

客戶名稱 : 朝阳  
CUSTOMER

Documnet No.: \_\_\_\_\_  
Approval Sheet Rev.: A0  
Spec. Rev. : P3

承認書  
APPROVAL SHEET

產品品名/Product Model No. : WA-F-LA-02-140  
客戶料號/Customer No. : 1029-0000200  
發行日期/ Issue Date : 2023-03-31  
承認日期/ Approved Date : 2023-03-31

Approved by customer: (signing or stamping here)

 禾邦電子(蘇州)有限公司  
INPAQ TECHNOLOGY(SuZhou)  
Co.,Ltd

蘇州市相城區黃埭鎮潘陽工業園區中心大道5號

No.5,zhongxin Road, PanYang industrial Park,HuangDai town,XiangCheng district ,Suzhou City

 佳邦科技股份有限公司  
INPAQ TECHNOLOGY Co.,Ltd

苗栗縣竹南鎮大厝裏9鄰59-12號

No. 59-12, 9 Lin, Ta Tsuo Li, Chu Nan Chen, Miao Li Hsien, Taiwan, R.O.C.

# WA-F-LA-02-140 Specification

Model: WA-F-LA-02-140

## 1. Explanation of part number :

WA - F - LA - 02 - 140  
(1) (2) (3) (4) (5)

(1) Product Type : Wireless Antenna

(2) Material: FPC+CABLE

(3) Frequency : 2.4GHz-2.5GHz

(4) Coaxial Cable Type : 02

(5) Suffix :140

## 2. Storage Condition:

Temperature -40 to +70 °C  
Humidity 65±20 % RH

## 3. Operating Condition:

Temperature -40 to +70 °C  
Humidity 65±20 % RH

## 4. Electrical Specification :

Those specifications were specially defined for 朝陽-ATC PARTY-BT3 model, and all characteristics were measured under the model's handset testing.

### 4-1. Frequency Band:

Frequency Band	MHz
ISM	2400-2500

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±

ANGLES=± HOLEDIA=±

SCALE : UNIT : mm

DRAWN BY : 靳靜 CHECKED BY : 赵付辉

DESIGNED BY : Ziv APPROVED BY : 赵付辉

TITLE : WA-F-LA-02-140 Specification



佳邦科技股份有限公司  
INPAQ TECHNOLOGY CO., LTD.

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

DOCUMENT NO.

PAGE REV.  
P3

## 4-2. Impedance

50 ohm nominal

## 4-3. Matching circuit

None

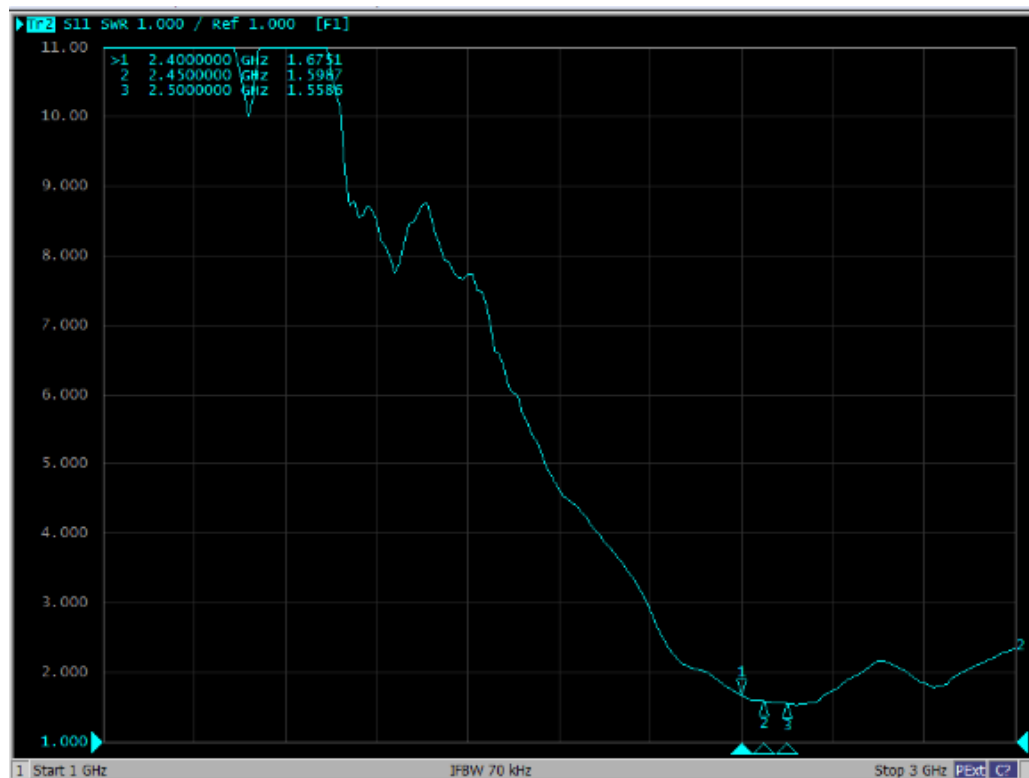
## 4-4. VSWR

### 4-4.1 Measuring Method

- 1.A 50Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR
- 2.Keeping this jig away from metal at least 20cm

### 4-4.2 Measurement frequency points and VSWR value

Frequency (Unit MHz)	2400	2450	2500
VSWR	1.67	1.59	1.55



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±      X.X=±      X.XX=±

ANGLES=±      HOLEDIA=±

SCALE :      UNIT : mm

DRAWN BY : 靳静      CHECKED BY : 赵付辉

DESIGNED BY : Ziv      APPROVED BY : 赵付辉

TITLE : WA-F-LA-02-140 Specification



佳邦科技股份有限公司  
INPAQ TECHNOLOGY CO., LTD.

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

DOCUMENT  
NO.

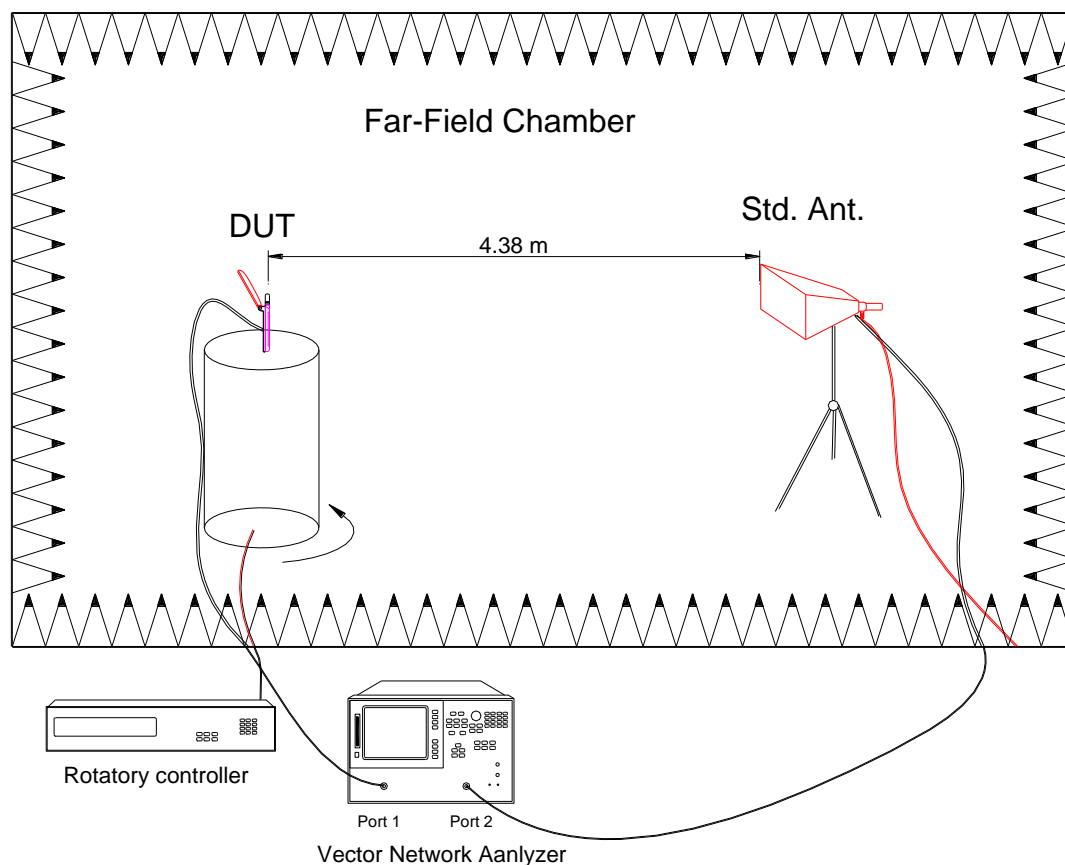
PAGE REV.  
P3

## 4-5. Efficiency and Gain

### 4-5.1 Measure method

1. Using a low loss coaxial cable to link a standard handset
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

### 4-5.2 Chamber definition



1. An anechoic chamber (7mx4mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quiet room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±      X.X=±      X.XX=±

ANGLES=±      HOLEDIA=±

SCALE :      UNIT : mm

DRAWN BY : 靳静      CHECKED BY : 赵付辉

DESIGNED BY : Ziv      APPROVED BY : 赵付辉

TITLE : WA-F-LA-02-140 Specification



佳邦科技股份有限公司  
INPAQ TECHNOLOGY CO., LTD.

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

DOCUMENT  
NO.


PAGE REV.  
P3

### 4-5.3 Efficiency and Gain

Antenna gain is marked (dBi) and is based on STANDARD HORN antenna. The data shows Peak Gain and Average Gain.

Frequency (MHz)	2400	2450	2500
Efficiency (%)	44.76	47.52	44.77
Peak Gain (dBi)	3.31	3.04	3.64

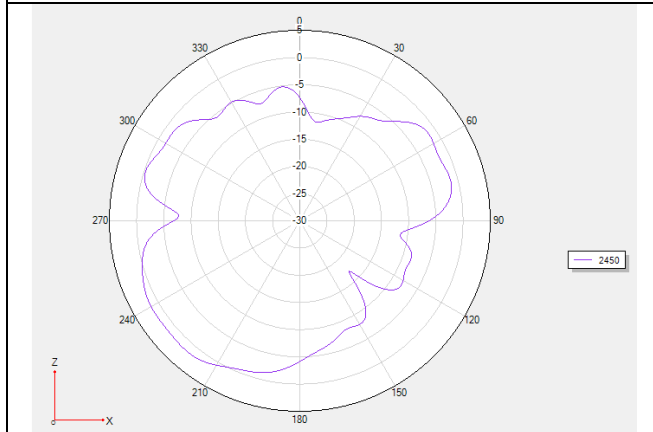
Freq. (MHz)	Efficiency (%)	Peak Gain (dBi)
2400	44.76	3.31
2410	45.12	3.22
2420	45.55	3.21
2430	47.29	3.34
2440	46.47	3.08
2450	47.52	3.04
2460	47.88	2.99
2470	48.12	3.15
2480	46	3.13
2490	44.75	3.28
2500	44.77	3.64
<b>AVG</b>	<b>46.20</b>	

UNLESS OTHER SPECIFIED TOLERANCES ON :		 <b>佳邦科技股份有限公司</b> <b>INPAQ TECHNOLOGY CO., LTD.</b>	
X=±	X.X=± X.XX=±		
ANGLES=±	HOLEDIA=±	<small>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</small>	
SCALE :	UNIT : mm		
DRAWN BY : 靳静	CHECKED BY : 赵付辉		
DESIGNED BY : Ziv	APPROVED BY : 赵付辉		
TITLE : WA-F-LA-02-140 Specification		DOCUMENT NO.	PAGE REV. P3

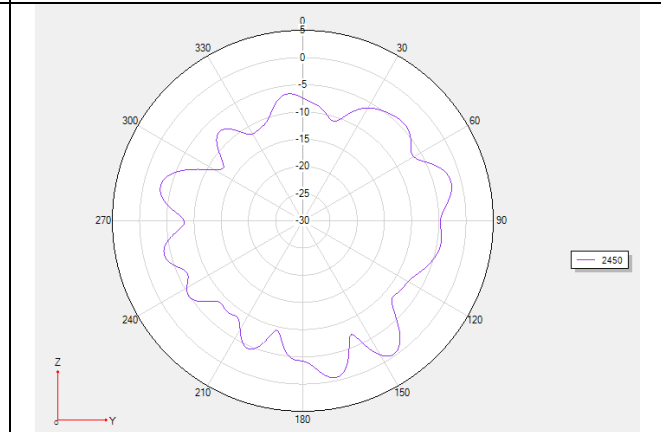
# 4-5.4 2D&3D Radiation Pattern Results

## 2D Radiation Pattern

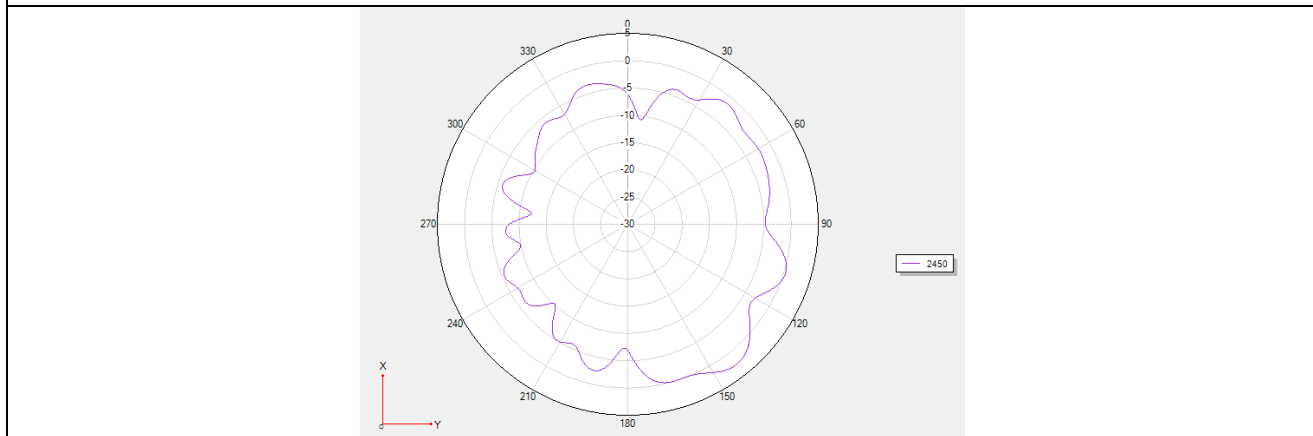
E1 面



E2 面



H 面



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±      X.X=±      X.XX=±

ANGLES=±      HOLEDIA=±

SCALE :      UNIT : mm

DRAWN BY : 靳静      CHECKED BY : 赵付辉

DESIGNED BY : Ziv      APPROVED BY : 赵付辉

TITLE : WA-F-LA-02-140 Specification



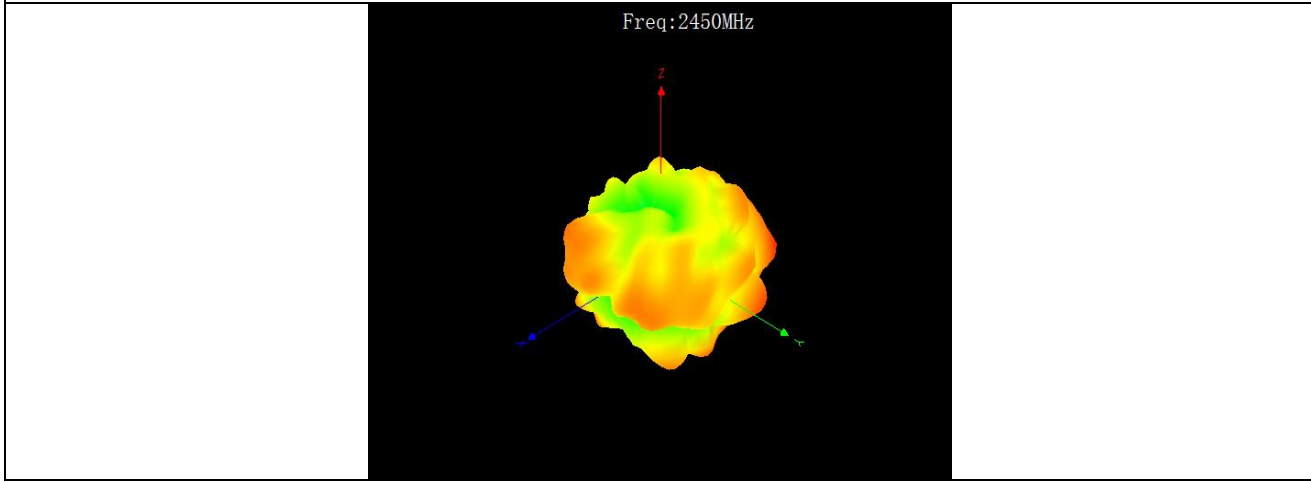
佳邦科技股份有限公司  
INPAQ TECHNOLOGY CO., LTD.

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

DOCUMENT NO.

PAGE REV.  
P3

### 3D Radiation Pattern

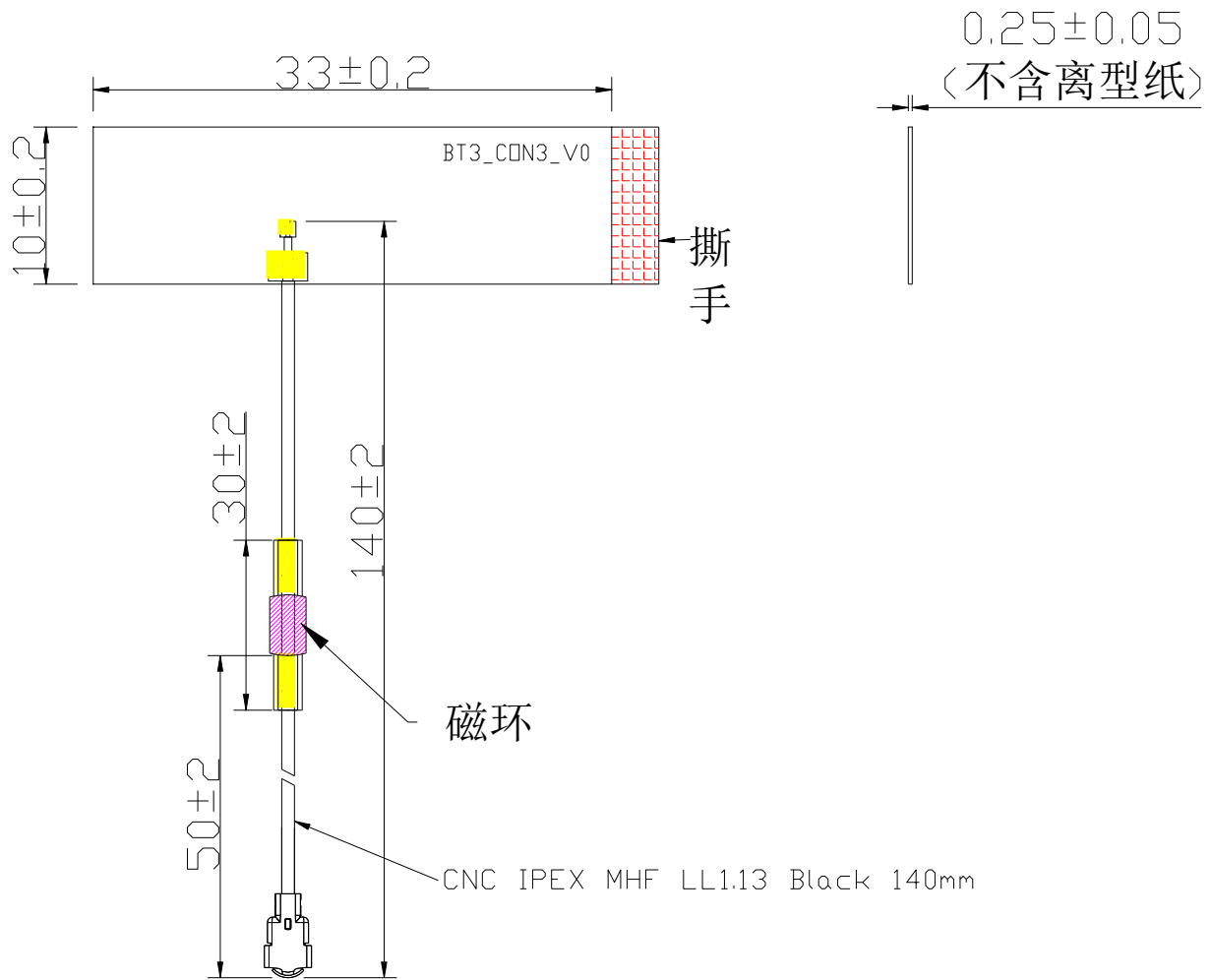


UNLESS OTHER SPECIFIED TOLERANCES ON : X=±            X.X=±    X.XX=± ANGLES=±        HOLEDIA=±		佳邦科技股份有限公司 INPAQ TECHNOLOGY CO., LTD.	
SCALE :	UNIT : mm		
DRAWN BY : 靳静	CHECKED BY : 赵付辉	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
DESIGNED BY : Ziv	APPROVED BY : 赵付辉		
TITLE : WA-F-LA-02-140 Specification		DOCUMENT NO.	PAGE REV. <b>P3</b>
		PAGE 6 OF 7	

## 5. Mechanical Specification:

### 5-1. Mechanical Configuration (Unit: mm)

The appearance of the antenna is according to drawing Figure 5-1-1



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±      X.X=±      X.XX=±

ANGLES=±      HOLEDIA=±

SCALE :      UNIT : mm

DRAWN BY : 靳静      CHECKED BY : 赵付辉

DESIGNED BY : Ziv      APPROVED BY : 赵付辉

TITLE : WA-F-LA-02-140 Specification



佳邦科技股份有限公司  
INPAQ TECHNOLOGY CO., LTD.

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

DOCUMENT  
NO.

PAGE REV.  
P3