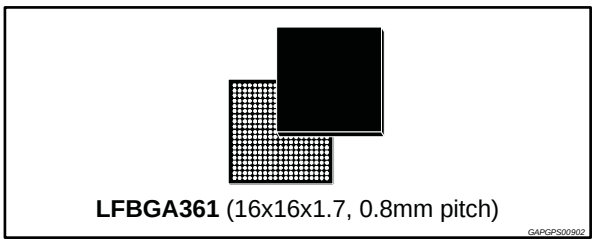
STA1385

Telemaco3P automotive family of telematics and connectivity microprocessor

Data brief



LFBGA361 (16x16x1.7, 0.8mm pitch)

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
- 32-bit watchdog timer
- 16-channels DMA
- 8x 32-bit free running times/counters
- 5x 16-bit Extended Function Timer (EFT) with input capture/output compare and PWM
- Real Time Clock (RTC) with fraction readout

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, SHA3
- True Random Number Generator

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
- 3x Synchronous Serial Port (SSP/SPI)
- 5x 32-bit GPIO ports
- JTAG based in-circuit emulator (ICE) with Embedded Trace Module

Operating Conditions

- VDD, VDD_ARM: 1.14 V-1.21 V
- VDD_IO_3V3: 3.3 V ±10%
- VDD_IO_SDMMC0: 1.8 V/3.3 V ±10%
- VDD_IO_BOOT: 1.8 V/3.3 V ±10%
- VDD_IO_ON: 3.3 V ± 10%
- VDDQ: 1.35 V ± 5% (DDR3L)
- -40 °C/+105 °C ambient temperature

Table 1: Device summary

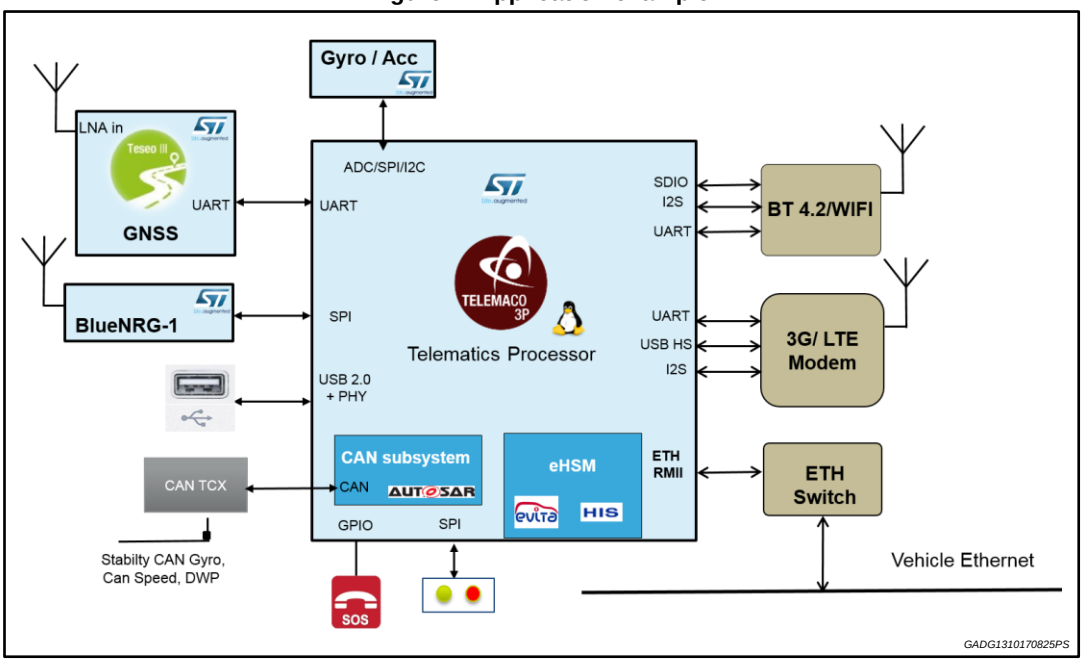
Order code	Package	Packing
STA1385	LFBGA 361 16x16x1.7mm	Tray

1 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



2 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***. ECOPACK® is an ST trademark.

2.1 LFBGA361 (16x16x1.7mm) package information

Figure 2: LFBGA361 (16x16x1.7mm) package outline

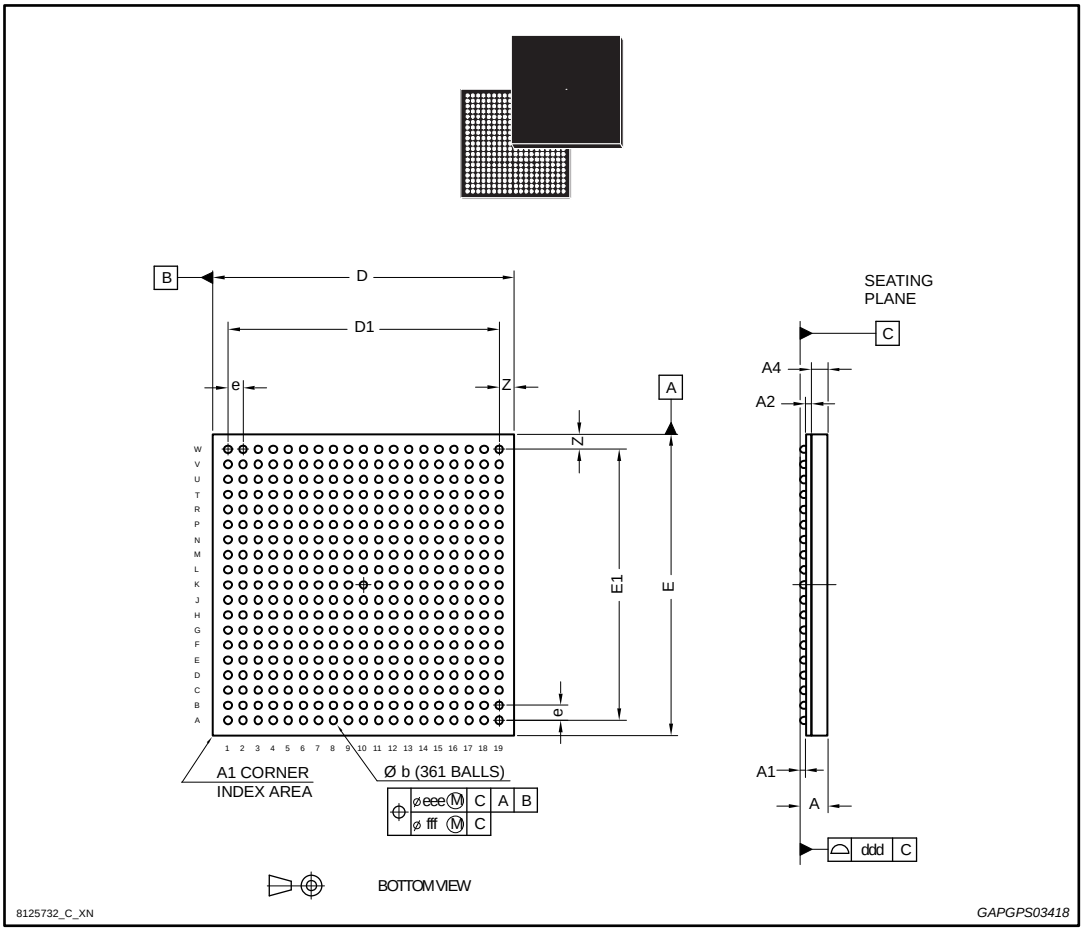


Table 2: LFBGA361 (16x16x1.7mm) package mechanical data

Ref	Dimensions (mm)		
	Min.	Typ.	Max.
A	-	-	1.7
A1	0.25	-	-
A2	-	0.3	-
A4	-	-	0.8
b	0.35	0.4	0.48
D	15.85	16	16.15

Ref	Dimensions (mm)		
	Min.	Typ.	Max.
D1	-	14.4	-
E	15.85	16	16.15
E1	-	14.4	-
e	-	0.8	-
Z	-	0.8	-
ddd	-	-	0.1
eee	-	-	0.15
fff	-	-	0.08

3 Revision History

Table 3: Document Revision History

Date	Version	Changes
13-Oct-2017	1	Initial release.

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