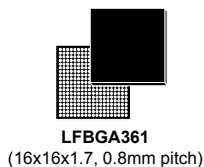


## Telemaco3P automotive family of telematics and connectivity microprocessor



GAPGPS00902

### Features

- AEC-Q100 qualified Grade 2



#### Core and Infrastructure

- Dual ARM CortexA7 up to 600 MHz, with MMU, FPU and NEON support
- Memory organization:
  - L1 Cache: 32 KB I, 32 KB D
  - L2 Cache: 256 KB
  - Total embedded SRAM: 768 KB

#### Embedded Vehicle Interface

- Isolated Cortex-M3 core
  - L1 Cache: 8 KB I
- 256 KB reserved embedded SRAM (extendible to 768 KB)
- 1x CAN Standard (C\_CAN)
- 2x CAN FD (M\_CAN)
- 1x Flexray

#### Media Interfaces

- 1x SD/MMC/SDIO SDR50 (SD/MMC0)
- 1x SD/MMC/SDIO SDR25 (SD/MMC1)
- 1x USB 2.0 DR with HS PHY and HSIC
- 1x USB 2.0 DR with HS PHY
- 2x ETH AVB MAC with RMII/RGMII

#### Embedded HW Security Module

- HIS SHE/SHE+ Service Set with extensions for PKC (SHE\_EXT)
- Cryptographic Functions Accelerators
  - Symmetric keys: MP AES
  - Public keys: RSA, ECC
  - Hash: MD5, SHA1, SHA2
- True Random Number Generator
- User programmable OTP memory (eHSM OTP)

#### Memory Interfaces

- 16-bit DDR3L-1066 (533 MHz)
- 16-bit LPDDR2-800 (400 MHz)
- SQI Interface
- 8-bit Parallel NAND (1 chip select)

#### I/O Interfaces

- 1x 6-channel 10-bits ADC
- 3x I2C multi-master/slave interfaces
- 6x UART controller
- 3x I2S audio interfaces
- 3x Synchronous Serial Port (SSP/SPI)
- 5x 32-bit GPIO ports
- JTAG based in-circuit emulator (ICE) with Embedded Trace Module

Product status link	
<a href="#">STA1385</a>	
Product summary	
<b>Order code</b>	STA1385
<b>Package</b>	LFBGA 361 16x16x1.7mm
<b>Packing</b>	Tray/ Tape and reel

### Operating conditions

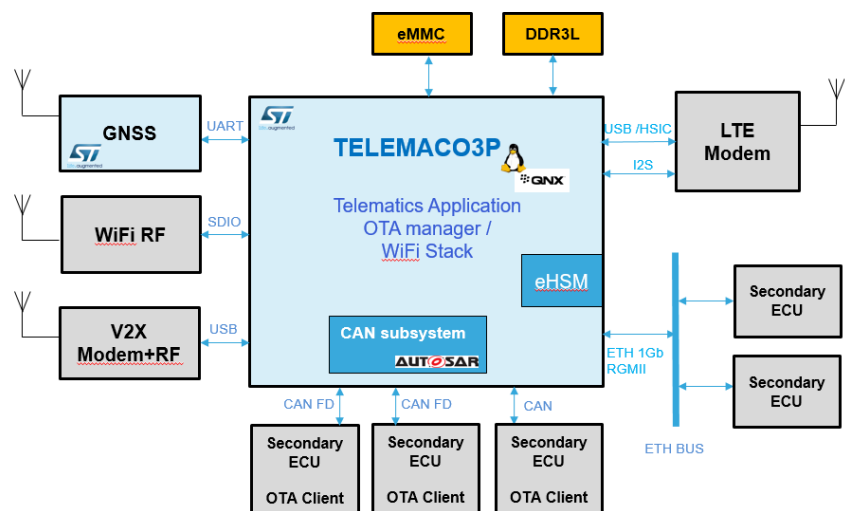
- VDD, VDD\_ARM: 1.14 V-1.21 V
- VDD\_IO\_3V3: 3.3 V  $\pm 10\%$
- VDD\_IO\_SDMMC0: 1.8 V-3.3 V  $\pm 10\%$
- VDD\_IO\_BOOT: 1.8 V/3.3 V  $\pm 10\%$
- VDD\_IO\_ON: 3.3 V  $\pm 10\%$
- VDDQ: 1.35 V  $\pm 5\%$  (DDR3L)
- Junction temperature range: -40 C/ +150 C

### Description

STA1385 is a fully automotive, power efficient System-On-Chip, targeting cost effective processing solutions for innovative Telematics and Connectivity applications including Cyber-security protection.

It features a powerful Dual ARM Cortex-A7 processor, an embedded and independent Hardware Security Module (HSM), an isolated sub-system based on ARM Cortex-M3 for vehicle CAN interface and a full set of standard connectivity interfaces, including a dual Gbit ETH AVB controller and Flexray.

Figure 1. Application example

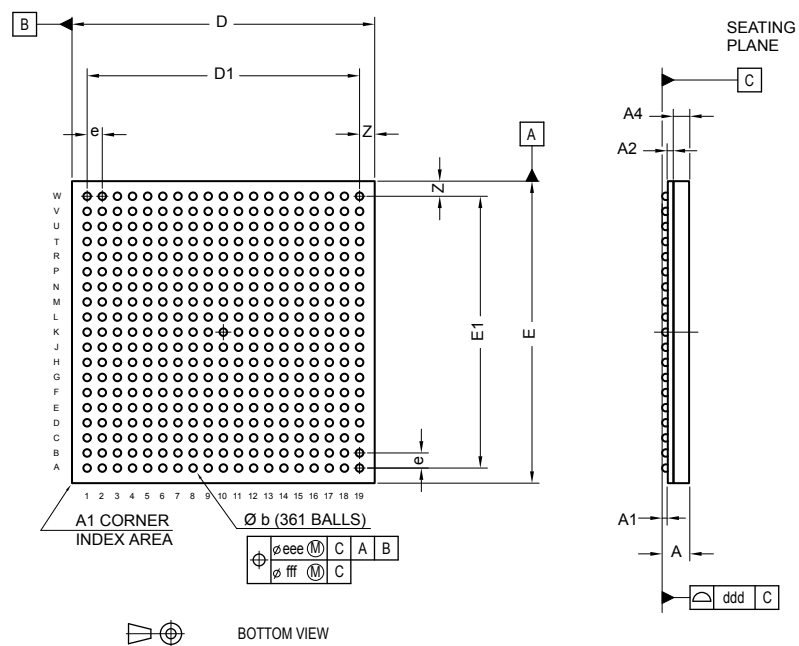


# 1 Package information

In order to meet environmental requirements, ST offers these devices in different grades of **ECOPACK** packages, depending on their level of environmental compliance. ECOPACK specifications, grade definitions and product status are available at: [www.st.com](http://www.st.com). ECOPACK is an ST trademark.

## 1.1 LFBGA361 (16x16x1.7mm) package mechanical data

Figure 2. LFBGA361 (16x16x1.7mm) package mechanical drawing



GAPGPS03418

Table 1. LFBGA361 (16x16x1.7mm) package mechanical data

Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.7			0.0669
A1	0.25			0.0098		
A2		0.3			0.0118	
A4			0.8			0.0315
b	0.35	0.4	0.48	0.0138	0.0157	0.0189
D	15.85	16	16.15	0.624	0.6299	0.6358
D1		14.4			0.5669	
E	15.85	16	16.15	0.624	0.6299	0.6358
E1		14.4			0.5669	
e		0.8			0.0315	
Z		0.8			0.0315	
ddd			0.1			0.0039

Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
eee			0.15			0.0059
fff			0.08			0.0031

## Revision history

**Table 2. Document revision history**

Date	Version	Changes
13-Oct-2017	1	Initial release.
07-Feb-2020	2	Updated <a href="#">Section Features</a> and <a href="#">Section Description</a>

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