

# FM220V0.2 Fingerprint USB (PC) Based Reader

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STARTEK provides the newest and compact  
USB Based Application Fingerprint module in 2011.

[PIV Specifications ported to a verification scanner](#)



Presented by:



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## ➤ General Description

Latest fingerprint reader introducing by Startek, FM220, is a high-quality CMOS-based optical reader. It captures images and verifies fingerprints at high speed and its performance in image capture lies in between a high-cost CCD-based fingerprint reader and a general CMOS-based reader. In the newly implemented FM220, it overcomes the problem some other optical readers have in requiring constantly replacing lens coating to speed up fingerprint image scanning. In addition, the image distortion rate of FM220 is decreased dramatically from 15% of a general CMOS reader to less than 1%. Its Modular Transfer Function (MTF) value has also been improved to more than 40% comparing to 30%~20% for a general CMOS reader. These features of FM220 represent a breakthrough in optical fingerprint reader technology.

## ➤ Features

- Compact and elegant
- USB 2.0 Interface (High Speed)
- Fast scanning & matching speed
- Choice to set different security levels for different FRR/FAR demand
- Non-distorted image quality
- Small template size, ISO approved.
- Real-life applications-no problem in verifying smeared, scarred, stained and smudged fingers.
- Support verification on various server platforms
- PIV capabilities ported to a verification scanner - absolutely low FTE
- Outstanding placement to image/template/1:N identification performance vs. any of the worlds leading manufacturers
- Ergonomic design to guide finger position for effective scanning
- Adjustable image magnification option for children
- High resolution > 600 dpi (optional)

- Adjustable image magnification and interpolation, capturing option for children (from infants to below 12 years)
- Successfully deployed in very harsh conditions in remotest corners and dusty and tribal locations.
- Almost Nil FTE
- The reader is totally shock proof, for accidental falls from table.(under 4 feet free fall)
- Suitably protected against dust and water ingress.
- Live Scan capability with ultra red below skin scanning. (optional)

## ➤ Specification

|   |  |
|---|--|
| <b>Sensors</b>                                  | CMOS sensor  |
| <b>Scanning Speed</b>                           | 1/15 second  |
| <b>Image Resolution</b>                         | 500 dpi (H), 500 dpi (V) (600 dpi optional)                                |
| <b>Image Capture Format</b>                     | 13.3 × 16.4 (in mm) (H*V) only for model FM220V0.2, otherwise 13 x 16.5 mm |
| <b>Scanner Output Image Size</b>                | 264 * 324 pixels (H * V) only for model FM220V0.2, otherwise 256*324       |
| <b>Gray Level</b>                               | 8 bits/pixel, max 256 gray scales  |
| <b>Image Ratio of Length to Width</b>           | 1 : 1  |
| <b>Scanner Interface Cable</b>                  | Standard USB compliant cable   |
| <b>Power Supply</b>                             | 1 Watt Approx, (From USB port)<br>(200mA, Approx, Standby: 60mA)           |
| <b>Minimum Hardware Requirement</b>             | P3 800MHz CPU or up,256 MB,USB2.0  |
| <b>Dimension</b>                                | 80mm(L) x 41mm(M) x 40mm(H)  |
| <b>Weight</b>                                   | 100g (Approx,)   |
| <b>Distortion</b>                               | <1%  |
| <b>Temperature (without external enclosure)</b> | 0°C ~ 40°C   |
| <b>MTBF</b>                                     | >70000 hours   |
| <b>Modulation Transfer Function</b>             | 0.4 at 10 cycle/mm   |
| <b>Scanning Light Source</b>                    | Ultra Red (940 nm) capable of support more than 600dpi                     |
| <b>Live Scan Capability</b>                     | Live Skin Sensing (with ultra red scanning, beneath skin, Optional)        |
| <b>Operating volts:</b>                         | +5V Tolerance 5% (USB Connector)   |
| <b>Humidity:</b>                                | <90% non condensing  |

Reference Performance: on Mobile or Handheld platforms

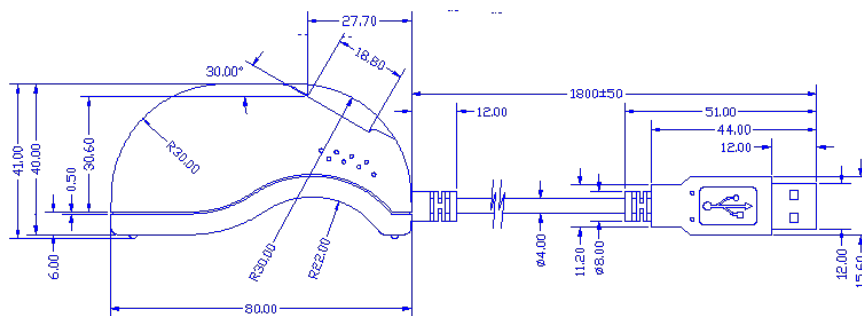
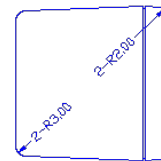
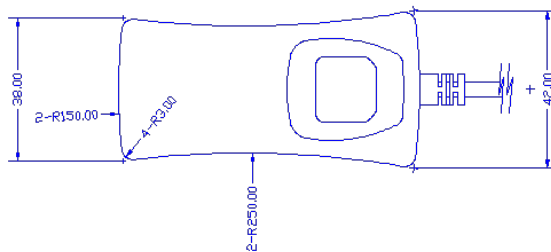
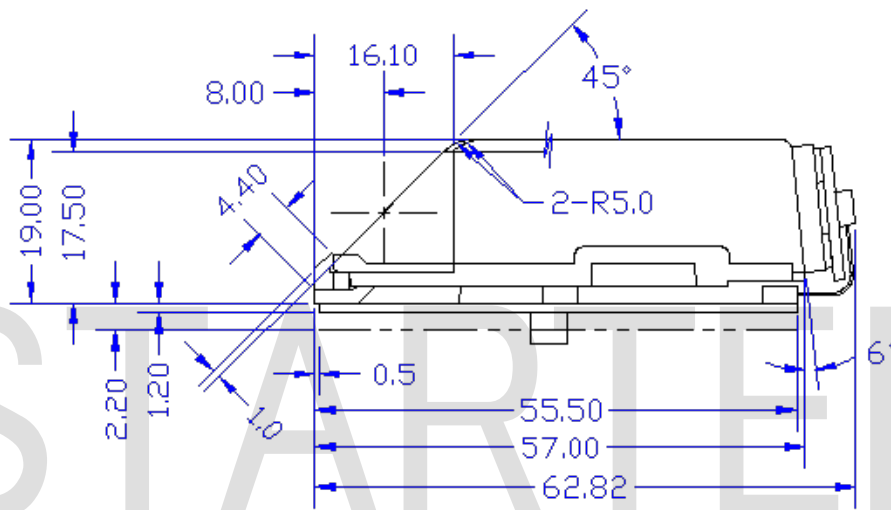
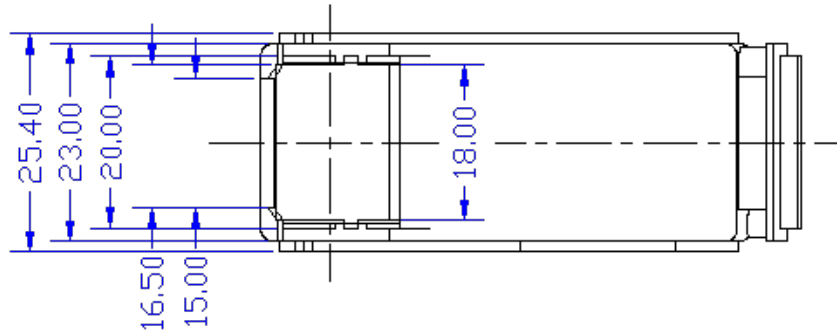
| <b>Biometric Performance</b>              | FM220(X86)<br>typical  | FM220 Low Bar<br>(ARM9-200MHz) | FM220 High Bar<br>(ARM11-800MHz) |
|---|--|--------------------------------|----------------------------------|
| Finger placement to image                 | 0.2  | 0.77                           | TBD                              |
| Finger placement to template              | 0.8  | 0.77                           | TBD                              |
| Finger placement to 1:N<br>identification | 1.0 sec*<br>(1,000users)   | 1.89 sec**<br>(600users)       | TBD***                           |
| Interoperability                          | MINEX, ANSI<br>378, ISO<br>19794-2:2005,<br>ANSI 381, ISO<br>19794-4:2005,<br>NFIQ compliant | Ditto                          | Ditto                            |
| Interface                                 | USB 2.0  | USB 2.0                        | USB 2.0                          |

\*Optimized to AMD Geode LX 800MHz CPU - WinCE 5.0 application, or Comparable Intel CPU

\*\* optimized for ARM 9 200 MHz, \*\*(ARM9 (Nuvoton 200MHz)

\*\*\*ARM11-base (SamSung S3C6410 800MHz CPU) evaluation undergoing.

## Mechanical Dimensions

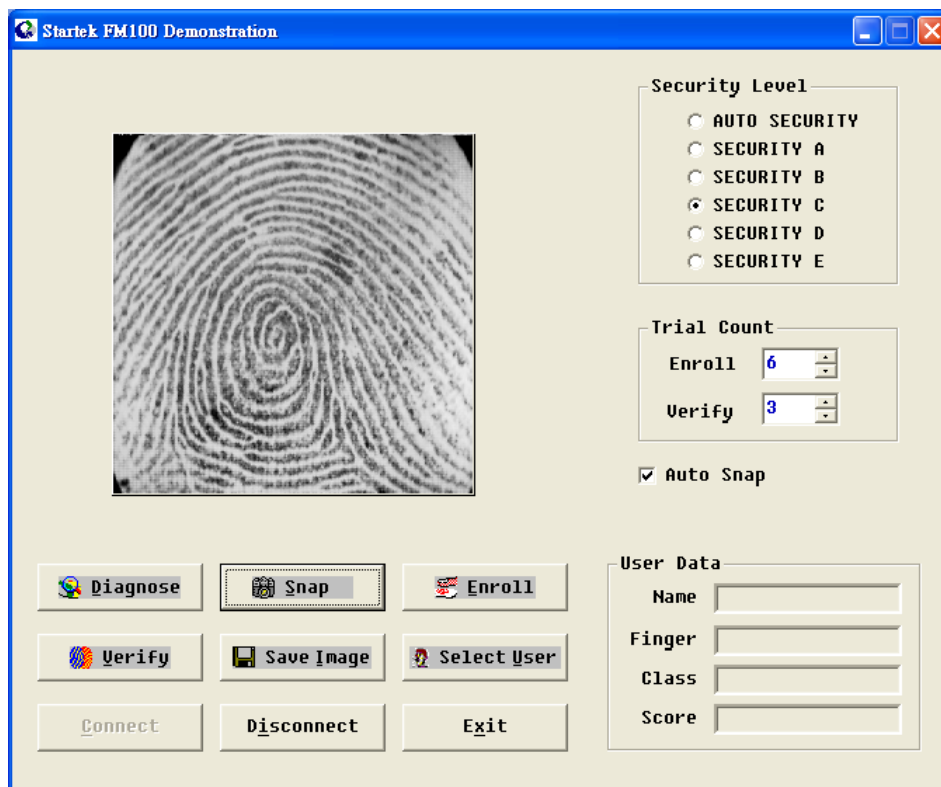


➤ **Startek® SDK PIV Plus**

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|--|--|
| <b>Minutia Size</b>  | < 1K bytes   |
| <b>Matching Speed</b>  | Less than 1 second   |
| <b>False Rejection Rate (FRR)</b>  | 1/100 ~ 1/30   |
| <b>False Acceptance Rate (FAR)</b>   | 1/100,000 ~ 1/1000,000   |
| <b>Allowable Fingerprint Rotation</b>  | ± 35°  |
| <b>Allowable Fingerprint Displacement</b>  | ± 5 mm   |
| <b>Software Platform</b>   | Windows 2000/2003/XP/XP Embedded/Vista/7 (32bit and 64bit), Linux with kernel 2.6 (x86); WinCE5.0 (x86 and Arm9) |
| <b>Functions of API</b><br><b>(ISO19794-2 / ISO19794-4 and FIPS201* Compliant)</b> | Image Capture<br>Enrollment / Template Generating<br>Matching  |

\*Software that matches a live authentication template with a stored template on the PIV Card in accordance with SP 800-76. (Part#002B0001, <http://fips201ep.cio.gov/apl.php>)

➤ **Normal Working Snap Scene of SDK**  
( Capture fingerprint image for Windows XP )



## ➤ **Headquarter Contact Information.**

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