

**Vix Technology UK Limited**

8 The Irwin Centre
Dry Drayton
Cambridge
CB23 8AR

18th May 2022

ITSO POST Compliance Certificate

Certificate Number: C-00220
Product/Service name: Vix TP5800 Bus ETM with CAST
Version: Software version 14.1.190000
Compliant with: ITSO TS 1000 Specification Version 2.1.4 Corrigendum 9

Dear Craig,

ITSO received a request submitted by Vix Technology UK Limited, for the recertification of the Vix TP5800 Bus ETM with CAST (Software version 14.1.190000). As indicated in Certification Test Report (ref. Test Report – POST-1641314525 - VIX Bus ETM TP5800 with CAST Back Office - New certification), ITSO has found reasonable evidence that the submitted product/service complies to ITSO TS 1000 Specification Version 2.1.4 Corrigendum 9.

Your product/service will be included in the certified products list, published on ITSO website.

Please note that the present Certification is subject to the following general terms and conditions along with conditions/constraints as detailed in Schedule B:

- i. The present Certification is granted on the basis of the ITSO Certification & Compliance Policy and therefore is valid as of today and will expire 7 years from issue, however if the Product/service contains a sub-assembly, the above referenced product will only be valid if the sub-assembly holds a valid ITSO certificate.
- ii. If the Product version number is changed, Vix Technology UK Limited must notify ITSO of this fact in writing by supplying the release notes. Any change in the Product that may generate a different behaviour with respect to the ITSO TS 1000 Specification version 2.1.4 corrigendum 9 standards may be considered a major modification subject to a new evaluation in order to maintain the present Certification.
- iii. The present Certification granted to Vix Technology UK Limited for the above referenced Product is non-transferable to any other vendor.
- iv. When request by an ITSO Licenced Operator, the ITSO Registered Supplier must supply a copy of the Test Report.

Certificate Number C-00220 Vix TP5800 Bus ETM with CAST

Registered address Aurora House, Deltic Avenue, Milton Keynes, MK13 8LW

Schedule A

The CM supported by TP5800 Bus ETM is shown in the following table:

CMD	CMD2	CMD4	CMD7	mCMD2
Customer Media Definition	✓		✓	✓

The IPEs supported are represented in the following table:

IPE	Accept	Create	Modify	Delete
TYP 0 – Private Application				
TYP 2 – Stored Travel Rights	✓	✓	✓	✓
TYP 3 – Loyalty (Type 1)				
TYP 4 – CTA (Mode 1)				
TYP 5 – CTA (Mode 2)				
TYP 14 – Entitlement	✓	✓	✓	✓
TYP 16 – ITSO ID & Entitlement	✓	✓	✓	✓
TYP 17 – Loyalty (Type 2)				
TYP 22 FR1 – Area Based Ticket	✓	✓	✓	✓
TYP 22 FR2 – Area Based Ticket	✓	✓	✓	✓
TYP 23 FR1 – Journey Ticket	✓	✓	✓	✓
TYP 23 FR2 – Journey Ticket	✓	✓	✓	✓
TYP 24 – Journey Ticket with Reservations and Special Restrictions	✓	✓	✓	✓
TYP 25 – Travel Voucher				
TYP 26 – Open System Tolling				
TYP 27 – Period Pass (space saving)				
TYP 28 – Carnet (space saving)				
TYP 29 – Multi Journey Ticker (space saving) – FR1				
TYP 29 – Multi Journey Ticker (space saving) – FR2				
Transient Ticket Log FR 1	✓	✓	✓	n/a
Transient Ticket Log FR 2	✓	✓	✓	n/a
Transient Ticket Log FR 3	✓	✓	✓	n/a
Transient Ticket Log FR 4	✓	✓	✓	n/a

Schedule A (cont.)

The optional functionality supported by this device is shown in the following tables:

Hot listing support			
Multi (0602)	Manually Block	Manually Unblock	Storage
✓	✓	✓	15,000 items

Action list support		
Single (OC03)	Multi (0603)	Storage
✓	✓	15,000 items

Action list Action to Take (ATT) support															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Interoperability/parameter list support/multi record receipt of multiple types				
ListFR1 Receive 0Axx	List FR1 Receive 0Bxx	List FR2 Receive 0Axx	List FR2 Receive 0Bxx	Receive multiple types 0600
✓	✓	✓	✓	✓

Miscellaneous						
POST HOPS queries	Additional Shell Data 0807	Log 1	UD Frames Generate 0Exx	UD Frames Receive 0Exx	UD Frames Generate 0Fxx	UD Frames Receive 0Fxx
		✓				

RSPS3002 Rail Supplementary Functions							
Check in	Check out	Undo Check in	Break of Journey	Inter- change	Pass Activation	Lists	Inspection

Schedule A (cont.)

Image of TP5800 Bus ETM



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Schedule B

List of conditions and/or constraints applied by ITS0:

- Recipient_Type 0x02 Set not supported
- Supplementary data messages are not supported.
- Partial refunds are not supported.
- Manual enabling/disabling of AutoRenew and AutoTopUp are not supported.
- AutoRenew in advance of expiry is not supported.
- Manual editing of data in the IPE data group is not supported.
- Reversal of a transaction reversal is not supported.
- Change of STR owner is not supported.
- Receive/change/refund a Deposit amount for Shell or IPE is not supported.
- Interoperability messages codes 0A01, 0A05, 0A07, 0A0D, 0A0E, 0B00, 0B01 & 0B05-0B0E are not supported.

The original expiry date, 17th May 2029, of this certificate has been amended to 23rd November 2028 due to the device not being verified with the new extended DTS EPOCH.



Certificate No. C-00220

ITSO Certificate of Compliance

Supplier: **Vix Technology UK Limited**

Product/service: **Vix TP5800 Bus ETM with CAST**
Version: **Software version 14.1.190000**

This is to certify that the above product/service has been tested as required by ITSO for compliance against:

ITSO TS 1000 Specification Version: 2.1.4 Corrigendum 9

Test Report Ref: Test Report – POST-1641314525 - VIX Bus ETM TP5800 with CAST Back Office - New certification

This product supports the functions: ITSO POST and communicates within an ITSO environment as listed in Schedule A of this Certificate.

This product may only be used by ITSO Licensed Members complying with the conditions and constraints listed in Schedule B.

Signed for and on behalf of ITSO: _____

Name: **Darren Marshall-Sewell**

Title: **Technology Manager**

Dated: **18th May 2022**

Certificate Valid until: **23rd November 2028**