

Apply for a Vehicle Approval Code (VAC) through Vehicle Inspection and Type Approval System (VITAS) to register a Bus

Ensure that your bus meets the technical requirements for bus in **Annex A**.

You must submit an application for vehicle approval to LTA through VITAS. You need to pay an application fee of \$274.68.

To ensure sufficient time for registration of **imported used bus**, you must submit the VITAS application at least 3 months before it reaches 3 years old.

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 submit your application to LTA, Vehicle Approval & Control Division, 10 Sin Ming Drive, Singapore 575701.

Documents to be submitted for verification include:

- a) Documents to prove compliance with the exhaust emission standards such as:
 - Vehicle manufacturer's certificate that the new bus complies with the prevailing exhaust emission standards; or
 - Certificate of Compliance on exhaust emission standards with test report from LTA/NEA-recognised vehicle testing laboratory (see **Annex B**). The format for Certificate of Compliance and test report is attached at **Annex C** (for Buses maximum laden weight (MLW) not exceeding 3,500kg) and **Annex D** (for Buses MLW exceeding 3,500kg);
- b) All imported used buses will have to undergo an emission test at LTA/NEA-recognised emission test laboratory (see **Annex B**). The imported used bus must conform to the relevant prevailing emission standards stipulated in the First or Second Schedule of the Environmental Protection and Management (Vehicular Emissions) Regulations in order to be approved for registration. For used buses that are tested in a recognised foreign emission test laboratory, they must be imported within 3 months from the date of the emission test certificate/report issued by the recognised foreign emission test laboratory.
- c) Detailed technical specifications of the bus issued by the vehicle manufacturer (e.g. technical catalogue, etc);
- d) Original Manufacturer/Purchase Invoice to state make/model, engine number, chassis number, year of manufacture, engine capacity, unladen weight and MLW; or foreign vehicle registration documents (for used bus). A statutory declaration is necessary if original documents are not available;
- e) Bill of Lading; and
- f) Inward Cargo Clearance Permit.

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

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

After your bus has passed the inspection, an approval letter with a VAC will be issued to you. With this VAC, you may proceed to register the bus.

Commercial Vehicle Emissions Scheme (CVES)

The CVES was introduced on 1 April 2021 to encourage consumers to choose less pollutive commercial vehicle models that emit lower exhaust emissions and are cleaner overall, thus addressing climate change, improving ambient air quality and protecting public health.

CVES applies to registrations of all new and imported used light commercial vehicles with MLW not exceeding 3,500kg, such as Light Goods Vehicles (LGVs), Goods-Cum-Passengers Vehicles (GPVs), and small buses. Such commercial vehicles registered from 1 April 2021 to 31 March 2025 (both dates inclusive) are classified into Bands A, B or C by their worst-performing pollutant i.e. carbon dioxide (CO₂), carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NO_x) and particulate matter (PM) emissions.

To account for the CO₂ emissions produced by electricity generation from fossil fuels, an emission factor of 0.4g CO₂/Wh will be applied to the electricity consumption of electric vehicles.

a) CVES bandings for CVES-eligible buses registered from 1 April 2021 to 31 March 2023

For CVES-eligible buses registered from 1 April 2021 to 31 March 2023, the incentive for Band A will be disbursed annually in equal payments to the prevailing registered vehicle owner over 3 years (i.e. \$10,000 a year). For Band B and Band C, the full incentive of \$10,000 for Band B will be disbursed and the full surcharge of \$10,000 for Band C will be imposed upon registration respectively.

Light Commercial Vehicles Registered from 1 April 2021 to 31 March 2023							
Band	CO₂ (g/km)	HC (g/km)	CO (g/km)	NO_x (g/km)	PM (mg/km)	Incentive	Surcharge
A	A ≤150	A =0.0	A =0.0	A =0.0	A =0.0	\$30,000	
B	150< B ≤280	0.0< B ≤0.039	0.0< B ≤0.27	0.0< B ≤0.008	0.0< B ≤0.9	\$10,000	
C	C >280	C >0.039	C >0.27	C >0.008	C >0.9		\$10,000

b) CVES bandings for CVES-eligible buses registered from 1 April 2023 to 31 March 2025

For CVES-eligible buses registered from 1 April 2023 to 31 March 2025, the full incentives for CVES Band A and CVES Band B will be disbursed (or the full surcharge for CVES Band C will be imposed) upon registration.

Light Commercial Vehicles Registered from 1 April 2023 to 31 March 2025							
Band	CO ₂ (g/km)	HC (g/km)	CO (g/km)	NO _x (g/km)	PM (mg/km)	Incentive	Surcharge
A	A ≤123	A =0.0	A =0.0	A =0.0	A =0.0	\$15,000	
B	123< B ≤216	0.0< B ≤0.025	0.0< B ≤0.27	0.0< B ≤0.015	0.0< B ≤0.85	\$5,000	
C	C >216	C >0.025	C >0.27	C >0.015	C >0.85		\$15,000

Terms and conditions for receiving CVES incentive are available at <https://go.gov.sg/cves>.

Annex A

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Technical Requirements for Bus

Definition of Bus

Under the Road Traffic Act, a bus must have a seating capacity of not less than 9 passengers (excluding driver).

Compliance with Road Traffic Act and its Subsidiary Legislations

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

Exhaust Emission Standards

The National Environment Agency (NEA) require all buses to be registered in Singapore to comply with the following exhaust emission standards:

Petrol-Driven must be:

Euro 6 (WLTP) or JPN2018	For vehicles using Port Fuel Injection
Euro 6 or JPN2018 + Euro 6 (WLTP) PN limit ¹	For vehicles using Gasoline Direct Injection

Diesel-Driven must be:

Euro 6 (WLTP) or JPN2018 + Euro 6 (WLTP) PN limit	For Buses with gross vehicle weight not exceeding 3,500kg
Euro 6 or PPNLT + Euro 6 PM number or J-WHVC + PN limit of 6.0×10^{11} #/kW	For Buses with gross vehicle weight exceeding 3,500kg

Evidence of your bus's compliance with the exhaust emission standards must be submitted to the LTA. The following documents are accepted as evidence of compliance with the exhaust emission standards:

For Brand New Buses

- a) COC issued by the vehicle manufacturer; or
- b) Letter of certification from the vehicle manufacturer that the bus complies with the required exhaust emission standards; or

¹ From 1 January 2022, NEA will tighten the particle number (PN) limit for gasoline direct injection petrol-driven vehicles from 6×10^{12} #/km to 6×10^{11} #/km. This measure will apply to light commercial vehicles (i.e., LGVs, GPVs and small buses, all with MLW not exceeding 3,500kg) that are registered from 1 January 2022.

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- c) Get your bus tested and certified by any of LTA/NEA-recognised vehicle testing laboratories (see **Annex B**). The laboratories are required to issue a Certificate of Compliance and test report (see **Annex C or D**) for the bus tested. Evidence of compliance with the exhaust emission standards will be waived if it has been registered as a new bus in a foreign country which adopts the same or higher exhaust emission standards as Singapore (at the time of its registration as a new bus in Singapore).

For Used Buses

Get your bus tested and certified by any of LTA/NEA-recognised vehicle testing laboratories (see **Annex B**). The laboratories are required to issue a Certificate of Compliance and test report (see **Annex C or D**) for the bus tested. For used buses that are tested in a recognised foreign emission test laboratory, they must be imported within 3 months from the date of the emission test certificate/report issued by the recognised foreign emission test laboratory.

Registration Inspection

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

Right-hand Drive

Only right-hand drive buses are allowed to be registered for use in Singapore.

Safety Belt

All new buses, except omnibuses, shall be fitted with retractable three-point seat belts at the driver seat and new small buses must have forward-facing seats fitted with retractable three-point seat belts. Small buses refer to buses with 9 seating capacity (excluding driver), and with MLW not exceeding 3,500kg. These buses can be registered as a School Bus, an Excursion Bus, a Private-Hire Bus or a Private Bus.

Safety Glass

All safety glass fitted onto the buses 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% for both the front windscreen and front side window glasses
- b) Not less than 25% for rear windscreen and rear side window glasses for buses (i.e. private buses, private hire buses and excursion buses) that are not licensed to carry school children
- c) Not less than 25% for rear windscreen for school bus and other buses (i.e. private buses, private hire buses and excursion buses) that are licensed to carry school children
- d) Not less than 50% for rear side window glasses for school bus, omnibus and other buses (i.e. private buses, private hire buses and excursion buses) that are licensed to carry school children

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- e) The glass of the front windscreen fitted to a motor 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 in-vehicle unit (IU) installed in such vehicle and any Electronic Road Pricing (ERP) facility (see **Annex F**). Windscreens that contain metallic oxide coating or are designed with defroster are known to have caused such interference

Device to observe blind spots for buses

With effect from 1 October 2015, all newly registered buses with MLW exceeding 8,000kg have to be fitted with mirrors/devices to enable the driver to have a clear view of the area within 300mm of the front and 300mm of the left side of the bus.

Chassis

- a) Every omnibus registered on or after 1 January 1990 shall be fitted with a chassis that is suitably designed and constructed for the carriage of passengers.
- b) Every private bus, excursion bus, private hire bus or school bus registered on or after 1 October 1996 shall be fitted with a chassis that is suitably designed and constructed for the carriage of passengers.

Rear Underrun Bumpers and Sideguards

Buses with MLW exceeding 3,500kg and buses with lower body exceeding 550mm above the ground must be fitted with approved rear underrun bumper and sideguards before they are allowed to be registered. 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.

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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-levelling feature.

Speedometer

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

Speed Limiter

All public service buses with MLW exceeding 10,000kg 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.

Additional Requirements for School Buses

With effect from 4 January 2005, all School buses or any other buses licensed to convey school children to and from their school shall be fitted with a reflective "Children Crossing" sign with red blinking light emitting diodes (LEDs) at the rear of the bus. The Red blinking light will be activated whenever the entrance or exit door is open for the children to alight or board the bus.

The specifications are appended below:

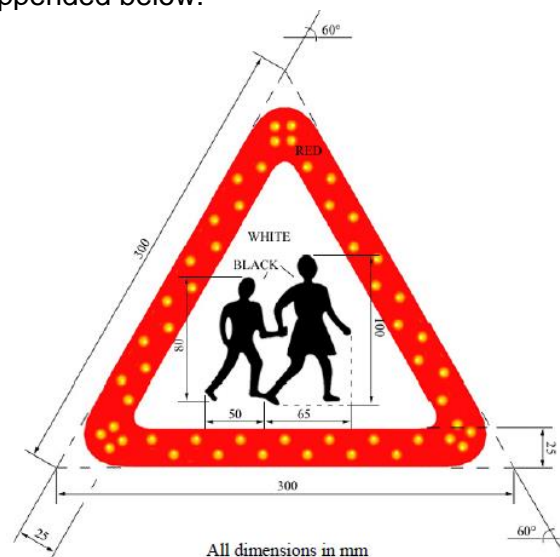


Figure 1: "Children Crossing" Sign

Specifications

- Dimension: Triangular in shape with a length of 300mm on each side as shown in the diagram. The dimension may be proportionately increased to a maximum of 1½ times the specified size.
- Casing: Body casing of plastic material.
- Surface: Retro-reflective material complying with ASTM Standards D4956 Type VII, Type VIII or Type IX (Specifications for retro-reflective sheeting for traffic control).
- Colour: White and red wide-angle prismatic retro-reflective material with black figures at the centre of the sign.
- LED: At least 50 units of ultra-bright red LEDs. The LEDs are arranged in two rows per side at the red retro-reflective materials and shall not be obstructed by the retro-reflective materials.
- Intensity: LEDs shall have a luminous intensity of at least 2500 milli-candela.
- Flashing rate: LEDs shall be lighted when the entrance or exit door is opened. The inner and outer rows of LEDs shall flash alternately at the rate of not less than 60 flashes per minute or not more than 120 flashes per minute.
- Location: Rear facing and securely affixed at the lower right-hand (off-side) corner of the rear window inside the vehicle.

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

For Buses with MLW not exceeding 3,500kg:

Singapore

VICOM Emission Test Laboratory
511 Bukit Batok Street 23, Singapore 659545

China

Tianjin Automotive Test Centre

1. Boxing Road, Beijing Economic and Technological Development Zone, Beijing, China
2. Room 526, Main Building, No.68, Xianfeng East Road, Dongli District, Tianjin, China/300300
3. No. 58, Gangpu Road, Meishan Free Trade Port Zone, Ningbo, Zhejiang, China/315832
4. Yancheng Automotive Proving Ground, Dafeng Economic Development Zone, Dafeng District, Yancheng, Jiangsu, China/224100

Hong Kong

Hong Kong Exhaust Emissions Laboratory Ltd
No. 140-A, Kat Hing Wai, Kam Tin, Yuen Long, New Territories, Hong Kong

For Buses with MLW exceeding 3,500kg:

Netherlands

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

United Kingdom

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

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The following Japanese Emission Test Laboratories are ONLY accepted to perform WLTP-Japan under JPN2018 emission standard. Test reports for CO₂ and fuel consumption measurements have to be obtained from tests conducted in accordance with UN ECE Regulation No.154, Regulation (EU) 2017/1151 or WLTP-Japan [TRIAS 08-002-02].

1. Japan Automobile Transport Technology Association
3-2-5 Yotsuya, Shinjuku-ku, Tokyo, Japan
2. Japan Vehicle Inspection Association
Toyoshima 7-26-28, Kita-Ku, Tokyo, Japan
3. Japan Automobile Research Institute
Shibadaimon 1-1-30, Minato-ku, Tokyo, Japan
4. Tokyo Metropolitan Research Institute for Environmental Protection
Shinsuna 1-7-5, Koto-ku, Tokyo, Japan

The following Japanese Emission Test Laboratory is ONLY accepted to perform the Japan World Harmonised Vehicle Cycle (J-WHVC) tests for buses with MLW exceeding 3,500kg.

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

India

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

France

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

Germany

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

United Kingdom

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

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

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The Registrar of Vehicles
Republic of Singapore

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

For the purposes of rule 35 and 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 : _____

Test Type I (For Petrol – Positive ignition (PI))

Pollutants	CO mg/km	THC mg/km	NHMC mg/km	NOx mg/km	PM mg/km	PN #/km
Measured Values						
DF -Mult/Add*						
Final Values						
Limit Values						

Or

Test Type I (For Diesel – Compression ignition (CI))

Pollutants	CO mg/km	NOx mg/km	HC + NOx mg/km	PM mg/km	PN #/km
Measured Values					
DF -Mult/Add*					
Final Values					
Limit Values					

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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)

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The Registrar of Vehicles
Republic of Singapore

Certificate of Compliance

For Bus (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) test

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) test / 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								

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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)

Annex E

List of LTA-Authorised Inspection Centres

JIC Inspection Services Pte Ltd (Ang Mo Kio)
21 Ang Mo Kio Street 63
Singapore 569118
Tel: 6484 7370

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

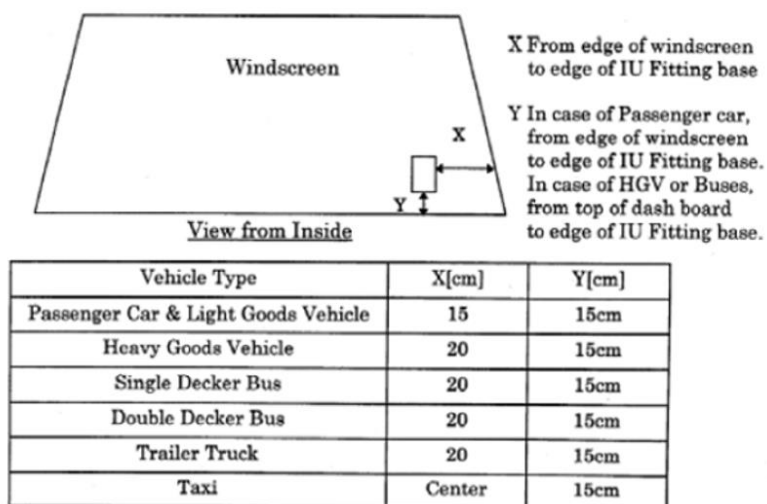
VICOM Inspection Centre Ltd (Sin Ming)
385 Sin Ming Drive
Singapore 575718
Tel: 6458 4555

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

Annex F

Standard In-Vehicle Unit (IU) Fitting Position Requirements

The following figure illustrates the standard IU fitting positions for the various vehicle types:



- The area of the glass windscreen which the IU is mounted on (□ in diagram), must not be of a material or content that affects the communications (radio frequency) between the IU and the ERP facility or equipment.
- The □ surface area must be at least 78mm x 121mm in the vertical orientation.
- For any request for the □ surface area to be at the bottom centre of the windscreen, this would warrant testing at a designated ERP test facility in Singapore (such testing is required to demonstrate that there is no communications failure from fitting the IU at that position).

Printing date: 1 January 2024

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.