

**EE TIMES**

## Matsushita blends FeRAM technology with smart cards

By Yoshiko Hara , *EE Times*

October 01, 2004 (4:46 PM EDT)

URL: <http://www.eetimes.com/article/showArticle.jhtml?articleId=49400183>

TOKYO — Matsushita Electric Industrial Co. Ltd. has added contactless smart card capabilities to its SD memory card using FeRAM technology in the smart card module to achieve a five-fold increase in communication speeds over EEPROM-based smart cards.

The memory card, smartSD, will be one of the first volume applications of FeRAM technology for Matsushita. The company has been developing FeRAM technology since the 1990s.

"The new SD card is the first SD card that combines the convenience of contactless data communication capabilities with large storage capacity and high security," claimed Masaki Akiyama, president of Panasonic System Solutions Co.

The smartSD/miniSD are an expanded version of conventional cards and share the same physical specifications. For smart card functions, smartSD complies with the JavaCard and GlobalPlatform formats. For contactless communications interface, it complies with ISO/IEC14443 Type B and JICSAP 2.0.

Matsushita said it will offer the smart card function both in standard SD and miniSD cards. The standard-sized SD card will have a built-in antenna; miniSD cards will require an antenna built into a host system. The first cards will have an 32-Kbyte FeRAM and 128-Mbyte flash memory.

Matsushita expects to begin sampling the cards in December and enter volume production in the fall of 2005. It will initially promote smartSD memory cards in Japan, eventually expanding overseas.

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■ **Description**

The flash disk controller (OTi\_6828) is a disk controller used to make a linear flash device array look like a normal disk, hiding the flash related problems with erasing.

The OTi\_6828 is a controller with USB interface. The USB interface is for full speed operation (12Mb/s). It conforms to USB Specification, Version 1.1. The USB transceiver is embedded in this controller. With stable slew-rate control, the controller reduces EMI.

The OTi\_6828 has a Phase Lock Loop (PLL) embedded. The PLL provides all clocks needed in this controller. It needs an externally provided clock operating in 14.318MHz.

The OTi\_6828 has integrated the regulator for 5V input and 3.3V output. It also supports voltage detector for power on reset.

The OTi\_6828 can control up to 4 pieces of NAND flash memory. The flash capacity can be 32M bits up to 1G bits. And these chips can be any combination. It has been optimized to support Toshiba and Samsung flash memory designs. It also supports Samsung's K9F and K9W Series flash. The controller has write-protected ability to prevent writing data to flash. The controller has a led control pin. It has three operation modes: suspend (off), active (fast) and idle (twinkle) mode. For read/write operation, the controller can achieve 1,000kB/920kB throughput. Comprehensive application with Windows OS is available.

This controller can operate in Win XP, Win2000, Windows Me, and Mac OS without any driver installation.

The OTi\_6828 is available in cost-saving 32-pin TSOP package.

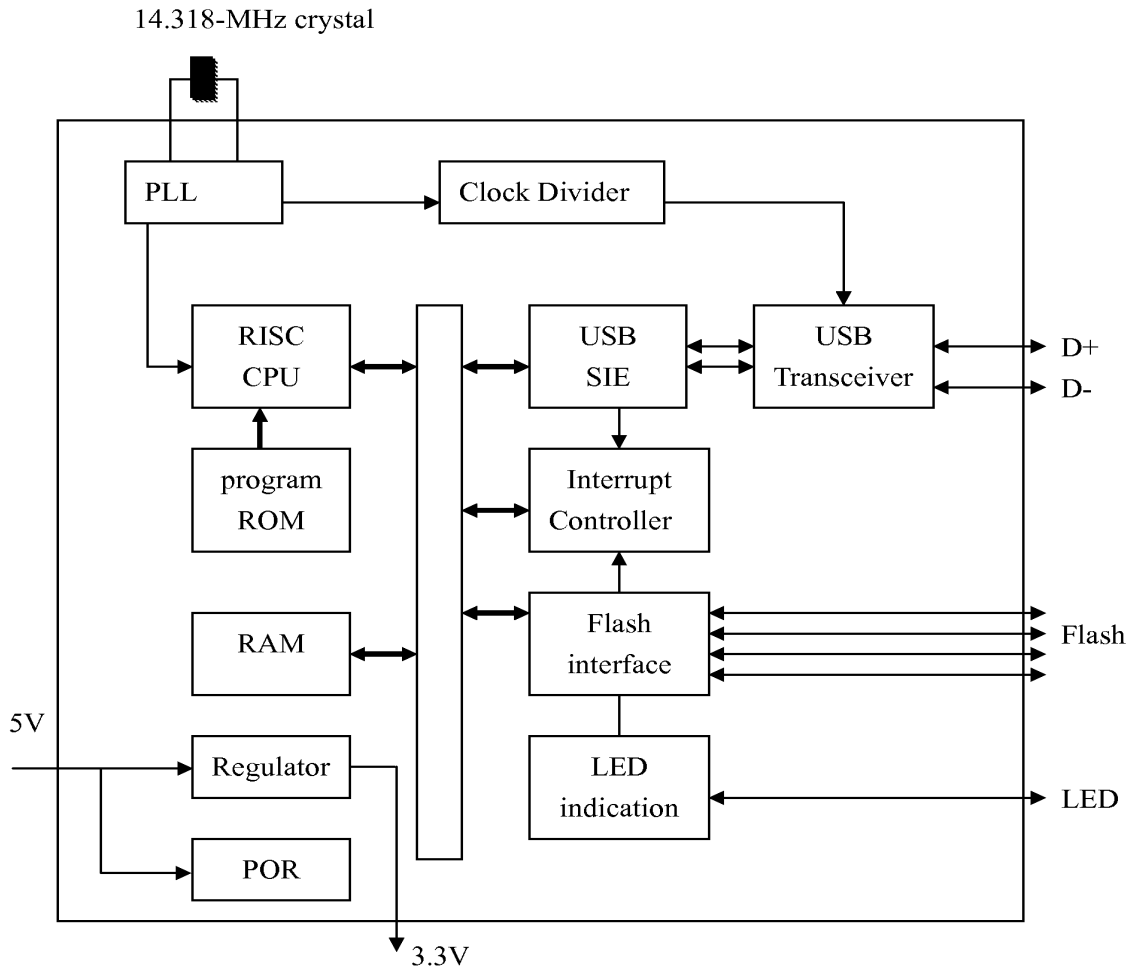
■ **Features**

- Flash controller with full-speed USB interface
- Integrated 5V/3.3V regulator, USB bus power supply capability
- USB Specification Compliance
  - Conforms to USB Specification, Version 1.1
- Integrated USB transceiver
  - Dynamic feedback control
  - Stable slew rate, independent of external loading
- RISC micro-controller
  - High-performance RISC architecture
  - Single cycle instruction execution
- 14.318 MHz external clock

- Integrated PLL
- Integrated Power On Reset (POR)
- Support up to 4 pieces of NAND Flash memory with write-protected ability
- Support Toshiba and Samsung's K9K series flash
- Support Samsung's K9F and K9W series flash
- Support wear-leveling
- Higher reliability: ECC on the fly
- Automatic bad block management
- Supported OS:
  - Win XP, Win2000, Windows ME, Linux 2.4 above, and MAC OS 9.0 & higher
  - Win 98/Win98SE driver available
  - Mac 8.6 mass storage driver available from Apple
  - Multiple LUN Windows driver is available
- LED indication:
  - Programmable through Mass Production Toolset
- Configurable Vendor ID/Product ID (VID/PID)
- Performance: Read (1,000kBytes/s) , Write (920kBytes/s) Max.
- Small form factor - standard 32-pin TSOP package

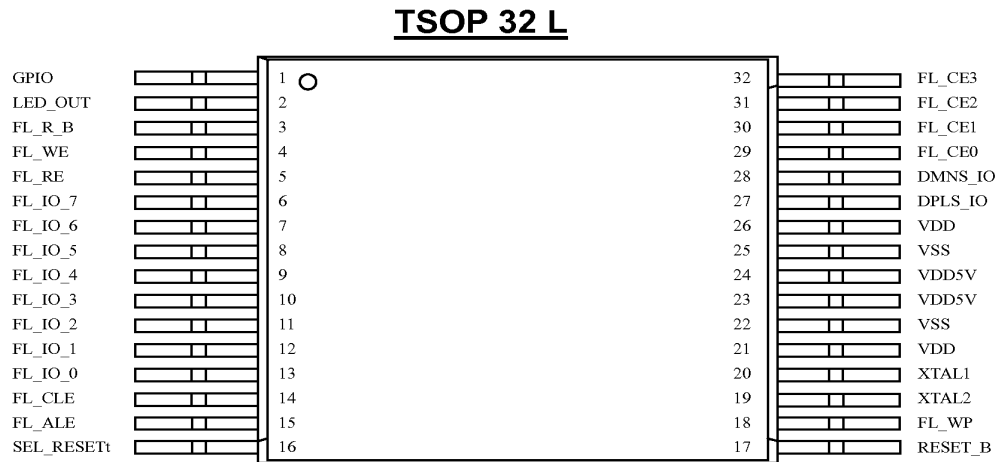


■ BLOCK DIAGRAM





■ **Pin Configuration**





■ **Pin Description**

Pin Name	Attribute	Description	Pin #
GPIO	I/O	Reserved I/O	1
LED_OUT	O	LED indication(open drain)	2
FL_R_B	I	Flash Ready_Busy	3
FL_WE	O	Flash Write Enable	4
FL_RE	O	Flash Read Enable	5
FL_IO_7	I/O	Flash data bus – bit 7	6
FL_IO_6	I/O	Flash data bus – bit 6	7
FL_IO_5	I/O	Flash data bus – bit 5	8
FL_IO_4	I/O	Flash data bus – bit 4	9
FL_IO_3	I/O	Flash data bus – bit 3	10
FL_IO_2	I/O	Flash data bus – bit 2	11
FL_IO_1	I/O	Flash data bus – bit 1	12
FL_IO_0	I/O	Flash data bus – bit 0	13
FL_CLE	O	Flash Command Latch Enable	14
FL_ALE	O	Flash Address Latch Enable	15
SEL_RESET	I	Selection of Internal Reset or External Reset	16
RESET_B	I	Reset, active low	17
FL_WP	I/O	Flash Write Protect	18
XTAL2	O	Crystal output	19
XTAL1	I	Crystal input (14.318MHz)	20
VDD	P	3.3V Output	21
VSS	P	GND	22
VDD5V	P	5V Input	23
VDD5V	P	5V Input	24
VSS	P	GND	25
VDD	P	3.3V Output	26
DPLS_IO	I/O	USB D+	27
DMNS_IO	I/O	USB D-	28
FL_CE0	O	Flash Chip Enable – Chip 0	29

FL_CE1	O	Flash Chip Enable – Chip 1	30
FL_CE2	O	Flash Chip Enable – Chip 2	31
FL_CE3	O	Flash Chip Enable – Chip 3	32

## ■ D.C. Characters

### DC Characteristics-1 (Ta=0 °C to +70 °C, Vcc = 3.3V ±10%)

Parameter	Symbol	MIN	TYP	MAX	Unit
Power Supply	VDD5V	4.5	5	5.5	V
Input Voltage	V <sub>IH</sub>	0.7x VDD	--	5	V
	V <sub>IL</sub>	-0.3	--	0.2 x VDD	V
Output Voltage	V <sub>OH</sub>	VDD-0.4	--	--	V
	V <sub>OL</sub>	--	--	0.4	V
Input leakage current (*2)	ILK	-1	--	1	uA
Working Current	IRW	--	20	--	mA
Operating Temperature	T <sub>a</sub>	0		70	°C
Storage Temperature	T <sub>s</sub>	-55		+150	°C
IO output current	I <sub>OH</sub>	--	4	--	mA
	I <sub>OL</sub>	--	4	--	mA

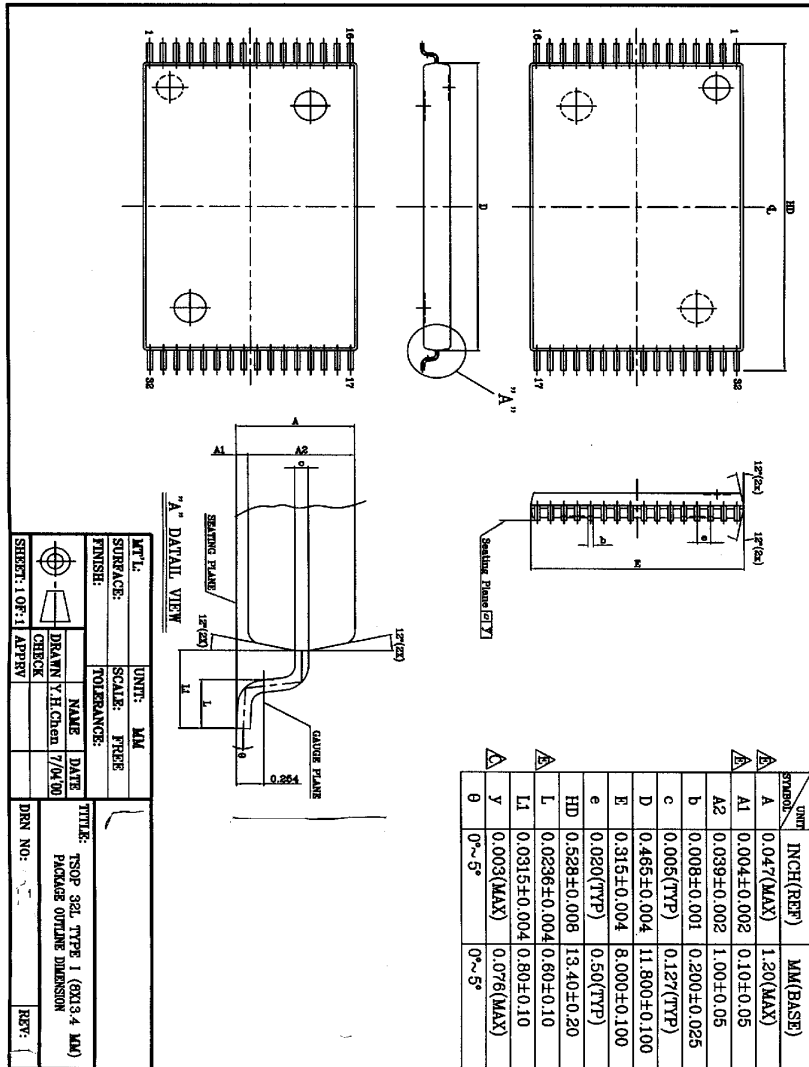
## ■ A.C. Characters

Parameter	Symbol	MIN	TYP	MAX	Unit
Input rising delay	T <sub>PIlh</sub>	0.35(2PF)	0.4(4PF)	0.54(8PF)	ns
Input falling delay	T <sub>PIhl</sub>	0.46(2PF)	0.53(4PF)	0.64(8PF)	ns
Output rising delay	T <sub>POlh</sub>	1.35(10PF)	1.97(30PF)	2.59(50pF)	ns
Output falling delay	T <sub>POhl</sub>	1.61(10PF)	2.41(30PF)	3.21(50pF)	ns



Ours Technology Inc.

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NAS Reman

**Panasonic Develops Industry's First SD Memory Card With Contactless Smart Card Capabilities**

Osaka, Japan, Oct 1, 2004 - (JCN Newswire) - Matsushita Electric Industrial Co., Ltd. (TSE: 6752), best known for its Panasonic brand products, has developed the industry's first SD Memory Card with contactless smart card capabilities. Called smartSD Card, the new SD Memory Card combines the convenience of contactless data communication capabilities with large storage capacity and high security. The company will position the smartSD Card as key to realizing the "ubiquitous network society" and will strive to create new business opportunities not only in the device sector but also in the system and solution service sectors. Sample shipments of the smartSD Cards will commence in December 2004. Commercial shipments are expected to follow in the fall of 2005.

Smart cards are rapidly expanding into many new markets including finance, transportation, distribution, industry and government administrations and have been introduced in a wide variety of applications such as transport ticket payments, access control, electronic money and credit cards. In 2003, some 51 million smart cards were issued in Japan and the number is expected to rise to 340 million by 2010.\* Meanwhile, since the introduction of the SD Memory Card in July 2000, 220 makers have announced over 2,600 SD Memory Card-compatible products and approximately 41 million SD Memory Cards were sold in 2003, attaining number one global market share in the memory card industry.

As smart cards become more convenient, the need for greater data capacity and high security has increased. The smartSD Card combines the advanced copyright protection, portability, and easy connectivity of the SD Memory Card with the convenience of a contactless smart card, allowing the card to send/receive large amounts of data at high speed and with high security, thereby supporting a variety of new applications. The smart card in the smartSD Card uses non-volatile FeRAM (ferroelectric RAM), which enables high-speed data writing, five times faster than conventional EEPROM-based smart cards. The large-capacity flash memory in the smartSD Card can be used as an extra storage area for the smart card module and the stored data is protected by cipher technology. The secured extended memory also transfers data at the rate of about 600 Kbytes per second.

Offering large secure storage, authentication and contactless data communication capabilities, the new type of SD Memory Card can be used for a wider variety of smart-card applications. Mr. Masaki Akiyama, President, Panasonic System

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Solutions Company, said, "Our hope is to create new businesses deriving from the special features of the smartSD Card. These include corporate solutions dealing with information leakage prevention, mobile service solutions dealing with content distribution and home service businesses dealing with content distribution for home AV equipment. We will continue to offer new secure services in the broadening SD world to make our daily lives more convenient and safe."

Panasonic will exhibit and demonstrate new applications using the smartSD Card at CEATEC Japan (October 5 to 9, 2004). Visit the Panasonic booth, 1A02, Hall 1, Digital Network Stage. More details will be found at the Panasonic web site at [http://matsushita.co.jp/exhibition/index\\_e.html](http://matsushita.co.jp/exhibition/index_e.html).

\*According to Yano Research Institute Ltd.

About Matsushita Electric Industrial Co., Ltd.

Matsushita Electric Industrial Co., Ltd. (TSE: 6752; NYSE: MC), best known for its Panasonic brand name, is a worldwide leader in the development and manufacture of electronic products for a wide range of consumer, business, and industrial needs. Based in Osaka, Japan, the company recorded consolidated sales of US\$71.92 billion for the fiscal year ended March 31, 2004. Matsushita's shares are listed on the Tokyo, Osaka, Nagoya, New York (NYSE:MC), Euronext, Amsterdam and Frankfurt stock exchanges.

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## Delivering ultimate security, high performance and ultra low power consumption, SmartMX is now in volume supply

Offering an optimized feature set together with the highest levels of security, SmartMX being the world's first triple interface chip solution, enables the easy implementation of state-of-the-art operating systems and open platform solutions. Within its targeted segment, SmartMX is the most advanced solution available, combining an exceptionally powerful FameXE co-processor for public and secret key encryption with the high security, low power, performance optimized, design concept of Philips' Tangram technology. Security evaluated to the highest standards by external laboratories, it offers excellent protection even against the most advanced attack scenarios.

SmartMX is ideal for use in single- and multi-application markets ranging from banking to finance and from mobile communications to secure network access, pay TV and transportation. Production has already been ramped up to meet requirements for the German 'GeldKarte' banking scheme where SmartMX has been certified by ZKA for use in the SECCOS project. For multi-application cards, SmartMX contains a built-in memory management unit to support strong firewalls and ensure that memory segments and banks of data are clearly defined and kept separate from one another. Its expanded memory configuration even allows it to support complex operating systems such as Java and Multos while still providing sufficient read-only memory (ROM) for many applications. This keeps its EEPROM memory free for other data and allows card issuers to choose SmartMX for multi-application solutions.

Manufactured using the market leading 0.18 µm, 5-metal layer technology, SmartMX supports Class "A", "B" and "C" (1.8V to 5 V) voltage ranges as requested by application standards such as 3GPP (3rd generation mobile communication) and EMV (credit/debit card standard). Products based on SmartMX ICs are targeting high volume and cost sensitive, single- and multi-application markets. Its contact interface meets the international standard ISO 7816, the physical standard for contact smart

cards while its contactless interface is compatible with the MIFARE range of products used in a wide variety of transport schemes and compliant with ISO 14443A, the industry and de-facto standard for contactless smart cards. The USB1.1 interface makes SmartMX the first solution of its kind capable of producing plug and play IC cards for secure access to the PC world. And with extended support for cryptography and multiple interface options, SmartMX is the optimal choice for use in almost any IT environment. It is in fact the first solution of its kind to incorporate three interface options as an integral part of a range of highly secure smart card controllers – ISO 7816 contact interface, ISO 14443A contactless interface and USB 1.1 interface.

"SmartMX has been designed to meet the highest performance standards and forthcoming security requirements, while providing the cost-efficiency demanded by application markets that use large volumes of smart cards," said Reinhard Kalla, General Manager of Identification at Philips Semiconductors. "Building on Philips Semiconductors' broad experience in smart card ICs and its expertise in security and cryptography, smartMX is the first product family of its kind to enable manufacturers to add a range of additional services on a single IC-based smart card using interface options such as contactless and USB."



## SIM SPOTLIGHT

# Digital Rights Pits SIMs Against Flash Cards

[ By Dan Balaban ]

Games are expected to become a big business for mobile network operators and content providers. And as network bandwidth and handset features grow, subscribers will soon be downloading lots of music, video and other multimedia content, too, many analysts predict.

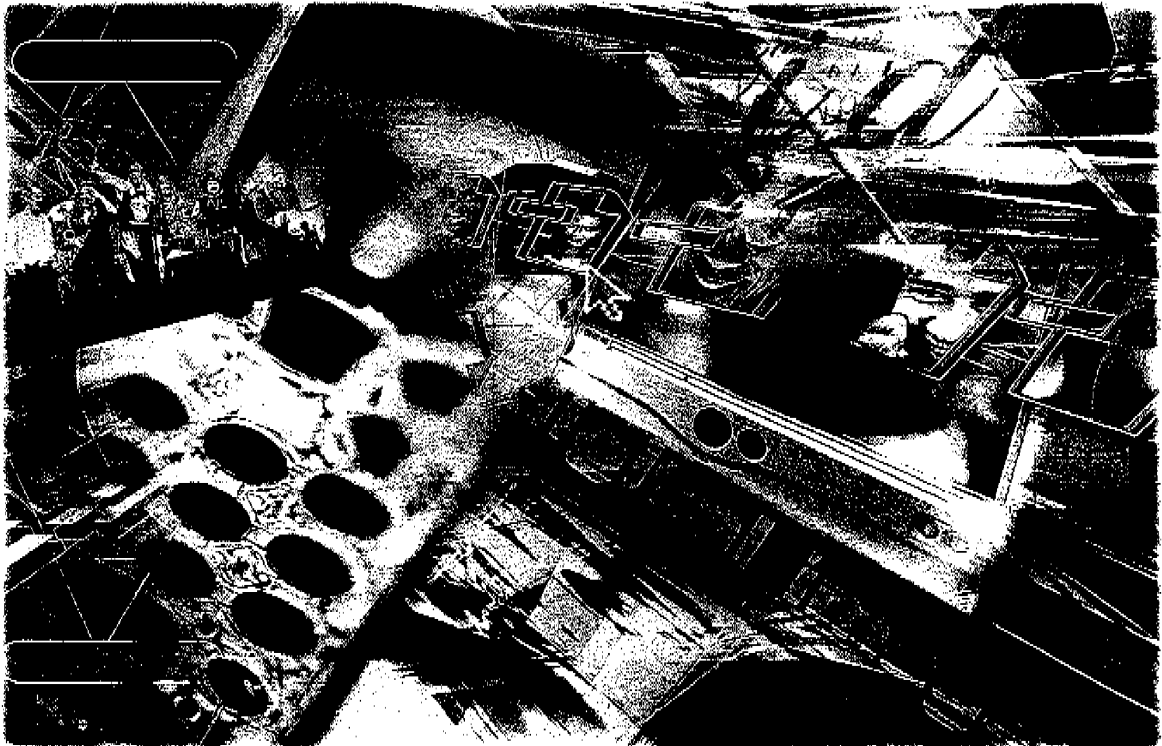
Operators and content

providers will need a way to ensure subscribers pay for this content and don't forward or copy it without permission. Hype has surrounded this prospective market for digital rights management for years, but vendors are catching the unmistakable scent of a budding business case.

"We are seeing the flower of a market," says Christian Goire, a top researcher for France-based card

vendor Axalto and chairman of the Java Card Forum.

The bloom on this market may still be a few years off, but vendors are staking their claims. Among the encouraging signs for them is recent action by the influential Open Mobile Alliance, which has advanced a new version of its digital rights management standard that has gained the broad support of mobile



network operators, content providers and component makers.

Tamper-resistant SIM cards, which come as standard equipment in most of the world's mobile handsets, provide a safe place to store and process encryption keys and certificates that would be needed to grant these digital licenses, say SIM suppliers. While in no way mandating use of secure cards, the Open Mobile Alliance's DRM 2.0 specification would create an opening for the SIM.

But if smart card vendors are cultivating this market, they will have plenty of competition, and not only from handset makers. Another com-

ponent supplier, makers of removable flash memory cards, has designs on the business.

Flash cards, which carry megabytes of memory, were a \$3.6 billion market last year, according to U.S.-based research firm Gartner. The cards store content in a range of devices, such as digital still and video cameras and MP3 music players. But more and more handsets provide slots for the cards, mainly to store photos. Flash cards for handsets represented just 14% of the total

**HYPE HAS SURROUNDED DIGITAL RIGHTS MANAGEMENT FOR YEARS. BUT VENDORS ARE CATCHING THE UNMISTAKABLE SCENT OF A BUDDING BUSINESS CASE.**

megabyte capacity of flash cards shipped last year. That will grow to 51% by 2008, estimates Gartner, which predicts one brand of removable flash cards, MultiMediaCard, will own the largest share of the handset market by the end of this year, edging out rival SD (Secure Digital) Card. MMC should widen that lead through 2008, says Gartner.

Makers of MMCs and their U.S.-based trade association have been aggressively targeting the

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As seen in logos: MMC, paypass, SECA, multi

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**SIM SPOTLIGHT**

handset market, offering a reduced-sized version of their card and faster download speeds. Now, sensing the market for digital rights management beginning to stir, leaders of the MMC Association are planning to adopt specifications for a new version of their "SecureMMC" card. It will support the new OMA digital rights management specification, along with those from Microsoft, Real Networks and others.

The SecureMMC will feature a tamper-resistant area about the size of the rewriteable memory on a mid- to high-end SIM card. This area could not only play host to licenses to download music or football highlights, but also store corporate files or

keys and payment account data for mobile commerce. It will also run Java Card operating software, popular in the smart card industry, especially for SIMs.

**\*Smart Card-Like Features**

Meanwhile, Matsushita Electric Industrial of Japan, better known as Panasonic, a maker of SD cards, last month announced it would introduce a flash memory card containing an antenna and tamper-resistant area. The "smartSD Card" would be inserted into handsets and could store photos and other multimedia, as it does now. It could also keep electronic cash or e-tickets, allowing customers to pay transit fares, make

\*retail purchases or enter entertainment venues with a wave of their handsets.

SD Card makers have earlier come out with a secure version of their cards, as has Sony Corp. with its Memory Stick. The makers of flash cards are adding the smart card-like features to try to differentiate themselves in a commoditizing market. "Margins are getting quite thin," says Gartner analyst Joseph Unsworth.

The MMC Association introduced the first version of the SecureMMC a few years ago during the telecom bubble, but the product went nowhere. Smart card vendors at the time seemed unconcerned. The smart card industry had fine-



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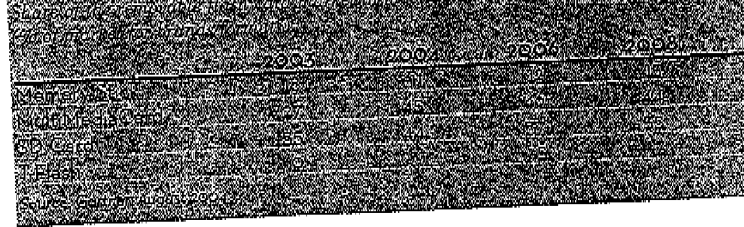
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**SIM SPOTLIGHT**

**MAKING ROOM IN HANDSETS**



tuned the security of their chips over nearly 20 years. How could the MMC compete?

But this time they cannot so easily shrug off the SecureMMC 2.0, due out next year. It is generating too much interest from operators and such big handset makers as Nokia.

Even Telecom Italia Mobile, the most aggressive user of SIMs

worldwide, has joined the MMC Association. And SIM vendors might find it hard to claim superiority in security because the biggest makers of smart card chips, such as Infineon Technologies, Renesas and Samsung Electronics, also make MMCs.

The three advantages MMCs hold over SIMs are: much higher memory capacity (up to 1 gigabyte);

super-fast communication speeds (soon a theoretical 52 megabits per second); and removability.

The largest SIM is a 1MB flash-based card not yet issued. As for download speeds, the fastest the SIM card can currently manage is around 200 kilobits per second—on a good day. And while the SIM card is technically removable, too, if a subscriber takes it out of his phone, he loses the network connection.

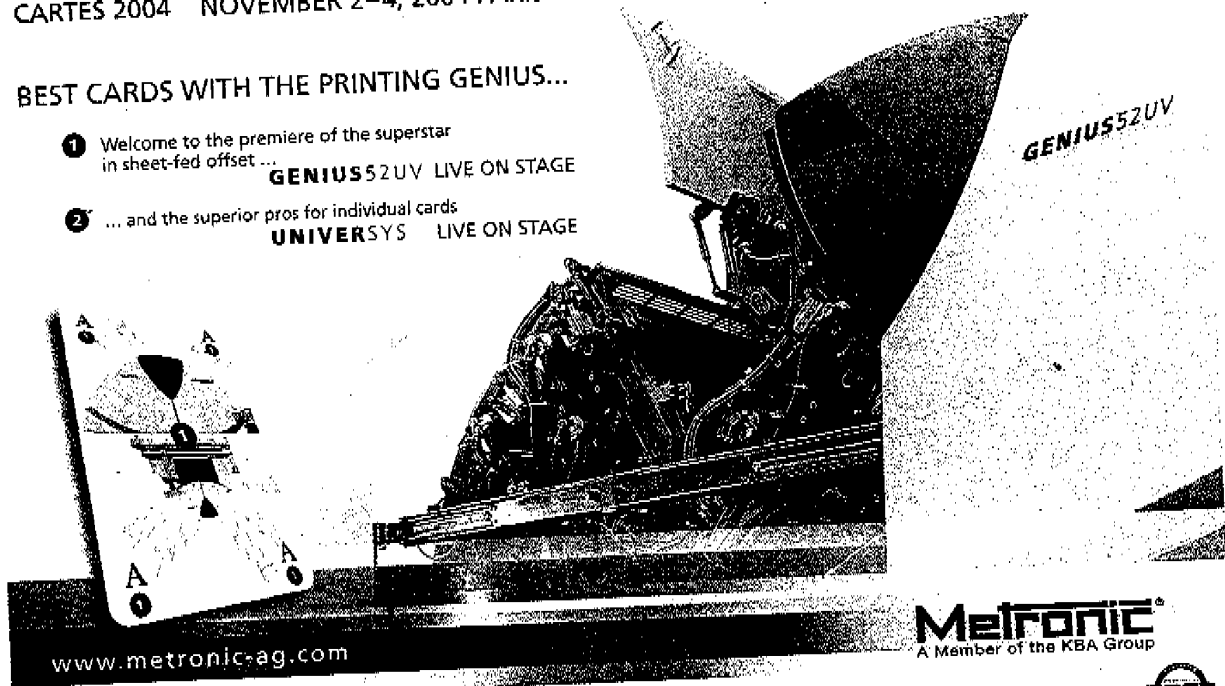
**Cards On The Move**

MMCs, like other removable flash cards, are designed to be taken out and inserted into many IT devices, such as music or video players, notes Yves Leonard, chairman of the MMC

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## SIM SPOTLIGHT

## EUROSMART REVISES ITS SIM FORECAST

**E**urosmart, the trade association of major European smart card vendors, isn't entirely guilty of underestimating its shipment figures. But that's exactly what the trade group now says it's done, and by a long shot.

It recently revised upward its worldwide projection of SIM card shipments for 2004 by nearly 25% to 800 million units. For its prior projection of 710 million units, made early this year, the group had relied on a gloomy forecast of global handset sales from Nokia and expectations of a slowdown in the torrid Chinese SIM card market.

In fact, handset sales have rebounded nicely and Chinese mobile subscribers continue to "churn like crazy." That plus growth in such GSM hotspots as India, Latin America and Eastern Europe mean SIM shipments will jump by 5% this year, says Eurosmart. That includes estimates Eurosmart makes for shipments by Chinese SIM card suppliers and other vendors not part of the group. It brings the forecast of total microprocessor card shipments for 2004 to more than 1.2 billion, up 25% from 2003.

Association and a senior marketing manager in Samsung's semiconductor unit. That fits with the Open Mobile Alliance's concept of digital rights management—enabling the authorized downloading of different types of multimedia content on various devices. That's why you won't find the SIM's core network authentication function moved to the MMC. It would wipe out the removability benefit of the flash card.

Some people, including the SIM card managers at TIM, have suggested the SIM could handle digital rights management, while the content itself could be speedily downloaded to the spacious flash card.

There are problems with this scenario, Leonard contends. Among them: A secure link would have to be established between the SIM and MMC, which would take time to implement, especially if it were first standardized.

Still, such SIM-savvy operators as TIM, Orange UK and Telefónica Móviles, are said to be

leaning toward giving the SIM an important role in digital rights management. TIM has also advanced the idea of storing some multimedia content on the SIM itself, and by the end of this year is expected to finally issue its much-anticipated 1MB SIM card, by far the largest on the market.

SIM cards have one advantage that suppliers believe trumps those of MMC. Three-quarters of all handsets used in wireless networks come equipped with SIM card slots. By comparison, the MMC Association says no more than one in six handsets shipped this year will sport a slot for any type of removable flash card. Of these, 45% will take an MMC, Gartner says. Moreover, standards makers have moved to make SIM cards more welcoming to multimedia content.

**SIM Vendors To Ship MMCs?**

But until SIM card makers substantially increase download speeds and memory capacity, operators may look to the MMC and competing brands

to store icons and other elements of their "portals," as well as promotional material, including videos. The operators would issue the flash card to the subscriber when they sign up for network service—at the same time they issue the SIM.

France-based smart card vendor Gemplus International is said to be planning to ship MMCs to one or more of its GSM customers. A source says Gemplus, the first smart card vendor to join the MMC Association, believes this could be a good fit because it has much stronger contacts with operators than makers of MMCs. At the same time, Gemplus, Germany's Giesecke & Devrient and other smart card suppliers are developing software for the secure area of flash cards. "There are many potential businesses, but it is still in the very early stages," says Marc Chancerel, head of Gemplus' Business Innovation Group.

**Division Of Labor**

Most likely, SecureMMCs would manage digital rights for heavy multimedia content, such as music, movies and memory-intensive games, because the card offers a place to store the content, he says. SIM cards would be used for controlling rights to download smaller, less expensive, content distributed by operators, such as simpler games. The card could also store keys that decrypt streaming broadcast video of, for example, football highlights, which the subscriber wouldn't store.

So, in the end, makers of smart cards and removable flash cards may not compete at all. But until subscribers start downloading more multimedia content to their handsets, the digital rights market is still anybody's game to win. **CT**

## 1. General description

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### 1.1 Family description

Philips Semiconductors SmartMX (Memory eXtension) multiple interface option platform features a significantly enhanced smart card IC architecture. New powerful opcodes are available beyond the compatible classic 80C51 instruction set. The SmartMX family manufactured in most advanced CMOS 0.18  $\mu\text{m}$  5 metal layer technology is positioned to service high volume, mono- and multi-application markets such as eGovernment (e.g. Smart Passport), banking/finance, mobile communications, public transportation, pay TV, conditional access and network access.

SmartMX enables the easy implementation of state-of-the-art operating systems and open platform solutions including Java Card Global Platform and MULTOS by offering optimized features like linear addressing and an enhanced instruction set together with the highest levels of security. Within its targeted segments, the new platform is the most advanced solution available, combining exceptionally powerful co-processors for public and secret key encryption supporting RSA, ECC, DES and AES, with the high security, ultra low power, performance optimized design concept of Philips Semiconductors' handshaking technology. For further details on general SmartMX platform features please refer to the "SmartMX platform features" short form specification.

### 1.2 Description P5CT072 device

- ◆ 72 Kbytes EEPROM
- ◆ 160 Kbytes User ROM
- ◆ 4608 bytes RAM
- ◆ PKI (Public Key Infrastructure) co-processor (RSA, ECC)
- ◆ Dual / Triple key DES-3 co-processor
- ◆ AES co-processor
- ◆ ISO/IEC 7816 contact interface
- ◆ ISO/IEC 14443A contactless interface
- ◆ USB 2.0 Low Speed contact Interface
- ◆ EEPROM data retention time: 20 years minimum

The P5CT072 is a Secure PKI Smart Card Controller of the SmartMX platform featuring 160 Kbytes of ROM, 4608 bytes of RAM and 72 Kbytes of EEPROM, which can be used as data memory and as program memory. Additionally a USB 2.0 (Low Speed) interface is available thus the device is called a "Secure Triple Interface Smart Card Controller". The non-volatile memory consists of high reliability memory cells to guarantee data integrity, which is especially important when the EEPROM is used as program memory.

# PHILIPS

Operated both in contact mode (ISO/IEC 7816) and in contactless mode (ISO/IEC 14443) the user defines the final function of the chip with his chip operating system (COS). This allows the same level of security, functionality and flexibility for the contact interface as well as for the contactless interface.

The field proven RF interface technology (according ISO/IEC 14443-2) is well established in all products of the MIFARE® interface platform and provides reliable communication and secure processing, even in electro-magnetically harsh environments like in buses or train stations. Compatibility with existing MIFARE® reader infrastructure and the optional free of charge emulation modes of MIFARE® 1K and MIFARE® 4K enable fast system integration and backward compatibility of standard MIFARE® and ProX family based cards.

Bi-directional communication with the contact interface of the device can be performed through three serial IOs. These IOs are under full control of the application software in order to allow conditional controlled access to the different internal memories.

The On-chip hardware is software controlled via Special Function Registers (SFRs). Their function and usage is described in the respective sections of this specification as the SFRs are correlated to the activities of the CPU, Interrupt, IO, EEPROM, Timers, etc.

The P5CT072 provides two power saving modes with reduced activity: the IDLE and the SLEEP or CLOCKSTOP Mode. These two modes are activated by software.

The device operates either with a single 1.8V, 3 V or 5 V power supply at a maximum external clock frequency of 10 MHz supplied by the contact pads (internally up to 30 MHz) or with a power supply generated from the RF-field emitted by an RF-reader.

### 1.2.1 The Contact Interface

Operating in accordance with ISO/IEC 7816, the SmartMX contact interface is supported by a built in UART, which enables data rates of up to 1Mbit/s allowing for the automatic generation of all typical baud rates and supports transmission protocols T=0 and T=1.

### 1.2.2 The USB 2.0 (Low Speed) Interface

SmartMX is the first product platform of its kind to provide a fully integrated USB interface based on the USB 2.0 (Low Speed) standard SmartMX making SmartMX based IC cards "Plug and Play" compatible with the whole PC world without the use of complex reader devices or extra external components. The USB interface uses the ISO contact module and works via a 4-wire connection to any PC supporting "hot Plug and Play". The card automatically recognizes an ISO or USB environment and is able to work with external frequency of up to 6 MHz or internal clock generation. The use of USB interfaces on smart cards is currently in the process of becoming standardized within ISO/IEC 7816-12.

### 1.2.3 Different Configurations of the P5CT072

Depending on the application requirements the P5CT072 can be configured according to options described in the data sheet chapter "ORDER ENTRY FORM".

There are three different configurations (A, B1 and B4) possible as shown in Table 111. The MIFARE® option configuration has impact on the access conditions for the EEPROM and influences the User OS development.

Note that the contactless interface can be used in any of the following configurations to communicate via any protocol (T=CL as specified in ISO/IEC 14443-4 or a self defined protocol), also concurrently to the MIFARE® protocol available in configuration B1 and B4.

#### 1.2.3.1 Configuration A

In configuration **A** all memory resources are available and under full control of the dual interface User OS. No MIFARE® functionality is available.

#### 1.2.3.2 Configuration B1

In configuration **B1** the contactless MIFARE® Classic OS provided by Philips is implemented on the P5CT072. 1 Kbyte of the EEPROM can be accessed by the MIFARE® Classic OS offering the same command set and functionality as a MIFARE® 1K hardwired logic chip. The access conditions for the user OS to the MIFARE® memory area can be configured via the so called ACM (Access condition matrix). The MIFARE® Classic OS offers a backward compatibility to support existing infrastructure based on the MIFARE® Classic functionality.

#### 1.2.3.3 Configuration B4

In configuration **B4** the MIFARE® Classic OS provided by Philips Semiconductors offers the same functionality and command set as the MIFARE® 4K hardwired chip. This emulation offers the possibility to access 4 Kbytes of EEPROM memory using the MIFARE® command set. Access rights for the user OS and the MIFARE® 4K emulation on accessing the EEPROM memory can be configured via the so called ACM (Access Condition Matrix).

For secure separation of the user OS and the MIFARE® OS a dedicated built in hardware protection controls the access to the EEPROM, RAM and ROM.

For detailed explanation of MIFARE® 1K and MIFARE® 4K functionality please refer also to the following documents:

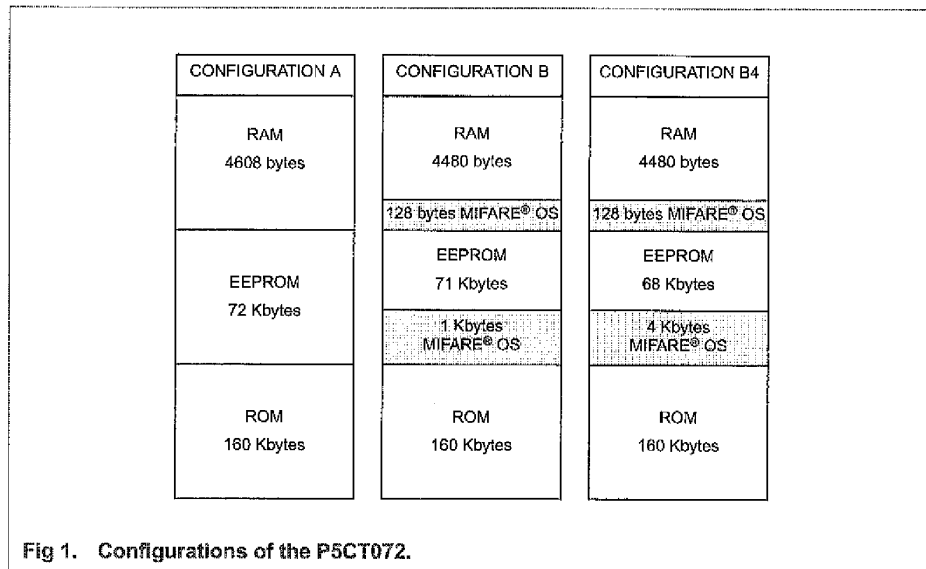
- MIFARE® MF CM500 Product Specification
- MIFARE® Standard IC MF1 ICS50 Functional Specification
- MIFARE® Standard 4 Kbytes Card IC MF1 ICS70



Table 1: Configurations of the P5CT072

Configuration	EEPROM
A	72 Kbytes for access with user OS
B1	71 Kbytes for access with user OS via EEPROM SFR 1 Kbyte for access with MIFARE® Classic OS and user OS [1]
B4	68 Kbytes for access with user OS via EEPROM SFR 4 Kbytes for access with MMIFARE® Classic OS and user OS [1]

[1] In configuration B1 and B4 the MIFARE® OS allocates 128 bytes of the RAM.



## 2. Features

### 2.1 Product Specific Features

- **72 Kbytes** EEPROM (including 192 bytes reserved manufacturer/security area)
- **160 Kbytes** User ROM
- **4608 bytes** RAM
  - ◆ 256 bytes IRAM + 3 Kbytes CXRAM
  - ◆ 1280 bytes FXRAM usable for FameXE
- **Memory Management and Protection Unit**
  - ◆ for more details see 2.2. Security Features
- **USB 2.0 (Low Speed)** contact interface acc. ISO/IEC7816-12
- **Contactless Interface Unit (CIU)** fully compatible with ISO/IEC14443A
  - ◆ fully supports the T=CL protocol acc. ISO/IEC14443-4
  - ◆ Data Transfer rates supported (106/212/424 kbit/s)
- **MIFARE® RF contactless interface** acc. ISO/IEC14443-2
  - ◆ 13.56 MHz operating frequency
  - ◆ Reliable communication due to 100% ASK
  - ◆ High speed (106/212/424 kbit/s, efficient frame support)
  - ◆ True anticollision
  - ◆ High speed CRC co-processor according to CCITT
- **MIFARE® reader infrastructure compatibility**
- **High speed DES-3 co-processor** (64 bit parallel processing DES engine)
- **High speed AES co-processor** (128 bit parallel processing AES engine)
- **PKI Co-processor** FameXE
  - ◆ The major Public Key Cryptosystems like RSA, El'Gamal, DSS, Diffie-Hellmann, Guillou-Quisquater, Fiat-Shamir and Elliptic Curve are supported
  - ◆ 4096 bits maximum key length for RSA with randomly chosen modulus
  - ◆ 32-bit interface
  - ◆ Boolean operations for acceleration of standard, symmetric cipher algorithms
  - ◆ Performance example: RSA Modular Exponentiation (Straight forward) < 35 ms (2048 bit key length and 17 bit exponent)
- **Optional free of charge MIFARE®1K and MIFARE® 4K functionality**
- **2 additional IO ports IO2 and IO3 for full-duplex serial data communication**

## 2.2 Security Features

- **Enhanced Security Sensors**
  - ◆ Low / high clock frequency sensor
  - ◆ Low / high temperature sensor
  - ◆ Single Fault Injection (SFI) attack detection
  - ◆ Light sensors
- **Electronic fuses** for safeguarded mode control
- **Unique ID** for each die
- **Clock Input Filter** for protection against spikes
- **Power-up / Power-down reset**
- **Optional programmable "Card Disable" feature**
- **Memory Security** (encryption and physical measures) for RAM, EEPROM and ROM
- **Memory Management and Protection Unit (MMU)**
  - ◆ Secure multi application operating systems via two different operation modes
    - System Mode and Application Mode
  - ◆ OS controlled access restriction mechanism to peripherals in Application Mode
  - ◆ Memory mapping up to 8 Mbytes Code memory
  - ◆ Memory mapping up to 8 Mbytes (-64K) Data memory
- **Optional disabling of ROM read instructions by code executed in EEPROM**
- **Optional disabling of any code execution out of RAM**
- **EEPROM programming:**
  - ◆ No external clock
  - ◆ Hardware sequencer controlled
  - ◆ On-chip high voltage generation
  - ◆ Enhanced error correction mechanism
- **64 or 128 EEPROM bytes for customer-defined Security FabKey.** Featuring batch-, wafer- or die-individual security data, incl. encrypted diversification features on request
- **14 bytes User Write Protected Security area in EEPROM** (byte access, inhibit functionality per byte)
- **32 bytes Write Once Security area in EEPROM** (bit access)
- **32 bytes User Read Only area in EEPROM** (byte access)
- **Customer specific EEPROM initialization optional**

## 2.3 Family Standard Features

- Dedicated Secure\_MX51 Smart Card CPU (Memory eXtended / enhanced 80C51)
  - ◆ 0.18  $\mu$ m 5 metal layer CMOS technology
  - ◆ operating in contact and contactless mode (dependent on family type option)
  - ◆ featuring a 24 bit universal memory space, 24 bit program counter
  - ◆ combined universal program/data linear address range up to 16 Mbyte
  - ◆ additional instructions to improve
    - pointer operations
    - performance
    - code density of both C and Java source code
- Low power / low voltage design using Philips handshaking technology
- Development and portation support of existing P8WE / P8RF family masks
- Multiple source vectorized interrupt system with four priority levels
- Watch exception provides for software debugging facility
- Multiple source RESET system
- Two 16-bit timers
- High reliable EEPROM for both data storage and program execution
  - ◆ Byte-wise EEPROM programming and read access
  - ◆ EEPROM endurance: up to 500 k programming cycles per byte
  - ◆ EEPROM data retention time: 20 years minimum
- Versatile EEPROM programming of 1 to 64 byte at a time
- Typical EEPROM page erasing time: 2.5 ms
- Typical EEPROM page programming time: 1.5 ms
- Power-saving IDLE Mode
  - ◆ Wake-up from IDLE Mode by RESET or any activated interrupt
- Power-saving SLEEP (power down) Mode or CLOCKSTOP Mode
  - ◆ Wake-up from SLEEP or CLOCKSTOP Mode by RESET or External Interrupt
- Contact configuration and serial interface according to ISO/IEC 7816: GND, VCC, CLK, RST, IO1
- ISO/IEC 7816 UART supporting standard protocols T=0 and T=1 as well as high speed personalization at 1Mbit/s
- External or internally generated configurable CPU clock
- 1 MHz to 10 MHz operating external clock frequency range
- Internal CPU clock up to 30 MHz with synchronous operation
  - ◆ Internal clocking independent of externally applied frequency
- High speed Triple-DES co-processor (two or three keys loadable)
- DES3 performance < 50  $\mu$ s
- High speed 16 bit CRC Engine according to CCITT polynom definition
- Low power Random Number Generator (RNG) in hardware, FIPS140-2 compliant
- 1.62V to 5.5V extended operating voltage range for class C, B and A
- -25 to +85°C operating ambient temperature range

## 2.4 Design-in Support

### ■ Approved Development Tool Chain

- ◆ Keil PK51 development tool package incl. Vision2/dScopeC51 simulator, additional specific hardware drivers incl. simulation of contactless interface and ISO/IEC 7816 card interface board. A "SmartMX DBox" allows software debugging and integration tests. ([www.keil.com](http://www.keil.com))
- ◆ Ashling Ultra-Emulator platform, stand alone ROM prototyping boards and ISO/IEC 7816 and ISO/IEC14443 card interface board. Code coverage and performance measurement software tools for real time software testing. ([www.ashling.com](http://www.ashling.com))
- ◆ Dual Interface dummy modules OM6711 (PDM 1.1 - SOT658) with special antenna bonding on C4 and C8 for testing the implanting process and antenna connection.

### ■ Software Libraries

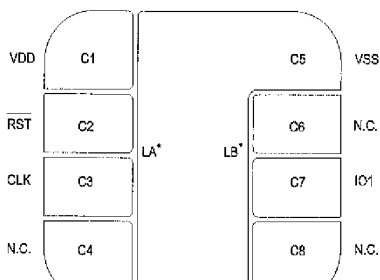
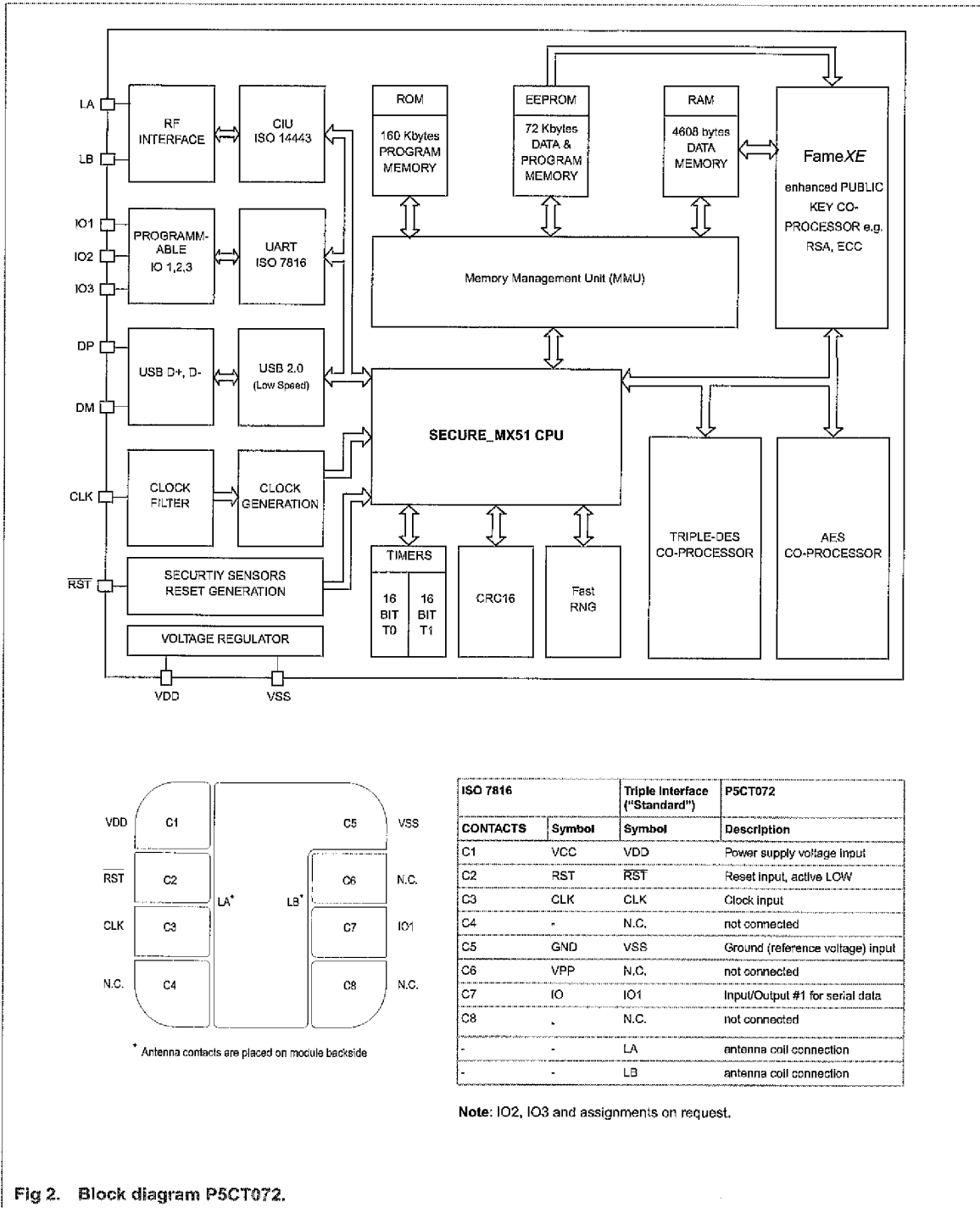
- ◆ Libraries supporting contactless communication according to ISO/IEC 14443, Part 3 and 4
- ◆ USB 2.0 (Low Speed) Basic Library Support
- ◆ EEPROM Read / Write routines

## 3. Ordering information

Table 2: Ordering information

Type number	Package		Version
	Name	Description	
P5CT072EW1/Tvsrrffo	FFC	sawn wafer 150 $\mu$ on film frame carrier	-
P5CT072EV0/Tvsrrffo	Module	Dual Interface Modules on super 35 mm format (8-contact)	SOT658 BA3
P5CT072EV1/Tvsrrffo	Module	Dual Interface Modules on super 35 mm format (8-contact) with Antenna connected to C4/C8	SOT658 BA3
P5CT072EV3/Tvsrrffo	Module	pure contactless module MOB2 on super 35 mm format	SOT500 AA3

4. Block diagram



\* Antenna contacts are placed on module backside

ISO 7816	Triple Interface ("Standard")		P5CT072
CONTACTS	Symbol	Symbol	Description
C1	VCC	VDD	Power supply voltage Input
C2	RST	RST	Reset Input, active LOW
C3	CLK	CLK	Clock Input
C4	-	N.C.	not connected
C5	GND	VSS	Ground (reference voltage) Input
C6	VPP	N.C.	not connected
C7	IO	IO1	Input/Output #1 for serial data
C8	-	N.C.	not connected
-	-	LA	antenna coil connection
-	-	LB	antenna coil connection

Note: IO2, IO3 and assignments on request.

## 5. Limiting values

**Table 3: Absolute maximum ratings** [1]  
In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
$V_{DD}$	Supply voltage		-0.5	+6.0	V
$V_I$	Input voltage on any signal pad		-0.5	$V_{DD} + 0.5$	V
$I_i, I_o$	DC input or output current on IO1, IO2 or IO3 pad		-	$\pm 15.0$	mA
$I_{latchup}$	Latch up current	$V_I < 0$ or $V_I > V_{DD}$	-	100	mA
$V_{ESD}$	Electrostatic discharge voltage [2]				
	on pads VDD, VSS, CLK, RST, IO1, IO2, IO3, DP, DM		-	$\pm 4.0$	kV
	on all other pads		-	$\pm 2.0$	kV
$P_{tot}$	Total power dissipation per package [3]		-	1	W
$T_{stg}$	Storage temperature range		Table note [4] Table note [4]		

[1] Stresses beyond those listed may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

[2] MIL Standard 883-D method 3015; Human body model; C = 100 pF, R = 1.5 k $\Omega$ ;  $T_{amb}$  = -25 to +85 °C.

[3] Depending on appropriate thermal resistance of the package.

[4] Depending on delivery type, refer to "Philips General Specification for 8" Wafers" and to "Philips Contact & Dual Interface Chip Card Module Specification".

**Table 4: Recommended operating conditions**

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
$V_{DD}$ (5.0)	Supply voltage	5 V operation	4.5	5.0	5.5	V
$V_{DD}$ (3.0)		3 V operation	2.7	3.0	3.3	V
$V_{DD}$ (1.8)		1.8 V operation	1.62	1.8	1.98	V
$V_I$	DC input voltage on digital inputs and digital IO pads		0		$V_{DD}$	V
$V_{I(ai/o)}$	DC input voltage on analog USB IO pads (DP/DM)		0		3.6	V
$T_{amb}$	Operating ambient temperature [1]		-25		+85	°C

[1] Operation ambient temperature when using the Universal Serial Bus interface with internally generated USB clock:  $T_{amb}$  = 0 to +50 °C.

## 6. Data sheet status

Level	Data sheet status [1]	Product status [2],[3]	Definition
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
III	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

[1] Please consult the most recently issued data sheet before initiating or completing a design.

[2] The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL: <http://www.semiconductors.philips.com>.

[3] For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

## 7. Definitions

**Short-form specification** — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

**Application information** — Applications that are described herein for any of these products are for illustrative purposes only. Philips Semiconductors make no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

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For sales office addresses, send an email to: [sales.addresses@www.semiconductors.philips.com](mailto:sales.addresses@www.semiconductors.philips.com)



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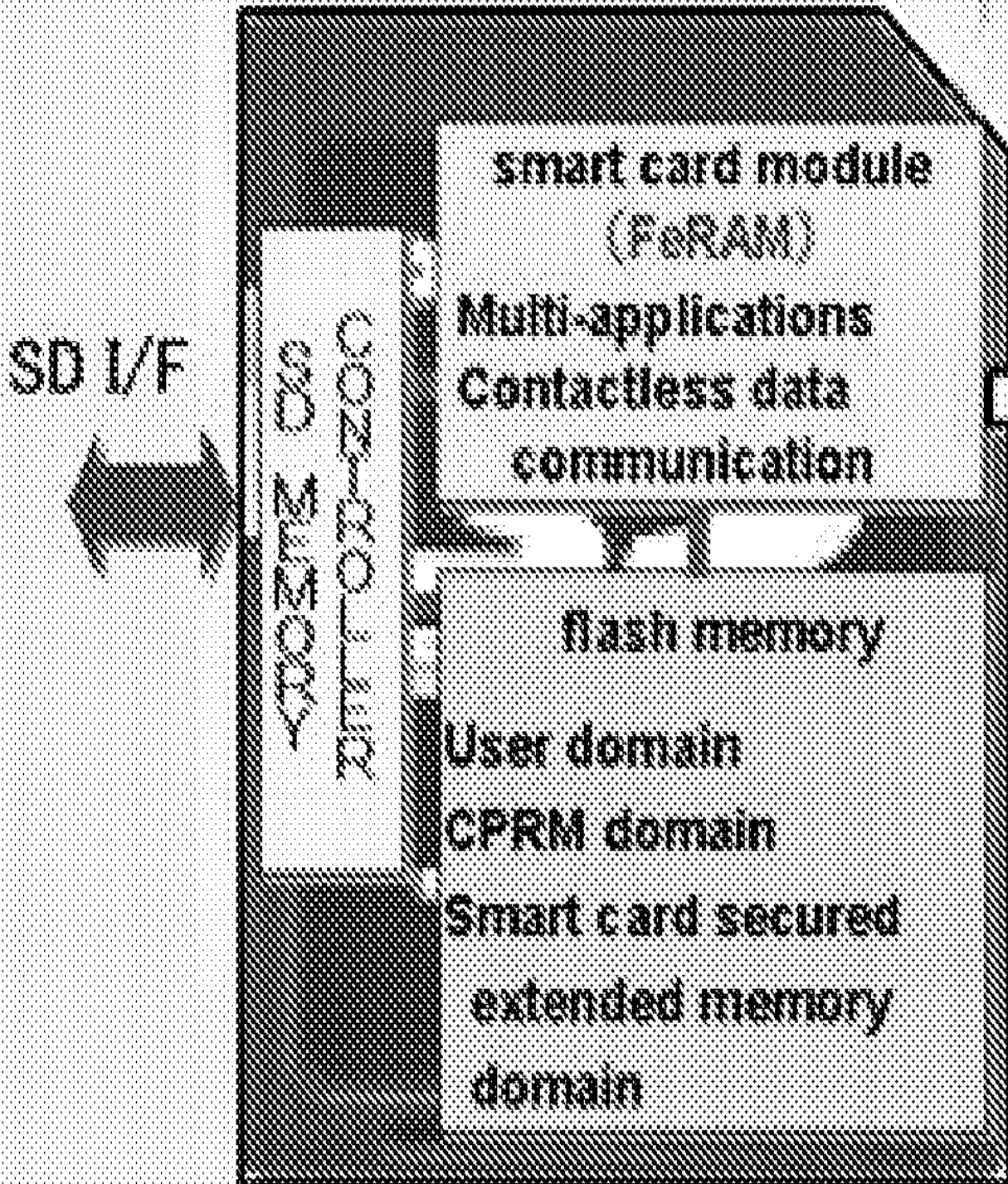
Date of release: 4 October 2004

Document order number: 9397 750 XXXXX

Published in The Netherlands

# smartSD Card Structure

## Contactless Data Communication I/F





## DS1490F 2-in-1 Fob\*

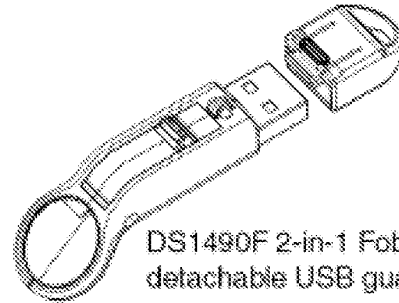
www.dalsemi.com

### FEATURES

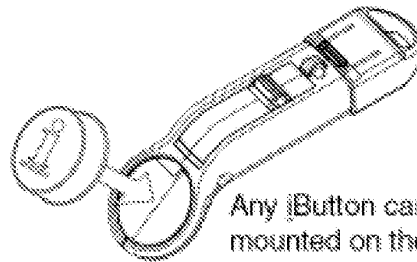
- 1-Wire<sup>®</sup> to USB port adapter for direct connection to notebook and desktop computers
- Any iButton<sup>™</sup> mounts in the ergonomically angled handle for touch-and-go applications such as door entry
- Fast, convenient computer log on with data rates up to 142k bits/second from the 1-Wire signal
- USB guard protects the USB A connector during everyday use conditions.
- 1.5M byte speed, low power, USB 1.2 compliant for plug and play operation
- LED shines through translucent case to indicate status
- Both the 2-in-1 Fob and its resident iButton are powered entirely from an USB interface
- Fob sources up to 10 ma for powering 1-Wire chips that require strong pull up such as the Java<sup>™</sup>-powered or ThermoChron iButton
- Low Profile Blue Dot extends 1-Wire signaling to other 1-Wire devices

### \*NOTE:

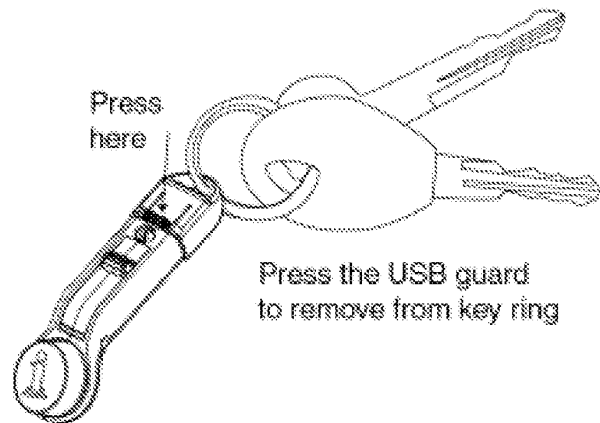
The DS1490F 2-in-1 Fob is sold without the iButton to give choice of the desired iButton.



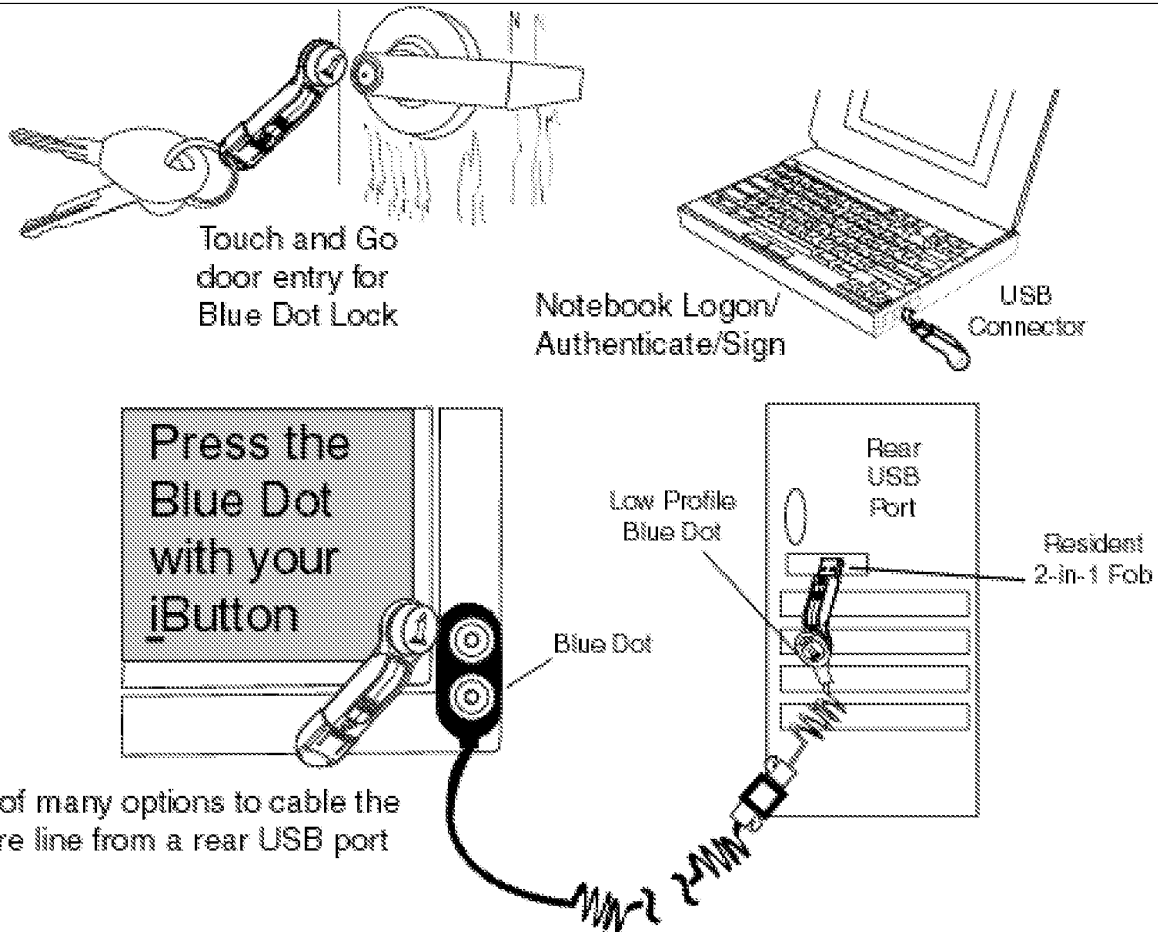
DS1490F 2-in-1 Fob with detachable USB guard



Any iButton can be mounted on the fob



Press the USB guard to remove from key ring



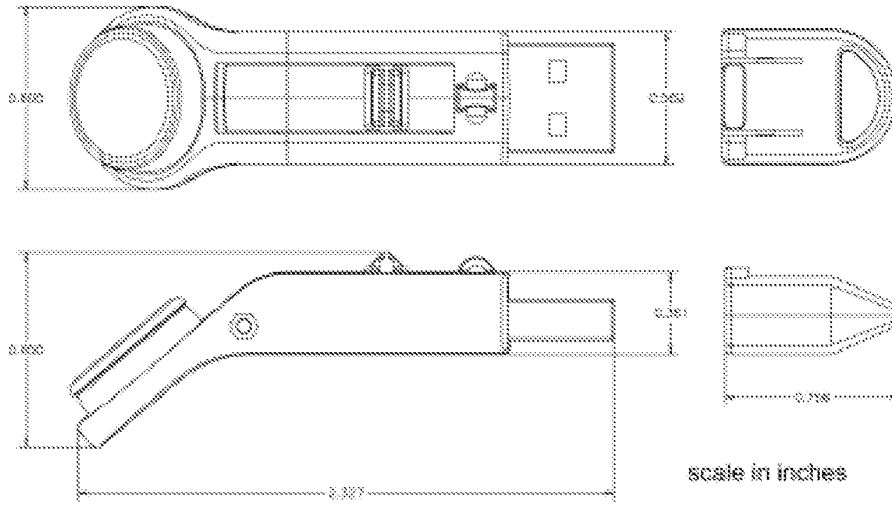
## DESCRIPTION

The 2-in-1 Fob has a DS2490 chip in its handle to convert 1-Wire signaling to USB communication. In this way an iButton, 1-Wire chip, or 1-Wire instrument can have a 2-way communication link with its USB host. Any iButton from the lowest cost to the most sophisticated can be mounted in the angled end of the fob. A Java-powered iButton in combination with the 2-in-1 Fob provides the equivalent of a Java smart card with a built in reader. Everything fits in the handle, so there is no cable for the notebook connectivity. The USB guard protects the connector from debris and mechanical stresses while attached to a key ring. Pressing the eject latch releases the guard of the 2-in-1 Fob for USB connection.

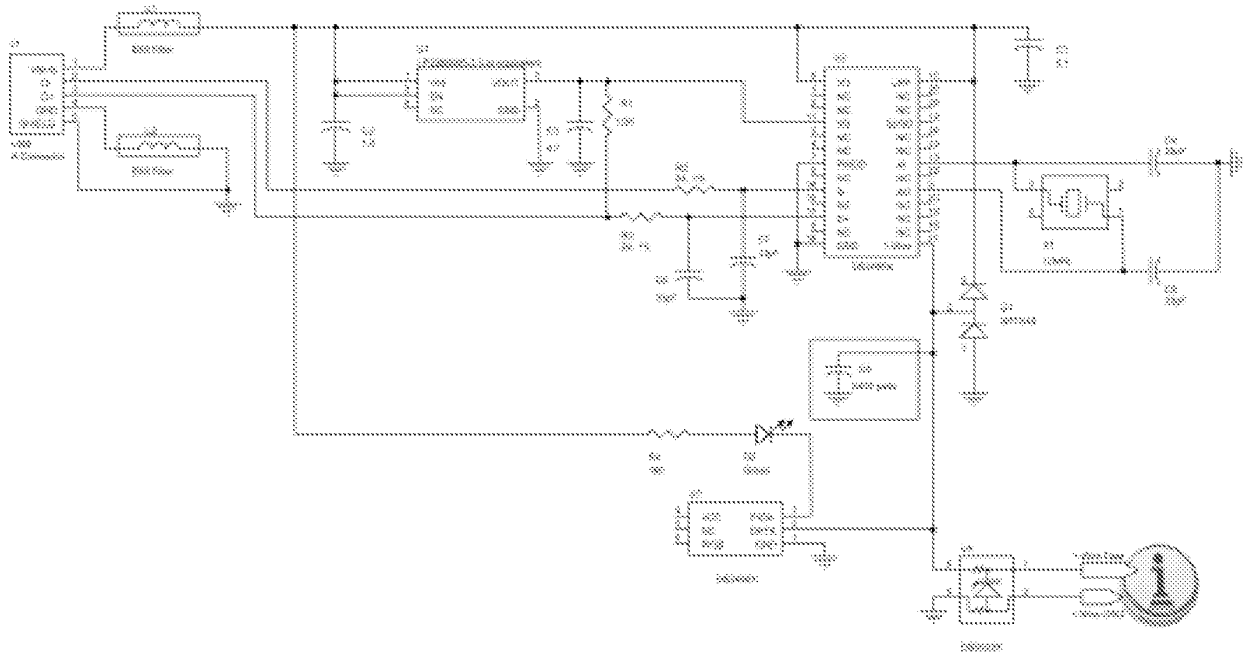
Together with the appropriate USB device driver, a notebook or desktop computer can read/write the attached iButton with no cables or other power connections. You can press the Blue Dot with your iButton for touch-and-go door entry.

By snapping on the Low Profile Blue Dot (DS1402L) to the iButton on the 2-in-1 Fob, the range of the 1-Wire signal can be extended to another Blue Dot receptor or other 1-Wire devices.

**Dimensions**



**Schematic**



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Posted on Fri, Oct. 01, 2004

## Japan's Matsushita developing memory cards with 'smart' chip function

**TOKYO (AP)** - Smart cards are on the rise in Japan, using computer chips with an antenna embedded in them to allow people to pay for purchases or unlock doors with a simple flick of their cards.

Now, Matsushita Electric Industrial Co., the Japanese electronics company that makes Panasonic-brand products, is adding that smart-card capability to SD Memory Cards.

The Osaka-based manufacturer said Friday that sample shipments will begin in December, while commercial shipments will follow by fall next year.

Smart cards work by having an integrated-circuit, or IC, chip inside connect wirelessly with a special reader-machine to make cashless payments, open locks and read identification.

Many Japanese already flash their smart cards at station gates to get on commuter trains. New cell-phone models here also work the same way, enabling people to buy soda at vending machines, pay restaurant bills and play games at a Tokyo arcade.

But the technology now used for smart cards, FeliCa from Matsushita's rival Sony Corp., has a smaller memory capacity of 32 kilobytes. Matsushita's new smartSD Card connects to a separate 128-megabyte memory within the same chip.

That expands the card's possible uses to include downloads of movies or music and secure storage of documents. And the need for data capacity is bound to climb as smart cards grow more popular, said Matsushita director Masaki Akiyama.

Sony, which is pushing its Memory Stick for data storage, says it hasn't offered an IC chip with more memory because common uses today don't require it.

SmartSD won't be compatible with Sony's FeliCa, which is widespread in Japanese ``wallet phones'' and train passes, although it's possible that future devices may come equipped with both types of chips.

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The smartSD Card looks like the regular one but will cost a bit extra although Matsushita didn't give a price. Matsushita officials said talks are under way to set up various applications but didn't give details.

But they said the potential is great, given that SD Memory Cards control 36 percent of the global market.

Smart card use in Japan is expected to surge to 340 million in 2010 from some 51 million last year, and Matsushita is hoping to get about 20 percent of that with smartSD.

In a presentation at a Tokyo hall Friday, Matsushita showed how a soccer-game ticket could be downloaded in a memory card on a personal computer.

Insert the card in your cell phone, and simply bring it next to a machine at the stadium gate to get in instantly. The memory function will even allow you to watch a movie on your phone display about the game.

The disadvantage is that the card -- about the size of a nail -- is just one more thing packed with personal information you can't afford to lose. But the data is coded so the card can't be read by anyone who happens to pick it up, according to Matsushita.

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# Panasonic Develops RFID smartSD Card

Posted By: [Ryan](#) on Monday, October 04, 2004 11:21:17 AM

Matsushita Electric Industrial Co, best known under the Panasonic brand, has developed a SD Memory Card with contactless smart card capabilities. Called smartSD Card, the new SD Memory Card combines contact-less data communication capabilities with large storage capacity and high security.

The company will position the smartSD Card as key to realizing the "ubiquitous network society" and will strive to create new business opportunities not only in the device sector but also in the system and solution service sectors. Sample shipments of the smartSD Cards will commence in December 2004. Commercial shipments are expected to follow in the fall of 2005.

Smart cards are rapidly expanding into many new markets including finance, transportation, distribution, industry and government administrations and have been introduced in a wide variety of applications such as transport ticket payments, access control, electronic money and credit cards. In 2003, some 51 million smart cards were issued in Japan and the number is expected to rise to 340 million by 2010.\* Meanwhile, since the introduction of the SD Memory Card in July 2000, 220 makers have announced over 2,600 SD Memory Card-compatible products and approximately 41 million SD Memory Cards were sold in 2003, attaining number one global market share in the memory card industry.



As smart cards become more convenient, the need for greater data capacity and high security has increased. The smartSD Card combines the advanced copyright protection, portability, and easy connectivity of the SD Memory Card with the convenience of a contactless smart card, allowing the card to send/receive large amounts of data at high speed and with high security, thereby supporting a variety of new applications.

The smart card in the smartSD Card uses non-volatile FeRAM (ferroelectric RAM), which enables high-speed data writing, five times faster than conventional EEPROM-based smart cards. The large-capacity flash memory in the smartSD Card can be used as an extra storage area for the smart card module and the stored data is protected by cipher technology. The secured extended memory also transfers data at the rate of about 600 Kbytes per second.

Offering large secure storage, authentication and contactless data communication capabilities, the new type of SD Memory Card can be used for a wider variety of smart-card applications. Mr. Masaki Akiyama, President, [Panasonic System Solutions](#) Company, said, "Our hope is to create new businesses deriving from the special features of the smartSD Card. These include corporate solutions dealing with information leakage prevention, mobile service solutions dealing with content distribution and home service businesses dealing with content distribution for home AV equipment. We will continue to offer new secure services in the broadening SD world to make our daily lives more convenient and safe."

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**I dont get it**

**JKingGrim** @ 10/4/2004 4:30:44 PM

Whats special about the card? How does it work differently? Does it have no metal pins on the end?

**RE: I dont get it**

**Hal2000** @ 10/4/2004 9:32:18 PM

contactless?  
  
Zodiac2/T616  
1.128 gigs under the hood.

**RE: I dont get it**

**mad212** @ 10/4/2004 10:28:26 PM

you walk into walmart, their rfid scanners pick up your info, and try to sell you the latest specials on your palm/cell, lol. I am really against the main use of rfid, its just spells trouble. And walmart is seriously pushing the use of it. Basically, you could embed a rfid into a shirt, and when this shirt is purchased your info tied into it. Walking back into walmart with that shirt would allow there readers to pick this info up. Minority report anybody? Well the other use is not bad, lets say those "shirts" were runing low, the computer could auto purchase more shirts.

in the sd card, i assume it would be usefull for computer security, holding your key to the computer, plus your data. I wouldn't mind taking a 8gb sd card to work, use it to sign in, then access my work, and then have the convience to take it

- The\_Voice\_of\_Reason
- > [All hail Jim!](#) - GregGaub
- > [RE: What a screwy article](#) -Gekko
- > [RE: Voice commands](#) - Hal2000
- > [Voice commands](#) - tooele
- > [RE: What the heck?](#) - honus

home. Other than that, hmmm....

**RE: I dont get it**

**bigfoot** @ 10/5/2004 2:54:10 PM

Seems like a solution to no known problem.

Cheers,

When the chips are down, the buffalo is empty.

**RE: I dont get it**

**Token User** @ 10/5/2004 5:42:38 PM

RFID has uses - but is this an RFID reader with memory, or a contactless RFID based memory card ... its really not that clear.

~ "Don't be too proud of this technological terror you've constructed." - DV ~

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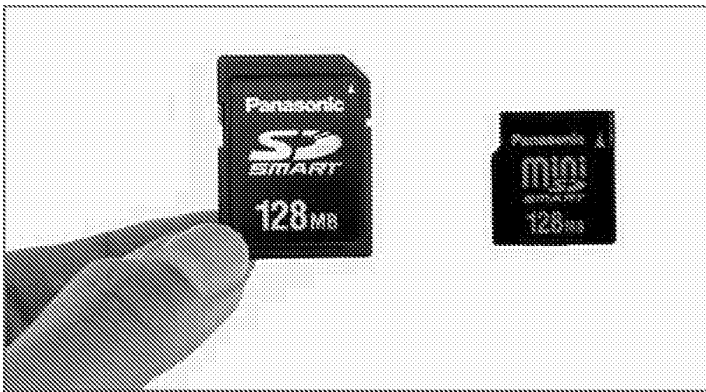
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### Panasonic's smartSD adds RFID to the mix

Posted Oct 4, 2004, 10:13 AM ET by Peter Rojas

Related entries: Peripherals



We're suckers for any kind of convergence, no matter how inane or banal, but we think Panasonic is actually on to something with smartSD, their new technology which combines those SD memory cards we all know and love with those RFID tags that tinfoil hat types loathe and fear. There are already a few cellphones with built-in RFID chips already out there (Nokia offers an [RFID kit for their 5140 handset](#)), but the big deal here is that with smartSD you could conceivably add RFID to almost anything with an SD or miniSD memory card slot like a cellphone, PDA, laptop, digital camera, personal video player, MP3 player, etc.

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1. Posted Oct 4, 2004, 10:29 AM ET by [TheZodiac](#)  
What a great idea!

Im assuming you need this slot to be SDIO compatible :) Maybe not?

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2. Posted Oct 4, 2004, 2:07 PM ET by MS Mobiles  
brilliant!

it's brilliant and the slot doesn't need to be SDIO compatible (you can just write ID to memory - like in non-SDIO SD-format cameras).

I am big fan of RFID but is this smartSD just a RFID label or a RFID reader? if it is reader it is great!!

3. Posted Oct 4, 2004, 9:08 PM ET by Craig  
Why would a consumer care??

Why would I want to add an RFID tag to a piece of portable electronics I already own? Is it like "Honey, where's my camera? What's that...just sweep the house with the handheld RFID scanner to see if it turns up? Hmm...OK." Not.

4. Posted Oct 22, 2004, 7:48 PM ET by David  
Lots of reasons

I'd love to be able to keep my RFID tags with my phone, so I don't have to carry around my wallet cards/keychain dongles to get in secure doors.

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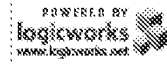
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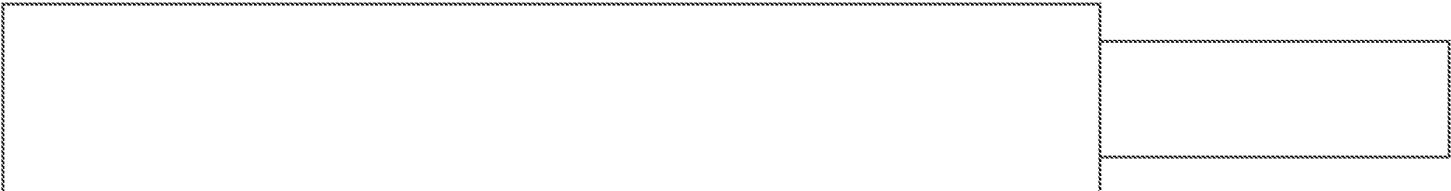
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## Vodafone KK Develops Contactless Smart Card Mobile Handset

Vodafone KK announced it has jointly developed a contactless interface prototype mobile handset with Sharp Corporation that is compatible with smart card embedded flash memory cards. This prototype's contactless communication is made possible by inserting a smartcard-embedded flash memory into the handset's memory card slot.

Features of mobile handsets that use contactless services include the download of 'electronic value' via mobile internet connections and being able to confirm smart card information on the handset display. Additional merits unique to the removable memory card system are as follows:

- Customers can use multiple smart card communication systems and services on one handset.

- Customers can continue to use contactless services when they upgrade to a new handset by simply inserting the memory card.

- Possible to use contactless services on other information terminals (PCs, PDAs, intelligent home electronics car navigation devices, etc.) allowing for the usage of new services.

The prototype handset's smart card-embedded flash memory card uses two types of specifications: JICSAP 2.0, which Vodafone KK expects to use in traffic applications and other business field, and ISO 14443 Type B, for expected use in finance and public administration and other business fields. By switching memory cards, customers will be able to use both types of specifications on one handset. Vodafone KK is working with Hitachi, Ltd. on the development of the card.

In the interest of developing services on a global level, Vodafone KK is moving ahead in studying mobile handset and smart card applications that are compatible with international standards. Vodafone KK plans to examine the possibilities of commercializing the service by engaging in discussions with industry groups, service providers and system vendors from multiple perspectives while conducting technological development and verification in parallel. Vodafone KK will work towards providing its customers with a service infrastructure environment that enables them to enjoy contactless services expected to further penetrate into the transportation, electronic ticket, identification, financial and public administration sectors.

Vodafone KK plans to display and demonstrate the prototype at the Business Show Tokyo 2004 trade fair held from May 11 at Tokyo Big Sight. ref mobilemag.com



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<b>Warnings:</b>					
<b>Information:</b>					
34	NPL Documents	NPL-15_Panasonic-Smart-SD-Card_jpg.pdf	41613	no	1
<b>Warnings:</b>					
<b>Information:</b>					
35	NPL Documents	NPL-3__Dallas-DS1490F.pdf	139760	no	3
<b>Warnings:</b>					
<b>Information:</b>					
36	NPL Documents	NPL-6__JP-Matsushita-Mercury-New.pdf	44980	no	2
<b>Warnings:</b>					
<b>Information:</b>					

37	NPL Documents	NPL-8__Panasonic-palm-info-cente.pdf	87632	no	3
<b>Warnings:</b>					
<b>Information:</b>					
38	NPL Documents	NPL-10__Rojas-Panasonic-smart-SD.pdf	104731	no	4
<b>Warnings:</b>					
<b>Information:</b>					
39	NPL Documents	NPL-14__Vodafone-Develops_htm.pdf	36700	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			26057725		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p>					

**PATENT APPLICATION FEE DETERMINATION RECORD**  
Effective December 8, 2004

10990296

**CLAIMS AS FILED - PART I**

	(Column 1)	(Column 2)
TOTAL CLAIMS	52	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	52 minus 20 =	32
INDEPENDENT CLAIMS	3 minus 3 =	
MULTIPLE DEPENDENT CLAIM PRESENT	<input type="checkbox"/>	

SMALL ENTITY TYPE

OR OTHER THAN SMALL ENTITY

RATE	FEE	OR	RATE	FEE
BASIC FEE	395	OR	BASIC FEE	790
X\$ 25=	800	OR	X\$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL	1195	OR	TOTAL	

\* If the difference in column 1 is less than zero, enter "0" in column 2

11/19/05 **CLAIMS AS AMENDED - PART II**

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	52	52	=
Independent	3	3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM	<input checked="" type="checkbox"/>		

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 25=		OR	X\$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	58	52	= 6
Independent	4	3	= 1
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM	<input type="checkbox"/>		

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 25=	150 <sup>00</sup>	OR	X\$50=	
X100=	100 <sup>00</sup>	OR	X200=	
+180=		OR	+360=	
TOTAL ADDIT. FEE	250 <sup>00</sup>	OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total			=
Independent			=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM	<input type="checkbox"/>		

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 25=		OR	X\$50=	
X100=		OR	X200=	
+180=		OR	+360=	



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/990,296	11/16/2004	Dennis J. Ryan	Ryan C-4	2050
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37053	7590	09/14/2006		
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D.A. STAUFFER PATENT SERVICES LLC  
1006 MONTFORD ROAD  
CLEVELAND HTS., OH 44121-2016

EXAMINER
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LE, UYEN CHAU N

ART UNIT	PAPER NUMBER
----------	--------------

2876

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



<b>Office Action Summary</b>	<b>Application No.</b> 10/990,296	<b>Applicant(s)</b> RYAN ET AL.	
	<b>Examiner</b> Uyen-Chau N. Le	<b>Art Unit</b> 2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 25 April 2006.
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-33,35-48 and 50-60 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-33,35-48 and 50-60 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some \*    c)  None of:
  - 1.  Certified copies of the priority documents have been received.
  - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 04/26/2006.
- 4)  Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5)  Notice of Informal Patent Application
- 6)  Other: \_\_\_\_\_.

**DETAILED ACTION**

***Requesting Continued Examination (RCE)***

1. Receipt is acknowledged of the Requesting Continued Examination (RCE) field 04/25/2006.

***Claim Objections***

2. Claims 2, 5, 21, 22, 26, 35, 37, 42, 43, 54-56 and 60 are objected to because of the following informalities:

Re claims 2, 5, 21, 22, 26, 35, 37, 42, 43, 54-56 and 60:  
The additional word "similar" recited in the claims understood as "the like", which renders the claims to indefinite.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United

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States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 8, 18-29, 31-33 and 35-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Jiau (US 2003/0236821 A1).

Re claims 1, 8, 18-29, 31-33 and 35-40: Jiau discloses a compact personal token apparatus 1, comprising: a connection module 1312 (paragraph [0044]); a translation module, which incorporated with a processor module 132; and an input/output module [139, 1341, 1342, 1343, 1344] (figs. 1 & 3A-3C); the translation module moves signals between a USB interface and a wireless interface (paragraphs [0050-0051]); an LCD screen 1341 and LEDs 1342 (fig. 3C); a standard-compliant contact based interface, the contact based interface complying to at least one standard interface selected from the group consisting of USB, IEEE 1394, PCMCIA, Compact Flash, Multi Media, Memory Stick, Smart Media, Secure Digital, mini SD, IBM Micro Drive, and any similar standard interface (paragraph [0044]); a standard-compliant contactless/wireless interface 1311; the contactless/wireless interface 1311 complying to one or more of the following standard interfaces: RFID-contactless interface according to WLAN 802.11 and Bluetooth compatible interface (paragraphs [0047] & [0050]); a flash memory 133 (fig. 3A); wherein: the dual interface chip (processor) inside the personal

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token can be directly programmed by a software running on the host system using the interface processor without the need for an external contact based dual interface read/write device (paragraph [0052]); wherein: the downloaded information can be used in the real world; wherein: the software is web based, allowing for downloading information from the web directly into the dual interface processor memory thus linking the virtual world to the real world (paragraph [0052]); wherein: the information stored in the personal token via the standard contact based interface is used for personal identification, secure network logon, access control, e-ticketing, e-payment and similar applications using either the standard compliant interface or the RFID-compliant interface (paragraph [0067]).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-7, 9, 12-17, 21, 41-48 and 50-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margalit et al (US 6,748,541) in view of Weng (US 6983888 B2).

Re claims 1-7, 9, 12-17, 21, 41-48 and 50-60: Margalit et al discloses a compact personal token apparatus 125, comprising; a connection module 140; a translation module, which incorporated with a processor module 130; and an input/output module (fig. 2); wherein: the connection module 140 is for interfacing the personal token apparatus with a an Internet-capable appliance; and the interface is a USB interface (fig. 2); wherein: the connection module 140 is for interfacing the personal token apparatus with a an Internet-capable appliance;

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and the Internet-capable appliance comprises a device, which is a personal computer (PC); wherein: the translation module moves signals between a USB interface and a smart card interface (fig. 2; col. 5, lines 1-30); wherein: the smart card interface 170 is an ISO 7816; wherein: the processor module 130 comprises a dual interface (DI) chip (i.e., USB and smart card); wherein: the processor module 130 incorporates the translation module (i.e., for passing data from the smart card to the USB interface chip 140 and vice versa) (fig. 2; col. 5, lines 20-27); flash memory 150 (fig. 2; col. 4, lines 35-38); a first physical module containing the input module and the translation module; and a second physical module containing the processor module and the output module (fig. 3); wherein: the connection, translation, processor, and input/output modules are embodied in a form of an apparatus having a general physical configuration of a conventional USB memory fob (figs. 3-5B); wherein: the output module comprises contacts for interfacing with a smart card (fig. 2); the fob is configured for interfacing with the Internet and emulating a smart card (fig. 2); wherein: the connection module 140 is for interfacing the personal token apparatus with an Internet-capable appliance; and further comprising: an input module is for connecting to the Internet; and the apparatus incorporates firewall functionality to protect

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the Internet-capable appliance (i.e., login process including username and password) (fig. 5B); a standard-compliant contact based interface, the contact based interface complying to at least one standard interface selected from the group consisting of USB, IEEE 1394, PCMCIA, Compact Flash, Multi Media, Memory Stick, Smart Media, Secure Digital, mini SD, IBM Micro Drive, and any similar standard interface (fig. 2).

Margalit et al is silent with respect to the translation module moves signals from the connection module to a contactless interface.

Weng teaches a body proper 1 having a receiver 12 and a transmitter 21 (i.e., RF or wireless interface), a flash memory 11, a USB interface control circuit 15, and a monode control switch 13 for switching from USB to wireless, all of which are interconnected; wherein when the high frequency receiver circuit (12) receives transmitted signals, through the monode control switch (13), the firewall (14) is turned on rendering the flash memory (11) to be read-and-writeable by the USB interface control circuit (15) (fig. 3; col. 2, lines 25-36).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of Weng into the system as taught by Margalit et al due to the fact that such modification would have been an

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obvious engineering variation, well within the ordinary skill in the art, for intended use (i.e., for transmitting data/signal from RF/wireless interface to USB interface and vice versa), and therefore an obvious expedient.

8. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiau in view of Weng (US 6983888 B2). The teachings of Jiau have been discussed above.

Re claims 10 and 11: Jiau has been discussed above, but is silent with respect to the translation module moves data or signals from a USB interface to an RFID interface and a wireless interface with storage of data in a flash memory or EEPROM of the processor module, and data can reside temporarily at one of the interfaces; the translation module is incorporated in the processor module so that the personal token apparatus can go directly from USB to wireless without being limited by smart card software architecture limitations; respectively.

Weng teaches a body proper 1 having a receiver 12 and a transmitter 21 (i.e., RF or wireless interface), a flash memory 11, a USB interface control circuit 15, and a monode control switch 13 for switching from USB to wireless, all of which are interconnected; wherein when the high frequency receiver circuit (12) receives transmitted signals, through the monode control switch (13), the firewall (14) is turned on rendering the flash



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memory (11) to be read-and-writeable by the USB interface control circuit (15) (fig. 3; col. 2, lines 25-36).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of Weng into the system as taught by Jiau due to the fact that such modification would have been an obvious engineering variation, well within the ordinary skill in the art, for intended use (i.e., for transmitting data/signal from RF/wireless interface to USB interface and vice versa), and therefore an obvious expedient.

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jiau in view of Margalit et al. The teachings of Jiau and Margalit et al have been discussed above.

Re claim 30: Jiau has been discussed above but is silent with respect to an interface that is complying to ISO 7810 or a 7816 compliant SIM module.

Margalit et al teaches a personal token apparatus 125 having an interface that is a 7816 compliant SIM module (fig. 2).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate a 7816 compliant SIM module of Margalit et al into the system as taught by Jiau in order to provide Jiau with a universal system

wherein the system can be utilized in any type of communications (i.e., contact, contactless, USB, etc.). Furthermore, such modification would provide the user the flexibility in using the system wherein the user does not have to concern about whether or not the system is compatible with a particular communication system that the user intend to use, and therefore an obvious expedient.

***Response to Arguments***

10. Applicant's arguments with respect to claims 1 and 46 (i.e., with respect to Margalit reference) have been considered but are moot in view of the new ground(s) of rejection.

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the apparatus has USB interface, wireless interface, contactless interface (p. 19, lines 10-16)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In this case, although both former and newly amended claims 1 and 46 have been carefully reviewed and given all possible ways of interpretation, an

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apparatus having all three specific components (e.g., USB interface, wireless interface, contactless interface) cannot be obtained.

12. Applicant's arguments regarding claims 1, 8, 18-29 and 31-40 with respect to Jiau reference have been fully considered but they are not persuasive.

13. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "RFID-contactless interface according to ISO 14443 and ISO 15693 as well as similar interfaces" (p. 24, lines 8-9)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In this case, the Examiner respectfully submits that Jiau has been used to reject claims 1, 8, 18-29 and 31-40, wherein none of the rejected claims recite the above limitation.

#### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uyen-Chau

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Page 12

N. Le whose telephone number is 571-272-2397. The examiner can normally be reached on maxi-flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Uyen-Chau N. Le  
Primary Examiner  
Art Unit 2876

September 12, 2006

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	substitute forms PTO/SB/08a & PTO/SB/08b	Application Number	<b>10/990,296</b>
		Filing Date	<b>November 16, 2004</b>
		First Named Inventor	Dennis J. Ryan
		Art Unit	2876
		Examiner Name	Uyen Chau N. Le
Sheet 1 OF 3		Practitioner Docket No.	Ryan C-4

**U.S. PATENT DOCUMENTS**

Exam. Initials	Cite No.	Document Number No. -Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Relevant Pages, Columns, Lines
UCL	A	US-3,941,489	03-22-1974	Bryan	
	B	US-4,367,965	01-11-1983	Speitel et al.	
	C	US-5,761,648	06-02-1998	Golden et al.	
	D	US-6,067,235	05-23-2000	Finn et al.	
	E	US 6,085,320	07-04-2000	Kaliski, Jr.	
	F	US 6,148,354	11-14-2000	Ban et al.	
	G	US 6,168,077	01-02-2001	Gray et al.	
	H	US 6,189,098	02-13-2001	Kaliski, Jr.	
	I	US 6,240,184	05-29-2001	Huynh et al.	
	J	US 6,283,658	09-04-2001	Estevez et al.	
	K	US 6,370,603	04-09-2002	Silverman et al.	
	L	US 6,385,677	05-07-2002	Yao	
	M	US 6,505,773	01-14-2003	Palmer et al.	
	N	US 6,543,690	04-08-2003	Leydier et al.	
	O	US 6,567,273	05-20-2003	Liu et al.	
	P	US 6,658,516	12-02-2003	Yao	
	Q	US 6,694,399	02-17-2004	Leydier et al.	
	R	US 6,724,680	04-20-2004	Ng et al.	
	S	US 6,748,541	06-08-2004	Margalit et al.	
	T	US 6,752,321	06-22-2004	Leaming	
	U	US 6,763,399	07-13-2004	Margalit et al.	
	V	US 6,772,956	08-10-2004	Leaming	
	W	US 6,798,169	09-28-2004	Stratmann et al.	
	X	US 6,801,956	10-05-2004	Feuser et al.	
	Y	US 6,848,045	01-25-2005	Long et al.	
	Z	US 6,876,420	04-05-2005	Hong et al.	
	AA	US 6,879,597	04-12-2005	Tordera et al.	
	BB	US 2001 0043702	11-22-2001	Elteto et al.	
	CC	US 2001 0054148	12-20-2001	Hoornaert	
	DD	US 2002 0011516	01-31-2002	Lee	
	EE	US 2003 0000267	01-02-2003	Jacob et al.	
	FF	US 2003 0028797	02-06-2003	Long et al.	
	GG	US 2003 0087601	05-08-2003	Agam et al.	
	HH	US 2003 0102380	06-05-2003	Spencer	
✓	II	US 2003 0236821	12-25-2003	Jiau	
UCL	JJ	US 6,342,839	01-29-2002	Curkendall et al.	

/Uyen Chau Le/

Examiner Signature

09/12/2006

Date Considered

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	substitute forms PTO/SB/08a & PTO/SB/08b	Application Number	<b>10/990,296</b>
		Filing Date	<b>November 16, 2004</b>
		First Named Inventor	Dennis J. Ryan
		Art Unit	2876
		Examiner Name	Uyen Chau N. Le
Sheet 2 OF 3		Practitioner Docket No.	Ryan C-4

#### FOREIGN PATENT DOCUMENTS

Exam. Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Doc.	Relevant Pages, Columns, Lines	T
UCL	f1	DE19631050	02-05-1998	Bergler et al.	Drawings	
	f2	HK 1063994	NO DATE			T
	f3	HK 1063995	NO DATE			T
	f4	JP2004246720	09-02-2004		Drawings	
	f5	WO99 052051	10-14-1999	International Business Machines		T
	f6	WO99 038062	07-29-1999	Kobil Computer GMBH	Abs.(Engl), Dwg.	
	f7	WO00 036252	06-22-2000	Jacob	Abs.(Engl), Dwg.	
	f8	WO00 042491	07-20-2000	Rainbow Technologies, Inc.		T
	f9	WO00 065180	11-02-2000	Muller et al.	Abs.(Engl), Dwg.	
	f10	WO00 075755	12-14-2000	Eutron Infosecurities		T
	f11	WO01 014179	03-01-2001	Wittwer et al.	Abs.(Engl), Dwg.	
	f12	WO01 038673	03-31-2001	Wittwer et al.	Abs.(Engl), Dwg.	
	f13	WO01 039102	11-02-2001	Muller et al.		T
	f14	WO01 048339	07-05-2001	Jacob et al.	Abs.(Engl), Dwg.	
	f15	WO01 048342	07-05-2001	Jacob et al.	Abs.(Engl), Dwg.	
	f16	WO01 061692	08-23-2001	Trek Technology		T
	f17	WO01 088693	11-22-2001	Seysen	Abs.(Engl), Dwg.	
	f18	WO01 096990	12-20-2001	Rainbow Technologies, Inc.		T
	f19	WO03 014887	02-20-2003	Activecard Ireland		T
	f20	WO03 034189	04-23-2003	Activecard Ireland		T
	f21	WO04 002058	12-31-2003	Gemplus	Abs.(Engl), Dwg.	
V	f22	WO04 081706	09-23-2004	Digisafe Ltd.		T
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#### NON PATENT LITERATURE DOCUMENTS

Exam. Initials	Cite No.	Name of author (ALL-CAPS), title of article, title of item, date, pages, vol-issue #, publisher, city and/or country where published.	T
UCL	1	<i>ACR38CT Contactless SIM Tracker Technical Specification</i> , Advanced Card Systems Ltd., Hong Kong. NO DATE	T
UCL	2	<i>ACR38DT Dual Key Technical Specifications, Version 1.3</i> , September 2004, Advanced Card Systems Ltd., Hong Kong.	T

/Uyen Chau Le/  
Examiner Signature

09/12/2006  
Date Considered

substitute forms PTO/SB/08a & PTO/SB/08b  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application Number	<b>10/990,296</b>
	Filing Date	<b>November 16, 2004</b>
	First Named Inventor	Dennis J. Ryan
	Art Unit	2876
	Examiner Name	Uyen Chau N. Le
Sheet 3 OF 3	Practitioner Docket No.	Ryan C-4

**NON PATENT LITERATURE DOCUMENTS**

Exam. Initials	Cite No.	Name of author (ALL-CAPS), title of article, title of item, date, pages, vol-issue #, publisher, city and/or country where published.	T
UCL	3	<i>Dallas Semiconductor DS1490F 2-in-1 Fob</i> , Dallas Semiconductor, Dallas TX. NO DATE	T
	4	<i>Dallas Semiconductor DS9490R-DS9490B USB to 1-Wire/iButton Adaptor</i> , Maxim I-C, Sunnyvale CA. NO DATE	T
	5	HARA, YOSHIKO, <i>Matsushita blends FERAM technology with smart cards</i> , EE Times, October 1, 2004, CMP Media, Manhasset NY.	T
	6	<i>Japan's Matsushita developing memory cards with smart chip function</i> , October 1, 2004, Mercury News, San Jose CA.	T
	7	<i>OTi-6828 Flash Disk Controller</i> , Ours Technology Inc., Taiwan. NO DATE	T
	8	<i>Panasonic Develops RFID smartSD Card</i> , October 4, 2004, Palminfocenter.com, Sunnyvale CA.	T
	9	<i>Panasonic Develops Industry's First SD Memory Card with Contactless Smart Card Capabilities</i> , October 1, 2004, The Japan Corporate News Network, Tokyo.	T
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	11	<i>Delivering ultimate security, high performance and ultra low power consumption, SmartMX is now in volume supply</i> , November 18-20, 2003, Cartes 2003, aris Nort Villepinte, France	T
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	13	<i>Smart MX P5CT072 Secure Dual Interface PKI Smart Card Controller, Rev. 1.3</i> , October 2004, Koninklijke Philips Electronics NV, The Netherlands	T
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UCL	15	<i>SmartSD Card Structure</i> , Panasonic NO DATE	T

/Uyen Chau Le/  
Examiner Signature

09/12/2006  
Date Considered

**Index of Claims**



Application/Control No.

10/990,296

Examiner

Uyen-Chau N. Le

Applicant(s)/Patent under Reexamination

RYAN ET AL.

Art Unit

2876

√	Rejected
=	Allowed

-	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date	
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Ryan, et al.

Confirmation Number: 2050

Title: MULTI-INTERFACE COMPACT PERSONAL TOKEN APPARATUS AND  
METHODS OF USE

Serial Number: 10/990,296

Publication No. 20050109841

Filing Date: 11/16/2004

Publication Date 5/26/2005

Docket No.: Ryan C-4

Examiner: Le, Uyen Chau N.  
phone: 571-272-2397  
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Art Unit: 2876

Dec 14, 2006

**COMMISSIONER FOR PATENTS**  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT**

This is in response to an Office action, dated September 14, 2006. An interview was scheduled with the Examiner for December 12. The Examiner requested that a proposal be faxed. A proposal was faxed. Applicant's attorney called at exactly 7 minutes past the appointed time. The Examiner was not available for the interview.

In light of this situation (the fact that proposals could not be discussed), it is requested that a subsequent rejection (if any) be made non-final.

## IN THE CLAIMS

### **Listing of Claims:**

1. (currently amended) A compact personal token apparatus, comprising:
  - a connection module;
  - a translation module;
  - a processor module; ~~and~~
  - an input/output module; and
  - a contactless interface;wherein:
  - the connection module is for interfacing the personal token apparatus with an Internet-capable appliance; and
  - the translation module moves signals between the connection module and ~~a~~ the contactless interface.
  
2. (currently amended) The compact personal token apparatus of claim 1, wherein:
  - the Internet-capable appliance comprises a device selected from the group consisting of personal computer (PC), laptop, PDA, MP3 player cellphone, and similar Internet-capable devices; and
  - the interface with the Internet-capable ~~appliance~~ appliance is selected from the group consisting of USB, FireWire, IR, Bluetooth, standard serial port, and WLAN; ~~and similar interfaces capable of interfacing with the Internet-capable appliance.~~
  
3. (previously presented) The compact personal token apparatus of claim 1, wherein:
  - the interface with the Internet-capable appliance comprises a USB connection.
  
4. (previously presented) The compact personal token apparatus of claim 1, wherein:
  - the contactless interface comprises a smart card interface.
  
5. (currently amended) The compact personal token apparatus of claim 4, wherein:
  - the smart card interface is selected from the group consisting of ISO 14443, ISO 15693, and NFC ~~and similar contactless interfaces.~~

6. (original) The compact personal token apparatus of claim 1, wherein:  
the processor module comprises a dual interface (DI) chip.
7. (original) The compact personal token apparatus of claim 1, wherein:  
the processor module incorporates the translation module.
8. (original) The compact personal token apparatus of claim 1, wherein:  
the output module comprises an RF antenna and a modulator.
9. (original) The compact personal token apparatus of claim 1, further comprising:  
flash memory.
10. (currently amended) The compact personal token apparatus of claim 1, wherein:  
the contactless interface is an RFID interface;  
further comprising a wireless interface;  
wherein the translation module moves data or signals from a USB interface to ~~an~~ the  
RFID interface and ~~a~~ to the wireless interface with storage of data in a flash memory or  
EEPROM of the processor module (dual interface chip), and data can reside temporarily at  
one of the interfaces.
11. (previously presented) The compact personal token apparatus of claim 1, wherein:  
the translation module is incorporated in the processor module so that the personal  
token apparatus can go directly from USB to contactless without being limited by smart card  
software architecture limitations.
12. (previously presented) The compact personal token apparatus of claim 1, wherein:  
the connection, translation, processor and input/output modules are embodied in a  
form of an apparatus having a general physical configuration of a conventional USB memory  
fob.
13. (previously presented) The compact personal token apparatus of claim 12, wherein the  
fob comprises;

a first physical module containing the connection module and the translation module;  
and

a second physical module containing the processor module and the output module.

14. (original) The compact personal token apparatus of claim 1, wherein:  
the output module comprises contacts for interfacing with a smart card.
15. (previously presented) The compact personal token apparatus of claim 1, wherein:  
the fob is configured for interfacing with the Internet and emulating a smart card.
16. (currently amended) The compact personal token apparatus of claim 1, wherein:  
the connection module is for interfacing the personal token apparatus with an Internet-capable appliance; and  
the personal token apparatus incorporates firewall functionality to protect the Internet-capable appliance.
17. (original) The compact personal token apparatus of claim 1, further comprising:  
interfaces for ISO contact, contactless, USB and DSL.
18. (original) The compact personal token apparatus of claim 1, further comprising:  
an LCD screen.
19. (original) The compact personal token apparatus of claim 1, further comprising:  
at least one switch.
20. (original) The compact personal token apparatus of claim 1, further comprising:  
at least one LED.
21. (currently amended) The compact personal token apparatus of claim 1, further comprising:  
a standard-compliant contact based interface, the contact based interface complying to  
at least one standard interface selected from the group consisting of USB, IEEE 1394,

PCMCIA, Compact Flash, Multi Media, Memory Stick, Smart Media, Secure Digital, mini SD, and IBM Micro Drive, ~~and any similar standard interface.~~

22. (currently amended) The compact personal token apparatus of claim 1, further comprising:

a standard-compliant wireless interface selected from the group consisting of Bluetooth compatible interface, WLAN 802.11, and UWB, ~~and any similar interface.~~

23. (previously presented) The compact personal token apparatus of claim 22, further comprising:

a standard-compliant interface releaseably coupleable to a host processing device, this being under a command of an operating system;

an interface module providing translation of standard-compliant contact based interface messages via a memory chip to Bluetooth /WLAN 802.11device compatible compliant messages, and providing the translation of Bluetooth /WLAN 802.11device compliant messages via a memory chip to standard-compliant contact based interface messages; and

a Bluetooth /WLAN 802.11device having a Bluetooth/WLAN 802.11compliant interface communicating through the interface module with the host processing device via a memory chip; the same Bluetooth /WLAN 802.11device communicating through a Bluetooth /WLAN 802.11compatible interface.

24. (previously presented) The compact personal token apparatus of claim 23, wherein:  
the contactless / wireless interface is releaseably coupleable from the interface module.

25. (original) The compact personal token apparatus of claim 22, further comprising:

a processor module; and

additional memory selected from the group consisting of flash memory and EEPROM device powered and addressed by the processor module;

wherein the additional memory can be used for user authentication and to run applications.

26. (currently amended) The compact personal token apparatus of claim 22, further comprising:

a standard-compliant smart card contact interface complying to ISO 7816, ~~or any similar interface.~~

27. (currently amended) The compact personal token apparatus of claim 22, further comprising:

a ~~the~~ processor module, ~~preparing~~ prepares messages to be sent by the ~~contactless/wireless interface~~ contactless and wireless interfaces, and ~~interpreting~~ interprets messages received via the ~~interface~~ contactless and wireless interfaces.

28. (currently amended) The compact personal token apparatus of claim 21, further comprising:

a standard-compliant interface releaseably coupleable to a host processing device, this being under a command of an operating system;

an interface module providing translation of standard-compliant contact based interface messages to ISO 7816 compliant messages and providing the translation of ISO 7816 compliant messages to standard-compliant contact based interface messages;

a dual interface processor having an ISO7816 compliant interface communicating through the interface module with the host processing device, the dual interface processor communicating through ~~an RFID-contactless~~ the contactless interface and connected to an inductive antenna.

29. (currently amended) The compact personal token apparatus of claim 28, wherein:

the contactless ~~wireless~~ interface is releaseably coupleable from the interface module.

30. (previously presented) The compact personal token apparatus of claim 28, wherein:

the dual interface processor is mounted in a dual interface card complying to ISO 7810 or a 7816 compliant SIM module and connected norms;

the compact personal token apparatus provides physical contacts for the dual interface card, or a 7816 compliant form factor; and

when connected, the dual interface or SIM card can communicate with the host

processing device through the interface module inside the personal token apparatus and, once the communication is done, the card can be released from the personal token apparatus and can be used then in the real world.

31. (previously presented) The compact personal token apparatus of claim 28, wherein:  
the dual interface chip (processor) inside the personal token apparatus can be directly programmed by a software running on the host system using the interface processor without the need for an external contact based dual interface read/write device.

32. (previously presented) The compact personal token apparatus of claim 31, wherein:  
the software is web based, allowing for downloading information from the web directly into the dual interface processor memory, thus linking the virtual world to the real world.

33. (currently amended) The compact personal token apparatus of claim 32, wherein:  
the downloaded information can be used in the real world by using the contactless ~~RFID~~ interface.

34. (canceled)

35. (currently amended) The compact personal token apparatus of claim 33, wherein:  
the information stored in the personal token apparatus via the standard contact based interface is used for personal identification, secure network logon, access control, e-ticketing, or e-payment ~~and similar~~ applications using either the standard compliant interface or the RFID-compliant interface.

36. (currently amended) The compact personal token apparatus of claim 33, wherein:  
information received through the ~~RFID-~~ contactless interface can be stored in the memory of the personal token apparatus and can then be provided to the host processing device via the standard interface, thus allowing a complete information exchange between the virtual world and the real world.

37. (currently amended) The compact personal token apparatus of claim 31, wherein:  
the information stored in the personal token apparatus via the standard contact based interface is used for personal identification, secure network logon, access control, e-ticketing, or e-payment ~~and similar~~ applications using either the standard compliant interface or the RFID-compliant interface.

38. (currently amended) The compact personal token apparatus of claim 31, wherein:  
information received through the ~~RFID-~~ contactless interface can be stored in the memory of the personal token apparatus and can then be provided to the host processing device via the standard interface, thus allowing a complete information exchange between the virtual world and the real world.

39. (original) The compact personal token apparatus of claim 31, further comprising:  
additional memory selected from the group consisting of flash memory and EEPROM device powered and addressed by the processor module;  
wherein the additional memory can be used for user authentication and to run applications.

40. (previously presented) The compact personal token apparatus of claim 21, further comprising:

a standard-compliant interface releaseably coupleable to a host processing device, this being under a command of an operating system;

an interface module providing translation of standard-compliant contact based interface messages via a memory chip to Bluetooth /WLAN 802.11device compatible compliant messages, and providing the translation of Bluetooth /WLAN 802.11device compliant messages via a memory chip to standard-compliant contact based interface messages; and

a Bluetooth /WLAN 802.11device having a Bluetooth/WLAN 802.11compliant interface communicating through the interface module with the host processing device via a memory chip; the same Bluetooth /WLAN 802.11device communicating through its Bluetooth /WLAN 802.11compatible interface.



41. (original) The compact personal token apparatus of claim 21, further comprising:  
a processor module; and  
additional memory selected from the group consisting of flash memory and EEPROM device powered and addressed by the processor module;  
wherein the additional memory can be used for user authentication and to run applications.
42. (currently amended) The compact personal token apparatus of claim 21, further comprising:  
a standard-compliant smart card contact interface complying to ISO 7816, ~~or any similar interface.~~
43. (currently amended) The compact personal token apparatus of claim 21, further comprising:  
a connection module, connecting the personal token apparatus to a host device including PC, PDA, or smart cellular phone ~~or similar device~~, either directly or with the help of a standard reader device such as a memory card reader.
44. (previously presented) The compact personal token apparatus of claim 21, further comprising:  
a standard-compliant interface releaseably coupleable to a host processing device, this being under a command of an operating system; and  
a translation module, translating messages incoming from the contact based interface, and translating messages to the host device from the personal token apparatus.
45. (previously presented) The compact personal token apparatus of claim 21, further comprising:  
a triple interface processor including contact, contactless, USB.
46. (currently amended) Method of interacting wirelessly, comprising:  
providing a device;  
interfacing the device with an Internet-capable appliance; and

providing a ~~smart card~~ contactless interface in the device selected from the group consisting of ISO 14443 and ISO 15693.

47. (original) Method, according to claim 46, wherein:  
the interface with the Internet-capable appliance is selected from the group consisting of USB, FireWire, IR, Bluetooth, standard serial port, WLAN.
48. (original) Method, according to claim 46, wherein:  
the Internet-capable appliance comprises a device selected from the group consisting of personal computer (PC), laptop, PDA, MP3 player and cell phone.
49. (canceled)
50. (original) Method, according to claim 46, wherein:  
the device is modular in construction.
51. (previously presented) Method, according to claim 46, wherein:  
the device performs a firewall functionality to protect the Internet-capable appliance.
52. (original) Method, according to claim 46, wherein:  
the device incorporates interfaces for ISO contact, contactless, USB and DSL.
53. (currently amended) A compact personal token apparatus, comprising:  
a connection module for interfacing the personal token apparatus with an Internet-capable appliance;  
a contactless interface; and  
a translation module for moving signals between the connection module and the contactless interface;  
wherein the contactless interface is an RFID interface.
54. (currently amended) The apparatus of claim 53 wherein the connection module is selected from the group consisting of USB, FireWire, IR, Bluetooth, standard serial port, and

WLAN, ~~and similar~~ interfaces capable of interfacing with the Internet-capable appliance.

55. (original) The apparatus of claim 53 wherein the Internet-capable appliance is selected from the group consisting of personal computer (PC), laptop, PDA, MP3 player, cellphone, and similar Internet-capable devices.

56. (currently amended) The apparatus of claim 53 wherein the contactless interface is selected from the group consisting of ISO 14443, ISO 15693, and NFC ~~and similar~~ contactless interfaces.

57. (original) The apparatus of claim 53, further comprising:  
a wireless interface.

58. (original) The apparatus of claim 53, further comprising:  
an RFID or NFC antenna.

59. (original) Method of linking the virtual world of the Internet with the real world of contactless transactions, comprising:

providing a compact personal token apparatus, comprising:

a connection module for interfacing the personal token apparatus with an Internet-capable appliance;

a contactless RFID interface; and

means for moving signals between the connection module and the contactless interface;

interacting in the virtual world when connected with the Internet-capable appliance;

and

interacting in the real world after interacting in the virtual world.

60. (currently amended) The method of claim 59, wherein interacting in the real world comprises an activity selected from the group ~~consisting~~ consisting of personal identification, secure network logon, access control, e-ticketing, and e-payment ~~and similar~~ applications.

## REMARKS

### Status

The Office action is responsive to an RCE filed with amendment, responsive to an Office action (final rejection) dated 09/14/2006 .

The Office action is responsive to communication(s) filed on 25 April 2006.

Claim(s) 1-33, 35-48 and 50-60 is/are pending in the application.

Claim(s) 1-33, 35-48 and 50-60 is/are rejected.

A telephonic interview was scheduled for December 12. The Examiner was not available. It is requested that a subsequent rejection (if any) be made non-final.

### *Claim Objections*

In the Office action, Claims 2, 5, 21, 22, 26, 35, 37, 42, 43, 54-56 and 60 are objected to because of use of the word "similar", and appropriate correction is required.

The verbiage involving "similar" is deleted from the claims.

### *Claim Rejections - 35 USC § 102, §103*

Claims 1, 8, 18-29, 31-33 and 35-40 are rejected under 35 U.S.C. 102(e) as being anticipated by **Jiau** (US 2003/0236821 A1).

Claims 1-7, 9, 12-17, 21, 41-48 and 50-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Margalit et al** (US 6,748,541) in view of **Weng** (US 6983888 B2).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jiau** in view of **Weng** (US 6983888 B2). The teachings of Jiau have been discussed above.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Jiau** in view of **Margalit et al**.

### *Traversing the Rejections*

The invention is directed to a device (and method of use) involving:

- contact interface
- contactless interface
- wireless interface

Signals are moved between these various interfaces. For example, information is downloaded from the Internet to the device, via the contact or wireless interfaces, and is later used by the device's contactless interface in a secure real-world transaction.

The **contact interface** may comprise (for example), a USB plug for moving signals to and from a host computer, thereby enabling communication via the Internet with other entities.

The **contactless interface** comprises (for example) an RFID or smart card application such as ISO 14443 , ISO 15693 and NFC.

The **wireless interface** comprises (for example) 802.11, Bluetooth, UWB, WLAN.

Generally, a **wireless interface** is normally simply a substitute for a **contact interface**, enabling devices to be connected over modest distances, such as 10-100 meters, such as for networking in an office environment. In such cases, signals are generally not "moved from" one interface to the other. Signals are moved via the one interface or the other. Situations can also exist (for example) where a machine without a wireless interface is supplied with a dongle that converts (moves signals from) contact (e.g., USB) to wireless (e.g., 802.11).

It has previously been discussed that although **contactless** and **wireless** interfaces both use RF to convey signals, they are completely different interfaces. They are different communications protocols with different capabilities and are used for different purposes. For example, a contactless, RFID, smart card protocol according to ISO 14443 and ISO 15693, can be used for private, secure financial transactions in "real world" applications such as payment at a retailer.

Note, for example, that 50 inches (ISO 15693, an RFID contactless protocol) is considered to be too great a distance to provide appropriate security for (**contactless**) financial transactions. But 50 inches would not be enough to provide a (**wireless**) network between office computers!

The references cited fail to disclose all of the elements of the invention, and therefore cannot successfully be used to reject the claims, either under §102 (novel) or §103 (non-obvious).

The invention is directed to a device (and method of use) involving various combinations of:

- contact interface
- contactless interface
- wireless interface

The independent claims are 1, 46, 53, 59:

1. A compact personal token apparatus ...
46. Method of interacting wirelessly ...
53. A compact personal token apparatus ...
59. Method of linking the virtual world of the Internet with the real world of contactless transactions ...

The references cited are **Margalit, Jiau, Weng**.

Margalit has

USB interface and  
contains a 7816 smart card chip (Fig. 2, 170)

Margalit does not have a wireless interface.

Margalit does not have a contactless interface.

As noted in the specification of the present invention, (page \_\_, line \_\_ [0079],

**ISO 7816** Regarding smart card, ISO7816 defines specification of **contact** interface IC chip and IC card.

Margalit's smart card chip is an "ISO7816 memory" (Margalit column 3, line 63)

Margalit is a **contact** device. It is neither contactless, nor wireless.

**Jiau** discloses a body wearable personal network server (BWPNS) device which can communicate via **wireless** in the form of personal area network (Bluetooth) and **wireless** LAN (IEEE 802.11), and has a USB plug.

**Jiau** does not disclose or suggest a contactless interface.

**Jiau** does not disclose or suggest any smart card functionality.

The Examiner states that Weng (newly cited) teaches a body proper 1 having a receiver 12 and a transmitter 21 (i.e., RF or wireless interface), a flash memory 11, a USB interface control circuit 15, and a monode control switch 13 for switching from USB to wireless, all of which are interconnected; wherein when the high frequency receiver circuit (12) receives transmitted signals, through the monode control switch (13), the firewall (14) is turned on rendering the flash memory (11) to be read-and-writeable by the USB interface control circuit (15) (fig. 3; col. 2, lines 25-36).

The Examiner states that "It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of Weng into the system as taught by Margalit et al due to the fact that such modification would have been an obvious engineering variation, well within the ordinary skill in the art, for intended use (i.e., for transmitting data/signal from RF/wireless interface to USB interface and vice versa), and therefore an obvious expedient."

**Applicant disagrees.** Weng discloses portable wireless anti-theft USB device. The device has a portable wireless anti-theft flash memory having a body proper in which there are a flash memory, a high frequency receiver circuit, and a **monode switch to go with a cap**, in

which are a high frequency transmitter, an encoding circuit, and a counter, for casing the body proper. Connecting the body proper to a computing device enables high frequency transmitting, receiving, and **turning on flash memory firewall**. When the transmitting source is a distance away, the firewall becomes engaged thus disabling the flash memory to prevent loss of data from theft for safety purpose.

At Weng, column 1, lines 25-27 "The invention relates to a portable wireless anti-theft USB disc using high frequency transmitting to turn on and off the flash memory firewall to protect from data theft.

In the next paragraph, Weng states "The cap having the transmitting circuit of the aforesaid portable wireless anti-theft USB disc is wearable on user so that when user is close enough to the body proper and to operate the computer, the body proper can receive signals to enable memory firewall. When the cap is away with user from the computer, the memory firewall is disabled from not receiving signals."

Applicant disagrees. Weng does not have "wireless", in the sense of 802.11 or the like, which is a communication interface. Rather, Weng has a simple RF function capable of turning on and off a firewall when in proximity with a selected computer.

Weng does not mention RFID, nor any of the RFID standards, as discussed above. Weng discloses a simple proximity switch, turning a function (firewall) within a portable apparatus on and off depending on distance from a host apparatus.

The present invention utilizes RFID technology to conduct contactless transactions. The contactless interface is an RFID interface selected from the group consisting of ISO 14443 (RFID-contactless interface), ISO 15693 (RFID-contactless interface), NFC and similar contactless interfaces. (see original claim 5)

Margalit has contact interface (USB) and smart card functionality (7816).

Jiau has a wireless interface for setting up a personal area network (PAN).

Weng has a USB interface, and a simple RF setup for switching a firewall function.



The invention, as claimed, has contact interface (such as USB), plus a contactless interface (such as ISO 14443, ISO 15693, NFC), and the means (translation module) for moving signals between these interfaces. It may also have a wireless interface (such as 802.11) for communicating with a host device in lieu of a contact interface connection, such as for communicating via the Internet for updating applications such as e-ticketing.

More particularly,

**Independent Claim 1** is amended to positively recite "contactless interface" as an element of the claim (whereas, previously, it was referred to indirectly, and may not have been given any patentable weight).

In **claim 4**, the contactless interface comprises a smart card interface.

In **claim 5**, the smart card interface is selected from the group consisting of ISO 14443, ISO 15693 and NFC.

In **claim 10**, the contactless interface is an RFID interface; the device further comprises a wireless interface; and the translation module moves data or signals from a USB interface to the RFID interface and to the wireless interface.

In **claim 11**, the translation module is incorporated in the processor module so that the personal token apparatus can go directly from USB to contactless without being limited by smart card software architecture limitations.

In **claim 22**, a wireless interface is introduced selected from the group consisting of Bluetooth compatible interface, WLAN 802.11 and UWB.

In **claim 27**, the processor module prepares messages to be sent by the contactless and wireless interfaces and interprets messages received via the contactless and wireless interfaces.

In **claim 33**, downloaded information can be used in the real world by using the contactless interface.

**Independent Claim 46** is directed to a method of interacting wirelessly, comprising:

providing a device;

interfacing the device with an Internet-capable appliance; and

providing a contactless interface in the device selected from the group consisting of

ISO 14443 and ISO 15693.

None of the references cited even have a contactless interface!

**Independent Claim 53** is directed to a compact personal token apparatus, comprising:

a connection module for interfacing the personal token apparatus with an Internet-capable appliance;

a contactless interface; and

a translation module for moving signals between the connection module and the contactless interface;

wherein the contactless interface is an RFID interface.

None of the references teach or suggest this.

**Independent Claim 59** is directed to a method of linking the virtual world of the Internet with the real world of contactless transactions, comprising:

providing a compact personal token apparatus, comprising:

a connection module for interfacing the personal token apparatus with an Internet-capable appliance;

a contactless RFID interface; and

means for moving signals between the connection module and the contactless interface;

interacting in the virtual world when connected with the Internet-capable appliance;

and

interacting in the real world after interacting in the virtual world.

*Conclusion*

The invention is novel and non-obvious. Applicant has attempted to present reasonable claims, capturing the invention, some of which are highlighted immediately hereinabove.

The Claims should be allowed.

No new matter is entered.

No fee is required.

For the applicant,

/Gerald E. Linden/

Gerald E. Linden  
Reg #30282

/D.A. Stauffer/

Dwight A. Stauffer  
Reg # 47,963

Correspondence via

Dwight A. Stauffer

**Customer 37053**

D.A. Stauffer Patent Services LLC

1006 Montford Rd.

Cleveland Hts. OH 44121

(216) 381-6599

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	1374161
<b>Application Number:</b>	10990296
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	2050
<b>Title of Invention:</b>	Multi-interface compact personal token apparatus and methods of use
<b>First Named Inventor/Applicant Name:</b>	Dennis J. Ryan
<b>Customer Number:</b>	37053
<b>Filer:</b>	Dwight A. Stauffer
<b>Filer Authorized By:</b>	
<b>Attorney Docket Number:</b>	Ryan C-4
<b>Receipt Date:</b>	14-DEC-2006
<b>Filing Date:</b>	16-NOV-2004
<b>Time Stamp:</b>	12:24:28
<b>Application Type:</b>	Utility

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
1		Ryan_C-4_Amd_as_filed_12-14-06.pdf	249806	yes	19

<b>Multipart Description/PDF files in .zip description</b>		
<b>Document Description</b>	<b>Start</b>	<b>End</b>
Amendment - After Non-Final Rejection	1	1
Claims	2	11
Applicant Arguments/Remarks Made in an Amendment	12	19
<b>Warnings:</b>		
<b>Information:</b>		
<b>Total Files Size (in bytes):</b>	249806	
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p>		



UNITED STATES PATENT AND TRADEMARK OFFICE

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NOTICE OF ALLOWANCE AND FEE(S) DUE

37053 7590 02/06/2007

D.A. STAUFFER PATENT SERVICES LLC
1006 MONTFORD ROAD
CLEVELAND HTS., OH 44121-2016

EXAMINER

LE, UYEN CHAU N

ART UNIT PAPER NUMBER

2876

DATE MAILED: 02/06/2007

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

TITLE OF INVENTION: MULTI-INTERFACE COMPACT PERSONAL TOKEN APPARATUS AND METHODS OF USE

Table with 7 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

37053                      7590                      02/06/2007

**D.A. STAUFFER PATENT SERVICES LLC**  
**1006 MONTFORD ROAD**  
**CLEVELAND HTS., OH 44121-2016**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**  
 I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)
_____ (Signature)
_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/990,296	11/16/2004	Dennis J. Ryan	RYAN C-4	2050

TITLE OF INVENTION: MULTI-INTERFACE COMPACT PERSONAL TOKEN APPARATUS AND METHODS OF USE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$0	\$1000	05/07/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
LE, UYEN CHAU N	2876	235-492000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.</p>	<p>2. For printing on the patent front page, list</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____</p> <p>3 _____</p>
--	---

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

<p>4a. The following fee(s) are submitted:</p> <p><input type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)</p> <p><input type="checkbox"/> A check is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).</p>
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5. Change in Entity Status (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



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Table with columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 10/990,296, 11/16/2004, Dennis J. Ryan, RYAN C-4, 2050
Row 2: 37053, 7590, 02/06/2007, EXAMINER LE, UYEN CHAU N
Row 3: ART UNIT 2876, PAPER NUMBER
DATE MAILED: 02/06/2007

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.



N

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/990,296	RYAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Uyen-Chau N. Le	2876	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 12/14/2006.
2.  The allowed claim(s) is/are 1-9, 11-33, 35-48 and 50-60.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>20070120</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|  | 9. <input type="checkbox"/> Other _____.   |

**EXAMINER'S AMENDMENT**

***Prelim. Amdt/Amendment***

1. Receipt is acknowledged of the Amendment filed 12/14/2006.
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Linden and Mr. Finn on 18 January 2007 in order to place the instant application in the proper form for an allowance by incorporating the limitation of claim 10 into each of the independent claims and deleting the phrase "similar" recited in claim 55.

The application has been amended as follows:

Re claim 1: Please substitute claim 1 with following:

1. A compact personal token apparatus, comprising:
  - a connection module;
  - a translation module;
  - a processor module;
  - an input/output module; and
  - a contactless interface;wherein:
  - the connection module is for interfacing the personal token apparatus with an Internet-capable appliance; and
  - the translation module moves signals between the connection module and a the contactless interface;wherein:
  - the contactless interface is an RFID interface;
  - further comprising a wireless interface;
  - wherein the translation module moves data or signals from a USB interface to the RFID interface and to the wireless interface with storage of data in a flash memory or EEPROM of the processor module (dual interface chip), and data can reside temporarily at one of the interfaces.

Re claim 10: Please cancel claim 10 without prejudice and/or traverse.

Re claim 46: Please substitute claim 46 with the following:

46. Method of interacting wirelessly, comprising:  
providing a device;  
interfacing the device with an Internet-capable appliance; and  
providing a contactless interface in the device selected from the group consisting of  
ISO 14443 and ISO 15693;  
wherein the contactless interface is an RFID interface;  
further comprising providing a wireless interface;  
wherein the translation module moves data or signals from a USB interface to the  
RFID interface and to the wireless interface with storage of data in a flash memory or  
EEPROM of the processor module (dual interface chip), and data can reside temporarily at  
one of the interfaces.

Re claim 53: Please substitute claim 53 with the following:

53. A compact personal token apparatus, comprising:  
a connection module for interfacing the personal token apparatus with an Internet-  
capable appliance;  
a contactless interface; and  
a translation module for moving signals between the connection module and the  
contactless interface;  
wherein the contactless interface is an RFID interface;  
further comprising a wireless interface;  
wherein the translation module moves data or signals from a USB interface to the  
RFID interface and to the wireless interface with storage of data in a flash memory or  
EEPROM of the processor module (dual interface chip), and data can reside temporarily at  
one of the interfaces.

Re claim 55: Please substitute claim 55 with the following:

55. The apparatus of claim 53 wherein the Internet-capable appliance is selected from the group consisting of personal computer (PC), laptop, PDA, MP3 player, and cellphone, ~~and similar Internet-capable devices.~~

Re claim 59: Please substitute claim 59 with the following:

59. Method of linking the virtual world of the Internet with the real world of contactless transactions, comprising:

providing a compact personal token apparatus, comprising:

a connection module for interfacing the personal token apparatus with an Internet-capable appliance;

a contactless RFID interface; and

means for moving signals between the connection module and the contactless interface;

interacting in the virtual world when connected with the Internet-capable appliance;

and

interacting in the real world after interacting in the virtual world;

further comprising providing a wireless interface;

wherein the translation module moves data or signals from a USB interface to the RFID interface and to the wireless interface with storage of data in a flash memory or EEPROM of the processor module (dual interface chip), and data can reside temporarily at one of the interfaces.

*Allowable Subject Matter*

3. Claims 1-9, 11-33, 35-48 and 50-60 are allowed.

4. The following is an examiner's statement of reasons for allowance:

The prior art of records to Margalit which discloses a USB interface and a contact interface (i.e., 7816 smart card), Jiau which discloses a USB interface and a wireless interface, Weng which discloses a wireless USB device and all other cited references, taken alone or in combination, fails to teach or fairly suggest the specific structure and/or the method a personal token apparatus comprising, among other things, a USB interface, a contactless interface which is an RFID interface, and a wireless interface, wherein the translation module move data or signals from the USB interface to the RFID interface and to the wireless interface with storage of data in a flash memory or EEPROM of the processor module (dual interface chip), and data can reside temporarily at one of the interfaces as set forth in the claimed combinations.

**Conclusion**

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uyen-Chau

Art Unit: 2876

N. Le whose telephone number is 571-272-2397. The examiner can normally be reached on M-F 5:30AM-2PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Uyen-Chau N. Le  
Primary Examiner  
Art Unit 2876

January 20, 2007

<b>Interview Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/990,296	RYAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Uyen-Chau N. Le	2876	

All participants (applicant, applicant's representative, PTO personnel):

- (1) Uyen-Chau N. Le. (3) David Finn (inventor).  
(2) Gerald E. Linden (Reg. 30282). (4) \_\_\_\_\_.

Date of Interview: 18 January 2007.

Type: a)  Telephonic b)  Video Conference  
c)  Personal [copy given to: 1)  applicant 2)  applicant's representative]

Exhibit shown or demonstration conducted: d)  Yes e)  No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: \_\_\_\_\_.


Identification of prior art discussed: \_\_\_\_\_.

Agreement with respect to the claims f)  was reached. g)  was not reached. h)  N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Linden and Mr. Finn authorized an Examiner amendment in order to place the instant application in the proper form for an allowance by incorporating the limitation of claim 10 into each of the independent claims and deleting the phrase "similar" recited in claim 55.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

  
**MICHAEL G. LEE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required



## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:


- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.




<b>Index of Claims</b>  	<b>Application/Control No.</b>  10990296	<b>Applicant(s)/Patent Under Reexamination</b>  RYAN ET AL.
	<b>Examiner</b>  Le, Uyen-Chau N	<b>Art Unit</b>  2876

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

Claims renumbered in the same order as presented by applicant
  CPA
  T.D.
  R.1.47

CLAIM		DATE									
Final	Original	01/20/2007									
1	1	=									
2	2	=									
3	3	=									
4	4	=									
5	5	=									
6	6	=									
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24	31	=									
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26	33	=									
	34	-									
27	35	=									
28	36	=									

<b>Index of Claims</b>  	<b>Application/Control No.</b>  10990296	<b>Applicant(s)/Patent Under Reexamination</b>  RYAN ET AL.
	<b>Examiner</b>  Le, Uyen-Chau N	<b>Art Unit</b>  2876

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

Claims renumbered in the same order as presented by applicant
  CPA
  T.D.
  R.1.47

CLAIM		DATE									
Final	Original	01/20/2007									
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56	59	=									
57	60	=									

<b>Search Notes</b>	Application/Control No.	Applicant(s)/Patent Under Reexamination
	Examiner	Art Unit

<b>SEARCHED</b>			
<b>Class</b>	<b>Subclass</b>	<b>Date</b>	<b>Examiner</b>

<b>SEARCH NOTES</b>		
<b>Search Notes</b>	<b>Date</b>	<b>Examiner</b>

<b>INTERFERENCE SEARCH</b>			
<b>Class</b>	<b>Subclass</b>	<b>Date</b>	<b>Examiner</b>



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Bib Data Sheet

CONFIRMATION NO. 2050

SERIAL NUMBER 10/990,296	FILING DATE 11/16/2004  RULE	CLASS 235	GROUP ART UNIT 2876	ATTORNEY DOCKET NO. Ryan C-4
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APPLICANTS

Dennis J. Ryan, Chandler, AZ;  
 David Finn, Mayo, IRELAND;  
 Patrick R. Comiskey, University Heights, OH; Norbert Knapich, Rosshaupten, GERMANY;

\*\* CONTINUING DATA \*\* ..... *UU*  
 This appln claims benefit of 60/520,698 11/17/2003  
 and claims benefit of 60/562,204 04/14/2004  
 and claims benefit of 60/602,595 08/18/2004

\*\* FOREIGN APPLICATIONS \*\* ..... *UU*

IF REQUIRED, FOREIGN FILING LICENSE GRANTED \*\* SMALL ENTITY \*\* *UU*  
 \*\* 12/16/2004

Foreign Priority claimed 35 USC 119 (a-d) conditions met Verified and Acknowledged	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance Examiner's Signature <i>UU</i> Initials	STATE OR COUNTRY AZ	SHEETS DRAWING 4	TOTAL CLAIMS 52	INDEPENDENT CLAIMS 3
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ADDRESS  
 37053  
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 CLEVELAND HTS. , OH  
 44121-2016

TITLE  
 Multi-interface compact personal token apparatus and methods of use

FILING FEE	FEES: Authority has been given in Paper	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time )
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## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L22	842	(235/492,472.02).CCLS.	US-PGPUB	OR	OFF	2007/01/20 14:10
L23	302	22 and @ad<="20031117"	US-PGPUB	OR	ON	2007/01/20 14:23
L25	11	((contact\$1less non\$1contact) and USB and wireless).clm.	US-PGPUB	OR	ON	2007/01/20 14:24

## EAST Search History

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L1	40	("20010043702" "20010043702" "20010054148" "20010054148" "20020011516" "20030000267" "20030028797" "20030087601" "20030102380" "20030236821" "20030236821" "3941489" "4367965" "5761648" "6067235" "6085320" "6148077" "6148354" "6168077" "6168077" "6189098" "6240184" "6283658" "6342839" "6370603" "6370603" "6385677" "6385677" "6505773" "6543690" "6543690" "6567273" "6567273" "6658516" "6658516" "6676420" "6694399" "6694399" "6724680" "6748541" "6748541" "6752321" "6752321" "6763399" "6763399" "6769499" "6772956" "6772956" "6798169" "6801956" "6801956" "6848045" "6848045" "6876420" "6879597" "6879597" "6983888").PN.	US-PGPUB; USPAT	OR	ON	2007/01/20 13:23
L2	6460	((235/380,375,492) or (705/41,44) or (713/172,200,201)).CCLS.	USPAT	OR	OFF	2007/01/20 14:03
L3	5994	2 and @ad<="20031117"	USPAT	OR	ON	2007/01/20 14:03
L7	3959	3 and @ad>="19950101"	USPAT	OR	ON	2007/01/20 14:03
L9	180	(235/472.02).CCLS.	USPAT	OR	OFF	2007/01/20 14:03
L10	161	9 and @ad<="20031117"	USPAT	OR	ON	2007/01/20 14:11
L11	126	10 and @ad>="19950101"	USPAT	OR	ON	2007/01/20 14:11
S1	13065	usb and (sim smart ic)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 08:17
S2	6267	contact\$4 and (contact\$1less non\$1contact\$4) and wire\$1less	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 10:16
S3	527	S1 and S2	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 08:18
S5	1383928	internet network\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:33



## EAST Search History

S6	489	S3 and S5	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 08:18
S7	189	S6 and @ad<="20031117"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:34
S8	33	("20010043702" "20010054148" "20020011516" "20030000267" "20030028797" "20030102380" "20030236821" "3941489" "4367965" "5761648" "6067235" "6085320" "6148354" "6168077" "6189098" "6240184" "6283658" "6370603" "6385677" "6505773" "6543690" "6567273" "6658516" "6694399" "6724680" "6752321" "6763399" "6772956" "6798169" "6801956" "6848045" "6876420" "6879597").PN.	US-PGPUB; USPAT	OR	ON	2007/01/18 10:11
S9	2	("6983888").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/18 09:09
S10	15	("20020192009"   "20030043111"   "20040064728"   "20040080989"   "20050083315"   "5952641"   "6088450"   "6446862"   "6504480"   "6522534"   "6561421"   "6594154"   "6763315"   "6763410"   "6837422").PN. OR ("6983888").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/18 09:09
S11	23	("6307538").PN. OR ("6561421").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/18 09:13
S12	7	("6151647"   "6168077"   "6216230").PN. OR ("6763399").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/18 09:32
S13	1511	(usb iso contact\$1 contacting) same (contact\$1less noncontact (non adj contact)) same wire\$1less	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:35
S15	1389877	internet network\$4 ethernet	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:34

## EAST Search History

S16	679	S13 and S15	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:36
S17	413	S16 and @ad<="20031117"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:36
S18	149	(usb iso) same (contact\$1less noncontact (non adj contact)) same wire\$1less	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:36
S19	130	S18 and S15	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:36
S20	84	S19 and @ad<="20031117"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 09:36
S21	8	("5796832"   "5929414"   "6138918"   "6237849"   "6250557"   "6256690"   "6577229").PN. OR ("6776339").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/18 09:49
S22	40	("20010043702" "20010043702" "200 10054148" "20010054148" "20020011 516" "20030000267" "20030028797" " 20030087601" "20030102380" "20030 236821" "20030236821" "3941489" "4 367965" "5761648" "6067235" "60853 20" "6148077" "6148354" "6168077" " 6168077" "6189098" "6240184" "6283 658" "6342839" "6370603" "6370603"  "6385677" "6385677" "6505773" "65 43690" "6543690" "6567273" "656727 3" "6658516" "6658516" "6676420" "6 694399" "6694399" "6724680" "67485 41" "6748541" "6752321" "6752321" " 6763399" "6763399" "6769499" "6772 956" "6772956" "6798169" "6801956"  "6801956" "6848045" "6848045" "68 76420" "6879597" "6879597" "698388 8").PN.	US-PGPUB; USPAT	OR	ON	2007/01/18 10:12
S23	7	S22 not S8	US-PGPUB; USPAT	OR	ON	2007/01/18 10:12

## EAST Search History

S24	134503	(triple three multiple plurality) near10 interfac\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 10:15
S25	93	usb same contact\$4 same (contact\$1less non\$1contact\$4) same wire\$1less	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 10:16
S26	62	S25 and @ad<="20031117"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 10:17

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LR  
2/26/07

IN THE SPECIFICATION

**in the previous amendment, the following amendment was made:**

**At page 1, lines 4-5 (entire paragraph)**

This is a non-provisional filing based on USSN 60/520,698 filed 11/17/2003 by Ryan, Comiskey, and Knapich and Finn.

**Please enter the following amendments in the specification (and abstract).**

**References are made to page and line numbers and/or to numbered paragraphs of the published patent application.**

**in the paragraph [0072], at page 13, beginning on line 17.**

IEEE ~~842.11~~ 802.11 The IEEE standard for wireless Local Area Networks (LANs). It uses three different physical layers, 802.11a, 802.11b and 802.11g.

**in the paragraphs [0089-0090], at page 16, beginning on line <sup>5</sup> 6.**

LR  
2/26/07

NFC Short for "Near Field Communication". NFC is a ~~wireless~~ contactless connectivity technology that enables short-range communication between electronic devices. If two devices are held close together (for example, a mobile phone and a personal digital assistant), NFC interfaces establish a peer-to-peer protocol, and information such as phone book details can be passed freely between them. NFC devices can be linked to contactless smart cards, and can operate like a contactless smart card, even when powered down. This means that a mobile phone can operate like a transportation card, and enable fare payment and access to the subway.

NFC is an open platform technology standardized in ECMA (European Computer Manufacturers Association) 340 as well as ETSI (European Telecommunications Standards Institute) TS 102 190 V1.1.1 and ISO/IEC 18092. These standards specify the modulation schemes, coding, transfer speeds, and frame format of the RF interface of NFC devices, as well as initialisation schemes and conditions required for data collision-control during initialisation – for both passive and active modes.

**in the paragraph [0124], at page 22, beginning on line 11.**

The invention is generally a compact personal token apparatus which can be plugged into a personal computer and interfaced with the virtual world of the Internet. The apparatus (or, as will be evident, a portion of a modular apparatus) can then be removed from the personal computer and used to conduct real world transactions. The compact personal token apparatus is suitably in the

j 10/990, 296

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2/26/07

**in the paragraph [0184], at page 32, beginning on line 17.**

As mentioned above, alternatively, the translation module can go from USB to ISO 14443 or 15693. In other words, directly from USB to wireless contactless.

**in the paragraph [0192], at page 33, beginning on line 7.**

Unlike the previous embodiment, in this embodiment the translation module 124 goes from USB to a wireless contactless interface. Therefore, the processor module 126 does not need to be a dual interface (DI) chip. Rather, the processor module 126 could simply comprise a USB interface on one side and a wireless contactless interface on the other. The memory of the processor could be used as temporary storage and the processor could handle the data encoding as well.

**in the paragraph [0203], at page 34, beginning on line <sup>22</sup>21.**

WR  
2/26/07

Figure 2B illustrates another exemplary embodiment 220 of the smart fob, again in the general form of a USB memory fob. But in this case, the smart fob has a first physical module 222 (left, as viewed) which contains the ~~input~~ connection module (e.g., 102, USB plug, cf. 212) and translation module (e.g., 104), and a second physical module 224 (right, as viewed) which contains the processor module (e.g., 106, dual-interface chip) and output module (e.g., 108, RF antenna and modulator). The two modules 222 and 224 can plug together and be taken apart from one another. In this manner, after interacting with the "virtual world" on his computer, the user can separate the two modules 222 and 224 and carry just the second module, for conducting "real world" transactions. The second module 224, comprising processor and output module, is sufficient for conducting real world, wireless contactless transactions, in the manner of a smart card. In other words, the smart fob can emulate a smart card.

**in the paragraph [0212], at page 36, beginning on line 19.**

- an input module 408 which, unlike other embodiments, need not perform wireless or contactless functions, but rather is socket (or plug), such as RJ-45, for connecting to a telephone line (or the like) supporting a DSL (or the like) connection to the Internet.

**in the paragraph [0223], at page 37, beginning on line 14.**

In use, for example, the user plugs the smart fob into his PC, or other Internet capable device (appliance), connects to the Internet, and interacts with a service or content provider to upload

substitute forms PTO/SB/08a & PTO/SB/08b		Application Number	10/990,296
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Filing Date	November 16, 2004
		First Named Inventor	Dennis J. Ryan
		Art Unit	2876
		Examiner Name	Uyen Chau N. Le
Sheet 2 OF 3		Practitioner Docket No.	Ryan C-4

**FOREIGN PATENT DOCUMENTS**

Exam. Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Doc.	Relevant Pages, Columns, Lines	T
UCL	f1	DE19631050	02-05-1998	Bergler et al.	Drawings	
	f2	HK 1063994	<del>NO DATE</del>	12/2004		T
	f3	HK 1063995	<del>NO DATE</del>	12/2004		T
	f4	JP2004246720	09-02-2004		Drawings	
	f5	WO99 052051	10-14-1999	International Business Machines		T
	f6	WO99 038062	07-29-1999	Kobil Computer GMBH	Abs.(Engl), Dwg.	
	f7	WO00 036252	06-22-2000	Jacob	Abs.(Engl), Dwg.	
	f8	WO00 042491	07-20-2000	Rainbow Technologies, Inc.		T
	f9	WO00 065180	11-02-2000	Muller et al.	Abs.(Engl), Dwg.	
	f10	WO00 075755	12-14-2000	Eutron Infosecurities		T
	f11	WO01 014179	03-01-2001	Wittwer et al.	Abs.(Engl), Dwg.	
	f12	WO01 038673	03-31-2001	Wittwer et al.	Abs.(Engl), Dwg.	
	f13	WO01 039102	11-02-2001	Muller et al.		T
	f14	WO01 048339	07-05-2001	Jacob et al.	Abs.(Engl), Dwg.	
	f15	WO01 048342	07-05-2001	Jacob et al.	Abs.(Engl), Dwg.	
	f16	WO01 061692	08-23-2001	Trek Technology		T
	f17	WO01 088693	11-22-2001	Seysen	Abs.(Engl), Dwg.	
	f18	WO01 096990	12-20-2001	Rainbow Technologies, Inc.		T
	f19	WO03 014887	02-20-2003	Activcard Ireland		T
	f20	WO03 034189	04-23-2003	Activcard Ireland		T
	f21	WO04 002058	12-31-2003	Gemplus	Abs.(Engl), Dwg.	
	f22	WO04 081706	09-23-2004	Digisafe Ltd.		T
UCL	f23	WO04 081769	09-24-2004	Axalto SA		T

D8  
2/26/07

**NON PATENT LITERATURE DOCUMENTS**

Exam. Initials	Cite No.	Name of author (ALL-CAPS), title of article, title of item, date, pages, vol-issue #, publisher, city and/or country where published.	T
UCL	1	ACR38CT Contactless SIM Tracker Technical Specification, Advanced Card Systems Ltd., Hong Kong. NO DATE	T
UCL	2	ACR38DT Dual Key Technical Specifications, Version 1.3, September 2004, Advanced Card Systems Ltd., Hong Kong.	T

/Uyen Chau Le/  
Examiner Signature

09/12/2006  
Date Considered



substitute forms PTO/SB/08a, PTO/SB/08b <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application Number	10/990,296
	Filing Date	November 16, 2004
	First Named Inventor	Dennis J. Ryan
	Art Unit	2876
	Examiner Name	Uyen Chau N. Lee
Sheet 1 OF 3	Practitioner Docket No.	Ryan C-4

**U.S. PATENT DOCUMENTS**

Exam. Initials	Cite No.	Document Number No. -Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Relevant Pages, Columns, Lines
W	A	US-3,941,489	<del>03-22-1974</del>	Bryan 3/1976	
	B	US-4,367,965	01-11-1983	Speitel et al.	
	C	US-5,761,648	06-02-1998	Golden et al.	
	D	US-6,067,235	05-23-2000	Finn et al.	
	E	US 6,085,320	07-04-2000	Kaliski, Jr.	
	F	US 6,148,354	11-14-2000	Ban et al.	
	G	US 6,168,077	01-02-2001	Gray et al.	
	H	US 6,189,098	02-13-2001	Kaliski, Jr.	
	I	US 6,240,184	05-29-2001	Huynh et al.	
	J	US 6,283,658	09-04-2001	Estevez et al.	
	K	US 6,370,603	04-09-2002	Silverman et al.	
	L	US 6,385,677	05-07-2002	Yao	
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	CC	US 2001 0054148	12-20-2001	Hoomaert	
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	EE	US 2003 0000267	01-02-2003	Jacob et al.	
	FF	US 2003 0028797	02-06-2003	Long et al.	
	GG	US 2003 0087601	05-08-2003	Agam et al.	
	HH	US 2003 0102380	06-05-2003	Spencer	
✓	II	US 2003 0236821	12-25-2003	Jiau	

28  
3/1/07

**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE  
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37053 7590 02/06/2007

**D.A. STAUFFER PATENT SERVICES LLC**  
1006 MONTFORD ROAD  
CLEVELAND HTS., OH 44121-2016

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/990,296 11/16/2004 Dennis J. Ryan RYAN C-4 2050

TITLE OF INVENTION: MULTI-INTERFACE COMPACT PERSONAL TOKEN APPARATUS AND METHODS OF USE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional YES \$700 \$300 \$0 \$1000 05/07/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
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LE, UYEN CHAUN 2876 235-492000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47, Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list  
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Gerald E. Linden  
2 Dwight A. Stauffer  
3 X

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

DPD Patent Trust Ltd

(B) RESIDENCE (CITY AND STATE OR COUNTRY)

Lower Churchfield, Tourmakeady,  
Co. Mayo, IRELAND

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are submitted:

- Issue Fee
- Publication Fee (No small entity discount permitted)
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- The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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Authorized Signature Gerald E. Linden

Date 30 March 2007

Typed or printed name Gerald E. Linden

Registration No. 30,282

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	10990296			
<b>Filing Date:</b>	16-Nov-2004			
<b>Title of Invention:</b>	MULTI-INTERFACE COMPACT PERSONAL TOKEN APPARATUS AND METHODS OF USE			
First Named Inventor/Applicant Name:	Dennis J. Ryan			
<b>Filer:</b>	Gerald Linden			
<b>Attorney Docket Number:</b>	RYAN C-4			
Filed as Small Entity				
<b>Utility Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	2501	1	700	700
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>1000</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	1638989
<b>Application Number:</b>	10990296
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	2050
<b>Title of Invention:</b>	MULTI-INTERFACE COMPACT PERSONAL TOKEN APPARATUS AND METHODS OF USE
<b>First Named Inventor/Applicant Name:</b>	Dennis J. Ryan
<b>Customer Number:</b>	69186
<b>Filer:</b>	Gerald Linden
<b>Filer Authorized By:</b>	
<b>Attorney Docket Number:</b>	RYAN C-4
<b>Receipt Date:</b>	30-MAR-2007
<b>Filing Date:</b>	16-NOV-2004
<b>Time Stamp:</b>	09:44:05
<b>Application Type:</b>	Utility

### Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	\$ 1000
RAM confirmation Number	1691
Deposit Account	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
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1	Issue Fee Payment (PTO-85B)	efs_c4_issue_fee_transmittal.pdf	89780	no	1
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8305	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			98085		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



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Table with 5 columns: APPLICATION NO., ISSUE DATE, PATENT NO., ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 10/990,296, 05/08/2007, 7213766, RYAN C-4, 2050

69186 7590 04/18/2007
LINDEN, STAUFFER PATENTS
1006 MONTFORD RD.
CLEVELAND HTS., OH 44121

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

- Dennis J. Ryan, Chandler, AZ;
David Finn, Mayo, IRELAND;
Patrick R. Comiskey, University Heights, OH;
Norbert Knapich, Rosshaupten, GERMANY;



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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
10/990,296	7213766	2876	9200

### Correspondence Address / Fee Address Change

The following fields have been set to Customer Number 69186 on 03/23/2007

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 69186 is:

LINDEN, STAUFFER PATENTS  
1006 MONTFORD RD.  
CLEVELAND HTS., OH 44121