WELCOME

OmniAir Consortium

Washington State Transportation Commission

July 21, 2026

OmniAir's Mission

- Promote certification and interoperability for ITS, tolling, and connected vehicles.
- Independent, third-party testing and certification through a global network of accredited test laboratories using qualified test equipment and validated test cases.
- OmniAir Certified devices conform to industry standards and meet minimal interoperability and performance requirements.

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OMNIAIR ECOSYSTEM

- Automotive OEMs
- Tier One Suppliers
- Applications & Services
- SCMS & Cybersecurity
- Semiconductors & Modules
- System Integrators
- Infrastructure Owner Operators
- Test Systems
- Test Laboratories
- Device Manufacturers
- Research Institutes
- Telecommunications Carriers

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Our Infrastructure Owner-Operator Members

OMNIAIR CONSORTIUM

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Certification & Interoperability In Your Daily Life

The takeaway: Certification ensures standards conformance.
Interoperability is the payoff — trusted devices that just work together, regardless of who made them.

Certification: independent third-party testing that confirms a product actually meets an agreed standard **— not just a manufacturer's claim**.

Interoperability: the result of certification — products from different companies that work together, reliably, right out of the box.

YOU ALREADY TRUST THIS SYSTEM EVERY DAY

USB-C Chargers

Any USB-C charger — regardless of maker — powers any USB-C device. Manufacturers built to one , so you do not need a drawer full of different cables.

Wi-Fi Routers

Your phone connects to a router you've never seen, made by a company you've never heard of. That's only possible because both were independently tested against the same standard.

Bluetooth Headphones

Wireless headphones from one brand pair with a phone or laptop from a completely different brand. That only works because both devices were independently certified against the same wireless standard.

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Certification Builds Trust

OmniAir provides independent, third-party testing and certification for C-V2X connected vehicle and RFID tolling technologies

1. Certification covers the entire communications protocol elements (Scope goes beyond Radio PHY)
2. Provides assurances to stakeholders that the system or technology has been vetted
3. Provides an avenue for technology to prove its validity
4. Along with standardization, certification promotes **Conformance** and **Interoperability** across transportation technologies and jurisdictions

Connected Vehicle – LTE-V2X (PC5)

CERTIFICATE OF COMPLIANCE / CONFORMANCE

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iTtelecom

OMNIAIR CERTIFIED

iT telecom Co. LTD (ITT)

Model: ITT-ASD-Q1

HW: 1.0 PC5 FAKRA FW: N/A SW: 1.2 REGULATORY: KC R-C-T21-ASD-Q1

Connected Vehicle: LTE-V2X (OBU) v1.0 Conformance

Test Specifications: 761, 762, 763, 765, 767, 768 & 769

Tolling – RFID-MPD

CERTIFICATE OF COMPLIANCE / CONFORMANCE

OMNIAIR CONSORTIUM

kapsch

OMNIAIR CERTIFIED

Kapsch TrafficCom

Janus MPR 2.4 Interior Reader (Single & Multi-Protocol States)

FN: 480802260 Radio: 802870 (2023jun20-050x-00) Protocol: TDM, 6B 80K, ISO-6C

HW: N/A SW: 2024aug16a-mpr24, CGC: A4-0003_aabb-mpr2na, Regulatory: JQU802870

for passing the requirements for this OmniAir Certification Program

Open-Road Tolling: RFID-MPD R1.0 Conformance & Interoperability

Test specifications per 750-MPDCA Scope & 850-Test Plan covers: 800-Conf-TDM, 801-Conf-6B80K, 802-Conf-ISO6C, 810-Tolling-ENV, 830-InOP-Device, 840-Gantry-SPD and 841a-Gantry-MPD

at DEKRA Certification Inc., Sterling, Virginia (OATL RFID-6C Tolling 2021120201-2023042401)

and SunTrax – Auburndale, Florida Field Test Site (OAFTS 2025013101).

CERTIFICATE #2025061901 - Awarded this 19th day of June 2025

OmniAir Certification Services

Standards ↔ Requirements ↔ Regulatory
Working Groups ↔ Test Cases / Scopes ↔ Validation

Qualified Test Equipment (OQTE)

- Bench & Mobile

Authorized Test Laboratory (OATL)

- Qualified Bench & Field Equipment
- Test Reports

Authorized Field Test Site (OAFTS)

- Open Road Overhead Gantry
- Plaza (Low Speed / Gated)
- Qualified Field Equipment
- Reference Device (ORD)

Device Certification

- Module (Global) – Radio & V2X
- LTE-V2X (C-V2X PC5)
- RFID SPD & MPD Tolling

In-works: 1) V2X Applications 2) Aftermarket Safety Devices 3) Transportation Sensor 4) V2X Tolling & Road Usage Charging

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Device Testing & Certification

First in the world for RFID Tolling, Connected Vehicles, and emerging V2X certification

1st in the World for each certification

Driving global interoperability since 2012

RFID Tolling

2012	6C RFID Tags and Readers
2023	*Multi-Protocol RFID Tags and Readers*

Connected Vehicles

2017	DSRC OBUs & RSUs
2023	C-V2X (PC5) OBUs and RSUs
2024	C-V2X (PC5) Modules

Upcoming Certification Programs

- RUC and Tolling Applications
- Aftermarket V2X Devices
- V2X Safety Applications
- Network V2X

C-V2X Certification for OBUs, RSUs & Modules

Standards upon which certification testing is based

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3GPP 36-521 (R14)	Radio PHY — Adapted for 759 Module & 761 Device
SAE J2735:2024	Message Decoding — MAP (782), SPAT (783) & TIM (786)
SAE J3161 & /1 2024	LTE-V2X Communications (762)
IEEE 1609.3:2020	Network Services (765)
RSU CTI 4001:2022 / NTCIP 1218	RSUs (772) & (785)
IEEE 1609.2:2022	Security Services (763)
SAE J3161/1 (J2945/1 BSM) & /1A:2024	BSM Min. Performance & Location Accuracy Testing (767 & 768)
SAE J3161/1 & /1A:2024 (I/P)	BSM Checklist Driving Test (769)

Device Types: | **OBU (On-Board Unit)** | **RSU (Roadside Unit)** | **Module**

OmniAir Certification for RFID Tolling Tags & Readers

800-OA-TSS&TP-CONF-TDM
TDM Tolling Protocol Conformance

801-OA-TSS&TP-CONF-ISO6B80k
ISO 6B-80K Tolling Protocol Conformance

802-OA-TSS&TP-CONF-ISO6C
ISO 6C Tolling Protocol Conformance

810a-OA-TSS&TP-ENV-Devices
Tolling Environmental Tests for Tags & Readers

820-OA-TSS&TP-TPP-Tags
Tag Parameter Performance
TDM, ISO 6B-80K or ISO-6C

825-OA-TSS&TP-PROG-FulFil-MPD
Programming & Fulfilment Delivery
TDM, ISO 6B-80K or ISO-6C

830-OA-TSS&TP-InOp-Devices
Device Interoperability Performance Single & Multi-Protocol Tolling Operational States involving TDM, ISO 6B-80K & ISO-6C

840-OA-TSS&TP-Gantry-SPD
Gantry Open Road Field Testing: Single-Protocol Operational Mode

841 -OA-TSS&TP-Gantry-MPD
Gantry Open Road Field Testing: Multi-Protocol Mode

841a-OA-TSS&TP-Gantry-MPD-EZPass
Gantry Open Road Field Testing: Multi-Protocol Mode per EZPass

842-OA-TSS&TP-Gantry SPDBL
Gantry Open Road Field Testing: Single-Protocol Mode Baseline

843-OA-TSS&TP-Plaza-MPD
Gantry Plaza Field Testing: Single-Protocol Mode Baseline

850-OA-TSS&TP-SPD-MPD-TestPlan
Single & Multi-Protocol Device Operation Test Plan

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What Happens Before A Device Can Earn OmniAir Certification

A six-step process, built on industry consensus

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STEP 1

Agree on the Standard

Manufacturers, agencies, and labs reach industry consensus on which technical standard a device must meet.

STEP 2

Write & Approve Test Cases

Working groups draft the test cases, run an IP review, and formally vote (ballot) to approve them.

STEP 3

Publish the Rulebook

OmniAir publishes the approved test cases so every lab and manufacturer works from the same playbook.

STEP 4

Qualify the Test Tools

Before it's used, the testing equipment itself is checked and qualified for accuracy and consistency.

STEP 5

Authorize Independent Test Labs

Devices are tested by OmniAir Authorized Test Laboratories — independent third parties, not the manufacturer.

STEP 6

Validate Test Cases

Twice-yearly Plugfest events, running since 2017, let manufacturers and test-tool providers work out issues together before certification testing.

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Certification Program Summary

Devices Certified to Date Across All Categories

59
RFID Tags Certified

Confidex • Kapsch TrafficCom • Neology • STAR SYSTEMS • Transcore

17
Readers Certified

FETC International • Kapsch TrafficCom • Neology • STAR SYSTEMS • Transcore

14
Roadside Units (RSUs) Certified

Cohda Wireless • Commsignia • Danlaw • iT telecom • Iteris • Kapsch TrafficCom • Lear • LG Electronics • Siemens • Yunex

13
Test Tools Certified

Danlaw • Iteris • Keysight Technologies • Rohde & Schwarz • Saesol Tech • Spirent • SwRI • Wayties

10
On-Board Units (OBUs) Certified

Commsignia • Danlaw • Ettifos • FICOSA • iT telecom • SiriusXM

2
Communication Modules Certified

DENSO • Unex

115 total certified devices across 26 brands

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V2X TOLLING WORKSHOP

Pooja Dwivedi
National Toll Technology Leader
HNTB

V2X Tolling Working Group

Meets Monthly (last meeting 6/23)

Roadside-Based Tolling

Direct RSU-OBU communications

Transaction at point of tolling

Extension of existing roadside model

Network based Approaches

Cloud mediated V2X communication

Integration with connected vehicle platforms

In-vehicle Payments

Account-linked toll transactions

Integration with OEN/payment ecosystems

Coexistence with Existing Systems

RFID, video tolling and V2X operating together

Transition of infrastructure

Back office and Transaction Integrations

Ingestion of V2X generated toll events

Alignment with existing toll processing systems

OmniAir Maryland Plugfest

June 1-5, 2026
Baltimore, Maryland

OmniAir Maryland Plugfest

June 1-5, 2026 Baltimore, Maryland

Hosted by Johns Hopkins University

In collaboration with Maryland Transportation Authority, MD CAV Working Group

AECOM, Audi, AUTOCRYPT, DENSO Crafting the Core, DEKRA, ETTIFOS, HNTB, ibtta Tolling. Moving Smarter., indra

iteris, iTtelecom, ITS America, Johns Hopkins University, kapsch, Keysight Technologies, leidos, MIOVISION, Maryland Transportation Authority MDTA

Morgan State University, NIST, noblis, OmniTrust, Prince George's County Maryland, Qualcomm, raven, robot.com, SAESOL TECH

U.S. DOT, Saxton Laboratory, The Eastern Transportation Coalition, TOLL INSIGHT, TTA, University of Maryland, University of Windsor, U.S. Department of Transportation, VECTOR, @Wayties

YUNEX TRAFFIC

OMNIAIR®
CONSORTIUM
HACKATHON

Inaugural

OmniAir Hackathon

Sponsored by

OmniTrust

June 3, 2026 | 8:30 - 3:30 pm | Johns Hopkins University at Mt. Washington

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What's Next?

The same interoperability and certification model is expanding into the next generation of transportation technology.

V2X in the Sky
Universal Electronic Conspicuity

Extending the same trusted, interoperable communications model from roads to low-altitude airspace — helping drones, eVTOLs, and manned aircraft detect and avoid one another.

Sensors
Cameras, Lidar & Radar

New certification for intersection sensors that work alongside V2X, giving roads better real-time awareness of vehicles, cyclists, and pedestrians.

V2X Tolling & In-Vehicle Payments
Pay tolls without a transponder

Shaping the interoperability rules for paying tolls directly through a connected vehicles & mobile apps— already piloted in North Carolina, Illinois, and Washington State.

Connected Automation
Strengthening self-driving systems

The same trusted V2X data — safety alerts, roadway conditions — increasingly feeds automated driving and driver-assist systems, extending certification's reach.

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Thank you!

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