$ 4.90 - Standard Global Shipping

SAK-TC389QP-160F300S AD

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SAK-TC389QP-160F300S AD belongs to the AURIX™ **TC38xQP** family . AURIX™ second generation (**TC3xx**) comes back with an increase in performance, memory sizes, connectivity and more scalability to address the new automotive and industrial trends and challenges. This family has more than 20 products to provide the most scalable portfolio of safety microcontroller. In terms of performance, T38x offers 4 cores running at 300 MHz and up to 1.5 MBytes embedded RAM, and consuming below 2 W. Its mirrored embedded flash banks offers A/B swap capabilities.

Summary of Features

- 4 TriCore™ running at 300 MHz (with 2 additional checker cores delivering 2700 DMIPS)
- Supporting floating point and fix point with all cores
- 10 MB flash/ECC protection
- 1568 KB SRAM / ECC protection
- 1 Gbit **Ethernet**
- 12x CAN FD, 2x **FlexRay**, 12x LINs, 6x **QSPI**, 2x **I²C**, 25x **SENT**, 5x SPI, 1x **HSSL**, 3x **MSC**
- eVita full HSM (ECC256 and SHA2)
- **LFBGA-516 Package**
- ISO 26262 ASIL-D support
- **AUTOSAR** 4.2 support
- Single voltage supply 5 V or 3.3 V
- 165°C junction temperature
- Standby mode controller
- Temperature :-40°C to 125°C

Benefits

- Best-in-class performance enabling ASIL-D designs
- Upward and downward scalable to the rest of **AURIX™ TC3xx** family
- A/B swap software update over the air support
- Easy migration from **AURIX™ TC2xx** thanks to high software and hardware compatibility

Potential Applications

Industrial applications:

- **Industrial robots** (advised for this product)
- **Solar panels**
- **Wind turbine inverters**
- **IO controller**
- **Servo drives**
- **Elevators**
- **Inverters**

Safety applications:

- **Air bag System** (advised for this product)
- **Chassis domain control**
- **Braking**
- **Pixel lighting**
- **Scable EPS solution** (advised for this product)
- **Full feature sensor fusion**
- **Multi-purpose camera** (advised for this product, especially TC233LP)
- **Active suspension control system**
- **Automotive 24 GHz radar system**
- **Highly integrated automotive 77 GHz radar chipset**
- **Sensor fusions**

Connectivity Applications:

- **Wireless Charging Solution** (advised for this product)
- **Advanced gateway architecture**
- **Telematic Control unit and V2X** (advised for this product)
- **High-feature Body Domain Control unit**

Transportation applications:

- **Commercial and Agricultural Vehicles (CAV)** (advised for this product)
- **CAV 24 GHz radar**
- **Commercial and Agricultural Vehicles (CAV)**
- **Drones/Multicopters**

Powertrain applications:

- **Transfercase**
- **Gasoline multi-port injection – discrete solution**
- **Gasoline direct injection**
- **Driving Domain Controller (DDC)**
- **Automatic transmission – hydraulic control**
- **Double-clutch transmission – hydraulic control**
- **Double-clutch transmission – electrical control**
- **48V micro-hybrid**

(H)EV applications:

- (H)EV battery management system
- **EV charging station**
- **(H)EV main inverter**
- **DC-DC Converter**

Designers who used this product also designed with

BTS7200-2EPA
PROFET™+2

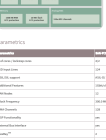
BSZ15DC02KD H
20V-60V Complementary MOSFET

BTS7200-2EPC
PROFET™+2

BSS138W
12V-800V Small Signal MOSFET

Diagrams

Interactive Diagram (pass over the diagram with the cursor to learn more about the features)



Parametrics

Parametrics	SAK-TC389QP-160F300S AD
# of cores / lockstep cores	4/2
A/D Input Lines	124
ASIL/SIL support	ASIL-D/ SIL-3
Additional Features	1Gbit/s Ethernet
CAN Nodes	12
Clock Frequency	300.0 MHz
DMA Channels	128
DSP Functionality	yes
External Bus Interface	yes
FlexRay™	2
Floating Point Unit	yes
Hardware Accelerator	no
I/O Operation Voltages min max	3.3 V 5.0 V
LIN	12.0
Number of ADC Modules	12.0
On-chip Clock Generation	yes
On-chip Voltage Regulator	yes
Oscillator Watchdog	yes
Program Memory	10.0 MByte
Real Time Clock	yes
SPI	5.0
SRAM (incl. Cache)	1568.0 kByte
Temperature	-40°C to 125°C
Type of Memory	Flash
Watchdog Timer	yes
eMMC	no

Documents

+ Expand all

+ Application Notes
+ Material Content Sheet (info)
+ Product Brochure
+ Application Brochure
+ Product Selection Guide
+ Presentations

Order

Sales Product Name	SAK-TC389QP-160F300S AD
OPN	TC389QP160F300SADKXUMA1
Product Status	active and preferred
Package name	PG-FBGA-516
Order online	
Completely lead free	yes
Halogen free	yes
RoHS compliant	yes
Packing Size	500
Packing Type	TAPE & REEL
Moisture Level	3
Moisture Packing	DRY

Boards

5 out of 12 boards

Image	Board	Family	Description	Status
	KIT_A2G_TC397_3V3_TFT Buy online	Microcontroller	This basic 3.3V TC397 Application Kit offers limited access to signals, for early evaluation purposes. An additional touchscreen display offers convenient handling.	active and preferred
	KIT_A2G_TC397_5V_TFT Buy online	Microcontroller	This basic 5V TC397 Application Kit offers limited access to signals, for early evaluation purposes. An additional touchscreen display offers convenient handling.	active and preferred
	KIT_A2G_TC375_5V_TRB Buy online	Microcontroller	The standard AURIX™ 2G TriBoard TC375 5V evaluation board, has a TC375TP mounted directly on the board and enables customers to quickly start to develop, evaluate and test their software.	active and preferred
	KIT_A2G_TC377TX_3V3_TR_S Buy online	Microcontroller	This AURIX™ 2G TC377TX 3.3V evaluation board, has a 2 x Gigabit Ethernet interface for added connectivity, and enables customers to quickly develop, evaluate and test their software. The TC377TX device is mounted on a socket so that it can be easily changed, making it particularly suitable for early project development.	active and preferred
	KIT_A2G_TC377_5V_TFT Buy online	Microcontroller	This basic 5V TC377 Application Kit offers limited access to signals, for early evaluation purposes. An additional touchscreen display offers convenient handling.	active and preferred

Show all boards

Tools & Software

+ Software

Training

+ Online Trainings / eLearning
+ Expert classroom trainings for Infineon Microcontrollers
+ Quick Trainings
+ Expert Trainings

Support

Search the FAQs! Enter your search terms...

XC800 8-Bit Microcontroller Family - programming the flash in...

Please tell us your e-mail address, then we will send you a request-form for your inquiry.
This will speed up an answer from our technical product support....

+ Read more

Dave Download Problem

It may happen that the email server of your provider declines the reception of Infineon community messages as spam due to their spam filter setting. ...

+ Read more

Memtool - support and licences

We are not able to provide official support for MemTool, because it is free of charge and not related to a specific product. For this reason we cannot license the distribution.... tools

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Meaning of Grade A behind the Step Code at Microcontrollers

The Grade A marking shows that the microcontroller can access internal flash with one wait state only.
By comparison, the industry standar...

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Technical Support

In order to enable us to process your inquiry as efficiently as possible and ensure your case is duly reported, we kindly ask you to submit your request via the following support form:...

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Tire Pressure Monitoring Product

If your inquiry concerns SP27/37 products, please send us your request via the online support form at: https://www.infineon.com/tsc ... https://www.infineon.com/tpms

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Write to the Technical Assistance Center
Call us toll-free or request a call back
Live chat with our Support Center
Ask our community for support in the forum

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