

# M3 ORANGE<sup>+</sup>

Top Rated Multi-Functional Industrial PDA with  
The Latest Technology - **Powerful Core Coretex-A8 833 MHz, 802.11b/g/n, HSPA+**



**SAP® Software**

## Full Featured Functionality

M3 ORANGE+ provides the latest technology in both hardware and software while providing industrial level of ruggedness.

User friendly operating system, Windows Embedded Handheld 6.5 and Windows Embedded CE 6.0 provides highly intuitive graphical user interface and new features. Also, 802.11b/g/n and HSPA+ makes M3 ORANGE+ suitable for all working environment. Furthermore, battery lock is replaced with slide type instead of previous rotate type for customer satisfaction.

## Key Features



### Windows Embedded Handheld 6.5 / Embedded CE 6.0

Windows Embedded Handheld 6.5 and Windows Embedded CE 6.0 is available in M3 ORANGE+. These latest operating system provides intuitive user interface.

\* Windows Embedded CE 6.0 will be available in 3Q, 2013



### Multi-mode Radio (802.11b/g/n. 3.8G HSPA+)

Wireless data transmission through 802.11b/g/n, HSPA+ and Bluetooth make your business easier and more comfortable.

### Maximum Mobility



### IP65 / 1.8m Drop, MIL-STD-810G

M3 ORANGE+ is suitable to use in a tough environment; withstands drop from 1.8m and protects against dust and water. Also, MIL-STD-810G certification proves its strength.

### Tough & Rugged

### Powerful System and Core



### Cortex-A8 833MHz

Powerful CPU speed with "High-Tier" guarantees faster graphic process and memory access.



### 3.2M Pixels AF Camera

High resolution and auto focused functionality capture clear images of product and / or documentation.



### Maximum Data Capture

### 1D / 2D / RFID (UHF/HF)

Superior scanner / internal RFID application provides real-time data capture and automatic data processing so that you can expect flexibility of work and cost-efficiency.



### Smart Battery

### User Comfort

### Li-Ion 3.7V 3,300mAh

M3 ORANGE+ smart battery provides accurate remaining battery capacity so that the user can efficiently plan the usage of the PDA. Also, its large capacity is suitable for long time shifts.



### Multi-function Keypads

Multi-functional keys of QWERTY, AZERTY keypads are designed for versatile performance. As hot keys, these are going to make the direct access be possible and increase users' working speed.



AlphaNumeric (31 keys)



QWERTY (50 keys)



AZERTY (50 keys)

## M3 ORANGE+ Specification

### PHYSICAL CHARACTERISTICS

#### Dimension

Standard	165.5 mm x 78.6 mm x 24.9 mm, 6.5" x 3.1" x 0.9"
HF RFID	165.5 mm x 78.6 mm x 40.2 mm
UHF RFID	165.5 mm x 78.6 mm x 38.9 mm



#### Weight (incl. battery)

Standard	332 g, 11.7 oz.
HF RFID	362 g, 12.7 oz.
UHF RFID	389 g, 13.7 oz.

**Display** 3.5" VGA TFT LCD, 480 x 640 pixels

**Touch Panel** Glass analog resistive touch

#### Battery

Main Battery Smart Battery, Li-ion 3.7 V, 3,300 mAh  
Backup Battery Li-ion 3.7 V, 200 mAh (not user accessible)

**Notification** Vibration and LEDs

**Keypads** AlphaNumeric, QWERTY, AZERTY

### PERFORMANCE CHARACTERISTICS

#### Multi-Processor

CPU Cortex-A8 833 MHz

Radio ARM 11 series

**OS** Microsoft® Windows Handheld 6.5  
Microsoft® Windows Embedded CE 6.0<sup>1</sup>

**Memory** RAM: 256 MB, ROM: 1GB  
External SD: MicroSD with SDHC (up to 32 GB)

**Interfaces** USB Host 1.1 / Client 2.0  
Ethernet (via accessory)  
RS232 Serial (via accessory)

#### Battery Performance

Standby	240 hours
Talk time	7 hours

### WIRELESS RADIO CHARACTERISTICS

#### WWAN

2G GSM / GPRS / EDGE: Quad band  
(850 / 900 / 1800 / 1900 MHz)

3.8G (WM) UMTS / HSPA+: Five band  
(800 / 850 / AWS / 1900 / 2100 MHz)

**Bluetooth** Class II, v2.0 with EDR (integrated antenna)

### GPS CHARACTERISTICS

#### Assisted GPS

Accuracy <sup>2</sup>	Position	2.5 m CEP
	SBAS	2.0 m CEP
Acquisition <sup>2</sup>	Cold Start	29 seconds
	Warm Start	29 seconds
	Hot Start	< 1 second
Velocity limits:	515 m/s, 1000 knots	

### WIRELESS LAN CHARACTERISTICS

**Bands** IEEE 802.11 b/g/n

**Chipset** Atheros AR6002

**Data Rate** 802.11b (DSSS): 1, 2, 5.5, 11 Mbps  
802.11g (OFDM): 6, 9, 12, 18, 24, 36, 48, 54 Mbps

#### Regulatory Domain

FCC	(Americas, Asia <sup>3</sup> , Mid East <sup>3</sup> )	MIC (TELEC)	(Japan)
ETSI	(Europe, Asia <sup>3</sup> , Mid East <sup>3</sup> , Africa)	KC (KCC)	(Korea)

#### 2.4 GHz Frequency Bands

FCC	2.4 to 2.473 GHz,	ETSI	2.4 to 2.483 GHz
MIC	2.4 to 2.495 GHz,	KC	2.4 to 2.483 GHz

#### 2.4 GHz Operating Channels

FCC	11 (3 non overlapping)	ETSI	13 (3 non overlapping)
MIC	14 (4 non overlapping)	KC	13 (3 non overlapping)

#### Security

Standards WEP, WPA, WPA2

Encryption WEP, TKIP, AES

Encryption Key Provisioning:  
Static (40 and 128 bit length)  
Pre-shared (PSK)  
Dynamic

802.1X Extensible Authentication Protocol Types:  
EAP-FAST, EAP-TLS, EAP-TTLS, PEAP-GTC,  
PEAP-MSCHAPv2, PEAP-TLS, LEAP

#### Certification

Wi-Fi Alliance	802.11 b / g / n, WPA Enterprise, WPA2 Enterprise
CCXv4	Cisco Compatible Extensions

### USER ENVIRONMENT

**Operating Temperature** -20 °C ~ 50°C, -4 °F ~ 122 °F

**Storing Temperature** -30 °C ~ 70°C, -22 °F ~ 158 °F

**Humidity** 93% non-condensing

**Drop Test** 1.5 m , 5 ft. (2 drops for each side / upgradable to 1.8m)

**Tumble Test** 1,000 1.6 ft. / 0.5 m tumbles (2,000 drops)

**IP Rating** IP65 (upgradable to IP67)

**Electrostatic Discharge** +/-8 kV air discharge

**Clock** Integrated real time clock (backup battery keeps the time info. while replacing the main battery)

<sup>1</sup> Available in 3Q, 2013

<sup>2</sup> All SV @ -130 dBm.

<sup>3</sup> Part of the region.

## M3 ORANGE+ Specification (contd.)

### DATA CAPTURE CHARACTERISTICS

#### 1D Scanner<sup>3</sup> Characteristics

Scan Rate	104 (± 12) scans/sec (bidirectional)
Laser Power	1.7 mW (± 0.2 mW) scan mode 0.5 mW (± 0.05 mW) aim mode
Scan Angle	47° ± 3° wide (default) 35° ± 3° narrow
Pitch Angle	± 65° with 100% UPC at 5 in.
Skew Tolerance	± 50° with 100% UPC at 5 in.
Roll	± 35° with 100% UPC at 5 in.
Ambient Sunlight Immunity	107,640 lux
Ambient Artificial Light Immunity	4,844 lux
Laser Safety	IEC60825-1 Class 2



1D Scanner

#### 2D Imager<sup>3</sup> Characteristics

Focal Point	17.8 cm, 7"
Image Sensor	752 x 480 CMOS sensors
Motion Tolerance	10.2 cm, 4" per second
Rotational Sensitivity	360°
Viewing Angle	± 40°
Ambient Light	Total darkness to 100,000 lux (full sunlight)
Illumination LEDs	626 nm +/- 30 nm
Aiming	LEDs: 526 nm +/- 30 nm Laser: 650 nm +/- 10 nm



2D Imager

#### Camera Characteristics

Resolution	3.2 M pixel
Flash	User controllable LED flash
Focus	Auto focus

#### High Frequency RFID (HF)

Frequency	13.56 MHz
Standards	ISO14443A, ISO14443B, ISO15693, I-CODE
SAM Slot	1 SAM / 2 SAM (optional)
Tag-ICs	Mifare <sup>®</sup> Standard, Mifare <sup>®</sup> 4k, Mifare <sup>®</sup> ProX, Mifare <sup>®</sup> Ultralight, Mifare <sup>®</sup> DESfire, Mifare <sup>®</sup> Mini, SLE66CLX320P, SLE55R04/08, Smart MX, Jewel, Topaz, SLE6666CL160S, SLIX4k, Sharp B, ASK GTML, ASK GTML2 ISO, TOSMART P0032/64, SR176, EM4135, ICode <sup>®</sup> SLI, LRI12, LRI64, LRI128, LRI2k, SRF55VxxP, SRF55VxxS, TempSense, Tag-It <sup>™</sup> HF-I Std, Tag-It <sup>™</sup> HF-I Pro, ICode <sup>®</sup> , ICode <sup>®</sup> EPC, ICode <sup>®</sup> UID



HF RFID

#### Ultra High Frequency RFID (UHF)

Frequency	902 ~ 928 MHz (FCC part 15) 865.600 ~ 867.600 MHz (ETSI EN 302 208)
Frequency Tolerance	± 10 ppm over the entire temperature range
Number of Channels:	4 channels (compliant to ETSI EN 302 208 v1.2.1) 50 hopping channels (compliant to FCC part 15.247) All subsets of 902~928MHz band are supported.
Standard	EPC C1G2 [RD3]



UHF RFID

#### Certifications and Partners



## M3 ORANGE+ Specification (contd.)

### DATA CAPTURE CHARACTERISTICS (contd.)

#### High Frequency RFID (HF) Supported Tag Details

Tag	Manufacturer	Serial Number	Read/Write operation	Transfer command	Comments
ISO 14443 A					
MIFARE® Standard	NXP	✓	✓	✓	
MIFARE® 4k	NXP	✓	✓	✓	
MIFARE® Ultralight	NXP	✓	✓	✓	
MIFARE® ProX	NXP	✓	✓	✓	
MIFARE® DESFire	NXP	✓	-	✓	
MIFARE® Mini	NXP	✓	✓	✓	
SLE66CLX320P	Infineon	✓	-	✓	Encryption not included
SLE 55R04 / 08	Infineon	✓	-	✓	Encryption included
Smart MX	NXP	✓	-	✓	
Jewel	Innovision	✓	✓	✓	
Topaz	Innovision	✓	✓	✓	
ISO 14443 B					
SLE6666CL 160S	Infineon	✓	-	✓	
SR176	STM	✓	✓	✓	
SLIX 4K	STM	✓	✓	✓	
ASK GTML2 ISO	ASK	✓	-	✓	
ASK GTML	ASK	✓	-	✓	Extended setup needed
Sharp B	Sharp	✓	-	✓	
TOSMART P0032/64	Toshiba	✓	-	✓	
Dual Interface					
ISO 14443 A compliant	Various	✓	-	✓	
ISO 14443 B compliant	Various	✓	-	✓	
ISO 15693					
EM 4135	EM	✓	✓	✓	
ICODE® SLI	NXP	✓	✓	✓	
LRI12	STM	✓	✓	✓	
LRI64	STM	✓	✓	✓	With 10% modulation index
LRI128	STM	✓	✓	✓	
LRI2k	STM	✓	✓	✓	Better performance with 10% modulation index
SRF55VxxP	Infineon	✓	✓	✓	
SRF55VxxS	Infineon	✓	✓	✓	Encryption included
Tag-it™ HF-I Std	TI	✓	✓	✓	
Tag-it™ HF-I Pro	TI	-	-	✓	Only in addressed mode
TempSense	KSW	✓	-	✓	Temperature logging
ICODE					
ICODE®	NXP	✓	✓	✓	
ICODE® EPC	NXP	✓	✓	✓	
ICODE® UID	NXP	✓	✓	✓	

## Accessories

M3 ORANGE+ provides extra accessories in addition to the standard accessories enhance the PDA's functionality and broaden its applicable area. Its wide range of extra accessories will make M3 ORANGE+ to be suitable virtually in any environment.

### Cradles



<Single Slot Ethernet Cradle>

<Vehicle Cradle>

M3 ORANGE+ has various types of cradle for charging and DataSync. Besides the basic Single Slot Cradle, Single Slot Ethernet Cradle can be used for Ethernet and Vehicle Cradle enables the use of device in a vehicle while charging. And GPS function can also be used while charging the device through the optional GPS.

### Pistol Grip (Scanner)

Optional pistol grip is for scan-intensive environments. This handy equipment will improve your ergonomics and increase your satisfaction.



<Pistol Grip>

### Snap-on



Snap-on provides almost the same functions of cradle but is optimized for using field environment.

There are other accessories;

Charging Holster and Leather Case for M3 ORANGE+.

Charging holster is a portable battery charger which is best solution for field service area.

To be handy for carrying and protect M3 ORANGE PLUS from any circumstances, a leather case will be a good solution. Users can choose belt type or strap type with this optional accessory.

### Other Useful Accessories



<Charging Holster>



<Leather Case>

\* Each extra accessory's manual can be downloaded at M3 Mobile technical support webpage. <http://itc.m3mobile.net>