

M₃SKY

Fully Rugged Industrial PDA with
the BEST Data Capture Technology – 1D, 2D, RFID (LF, HF)



Slim and Light PDA

M3 SKY series is the most popular product of M3 Mobile in worldwide. It supports WWAN (2G, 3G), Scanner (1D, 2D), RFID (LF, HF) and Alphanumeric, QWERTY, AZERTY keypads to suite your work environment. Furthermore, its wide range of accessories makes it virtually suitable for any application. The flexible options and performance will give you satisfaction and cost efficiency.

Key Features

Charming Design and Toughness



Slim and Light

M3 SKY is slim and light but rugged. It can be used for ticketing and/or asset management wherever the mobile device is needed



IP 65 Sealing, 1.5m Drop (Ingress Protection, Drop to steel surface)

M3 SKY is suitable to use in a tough environment; withstands drop from 1.5m and protects against dust and water.

All Environment



Endurance for temperature

M3 SKY can be operated within -20°C to 60°C and its storage temperature is -30°C to 70°C. It will guarantee the normal function at any temperature of working environment.



Military STD-810F

The MIL-STD-810F certification demonstrates the ruggedness of the M3 SKY and its appropriateness for use on extreme conditions such as military operations, field service and warehouse management.

Maximum Data Capture and Mobility



1D / 2D / RFID (LF/HF)

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



Multi-mode Radio (802.11 b/g, Bluetooth, IrDA, 2G, 3G)

Various data transmission methods you're your business easier and more comfortable.

Enhance further with Various Options



Battery (Li-Ion 3.7V 2,200mA / 4,000mA)

Extended battery is suitable for long shift duration. M3 SKY can be used even in a non-rechargeable environment with long lasting battery.



Multi-function Keypads

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

Handheld Computer Categories

M3 Mobile Co., Ltd. provides industrial level of handheld computers in four main categories.

STANDARD

- ◆ Slim and light design but withstands IP65 and at least 1.5 meters of drop to steel surface.



SMART

- ◆ Ultra light weight and compact design maximize the mobility.



ULTRA

- ◆ Widely used in tough environment and longer range of scanning is required.



POS

- ◆ Point of sale devices, as its name suggests, supports payment system with integrated printer.



M3 SKY is:

■ **STANDARD**

■ SMART

■ ULTRA

■ POS

STANDARD is one of the most common device type found in various industries. In fact, STANDARD type PDA can be used in all business. See next page for applicable industry.

Applicable Area



Logistics – Parcel Delivery, 3PL, Credit Card Delivery, etc

In this industry PDA is used to send/receive postal information from the main system or server. Also, administrator can see the delivery status and vehicle position in real time. Thus, provides effective, fast and accurate delivery service is achieved. For global references, click [here](#).

Key Benefits

- ✓ Accurate delivery services.
- ✓ Real time information update with accurate vehicle positions.
- ✓ Advanced wireless technology such as 3G (HSDPA), A-GPS, 802.11a/b/g saves time and no more paper work is required.



Service Visit – Cable TV, Boiler, Water Purifier, Home Study, ATM, etc

Service visit is a customer oriented business that visits customer and provide various services. It involves from regular check and repair services for all sorts of utilizes such as water purifier and household appliances, to educational service at any places such as home, factory, facilities and so on. For global references, click [here](#).

Key Benefits

- ✓ Product stock (spare parts) management.
- ✓ Service quality control became easy by organizing periodical visits with the server.
- ✓ Current state of the visit site can be easily checked on the PDA.



Public – Meter Reading, Ticket Checks, Police, Military, Hospitality, etc

M3's STANDARD PADs are widely used in public industry. 1D/2D/Camera AutoID system allows user to scan the barcode of electric, hydraulic, gas and/or car parking meter to obtain current usage status and the picture is taken using the camera as the evidence of the meter status. Also, with connection to BT printer, invoices (or fine ticket) can be issued on site. For global references, click [here](#).

Key Benefits

- ✓ Fast and accurate data collection.
- ✓ Invoices issued on site with BT printer.
- ✓ Time saving and efficient.



Distribution – Department Store, Mart, Retail, Warehouse, etc

In Distribution industry, stock management is the key point. Before PDA is adopted in this industry, the manager usually performed stock counting once a month which is time consuming and may induce human error. However, with barcode or RFID system, the number of in, out, remaining stock is easily managed. Also, the PDA can be used to check the price of a product on the shelf. For global references, click [here](#).

Key Benefits

- ✓ Time and cost effective.
- ✓ Convenient and accurate stock management.
- ✓ Stocks in each branch can be controlled at headquarter.

More details of M3 SKY and relevant casestudy documents can be found at the homepage. www.m3mobile.net.

Accessories

M3 SKY 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 SKY to be suitable virtually in any environment.

Cradles



M3 SKY 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 is for charging M3 SKY device in the car. And GPS function can also be used while charging the device through the optional GPS. Also, 4-Slot Ethernet Cradle, combined with 4 cradles all

together, charges four of M3 SKY device at the same time and is able to be DataSync with PC.

Pistol Grip



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

Snap-On

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



Other Useful Accessories



There are other accessories; Charging Holster, Leather Case and Extended battery for M3 SKY. Extended battery, which is Li-Ion 3,7V 4,000mA, will be useful where the PDA cannot be re-charged.

M3 SKY Specification

Physical Characteristics	
Dimension (W x H x D) mm/inch	78.6 x 163.5 x 24.9 mm
	3.0 x 6.4 x 0.9 in.
Weight (including battery)	320g / 11.2 oz 343g / 12.1 oz (With HF)
Display	3.5" QVGA TFT LCD, 240 x 320 pixels
Touch Panel	Glass analog resistive touch
Main Battery	Li-ion, 3.7 V, 2,200 mAh (Standard) Li-ion, 3.7 V, 4,400 mAh (Extended)
Backup Battery	Li-ion, 3.7 V, 200 mAh (not user-accessible)
Notification	Vibration and LED
Keypads	Alphanumeric (26key) QWERTY (49key) AZERTY (49key)

Performance Characteristics	
Multi-processor	CPU Marvell PXA-270 624MHz
	Radio ARM9 series
OS	Microsoft® Windows Mobile® 6.1 Classic and Professional
Memory	RAM 128 MB
	ROM 256 MB
	Card Slot MicroSD with SDHC(up to 32 GB)
Interface	USB Host 1.1 / Client 1.1, Ethernet (via Cradle or Snap-On), RS232 (via Cradle or Snap-On),
Battery Performance	Standby time: up to 390 hours Talk time: up to 6 hours

User Environment	
Operating Temp	-20 °C ~ 60 °C / -4 °F ~ 140 °F
Storing Temp.	-30 °C ~ 70 °C / -22 °F ~ 158 °F
Humidity	90% non-condensing
Drop test	12 drops at 1.5m / 5ft. to steel surface. (2 drops for each side)
IP rating	IP65
Clock	Integrated real time clock (Backup battery keeps time info while replacing the main battery)
Electrostatic Discharge (ESD)	±8kV air discharge

Wireless Radio Options	
WWAN	2G GSM/GPRS/EDGE: Quad band (850/900/1800/1900 MHz)
	3G UMTS/HSDPA: Triple band (850/1900/2100 MHz)
GPS (optional AGPS) ¹ All SV @ -130 dBm	Assisted-GPS Accuracy ¹ Position 2.5m CEP SBAS 2.0m CEP Acquisition ¹ Cold start 29s Warm start 29s Hot start <1s Velocity Limits: 515m/s(1000knot)
Bluetooth	Class II, v1.2 integrated antenna

Wireless LAN Characteristics	
WLAN	IEEE 802.11 b/g
Chipset	Broadcom BCM4318E
Data Rates	802.11b (DSSS): 1, 2, 5.5, 11 Mbps
	802.11g (OFDM): 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Reg. Domain ² Part of the region.	FCC (Americas, Asia ² , Mid East ²) ETSI (Europe, Mid. East, Africa, Asia ²) MIC (formerly TELEC) (Japan) KC (formerly KCC) (Korea)
Frequency Bands	2.4 GHz Freq. 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
Operating Channels	2.4 GHz 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
Certifications	802.1X Extensible Authentication Protocol Types: EAP-FAST, EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, PEAP-TLS, LEAP
	Wi-Fi Alliance: 802.11b, 802.11g WPA Enterprise WPA2 Enterprise

	Cisco Compatible Extensions CCXv4
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Data Capture Characteristics

1D Scanner³ Characteristic

Light Source	650 nm visible laser diode
Scan Rate	100 scans/sec
Decode Rate	100 decodes/sec
Reading Angle	54°, effective 44°
Pitch Angle	±35°
Skew Angle	+8 ~ +50°, -8 ~ -50°
Tilt Angle	±20°
Ambient fluorescent light rejection 4,000 lux max.	
Ambient white light rejection 4,000 lux max.	
Ambient direct sun light rejection 80,000 lux max.	
Laser Safety Class	IEC825, Class I laser product
EMC	EN 55022, EN 55024

³ Characteristics are based on the default option.

2D Imager³ Characteristic

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

Camera Characteristics

Resolution	2 megapixel
Flash	User controllable flash
Focus	Auto focus

High Frequency RFID

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

Low Frequency RFID

Frequency	125 kHz and 134.2 kHz
Supported Tags	EM4x02, EM4x50, HITAG1, HITAG2, HITAG S, EM4x05 (ISO-FDXB), Q5, TI-RFID 64bit RO, TI-RFID 64bit RW, TI-RFID 1088bit

Supported High Frequency RFID tags

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	✓	✓	✓	

Supported Low Frequency RFID tags

Tag	Serial Number	Read block	Write block	Properties
EM4x02	✓	-	-	5 bytes R/O
EM4x50	✓	✓	✓	32 x 4 bytes R/W, password
HITAG1	✓	✓	✓	64 x 4 bytes R/W
HITAG S	✓	✓	✓	1, 8 or 64 x 4 bytes R/W
HITAG2	✓	✓	✓	7 x 4 bytes R/W, password
EM4x05 (ISO-FDXB)	✓	-	-	8 bytes R/O
Q5	✓	✓	✓	8 x 4 R/W, password
TI-RFID SYSTEMS 64 Bit R/O	✓	-	-	8 bytes R/O
TI-RFID SYSTEMS 64 Bit R/W	✓	✓	✓	8 bytes R/W
TI-RFID SYSTEMS 1088 Bit Multipage	✓	✓	✓	17 x 8 bytes R/W



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