ROOTCLOUD

T-AMS物联终端

型号：LI1516-DC-T-GL PRO

产品说明书

制造商：树根互联股份有限公司

地址：广州市海珠区琶洲大道东路3号303-309房

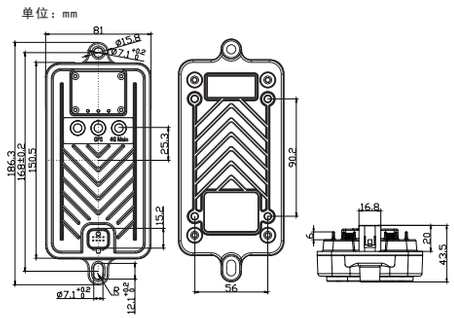
一、产品概述

本品专为工程机械设备设计,主要功能:工况数据交互,全网通4G,WIFI,BT通信,GPS定位及云端平台监控,管理.

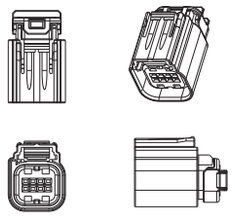
二、整机规格

1.外形尺寸

单位：mm



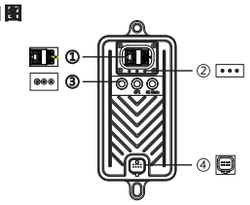
2.工业连接器（选配）



品牌：TE
壳体：141100-1
端子：1393366-1
线径：20#AWG

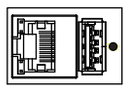
三、产品接口

1.接口图



2.接口说明

2.1 接口图中序号①为调试接口区

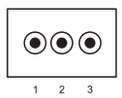


1.调试端口
2.USB接口
3.模式按钮

2.2 接口图中序号②为指示灯区

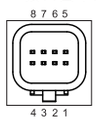
1.电源灯.红灯长亮:正常上电.
2.网络灯.红灯闪烁:模组启动中.
绿灯闪烁:设备拨号.
绿灯长亮:设备在线.
3.数据灯.红灯闪烁:模组未启动,数据交互中.
绿灯闪烁:数据交互.

2.3 接口图中序号③为天线接口区



1.DIV 天线
2.GPS 天线
3.4G主天线

2.4 接口图中序号④为数据通信接口区



1.Power in -	5.Power in +
2.ACC	6.IG
3.CAN1-H	7.CAN1-L
4.CAN2-H	8.CAN2-L

四、硬件参数

直流电源	9V-36V
设备功耗	休眠模式 ≤6ma@24V
	工作模式 ≤100ma@24V
工作温度	-40℃-85℃
防护等级	IP 67
散热方式	被动散热
相对湿度	10-95% RH @ 40℃ , 不结露
负载突降	汽车行业标准
机械抗震	Shock 400m/S2 IEC60068-2-27
定位模式	Beidou/GPS 冷启动<40s 热启动<12s
通讯制式	LTE-FDD:B1/B2/B3/B4/B5/B7/B8/B12/B13 /B25/B26/B18/B19/B20/B28 LTE-TDD:B38/B39/B40/B41 WCDMA:B1/B2/B4/B5/B8/B6/B19 GSM:850/900/1800/1900MHz
通讯区域	全球
SIM卡	贴片 M2M SIM卡
WIFI通信	2.4G WIFI IEEE 802.11 b/g/n
BT 通信	BLE 4.2
数据采集	2 x CAN ISO 11898-2/-5
	2 x DI 数字量
锂电续航(选配)	3000maH 锂电池
	带电池保护板
处理器	MCU 168MHz + CPU 1.2 GHz
存储	标配16GB EMMC, 可拓展存储
固件升级	远程OTA升级 / 本地U盘升级
天线类型	外置 置于开阔无遮挡区域
天线接口	3 x SMA 外螺内孔

指示灯	1 x Power 2 x RG
EMC	CISPR25 ISO 11452-2
匹配电阻	两路CAN默认不带120ohm匹配电阻

五、软件规格

1.支持基于CAN2.0B的车载控制器工况数据采集.
2.支持通过云平台进行车载控制器指令下发.
3.支持数据传输断线续传，本地数据存储.
4.支持远程OTA升级，本地U盘升级.
5.支持GPS位置信息采集.
6.支持驾驶行为分析.

六、随机附件

名称	数量	单位	备注
设备主机	1	台	
安装螺钉	2	颗	
设备天线	1	条	选配
主机线束	1	条	选配
说明书	1	份	

七、认证

ROOTCLOUD

T-AMS DEVICE

Model: LI1516-DC-T-GL PRO

Product manual

Manufacturer：ROOTCLOUD TECHNOLOGY CO., LTD

Address：Room 303-309,N0.3,Pazhou Avenue East, Haizhu District,GuangZhou,GuangDong,China.

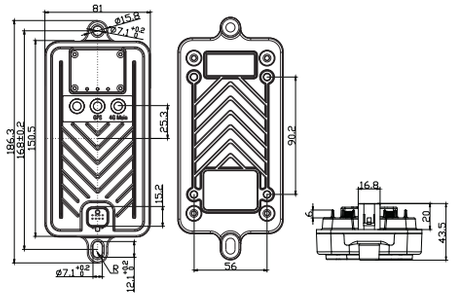
1.Description

The product is designed for construction machinery, Included function: Data interaction,4G,WiFi,BT,GPS position and Remote management, device monitor.

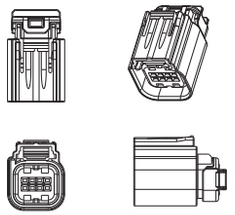
2.Specifications

2.1 Dimensions

unit : mm



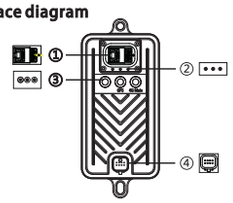
2.2 Connector (Optional)



Brand : TE CONNECTIVITY
Housing : 141100-1
terminal : 1393366-1
Wire : 20#AWG

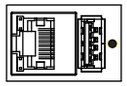
3.Interface

3.1 Interface diagram



3.2 Interface description

3.2.1 Position ① is debug area

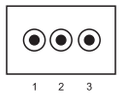


1.Debug interface
2.USB
3.MODE button

3.2.1 Position ② is indicator LEDs

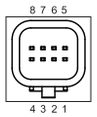
1.POWER LED:Hold in RED-Power on.
2.NET LED:Flicker in red-Module is starting.
Flicker in green-Device connecting.
Hold in green-Device connected.
3.DATA LED:Flicker in red-Module is starting and in data interaction.
Flicker in green-Data collecting.

3.3.3 Position ③ is antenna area



1.DIV antenna
2.GPS antenna
3.4G main antenna

3.3.4 Position ④ is signal and power area



1.Power in -	5.Power in +
2.ACC	6.IG
3.CAN1-H	7.CAN1-L
4.CAN2-H	8.CAN2-L

4.Features

Voltage	DC 9V-36V
Power Dissipation	Sleep mode ≤6ma@24V
	Work mode ≤100ma@24V
Temperature	-40℃-85℃
IP code	IP 67
Cooling	No active cooling
Humidity	10-95% RH @ 40℃ , No condensation
Load Dump	Automotive standards
Shock	Shock 400m/S2 IEC60068-2-27
GNSS	Beidou/GPS cold start<40s hot start<12s
Frequency Band	LTE-B2/B4/B5/B7/B12/B13/B25/B26/B38/B41 WCDMA:B2/B4/B5 GSM:850/1900MHz
AREA	Global
USIM	Mount M2M USIM
WIFI	2.4G WIFI IEEE 802.11 b/g/n
BT	BLE 4.2
Data collection	2 x CAN ISO 11898-2/-5
	2 x DI Digital input
Li-ion battery (Optional)	3000maH Li-ion battery
	Battery protection
CPU	MCU 168MHz + CPU 1.2 GHz
Storage	Standand 16GB EMMC,Scalable storage
Firmware update	OTA Update / USB disk
Antenna type	External Put under open sky
Antenna interface	3 x SMA

Indicator LEDs	1 x Power 2 x RG
EMC	CISPR25 ISO 11452-2
Terminal resistor	Both CAN bus don't mount 120ohm terminal resistor

5.Software

1.Support the data acquisition of vehicle controller based on CAN2.0B.
2.Support the instruction distribution of controller through cloud platform.
3.Support data transmission, continuous transmission, local data storage.
4.Support remote OTA upgrade, local USB disk upgrade.
5.Support GPS position information collection.
6.Support Driving behavior analysis.

6.Element

name	quantity	unit	note
Device	1	pcs	
Screw	2	pcs	
Antenna	1	pcs	Optional
Wire harness	1	pcs	Optional
Manual	1	pcs	

7.Certificate

ISEDC RSS warning

This device complies with Innovation, Science and Economic Development Canada licence-exempt RSS standard (s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference,including interference that may cause undesired operation of the device.

Le présent areil est conforme aux CNR d' l'innovation, la science et le développement économique Canada licables aux areils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

(1) l'areil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ISEDC Radiation Exposure Statement:

This equipment complies with ISEDC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

Cet appareil est

conforme aux limitesd'exposition de rayonnement RF ISEDC établiespour un environnement non contrôlé. Cetémetteur ne doit pas être co-implanté oufonctionner en conjonction avec toute autreantenne ou transmetteur.

Cet équipement doit être installé et utiliséavec une distance minimale de 20cm entre leradiateur & votre corps.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

Tous les changements ou modifications non expressément approuvée par le responsable de la conformité pourrait vider l'utilisateur est habilité à exploiter l'équipement.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. -Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.