Telematics has become a key segment due to rising demand for connectivity and safety features, such as emergency call and remote vehicle diagnostics.

ST’s Telemaco2 dual core offers a powerful application processor and a secure, independent subsystem for CAN vehicle control. Telemaco2 is a cost effective, high performance automotive grade solution.

**KEY FEATURES**
- Cortex-R4 application core at 450+ MHz (700+ MIPS)
- Dedicated/secure CAN subsystem on embedded Cortex M3 with reserved SRAM, running its dedicated RTOS
- Multiple USB 2.0, SD/SDIO, CAN, SPI, I²C, UART
- Optional sound subsystem for connectivity applications
- Integrated power management logic
- Support of external connectivity: WiFi over SDIO, BT
- Boot code authentication and security
- Stand-by power ~50 µA
- Wake-up time < 50 ms
- Optimized system BOM
- AUTOSAR-ready hardware

**SOFTWARE OFFERING**
- Linux OS kernel + bsp
- Pre-integrated open-source & 3rd party MW for easy implementation
  - reference WLAN stack
  - Positioning & Dead Reckoning SW for ST GNSS Tracker
- FreeRTOS kernel for independent Cortex M3 subsystem
- Distributed RPMSG framework for secure inter process communication
- Bootloader toolset for custom/smart boot implementations

Cost-effective Automotive-grade Solution for In-vehicle Connected Services
TELEMACO2 BLOCK DIAGRAM FOR TELEMATICS AND CONNECTIVITY

Audio and sound
- Digital audio IF (I²S/SPI)
- Audio ADCs
- Audio DAC
- DSP sound subsystem

Main CPU
- Cortex R4

Embedded SRAM
- Cortex M3 Core
- CAN
- GPIO
- Reserved eSRAM
- Mailbox

Security
- OTP
- UUID
- Secure interconnect
- Boot code authentication

System
- Interrupt controller
- Watchdog
- JTAG
- DMA
- Timers/counters
- EFT
- RTC
- Power on reset
- Power management logic

Microcontroller subsystem
- Cortex R4 (Linux)

Connectivity
- High speed USB
- SD/MMC/SDIO
- SPI
- I²C
- UART
- GPIO
- Gen. purpose ADC

External memory interfaces
- Serial quad NOR/XIP
- Parallel NAND-NOR
- 16 bit SDRAM

EXAMPLE OF TELEMATICS SOLUTION

PART NUMBER

<table>
<thead>
<tr>
<th>Part number</th>
<th>CAN</th>
<th>DSP Sound Subsystem</th>
<th>Package information</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA1074</td>
<td>No</td>
<td>Yes</td>
<td>TFBGA 256 11x11x1.2 mm 0.65 mm pitch</td>
</tr>
<tr>
<td>STA1078</td>
<td>2x</td>
<td>No</td>
<td>TFBGA 256 11x11x1.2 mm 0.65 mm pitch</td>
</tr>
<tr>
<td>STA1079</td>
<td>1x</td>
<td>Yes</td>
<td>TFBGA 256 11x11x1.2 mm 0.65 mm pitch</td>
</tr>
<tr>
<td>STA1088</td>
<td>2x</td>
<td>Yes</td>
<td>LF8GA 361 16x16x1.7 mm 0.8 mm pitch</td>
</tr>
</tbody>
</table>

OPERATING CONDITIONS
- VDD: 1.14 V – 1.26 V
- VDDIO: 3.3 V ±10%
- VDDIOON: 3.3 V ±10%
- Operating Temperature Range: -40/+85 °C
- Automotive Grade