



互億科技股份有限公司

產品承認書

(SPECIFICATION FOR APPROVAL)

客戶名稱 (CUSTOMER)	Mitac
產品編號 (PRODUCT NO.)	412600000066
產品規格 (SPECIFICATION)	GMEWLGRL
備註 (REMARK)	ROHS Lead-free

承認單位				
業務主管	QC 主管	RD 主管	PM 主管	PM
				

Product Specification



- 1. Specification**
- 2. Certificates**
- 3. Block Diagram**
- 4. Schematics**
- 5. PCB YELLOW CARD**

產品規格書

PROJECT: GMEWLGRL

DATE: 2006 / 03 / 15

— . Specification

Version: 1.4 PAGE: 1/2

1. Introduction

GMEWLGRL is a USB2.0 MiniCard (Mini PCI Express bus)

IEEE 802.11b/g adapter for Windows NB.

It's conformed with RoHS-2002/95/EC standard .

2. Features

- Supports WMM
 - Full Implementation of the MAC Protocol specified in IEEE Standards 802.11-1999 and 802.11g and 802.11g-2003
- 2.4GHz spread spectrum technology
- 54Mbps high speed transfer rate and backward compatible with 802.11b
- USB2.0 MiniCard (Mini PCI Express bus)
- Support antenna diversity
- Support 64/128-bit WEP Data Encryption function for high level of security
- Support WPA and AES advanced WLAN Security.
- Support peer to peer communication among any wireless users, no Access Point required.

3. Specification

- Protocol : Compatible with IEEE 802.11b /g Standard
- Modulation Technique :
 - 802.11b : DSSS (Direct Sequence Spread Spectrum) with BPSK (1Mbps), QPSK (2Mbps), and CCK (5.5 and 11Mbps)
 - 802.11g : OFDM
- Transfer data rate : **802.11g** : 54, 48,36,24, 18,12,9,6Mbps, auto-fallback
802.11b : 11, 5.5, 2,1Mbps, auto-fallback
- Media access protocol : CSMA/CA with ACK
- Antenna connection interface : Miniature coaxial Connector .
- Output Power : 15~18dBm(CCK), 10~13dBm(OFDM)
- RF sensitivity : @PER <0.08 ,11Mbps < -84dBm(typical)
@ PER <0.08 ,54Mbps < -70dBm(typical)
- Security : 64/128-bit WEP Encryption
64/128-bit TKIP Data Encryption
64/128-bit AES Data Encryption
- Channels Support :

US/Canada: 11 (1 ~ 11)
Major European country: 13 (1 ~ 13)
France: 4 (10 ~ 13)
Japan: 14 (1~13 or 14th)

4. Mechanical

Dimension: 50.95 x 30 x 1 mm (L x W x H)

5. Certification

FCC, CE class B,

6. Environmental Operating Ranges

- Operating Temperature : 0 ~70° C , Humidity 10 ~ 90%
- Storage Temperature : -20 ~90° C, Humidity 10 ~ 90%

7. Green Certification

RoHS-2002/95/EC

8. Power Consumption

- Maximum: Transmit : (310 mA <max>)
Receive : (290 mA <max>)
- Idle: TBD (213 mA)

9. Drivers support

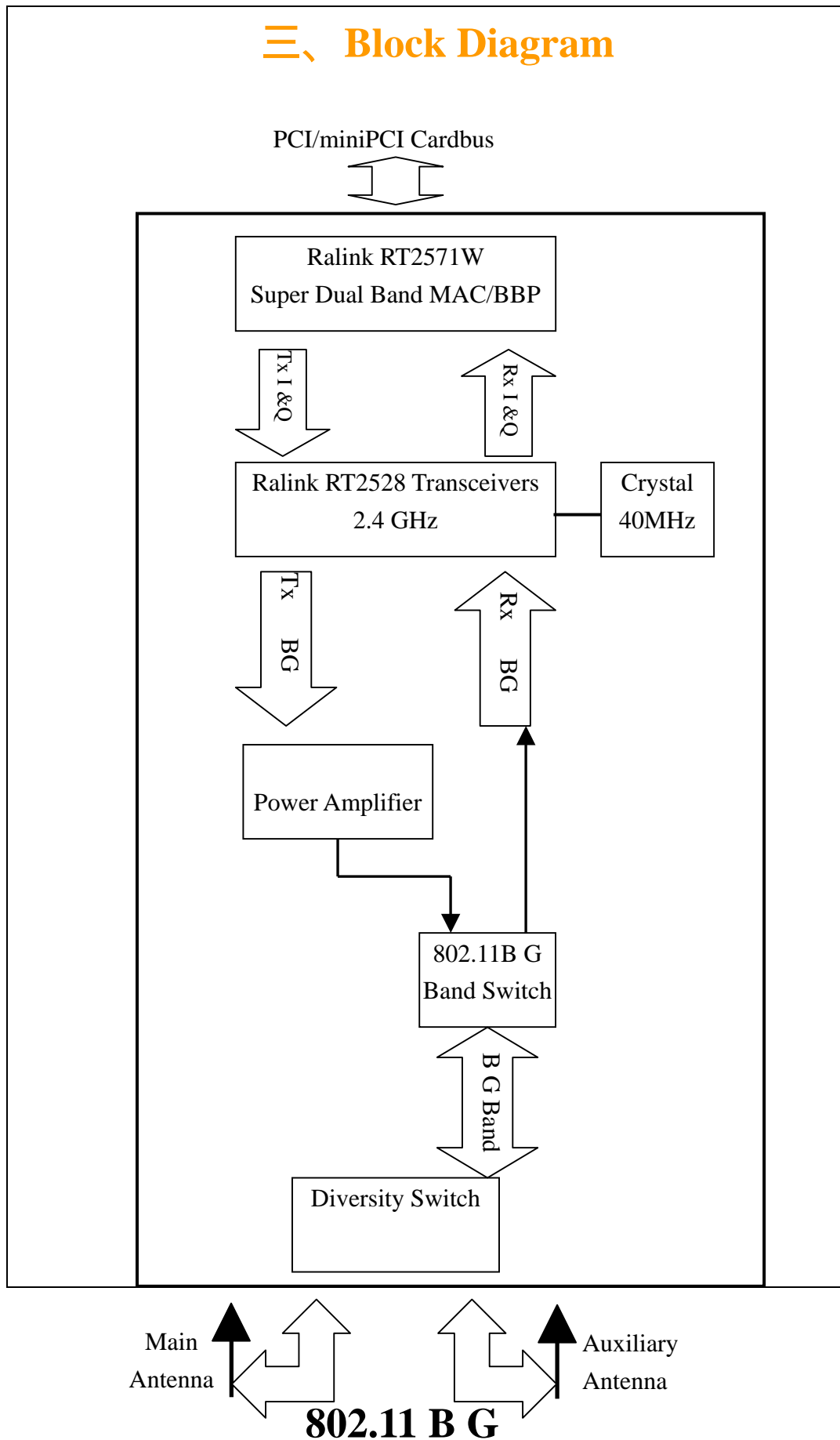
Microsoft Windows 98SE, Windows ME/2000 /XP,

二. Certificates :

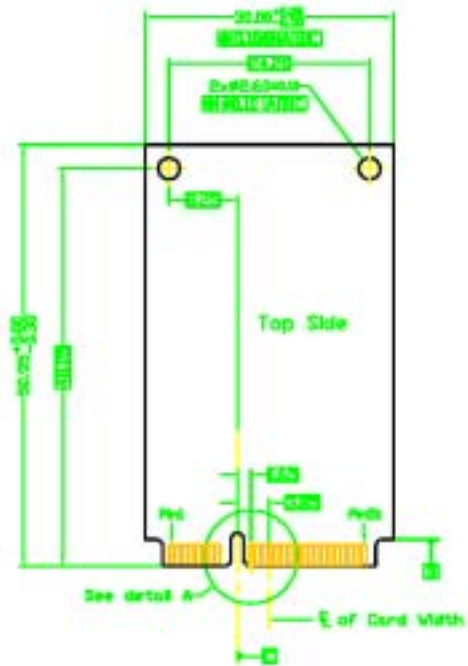
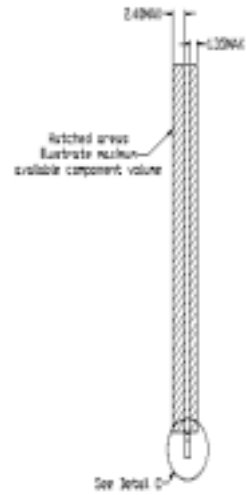
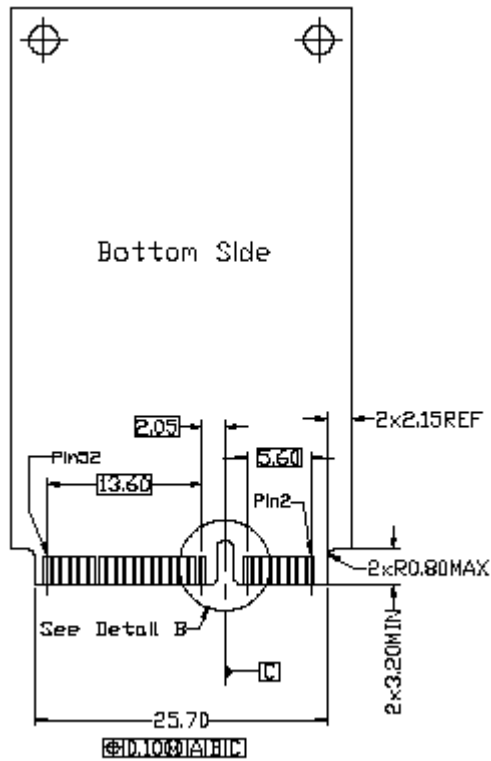
Safety Requirements :

The subject product must be certified with FCC, CE class B

三、Block Diagram



Dimension



Interface pin assignment and signal names :

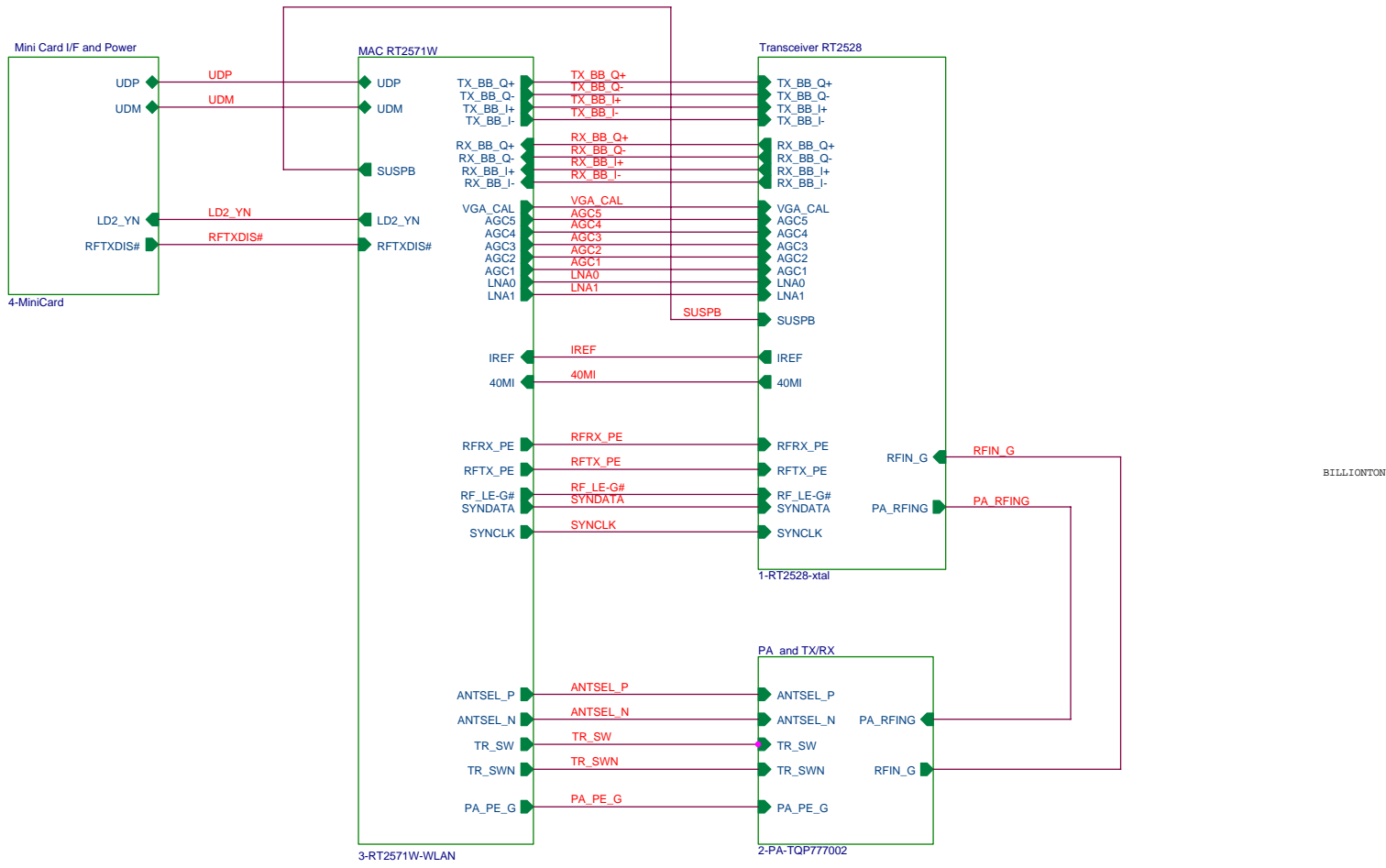
Pin#	Signal	Description
1	WAKE#	no use
2	(+3.3V)	positive supply for minicard
3	RESERVED	no use
4	GND	ground pin
5	RESERVED	no use
6	(+1.5V)	no use
7	CLKREQ#	no use
8	RESERVED	no use
9	GND	ground pin
10	RESERVED	no use
11	REFCLK-	no use
12	RESERVED	no use
13	REFCLK+	no use
14	RESERVED	no use
15	GND	ground pin
16	RESERVED	no use
17	RESERVED	no use
18	GND	ground pin
19	RESERVED	no use
20	RESERVED	hardware radio on/off control pin
21	GND	ground pin
22	PERST#	no use
23	PERn0	no use
24	(+3.3Vaux)	no use
25	PERp0	no use
26	GND	ground pin
27	GND	ground pin
28	(+1.5V)	no use
29	GND	ground pin
30	SMB_CLK	no use
31	PETn0	no use
32	SMB_DATA	no use
33	PETp0	no use
34	GND	ground pin
35	GND	ground pin
36	USB_D-	usb data minus
37	RESERVED	no use
38	USB_D+	usb data plus
39	RESERVED	no use
40	GND	ground pin
41	RESERVED	no use
42	LED_WWAN#	no use
43	RESERVED	no use

44	LED_WLAN#	minicard active led indicator
45	RESERVED	no use
46	LED_WPAN#	no use
47	RESERVED	no use
48	(+1.5V)	no use
49	RESERVED	no use
50	GND	ground pin
51	RESERVED	no use
52	(+3.3V)	positive supply for minicard

4.BOM

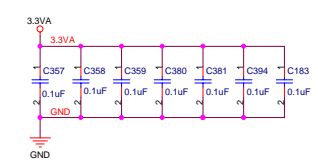
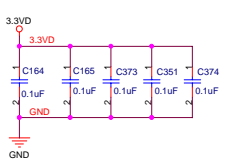
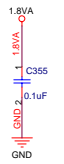
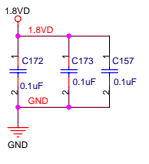
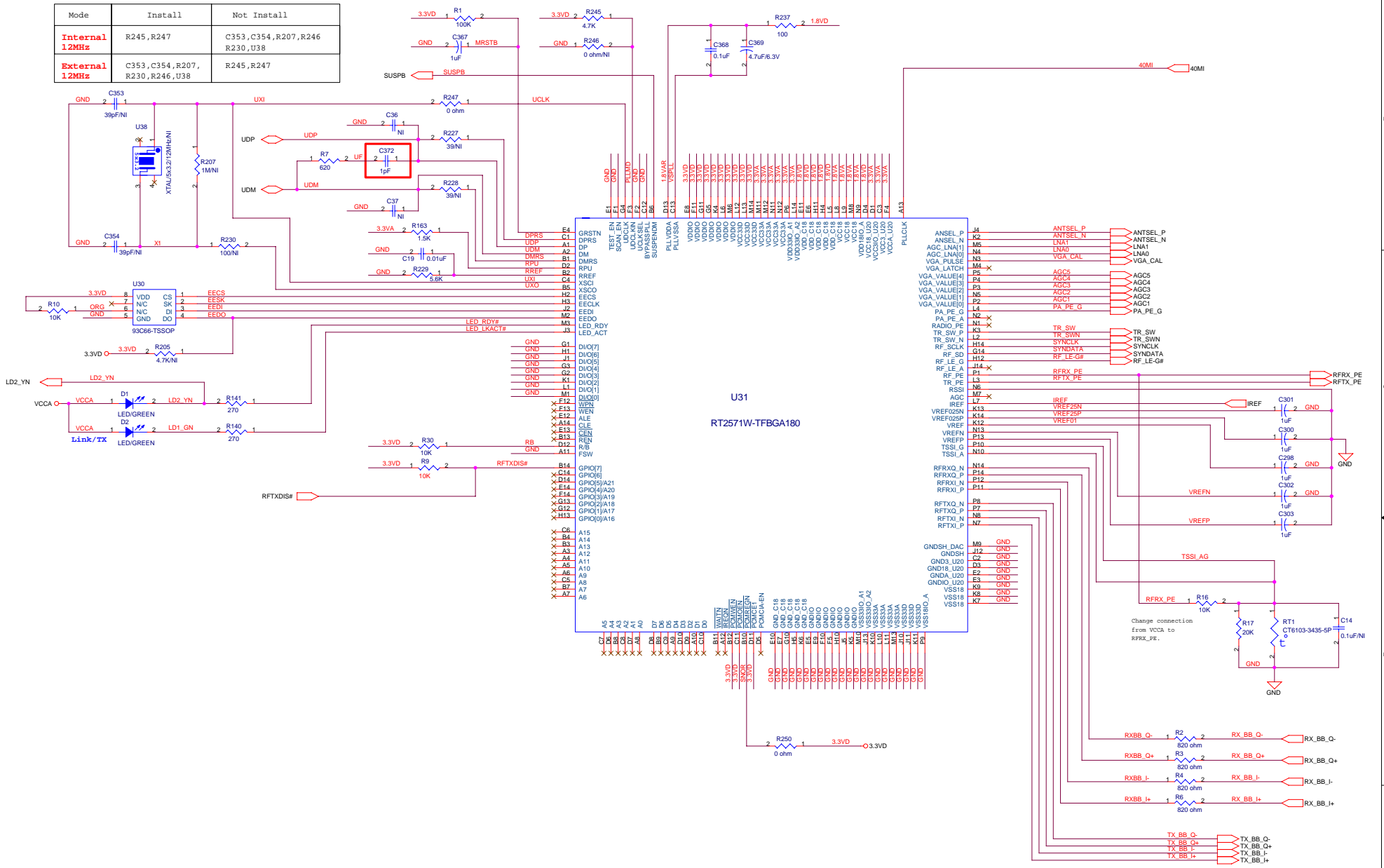
品 號 / 單位	品 名	規 格	用量
39919424-010009	PCBA GMEWLGRL-B/N_1ANT	RT2571W+2528/BG/MINICARD	
10901210-004009	PA 2.4GHZ	TQP777002/TRIQUINT	1
10901510-006009	IC802.11G TRANSCEIVER	QFN-56/RALINK/RT2528	1
10901710-003009	IC WLG MAC/RT2571W/GP	BGA-180/RALINK	1
10902110-003009	FILTER/2.4-2.5GHZ/GP	BPF/BP190B/禾頻	1
10902501-006009	RF SPDT SWITCH/GP	NEC-UPG2179TB	2
10903000-005009	RF CONNECTOR/FOXCONN/GP	HD96017/SILVER	2
11003311-066009	IC EEPROM 4K/空白/ATMEL	AT93C66A-10TI-2.7/TSSOP8	1
11005300-166189	REGULATOR/1.8V/SOT23/GP	RT9166-18PVL/RICHTEK	1
11100021-010009	電容 CC/GP	1P/50V/NPO/0402	1
11100021-010509	電容 CC/GP	1.5PF/50V/NPO/0402	2
11100021-020209	電容 CC/GP	2.2P/50V/NPO/0402/TDK	4
11100021-040709	電容 CC/GP	4.7PF/50V/NPO/0402	1
11100021-100009	電容 CC/GP	10P/50V/NPO/0402	6
11100021-101019	電容 CC/GP	100PF/50V/NPO/0402	2
11100021-103009	電容 CC/GP	10NF/16V/X7R/0402	3
11100021-150009	電容 CC/GP	15P/50V/NPO/0402	1
11100021-220109	電容 CC/GP	22PF/50V/CG TYPE/0402	1
11100021-330009	電容 CC/GP	33PF/50V/NPO/0402	1
11100021-390009	電容 CC/GP	39PF/50V/NPO/0402	1
11100021-680009	電容 CC/GP	68PF/50V/NPO/0402	2
11100022-102009	電容 CC/GP	1000PF/50V/X7R/0402	4
11100022-332009	電容 CC/GP	3300PF/50V/X7R/0402	1
11100023-104009	電容 CC/GP	0.1UF/16V/Y5V/0402	18
11100032-105109	電容 CC/GP	1UF/10V/X5R/0603	8
11100032-475009	CC/ECJ1VB0J475M/GP	4.7UF/6.3V/X5R/0603	5
11100042-106009	電容 CC/JMK212BJ106MG-T	10UF/6.3V/X7R/0805/GP	4
11100053-106019	電容 CC/NTY/GP	10UF/10V/Y5V/1206	2
11201011-000019	RES CF/GP	0/1%/0402	11
11201011-152009	RES CF/GP	1.5K/1%/0402	1
11201011-183009	RES/CF/GP	18K/1%/0402	1
11201011-271009	RES CF/GP	270/1%/0402	2
11201011-472009	RES CF/GP	4.7K/1%/0402	1
11201011-562009	RES CF/GP	5.6K/1%/0402	1

品 號 / 單位	品 名	規 格	用量
39919424-010009	PCBA GMEWLGRL-B/N_1ANT	RT2571W+2528/BG/MINICARD	
11201011-621009	RES CF/GP	620/1%/0402	1
11201015-101009	RES CF/GP	100/5%/0402	1
11201015-103009	RES CF/GP	10K/5%/0402	4
11201015-104009	RES CF/GP	100K/5%/0402	1
11201015-105009	RES CF/GP	1M/5%/0402	2
11201015-203009	RES CF/GP	20K/5%/0402	1
11201015-270009	RES CF/GP	27/5%/0402	1
11201015-821009	RES CF/GP	820/5%/0402	4
11204025-103009	熱敏電阻 CT6103-3435-5P	NTC 10K/5%/F/3435/0603	1
11301102-103009	INDUCTOR	10NH/SMD/0402/ACX	1
11301102-104019	INDUCTOR/GP	100NH/5%/0402/TDK	1
11301102-152009	INDUCTOR/GP	1.5nH/±0.3n/0402/ACX	1
11301102-182019	INDUCTOR/GP	1.8nH/±0.3nH/0402/ACX	1
11301102-222009	INDUCTOR/GP	2.2nH/0.3nH/0402/ACX	1
11301102-272009	INDUCTOR/GP	2.7nH/SMD/0402/ACX 無鉛	3
11301102-392009	INDUCTOR/GP	3.9n/±0.3n/0402/ACX	1
11301102-472009	INDUCTOR/GP	4.7nH/SMD/0402	1
11301405-100009	COMMON MODE 90-OHM/GP	RFCMF1220100M3T/F4P-2012	1
11401061-400009	XTAL 40MHZ	20PPM/CL15PF/SMD/5*3.2	1
25107099-000009	鐵蓋(T);M/GP	MINICARD/劫皇/575-16BZ1.	1
25107099-100009	鐵蓋(B);M/GP.	MINICARD/劫皇/575-156AZ1	1
29919424-010009	PCB-8WM/1±0.1mm/GP	GMEWLGRL-B/N/BG/MINICARD	1

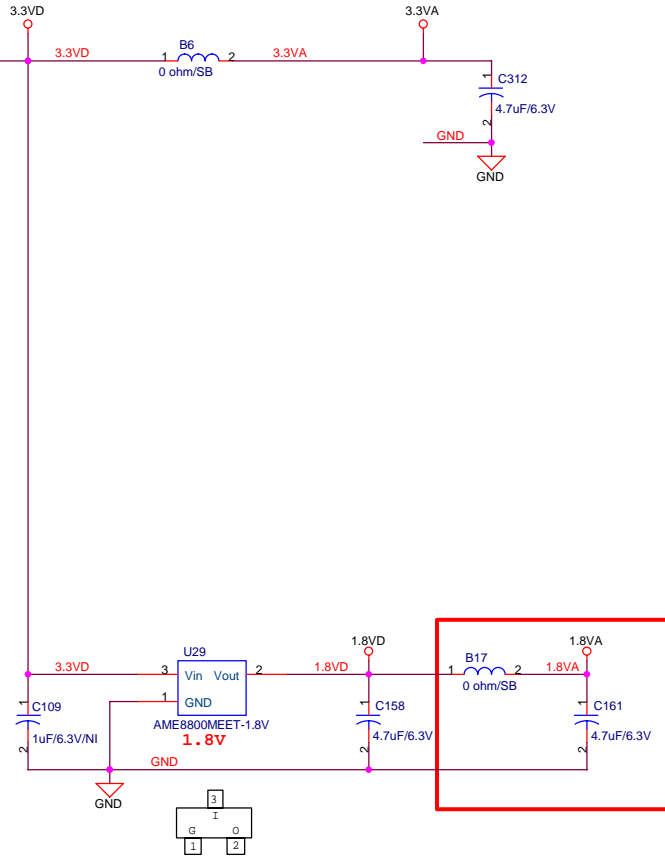
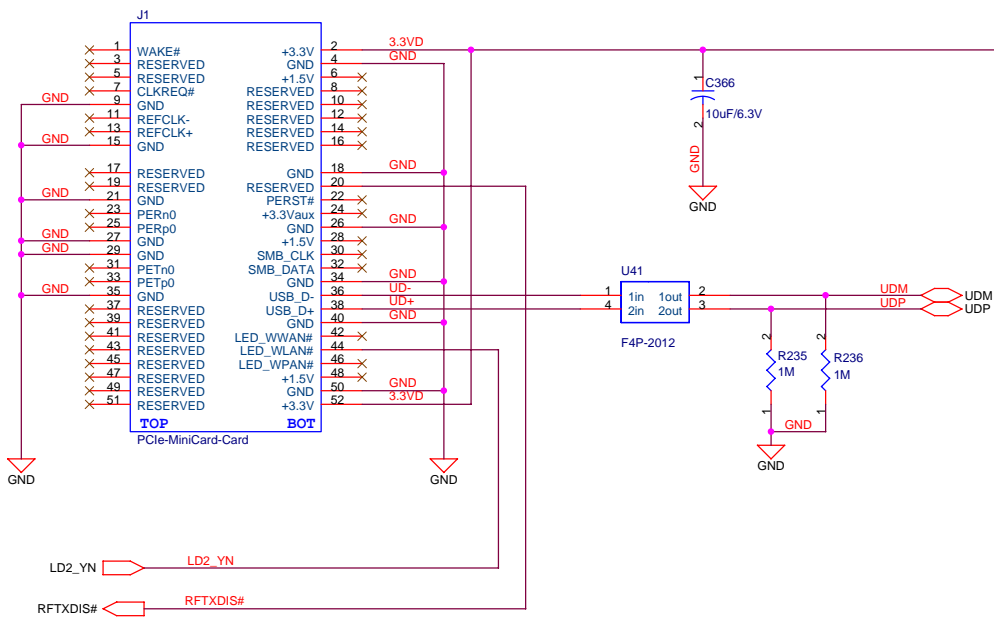


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Size B	Document Number 39919424-010009	Rev V 1.0
Date: Wednesday, March 15, 2006	Sheet 1	of 1

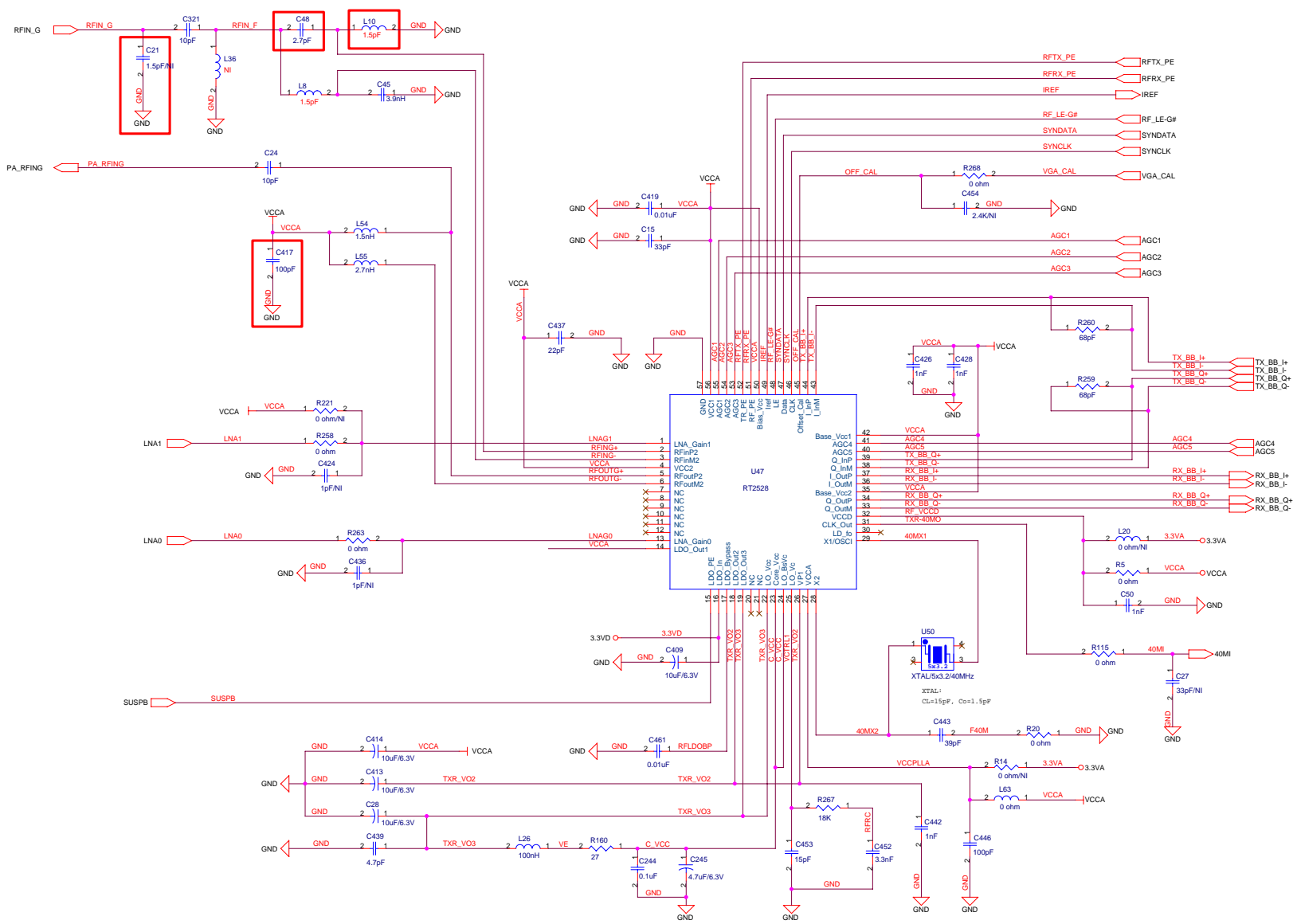
Mode	Install	Not Install
Internal 1.2MHz	R245, R247	C353, C354, R207, R246 R230, U38
External 1.2MHz	C353, C354, R207, R230, R246, U38	R245, R247



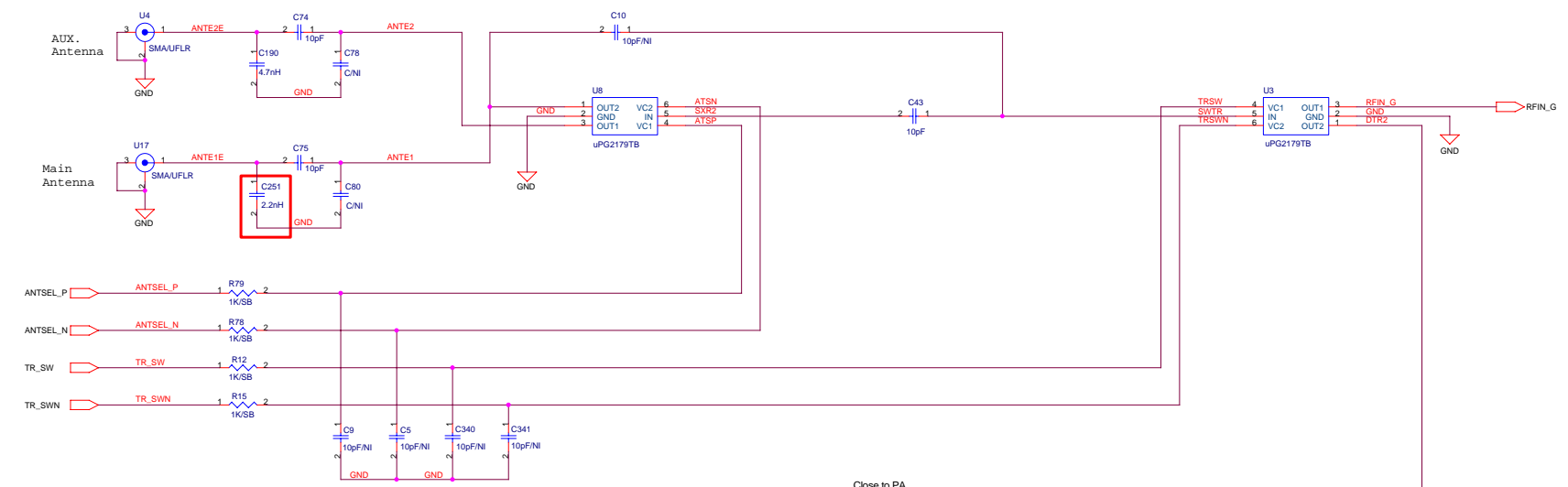
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Date: Wednesday, March 15, 2006	Sheet 1 of 1	



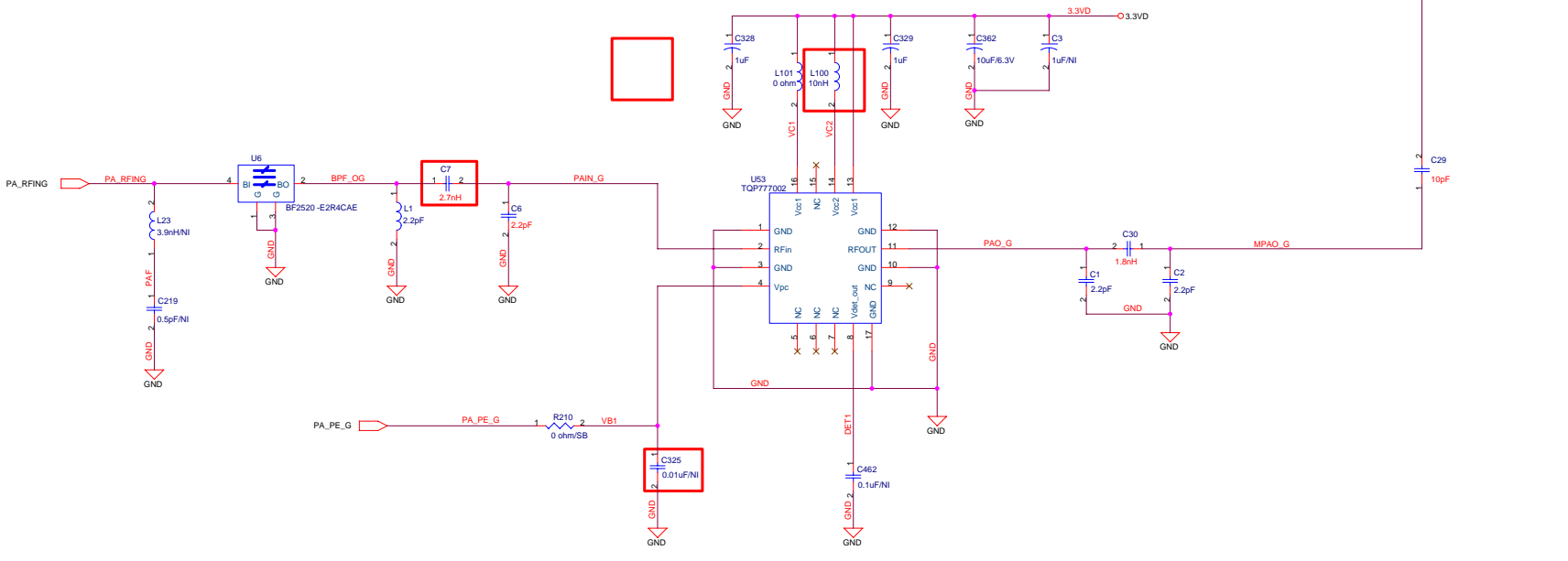
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Size B	Document Number: 39919424-010009	Rev V 1.0
Date: Wednesday, March 15, 2006	Sheet 1 of 1	



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Size C	Document Number 39919424-010009	Rev 1.0
Date: Wednesday, March 15, 2006	Sheet 1	of 1



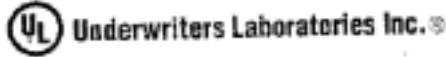
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Size: C	Document Number: 39919424-010009
Date: Wednesday, March 15, 2006	Rev: 1.0
Sheet 1 of 1	

六、PCB YELLOW CARD

Northbrook, Illinois • (847) 272-6800
 Mahwah, New York • (831) 271-6200
 Santa Clara, California • (408) 385-0400
 Research Triangle Park,
 North Carolina • (919) 549-1400
 Corvallis, Washington • (360) 317-5500



TSUDING GLOBAL ELECTRONIC CO LTD
 MR L A LEU, PLANT MANAGER
 32 LANE 290 HSIN SHENG RD
 HSIN CHUANG TSUN
 LU CHU HSIANG
 TAOYUAN TAIWAN

RE: Project Number(s) - 02CA03853

Your most recent Certification is shown below. You may also view this information, or a portion of this information (depending on the product category), on UL's Online Certifications Directory at www.ul.com/database. Please review the text and contact the Conformity Assessment Services staff member who handled your project if revisions are required. For instructions on placing an order for this information in a 3 x 5-inch format, you may refer to the enclosed order form for UL Card Service.

ZPMV2
 Wiring, Printed - Component

July 20, 2002

TSUDING GLOBAL ELECTRONIC CO LTD
 32 LANE 290 HSIN SHENG RD HSIN CHUANG TSUN LU CHU
 HSIANG, TAOYUAN TAIWAN

E154316

Type	Crad Coard Width		TSA Mils	SSDS+	Min Area Diam In.	Solder Life		Min Oper Temp C	UL94 Flame Class	Meets UL796 OSR	CTI
	Mils In.	Edge In.				C	Sec				
Multi-layer printed wiring boards.											
1044	0.003	0.007	0.67	D5	1.0	240	10	100	94V-0	A3	—
Single layer printed wiring boards.											
1045	0.002	0.007	0.67	D5	1.0	174	15	130	94V-0	A2	—

-SS — Single sided, DS — Double or single sided.

Marking: Company name or trademark (UL) and type designation.

See General Information Preceding These Recognitions

A (black triangle) Symbol is marked on those products within a given type designation that comply with direct support of current-carrying parts performance level requirements of UL 796. "A3" is used to indicate that all base materials under that type designation comply with direct support of current-carrying parts performance level requirements of UL 796.

For use only in equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

UL FILE

ZPMV2

Component - Wiring, Printed

EISO ENTERPRISE CO LTD

E162061 (S)

NO.52-2, PEI-NEI STREET, SHU LIN CITY,

(A CARD)

TAIPEI HIEN TAIWAN, R.O.C.

Clad		Max		Min		Meets					
Cond Width	Min	Area	Sold	Oper	UL94	UL796					
Min	Edge	Thk	Diam	Lts	Temp	Flame	Dir				
Typ In	In	Mils	SS/DS+	In	C	Secs	C	Class	Sup	CTH	
single layer printed wiring boards.											
5	0.005	0.009	0.67	DS	1.0	274	15	130	94V-0	Yes	---
fulllayer printed wiring board.											
6	0.004	0.004	1.35	DS	1.0	288	12	130	94V-0	Yes	---

4SS - Single clad DS Double clad DS



Test Report

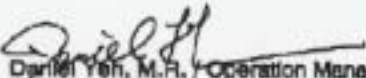
金協昌科技股份有限公司
242台北縣新莊市新樹路52號

報告號碼 : CE/2005/B321
日期 : 2005/11/21
頁數 : 1 of 4

以下測試樣品乃供應廠商所提供及確認：

<u>樣品名稱</u>	:	PCB (印刷電路板)
<u>產品型號</u>	:	TQ4G200736A(化金)
<u>買主/訂單號碼</u>	:	金協昌科技股份有限公司
<u>收件日期</u>	:	2005/11/14.
<u>測試日期</u>	:	2005/11/14 TO 2005/11/21

測試結果 : - 請見下一頁 -


Daniel Yeh, M.P., Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.