



TQ277 MTU

INTRODUCTION

The TQ277 MTU (Machine Telematic Unit) is an advanced machine telematics unit, with a Linux based OS and GSM/3G for connectivity, and GNSS for navigation. The MTU is perfectly suitable for remote integration and control of heavy machinery and other systems in need of remote access and collection of data.

THIRD GENERATION

This is the third generation of MTU from TelliQ with upgraded connectivity and navigation modules, as well as upgraded processor and many more improved features. The MTU is able to determine the object's coordinates and transfer them via OTA protocol. This device is perfectly suitable for applications where location and integration acquirement of remote objects in harsh environments is needed. The MTU also has additional I/Os, which let you control and monitor other devices on remote objects.



HARDWARE BASIC FEATURES

Feature	Description
GSM / GPRS	GSM, GPRS, EDGE, UMTS, HSPA Bands B6 and B19 (subset of B5) HSPA+, 21.0/5.76 Mbps down-/uplink SMS (text, data)
GNSS	GPS L1, Glonass L1, QZSS L1, Bands Position accuracy (CEP50): 2.5m Sensitivity - Acquisition: -147 dBm, Tracking: -166 dBm
CPU	ARM® Cortex™-A8 500MHz
Memory	DDR3 SDRAM 1GBIT(128MB)
Storage	SLC NAND Flash Parallel 2GBIT(256MB)
Misc	Real time clock (RTC) Three axis vibration sensor 0-8G Power save features. Chip SIM as standard Linux OS: OpenWrt Power supply: 9 – 36V

INTERFACE FEATURES

Feature	Description
DIN/DOUT	8 configurable DIN or DOUT (open drain)
Ignition IO	IN0 is dedicated for ignition IO1-2 can be used as counter
AIN	Analog input (0-5V, 0-30V)
VOUT	Switchable power supply output 12V or 24V
CAN	Two separate 2.0b CAN BUS interfaces
RS232	1x Isolated RS232, 1x RS232/485 configurable port
Ethernet	IEEE 802.3 10/100Mbps
Misc:	1-Wire, USB host
Internal interfaces	SIM card holder (2FF – Mini) SD card holder (Micro SD), JTAG/DEBUG

SOFTWARE

The TQ277 Advanced MTU is equipped with a Linux operating system which gives amazing possibilities for expansion and integration with new hardware and protocols. It also provides an environment for flexible ways to configure and reprogram the unit.

The TQ277 Advanced MTU is developed to work seamlessly with the internal MTU TelliQ applications as well as TelliQ Back Office systems, but can also be distributed as a stand-alone product.

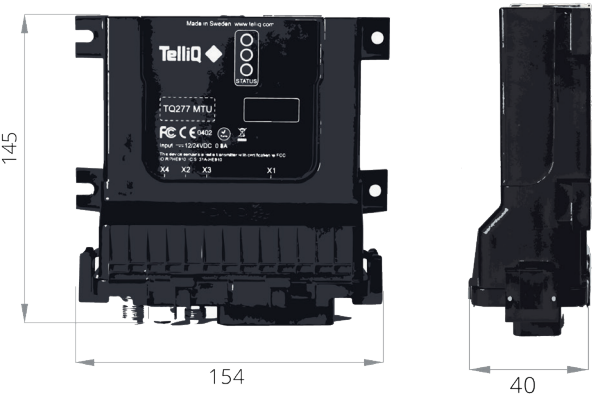
APPROVALS AND CERTIFICATIONS

Certifications	
EMC Directive	EN 13309:2010 EN 301 489-(1, 19, 52)
RED Directive	EN 301 511 EN 301 908-(1, 2) EN 60950-(1, 22)
Automotive Directive	UN ECE reg10 v.4

ENVIRONMENTAL

Feature	Description
IP Code	IP67
Chemical protection	Oil and fluid resistant
Operation temperature	-40°C ... +65°C
Storage temperature:	-40°C ... +85°C
Misc.	High vibration resistant

DIMENSIONS



The internal application is built up of different nodes, a node basically consists of a feature (ie. One node for CAN-BUS, one for 1-wire and so on.), that all communicate with an internal OTA server. There is also a script generator where Python programming language is used to configure the unit how to behave. The OTA server collects and compiles all the information and sends it via the TelliQ OTA protocol to a Back office.

POWER FEATURES

Feature	Energy consumption
Max	300 mA
Nominal	150 mA
Deep sleep	<200µA

EXTERNAL INTERFACES

Port	Name	Specification
X1	Mainconnector	Cinch 30p male
X2	Ethernet	M12 4p D coded female
X3	GNSS	Reverse polar TNC female
X4	GSM	TNC female

MAINCONNECTOR PIN DECLARATION

	1	2	3
A	Uin, main Power	AGND	AGND
B	IO0, Ignition	IO1	IO2
C	IO3	IO4	IO5
D	IO6	IO7	Ain 0-5V/0-30V
E	GND iso RS232	TXDE iso RS232	RXDE iso RS232
F	RTSE, iso RS232	CTSE, iso RS232	TXD/AE2 RS232/485A
G	RXD/BE2 RS232/485B	1wire +5V	1wire bus
H	AGND	CAN2, CAN High	CAN2, CAN Low
J	USB Vbus +5V	USBHAD-	USBHAD+
K	Uout 12V/24V	CAN1, CAN High	CAN1, Can Low

