

Specification for GPS Vehicle Tracking Devices Installation for National Transport Commission (NTC)

Description	Requirement
GPS Receiver	
Product	Please specify
Make	Please Specify
Model Number	Please Specify
Country of Origin	Please Specify
Year of Manufacturing	Within last two years
Dimensions	Please Specify
IP rating	IP65
GPS Frequency	L1, 1575.42 MHz
GPS Code	C/A Code, 1.023 MHz chip rate
GPS Channels	20
GNSS Antenna	External antenna with minimum of 2m wire length or an internal antenna if satellite accuracy is satisfied.
GPS Sensitivity	-159dBm or better
GPS Accuracy	Position – 10 m 2D RMS (or better)
	Velocity – 0.1 m/s (or better)
	Time – 1 μ s (synchronized to GPS time) (or better)
Parameter Ranges	Altitude \leq 10,000 m (or higher)
	Velocity \leq 500 m/s (or higher)
	Acceleration \leq 4 g (or higher)
GPS Start time	Cold Start – 42 s (or lower)
	Warm Start – 38 s (or lower)
	Hot Start – 1 s (or lower)
Datum	WGS-84
DGPS	WAAS, EGNOS, MSAS (or better)
Mobile Data Communication Antenna	Internal or External (please specify)
GSM Module	
Frequency Bands	850/900/1800/1900/2100Mhz
Network	Mobile data communication facility shall be compatible with system of Sri Lanka (2G, 3G, 4G & 5G)
SIM Card Support	Required
Data Transmission Modes	TCP/UDP/SMS
SMS Support	Required
Support GNSS systems	Please Specify
Retransmission After Dead Zone	Required
Dual communication	Required for 2-way voice communication (VOIP SIP also acceptable)

Data Requirements			
Flash Capacity	4 Mb (or higher)		
Sampling Interval	10 s (or lower). All parameters must be uploaded to server at this rate		
Event Triggered Upload	Required		
Dead Zone Data Upload	Required		
Data Transfer Modes to NTC Server	HTTP POST		
Data Transfer Mechanism	<p>Directly from device to NTC central monitoring system or via vendor- specific data collection/translation application installed at NTC central monitoring system.</p> <p><i>* In the latter case vendor must provide necessary software, licenses, and software updating and maintenance for 5 years. NTC does not cover any expenses related to software licenses, maintenance, etc. other than hosting the application.</i></p>		
HTTP POST Format	<p>URL – http://host_name/gpsdatauploader/httpuploaderpost.php Keys – systemno, date_time, longitude, latitude, speed, direction, locate, idlestat, milage, altitude, acceleration</p>		
Data Formats	Key	Format	Description
	systemno	Integer value	Unique device ID – must be globally unique or to be configured during device registration
	date_time	yyyy-mm-dd hh:mm:ss	Converted to Sri Lankan time
	longitude	Float value	Decimal degree
	latitude	Float value	Decimal degree
	speed	Integer value	Km/h
	direction	Integer value ()	0 – 359 degrees (a.k.a. azimuth)
	locate		
	idlestat	Binary	Ignition status, 1 – On, 0 - Off
	milage	Integer value	To be set during device registration and then to automatically update
	altitude	Float value	Decimal degree
	acceleration	Integer value	m ² /s
Mechanical and Environmental Properties			
Voltage	12V-24V (preferred) or 12V-36V		
Overvoltage Protection	Required		
Power Consumption	≤ 200 mA		
Backup battery	The back-up battery should keep the unit working for 4 hours minimum		
Storage Temp.	0°C to +70°C		

Working environment	Inside buses, behind the dashboard of buses of Sri Lanka, buses with non-air conditioning and air conditioning
Operation Temp.	0°C to +70°C
Humidity	5%--95% non-air condensing
Memory	The memory should keep data for minimum 7 days
Casing	Tamper and vibration proof casing (communication chip must be completely sealed)
Buzzer	Required
Speaker and Microphone	Required for 2-way voice communication
Warranty	1 year more 3 year comprehensive warranty should be provided by the suppliers

N.B –It is noted that not mandatory for inclusion Dual communication system with Buzzer requirement for GPS installation in Sisussariya and Gamisariya services buses.