

METATRONIX

Innovative Intelligent Transport Systems



- E13
- ITxPT
- IP66
- EN50155
- ENS0310



- FMS2IP
- GNSS
- FMSV4
- OABR

MPPxPT

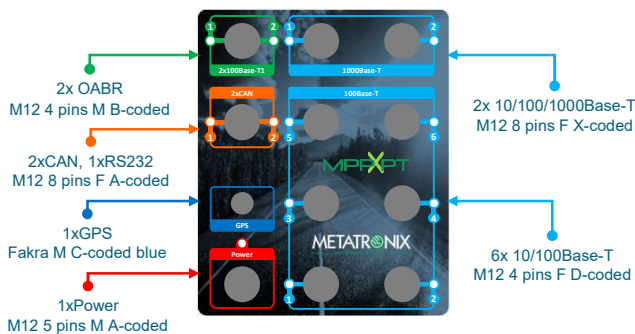
MPPxPT (Multi Purpose Platform for Public Transport) is a new concept of onboard scalable platform to provide multiple ITS services, compliant with ITxPT specification and other exclusive services designed by Metatronix.

ITxPT services:

- Module Inventory
- Time
- GNSS Location
- FMS to IP
- APC - Automatic Passenger Counting
- MQTT Broker

Additional exclusive features and services:

- FMS Gateway
- Gigabit Ethernet Switch
- L2 Switch Management
- CANJ 1939 to IP
- OABR Ethernet
- Vehicle Diagnostic BlackBox
- Vehicle Remote Diagnostic Light (FMSV4 based)
- Vehicle Remote Diagnostic Plus
- TTPMS Tyre Temperature & Pressure Monitoring System



MPPxPT is ITxPT labelled



INFORMATION TECHNOLOGY
For PUBLIC TRANSPORT

PROCESSOR	NXP® i.MX6UL-2, ARM® Cortex®-A7 @ 528 MHz, NXP® i.MX6UL-2, with NEON™ MPE (Media Processor Engine) co-processor Dedicated cryptographic co-processor (Secure Element) with hardware assisted Elliptic Curve support: FIPS 186-4 Elliptic Curve Digital Signature (ECDSA), NIST SP800-56A Elliptic Curve Diffie-Hellman (ECDH), NIST Standard P256 Elliptic Curve, 256-bit SHA/HMAC, X.509 certificate support, Multilevel RNG (NIST SP 800-90A DRBG), Tamper Monitor, 72-bit unique device ID, i.MX6UL Cryptographic Acceleration and Assurance Module (CAAM): AES 128/256, DES/3DES, ARC4, RSA (4096), MD5, SHA-1/224/256, HMAC, AES-CMAC, AESXCBC-MAC, AES-CCM, TRNG with hardware entropy source (NIST SP-800-90A), Embedded Security Framework.
SECURITY	
O.S.	Linux Embedded
MEMORY	256 MB (up to 1 GB) SLC NAND Flash, 256 MB (up to 1 GB) DDR3 4 GB (up to 32 GB) eMMC, Micro SD slot
INTERFACES	1x CAN (FMS V4), 1x CAN (J1939), 1x RS232, M12F 8 pins A code Up to 6x Ethernet 10/100Base-T, M12F 4 pins D code Up to 2x Ethernet 10/100/1000Base-T, M12F 8 pin X code 2x Eth 100Base-T1 (OABR-BroadR Reach), M12M 4 pins B code 1x Power Supply inputs, M12 5 pins male A code 1x GNSS Fakra connector C code blue
LINUX Network Services	TCP/UDP, ICMP, ARP, RARP, BOOTP, DNS, DHCP, TFTP, Telnet.
Navigation	GNSS: GPS, Glonass, Galileo, QZSS, Digital 3D accelerometer and 3D Gyro
Ethernet Std.	IEEE 802.3, IGMP V3
LED Indicators	4 LEDs: Power, Link/Activity
Input Voltage	10 to 32 VDC, load dump, overvoltage & reverse polarity
Input Current	< 210 mA @ 24 VDC, 25°C
Consumption	< 5 W Basic version without Switch; < 10 W Full version
Housing	Aluminum alloy case
Dimensions	175 x 121 x 42 mm (LxWxH) (excluding connectors)
Operating Temp.	-30° to +70° C, +80° for 30 min.
Storage Temp.	-40° to +90° C
Humidity	5 to 95% RH (non-condensing)
CERTIFICATION & COMPLIANCE	E-mark ECE R10-05, ITxPT Label Degree of protection : Standard IP 66 EN 13149 parts 7/8/9 EN 50155 (Humidity, Ambient air temperature, Storage temperature) ¹ EN 50155 (Power supply voltage interruption, Surges, Isolation resist.) ¹ EN 60068-2-64 (Vibration, broad-band random and guidance) ¹ ENS 0310 rev M (T&B, class 3A) EMISSIONS-IMMUNITY-SAFETY: FCC Part 15 Class B, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, ICES-003 Class B, VCCI Class II, AS 3548, FCC Part 15 Subpart C Section 15.247, IC (Industry Canada), RSS-210 Issue 5 Section 6.2.2(o), EN 300 328, EN 301 489-17, EN 55024, EN 301 489-3, Safety UL/UR (or equivalent)

¹ Only specific models

P/N	Desc.	HW CONFIGURATIONS			HW OPTIONS		
		LAN	CAN FMS	CAN J1939	OABR	1 GPS	2 SWITCH
PMPP0z1yyx	Basic	✓	✓			✓	✓
PMPP0z2yyx	Extended	✓	✓	✓		✓	✓
PMPP0z3yyx	Full	✓	✓	✓	✓	✓	✓

Where: z= 1 for Bus and 2 for Rail, yy=release or custom, x= 0 for none, 1 for GPS, 2 for Switch, 3 for GPS+Switch.

MODEL	SW OPTIONS					HW OPT	SW OPTIONS	
	FMS2IP	CAN2IP	APC	i.Diag Light	i.Diag Plus		GNSS & Time	L2 Mgmt
Basic	✓		✓	✓		1	✓	
Extended	✓	✓	✓	✓	✓	2		✓
Full	✓	✓	✓	✓	✓	3	✓	✓

