



# Cargo Electronic Devices Approval List

**Issue 16 – 26 November 2021**



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## 1. Introduction

Virgin Australia recognises the requirement for Cargo Consignments to be monitored during all phases of shipment, including temperature monitoring, geolocation tracking, etc.

Cargo Electronic Devices (CEDs), sub-categorised as either Cargo Tracking Devices (CTDs) or Cargo Dataloggers (CDLs) are used by airlines and passengers to track baggage or cargo being transported.

Typically, CTDs contain a cellular radio which communicates with the existing cellular infrastructure to provide updates on the cargo location and other optional data such as temperature, humidity, shock, vibration, etc. On the other hand, CDLs typically records the data mentioned above. The data is saved to the internal memory. The interface to the data would be via USB, or Bluetooth in later versions. CDLs that are Wireless Technology enabled, will be addressed in the same manner as the CTDs as they contain a radio as well.

CEDs are not installed on the aircraft. These devices are placed with cargo or baggage, which effectively categorise them as Portable Electronic Devices (PED) or Transmitting Portable Electronic Devices (TPED) in the case where it communicates via radio. Guidance as to the suitability of CEDs on-board aircraft to ensure no interference with aircraft systems is provided in FAA Advisory Circular AC 91.21-1D (Latest Revision).

## 2. Scope

The Cargo Electronic Devices Approval List has been prepared by Virgin Australia Engineering to provide guidance and approval for Cargo Electronic Devices to be utilised by Cargo Companies on-board Virgin Australia aircraft.

## 3. Guidance

It is important to review the Cargo Electronic Devices Approval List (CEDAL) before providing authority for Cargo Electronic Devices (CEDs) to be attached to Cargo carried on-board Virgin Australia aircraft.

## 4. Queries and Approval

This CEDAL is to be used for reference only – if the CED is not listed on the below list, a formal Request for Approval is required before use of unlisted device.

Contact for Queries and Approval:

Fleet Engineering IFE: [engineering.ife@virginaustralia.com](mailto:engineering.ife@virginaustralia.com)

Please submit an e-mail request for CED with as much information and substantiation data as possible.

Information to be included:

### i. Design Information

1. Pictures of Device and associated Peripherals
2. Product Label
3. Operational Description of Device and Peripherals
4. Manufacturer Statement of Strict Design and Production Controls
5. Battery design standard and relevant qualification documentation for devices using a lithium battery

### ii. Emissions Limits and Peripheral Devices

Device is to meet RF radiated emissions limits as described in RTCA DO-160G (or later revision), Section 21, Category H (Environmental Conditions and Test Procedures for Airborne Equipment)

### iii. Means to Shut Off PED

If no report is available for Item (ii) above, then the device must be designed with a minimum of two independent means to:

- 1) Turn off completely; or
- 2) Turn off cellular or mobile functions; or
- 3) A combination of both when airborne.

NOTE 1: The independent means must identify different sources, i.e. two similar, yet separate, sources of the same type are not considered independent.

NOTE 2: The device may use low-powered wireless communications during flight without the requirement to comply with NOTE 1 above, i.e. Bluetooth (IEEE 802.15.1) and ZigBee (IEEE 802.15.4). The low-power limit is 100mW EIRP (Effective Isotropic Radiated Power). WLAN (IEEE 802.11) may exceed 100mW and these devices should be reviewed.

### iv. Signals

The device must not emit any audible or visually disturbing signals during transport.

### v. PED Batteries

Battery Design Standard and Relevant Battery Qualification Documentation if the device contains a Lithium battery.

Examples of design standards and documentation are:

TSO-C142a, Non-Rechargeable Lithium Cells and Batteries, dated August 7, 2006  
IEEE Std 1625 / 1725, IEEE Standard for Rechargeable Batteries for Portable Computing  
ST/SG/AC.10/11, Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Section 38.3

## 5. Important Information

It should be noted that Virgin Australia aircraft are typically PED/TPED approved to industry standards listed below:

- RTCA/DO-160G, Environmental Conditions and Test Procedures for Airborne Equipment
- RTCA/DO-294C, Guidance on Allowing Transmitting Portable Electronic Devices (T-PEDs) on Aircraft
- RTCA/DO-307, Aircraft Design and Certification of Portable Electronic Devices (PEDs) Tolerance

Further substantiation data can be found in the latest revision of the following reports (available on request):

- B737: Boeing Drawing 222A4006

## 6. Limitations

The following limitations exist pertaining to the use of CEDs:

- CED placement is limited to the Cargo Bay or Compartment
- CED is not permanently installed to the aircraft
- CED uses its own internal power source (cell or battery)
- CED is not connected to the Aircraft

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## 7. Approval List – Approved for Use on VA Fleet

| Manufacturer        | Make  | Model  | ESR Reference | Report Reference           | DG Approval*     |
|---------------------|---|--|---------------|----------------------------|------------------|
| Berlinger           | Q-tag®  | CLm doc  | 1262508       | VAER-4420-001              | Yes              |
| Berlinger           | Q-tag®  | CLm doc D  | 1262508       | VAER-4420-001              | Yes              |
| Berlinger           | Q-tag®  | CLm doc L  | 1262508       | VAER-4420-001              | Yes              |
| Berlinger           | Q-tag®  | CLm doc LR   | 1262508       | VAER-4420-001              | Yes              |
| Emerson             | GO  | Real-Time  | 1262509       | VAER-4420-004              | Yes              |
| Emerson             | GO  | Real-Time XL   | 1262509       | VAER-4420-004              | Yes              |
| Emerson             | GO  | Real-Time LUX  | 1262509       | VAER-4420-004              | Yes              |
| Emerson             | GO  | Wireless   | 1262509       | VAER-4420-005 <sup>2</sup> | Yes              |
| Escavox             | Blue Box  | gSense30g-02   | 1294423       | VAER-4420-012              | Yes              |
| Kirsen Technologies | A-Type Device<br><i>Also known as "DB Schenker Smartbox" (under commercial agreements).</i> |  | 1262506       | VAER-4420-003              | Yes              |
| Logmore             | QR Tag  | Model One  | 1302468       | VAER-4420-024              | Yes <sup>1</sup> |
| Logmore             | QR Tag  | Model Two  | 1302468       | VAER-4420-024              | Yes <sup>1</sup> |
| Logmore             | QR Tag  | Model Three  | 1302468       | VAER-4420-024              | Yes <sup>1</sup> |
| OnAsset             | Sentry  | 400  | 531615        | GS Aero ER-10105-001       | Yes <sup>1</sup> |
| OnAsset             | Sentry  | 500  | 531615        | GS Aero ER-10105-001       | Yes <sup>1</sup> |
| RoamBee             | BeeSense  | RMBU_3GTR<br><i>Also known as Bee Sense, Bee, 3G Bee and Sensor Bee.</i> | 1252507       | VAER-4420-002              | Yes              |
| RoamBee             | BeeBeacon Sense   | BB-TPH-1   | 1290448       | VAER-4420-006              | Yes <sup>1</sup> |
| RoamBee             | BeeBeacon Aware   | BB-SEC-1   | 1291155       | VAER-4420-007              | Yes <sup>1</sup> |

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| Manufacturer | Make               | Model                 | ESR Reference | Report Reference     | DG Approval*     |
|--------------|--------------------|-----------------------|---------------|----------------------|------------------|
| Sensitech    | Sentry             | 500                   | 531615        | GS Aero ER-10105-001 | Yes <sup>1</sup> |
| Sensitech    | TempTale           | Geo Ultra             | 1302433       | VAER-4420-023        | Yes <sup>1</sup> |
| Sensitech    | TempTale           | Geo Ultra with Probe  | 1306485       | VAER-4420-025        | Yes <sup>1</sup> |
| Sensitech    | TempTale 4         | TempTale 4            | 1299199       | VAER-4420-021        | Yes <sup>1</sup> |
| Sensitech    | TempTale 4         | Bio                   | 1299199       | VAER-4420-021        | Yes <sup>1</sup> |
| Sensitech    | TempTale 4         | Humidity              | 1299201       | VAER-4420-022        | Yes <sup>1</sup> |
| Sensitech    | TempTale 4 (TT4)   | USB                   | 1294267       | VAER-4420-008        | Yes              |
| Sensitech    | TempTale 4 (TT4)   | USB Dry Ice           | 1294267       | VAER-4420-009        | Yes              |
| Sensitech    | TempTale 4 (TT4)   | Multi-Alarm           | 1294267       | VAER-4420-010        | Yes              |
| Sensitech    | TempTale 4 (TT4)   | USB Multi-Alarm       | 1294267       | VAER-4420-010        | Yes              |
| Sensitech    | TempTale 4 (TT4)   | Probeless Dry Ice     | 1294267       | VAER-4420-011        | Yes              |
| Sensitech    | TempTale Ultra     | 64K                   | 1295078       | VAER-4420-013        | Yes              |
| Sensitech    | TempTale Ultra     | 16K                   | 1295080       | VAER-4420-014        | Yes              |
| Sensitech    | TempTale Ultra     | BIO                   | 1295084       | VAER-4420-015        | Yes              |
| Sensitech    | TempTale Ultra     | Dry Ice Probe         | 1295086       | VAER-4420-016        | Yes              |
| Sensitech    | TempTale Ultra     | Fit                   | 1295091       | VAER-4420-017        | Yes              |
| Sensitech    | TempTale Ultra     | Humidity              | 1295092       | VAER-4420-018        | Yes              |
| Sensitech    | TempTale Ultra     | Probe                 | 1295093       | VAER-4420-019        | Yes              |
| Sensitech    | TempTale Ultra     | Probeless Dry Ice     | 1295094       | VAER-4420-020        | Yes              |
| Sensitech    | Vizcomm®           | View Ultra            | 1302433       | VAER-4420-023        | Yes <sup>1</sup> |
| Sensitech    | Vizcomm®           | View Ultra with Probe | 1306485       | VAER-4420-025        | Yes <sup>1</sup> |
| Sony         | VT-G100            |                       | 1349083       | VAER-4420-028        | Yes <sup>1</sup> |
| Tive         | Temperature Beacon | TT-6000               | 1310319       | VAER-4420-027        | Yes <sup>1</sup> |

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|--------------|------------|---------|---------------|------------------|------------------|
| Tive         | tiveSolo5G | TT-7000 | 1308383       | VAER-4420-026    | Yes <sup>1</sup> |
| Tive         | tiveSolo5G | TT-7100 | 1308383       | VAER-4420-026    | Yes <sup>1</sup> |

\* DG (Dangerous Goods) Approval for Battery Carriage / Use

<sup>1</sup> Approved per current VAGP A6 DG Manual

<sup>2</sup> It is advised that the Bluetooth capability of this device is deactivated prior to flight in accordance with the user manual.



# Cargo Electronic Devices Approval List



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## 8. Approval List – NOT Approved for Use on VA Fleet

| Manufacturer | Make | Model  | ESR Reference |
|--------------|------|--------|---------------|
| Sendum       |      | PT300  | 1267757       |
| Sendum       |      | PT300D | 1267757       |

\*\*\* END \*\*\*