac information
14	NMEA_SEN_MEPH,	//	PMTKEPH interval – GPS ephemeris information
15	NMEA_SEN_MDGP,	//	PMTKDGP interval – GPS differential correction information
16	NMEA_SEN_MDBG,	//	PMTKDBG interval – MTK debug information
17	NMEA_SEN_ZDA,	//	GPZDA interval – Time & Date
18	NMEA_SEN_MCHN,	//	PMTKCHN interval – GPS channel status

Supported Frequency Setting

0 – Disable or not supported sentence

1 – Output once every one position fix

2 – Output once every two position fixes

3 – Output once every three position fixes

4 – Output once every four position fixes

5 – Output once every five position fixes

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Example:

$PMTK314,1,1,1,1,1,5,1,1,1,1,1,1,0,1,1,1,1,1,1*2C<CR><LF>

This command set GLL output frequency to be outputting once every 1 position fix, and RMC to be outputting once every 1 position fix, and so on.

You can also restore the system default setting via issue:
$PMTK314,-1*04<CR><LF>

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