

MEITRACK Driver Fatigue Monitor System User Guide



Applicable Model: T466G



File Name	MEITRACK T466G Driver Fatigue Monitor System User Guide		
Model	T466GCreation Date2018-12-13		
		Update Date	2019-01-30
Subproject	Product User Guide	Total Pages	18
Version	V1.1	Confidential	External Documentation

Change History

Contents

1 Cop	yright and Disclaimer	4 -
2 Proc	duct Introduction	4 -
	2.1 Brief Introduction	4 -
	2.2 T466G System Scheme Diagram	4 -
	2.3 Product Functions	5 -
	2.4 Function Description	5 -
3 Prod	duct Specifications	6 -
	3.1 T466G Specifications	6 -
	3.2 Fatigue Sensor Specifications	7 -
4 T46	6G and Accessories	7 -
	4.1 T466G	7 -
	4.2 T466G standard accessories:	7 -
	4.3 Optional accessories:	7 -
5 T46	6G Installation	8 -
	5.1 Interface Definition	8 -
	5.2 T466G Connection	9 -
	5.3 Finding an Installation Location	9 -
	5.4 Testing	- 10 -
6 DIP	Switch Introduction	- 11 -
7 Mei	track Manager Configuration	- 12 -
	7.1 Setting the GPRS Event	- 12 -
	7.2 Setting the Fatigue Driving function	- 13 -
8 Sett	ing Parameters by Command	- 13 -
9 GPR	S Protocol About Alert Event 114	- 14 -
10 MS	SO3 Platform	- 15 -
	10.1 Add a T466G	- 15 -
	10.2 Querying Driver Fatigue Time Statistics Reports	- 16 -
	10.3 Querying Driver Fatigue Trip Statistics Reports	- 17 -
	10.4 Querying Driver Fatigue Mileage Statistics Reports	- 17 -
	10.5 Querying Alert Reports	- 18 -
	10.6 Querying Alert Photos	- 18 -



1 Copyright and Disclaimer

Copyright © 2019 MEITRACK. All rights reserved.

Cmeitrack , ∞ and \odot are trademarks that belong to Meitrack Group and its subsidiary.

The user manual may be changed without notice.

Without prior written consent of Meitrack Group, this user manual, or any part thereof, may not be reproduced for any purpose whatsoever, or transmitted in any form, either electronically or mechanically, including photocopying and recording.

Meitrack Group shall not be liable for direct, indirect, special, incidental, or consequential damages (including but not limited to economic losses, personal injuries, and loss of assets and property) caused by the use, inability, or illegality to use the product or documentation.

2 Product Introduction

2.1 Brief Introduction

Driver fatigue monitoring system is a complete system object, specially designed to monitor whether the driver is in fatigue driving state. The driver's face is monitored by the fatigue monitor to determine whether the driver is in the fatigue driving state. In addition, drivers are reminded by voice broadcast. At last, warning information is uploaded to the platform to make statistics of drivers' fatigue driving reports. This system includes T466G fatigue driving monitor and MS03 platform, which is suitable for long-distance passenger/freight vehicles, dangerous goods transport vehicles, school buses, taxis, buses, family cars and other types of vehicles.

2.2 T466G System Scheme Diagram





2.3 Product Functions

- Drowsiness alert
- Distraction alert
- Absence alert
- Smoking alert
- On Phone Call alert
- Yawning alert

2.4 Function Description

The T466G driver fatigue monitor system can be used by logistics companies and long-distance bus companies to detect a driver's fatigue state and provide an early voice warning. This will help prevent accidents in a timely manner, protect fleet companies' properties, and ensure driver safety. In addition, driver behaviors can be monitored. This monitor can detect the following six events by recognizing faces and eyeballs:

Function	Triggering Condition	Voice Warning	Photo	
Drowsiness	• When the green LED indicator is steady on	Please watch the road.	Upload alert photos.	
alert	and the driver closes the eyes, lowers the			
	head, or does not keep the eyes on the			
	road, a drowsiness alert will be generated.			
	• When the driver opens the eyes, the alert			
	will be cleared.			
Distraction	• When the driver is distracted, looks up, or	Please keep your eyes	Upload alert photos.	
alert	does not keep the eyes on the road, a	on the road.		
	distraction alert will be generated.			
	• When the driver keeps the eyes on the			
	road, the alert will be cleared.			
Absence	• When the green LED indicator is on and	Please aim the	Upload alert photos.	
alert	the driver is absent or covers the camera	monitor at your face.		
	for more than 15 seconds, an absence			
	alert will be generated.			
	• When the camera can capture the driver's			
	face, the alert will be cleared.			
Smoking	• When the green LED indicator is on and	No smoking, please.	Upload alert photos.	
alert	the driver is smoking, a smoking alert will			
	be generated.			
	• When the driver is not smoking, the alert			
	will be cleared.			
On Phone	• When the green LED indicator is on and	No calling, please.	Upload alert photos.	
Call alert	the driver calls for 15 seconds, an On			
	Phone Call alert will be generated.			
	• When the driver puts down the phone,			
	the alert will be cleared.			



Yawning	•	When the green LED indicator is on and	Please take a rest.	Upload alert photos.
alert		the driver is yawning, a yawning alert will		
		be generated.		
	•	When the driver is not yawning, the alert		
		will be cleared.		

3 Product Specifications

3.1 T466G Specifications

Item	Specifications		
Dimension	80.5 mm x 60 mm x 23.5 mm		
Weight	100g		
I/O power cable length	50 cm		
Power supply	DC 11.4–90 V/1.5 A		
Power consumption	Standby (sleep) power consumption 5mA, working power consumption 65mA~80mA		
Operating temperature	-35°C to 80°C (available for the device without a battery)		
Operating humidity	5% to 95%		
LED indicator	Green indicator showing the GSM signal		
	Blue indicator showing the GPS signal		
Button/Switch	1 upgrade button (used to manually upgrade the firmware)		
	1 power button		
Memory	8 MB buffer		
Sensor	3-axis accelerometer (used to wake the device up by vibration and detect towing alerts,		
	harsh acceleration alerts, and harsh braking alerts)		
Frequency band	T466G-E:		
	UMTS/HSDPA: 900/2100 MHz		
	GSM/GPRS: 900/1800 MHz		
	T466G-A:		
	UMTS/HSDPA: 850/1900 MHz		
	GSM/GPRS: 850/900/1800/1900 MHz		
	T466G-T:		
	UMTS/HSDPA: 850/2100 MHz		
	GSM: 850/900/1800/1900 MHz		
	Note: Select proper device according to the local frequency band.		
GPS sensitivity	-165 dB		
Positioning accuracy	2.5m		
I/O port	2 digital inputs and 1 analog detection input (0-30 V; selectable positive, negative, and		
	analog detection inputs)		
	1 output		
	1 USB port		
	1 1-wire interface (set to an output or a negative input)		
	1 output (voltage: 5V)		



1 RS232 port (T466G RS232 version): GND/TX/RX

3.2 Fatigue Sensor Specifications

Item	Specifications
Weight	300g
Power supply	9–32 V
Average operating current	340 mA (12 V)
	180 mA (24 V)
Operating temperature	-30°C to 75°C
Operating humidity	5 %–95 %
Pixel	320x240
Baud rate	115200 bps
Cable	150 cm (length)

4 T466G and Accessories

4.1 T466G



T466G

Driver Fatigue Monitor sensor

Bracket

4.2 T466G standard accessories:

- T466G tracker (internal and external antenna version is optional)
- L wrench
- Hexagon screw
- CD download card
- Standard Android USB cable

4.3 Optional accessories:

Optional Accessory	Description
Relay (12 V/24 V)	Connect to output 1.
Buzzer	Connect to the 1-Wire interface (green cable), which needs to be set to
	output 2.
	The buzzer should be connected to 5 V power supply.
A52 digital temperature sensor	Connect to the 1-Wire interface (green cable).



iButton reader	Connect to the 1-Wire interface (green cable).
A53 fuel level sensor	Connect to AD input 1 (blue cable).
A64 remote control receiver	Connect to input 1 (grey cable), which needs to be set to the remote
	control input.
A67 remote control	
400 mAh battery	High-temperature or normal-temperature battery optional
External GPS antenna	3 meters in length
	Available for the device with an external antenna connector (two
	hardware versions available: internal or external antenna)

5 T466G Installation

5.1 Interface Definition

The I/O cable is an 11-pin cable, including the power, analog input, and negative/positive input and output interfaces.

1	2	3	4	5	6	7	8
Power (+)	GND (-)	Input 1 (-)	Input 2 (+)	AD input 1	Output 1	1-wire	5 V output cable
						interface	
9	10	11					
GND	RS232-Tx	RS232-Rx					

Pin Number	Color	Description
1 (Power +)	Red	Positive charge of the power input, connected to the positive charge of the
		vehicle battery. Input voltage: 11–36 V. 12 V or 24 V is recommended.
2 (GND)	Black	Ground wire, connected to the negative charge of the vehicle battery or to
		the negative terminal.
3 (Input 1)	Grey	Digital input, (negative trigger by default)
		Connect to a door trigger signal cable to detect vehicle door status. (Most
		Chinese, Korean, and Japanese cars are negative edge-triggered.)
		The port can be set to positive trigger, AD input 2 (0–30 V), or remote control
		input.
4 (Input 2)	White	Digital input, positive trigger. The port can be set to negative trigger or AD
		input 3 (0–30 V).
		Connect to the vehicle ACC cable by default to detect the vehicle ACC status.
5 (AD input 1)	Blue	Analog input with 12-bit resolution and valid voltage 0–30 V.
		The port can be set to input 3 (positive/negative).
6 (Output 1)	Yellow	Valid: low level (0 V)
		Invalid: open collector
		Maximum voltage for output open collector (invalid): 60 V
		Maximum current for output low level (valid): 500 mA
		Set the PWM output (output time and adjustable pulse width).
		Connect to an external relay to remotely cut off the vehicle fuel cable or



		engine power supply.
7 (1-wire interface)	Green	Connect to the iButton and other devices supporting 1-wire protocol.
		The port can be set to negative input 4 or output 2 open collector.
8 (5 V output cable)	Pink	5 V output
		It can be connected to the power supply of a temperature sensor.
9 (GND)	Black	Ground wire
10(RS232-Tx)	Purple	The device sends data through RS232 port.
11(RS232-Rx)	Brown	The device receives data through RS232 port.

T466G has connectors for fatigue driving sensors for easy installation. Two long wires are drawn from the connector to supply power for the sensor:

12	13
Sensor power(+)	GND

Pin Number	Color	Description				
12 (Sensor power +) Red(long wire)		Positive charge of the sensor power input. Connect to the vehicle AC				
		cable by default to get power. Input voltage: 9–32 V.				
13 (GND) Black(long wire)		Ground wire, connected to the negative charge of the vehicle battery or				
		to the negative terminal.				

5.2 T466G Connection

T466G has a connector for easy connected with the fatigue driving sensor. Two long red and black I/O wires are used to connect the power supply of fatigue driving sensor. Due to the large power consumption of the sensor, it is easy to exhaust the car battery, the long red line is connected with ACC by default to power the sensor.



5.3 Finding an Installation Location

Each type of vehicle has a different internal structure. So you need to find a right location to install the Monitor. In general, you can install it around the dashboard (left/right/front). The installation angle between the Monitor and a



driver's eyes must be smaller than 30 degrees. It can be fixed on the uneven surface inside the vehicle as long as the camera can capture the driver's face.



5.4 Testing

Tear the protective paper down from the bottom of the bracket, put the Monitor on the installation location around the dashboard, and connect the Monitor to the power supply. Adjust the lens' direction according to the status of the LED indicator and aim the lens at a driver.



Connect the Monitor to the bracket using a universal joint, and aim the lens at the driver. Please ensure that the lens must be installed vertically, which means that the green LED indicator and the center of the lens are vertical. Don't press the double-sided tape too hard for the first time, so that you can re-adjust the installation location easily. Sit on the driver's seat to test whether the installation location is right. If the green LED indicator of the camera is on

or is blinking, it means that the Monitor has detected the driver's open eye state. Please ensure that the distance between the lens and eyes ranges from 60 cm to 90 cm. When the driver keeps the eyes on the road and the green LED indicator is on, it means that the Monitor is installed normally and works properly. Ensure that the lens and the green LED indicator are vertical.

The dashboard of trucks and buses is low, so you should install the Monitor on a higher location around the dashboard.



If the Monitor is installed in front of the driver to the left or to the right, the Monitor should not be higher than the driver's eyes, and the angle between the installation location and the driver's eyes should not be higher than 30 degrees. Please ensure that the distance between the lens and eyes ranges from 60 cm to 90 cm. Sit on the driver's seat to test whether the installation location is right. If the green LED indicator of the camera is on or is blinking, it means that the Monitor has detected the driver's open eye state. When the driver opens the eyes, the blinking of the green LED indicator is a normal condition, especially for the driver wearing a pair of glasses. Sometimes the green LED indicator will blink because there is something that shades the eyes. If the green LED indicator is still on or is still blinking when the driver moves slightly, it means that the installation location is right and you can drive to start your trip.



6 DIP Switch Introduction

Each person's requirements for sensitivity detection will vary as time goes by. When the people use the product for the first time, they hope that an alert will be generated immediately once they close their eyes. After a period, they may complain too many warnings and hope that an alert will be generated only when they are in a real drowsiness or distraction state. Therefore, we provide the sensitivity level function for users. After a sensitivity level is set, the real drowsiness and distraction state can be quickly detected. But the alert time of distraction and closing eyes will be different.

The DIP switch is at the back of the Monitor, shown in the following figures. The switch will be pushed to the off position before delivery.









DIP1, DIP2, DIP3, DIP4: switch off (pull down)

The functions of DIP switches are as follows:

DIP Switch	Function
DIP1	• Switch on: low sensitivity. When drivers close the eyes or are distracted,
	it will take about 5 seconds to generate an alert.
	• Switch off: high sensitivity. When drivers close the eyes or are
	distracted, it will take about 1 or 2 seconds to generate an alert.
DIP2	• Switch on: When the speed is larger than 15 km/h, an alert will be
	generated.
	• Switch off: When the speed is larger than 30km/h, an alert will be
	generated.
DIP3	• Switch on: The yawning alert function will be enabled.
	• Switch off: The yawning alert function will be disabled.
DIP4	• Switch on: The debug mode will be enabled. An alert will be generated,
	no matter what the speed is. This will help users test the alert function
	indoors or in an underground parking lot.
	• Switch off: The debug mode will be disabled, and the DIP2 switch will
	work.

7 Meitrack Manager Configuration

7.1 Setting the GPRS Event

On the **Event** tab page, locate **Driving Behavior**, and select **GPRS**. When the Monitor detects an alert, a GPRS event will be sent to the MS03 tracking platform.



MEITRACK Driver Fatigue Monitor System User Guide

Authoriz	ze						
	Event SMS Header		Setting	SMS Call	SMS Call	SMS Call	GPRS
	Fuel Filling	Fuel Filling					
	Ult-Sensor Drop	Ult-Sensor Drop					
	Sharp Turn to Left	Harsh Cornering					
	Sharp Turn to Right	Harsh Cornering					
	Output 1 Active	Out1 Active					
	Output 2 Active	Out2 Active					
	Output 1 Inactive	Out1 Inactive					
	Output 2 Inactive	Out2 Inactive					
	Driving Behavior						
	Harsh Braking	Harsh Braking					
	Harsh acceleration	Fast Accelerate					

7.2 Setting the Fatigue Driving function

Fatigue Driving Function Setting is only available for the Driver fatigue monitor sensor. When you restore the T466G to factory settings, the default parameter of this function cannot be restored.

unction Setting			
Abesend	e 🗹 Distraction	Smoking	🗹 On phone call
e Level Low	\sim		
y(Telephone) 4			
	Function Setting Abesence e Level Low Cy(Telephone) 4	Function Setting Abesence Distraction E Level Low Cy(Telephone) 4	Function Setting Abesence Distraction Smoking e Level Low cy(Telephone) 4

- Alarm Enable: If you do not set Alarm Enable, no alerts and GPRS events will be generated and no photos will be taken. Also, there will be no voice warnings.
- Alert Volume Level: There are 3 alert volume levels:
 - ♦ Mute
 - ♦ Low
 - ♦ High

If Alarm Volume Level is set to Mute, the Monitor will not make alert sounds, but alert events and photos will be sent to the MS03 tracking platform.

• Set Sensitivity(Telephone): Telephone alarm detection sensitivity can be set. The default sensitivity is 4, and the value range is: 3~30.

8 Setting Parameters by Command

Setting the	Setting the Driver Fatigue Function (SMS/GPRS) – C90					
Sending	C90,A,B,C,D,E					
Reply	C90,OK/ <error code=""></error>					



Command Description

1. Parameter A: indicates the alert volume. The parameter value is **0**, **1**, **2**, and **225**. Decimal.

0: No sound. 1: Medium volume. 2: High volume. 225: reserved for DIP switches.

Parameter **B**, **C**, **D**, and **E**: indicates an alert. Decimal.

B: Absence alert. 0: function disabled. 1: function enabled.

C: Distraction alert. 0: function disabled. 1: function enabled.

D: Smoking alert. 0: function disabled. 1: function enabled.

E: On Phone Call alert. 0: function disabled. 1: function enabled.

- 2. If you want to read the parameters, send C90.
- 3. Parameter settings must be complete.

4. If the network connection is poor or parameter settings are not correct, an error code will be replied.

Example

@@R35,868725036977468,C90,2,1,1,1,1*60

\$\$R28,868725036977468,C90,OK*1E

Setting the	Setting the Sensitivity(Telephone) (SMS/GPRS) – BA6									
Sending	BA6,X									
Reply	BA6,OK/ <error code=""></error>									
Command Description										
1. Para	Parameter X: indicates the telephone detecting sensitivity. Default 4. Value range from 3~300. Decimal.									
2. If yo	u want to read the parameters, send BA6.									
3. If th	e network connection is poor or parameter settings are not correct, an error code will be replied.									
Example	Example									
@@R27,8	368725036977468,BA6,4*FC									
\$\$R28,86	3725036977468,BA6,OK*2B									

9 GPRS Protocol About Alert Event 114

Driver fatigue alert	Driver fatigue alert	\$\$b185,868725036977468,AAA,
(event code 114).	Format: A B C	114,22.513633,114.057243,180
For details, see the	A: indicates the Montor version. The	704002342,A,11,24,40,288,0.9,2
assisted event info of	parameter value is 01 . Decimal.	9,1,50063,460 1 252F 00003BF
Meitrack GPRS	B: indicates the alert type. Contains 2	9,0000,0001 0000 0000 019B
Protocol.	characters; decimal.	04CA, 01 08 180704002340_Ya
	• 01: Mild fatigue	wning.jpg,,3,,,30,41*E7
	• 02: Moderate fatigue	It indicates version 01, a
	• 03: Severe fatigue	yawning alert, photo name
	• 04: Distraction alert	180704002340_Yawning.jpg.
	• 05: Absence alert	
	• 06: On Phone Call alert	
	• 07: Smoking alert	
	• 08: Yawning alert	
	C : indicates the additional alert information.	



Contains at most 32 characters. Decimal. The	
parameter value is the name of a photo.	

10 MS03 Platform

T466G Driver fatigue monitor system, real-time management and monitoring of the equipment through MS03 platform. In addition to basic MS0 functions: monitor vehicles, people, and objects equipped with trackers in real time on web pages. T466 supports three separate fatigue driving statistic reports. Support three directions of time, journey and mileage to monitor drivers' driving fatigue.

10.1 Add a T466G

Visit http://ms03.trackingmate.com, enter the user name and password, and log in to the MS03. (Purchase the login account from your provider.)





MEITRACK Driver Fatigue Monitor System User Guide

Account/Tracker Mana	Add new tracker		●⊗	• •
Enter tracker/user nar	IMEI:	868998031584200		×
Use	Tracker password:	•••••		
🛢 🦂 sherry(sherryte	Tracker name:	T466G_4200		
🕂 🟯 Ashe(Ashe	SIM number:	13111111111		
sherry01(sl	Model:	T466G	-	
1311111	Expiry date:	2019-12-06 🗘		
🚔 MT90G_3(Tracker icon	V		
- MVT800_3	Icon list			se history
🚘 T1B_6732 🚘 T1B_7329	V	$\bigvee \qquad \bigvee \qquad$		
🚘 T1B_7879 🚘 T333_300	V	💙 🕅 🦄		
🚔 T333_391			•	
- 🚔 T333_743		Submit		transfer password

- IMEI: Identifies the tracker's IMEI number. (Query the number by SMS command: 0000,E91.) If the input information is incorrect, device status cannot be queried.
- **Tracker password**: indicates the SMS command password of the tracker. The default password is 0000. You can change the password if needed.
- **Tracker name**: You can customize a name, such as the car license plate number, driver name, and company name.
- **SIM number**: indicates the phone number of your SIM card used in the tracker.
- Model: Select the tracker model.
- Expiry date: year-round UY = Unit of Trackers x Years

10.2 Querying Driver Fatigue Time Statistics Reports

To view alert statistics information during different time periods, choose **Reports**, and click **Fatigue driving time statistics**.







10.3 Querying Driver Fatigue Trip Statistics Reports

To view alert statistics information during different trips, choose Reports, and click Fatigue driving trip statistics.



	_											
om	2018-11-01	00:00 - To: 201	18-11-13 🔟 23:59 🧃	Address Au	tomatic 👻 🔍	×II 📙						
Ð	Tracker name ↓	Start address	Stop address	Start time	End time	Travel / kilometre	Drowsiness	Distraction	Absence	OnPhoneCall	Smoking	Yawning
Plea												
156 5												
elec												
tati												
ack												
Ħ												

10.4 Querying Driver Fatigue Mileage Statistics Reports

To view alert statistics information per 100 km, choose Reports, and click Fatigue driving mileage statistics.





10.5 Querying Alert Reports

To view all alert events detected by the T466G, choose Reports, and click Event Report.



	T466G_3983	Drowsiness(Distraction 🌆)	2018-11-06 10:59:33	2018-11-06 10:59:37	Valid		35.00	22.513590	114.057213
l	T466G_3983	Drowsiness(Severe Fatigue 🙆)	2018-11-06 10:52:23	2018-11-06 10:52:25	Valid		35.00	22.513596	114.057173
	T466G_3983	Drowsiness(Moderate Fatigue 🗖)	2018-11-06 10:54:25	2018-11-06 10:54:27	Valid	<u></u>	35.00	22.513600	114.057160
	T466G_3983	Drowsiness(Mild Fatigue	2018-11-05 10:35:52	2018-11-06 10:35:54	Valid	1220	35.00	22.513585	114.057146
I	T466G_3983	Drowsiness(OnPhoneCall	2018-10-22 13:49:53	2018-10-22 13:50:25	Valid		0.00	22.513585	114.057295
Ī	T466G_3983	Drowsiness(Yawning 🖉)	2018-11-06 10:42:21	2018-11-06 10:42:23	Valid		35.00	22.513586	114.057151

10.6 Querying Alert Photos

To view all alert photos captured by the T466G, choose Reports, and click Photo Report.





T466G_3983 11/6/2018 2:54:57 AM 181106025457_On_ph one_call.jpg



T466G_3983 11/6/2018 2:43:39 AM 181106024339_On_ph one_call.jpg



T466G_3983 11/6/2018 2:54:25 AM 181106025425_Drowsi ness.jpg



T466G_3983 11/6/2018 2:42:21 AM 181106024221_Yawnin g.jpg



T466G_3983 11/6/2018 2:52:50 AM 181106025250_On_ph one_call.jpg



T466G_3983 11/6/2018 2:39:10 AM 181106023910_Drowsi ness.jpg



T466G_3983 11/6/2018 2:52:23 AM 181106025223_Drowsi ness.jpg



T466G_3983 11/6/2018 2:37:59 AM 181106023759_Drowsi ness.jpg

If you have any questions, do not hesitate to email us at info@meitrack.com.