

# MDL 3.0~5.0/12V TE2298721 RG174/2300mm 9

## GPSFMLTEWIFIS15N-S3-01

### 1. Application :

This application shall apply for antenna unit which shall be used with an engine for an automobile.  
(for impedance 50Ω)

### 2. Appearance :

Antenna Unit (with radome, connector, and cable –refer to an attached drawing)

Characteristics	Specification
Dimensions	160*60*68mm
Radome	S15N
Weight	489g typ.
Connector	TE2298721-1
Cable	RG174 Black
IP Rating	IPx5

### 3. Operating Condition :

Temperature	-40 ~ +80°C
Humidity	20 ~ 95%RH


### 4. Storage Condition :

Temperature	-40 ~ +80°C
Humidity	20 ~ 95%RH
Recommended Storage condition	Store in the indoor condition as listed below: Temperature -20°C~+45°C, Humidity 80% Max.

### 5. Electrical Specification :

※All value are defined at 25±15°C, 65±20%RH, power handling 1μ watt, air pressure 960±100 HPA unless otherwise noted.

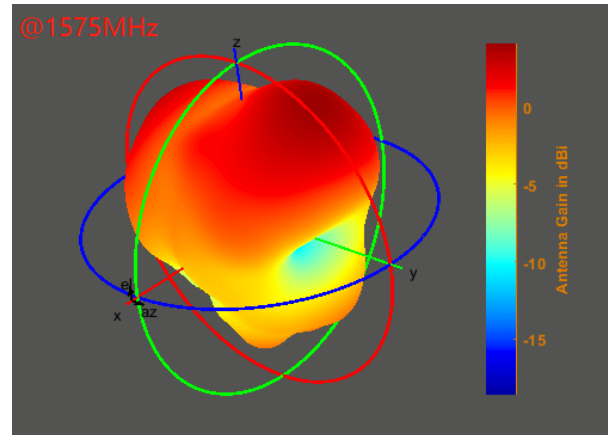
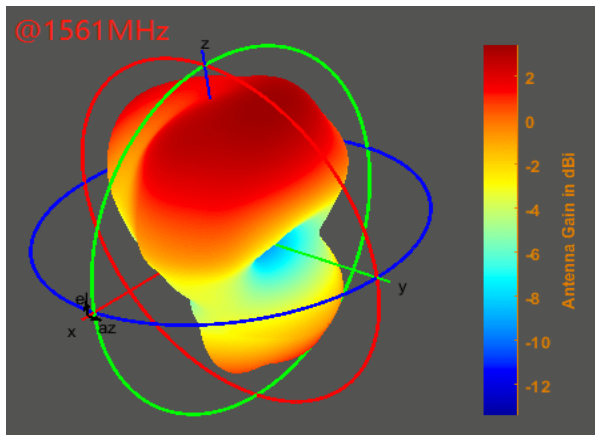
※GPS patch antenna characteristics are measured with test housing in an anechoic chamber.

UNLESS OTHER SPECIFIED TOLERANCES ON : X = ±            X.X = ±            X.XX = ANGLES = ±            HOLE DIA = ±		 INPAQ TECHNOLOGY CO., LTD.	
SCALE :	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
DRAWN BY: 李志强	CHECKED BY:唐龙		
DESIGNED BY: 刘硕/吕巧云	APPROVED BY: 杨开月		
TITLE : GPSFMLTEWIFIS15N-S3-01		DOCUMENT NO.	SPEC REV.
		ENS000160470	A0

## 5-1 GNSS Patch Antenna Specification.

Characteristics	Specification
Center Frequency	1560~1580 MHz
Gain at Zenith (90°)	3 dBic typ.
Polarization	R.H.C.P

3D Radiation pattern (without cable loss)



## 5-2 GNSS LNA Specification.

Characteristics	Specification
Frequency Range	1560~1580MHz
Gain	1561MHz: 27±3dB (3.0±0.1V) 1575.42MHz: 28±3dB (3.0±0.1V)
Noise Figure	2.0dB Max
Output V.S.W.R	2.0 typ.
Operation Voltage	DC=3.0V
Current	DC=9.5±3mA (3.0±0.1V)

## 5-3 GNSS Antenna Overall Specification. (Through Antenna, LNA, without cable loss)

Characteristics	Specification
Frequency Range	1560~1580 MHz (In the shark fin)
Zenith Gain	1561MHz: 30±3dBic (3.0±0.1V) 1575.42MHz: 31±3dBic (3.0±0.1V)
Output Impedance	50Ω
Output V.S.W.R	MAX 3.0 typ.
Operation Voltage	DC= 3.0V
Current	DC=9.5±3mA (3.0±0.1V)

UNLESS OTHER SPECIFIED TOLERANCES ON :

X = ±      X.X = ±      X.XX =

ANGLES = ±      HOLE DIA = ±



INPAQ TECHNOLOGY CO., LTD.

SCALE :

UNIT : mm

DRAWN BY: 李志强

CHECKED BY: 唐龙

DESIGNED BY: 刘硕/吕巧云

APPROVED BY: 杨开月

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

TITLE : GPSFMLTEWIFIS15N-S3-01

DOCUMENT  
NO.

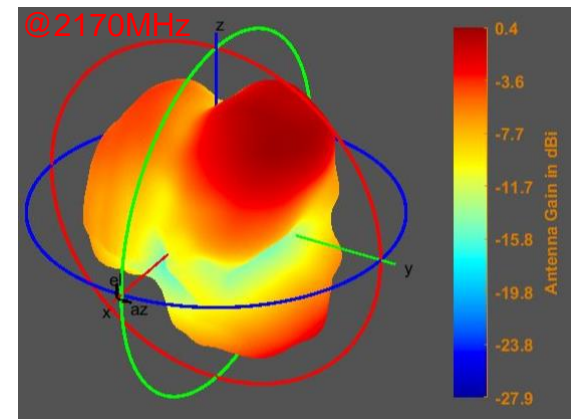
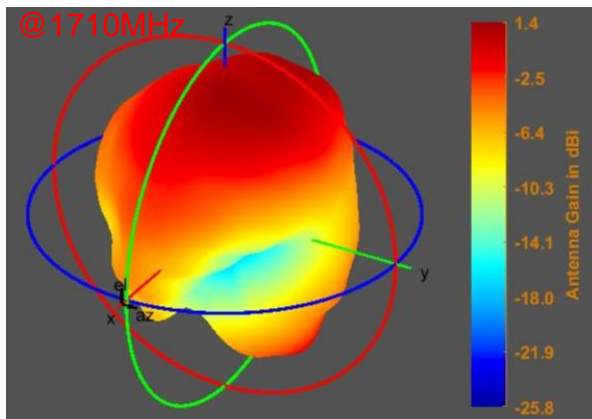
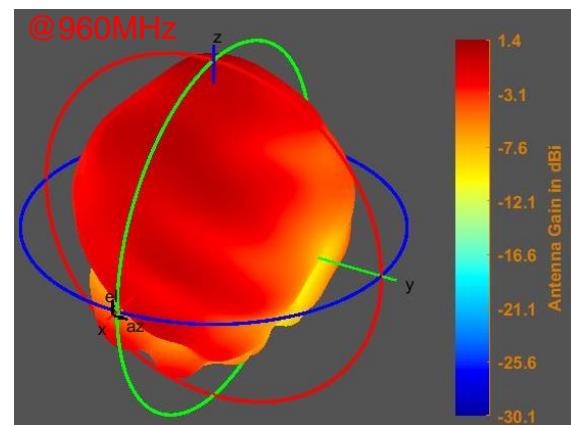
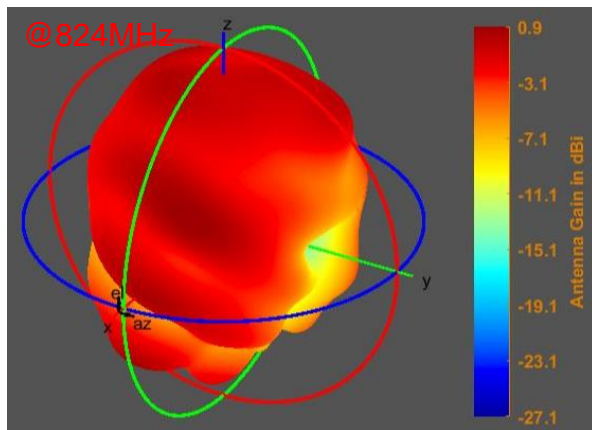
ENS000160470

SPEC REV.  
A0

## 5-4 LTE Antenna Electrical Specifications

Characteristics	Specification
Frequency	824-960 MHz, 1710-2690 MHz
Polarization	Linear
Peak Gain	1.5 dBi typ. (824~960MHz) 2.0 dBi typ. (1710~2690MHz)
Average Gain	-0.42 to -1.58 dBi (824~960MHz) -0.27 to -3.09 dBi (1710~2690MHz)
Output V.S.W.R	MAX 4.0
Testing Condition	In the shark fin

3D Radiation pattern (with cable loss)



UNLESS OTHER SPECIFIED TOLERANCES ON :

$X = \pm$        $X.X = \pm$        $X.XX =$

ANGLES =  $\pm$       HOLE DIA =  $\pm$



INPAQ TECHNOLOGY CO., LTD.

SCALE :

UNIT : mm

DRAWN BY: 李志强

CHECKED BY: 唐龙

DESIGNED BY: 刘硕/吕巧云

APPROVED BY: 杨开月

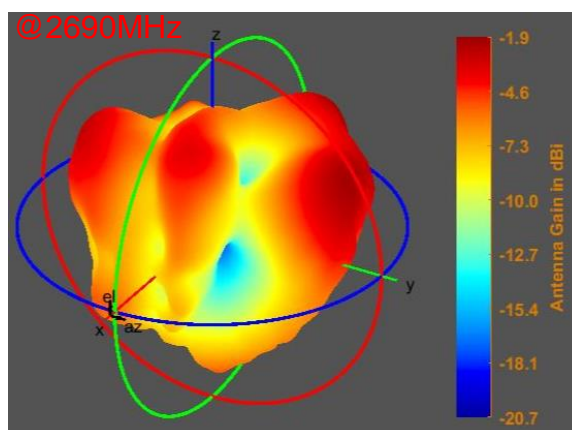
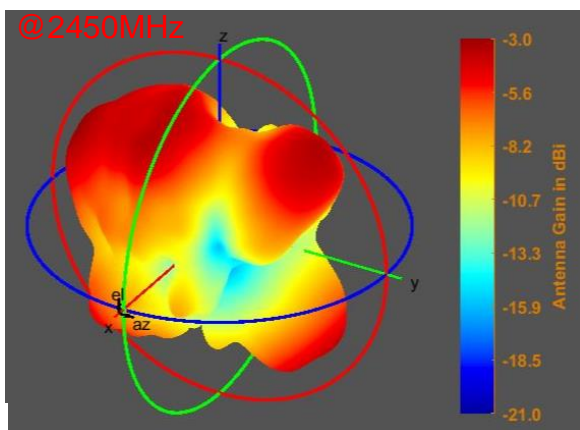
THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

TITLE : GPSFMLTEWIFIS15N-S3-01

DOCUMENT  
NO.

ENS000160470

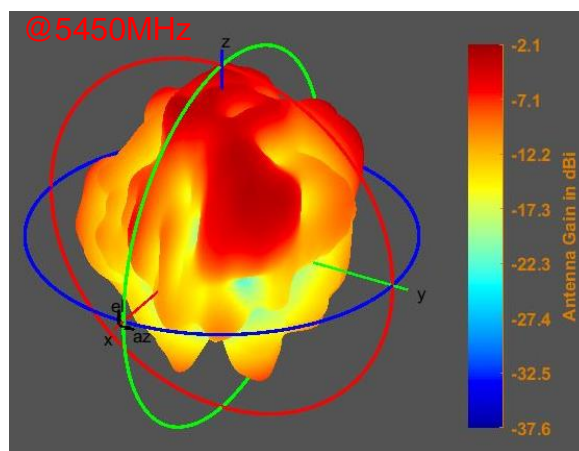
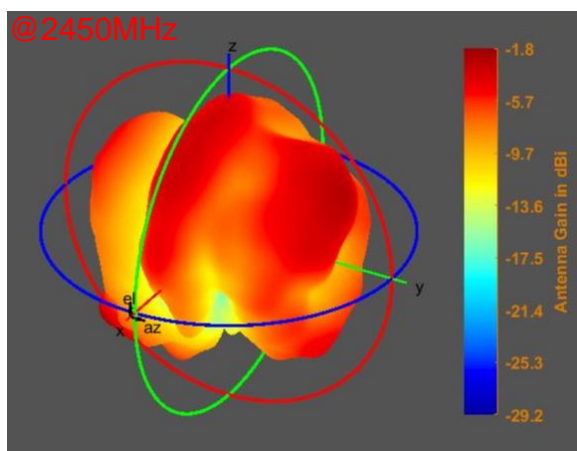
SPEC REV.  
A0



## 5-5 WIFI Antenna Electrical Specifications

Characteristics	Specification
Frequency	2.4~2.5 GHz, 5.15~5.85GHz
Polarization	Linear
Peak Gain	2.5 dBi typ. (2400~2500MHz) 3.5 dBi typ. (5150~5850MHz)
Average Gain	-1.82 to -1.58 dBi (2400~2500MHz) -1.65 to -0.72 dBi (5150~5850MHz)
Output V.S.W.R	MAX 2.5
Testing Condition	In the shark fin

3D Radiation pattern (with cable loss)



## 5-6 FM Antenna Electrical Specifications

Characteristics	Specification
Frequency Range	87~108 MHz (In the shark fin)
LNA Gain	14±3dB (12.0±0.1V)

UNLESS OTHER SPECIFIED TOLERANCES ON :

X = ± X.X = ± X.XX =

ANGLES = ± HOLE DIA = ±



INPAQ TECHNOLOGY CO., LTD.

SCALE :

UNIT : mm

DRAWN BY: 李志强

CHECKED BY: 唐龙

DESIGNED BY: 刘硕/吕巧云

APPROVED BY: 杨开月

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

TITLE : GPSFMLTEWIFIS15N-S3-01

DOCUMENT  
NO.

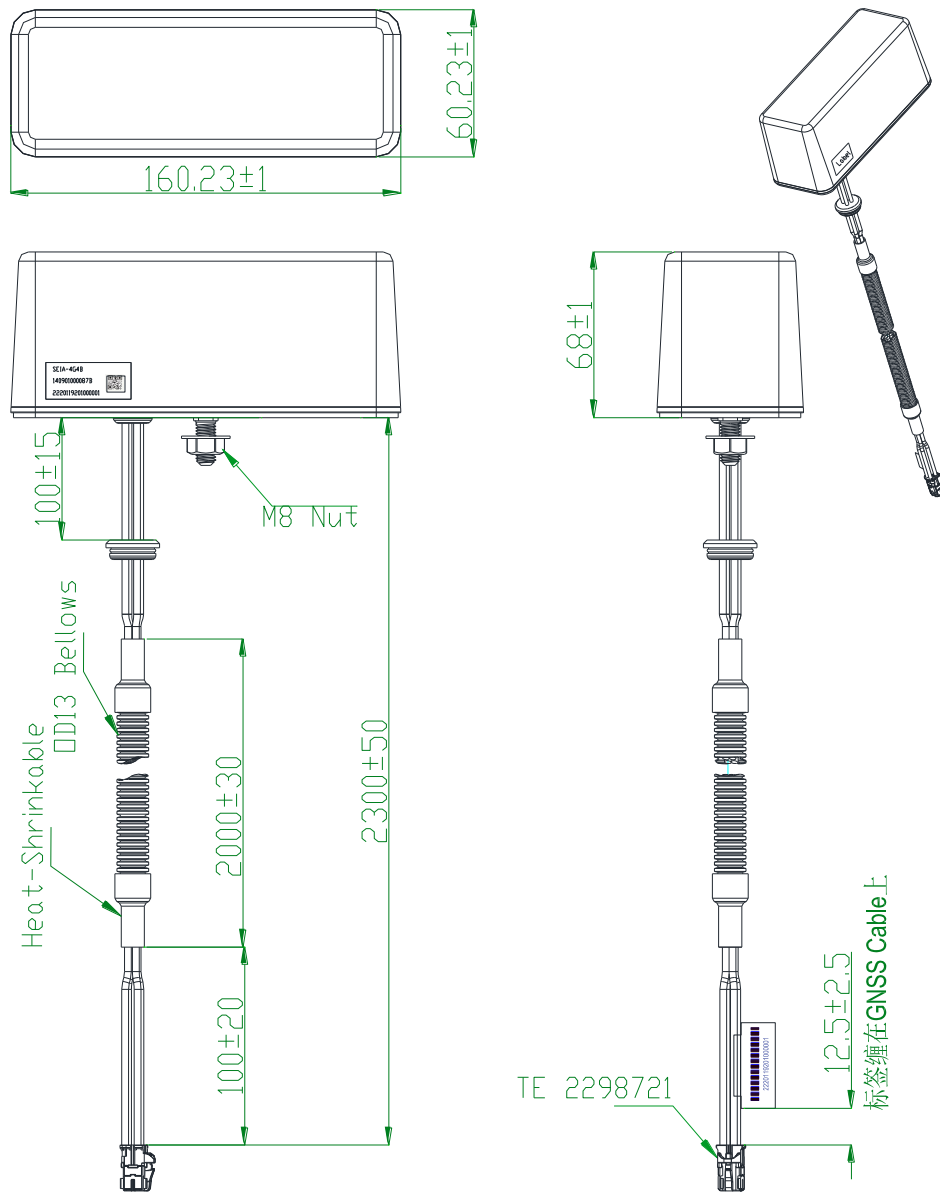
ENS000160470

SPEC REV.  
A0

Output Impedance	50Ω
Output V.S.W.R	2.0 typ.
Operation Voltage	DC= 12.0V
Current	DC=5±2mA (12.0V)
Noise Figure	2.5dB Max

## 6. Machine drawing

### 6-1 Antenna Dimensions



### 6-2 Connector Pin Definition

UNLESS OTHER SPECIFIED TOLERANCES ON :

X = ±      X.X = ±      X.XX =  
**ANGLES = ±      HOLE DIA = ±**



**INPAQ TECHNOLOGY CO., LTD.**

**SCALE :**

**UNIT : mm**

**DRAWN BY:** 李志强

**CHECKED BY:** 唐龙

**DESIGNED BY:** 刘硕/吕巧云

**APPROVED BY:** 杨开月

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

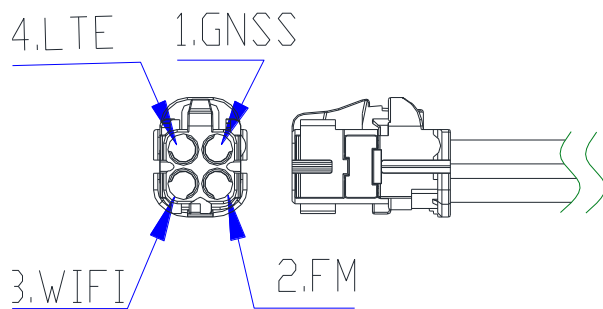
**TITLE : GPSFMLTEWIFIS15N-S3-01**

**DOCUMENT  
NO.**

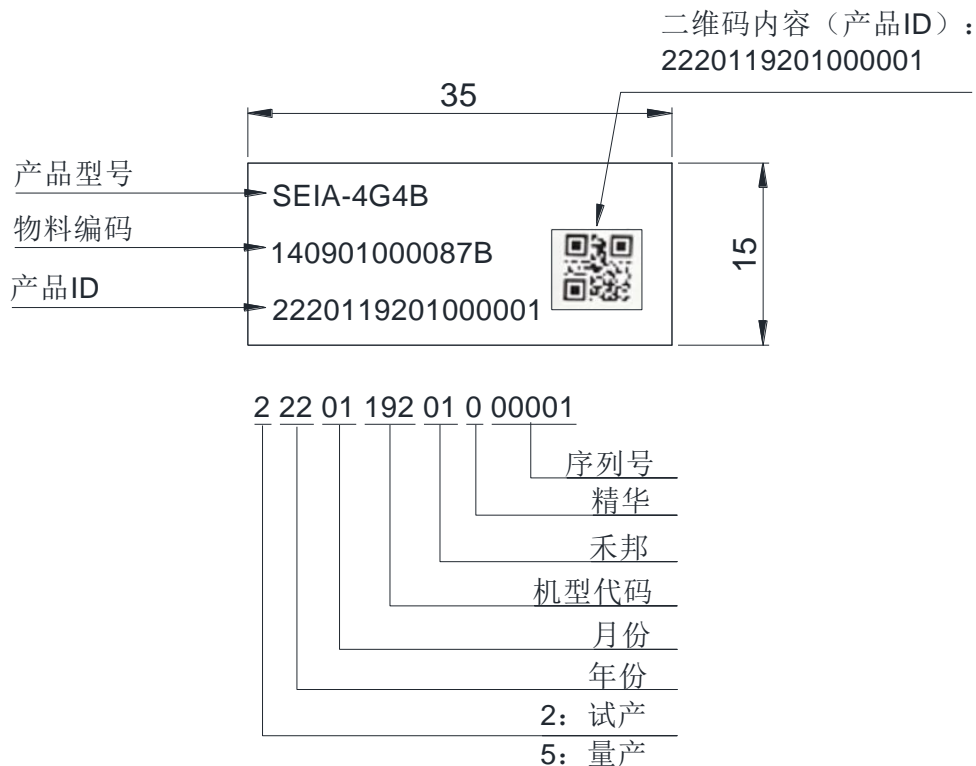
**ENS000160470**

**SPEC REV.**

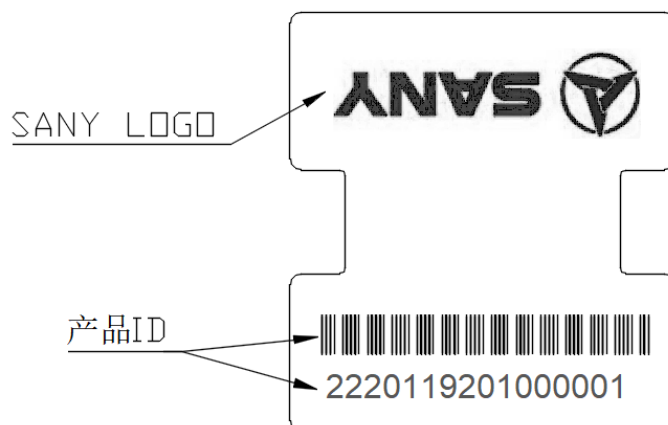
**A0**




### 6-3 Body Label Definition



### 6-4 Cable Label Definition



UNLESS OTHER SPECIFIED TOLERANCES ON : X = ±      X.X = ±      X.XX = ANGLES = ±      HOLE DIA = ±		 <b>INPAQ TECHNOLOGY CO., LTD.</b>	
SCALE :	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
DRAWN BY: 李志强	CHECKED BY:唐龙		
DESIGNED BY: 刘硕/吕巧云	APPROVED BY: 杨开月		
TITLE : GPSFMLTEWIFIS15N-S3-01		DOCUMENT NO.	<b>ENS000160470</b> <div>SPEC REV. A0</div>