

ATOMO - 7

SMART TICKET VALIDATOR





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The **Digitax ATOMO 7** is a Smart Ticket Validator equipped with the android operating system and can be programmed and customized with specially developed applications according to customer needs.

ATOMO 7 is equipped with contactless reader with a payment module on request and a professional NFC and barcode/QR scanner.

A 1280x800 color TFT display can show animated images and all you need for your custom Apps. The device is equipped with an extensive set of external interfaces with which it can be connected to external devices.

Enabled to all Kinds of Payments: Paper tickets, transit cards, EMV bank cards, QR codes.
Supports reading EMV and Calypso cards.

Leading Protection Level IP65 waterproof and dustproof, IK09 impact-proof.

Android Operating System with extensive Digitax SDK to an easy and quickly programming software development application.

The Device can provided with 2 different system hardware platforms:

- CPU Qualcomm MSM8909 chipset, Quad-core ARM Cortex-A7 32-bit CPU @1.1GHz. Adreno 304 GPU
- CPU Qualcomm QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz. Adreno 702 GPU

Extensive short and long range connectivity:

4G LTE, dual-band Wi-Fi, and low-power Bluetooth, GPS.

Secure and Easy pole mount kit for an easy installation.

RFID Reader and POS Antenna is integrated into the display.

- | | |
|---|--|
| <input checked="" type="checkbox"/> ANDROID OS | <input checked="" type="checkbox"/> BACKUP BATTERY |
| <input checked="" type="checkbox"/> CORTEX A7 / A53 | <input checked="" type="checkbox"/> DISPLAY 7" 500/1K NITS |
| <input checked="" type="checkbox"/> QUAD-CORE 1.1/2.0 GHz | <input checked="" type="checkbox"/> 9-AXIS ACCELEROMETER |
| <input checked="" type="checkbox"/> IK9 | <input checked="" type="checkbox"/> IP65 |
| <input checked="" type="checkbox"/> RAM 2GB-3GB / STORAGE 16GB-32GB | <input checked="" type="checkbox"/> WIFI 2.4GB/5G |
| <input checked="" type="checkbox"/> GPS | <input checked="" type="checkbox"/> DIGITAX SDK |
| <input checked="" type="checkbox"/> 4G LTE | <input checked="" type="checkbox"/> BLUETOOTH 4.2 |
| <input checked="" type="checkbox"/> ETHERNET | <input checked="" type="checkbox"/> MULTI LANGUAGE |



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MAIN FEATURES

OPTION 1

CPU	Fanless Device with Primary CPU Qualcomm MSM8909 chipset, Quad-core ARM Cortex-A7 32-bit CPU @1.1GHz. Adreno 304 GPU.
GPU	OpenGL ES 3.02, OpenCL3, content security and reduced power consumption.
Ram Memory	+2GB LPDDR3
Storage Solid State Hard Disk Memory	16GB EMMC
OS	Android 7.1 X

OPTION 2

CPU	Fanless Device with Primary CPU Qualcomm QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz AdrenoTM 702 GPU
GPU	OpenGL ES 3.02, OpenCL3, content security and reduced power consumption.
Ram Memory	+3GB LPDDR3
Storage Solid State Hard Disk Memory	32GB EMMC
OS	Android 12/13

BOTH OPTIONS

Secondary Intensive Task CPU Processor (AITP)	Secondary CPU The dedicated AITP (Automotive Intensive Task Processor) supplies the functionalities required by the automotive market like power management, Safe Shutdown, Wheel Pulses Odometer, Distance and Speed calculation, Wake-Up on Ring, Over-the-Air services for software and firmware updates. The AITP is OTA programmable for remote automatic firmware and tariff upgrade and is always powered ON. It can also switch ON and OFF the device and the peripherals.
External SD	Up to 2T for external storage
Communication Modem 4G	LTE Cat 4 GSM / GPRS Class 12 2 Sim Card slots Always online.
Antennas	Internal WiFi-BT-LTE External WiFi-BT-LTE Rugged Combo antenna (option).
Multimedia	Audio: MP3, AAC+,eAAC, AMR-NB, -WB, G.711, WMA 9/10 Pro. Video: Encode:30fps 720P (H.264), 30fps WVGA (MPEG-4/VP8). Decoding:30fps 1080P (H.264/MPEG-4/VP8/H.265 DivX4/5/6), 30fps WVGA (H.263).
Audio	3 Watt Audio Speaker
Connectivity	Wi-Fi Connection 2.4G/5.8G, 802.11 a/b/g/n Bluetooth class 2 BT 2.1+EDR/3.0/4.1 LE.
DISPLAY	
Viewing area	7" diagonal.
Resolution	1280x800
Colours	TFT LED Display with 1,67 M colors
Luminosity	Display clearly viewable with 500/1000 cd/m2.
Touchscreen	Automotive Full Rugged Pen/Finger Touchscreen. Extended Temperature Range. IK9
INPUT / OUTPUT	
Input Output	2 Digital inputs and 2 Power Output
Serial Ports	2 RS232 Serial External Ports (485 Optional)
Ignition Input	1 Ignition Input to Turn ON Turn OFF Device Remotely
CAN	Can Interface to connect to vehicle interface (Option)

QR SCANNER

Equipped with a smart and fast scanning engine the QR scanner include a camera taking picture of and decoding the barcode. This scanning engine works at 800MHz with an integrated highly performing decoder and it can decode 1D & 2D barcodes and OCR-B font very fast. The high quality CMOS camera is capable of 100 frames/s and the device can scan paper, LCD, mobile phones, computers, or PDAs in a very readable way.

CPU Processor	High performance embedded and low power 800MHz CPU.
Reading capability	Ultra-fast 100 fps CMOS image sensor enabling high speeding scanning of 1D and 2D barcodes and OCR fonts. Improved scanning of curved, wide, poorly printed and damaged barcodes.
Motion Immunity	Exceptional motion tolerance for moving targets. Improved scanning of curved, wide, poorly printed and damaged barcodes.
LIGHT SOURCE	Aiming green LED, warm white illumination LED.
SCAN METHOD	CMOS area sensor, 640 x 480 pixels, black and white.
SCAN RATE	Up to 100 fps.
READING PITCH ANGLE	-65 to 0°, 0 to +65°.
READING SKEW ANGLE	-65 to 0°, 0 to +65°.
READING TILT ANGLE	360°
MINIMUM RESOLUTION AT PCS 0.9	4 mil (0.1 mm).
MINIMUM PCS VALUE	0.9
FIELD OF VIEW	Horizontal: 38° Vertical: 28.9°.
DEPTH OF FIELD AT QR CODE	6.7 mil (0.169mm) 2.52 - 4.17 in (64 - 106 mm) 15 mil (0.381mm) 1.18 - 9.21 in (30 - 234 mm).
DEPTH OF FIELD AT CODE 39:	5 mil (0.127 mm) 2.05 - 4.96 in (52 - 126 mm) 10 mil (0.254 mm) 1.81 - 9.68 in (46 - 246 mm) 20 mil (0.508 mm) 2.36 - 18.35 in (60 - 466 mm).
BARCODE (1D):	JAN/UPC/EAN including add on, Codabar/NW-7, Code 11, Code 39, Code 93, Code 128, GS1-128 (EAN-128), GS1 DataBar (RSS), IATA, Industrial 2 of 5, Interleaved 2 of 5, ISBN-ISSN-ISMN, Matrix 2 of 5, MSI/Plessey, S-Code, Telepen, Tri-Optic, UK/ Plessey.
BARCODE (2D):	Aztec Code, Aztec Runes, Chinese Sensible Code, Codablock F, Composite Codes, Data Matrix (ECC200), DotCode, Passport MRZ (OCRB), Maxi Code (mode 2~5), MicroPDF417, Micro QR Code, PDF417, QR Code.
BARCODE (POSTAL CODES)	Chinese Post, Intelligent Mail Barcode, Korean Postal Authority Code, POSTNET.

RFID READER

The RFID Reader is equipped with a 13.56 MHz Proximity Read / Write device supporting transponders according to ISO 14443 Type A and Type B, ISO 15693, ISO 18000-3M3 as well as NFC devices according to ISO 18092.

The Reader Module is certifiable for applications like VDV-KA and ITSO. The 4 SAM sockets are tested according to EMVCo Contact Level 1.

The device can handle 4 different Sam modules; SoftCrypto and SAMCrypto High-Level-Functions offer a user friendly and fast interface for accessing encrypted data of mifare DESFire (EV0, Ev1), mifare PLUS and mifare Ultralight C.

It is possible to access also to newer chips such as mifare DESFire EV2 or NTAG 424 DNA via a secure communication channel.

Integrated RFID	ISO 15693, ISO 14443-A/-B, NFC (Near Field Communication) and Calypso compatible. Hi-level support SoftCrypto e SAMCrypto to handle crypt data smartcard MIFARE™ DESFire EV1, MIFARE™ PLUS e MIFARE™ Ultralight C.
Operating frequency	13.56 MHz
Transmitting power	450 mW
Antenna type	Internal embedded antenna.
LIGHT SOURCE	Aiming green LED, warm white illumination LED.
Smartcard interface	ISO 7816 – 4 SAM sockets (Id000 format). – T=0 and T=1 protocol. – Voltage categories A, B & C.
Reader modes	Polling-Mode, Scan-Mode.
Supported transponders	Mifare classic, mifare UltraLight, mifare DESFire, mifare PLUS, mifare UltraLight C, my-d move, Jewel™, FeliCa, NTAG, mifare / NTAG Ev2 Crypto Tag-It HFI, Fujitsu MB89R11x, STM24LRx, STMLR12k, I-Code SLI / SLIX, I-Code ILT NFC Devices in Card Emulation Mode (Tag Type 1 ... 5), NFC Peer-to-Peer (P2P).
Radio approvals	Europe EN 300 330. North America FCC, IC.
EMC	EN 301 489, ISO 11452-2 / -4 (Functional status C).
SAM sockets	EMVCo Contact Level 1 (version 4.3).
Environment	WEEE – 2002/96/EC, RoHS – 2002/95/EC.

OPEN PAYMENT TERMINAL

The Open Payment Terminal is a PCI PTS 5.1 certified terminal natively designed to meet national regulations and ensure the highest security standards for all open payments in the transport field. The module allows all the most known contactless payments methods: Visa, Mastercard, Amex, Discover, CUP, Interact, Flash, ApplePay, GooglePay among the others.

The Terminal is able to manage all digital tickets:

- Closed-loop cards:
 - MIFARE® Classic (1 o 4 k)
 - MIFARE® Ultralight
 - Calypso
 - Desfire®
- NFC devices, contactless tickets.
- Mobile apps (through Bluetooth)... and others.

Based on the very powerful processor TETRA by Telium, the terminal it is able to handle all kinds of future ticketing media and new transport applications.



Processor / OS	Cortex A5 - Telium TETRA.
Memory	512 MB Flash, 512 MB RAM MicroSD up to 32GB.
SAM	4xSAM ID-000 ISO 7816 (High Speed protocol).
Contactless reader	EMV Level 1 / ISO 14443 A/B/B' ISO 18 092 (reader mode).
User interface	RVB backlighted landing zone. 4 RVB LEDs.
Audio	Buzzer Monotone. Polyphonic sound with external loudspeakers.
Security	PCI PTS 5.1 certified.
Operation conditions	Relative humidity: 95% non-condensing at 40°C External temperature range: -20°C to +70°C (-4°F to 158°F) for consumer product. External temperature range: -20°C to +55°C (-4°F to 131°F) for transportation (automotive, railways) product.

PAYMENTS METHOD

OPEN PAYMENT TERMINAL



RFID CARD READER



INNOVATIVE POLE DOCKING

Atomo-7, in its pole-mounted version, comes with the dedicated **Pole Docking** system.

This is not a simple mounting bracket for installing the device on the vehicle's pole, but a component specifically conceived, designed, and engineered to provide a range of features aimed at facilitating installation, maintenance, durability, and overall product reliability.

In addition, it includes a memory module readable and writable by the validator that can store useful data related to **device identification** and installation.



The **Pole Docking** is designed to provide **IP65**-rated protection, ensuring the waterproofing not only of the main unit but also of its connector. This is achieved through the use of a special **Pogo Pin**-type connector, which remains fully shielded from accidental infiltration, effectively **eliminating any risk of water ingress into the cable compartment**.



The **Pole Docking** of **Atomo-7** features **two LED** indicators located on the rear of the unit. These LEDs can serve as **status indicators for the entire system** and, thanks to their programmability, can be controlled by the main application. This makes them a valuable **visual support tool for the driver**.



The **ATOMO-7 Pole Docking** features an **efficient quick-release system** with a lock accessible only to installers, enabling fast maintenance and **rapid unit replacement** without prolonged vehicle down-time. Both access points to the release mechanism are **protected and covered** for maximum security.

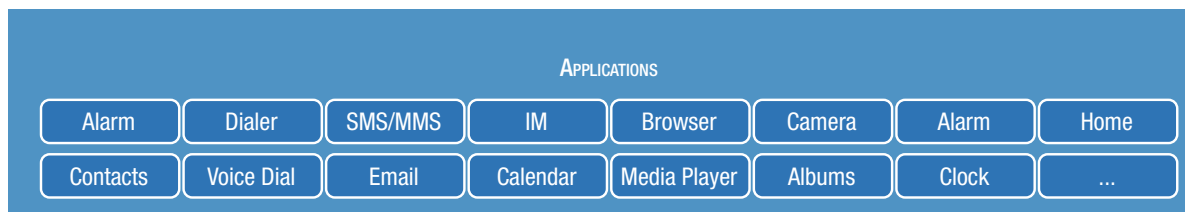
SOFTWARE CUSTOMIZATION

Digitax R&D Team can customize and keep updated every System software module.

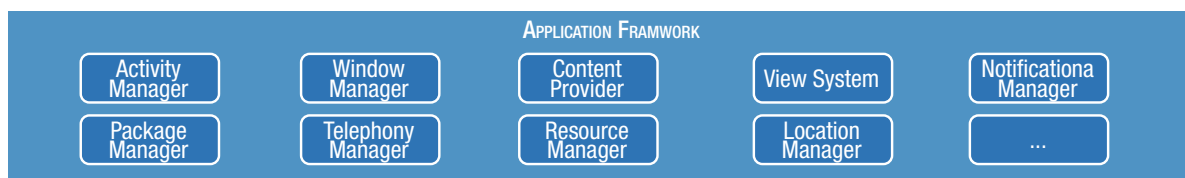
Together with the technical support, Digitax also provides Libraries, Code Samples and anything is required to let the customers to develop customized and proprietary applications by their own.

Digitax will provide technical support

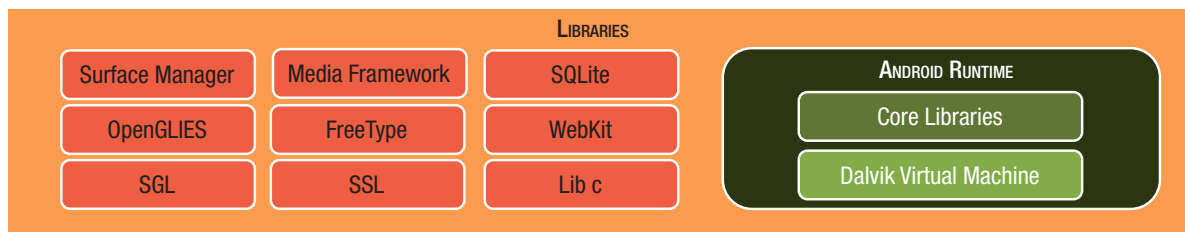
APP LAYER



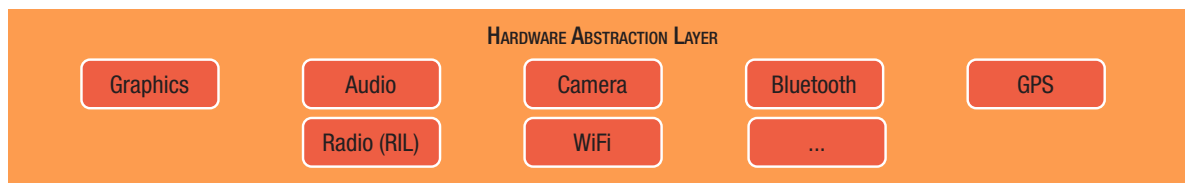
JAVA LAYER



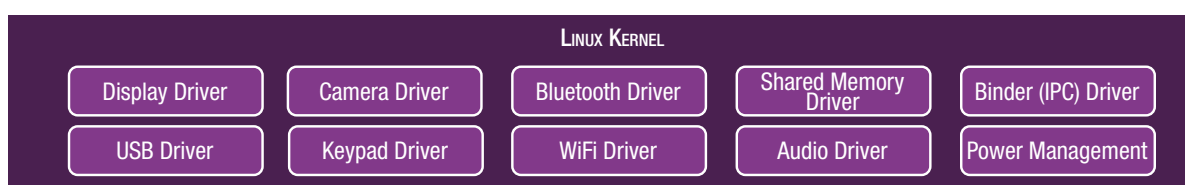
NATIVE LAYER



HAL



LINUX KERNEL





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