Land Transport Authority

10 Sin Ming Drive Singapore 575701

Procedures on Importation and Registration of an Engineering Plant in Singapore

Registration Requirements

Vehicle Registration
All vehicles in Singapore must be registered with the Land Transport Authority (LTA).

Certificate of Entitlement (COE)
Engineering Plants (except cement and concrete mixer[1]) are exempted from the Vehicle Quota System, i.e. COE is not required for registration of these vehicles.

Additional Registration Fee (ARF)
Engineering Plants (except cement and concrete mixer[2]) are exempted from payment of ARF.

[1] Cement and concrete mixer are classified under Category C. Alternatively, you can secure a COE under the Open Category (i.e. Category E). Please check the current COE information at the ONE.MOTORING portal (https://onemotoring.lta.gov.sg) or on the MyTransport.SG Mobile App (download the App "MyTransport Singapore" via the Apple App Store or Google Play).

[2] ARF for cement and concrete mixer is calculated at 5% of the Open Market Value (OMV) of the engineering plant.

Technical Requirements

Compliance with Road Traffic Act and its Subsidiary Legislations

All engineering plants to be registered in Singapore must comply with the Road Traffic (Motor Vehicles, Construction and Use) Rules and Road Traffic (Motor Vehicles, Lighting) Rules.

Exhaust Emission Standards

The National Environment Agency (NEA) requires all engineering plants to be registered for use on roads in Singapore to comply with the following exhaust emission standards:

Petrol-Driven must be:

Euro 6 (WLTP) or JPN2018 or JPN2023	For vehicles using **Port Fuel Injection**
Euro 6 (WLTP) or JPN2018 + Euro 6 (WLTP) PN limit or JPN2023	For vehicles using **Gasoline Direct Injection**

Diesel-Driven must be:

Euro 6 (WLTP) or JPN2018 + Euro 6 (WLTP) PN limit or JPN2023	For vehicles with MLW not exceeding 3,500kg
Euro 6 or PPNLT + Euro 6 PM number or J-WHVC + PN limit of 6.0×10^{11} #/km or PPNLT 2023 or J-WHVC 2023	For vehicles with MLW exceeding 3,500kg

Certification for compliance with the exhaust emission standards issued by the vehicle manufacturer or LTA/NEA-recognised vehicle testing laboratories (see **Annex A**) must be produced. The vehicle must be tested before it can be imported for registration in Singapore. The format for Certificate of Compliance and test report is attached at **Annex B** (for petrol-driven vehicle) and **Annex C or D** (for diesel-driven vehicle).

On-Board Unit (OBU) Installation

As part of the shift to the new ERP 2.0 system, LTA requires cement and concrete mixers, concrete pumps and mobile cranes, and any other engineering plants that are allowed on public roads, to be registered in Singapore to comply with the OBU installation requirements. All other types of engineering plants are not required to install OBU. An OBU Compliance Form, together with the relevant declaration and/or test report must be submitted by the motor dealer, distributor or importer to LTA for verification. Please refer to **Annex E** for a sample copy of the OBU Compliance Form and the OBU installation requirements.

Registration Inspection

The engineering plant must pass inspection at any LTA-Authorised Inspection Centres (see **Annex F**) before it can be registered.

Right-hand Drive
Only right-hand drive engineering plants are allowed to be registered for use in Singapore.

Safety Belt
All engineering plants must be fitted with approved front and rear (for double cabin only) safety belts. The safety belt and its anchorage points must meet internationally recognised standards (e.g. ECE standard, British standard) and the labels must be mounted in the engineering plant, if applicable.

Safety Glass
All safety glass fitted onto the engineering plant must meet one of the recognised international standards e.g. ECE, DOT, BS, JIS, etc. The safety glass must meet the following requirements:

a) Not less than 70% light transmittance for front windscreen and front side window glasses;

b) Not less than 25% light transmittance for rear windscreen and rear side window glasses; and

c) The glass of the front windscreen fitted to a vehicle shall not be made of a material or be of a design such as to prevent, obstruct or interfere with transmission of signals between an OBU installed in such vehicle and any Electronic Road Pricing (ERP) facility (see **Annex E**). Windscreens that contain metallic oxide coating or are designed with defroster are known to have caused such interference.

Rear Underrun Bumpers and Sideguards
Engineering plants with MLW exceeding 3,500kg or trailers must be fitted with approved rear underrun bumper and sideguards before they are allowed to be registered, if applicable. Rear underrun bumper and sideguards are protective devices fitted at the back and sides of these vehicles. In the event of a collision between a smaller vehicle and a heavy vehicle, they will cushion the impact of collision and minimise injuries to drivers and passengers in the smaller vehicle.

The underrun bumper and sideguards must comply with the requirements as specified in the EEC Directives 79/490/EEC and 89/297/EEC respectively, or such, other standards as may be approved by LTA. The design drawings of such devices are required to be endorsed by a local professional engineer or vehicle manufacturer who has carried out simulation by calculation or laboratory testing.

Modifications to Vehicle
You are advised to consult the vehicle manufacturer and seek approval from LTA before carrying out any modification to the vehicle. Such modifications must be approved by the vehicle manufacturer. In addition, the modification work has to be carried out by either the vehicle manufacturer or an agent authorised by the vehicle manufacturer. The vehicle manufacturer or the authorised agent must certify that the modification is done according to the procedures and requirements set out by the vehicle manufacturer.

Asbestos-free Brake and Clutch
NEA requires all newly registered vehicles to have asbestos-free brake and clutch linings. This requirement is gazetted under the Poisons Act.

Chlorofluorocarbon (CFC)-free Air-conditioners
NEA requires the air-conditioners installed in all newly registered vehicles to use CFC-free refrigerant.

Use of Hydrocarbon (HC) Refrigerants in Vehicle Air-conditioning Systems
The use of HC refrigerants in vehicle air conditioning systems is not allowed. Refer to the Singapore Civil Defence Force's circular for more details:
https://www.scdf.gov.sg/docs/default-source/scdf-library/scdf-circular-on-hydrocarbon-refrigerants-june-2015.pdf

High Intensity Discharge (HID) Headlamps
Vehicles fitted with HID headlamps must be equipped with an auto-leveling feature.

Speedometer
All engineering plants must be able to permanently indicate/display vehicular speed in units of kilometres per hour (km/h).

Speed Limiter
All engineering plants with MLW exceeding 12,000kg must be fitted with approved speed limiters with the set speed at 60km/h. The speed limiter must comply with European Standard 92/24/EEC or the British Standard BS AU 217: Part 1a: 1987.

Electric Vehicles and Electric Vehicle Charging Systems
All electric vehicles (EVs) must comply with recognised international vehicle safety standards such as those adopted by the EU countries, Japan and the USA. To show proof that the EVs are tested in accordance to the UN ECE Regulation No. 100, you will be required to produce the relevant certifications on electrical safety for electric powertrain vehicles issued by an overseas designated technical service (e.g. TUV, IDIADA, DEKRA, VCA etc.).

A nationwide EV charging standard TR25:2022 (Technical Reference for Electric Vehicle Charging System) has been established for the EV charging system in Singapore. Singapore has adopted Type 2 AC and Combo-2 DC charging systems as the nationwide public charging standard for EVs. CHAdeMO charging system is only allowed as an optional[3] public charging standard. To ensure safe use of the public charging infrastructure, an EV must be equipped with:

a) A matching Type 2 vehicle inlet (or AC charging only); or

b) A Combo-2 vehicle inlet (for AC and DC charging); or

c) A matching Type 2 vehicle inlet (for AC charging) and a CHAdeMO vehicle inlet (for DC charging).

[3]CHAdeMO is only allowed as an optional public charging standard and not as a national public charging standard. CHAdeMO chargers that comply with TR25:2022 can be imported and installed in Singapore, as long as they are provided alongside Type 2 AC and/or Combo 2 DC charging points.

All EV chargers must be type-approved and affixed with approval labels before they can be supplied, installed or certified as fit for charging EVs. For more information on the type approval of EV chargers, please refer to the following link:
https://onemotoring.lta.gov.sg/content/onemotoring/home/owning/electric-vehicle-charging/ev-charger-type-approval.html

Please refer to **Annex G** for more information that is required for the importation of EVs.

Ministry of Manpower's (MOM) Safety Guidelines Related to Powered Counterbalanced Forklift Trucks

MOM requires all forklifts to be equipped with functional seatbelt, be properly maintained (including all safety features) and operated safely in accordance with established guidelines on safe usage of forklift.

Manufacturers and suppliers of forklift trucks are required to fulfil your duties and responsibilities under the Workplace Safety and Health (WSH) Act. Refer to MOM Website for more information:
https://www.mom.gov.sg/workplace-safety-and-health/workplace-safety-and-health-act/machinery-and-equipment

Occupiers and employers must ensure that only trained and competent operators are allowed to operate the forklift in the workplace. Requirements on the safe use of forklift can be found under the Singapore Standard SS573:2012 (Code of Practice for the Safe Use of Powered Counterbalanced Forklift) and WSH Guidelines on Safe Operation of Forklifts.

Information about forklift training and refresher training can be found here:
https://www.mom.gov.sg/faq/licensing/how-often-do-i-have-to-send-my-forklift-operators-for-refresher-training

Refer to WSH Council on more information on the safe use of forklift:
https://www.tal.sg/wshc/topics/forklift/operating-forklifts-safely#

Step-by-Step Guide to Import an Engineering Plant in Singapore

Step 1
Check if your engineering plant meets registration and technical requirements.

Step 2
Ship the engineering plant to Singapore through a shipping agent.

Step 3
Arrange with your shipping agent to obtain an **Inward Cargo Clearance Permit**. Your agent will have to submit an application to the Singapore Customs using the TradeNet® System. **Permit and processing fee and Goods & Services Tax (GST)** will be payable to the Singapore Customs through inter-bank GIRO. GST is computed at 9% of the total Cost, Insurance & Freight (CIF). For further information on the application for Inward Cargo Clearance Permit, please visit www.customs.gov.sg or contact the Singapore Customs at:

Singapore Customs
55 Newton Road
#07-01 Revenue House
Singapore 307987
Tel: 6355 2000

Step 4
Prepare documents for verification and registration of the engineering plant in Singapore. Please refer to the Step-by-Step Guide to Register an Engineering Plant in Singapore below.

Step-by-Step Guide to Register an Engineering Plant in Singapore

Step 1
Decide whether you want to register the engineering plant yourself or through a motor dealer to register the engineering plant for you. If a motor dealer registers the engineering plant on your behalf, they will carry out all or most of the following steps for you.

Step 2
You must submit an application for a vehicle approval to LTA through the Vehicle Inspection and Type Approval System (VITAS). You need to pay an application fee of $274.68.

Please refer to VITAS website (https://vrl.lta.gov.sg/certlogin.html) for more details on opening a user account and application procedures. If you do not have a registered account, you can write in via our feedback portal (https://www.lta.gov.sg/content/ltagov/en/contact_us.html).

Documents to be submitted for verification include:

a) Documents to prove compliance with the exhaust emission standards such as:

- Letter of certification from the vehicle manufacturer that the engineering plant complies with the required exhaust emission standards; or
- Certificate of Compliance on exhaust emission standards with test report from LTA/NEA-recognised vehicle testing laboratory;

b) Detailed technical specifications of the engineering plant issued by the vehicle manufacturer (e.g. technical catalogue, etc);

c) Original Manufacturer/Purchase Invoice to state make/model, engine number, chassis number, year of manufacture, engine capacity, unladen weight and maximum laden weight; or foreign vehicle registration documents (for used engineering plant). A statutory declaration is necessary if original documents are not available;

d) Letter of No Objection (LNO) issued by LTA for OBU Compliance;

e) Bill of Lading; and

f) Inward Cargo Clearance permit.

All documents submitted **MUST** be in the English language. Notarised translations are acceptable.

Acceptance of the above documents (e.g., exhaust emission and noise test report) are subject to due diligence checks. You should take this into consideration, especially when registering a new engineering plant/vehicle for the first time.

Once in-principle approval has been given, you will be notified to send the engineering plant for inspection at any LTA-Authorised Inspection Centres (see **Annex F**) where an inspection fee will be charged.

After your engineering plant has passed the inspection, an approval letter with a Vehicle Approval Code (VAC) will be issued to you. With this VAC, you may proceed to register the engineering plant.

Step 3
A Vehicle Parking Certificate (VPC) is required for any of the following vehicles:

a) Heavy goods vehicle or cement and concrete mixer with MLW exceeding 5,000kg;

b) Bus with a seating capacity exceeding 15 persons, excluding driver;

c) Trailer, container trailer, low loader or flat-bed trailer, with MLW exceeding 5,000kg; or

d) Mobile crane or recovery vehicle with unladen weight exceeding 2,500kg.

Step 4
Once all information and documents are in order, you can make an appointment via our Digital Services (https://www.lta-eappointment.sg, select Registration > Register Vehicles (Self-Import)) to submit the following documents to LTA, Vehicle Quota & Registration Division, 10 Sin Ming Drive, Singapore 575701 for registration:

a) Application for Registration and Licensing of a Motor Vehicle (Form R01). Refer to "Forms" at https://onemotoring.lta.gov.sg for the latest form;

b) Identification documents of the vehicle owner:

- For individual owners
  - Original[4] NRIC [for Singaporeans and Permanent Residents (PRs)] or Employment/Immigration pass card[5] (for foreigners).

- For companies
  - Printout of the business profile of the company from the Accounting & Corporate Regulatory Authority (ACRA). This printout is valid up to 14 days from the date of issue;
  - Original[5] NRIC (for Singaporeans and PRs) or Employment/Immigration pass card[6] (for foreigners) of the authorised person from the company; and
  - Original authorisation letter, signed by at least a Manager or above, if the authorised person of the company is not listed in the ACRA printout.

- For organisations
  - A copy of certificate issued by the Registry of Societies or relevant regulating authority; and
  - Original[5] NRIC (for Singaporeans and PRs) or Employment/Immigration pass card[6] (for foreigners) of the authorised person from the organisation;

c) Approval letter with VAC;

d) Temporary COE (TCOE) (if applicable);

[4] Physical NRIC or long-term pass card or Digital Identity Card (Digital IC) launched via the Singpass app. Images or videos of the identity card/pass/Digital IC will not be accepted.
[5] Employment/Immigration pass card issued by the Ministry of Manpower (MOM) or Immigration & Checkpoint Authority of Singapore (ICA) bearing the Foreign Identification Number (FIN).

e) Valid Motor Insurance Cover;

f) Notice of Retained/Bid Vehicle Registration Number (if any);

g) Approval letter from the relevant authorities, if the engineering plant is to be registered under a special scheme (if any);

h) VPC (if any); and

i) Inward Cargo Clearance Permit.

Total fees payable by NETS or SGQR PayNow:

a) Processing Fee of $28.34 per application (if registration is done at LTA's office);

b) Registration Fee of $350; and

c) Road Tax
   i) For cement and concrete mixer, concrete pump and mobile crane, refer to https://onemotoring.lta.gov.sg for the latest road tax rate under "Buying", "Upfront Vehicle Costs", "Vehicle Tax Structure"; and

   ii) For others, road tax is exempted.

Step 5
Collect the following from LTA, Vehicle Quota & Registration Division, 10 Sin Ming Drive, Singapore 575701 upon registration of the engineering plant:

a) Notification of registration; and

b) Receipt.

Step 6
Upon successful registration, a vehicle registration number will be assigned to the engineering plant, unless a retained or bid vehicle registration number is used. You have to affix the vehicle registration number plates on your engineering plant within 3 days of registration.

Annex A
Page 1 of 2

List of LTA/NEA-Recognised Vehicle Exhaust Emission Testing Laboratories for Engineering Plants

For Engineering Plants with MLW not exceeding 3,500kg

Singapore

1. Vicom Emission Test Laboratory
   [Only for exhaust emission test]
   511 Bukit Batok Street 23
   Singapore 659545
   Tel: (65) 6567 0282
   Fax: (65) 6560 2649
   Email: customerservice@vicom.com.sg
   Website: www.vetl.com.sg

Overseas

1. Laboratoire De L'union Technique De L' Automobile
   Du Motorcycle Et Du Cycle Autodrome De
   91 Linas Monthlery
   France

2. Millbrook Proving Ground Ltd
   Millbrook, Near Ampthill
   Bedford MK45 2JQ
   England

3. Tianjin Automotive Test Centre
   A: Boxing Road, Beijing Economic and Technological Development Zone
      Beijing, China
   B: Tianshanlukou, Chenglinzhuangdao
      Tianjin, China

For Engineering Plants with MLW exceeding 3,500kg

1. Laboratoire De L'union Technique De L' Automobile
   Du Motorcycle Et Du Cycle Autodrome De
   91 Linas Monthlery
   France

2. Rheinisch – Westfalischer Technischer
   Uberwachungs - Verein e.v.
   Adlerstrasse 7
   4300 Essen 13 (Kray - Leithe)
   West Germany

3. Vehicle Certification Agency (VCA)
   VCA Bristol
   1 The Eastgate Office Centre
   Eastgate Road, Bristol
   BS5 6XX, United Kingdom

Annex A
Page 2 of 2

4. TÜV Süd Auto Service GmbH
Krailenshaldenstraße 30; 70469 Stuttgart

5. TÜV NORD Mobilität GmbH & Co. KG IFM – Institut für Fahrzeugtechnik und Mobilität
Adlerstraße 7; 45307 Essen

6. Millbrook Proving Ground Ltd
Millbrook, Near Ampthill, Bedford MK45 2JQ, England

7. Horiba Mira Ltd
Watling Street, Nuneaton, Warwickshire CV10 0TU

8. RDW Centre for Vehicle Technology and Information
Zoetermeer Head-Office
Europaweg 205
PO Box 777
2700 AT Zoetermeer
The Netherlands

9. Japan Automobile Research Institute
Shibadaimon 1-1-30, Minato-ku, Tokyo, Japan

10 The Automotive Research Association of India (ARAI)
Survey No. 102, Vetal Hill, Off Paud Road, Kothrud,
Pune, Maharashtra, India

Annex B
Page 1 of 2

The Registrar of Vehicles
Republic of Singapore

Certificate of Compliance

For the purposes of rule 35 of the Road Traffic (Motor Vehicles, Construction and Use) Rules, the following certificate is submitted:

1. _____ was tested by the
(vehicle make/model)

_____
(name and address of testing laboratory)

to ensure it complies with _____ and the following were
(exhaust emission standard)
the results of the test:
Model : _____
Weight : _____
Engine No. : _____
Chassis No. : _____
Engine Capacity : _____

Test Type I

Pollutions Tests	CO g/km	HC g/km	NOx g/km	HC + NOx g/km	CO_2 g/km
1st test					
2nd test					
3rd test					
Average					
Limit for Inertia					

Test Type II
Idling speed specified by manufacturer: _____ rpm

Idling speed limits: _____ rpm

RPM	RPM	RPM	RPM
CO %			

CO: _____ Vol. % at _____ rpm

Test Type III

Vehicle Speed	Power Applied to driven Wheel	Pressure in crankcase	Weighing Factor	Q' n	Cn	Q' n	HC	Pn
Km/h	Kw	/mm H_2O		1/min	g/min	1/min	Ppm	g/min
Idling								
50±2								
50±2								

Annex B
Page 2 of 2

Test Type IV Evaporative (Optional)

_____

_____

Test Type V Endurance / Durability

_____

_____

2. The particulars set out in paragraph 1 are true and correct.
Based on the said particulars, the *manufacturer / testing laboratory hereby declares that _____ complies with the above mentioned
(vehicle make/model)
exhaust emission standard.

Dated this _____ day of _____ 20_____.

For and on behalf of the Manufacturer:

(1) _____
(Signature of Chief Executive of Company)

_____
(Name)

(2) _____
(Signature of Engineer)

_____
(Name)

_____
(Qualifications)

* Delete where not applicable

Annex C
Page 1 of 2

The Registrar of Vehicles
Republic of Singapore

Certificate of Compliance
For Engineering Plant (MLW not exceeding 3,500kg)

For the purposes of rule 37 of the Road Traffic (Motor Vehicles, Construction and Use) Rules, the following certificate is submitted:

1. _____ was tested by the
(vehicle make/model)

_____
(name and address of testing laboratory)

to ensure it complies with _____ and the following were
(exhaust emission standard)
the results of the test:

Model : _____
Weight : _____
Engine No. : _____
Chassis No. : _____
Engine Capacity : _____

(A) Test Type I (Verifying the average tailpipe emissions after a cold start)

Pollutions Tests	CO g/km	HC g/km	NOx g/km	HC + NOx g/km	Mass of particulates g/km
1st test					
2nd test					
3rd test					
Average					
Limit for Inertia					

Test Type V (Durability of anti-pollution control devices)

_____

_____

(B) On Board Diagnostic (OBD) Test

Pollutions Tests	CO g/km	HC g/km	NOx g/km	HC + NOx g/km	Mass of particulates g/km
1st test					
2nd test					
3rd test					
Average					
Limit for Inertia					

Annex C
Page 2 of 2

2. The particulars set out in paragraph 1 are true and correct.
Based on the said particulars, the *manufacturer / testing laboratory hereby declares that _____ complies with the above mentioned
(vehicle make/model)
exhaust emission standard.

Dated this _____ day of _____ 20_____.

For and on behalf of the Manufacturer:

(1) _____
(Signature of Chief Executive of Company)

_____
(Name)

(2) _____
(Signature of Engineer)

_____
(Name)

_____
(Qualifications)

* Delete where not applicable

Annex D
Page 1 of 2

The Registrar of Vehicles
Republic of Singapore

Certificate of Compliance
For Engineering Plant (MLW exceeding 3,500kg)

For the purpose of rule 37 of the Road Traffic (Motor Vehicles, Construction and Use) Rules, the following certificate is submitted:

1. Chassis No: _____ Engine No: _____
   Engine Type: _____ Engine Capacity: _____
   Make: _____ Model: _____

was tested by the _____
(Name and address of testing laboratory)

to ensure it complies with _____.
(exhaust emission standard)

This certificate is also applicable to the following models which are fitted with the same engine type:

_____

The following were the results of the test:

(A) World Harmonised Stationary Cycle (WHSC) Tests

Emissions	CO mg/kWh	THC mg/kWh	NHMC mg/kWh	NOx mg/kWh	CH_4 mg/kWh	NH_3 mg/kWh	PM Mass mg/kWh	PM number #/kWh
DF -Mult/Add*								
Test Result								
Final Values								
Limit Values								

(B) World Harmonised Transient Cycle (WHTC) / Japan World Harmonised Vehicle Cycle (J-WHVC) Tests

Emissions	CO mg/kWh	THC mg/kWh	NHMC mg/kWh	NOx mg/kWh	CH_4 mg/kWh	NH_3 mg/kWh	PM Mass mg/kWh	PM number #/kWh
DF -Mult/Add*								
Cold start								
Hot start w/o regeneration								
Hot start with generation*								
$K_{r,u}$ (mult/add)*								
$K_{r,d}$ (mult/add)*								
Weighted test result								
Final test results with DF								
Limit Values								

Annex D
Page 2 of 2

2. The particulars set out in paragraph 1 are true and correct.
Based on the said particulars, the *manufacturer / testing laboratory hereby declares that _____ complies with the above mentioned exhaust emission standard.
(vehicle make/model)

Dated this _____ day of _____ 20_____.

For and on behalf of the Manufacturer:

(1) _____
(Signature of Chief Executive of Company)

_____
(Name)

(2) _____
(Signature of Engineer)

_____
(Name)

_____
(Qualifications)

* Delete where not applicable

Annex E
Page 1 of 5

On-Board Unit (OBU) Installation Requirements

1) Placement of the OBU Components for Cement and Concrete Mixers, Concrete Pumps, Mobile Cranes and On-Road Engineering Plants

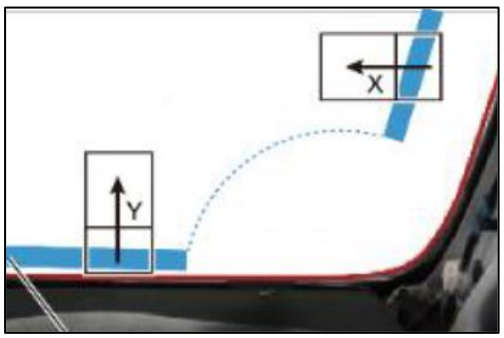
Cement and concrete mixers, concrete pumps, mobile cranes and on-road engineering plants to be registered in Singapore will be fitted with a three-piece OBU, comprising an Antenna, Processing Unit and an optional Touchscreen Display. During installation, the workshop* will assess the make and model of the vehicle and check with the vehicle owner on aspects such as placement of the Processing Unit and the optional installation of the Touchscreen Display, including its preferred position.

*Do note that only LTA-Authorised persons (e.g. authorised workshop technicians) are able to install the OBU in motor vehicles. Self-installation of the OBU is not permitted, and doing so is an offence under the Road Traffic Act (Electronic Road Pricing System) Rules 2015.

2) Placement of the OBU Antenna

For the OBU Antenna, the position with respect to the windscreen edges and the associated fitting base are determined by the angle of the windscreen from the vertical line, as specified below:

Windscreen Angle (from Horizontal Line)	**Antenna Unit Fitting Base**	**Minimum Distance from Vehicle's Black Ceramic Border Line**	
		Horizontally (***X dimension***)	**Vertically** (***Y dimension***)
<45º	Not required	10 cm	5 cm
45º to 65º	20º Fitting Base	15 cm	15 cm
>65º	40º Fitting Base	15 cm	15 cm



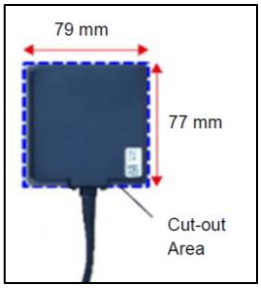
Annex E
Page 2 of 5

In addition, the OBU Antenna should not be installed at locations that could potentially interfere with the transmission of signals between the OBU Antenna installed in such vehicle and any Electronic Road Pricing facility.

Locations known to have caused such interference are:

i) Any type of solar film that affects or interferes with radio frequencies.

ii) Windscreens that contain metallic oxide coating or are designed with defroster. A cut-out area of minimally 77 mm by 79 mm will be required.



iii) A location on or near metal surfaces and/or electronic devices (e.g. dash cam) that will affect performance of antenna.

iv) A location that will be blocked or hindered by wiper's stationary position. In which case, the OBU Antenna needs to be placed above and away from the wiper's stopping position.

3) Technical Requirements for OBU Installation in Cement and Concrete Mixers, Concrete Pumps, Mobile Cranes and On-Road Engineering Plants

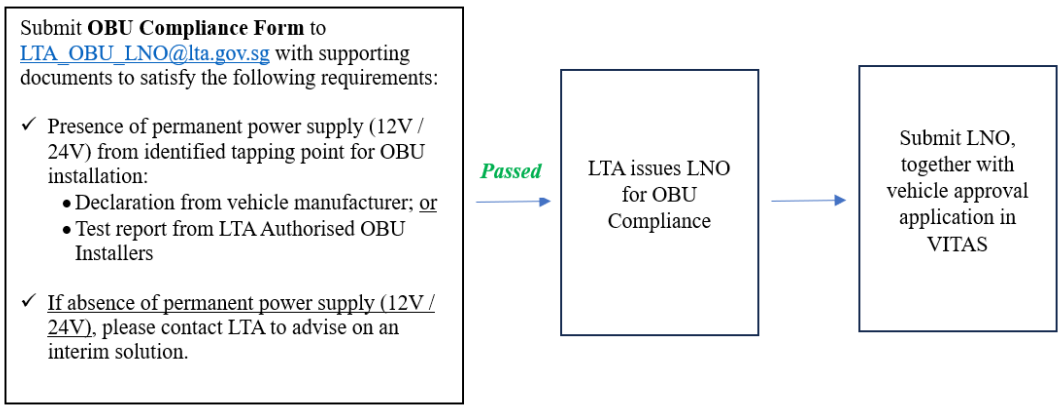
Category	Requirements
+B Permanent Power (OBU Yellow Cable)	OBU requires a permanent power source: • **Minimum of DC 12V** • **Maximum of DC 36V** This **permanent** power source shall be available **regardless of vehicle engine on/off** and even during the charging of the vehicle's battery.
Ignition Detection Line (OBU Red Cable)	Must exceed DC 4.16V when vehicle ignition is on and must not exceed DC 4.16V when vehicle ignition is off, even if certain accessories remain active.
Ground (OBU Black Cable)	Use of vehicle battery or vehicle chassis ground
Battery Capacity	Vehicle battery capacity shall meet **minimum**: 34Ah @12V
Current Rating	Vehicle's battery must support the following OBU current rating: **Typical**: 0.6-0.8A @12V **Maximum** (high load situation): 1.2A @12V

4) Letter of No Objection (LNO)

Any motor dealer, distributor or importer who wants to register cement and concrete mixers, concrete pumps, mobile cranes and on-road engineering plants with LTA in Singapore must submit the OBU Compliance Form together with the relevant declaration and/or test report to LTA (via email to LTA_OBU_LNO@lta.gov.sg). A LNO will be issued by LTA if the submitted documents and information are in order. You are required to submit the LNO as part of your vehicle approval application for new registration of cement and concrete mixers, concrete pumps, mobile cranes and on-road engineering plants in the Vehicle Inspection and Type Approval System (VITAS).

If the relevant vehicles do not present a permanent 12V power supply that can be used for OBU installation, LTA will contact the applicant on an interim solutioning.

An overview of the procedure for obtaining the LNO is shown in the diagram below.



Annex E
Page 4 of 5

5) OBU Compliance Form For Non-Motorcycles/Scooters

OBU Compliance Form for Non-Motorcycles/Scooters	
Notes for Application: 1) For **Batch Vehicles Approval**, only one OBU Letter of No Objection (LNO) is needed per each batch approval application (limited to 50 quantities per application). 2) For **Extension to Type Approval**, a new OBU LNO is required only if the vehicle's internal circuitry is changed, which results in different permanent power and ignition source points.	
Application Date	DD/MM/YYYY
Company Name	Applicant Company Name "SAMPLE XYZ Pte Ltd"
UEN	*Applicant to provide UEN*
Local Registered Office Address	*Applicant to provide Singapore Registered Office Address*
Contact Person Name / Phone No. / Email Address	*Applicant to provide contact details*
Vehicle Brand	*Applicant to provide brand of vehicle*
Vehicle Type	*Applicant to provide type of vehicle and if ICE or Hybrid or Electric*
Vehicle Models	*Applicant to provide model/s of vehicle*
Battery Capacity	xx Ah
Permanent Power 12V/24V source available for OBU installation	Yes/No
Indicate with illustrations of actual vehicle (e.g. pictures, schematics, datasheet) on where power sources are tapped	Please indicate the following electrical points clearly: i. Permanent 12V/24V – ii. Ignition Source –
Does the vehicle come with an original factory fitted power disconnect switch?	Yes/No

6) Format of Declaration / Test Report

Template for Declaration / Test Report Vehicles (Non-Motorcycles/Scooters)			
Permanent Power Source (Indicate electrical point: _____)			
No.	**Test Description**	**Expected Result**	**Actual Result (Provide pictures)**
1	Test electrical point for permanent power using multimeter when vehicle in Ignition OFF / Sleep state	Minimum 12V / 24V present at electrical point	
2	Test same electrical point 30 mins later, for permanent power using multimeter when vehicle in Ignition OFF / Sleep state **(Dependent on vehicle design please adjust to the correct waiting time if the vehicle takes more than 30 mins to be in sleep state)**	Continue to have minimum 12V / 24V present at electrical point	
Ignition / State Source (Indicate electrical point: _____)			
No.	**Test Description**	**Expected Result**	**Actual Result (Provide pictures)**
1	Test electrical point for Ignition / state using multimeter when vehicle in Ignition ON / Active state	Voltage measure within 12V / 24V	
2	Test electrical point for Ignition / state using multimeter when vehicle in Ignition OFF / Sleep state	Voltage measure 0V	

Company Name:	
Name of Tester:	
NRIC/FIN (Last 4 digit):	
Email:	
Contact Number:	

Annex F

List of LTA-Authorised Inspection Centres

JIC Inspection Services Pte Ltd (Pioneer)
53 Pioneer Road
Singapore 628505
Tel: 6863 9639

STA Inspection Pte Ltd (Boon Lay)
249 Jalan Boon Lay
Singapore 619523
Tel: 6261 6178

STA Inspection Pte Ltd (Sin Ming)
302 Sin Ming Road
Singapore 575627
Tel: 6452 1398

VICOM Inspection Centre Ltd (Bukit Batok)
511 Bukit Batok Street 23
Singapore 659545
Tel: 6567 7111

VICOM Inspection Centre Ltd (Changi)
20 Changi North Crescent
Singapore 499613
Tel: 6545 4808

VICOM Inspection Centre Ltd (Kaki Bukit)
23 Kaki Bukit Avenue 4
Singapore 415933
Tel: 6749 5422

VICOM Inspection Centre Ltd (Sin Ming)
385 Sin Ming Drive
Singapore 575718
Tel: 6458 4555

VICOM Inspection Centre Ltd (Yishun)
501 Yishun Industrial Park A
Singapore 768732
Tel: 6755 9028

Annex G

Information required for Electric Vehicles (EVs)

a) Establishment and background of the vehicle manufacturer.

b) The EV production volume per year, number of EVs exported and countries exported to.

c) Appropriate document issued by an approving authority to show the international recognition of the vehicle manufacturer [e.g. World Manufacturer Identifier (WMI) code allotted by Society of Automotive Engineers (SAE)].

d) Appropriate document issued by the certifying authorities in the approving country and other countries, if available, to show the acceptance of the vehicle.

e) A list of EV components and the relevant standards which the EV components had complied with (to be provided by the vehicle manufacturer) together with compliant test reports.

f) Certification and test reports issued by an overseas designated technical service (e.g. TUV, IDIADA, DEKRA, VCA etc.) showing that EVs comply with the requirements in UN ECE Regulation No. 100 – for the electric power train of EVs.

g) LTA registration mark of registered EV Chargers, as proof that the EV charging system are registered with LTA. For more information, please refer to the following website: https://onemotoring.lta.gov.sg/content/onemotoring/home/owning/electric-vehicle-charging.html

Copy of the Technical Reference is available at:
Toppan Leefung Pte Ltd
1 Kim Seng Promenade
#18-01 Great World City East Tower
Singapore 237994
Phone / Fax: (65) 6826 9691 / (65) 6820 3341
Website: https://www.singaporestandardseshop.sg/
Email: singaporestandardseshop@toppanleefung.com

h) The type of tests which the vehicle had undergone.

i) The safety features (both mechanical and electrical) of the vehicle, e.g. electrical isolation to prevent electrical shock hazard.

j) List of vehicle manufacturer facilities and equipment (with photographs).

k) A copy of the facility appraisal certificate issued by the certifying authority who conducts routine checks on vehicle manufacturer's facilities and equipment.

l) Detailed technical specifications of the vehicles which are to be imported into Singapore.

m) Vehicles such as cement and concrete mixers, concrete pumps, mobile cranes and on-road engineering plants to meet all On-Board Unit (OBU) Installation Requirements as listed in **Annex E**.

Note:

- For new agency, documentary proof from vehicle manufacturer must be produced showing the authorisation of the company as the sole agent of the vehicle in Singapore.

- All the above information must be provided by the vehicle manufacturer.

Annex H

Registration Documents Checklist

☒ **Check against this list to ensure that you have all the necessary documents to register your engineering plant.**

☐ Letter of certification from the vehicle manufacturer that the engineering plant complies with the required exhaust emission standards; or

Certificate of Compliance on exhaust emission standards with test report from LTA/NEA-recognised vehicle testing laboratory

☐ Original Manufacturer/Purchase Invoice or foreign vehicle registration documents (for used engineering plant)

☐ Bill of Lading

☐ Application for Registration and Licensing of a Motor Vehicle (Form R01)

☐ Original[6] identification document of vehicle owner (e.g. NRIC for Singaporean and PR or Employment/Immigration pass card for foreigner)

☐ Letter of No Objection (LNO) issued by LTA for OBU Compliance

☐ Approval letter with VAC

☐ Temporary COE (TCOE) (if applicable)

☐ Valid Motor Insurance Cover

☐ Notice of Retained/Bid Vehicle Registration Number (if any)

☐ Approval letter from the relevant authorities, if the engineering plant is to be registered under a special scheme (if any)

☐ VPC (if any)

☐ Inward Cargo Clearance Permit

☐ Payment of applicable fees by NETS or SGQR PayNow only

Printing date: 29 January 2025

The information contained in this handout is current at the time of printing.
It is subject to change as may be required by the LTA or other relevant authorities.

[6] Physical NRIC or long-term pass card or Digital Identity Card (Digital IC) launched via the Singpass app. Images or videos of the identity card/pass/Digital IC will not be accepted.