



phyCARD System on Module

The new phyCARD family represents the latest advance of PHYTEC's state-of-the-art System On Module (SOM) technology. This next generation SOM standardizes hardware and software around broadly supported embedded processor architectures, resulting in extensive deployment benefits for embedded product design:

- Scalability and price/performance flexibility
- Hardware and software compatibility
- Reduced design complexity
- Extended product lifecycles and migration paths

Deployment

The entire phyCARD family mounts to a common phyBASE Carrier Board for start-up, evaluation and break-out of I/O, enabling the phyCARD to interface to a nearly endless variety of applications. The phyBASE also serves as a reference design for end user target hardware into which the phyCARD is deployed. The phyCARD and phyBASE can also be delivered in a complete system, together with housing. At quantities as low as 100 units, the phyCARD and phyBASE can be customized to best meet technical requirements and cost objectives.

Design Services

PHYTEC offers hardware and software design services which can further reduce time-to-market and design risk. These engineering services can range from technical support, to design of target hardware and BSP adaptation, to complete turn-key solutions.

phyCARD Features

		phyCARD-S	phyCARD-M	phyCARD-L	phyCARD-XL
CPU	Architecture	ARM9	ARM11	Cortex A8	x86
	CPU	Freescale i.MX27	Freescale i.MX35	T.I. OMAP 35xx	Intel Atom Z5xxPT
	Frequency (max)	400 MHz	532 MHz	720 MHz	1.6 GHz
	MMU	Yes	Yes	Yes	Yes
On-board memory	RAM	32 MB to 256 MB DDR	64 MB to 256 MB DDR	128 MB to 1 GB DDR2	256 MB to 1 GB DDR2
	Flash	64 MB to 1 GB NAND	64 MB to 1 GB NAND	64 MB to 1 GB NAND	512 MB to 4 GB SSD
	Serial EEPROM	4 kB	4 kB	4 kB	4 kB
	EEPROM Options	32 kB	32 kB	32 kB	32 kB
Interfaces	MMC/SD Interfaces	1	1	1	1
	JTAG	Yes	Yes	Yes	Yes
	RS-232	1	1	1	1
	I ² C	1	1	1	1
	SPI/SSP	1	1	1	1
	USB	1 HS HOST 1 HS OTG	1 HS HOST 1 HS OTG	1 HS HOST 1 HS OTG	1 HS HOST 1 HS OTG
	Ethernet	10/100 Mbit/s	10/100 Mbit/s	10/100 Mbit/s	10/100 Mbit/s
Specifications	LCD Interface	Yes (LVDS)	Yes (LVDS)	Yes (LVDS)	Yes (LVDS)
	Resolution (max)	SVGA	WVGA	HD720p	Full HD
	Audio & Touch	AC97 Interface	AC97 Interface	AC97 Interface	HD Audio (touch via SPI)
	Camera	Yes (LVDS)	Yes (LVDS)	Yes (LVDS)	-
Specifications	Power Supply	3.3V	3.3V	3.3V	5V
	Connectors (0.635 mm pitch)	100-pin	100-pin	100-pin	100-pin
	Dimensions	60mm x 60mm	60mm x 60mm	60mm x 60mm	60mm x 100mm
	Temperature Range	-40° to +85°C	-30° to +85°C	-40° to +85°C	-40° to +85°C
	Power Draw	0.66 W	0.8 W	tbd	tbd
Operating Systems	Linux	Yes	Yes	Yes	Yes
	Windows Embedded	Yes	Yes	Yes	Yes



Scalability and Price/Performance Flexibility

phyCARDS enable OEMs and OEDs to design complete embedded end product families around a scalable range of four processor classes, from ARM9 to Intel Atom. This provides overall system cost optimization according to specific price-performance and market requirements. With a standardized interconnect bus, the entire phyCARD range can be deployed in the same end product without requiring redesign of application-level target hardware.

Hardware and Software Compatibility

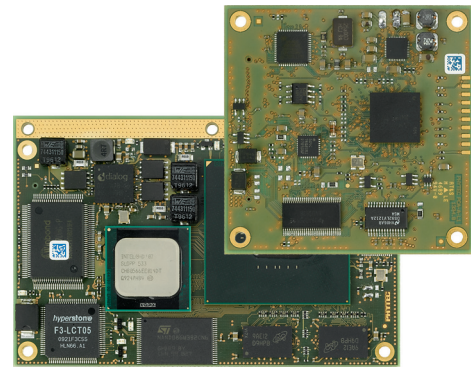
phyCARDS maintain hardware compatibility due to a standard break-out of interface signals common to the majority of embedded designs. PHYTEC's innovative X-Arc embedded bus standard defines the location of these interface signals on a single 100-pin connector. Each pin is assigned a specific signal per the X-Arc standard: 10/100 Ethernet, USB 2.0, UART, SPI, I2C, audio, SDIO/MMC, GPIO, JTAG, display (LVDS) and more. Production-ready Linux and Windows Embedded Board Support Packages (BSPs) are available, further reducing development time and design risk by allowing you to focus on application-level hardware and software.

Reduced Design Complexity

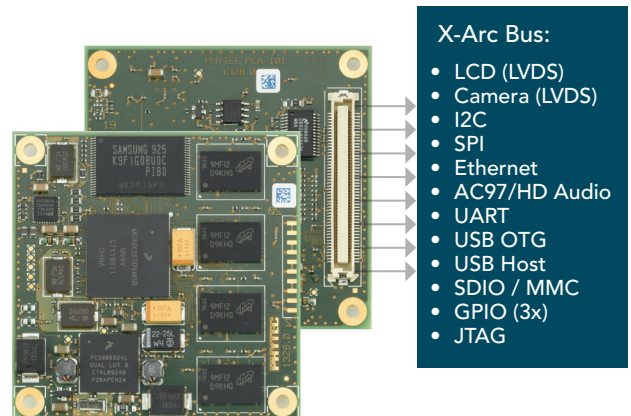
With its number of interface signals reduced to essential I/O, the phyCARD represents a reduced complexity approach to embedded development. Its streamlined functionality greatly simplifies the design of the target hardware in which it is deployed, resulting in reduced time-to-revenue. Like their phyCORE counterparts, phyCARDS are available in Rapid Development Kits (RDKs) that provide a platform to jump-start embedded designs.

Extended Product Life Cycles

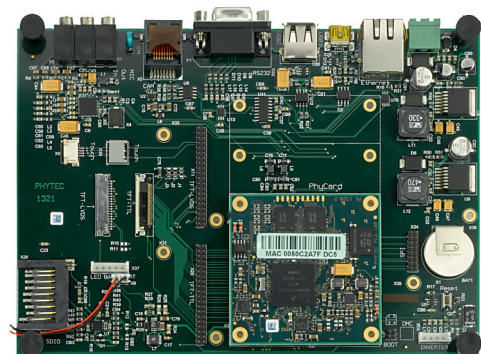
The phyCARD represents a simplification of embedded design in response to the steep technology curve and the proliferation of an ever-expanding set of chip-level features and peripherals on processor architectures. At the design level, the phyCARD provides a long-term solution to issues of component obsolescence. With its standard break-out of interface signals, the phyCARD enables you to avoid system-level hardware redesign of your embedded product due to critical component discontinuation, including the processor.



phyCARD-XL and phyCARD-L



phyCARD-M



phyCARD-S on phyBASE

The phyBASE accommodates the varying dimensions of all phyCARDS.

