SICOMM Technologies

# Product Preview

PP/7033/1 September 2019

# SCT7033

## AIS Class B Protocol Stack Processor—CSTDMA

The SCT7033 is a complete, proven, protocol solution that seamlessly integrates with CML's CMX7032 Marine AIS Baseband Processor and allows designers and manufacturers to quickly develop AIS Class B CSTDMA transceivers, targeting emerging market applications.

## Functional Summary

- Implements AIS Class B CSTDMA protocol stack
- IEC 62287-1 edition 3 compatible
- CMX7032 / DE70322TC compatible
- exactTrax™ support

## Technical features

- ITU-R M.1371-5 compliant
- uBlox GNSS interface
- USB and UART Presentation Interfaces
- LED indicator drivers for channel and operational status
- DSC decoder included
- Optional GPIO for future customisation
- 3.3V supply
- 100LQFP package

## Applications

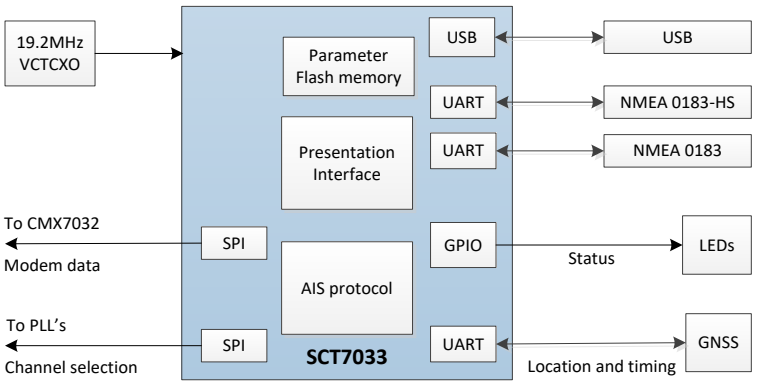
- AIS transceivers
- AIS receivers

AIS (Automatic Identification System) is governed by well-established marine standards intended, primarily, to allow ships to view marine traffic in their area and to be seen by that traffic. The standards define technical and operating parameters to ensure correct interworking between equipment and as such define the communications protocols that are to be used.

The SCT7033 integrates a proven protocol stack meeting these requirements. It supports CSTDMA data transmission as well as providing flexible interfacing to GNSS receivers, NMEA0183 marine communications bus, status LEDs and USB/UART interfaces. The device automatically configures the CMX7032, CML's AIS modem processor and PLLs to the appropriate AIS and marine radio channels.

The CMX7032 is automatically configured with Function Image™ 7032/7042FI-3 .x that supports full AIS transceiver functionality and also incorporates support for exactTrax™, exactEarth®'s satellite AIS solution.

The device is supported by a PC based configuration program that allows manufacturers to set MMSI numbers and vessel parameters, storing these in the device's non-volatile memory.



## Key Functionality

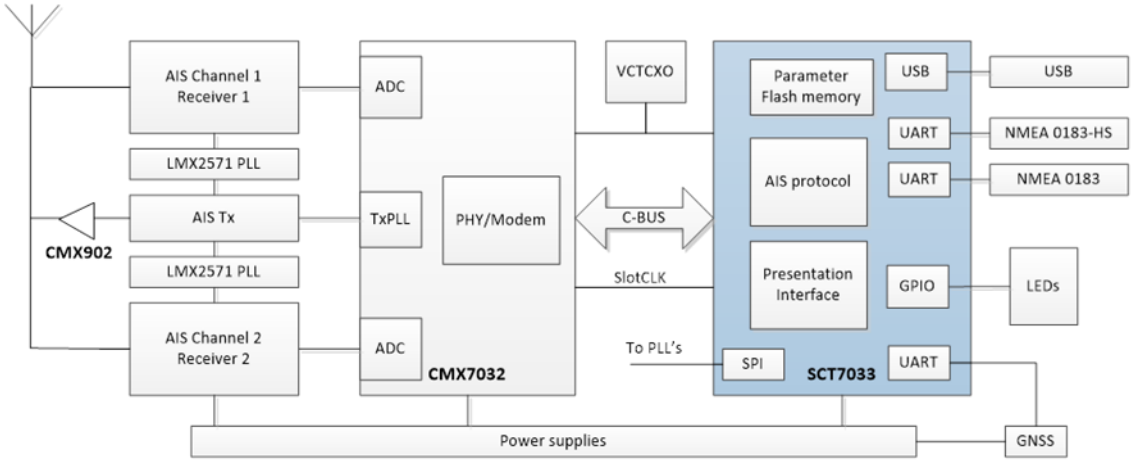
- ITU-R M.1371-5 compliant protocol stack
- Embedded 7032/7042FI-3.x Function Image™ that downloads automatically on power up
- GPS slot clock for CMX7032 timing
- SPI interface to control RF PLLs tuned to:
  - AIS channels 161.975 MHz (AIS1)and 162.025 MHz (AIS2)
  - Other marine channels including DSC
- UART for GNSS interface (uBlox module)
- USB and UART
- LED drivers for status indication
- 3.3V supply/64mA current consumption
- -40 to +85°C operating temperature range

## Key Specifications

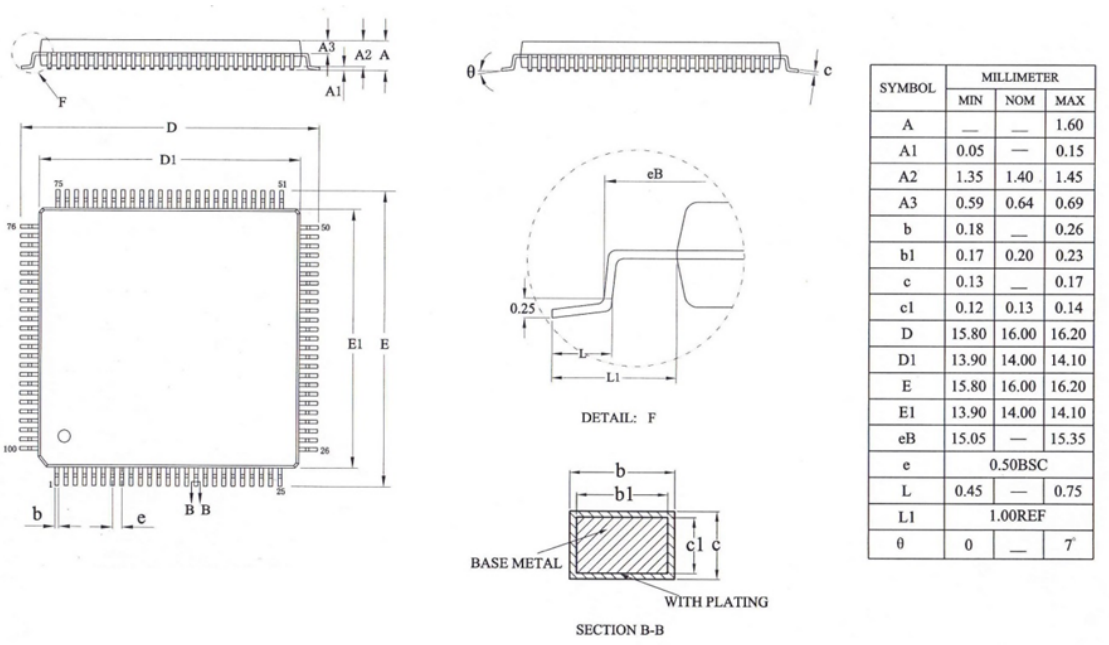
All parameters specific at Vdd=3.3V, CLK=19.2MHz, Tamb=25C

| Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Supply voltage | | | | |
| Main analogue and digital supplies | 3.0 | 3.3 | 3.6 | V |
| Supply current | | | | |
| Active mode | | 64 | | mA |
| Startup time, from powersave | | 20 | | ms |

## Typical application demonstrated using the DE70322TC



## SCT7033 Package Details




| SYMBOL | MILLIMETER | | |
|---|---|---|---|
| | MIN | NOM | MAX |
| A | — | — | 1.60 |
| A1 | 0.05 | — | 0.15 |
| A2 | 1.35 | 1.40 | 1.45 |
| A3 | 0.59 | 0.64 | 0.69 |
| b | 0.18 | — | 0.26 |
| b1 | 0.17 | 0.20 | 0.23 |
| c | 0.13 | — | 0.17 |
| c1 | 0.12 | 0.13 | 0.14 |
| D | 15.80 | 16.00 | 16.20 |
| D1 | 13.90 | 14.00 | 14.10 |
| E | 15.80 | 16.00 | 16.20 |
| E1 | 13.90 | 14.00 | 14.10 |
| eB | 15.05 | — | 15.35 |
| e | 0.50BSC | | |
| L | 0.45 | — | 0.75 |
| L1 | 1.00REF | | |
| θ | 0 | — | 7° |

## Information Resource

Website

- Product Preview
- Datasheet

Technical Portal (Contact CML for access)

- Datasheet/User manual
- Software updates

## Ordering Information

- SCT7033

**WHAT TO DO NEXT** Visit: www.cmlmicro.com Find: **Distributor**

## CML Microcircuits Benefits

### Faster time to market

Developing proven high performance and field tested ASSP ICs, CML is helping engineers to cope with increasing pressure in delivering shorter project design cycles.

### Design flexibility

CML's *FirmASIC*® reconfigurable technology with the use of a Function Image upload enables a single hardware platform to be used for multiple communications systems.

### High Quality

With 100% of products being tested before shipping, customers are assured of the highest reliability.

### Product Longevity

Designing with CML products, manufacturers are rewarded with longer product life cycles and a stable BOM, ensuring minimum engineering costs and maximum profit.

### Low Power

Being at the forefront of low power chip technology, manufacturers can develop smaller equipment with extended battery life.

### Superior Support

Internal and field based applications teams worldwide provide focused customer support to ease the development process.

**www.cmlmicro.com**

United Kingdom Tel: +44 (0) 1621 875500 email: sales@cmlmicro.com
United States Tel: +1 336 744 5050 email: us.sales@cmlmicro.com
Singapore Tel: +65 62888129 email: sg.sales@cmlmicro.com