



Cargo Electronic Devices Approval List

Issue 19 – 22 Jul 2022

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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

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)

** Category H at minimum*

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

7. Approval List – Approved for Use on VA Fleet

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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 ²	Yes
Escavox	Blue Box	gSense30g-02	1294423	VAER-4420-012	Yes
Kirsen Technologies	A-Type Device <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 ¹
Logmore	QR Tag	Model Two	1302468	VAER-4420-024	Yes ¹
Logmore	QR Tag	Model Three	1302468	VAER-4420-024	Yes ¹
OnAsset	Sentry	400	531615	GS Aero ER-10105-001	Yes ¹
OnAsset	Sentry	500	531615	GS Aero ER-10105-001	Yes ¹
OnAsset	Sentry	600	1382863	VAER-4420-029	Yes ¹
RoamBee	BeeSense	Flex	1382865	VAER-4420-030	Yes ¹
RoamBee	BeeSense	RMBU_3GTR <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 ¹
RoamBee	BeeBeacon Aware	BB-SEC-1	1291155	VAER-4420-007	Yes ¹

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Sensitech	Sentry	500	531615	GS Aero ER-10105-001	Yes ¹
Sensitech	TempTale	Geo Ultra	1302433	VAER-4420-023	Yes ¹
Sensitech	TempTale	Geo Ultra with Probe	1306485	VAER-4420-025	Yes ¹
Sensitech	TempTale 4	TempTale 4	1299199	VAER-4420-021	Yes ¹
Sensitech	TempTale 4	Bio	1299199	VAER-4420-021	Yes ¹
Sensitech	TempTale 4	Humidity	1299201	VAER-4420-022	Yes ¹
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 ¹
Sensitech	Vizcomm®	View Ultra with Probe	1306485	VAER-4420-025	Yes ¹
Sony	VT-G100		1349083	VAER-4420-028	Yes ¹
Tec4med	Tec4med	TempBeacon	1400906	VAER-4420-031	Yes ¹
Tec4med	Tec4med	SmartBeacon	1400906	VAER-4420-031	Yes ¹

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Tec4med	Tec4med	CryoBeacon	1400906	VAER-4420-031	Yes ¹
Tec4med	Tec4med	SmartHub - Alkaline	1405287	VAER-4420-032	Yes ¹
Tec4med	Tec4med	SmartHub - Li-Po	1405287	VAER-4420-032	Yes ¹
Tec4med	Tec4med	SmartLock	1405287	VAER-4420-032	Yes ¹
Tive	Temperature Beacon	TT-6000	1310319	VAER-4420-027	Yes ¹
Tive	tiveSolo5G	TT-7000	1308383	VAER-4420-026	Yes ¹
Tive	tiveSolo5G	TT-7100	1308383	VAER-4420-026	Yes ¹

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

¹ Approved per current VAGP A6 DG Manual

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

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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 ***