

IT Controller (used 4G/ 3G/ GSM Communication) JRN-340K User Manual

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Locator Products Groupe
Product Development Department

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Introduction

The IT controller for 4G communication is a location information communication terminal device with packet data communication function of 4G/3G/GSM system (see table below) and GPS receiving function (L1 1.5GHz band). It uses TCP/IP/PPP as the communication protocol.

Overview

Supported frequency bands

Items	Specification
Band	GSM/GPRS/EDGE: Quad band、 850/900/1800/1900MHz UMTS/HSPA+: Eight band、 850(BdXIX) / 850(BdVI) / 850(BdV) / 900 (BdVIII) / 1700(BdIII) / 1900(BdII) / 2100(BdIV) / 2100MHz (BdI) LTE : Twelve band、 700 (Bd12,Bd28) 800 (Bd20) 850 (Bd18,Bd19,Bd5) / 900 (Bd8) / 1800 (Bd3) / 1900 (Bd2) / 2100(Bd1,Bd4) / 2600 (Bd7)
Output Power	(according to release 99) Class 4 (+33dBm $\pm$ 2dB) for GSM850 Class 4 (+33dBm $\pm$ 2dB) for GSM900 Class 1 (+30dBm $\pm$ 2dB) for GSM1800 Class 1 (+30dBm $\pm$ 2dB) for GSM1900 Class E2 (+27dBm $\pm$ 3dB) for GSM 850 8-PSK Class E2 (+27dBm $\pm$ 3dB) for GSM 900 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1800 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1900 8-PSK (according to release 99) Class 3 (+24dBm +1/-3dB) for UMTS 850, WCDMA FDD BdXIX Class 3 (+24dBm +1/-3dB) for UMTS 850, WCDMA FDD BdVI Class 3 (+24dBm +1/-3dB) for UMTS 850, WCDMA FDD BdV Class 3 (+24dBm +1/-3dB) for UMTS 900, WCDMA FDD BdVIII Class 3 (+24dBm +1/-3dB) for UMTS 1700, WCDMA FDD BdIII Class 3 (+24dBm +1/-3dB) for UMTS 1900, WCDMA FDD BdII Class 3 (+24dBm +1/-3dB) for UMTS 2100, WCDMA FDD BdIV Class 3 (+24dBm +1/-3dB) for UMTS 2100, WCDMA FDD BdI (according to release 8) Class 3 (+23dBm $\pm$ 2dB) for LTE 700, LTE FDD Bd12 Class 3 (+23dBm +2dB/-2.5dB) for LTE 700, LTE FDD Bd28 Class 3 (+23dBm $\pm$ 2dB) for LTE 800, LTE FDD Bd20 Class 3 (+23dBm $\pm$ 2dB) for LTE 850, LTE FDD Bd18 Class 3 (+23dBm $\pm$ 2dB) for LTE 850, LTE FDD Bd19 Class 3 (+23dBm $\pm$ 2dB) for LTE 850, LTE FDD Bd5 Class 3 (+23dBm $\pm$ 2dB) for LTE 900, LTE FDD Bd8 Class 3 (+23dBm $\pm$ 2dB) for LTE 1800, LTE FDD Bd3 Class 3 (+23dBm $\pm$ 2dB) for LTE 1900, LTE FDD Bd2 Class 3 (+23dBm $\pm$ 2dB) for LTE 2100, LTE FDD Bd4 Class 3 (+23dBm $\pm$ 2dB) for LTE 2100, LTE FDD Bd1 Class 3 (+23dBm $\pm$ 2dB) for LTE 2600, LTE FDD Bd7

Configuration

NO.	Equipment	Model	Quantity
1	IT Controller	JRN-340K	1
2	Communication Module	Cinterion PLS63-W (Telit) (Note 1)	1
3	Battery pack	NBB-3400 (TOCAD ENERGY) (Note 2)(Note 3)	1
4	eSIM	7DZLE0001 (docomo)	1

(Note 1)

The scope of our quality assurance for the communication module is limited to the isolation of whether problems caused by the communication module or not. The quality assurance of the communication module is to be performed by Telit. Therefore, we will ask Telit to conduct a detailed analysis of the cause of the problem and to confirm the spread of the defective lot.

(Note 2)

The built-in battery pack is warranted for 1 year for function and 3 months for performance. Please replace the battery pack on a regular basis.

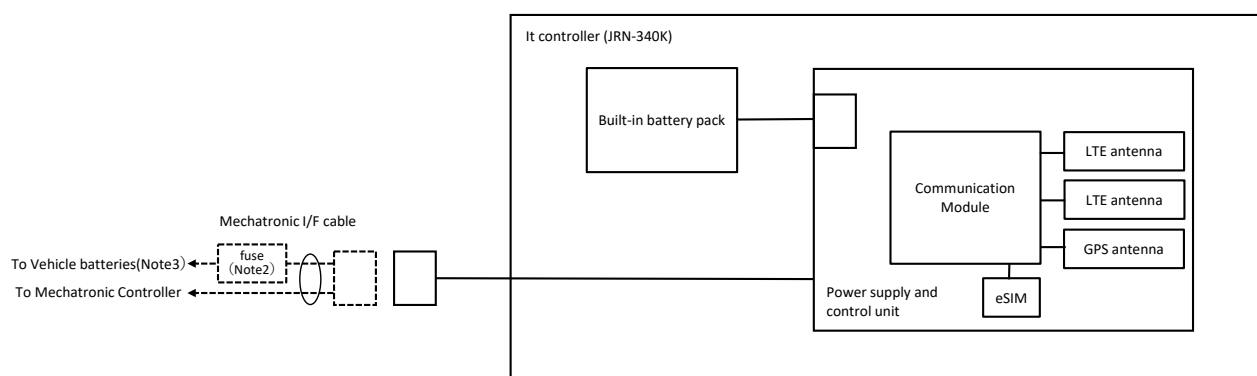
If periodic replacement is difficult, the performance of the battery itself may deteriorate or the battery may malfunction, which may cause the emergency call function not to operate when the heavy equipment battery is removed.

In addition, do not use metal products (tools, etc.) when removing and installing the battery connector.

The battery may short-circuit, resulting in excessive current flow, which may cause the battery to overheat, rupture, leak, or damage the equipment.

(Note 3)

The built-in battery pack must be restored to a fully charged state by replenishing (charging) power to the built-in battery pack when external power is supplied. If no power replenishment continues, the remaining capacity of the built-in battery pack may decrease or become empty.



Configuration Diagram

Note1 Please prepare mechatronic I/F cables by customer.

Note2 A fuse (recommended current rating: 2[A]) is required for the mechatronic I/F cable to protect against overcurrent.

Fuses should be inserted at two locations: battery and GND.

Note3 Do not take main power from a DC cigar. Poor contact may cause malfunction.

Functions

(1) Operation during key OFF performs the following.

- ① Periodic batches are performed at the specified time.
- ② The server responds to the call from the server side.
- ③ Acquire current location information by GPS and generate out-of-area alerts.

(2) Standby (power saving) control function

Return from standby (power saving) is as follows

*Set to allow return by the following interrupt when shifting to standby.

- ① CAN1_EN/CAN2_EN (Engine Key) ON from mechatronics
- ② Detect ACC ON⇔OFF change
- ③ Interrupt by RING0 signal from communication module
- ④ Date and time notification return by date and time setting
- ⑤ UART (serial data) receiving from PC
- ⑥ Charge signal (HOUR_METER) ON

When the device is restored from standby, the application is notified of the restoration.
Shift to standby follows the instruction from the application.

(3) Storing operating data

Enables storage of operating data.

(4) Clock

Enables the current time to be determined by information from GPS satellites.

Maintains and counts the date and time even when the main power is disconnected.

(5) Backup

It retains the IT controller's operation mode and communication settings even when the main power is disconnected. Also, when fully charged, within one hour (typ), at least one set of mail can be sent and received to and from the server.

(6) External communication function

It has 3 channels: mechatronics (CAN2), mechatronics 2 (CAN1), and monitor (RS-232C).

The communication protocol for CAN1/2 is SAE J1939, and baud rates of 250k/500k are supported.

(7) GPS

Both during key ON and key OFF, coordinates are acquired every 30 minutes or so.

Rollover is described separately.

(8) 4G/3G/GSM communications

Built-in communication module enables data communication using 4G/3G/GSM communication.

The mobile communication network will be compatible with NTTdocomo line.

(9) Software rewriting

It also enables software rewriting using WiFi and monitor (RS-232C) port.

(10) LED indication

The following LED indications are provided.

- ① Power source
- ② In/out of range of cellular phone network

(11) Mechatronics commands [supported by user application]

The following command exchanges information with the mechatronics via CAN communication.

- ① Key ON
- ② Engine ON
- ③ Key OFF

-
- ④ Alarm
 - ⑤ Fuel level
 - ⑥ Engine water level
 - ⑦ Engine oil level
 - ⑧ Fluid level
 - ⑨ Engine oil pressure
 - ⑩ Engine water temperature
 - ⑪ Air cleaner
 - ⑫ Charge
 - ⑬ DS (forced key OFF)
 - ⑭ RT (status inquiry)
 - ⑮ HS (hour meter change)
 - ⑯ CTO (command)
 - ⑰ Automatic key OFF judgment processing
 - ⑱ HD (Health Diagnostic command)HD
 - ⑲ FD (Failure Diagnosis command)FD

(12) Communication protocols in cell phone networks

Send in e-mail format to a mail server using the TCP/IP protocol.

(13) 時差設定

Operates at UTC+αh.

α h can be rewritten from outside. (Server input and console input)

(14) WLAN

WLAN that enables communication at 2.4GHz using IEEE802.11g/n is supported in AP mode.

WLAN Alliance certification (device certification) is not obtained.

(15) Abnormality detection function

It has a function to detect the following abnormalities and notify the VCU.

- ① Built-in battery pack removal
- ② CAN1/2 communication line disconnection

Specifications

1.1 Mechatronic interface specifications

(1) Mechatronic CAN2 (standard)

NO.	Item	Specification
1	Data transmission method	SAE J1939
2	Data transmission speed	250k/500kbps Depends on software configuration
3	Communication format	Extension 29bit

(2) Mechatronic CAN1 (Second)

NO.	Item	Specification
1	Data transmission method	SAE J1939
2	Data transmission speed	250k/500kbps Depends on software configuration
3	Communication format	Extension 29bit

(3) Monitor port (maintenance connector)

NO.	Item	Specification
1	Data transmission method	Half-duplex start-stop synchronization
2	Signal level	RS-232C
3	Data transmission speed	115,200bps
4	Frame length	Variable length
5	Data length	8bit
6	Start bit	1bit
7	Parity bit	None
8	Stop bit	1bit
9	Character code	EUC

1.2 General Specifications

NO.	Item	Specification
1	Supply voltage	Voltage range DC +10 to +16V (max. 32V)
2	Built-in battery Pack	Secondary battery Nickel-metal hydride battery (Ni-MH) NBB-3400 (500mAh/4.8V)
3	SIM interface	1.8V/3.0V仕様
4	Current consumption (Target value)	During communication: Average current 400mA or less/12V (+25°C) During standby: 23mA typ./12V (when not charged, +25°C, within range) (Note 1)
5	Surrounding environment	Operating temperature: -30 to +70°C Storage temperature: -40 to +85°C Operating humidity: 0 to 95%Rh (non-condensing) Communication module operation is subject to communication module specifications. Also, when using the built-in battery pack Operating temperature: -20°C to +70°C Charging temperature: 0°C to +70°C
6	Dimensions	200 x 60 x 30 (mm) (Excluding protrusions)
7	Weight	Less than 400g
8	Cabinet	Material : PBT 751SA

(Note 1)

The condition for intermittent receiving operation within the range is LTE communication DRX=256.

After the LTE communication module is set to sleep when the power-saving mode is shifted, the LTE module starts intermittent receiving operation.

The receiving interval of intermittent receiving varies according to the DRX (Discontinuous receiving) value specified by the communication operator as follows. (DRX is specified from 32 to 256)

Receive interval: 10 ms * DRX value.

Every 0.32 seconds for DRX=32

Every 0.64 seconds for DRX=64

Every 1.28 seconds for DRX=128

Every 2.56 seconds for DRX=256

(*) When out of range, the standby current increases due to carrier search.

1.3 Communication module (GPS function) specifications

No	Item	Specifications
1	Receiving satellite	GPS, QZSS
2	Incoming signal	GPS : 1575.42MHz (L1) QZSS : 1575.42MHz (L1C)
3	Number of receiving channels	55ch
4	Positioning accuracy	< 2m CEP-50 (Open Sky) *The rollover of the GNSS receiver will temporarily revert to the past date (April 28, 2013) on December 12, 2032, but will then automatically recalibrate to the correct present date in a few minutes.
5	Geodetic system	WGS-84 (default)
6	Time system	UTC
7	Antenna detection function	None

1.4 Communication module (communication function) specifications

No.	Item	Specifications
1	Type name	Cinterion PLS63-W (Thales)
2	Radio frequency *1	GSM/GPRS/EDGE: Quad band、 850/900/1800/1900MHz UMTS/HSPA+: Eight band、 850(BdXIX) / 850(BdVI) / 850(BdV) / 900(BdVIII) / 1700(BdIII) / 1900(BdII) / 2100(BdIV) / 2100MHz (BdI) LTE : Twelve band、 700 (Bd12,Bd28) 800 (Bd20) 850 (Bd18,Bd19,Bd5) / 900 (Bd8) / 1800 (Bd3) / 1900 (Bd2) / 2100(Bd1,Bd4) / 2600 (Bd7)
3	Transmitting output (room temperature) *2	(according to release 99) Class 4 (+33dBm $\pm$2dB) for GSM850 Class 4 (+33dBm $\pm$2dB) for GSM900 Class 1 (+30dBm $\pm$2dB) for GSM1800 Class 1 (+30dBm $\pm$2dB) for GSM1900 Class E2 (+27dBm $\pm$ 3dB) for GSM 850 8-PSK Class E2 (+27dBm $\pm$ 3dB) for GSM 900 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1800 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1900 8-PSK (according to release 99) Class 3 (+24dBm +1/-3dB) for UMTS 850, WCDMA FDD BdXIX Class 3 (+24dBm +1/-3dB) for UMTS 850, WCDMA FDD BdVI Class 3 (+24dBm +1/-3dB) for UMTS 850, WCDMA FDD BdV Class 3 (+24dBm +1/-3dB) for UMTS 900, WCDMA FDD BdVII Class 3 (+24dBm +1/-3dB) for UMTS 1700, WCDMA FDD BdIII Class 3 (+24dBm +1/-3dB) for UMTS 1900, WCDMA FDD BdII Class 3 (+24dBm +1/-3dB) for UMTS 2100, WCDMA FDD BdI Class 3 (+24dBm +1/-3dB) for UMTS 2100, WCDMA FDD BdI (according to release 8) Class 3 (+23dBm $\pm$2dB) for LTE 700, LTE FDD Bd12 Class 3 (+23dBm +2dB/-2.5dB) for LTE 700, LTE FDD Bd28 Class 3 (+23dBm $\pm$2dB) for LTE 800, LTE FDD Bd20 Class 3 (+23dBm $\pm$2dB) for LTE 850, LTE FDD Bd18 Class 3 (+23dBm $\pm$2dB) for LTE 850, LTE FDD Bd19 Class 3 (+23dBm $\pm$2dB) for LTE 850, LTE FDD Bd5 Class 3 (+23dBm $\pm$2dB) for LTE 900, LTE FDD Bd8 Class 3 (+23dBm $\pm$2dB) for LTE 1800, LTE FDD Bd3 Class 3 (+23dBm $\pm$2dB) for LTE 1900, LTE FDD Bd2 Class 3 (+23dBm $\pm$2dB) for LTE 2100, LTE FDD Bd4 Class 3 (+23dBm $\pm$2dB) for LTE 2100, LTE FDD Bd1 Class 3 (+23dBm $\pm$2dB) for LTE 2600, LTE FDD Bd7

4	Receiving sensitivity (room temperature)*3	-97dBm or less
5	LTE specification	3GPP Release 10 UE CAT 1 supported DL 10Mbps, UL 5Mbps
6	HSPA specification	3GPP Release 7 DL 7.2Mbps, UL 5.7Mbps HSDPA Cat.8 / HSUPA Cat.6 data rates Compressed mode (CM) supported according to 3GPP TS2 5.212
7	UMTS specification	3GPP Release 4 PS data rate – 384 kbps DL / 384 kbps UL CS data rate – 64 kbps DL / 64 kbps UL
8	SMS specification	Point-to-point MT and MO Cell broadcast Text and PDU mode Storage: SIM card plus SMS locations in mobile equipment

*1 The following bands supported by PLS63-W are masked by this device as unused bands.

LTE: Bd13

*2,*3 These are the guaranteed design values of the communication module alone and do not guarantee the performance of the module when installed on construction equipment. Communication status should be checked in the actual usage environment.

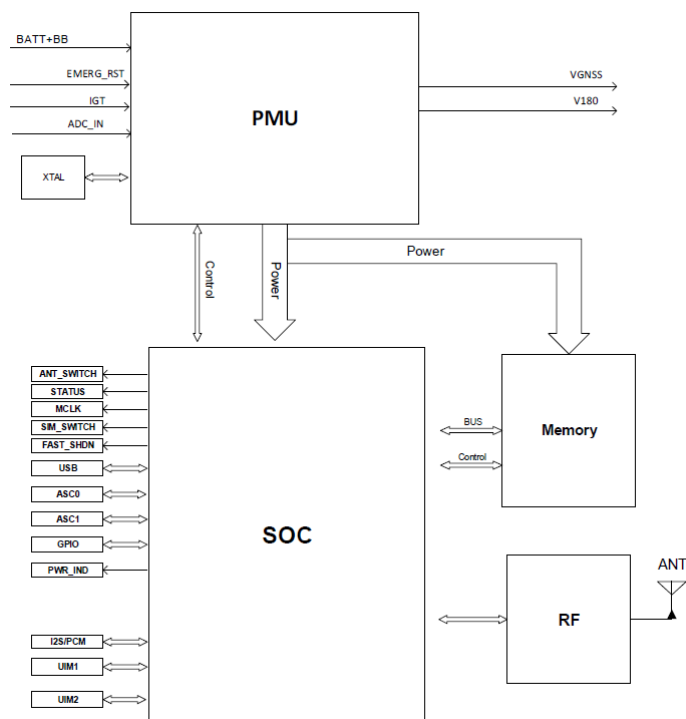


Fig. : PLS63-W Block Diagram

1.5 Built-in battery pack specifications

NO	Item	Specifications
1	Type name	NBB-3400
2	Type	Nickel-Metal Hydride battery (Ni-MH)
3	Nominal Voltage	4.8V
4	Nominal capacity	500mAh
5	Battery Label	See diagram below.

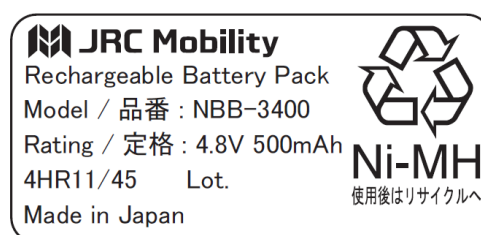


Fig. : Internal Battery Pack Label Diagram

1.6 External Connector Specifications

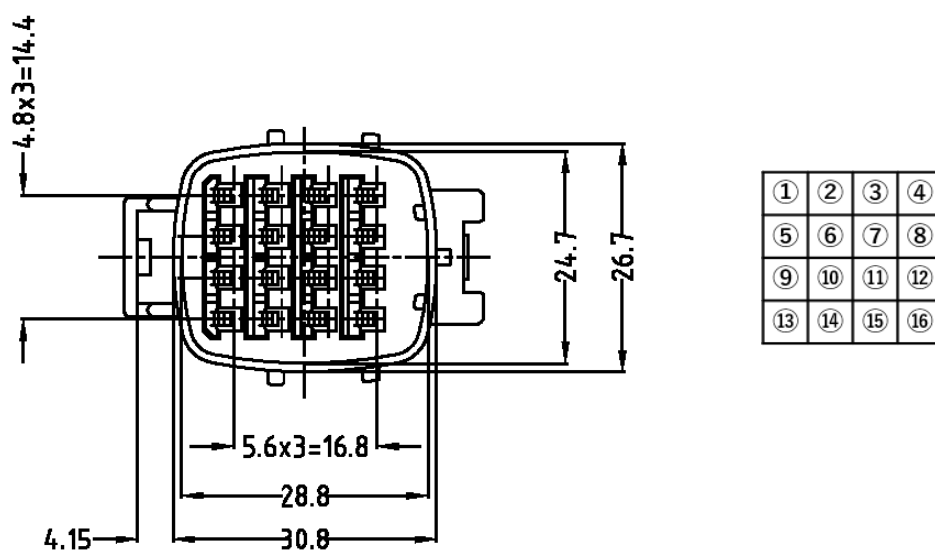
N O.	Item	Specofications
1	Interface connector	Manufacturer : TE Type name : 368050-1

External Interface Specifications

1.7 Interface Connector Specifications

1.7.1 Pin assignment table

端子番号	端子名	備考
1	BAT	Battery
2	GND	GND
3	HOUR_METER	Hour meter signal (operating/non-operating discrimination signal)
4	GND	GND
5	NC	NC
6	NC	NC
7	MONI_RXD	IT Controller → Monitor
8	MONI_TXD	Monitor → IT Controller
9	CAN0_EN	CAN0 Enable
10	CAN0_H	CAN0 High-Level input-output
11	CAN0_L	CAN0 Low-Level input-output
12	GND	GND
13	CAN1_EN	CAN1 Enable
14	CAN1_H	CAN1 High-Level input-output
15	CAN1_L	CAN1 Low-Level input-output
16	GND	GND



Connector Outline Drawing
Mating surface

1.8 Power Serial Interface Equivalent Circuit

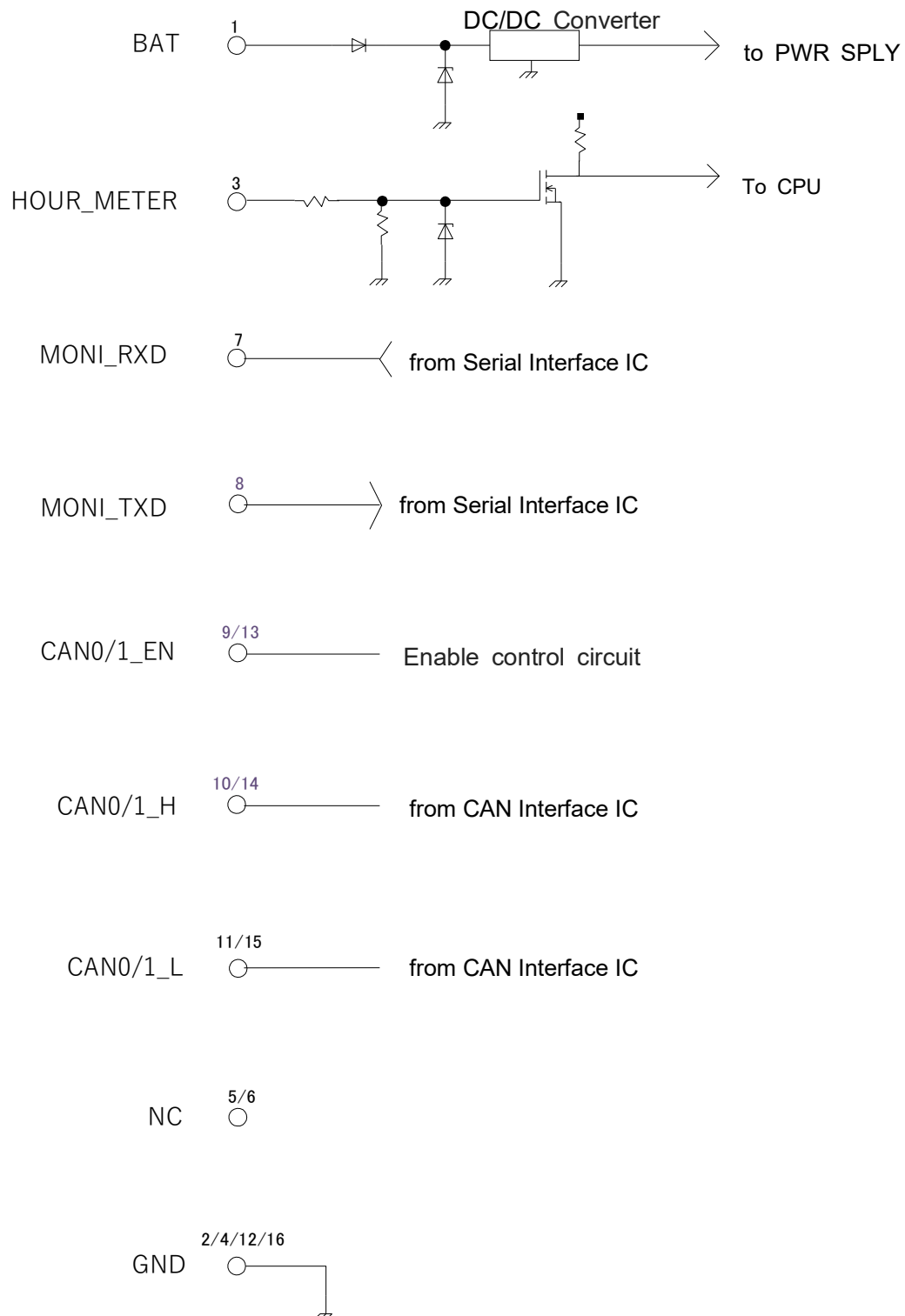
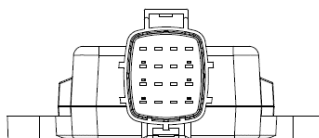


Fig: Power Serial Interface Equivalent Circuit

1.9 JRN-340K



About GPS Week Number Rollover

The GNSS receiver rollover will temporarily revert to the past date (April 28, 2013) on December 12, 2032, but will then automatically recalibrate to the correct present date within a few minutes.

Handling Precautions

	Caution	This symbol indicates a general caution, warning, or hazard not otherwise specified.
	Instruction	This symbol indicates a general action to the user.
	Procedure for turning off the power	This symbol indicates that the user must unplug the power plug from the outlet.
	Prohibition	This symbol indicates a general prohibition notice.
	Disassembly Prohibited	This symbol indicates a prohibition against disassembling this device, which may cause electric shock or other problems.
	Don't touch	This symbol indicates a prohibition notice for touching certain parts of the product under certain conditions that may result in injury.
	No wetting	This symbol indicates a prohibition notice when the product is used in a place where water may be splashed, wet, soaked, applied, or spilled, which may cause electric shock or fire due to electrical leakage.

1.10 Specification values

Be sure to observe the specification values for this device. Exceeding the specification values may cause malfunctions.

	1 Power supply voltage: Main unit (input voltage) This is the maximum voltage that can be applied between the power supply terminal and the ground terminal (GND).
	2 Operating Temperature The operating temperature is the temperature range within which the product can operate satisfying the specifications. Exceeding this temperature range may result in malfunction.
	3 Storage Temperature This is the temperature range for storing the product without operating it, and if the temperature exceeds this range, the performance may not be satisfied. Exceeding this temperature range may result in malfunction.

1.11 Precautions for use

	1 This product is not suitable for use in areas where children are likely to be present.
	2 Do not unscrew or disassemble this equipment. Doing so may cause performance degradation or malfunction.
	3 When performing maintenance with the screws removed, be sure to take measures against static electricity (battery replacement, reset switch operation, etc.). Failure to do so may cause performance degradation or malfunction.
	4 Dropping this device or leaving it outside for a long period of time may cause scratches, stains, or malfunctions.
	5 This equipment is not designed for use in the following special environments. Do not use the instrument in the following special environments, as it may cause

	performance degradation or malfunction. -Water, oil, chemicals, organic fluids, etc. -In dust -In corrosive gases such as salt air, chlorine, hydrogen sulfide, ammonia, sulfur oxides, hydrogen chloride, and sulfurous gases. -Environment with strong static electricity or electromagnetic waves
	6 Do not use for medical equipment, space, aerospace equipment, disaster prevention, security equipment, or other equivalent equipment that requires a high level of safety that may affect human life.
	7 Do not use the product near people wearing medical or electrical equipment. Radio waves may cause malfunction of medical equipment, etc.
	8 Depending on the car model, the antenna may affect in-vehicle electronic devices. When installing or wiring the antenna, it should be installed and wired as far away from in-vehicle electronic devices as possible. In particular, when installing a GPS antenna, please install it as far away from the car navigation system and other antennas as possible. This may cause performance degradation.
	9 Forcing, heating, pulling, or bending the cable with heavy objects may damage the cable and cause fire or electric shock.
	11 Do not operate it while driving a car or machine. Doing so may cause an accident.
	12 If water, metal, or other foreign objects enter the interior, first turn off the power to the product, disconnect the power cable, and contact us. Using the product as it is may cause fire, electric shock, or malfunction.
	13 When cleaning, turn off the power and unplug the power cable for safety. Failure to do so may cause fire or electric shock.
	14 When cleaning the surface, do not use organic solvents such as thinner or benzene. They may damage the surface paint. To clean the surface, remove dust and dirt and wipe with a clean cloth

1.12 Precautions for implementation

	1 When handling this equipment, be careful to avoid static electricity. Static electricity may cause malfunctions. In particular, pay attention to static electricity on the interface connector.
	2 Be sure to turn off the power circuit before inserting connectors. Also, avoid collision and insert the connectors in parallel.
	3 Be careful not to touch the terminals of the interface connector with bare or greasy hands.
	4 Do not use or leave the equipment in high direct sunlight or in high temperatures. Doing so may cause overheating, deformation, or malfunction of the equipment.
	5 Install the main unit and cables in such a way that they do not interfere with the operation or handling of airbags or other equipment.
	6 Connect each cable securely to the product. Failure to do so may cause the cables to disconnect or damage the connectors.
	7 Do not install the device near devices that generate magnetic fields, such as high-voltage power lines or transformers. The device may not operate properly.

1.13 Overcurrent protection



- 1 This device does not have a built-in fuse for overcurrent protection. To prevent hazards, use a fuse for overcurrent protection in the power supply line.
-

1.14 Storage Precautions



- 1 Avoid locations where corrosive gases such as salt air, chlorine, hydrogen sulfide, ammonia, sulfur oxides, hydrogen chloride, and sulfurous gases are generated.



- 2 Since condensation will form on a set of equipment in places where there are sudden changes in temperature and humidity, avoid such environments and store the equipment in places where there are few changes in temperature.



- 3 Do not place the product on an unstable surface, such as on a wobbly table or on a tilted surface. Doing so may cause the product to fall, resulting in malfunction or injury.



- 4 Do not store the product in a humid or dusty place. Doing so may cause overheating, ignition, or malfunction.
-

1.15 Transportation Method



- 1 Do not throw or drop it. Doing so may break the device.



- 2 Do not allow it to get wet. Please be careful not to get it wet during transportation during rainfall and snowfall.
-

1.16 Disposal



- 2 Do not throw batteries into fire. It may explode and cause fire or injury.
-

1.17 Other



- 1 Please note that we are not responsible for any defects or abnormalities caused by deviations from the specifications.



- 2 The Company reserves the right to change to alternative components to the extent that electrical, mechanical, and environmental characteristics are not impaired with respect to the equipment described in this specification.



- 3 If the enclosure becomes too hot to touch, avoid touching it directly, stop using it immediately, and contact our sales department or the nearest branch or sales office.



- 4 Never perform internal inspections or repairs by the customer. Inspection and repair by unprofessional maintenance personnel may result in fire or electric shock. For internal inspection and repair, contact our sales department or the nearest branch/branch office or distributor.
-

Compliance Notation

True Importer
No subject countries

Compliance with FCC/IC Rules and Regulations (USA and Canada)

• FCC

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

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.

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

• IC This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.