



# CANgine

## FMSIA-CC

### Product Brief

CANgine FMSIA-CC is a smart FMS (fleet management standard) to RS232 protocol chip. The chip can be embedded into your hardware to connect it to the trucks or bus' FMS/CAN bus line. Like the device CANgine FMS the FMSIA-CC chip 'speaks' pure ASCII code, so handling the device and the delivered data is very easy. You only need to interpret the ASCII data in the received serial strings as outlined by the manual.

Once configured via the serial link FMSIA-CC starts every time with the same configuration as configuration data is stored in the internal non volatile EEPROM memory.

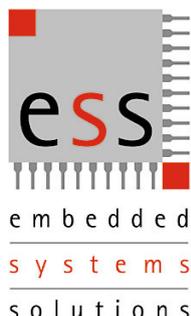
To connect FMSIA-CC to your controller no RS232 transceiver is needed. FMSIA-CC can be implemented in 5.0 V and 3.3 V designs. In the documentation you'll find a detailed design recommendation. Just select the features you need and in a few minutes the FMS protocol chip is implemented in your hardware.

Just as well will go on the implementation in your software. Configure CANgine FMSIA-CC to startup automatically after reset and you will receive the desired truck or bus FMS variables in the configured cycle time on the serial link.

CANgine FMSIA-CC comes in a QFP44 package with a temperature range of -40 ... +85 °C.

CANgine FMS is based on the FMS standard defined in mid 2002 by DaimlerChrysler, MAN, Scania, Volvo, Iveco and DAF and the later defined Bus FMS standard.

Technical Data	
Clock	20 MHz external clock
CAN baudrate	250k according to FMS standard
RS232 baudrates	2.400 to 115.200 baud
Optional Displays	LED RUN (green) and LED ERR (red)
Power supply	5 VDC or 3.3 VDC
Supply current	~ 15 mA
Operating temperature	-40 .. 80 °C
Case	QFP44 PLCC44 only for prototypes



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### Command Overview

?[CR]	show parameter settings
An[CR]	set axle count for serial transmission
ASn[CR]	set autostart feature on or off
Cn[CR]	set cycle time for serial transmission
CUc[CR]	set cycle time unit for serial transmission
Dc[CR]	set decimal separator for serial output
En[CR]	set RS232 echo on or off
F[CR]	send error register info to serial link
Mccccccc[CR]	set mask for data selection
P	send data set (in normal operation mode if data request mode is selected)
Pc[CR]	set protocol to truck or bus FMS protocol (in configuration mode)
R[CR]	restart FMS polling (exit configuration mode)
Sn[CR]	set screen or database format
V[CR]	send version information to serial link

Sample data output in screen format:

```

0-00:11:56.961
EngSpeed 2725,125 rpm
Accel 51,2 %
TCO 78,12 km/h MD:1 OS:0 DI:0 TP:0 HI:0 EV:0 D1:1/3/1 D2:0/2/7
Speed 78,12 km/h CC:1 BR:0 CS:0 PTO:1
Service +3205 km
Distance 45342,125 km
EngHours 975,05 h
FuelC 9839,0 L
weight 1000,0 kg (n) 2000,0 kg (n) 3000,0 kg (n)
EngTemp +71 degr
FuelLev 60,4 %
VehID CANgine
FMS 01.00 Diag:0 Requ:0

```



In database format, all values are separated by ';' and neither names nor physical units are transmitted.

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For more information about the whole CANgine product family or downloading the manual of CANgine FMSIA-CC see [www.CANgine.com](http://www.CANgine.com)