

## **Reference design for the approval of the Wismo Q2403**

Version : **001**

Date : **June 2002**

Référence :

Level	Date	History of the evolution	Writer
001	2002-06-21	Creation	Isabelle Tocquer

	Name	Function	Date
Written by	Isabelle Tocquer	FTA Manager	2002-06-21
Validated by			
Approved by			

## Contents

<b>1</b>	<b>Aim of this document.....</b>	<b>4</b>
<b>2</b>	<b>Applicable tests on the Q2403.....</b>	<b>4</b>
2.1	For Countries outside the European Community.....	4
2.2	For the European market .....	4
2.3	Conclusion .....	5
<b>3</b>	<b>Reference design specifications.....</b>	<b>6</b>
3.1	Serial link RS232.....	6
3.2	SIM connections.....	7
3.3	Power supply circuit .....	8
3.4	Audio connections.....	9
3.5	RF output .....	11
<b>4</b>	<b>Schematics .....</b>	<b>12</b>

## **1 Aim of this document**

Wavecom policy is to perform on the Q2403 module all GSM tests which can be asked for approval of an apparatus which integrates Q2403 module.  
A hereafter design, compliant with Q2403 hardware specifications, has been used to approve Wismo Module.

This document describes platform board (called reference design) used to perform tests which prove :

- Q2403 R&TTE directive compliance
- Q2403 GCF certification criteria compliance.

## **2 Applicable tests on the Q2403**

### **2.1 For Countries outside the European Community**

Basis for the GSM approval in the world is GERAN TS 51.010-1 or EN 300 607-1 depending on local rules.

R&TTE directive is a good basis for approval of GSM products in more and more countries.

GCF certification is preferred by GSM operators community.

### **2.2 For European market**

R&TTE directive is applicable in the European Community. To have CE mark, a product must be compliant with those standards:

- EN 60950:2000 (Safety tests)
- EN 50360:2001 (Health tests)
- EN 301 489-1 v1.3.1 (09-2001) and EN 301 489-7 (09-2000) (EMC tests)
- EN 301 419-1 v4.1.1 (03-2000) and EN 301 511 v7.0.1 (12-2000) (GSM tests)

## 2.3 Conclusion

All applicable tests on a GSM mobile equipment requested in most of countries for GSM and DCS bands are done on the Q2403 module. In details, Wavecom has performed:

- For **GSM tests**, all applicable tests requested for R&TTE and GCF approval
- For **EMC tests**, we have done applicable tests for a portable equipment, i.e.:
  - EN 55022 (Radiated emissions)
  - EN 61000-4-3 (RF electromagnetic field (80MHz to 2000MHz))
  - EN 61000-4-2 (Electrostatic discharge (ESD))
- For **Safety tests**, all relevant tests have been performed.
- For **Health tests**: not applicable

Remark : ESD tests were performed :

- on SIM connector to validate our ESD protection solution
- between 60 pins module connector and serial link 2.8V-12V circuit converter
- on two audio outputs

### 3 Reference design specifications

Following items have been developed around Q2403, according to HW specification, to perform approval :

- serial link RS232
- SIM connector
- direct Vbatt access to power the module
- audio outputs 1 and 2
- RF output

#### 3.1 Serial link RS232

Pin description :

Signal	PIN number	I/O	I/O type	Description
CT103 / RX	39	I	CMOS	Transmit serial data
CT104 / TX	32	O	1X	Receive serial data
CT105 / RTS	30	I	CMOS	Ready To Send
CT106 / CTS	37	O	1X	Clear To Send
CT107 / DSR	36	O	1X	Data Set Ready
CT108-2 / DTR	34	I	CMOS	Data Terminal Ready
CT109 / DCD	51	O	CMOS/2X	Data Carrier Detect
CT125 / RI	54	O	CMOS / 2X	Ring Indicator
CT102 / GND	Shielding legs			Ground

All serial link signals are reachable via RS232 connector.

At output of 60 pins connector, RS232 voltage level is 2.8V. Rising and falling time of data is less than 200nS at 115200bauds.

Then connecting them to a PC, we need to convert 2.8V to 12V by using the MAX 3237 component.

Adaptation circuit for serial link is the one recommended to customers.

MAX 3237 power supply could be different from main power supply Vbatt. A switch circuit is implemented in order to allow that.

### 3.2 SIM connections

Current SIM signals are :

- SIMVCC : SIM power supply
- SIMRST : reset
- SIMCLK : clock
- SIMDATA : I/O port
- SIMPRES : SIM card detect
- SIMVDD: not connected

Pin description

Signal	Pin number	I/O	I/O type	Description
SIMCLK	3	O	2X	SIM Clock
SIMRST	5	O	2X	SIM Reset
SIMDATA	7	I/O	CMOS / 3X	SIM Data
SIMVCC	9	O		SIM Power Supply
SIMPRES	50	I	CMOS	SIM Card Detect

SIM interface controls a 3V SIM only.

We add Transient Voltage Suppressor (TVS) diodes with low capacitance (less than 10pF) on signal connected to the SIM socket in order to prevent any Electrostatic Discharge.

They shall be placed as close as possible to the SIM socket.

Following references are used :

- DALC208SC6 from ST Microelectronics which will be connected to SIMCLK and SIMDATA
- ESDA6V1 from ST Microelectronics for the ESD protection of SIMVCC

On the board near SIM connector, we also add on SIMVCC a 100nF capacitor in parallel as close as possible to the SIM connector to minimize noise .

### 3.3 Power supply circuit

Vbatt and VDD are both connected, but a switch circuit is implemented in order to supply separately Vbatt and VDD.

Power Supply Voltage

	Voltage limit
Vbatt	Vmin = 3.3V (*) Vnom = 3.6V Vmax = 4.5V(**)
VDD	Vmin = 3.1V Vmax = 4.5V

(\*) : This value has to be guaranteed during the burst (with 2.0A peak in GSM or GPRS mode)

(\*\*) : max operating Voltage Stationary Wave Ratio (VSWR) 2:1

Power Supply Pin out

Signal	Pin number
VBATT	55, 57, 58, 59 60
VDD	11
GND	Shielding

The grounding connection is done through the shielding ⇒ the four legs have to be soldered to the ground plane.



### 3.4 Audio connections

Two different microphone inputs and two different speaker outputs are supported. MIC2 inputs already include the biasing for an electret microphone allowing an easy connection to a handset.

MIC1 inputs does not include an internal bias.

Pin description

Signal	Pin #	I/O	type I/O	Description
MIC1P	42	I	Analog	Microphone 1 positive input
MIC1N	44	I	Analog	Microphone 1 negative input

Pin description

Signal	Pin #	I/O	type I/O	Description
SPK2P	45	O	Analog	Speaker 2 positive output
SPK2N	47	O	Analog	Speaker 2 negative output

Two RJ9 connectors are put on the board in order to be able to test both audio connections.

Audio circuit could be powered by an external source. A switch circuit is implemented in order to power separately the module (via Vbatt) and the serial link circuit and the audio circuit.

**Specifications:****MICROPHONE :**

- 2 Inputs,4 lines: Mic1p Mic1n Mic2p Mic2n
- Mic2: internal bias for electret microphone.this bias is active only when a call is set up .
- Mic1:no internal bias .
- Each microphone inputs are differential mainly to remove common mode noise (TDMA noise).
- Each Mic lines is ac coupled with 100nF in the module .
- Microphone input differential impedance = 13Kohm+/- 3Kohm at 1kHz.
- Mic2 bias =2V,500 $\mu$ A.
- Mic signal level : from 4mVrms to 40mVrms.

**SPEAKER**

- 2 output ,4 lines :Spk1p, Spk1n, Spk2p, Spk2n.
- Each speaker output are differential.
- Drive capability:50 Ohm//1nF
- Speaker output can drive also 32Ohm speaker but maximum gain is forbidden (in this case :gain=max gain -6dB).
- Speaker output differential impedance < 3 Ohm.
- Speaker output impedance in single ended <1.5 Ohm.
- Speaker signal output level :1.65Vrms max.
- Warning: Using single-ended connection means lose half of the power.
- Speaker recommendations: - type electro-magnetic,100mW with impedance 32 Ohm to 150 Ohm.
- Flat response between 1kHz and 3.4kHz
- Sensitivity (SPL):100dB min (V=100mV@1kHz)

### 3.5 RF output

A dual band antenna E-GSM/DCS is connected to the module for radiated spurious emission tests.

Specifications of the antenna are :

- Impedance : 50 ohms
- VSWR Tx max 2 :1 / Rx max 2 :1
- Typical radiated gain : 0dBi

For RF tests, we use an IMP connector with the module. The IMP connector is soldered on the board and the connection between this connector and module RF output PAD is made when the module is put and soldered on the board.

RF output connection on the reference design board is made by a SMA connector. The IMP connector and the SMA one are connected through a printed RF line. The antenna is then connected to this SMA connector.

## 4 Schematics

Schematics, PCB layout and Bill of materials of this board are available hereafter.

**CARTE / PCB  
STARTER KIT  
WISMO QUIK  
VERSION 3.0**

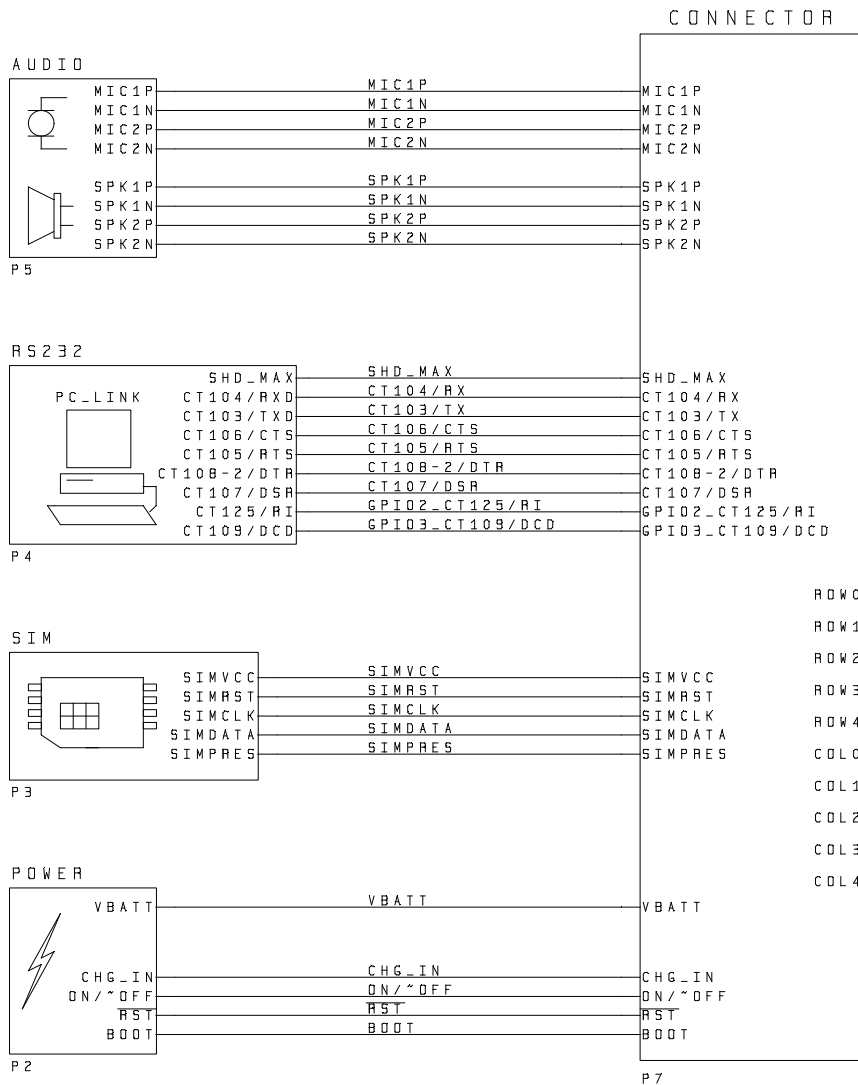
DOSSIER CIRCUIT IMPRIME / PCB FILE	STARTER KIT WISMO QUIK v3.0
SERVICE / DEPARTMENT	14501
REFERENCE WAVECOM	WM9929-010-30
DATE	26/02/2002

AUTORISATION DE COMMUNICATION ET REPRODUCTION / AGREEMENT COMMUNICATION & REPRODUCTION	
NOM / NAME	
SERVICE / DEPARTMENT	
SOCIETE / COMPANY	

- v - SCHEMAS / *SCHEMATICS*
- v - NOMENCLATURE / *BILL OF MATERIALS*
- v - DOSSIER CIRCUIT IMPRIMEE / *PCB FILE*
- v - PLAN D'EQUIPEMENT / *ASSEMBLY DRAWING*
- v - DOSSIER DE FABRICATION / *MANUFACTURING FILE*
- v - PLAN DE MISE EN PANNEAU / *PANEL OUTLINE*
- v - REMARQUES & MODIFICATIONS / *COMMENTS & MODIFICATIONS*
- v - DIVERS / *MISCELLANEOUS*


# **SCHEMAS**

## ***SCHEMATICS***



TROU100	⊙	TROU103	⊙
TROU3MM		TROU3MM	
TROU101	⊙	TROU104	⊙
TROU3MM		TROU3MM	
TROU102	⊙	TROU105	⊙
TROU3MM		TROU3MM	

SPEC-CLIENT	MODULE
VDD	VIN_REG
SDA/SPI-IO	SDA
SCL/SPI-CLK	SCL
GP02	GP05
GP01	GP03
GP00/SPI-AUX	GP02
SPI-EN	LCDEN
CT105/RTS	CTS
CT104/RX	TXD
CT108-2/DTR	DSR
CT107/DSR	DTR
SIMPRES	SIMPRES/GPI012
GPI01	GPI011
GPI02-CT125/RI	GPI010
VCC_RTC	BAT_RTC
GPI04	GPI08
GPI03-CT109/DCD	GPI05/PWM1
BUZ	BUZZER
CT103/TXD	RXD
CT106/CTS	RTS
GPI05	GPI09 or ADC3
AUXV0	ADC2 (W2C)
CHG-IN	DCVOLT

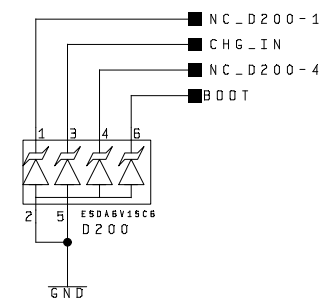
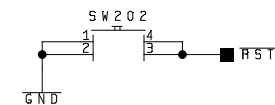
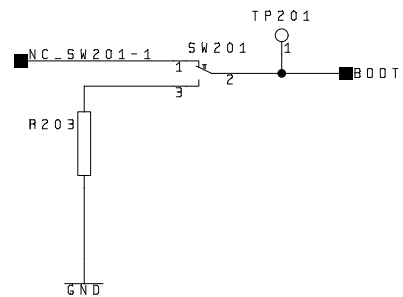
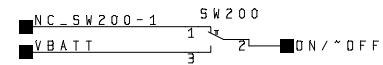
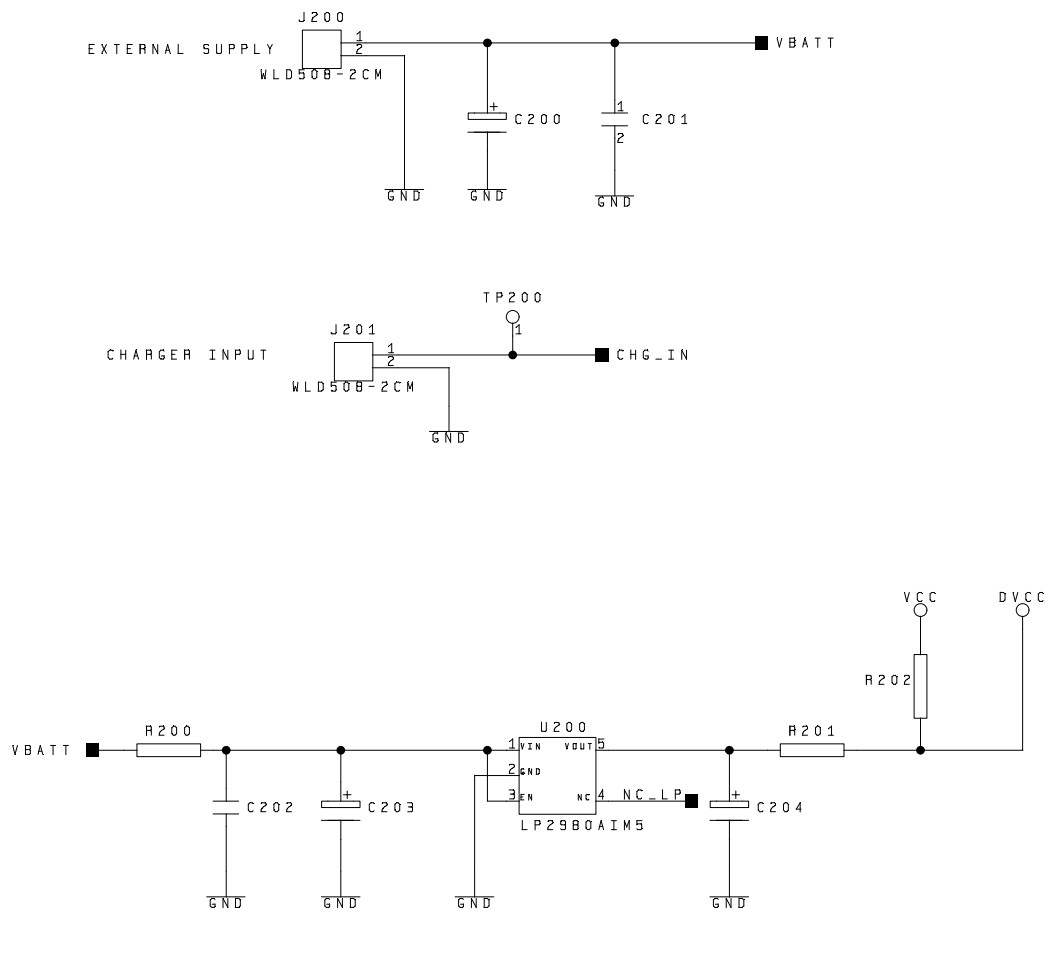


# WAVECOM

The shock wave in the wireless world

PROJECT : STARTERKIT WISM02		Sheet: 1/7
SCHEMATIC: GENERAL HIERARCHY		
WAVECOM 39 Rue du Gouverneur Eboe 92130 ISSY LES MOULINEAUX FRANCE		Date: 26/02/2002 Version: 3.0 Eng: FDL



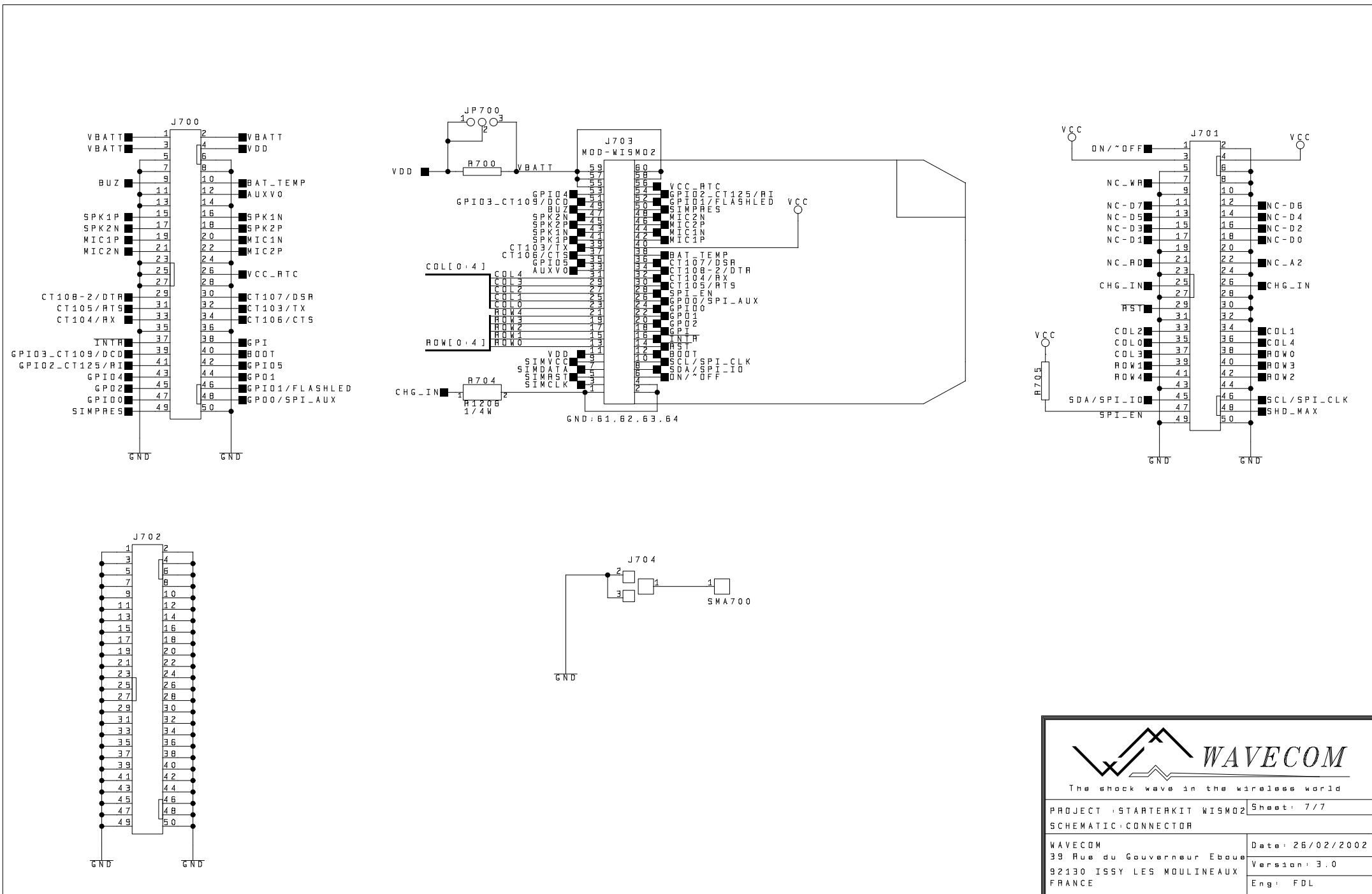


TO START :

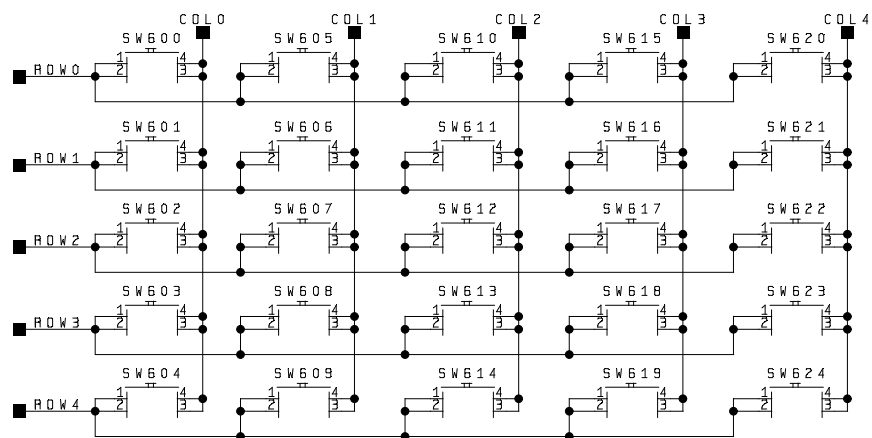
- SUPPLY ON "J200" 3.6V
- SW200 IS TURNED ON "VBATT" TO ENABLE WISMO'S BASE BAND REGULATORS.
- SW201 SELECTS DOWNLOAD (BOOT) "ON" OR "OFF".



PROJECT : STARTERKIT WISMO2	Sheet: 2/7
SCHEMATIC: POWER	
WAVECOM 39 Rue du Gouverneur Ebaue 92130 ISSY LES MOULINEAUX FRANCE	Date: 26/02/2002 Version: 3.0 Eng: FDL



PROJECT : STARTERKIT WISM02		Sheet: 7/7
SCHEMATIC: CONNECTOR		
WAVECOM		Date: 26/02/2002
39 Rue du Gouverneur Ebaue		Version: 3.0
92130 ISSY LES MOULINEAUX		Eng: FDL
FRANCE		

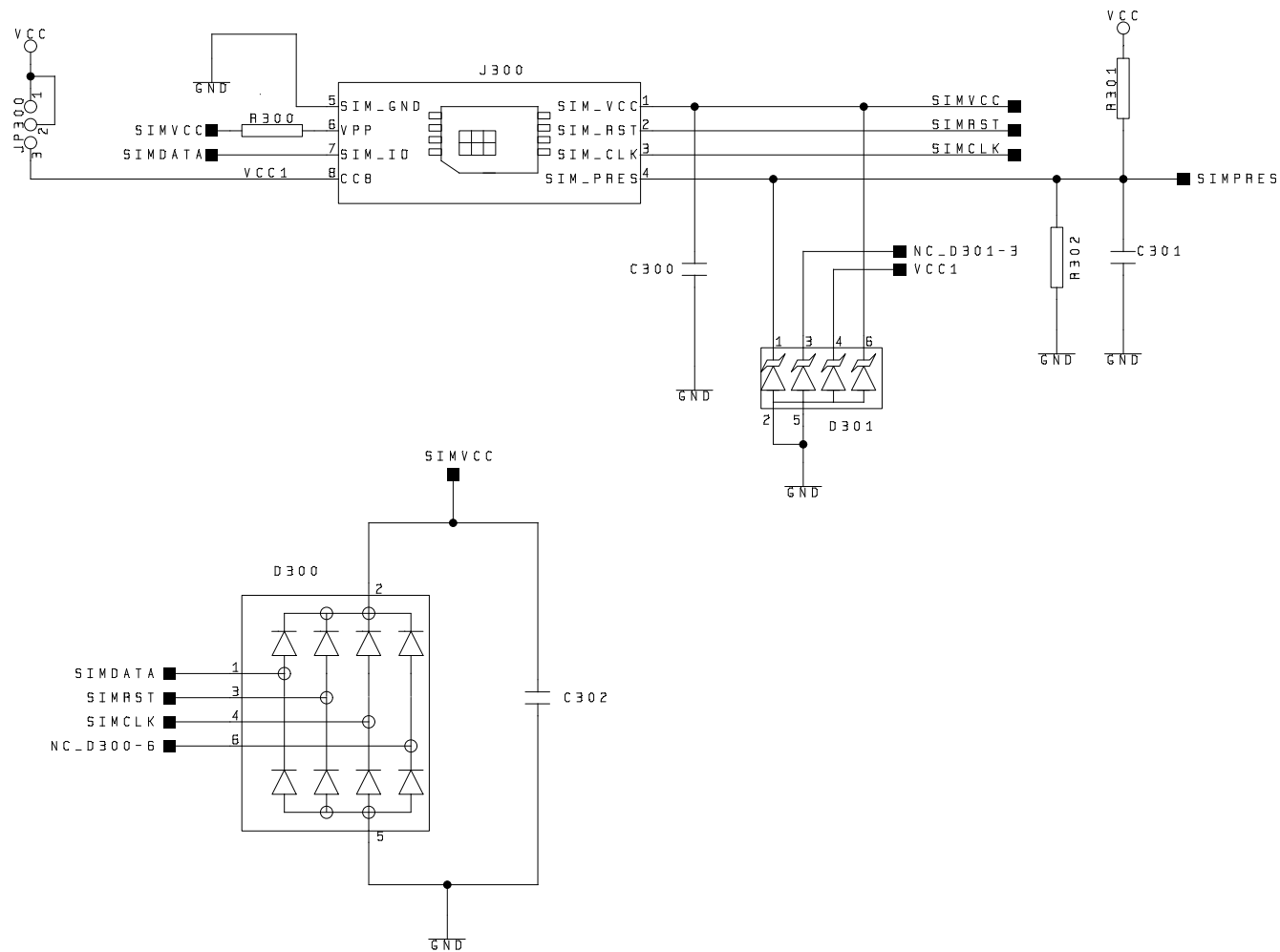



The shock wave in the wireless world

PROJECT : STARTERKIT WISH02 Sheet: 6/7

SCHEMATIC: KEYPAD

WAVECOM 39 Rue du Gouverneur Eboe 92130 ISSY LES MOULINEAUX FRANCE	Date: 26/02/2002 Version: 3.0 Eng: FDL
---	--

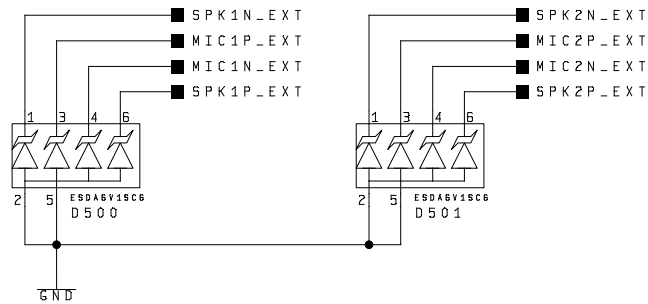
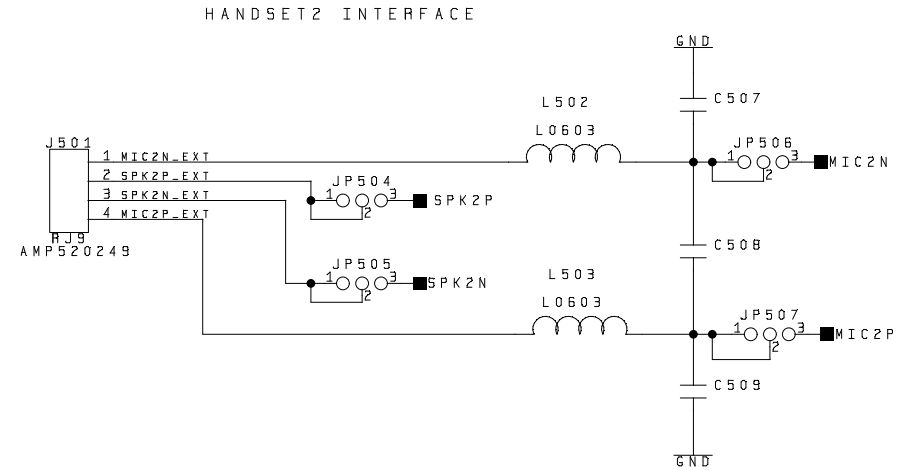
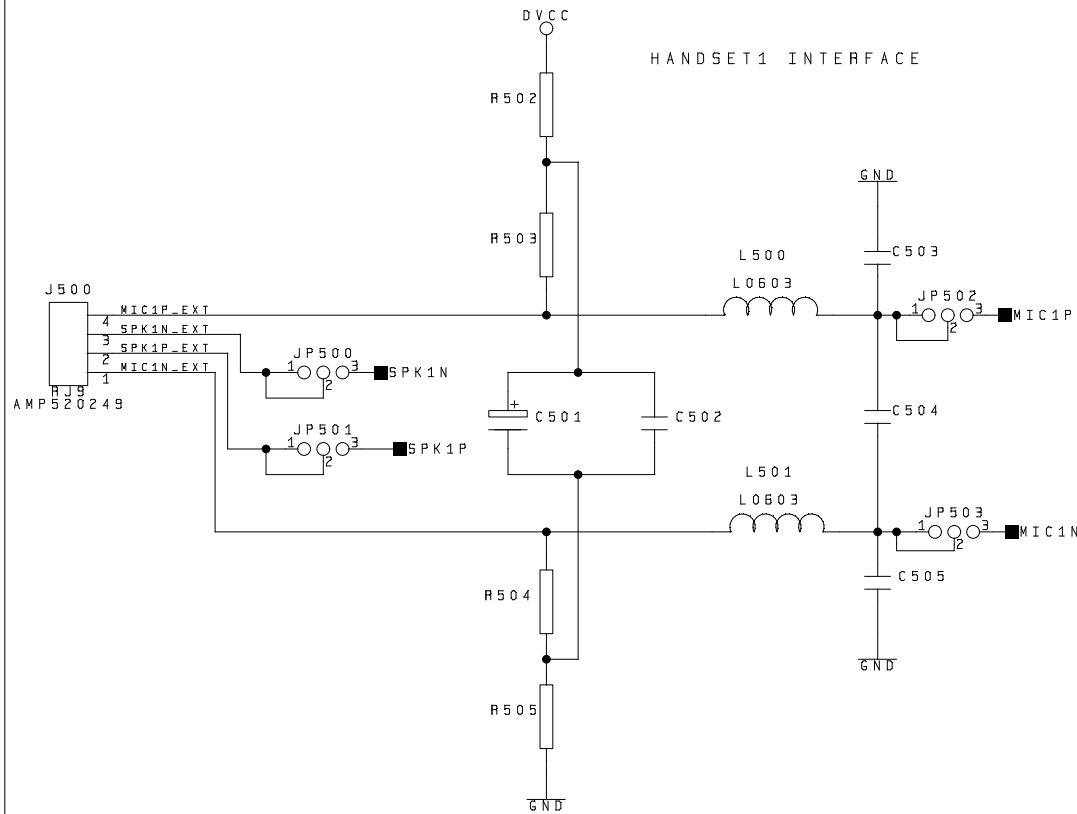





**WAVECOM**

The shock wave in the wireless world

PROJECT : STARTERKIT WISM02		Sheet: 3 / 7
SCHEMATIC: SIM		
WAVECOM 39 Rue du Gouverneur Eboe 92130 ISSY LES MOULINEAUX FRANCE		Date: 26/02/2002 Version: 3.0 Eng: FDL





**WAVECOM**

The shock wave in the wireless world

PROJECT : STARTERKIT WISM02		Sheet : 5/7
SCHEMATIC : AUDIO		
WAVECOM 39 Rue du Gouverneur Eboe 92130 ISSY LES MOULINEAUX FRANCE		Date : 26/02/2002 Version : 3.0 Eng : FDL



# **NOMENCLATURE**

## ***BILL OF MATERIALS***

starterkit\_

\*\*\*\*\*

\*WAVECOM :PARTLIST

\*Projet :STARTERKIT WISMO QUIK

\*REV :3.0

\*Date :26 FEVRIER 2002

\*\*\*\*\*

INDEX	ID ou réf.	FUNCTION	TYPE	VALUE	TOL.	INFO	PACK	PART NAME	SUPPLIER	DEVICE
T400	WM00145						EMT3		ROHM	DTC144EE
U200	WM00183			3.0V			SOT23-5		NATIONAL SEMICONDUCTOR	LP2980AIM5
J703	WM00279	60 PIN SMD CONNECTOR					MOD-WISMO2		ELCO	MOD-WISMO2
C503	WM00425	CERAMIC CAPACITOR		47PF			C0603		?	C0603
C504	WM00425	CERAMIC CAPACITOR		47PF			C0603		?	C0603
C505	WM00425	CERAMIC CAPACITOR		47PF			C0603		?	C0603
C507	WM00425	CERAMIC CAPACITOR		47PF			C0603		?	C0603
C508	WM00425	CERAMIC CAPACITOR		47PF			C0603		?	C0603
C509	WM00425	CERAMIC CAPACITOR		47PF			C0603		?	C0603
C301	WM00495	CERAMIC CAPACITOR		470PF			C0603		?	C0603
C201	WM00600	CERAMIC CAPACITOR		100NF			C0603		?	C0603
C202	WM00600	CERAMIC CAPACITOR		100NF			C0603		?	C0603
C300	WM00600	CERAMIC CAPACITOR		100NF			C0603		?	C0603
C302	WM00600	CERAMIC CAPACITOR		100NF			C0603		?	C0603
C400	WM00600	CERAMIC CAPACITOR		100NF			C0603		?	C0603
C502	WM00600	CERAMIC CAPACITOR		100NF			C0603		?	C0603
C401	WM00620	CAPACITOR		1UF	XXX		C0805			C0805
C402	WM00620	CAPACITOR		1UF	XXX		C0805			C0805
C403	WM00620	CAPACITOR		1UF	XXX		C0805			C0805
C404	WM00620	CAPACITOR		1UF	XXX		C0805			C0805
C501	WM00648	CAPACITOR	TANTALE	4.7UF			TAJA_AVX			TAJA_AVX
R412	WM00660	RESISTOR	?	0			R0603		?	R0603
R200	WM00660	RESISTOR		0			R0603			R0603
R201	WM00660	RESISTOR		0			R0603			R0603
R403	WM00710	RESISTOR	?	100			R0603		?	R0603
R404	WM00710	RESISTOR	?	100			R0603		?	R0603
R405	WM00710	RESISTOR	?	100			R0603		?	R0603
R406	WM00710	RESISTOR	?	100			R0603		?	R0603
R407	WM00710	RESISTOR	?	100			R0603		?	R0603
R408	WM00710	RESISTOR	?	100			R0603		?	R0603



starterkit\_wismo\_quik\_32371

starterkit\_wismo\_quik\_3237

R409	WM00710	RESISTOR	?	100			R0603		?	R0603
R410	WM00710	RESISTOR	?	100			R0603		?	R0603
R203	WM00730	RESISTOR	?	1K			R0603		?	R0603
R502	WM00730	RESISTOR	?	330			R0603		?	R0603
R505	WM00730	RESISTOR	?	330			R0603		?	R0603
R411	WM00770	RESISTOR	?	1K			R0603		?	R0603
R503	WM00770	RESISTOR	?	1K			R0603		?	R0603
R504	WM00770	RESISTOR	?	1K			R0603		?	R0603
R414	WM00890	RESISTOR	?	10K			R0603		?	R0603
R302	WM00970	RESISTOR		100K			R0603			R0603
R705	WM00970	RESISTOR		100K			R0603			R0603
L500	WM11579	INDUCTOR		100NH	XXX		L0603		MURATA	L0603
L501	WM11579	INDUCTOR		100NH	XXX		L0603		MURATA	L0603
L502	WM11579	INDUCTOR		100NH	XXX		L0603		MURATA	L0603
L503	WM11579	INDUCTOR		100NH	XXX		L0603		MURATA	L0603
C203	WM11602	CAPACITOR	TANTALE	4.7UF			TAJA_AVX			TAJA_AVX
C204	WM11602	CAPACITOR	TANTALE	4.7UF			TAJA_AVX			TAJA_AVX
J400	WM11713						SUBD284-9FC			SUBD284-9FC
J500	WM11715						AMP520249			RJ9
J501	WM11715						AMP520249			RJ9
J200	WM11716						WLD508-2CM			WLD508-2CM
J201	WM11716						WLD508-2CM			WLD508-2CM
U400	WM11718						SSOP28			MAX3237
SW200	WM11735						SEC1K2			SEC1K2
SW201	WM11735						SEC1K2			SEC1K2
J300	WM11883	CONNECTOR					91228-0002	91228-0002	MOLEX	91228-0002
C200	WM12495	CAPACITOR	TANTALE	47UF		10V	CTCD		AVX	CTCD
R704	WM12800	RESISTOR		0	5%	1/4W	R1206			R1206
J700	WM12931	50 PIN MALE CONNECTOR					HE10_2P25		3M-ELECTRONIQUE	HE10_2P25
J701	WM12931	50 PIN MALE CONNECTOR					HE10_2P25		3M-ELECTRONIQUE	HE10_2P25
J702	WM12931	50 PIN MALE CONNECTOR					HE10_2P25		3M-ELECTRONIQUE	HE10_2P25
J704	WM12932						CON_IMP_SOLDER			CON_IMP_SOLDER
SW202	WM12936						3CTH9			3CTH9
SW600	WM12936						3CTH9			3CTH9
SW601	WM12936						3CTH9			3CTH9
SW602	WM12936						3CTH9			3CTH9
SW603	WM12936						3CTH9			3CTH9
SW604	WM12936						3CTH9			3CTH9
SW605	WM12936						3CTH9			3CTH9
SW606	WM12936						3CTH9			3CTH9

starterkit\_wismo\_quik\_32371

starterkit\_wismo\_quik\_3237

SW607	WM12936						3CTH9			3CTH9
SW608	WM12936						3CTH9			3CTH9
SW609	WM12936						3CTH9			3CTH9
SW610	WM12936						3CTH9			3CTH9
SW611	WM12936						3CTH9			3CTH9
SW612	WM12936						3CTH9			3CTH9
SW613	WM12936						3CTH9			3CTH9
SW614	WM12936						3CTH9			3CTH9
SW615	WM12936						3CTH9			3CTH9
SW616	WM12936						3CTH9			3CTH9
SW617	WM12936						3CTH9			3CTH9
SW618	WM12936						3CTH9			3CTH9
SW619	WM12936						3CTH9			3CTH9
SW620	WM12936						3CTH9			3CTH9
SW621	WM12936						3CTH9			3CTH9
SW622	WM12936						3CTH9			3CTH9
SW623	WM12936						3CTH9			3CTH9
SW624	WM12936						3CTH9			3CTH9
JP300	WM13372						HE14_1P3			HE14_1P3
JP400	WM13372						HE14_1P3			HE14_1P3
JP500	WM13372						HE14_1P3			HE14_1P3
JP501	WM13372						HE14_1P3			HE14_1P3
JP502	WM13372						HE14_1P3			HE14_1P3
JP503	WM13372						HE14_1P3			HE14_1P3
JP504	WM13372						HE14_1P3			HE14_1P3
JP505	WM13372						HE14_1P3			HE14_1P3
JP506	WM13372						HE14_1P3			HE14_1P3
JP507	WM13372						HE14_1P3			HE14_1P3
JP700	WM13372						HE14_1P3			HE14_1P3
R400	WMXXXXX	RESISTOR	?	NC			R0603		?	R0603
R401	WMXXXXX	RESISTOR	?	NC			R0603		?	R0603
R402	WMXXXXX	RESISTOR	?	NC			R0603		?	R0603
R413	WMXXXXX	RESISTOR	?	NC			R0603		?	R0603
R202	WMXXXXX	RESISTOR		NC			R0603			R0603
R300	WMXXXXX	RESISTOR		NC			R0603			R0603
R301	WMXXXXX	RESISTOR		NC			R0603			R0603
R700	WMXXXXX	RESISTOR		NC			R0603			R0603
SMA700	WMXXXXX						SMA			SMA
TP200	WMXXXXX					DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TP201	WMXXXXX					DIAMETRE 1.2MM	TP_PAD12			TP_PAD12

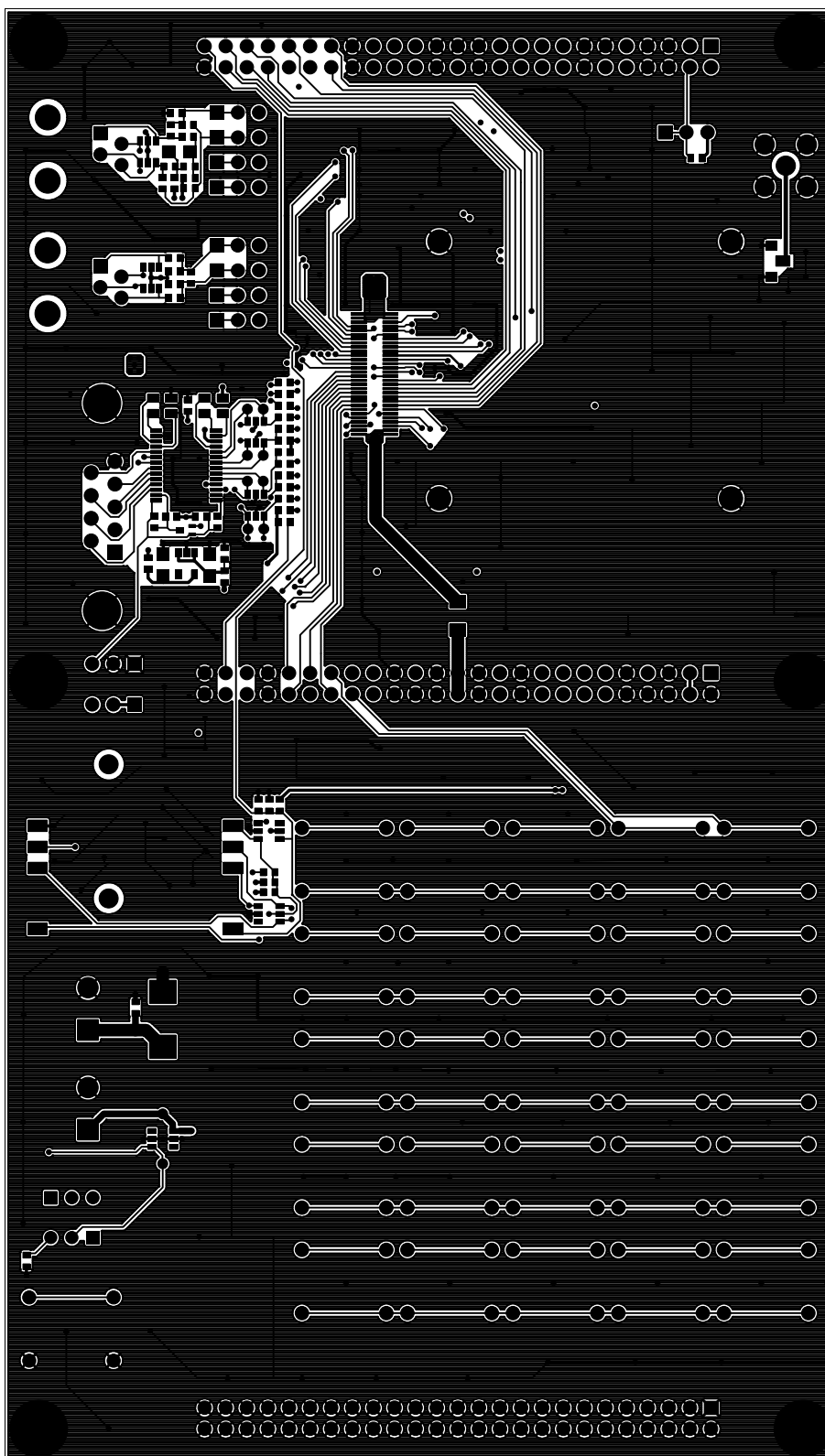
starterkit\_wismo\_quik\_32371

starterkit\_wismo\_quik\_3237

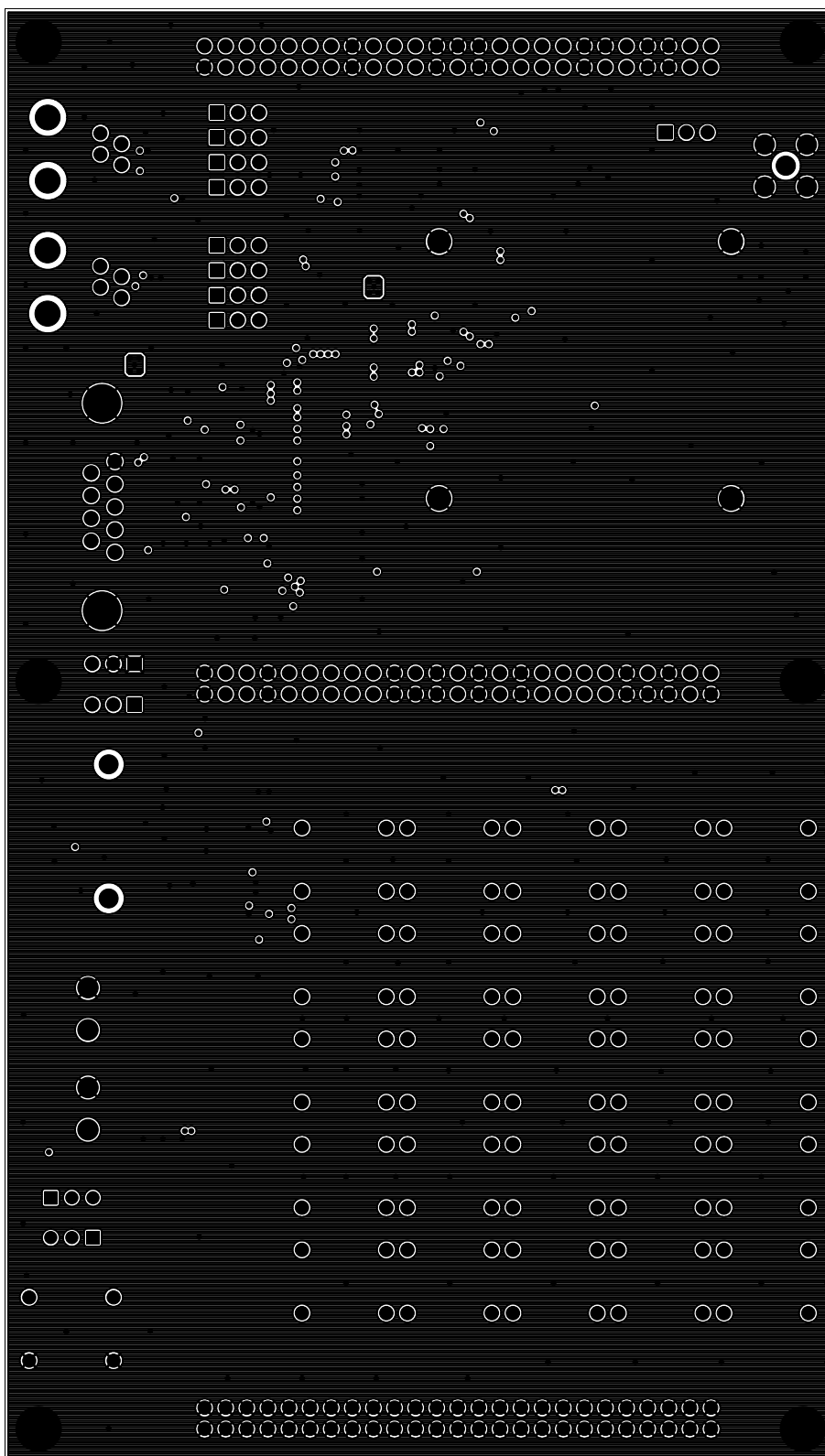
TP400	WMXXXXX				DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TP401	WMXXXXX				DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TP402	WMXXXXX				DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TP403	WMXXXXX				DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TP404	WMXXXXX				DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TP405	WMXXXXX				DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TP406	WMXXXXX				DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TP407	WMXXXXX				DIAMETRE 1.2MM	TP_PAD12			TP_PAD12
TROU10	WMXXXXX					TROU3MM			TROU3MM
TROU10	WMXXXXX					TROU3MM			TROU3MM
TROU10	WMXXXXX					TROU3MM			TROU3MM
TROU10	WMXXXXX					TROU3MM			TROU3MM
TROU10	WMXXXXX					TROU3MM			TROU3MM
TROU10	WMXXXXX					TROU3MM			TROU3MM
D300		ESD PROTECTION				SOT23-6L	DALC208SC6	SGS-THOMSON	DALC208SC6
D200		ESD DIODE			COMPOSANT NON EX	SOT23-6L		ST	ESDA6V1SC6
D301		ESD DIODE			COMPOSANT NON EX	SOT23-6L		ST	ESDA6V1SC6
D400		ESD DIODE			COMPOSANT NON EX	SOT23-6L		ST	ESDA6V1SC6
D401		ESD DIODE			COMPOSANT NON EX	SOT23-6L		ST	ESDA6V1SC6
D500		ESD DIODE			COMPOSANT NON EX	SOT23-6L		ST	ESDA6V1SC6
D501		ESD DIODE			COMPOSANT NON EX	SOT23-6L		ST	ESDA6V1SC6

# **DOSSIER PCB**

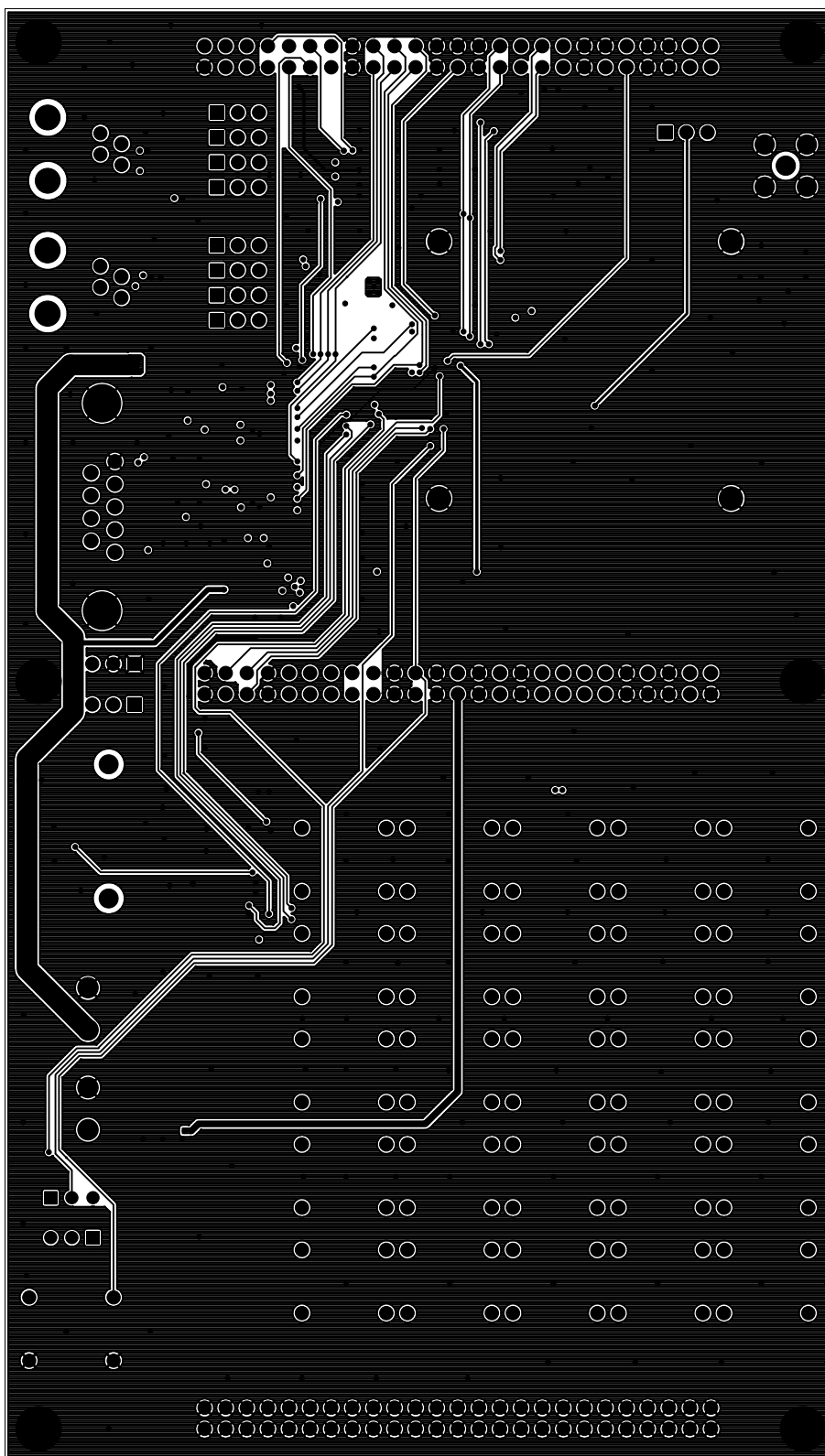
## ***PCB FILE***



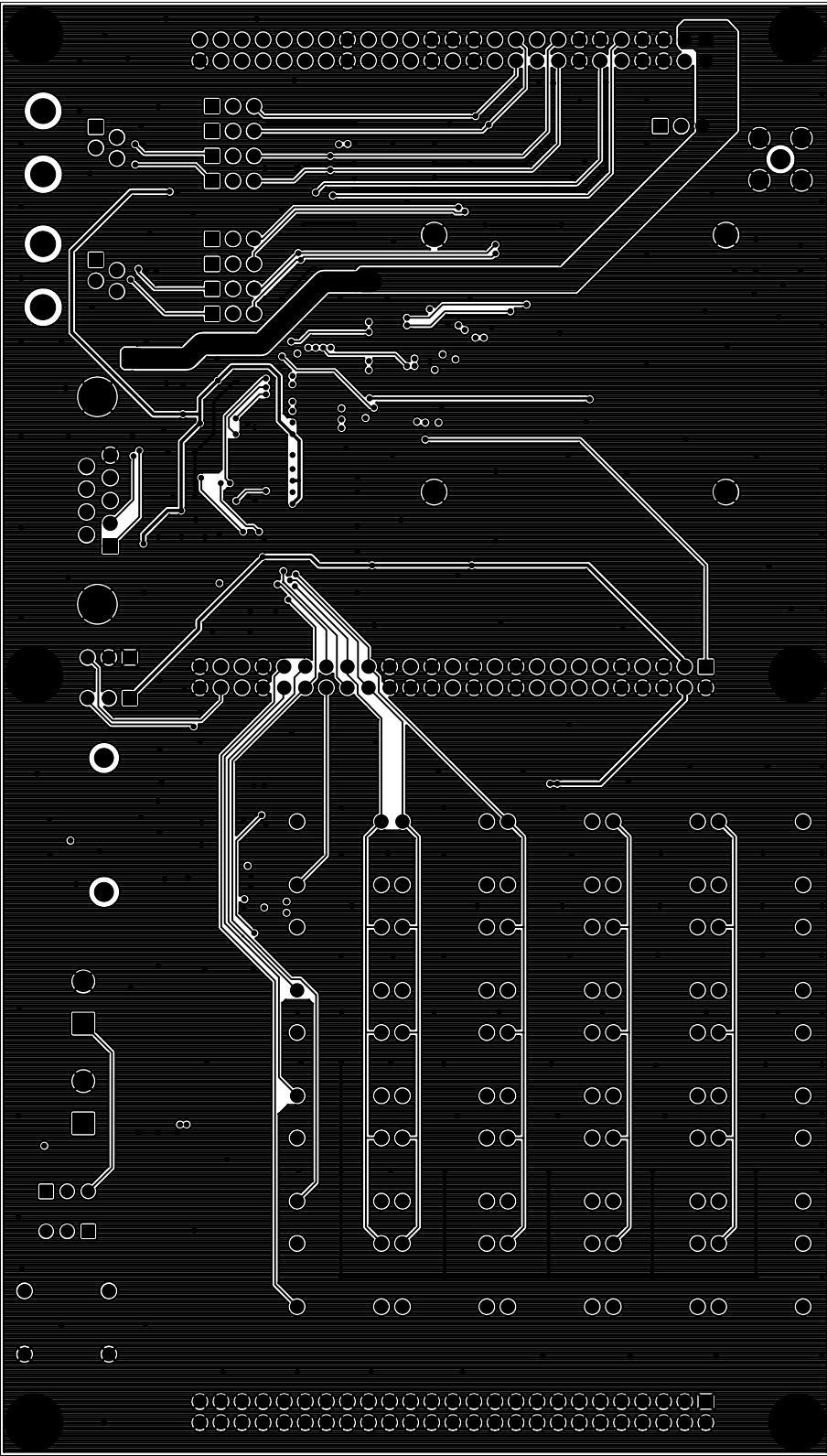
DATE	26/02/2002	<b>wavecom</b> <sup>®</sup>
VERSION	V3.0	
ENG	FDL	
TITLE	TOP LAYER	SCALE 0 2 4 mm
PROJECT	STARTER KIT WISMO QUIK	FORMAT --
N° D'IDENTIFIANT	WM9929-010-30	



DATE	26/02/2002	wavecom <sup>®</sup>
VERSION	V3.0	
ENG	FDL	
TITLE	MID LAYER 1	SCALE 0 2 4 mm
PROJECT	STARTER KIT WISMO QUIK	FORMAT --
N° D'IDENTIFIANT	WM9929-010-30	

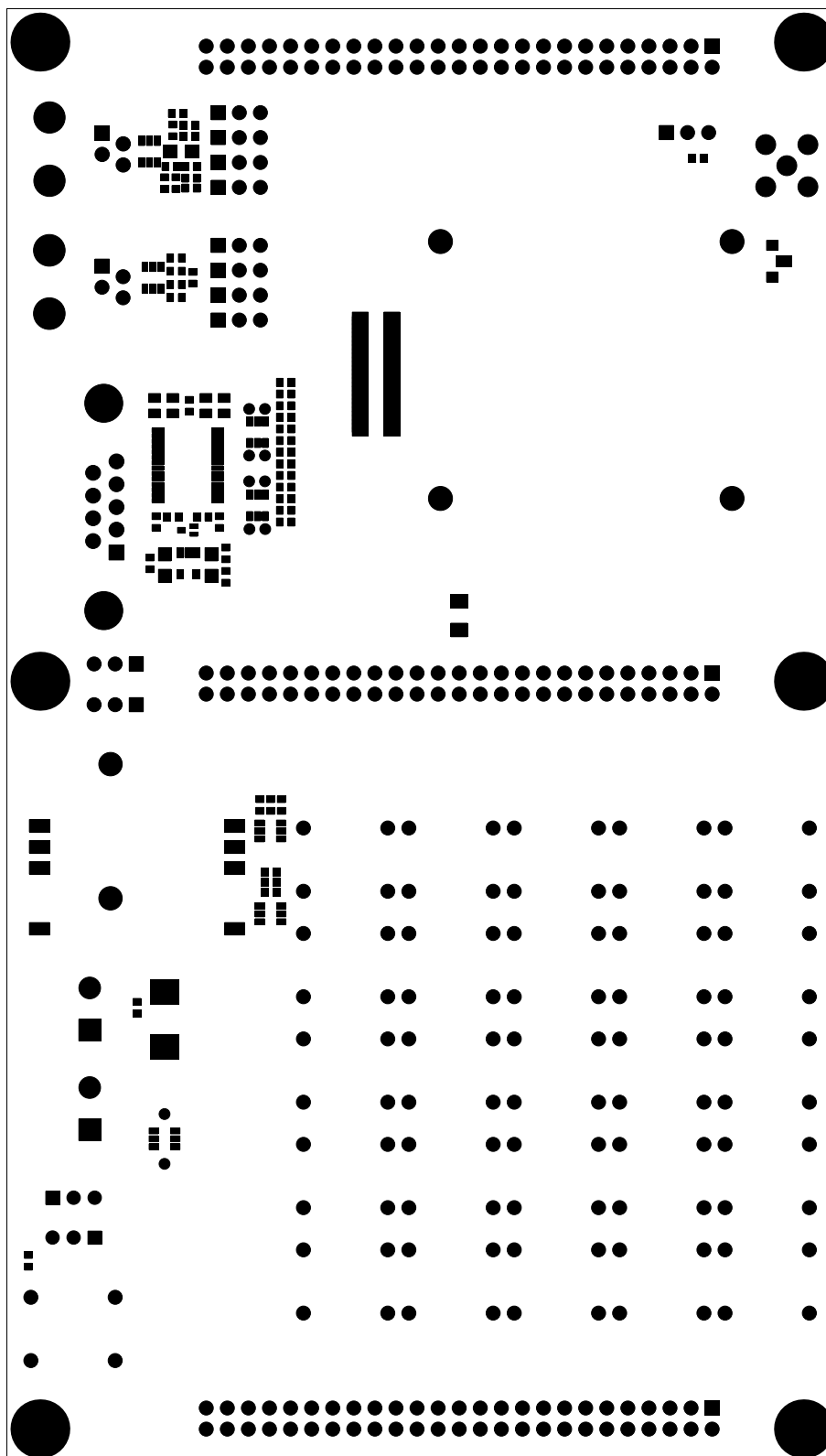


DATE	26/02/2002	<b>wavecom</b> <sup>®</sup>
VERSION	V3.0	
ENG	FDL	
TITLE	MID LAYER 2	SCALE 0 2 4 mm
PROJECT	STARTER KIT WISMO QUIK	FORMAT --
N° D'IDENTIFIANT	WM9929-010-30	

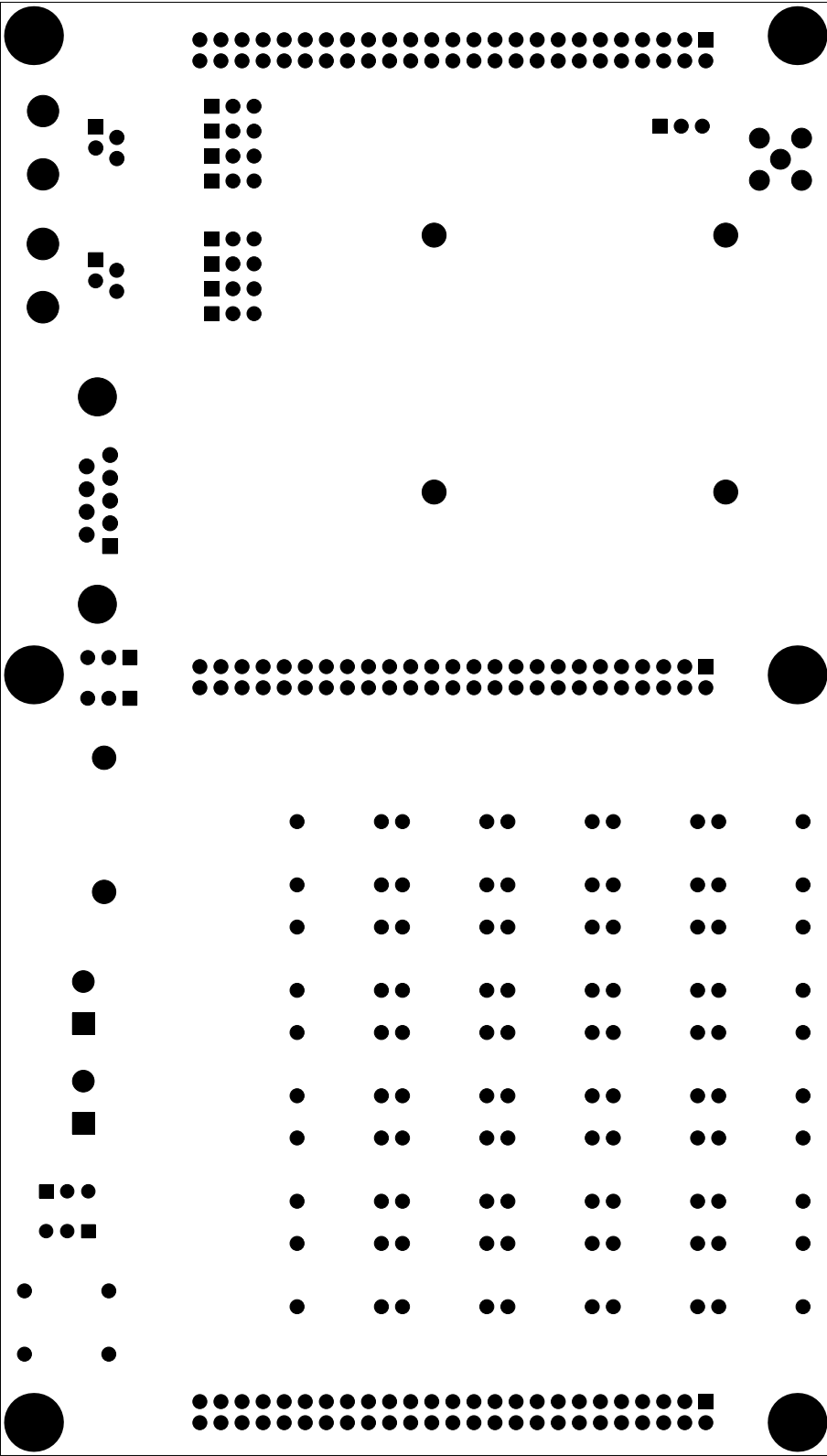


N : D'IDENTIFIANT		WMa22a-010-30
PROJECT		STARTER KIT WISMO QUIK
TITLE		BOTTOM LAYER
ENG	FDL	SCALE 0.2 mm
VERSION	V3.0	FORMAT
DATE	28/03/2003	W96COM

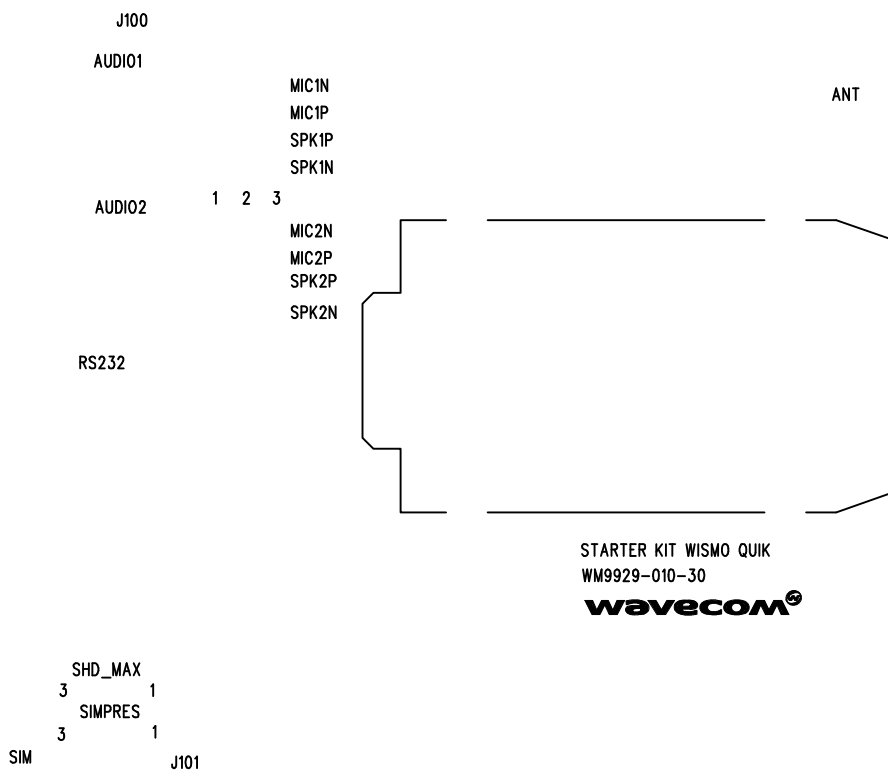




DATE	26/02/2002	<b>wavecom</b> <sup>®</sup>
VERSION	V3.0	
ENG	FDL	
TITLE	SOLDER MASK TOP	SCALE 0 2 4 mm 0 1 2 3 4
PROJECT	STARTER KIT WISMO QUIK	FORMAT --
N° D'IDENTIFIANT		WM9929-010-30




N : D'IDENTIFIANT		WMA929-010-30	
PROJECT		STARTER KIT WISMO QUIK	
TITLE		SOLDER MASK BOTTOM	
ENG		FDL	
VERSION		V3.0	
DATE		28/03/2003	
W96GCOM		SCALE	
		0.2 mm	
		FORMAT	
		--	



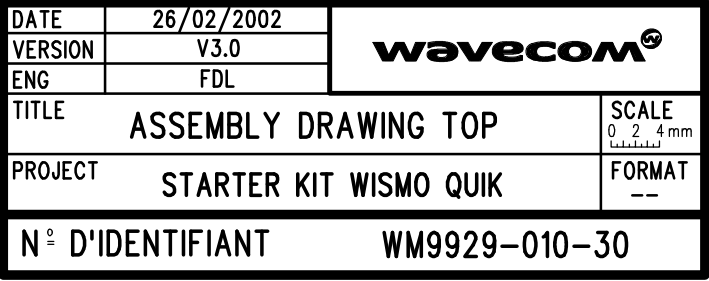
	COL0	COL1	COL2	COL3	COL4
	ROW0				
VBATT	ROW1				
CHG_IN	ROW2				
ON_~OFF 3V6 OFF BOOT ON	ROW3				
RESET	ROW4				
J102					

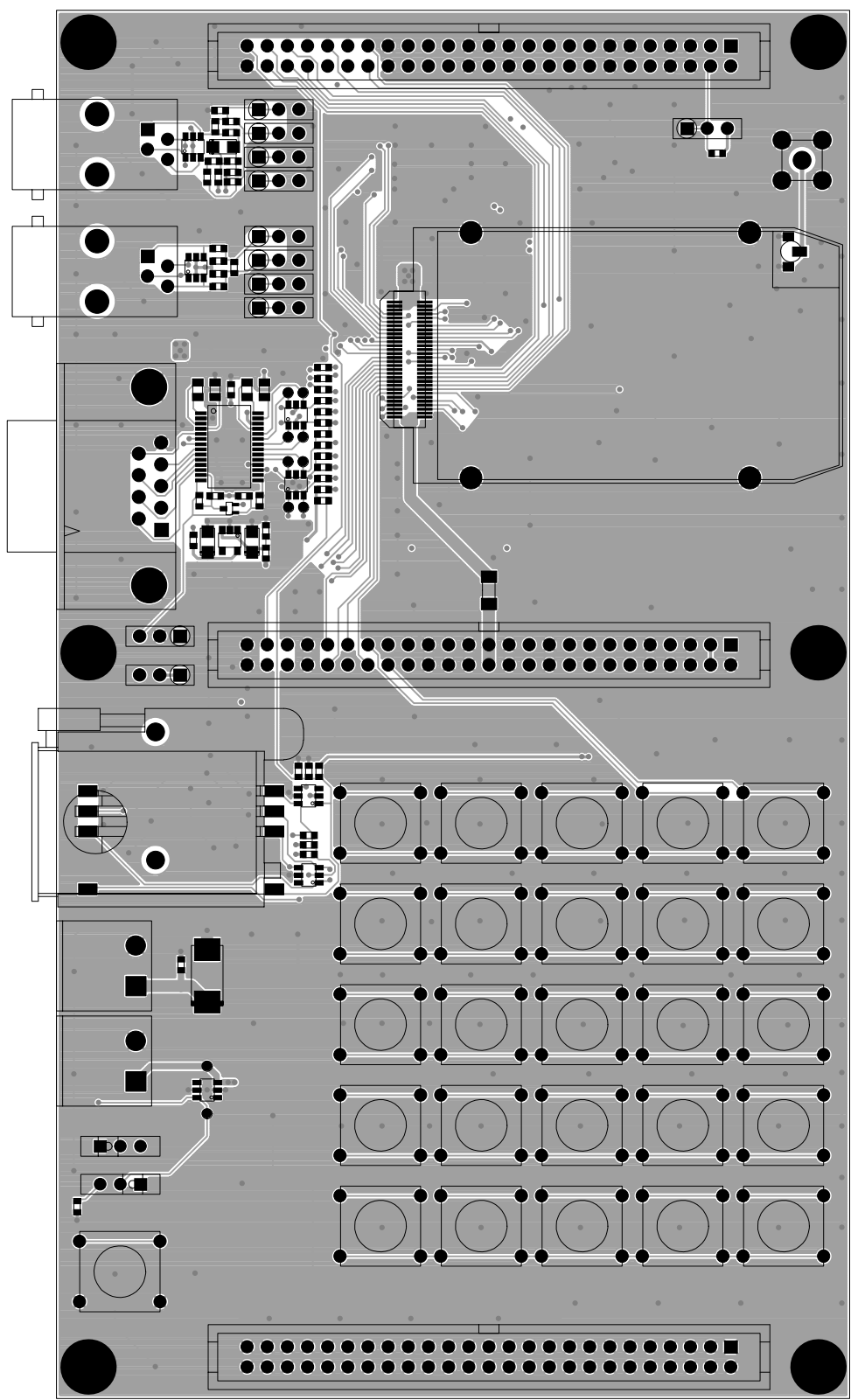
DATE	26/02/2002	<b>wavecom</b> <sup>®</sup>
VERSION	V3.0	
ENG	FDL	
TITLE	SILKSCREEN TOP	SCALE 0 2 4 mm
PROJECT	STARTER KIT WISMO QUIK	FORMAT --
N° D'IDENTIFIANT		WM9929-010-30

DATE	26/02/2002	<b>wavecom</b> <sup>®</sup>
VERSION	V3.0	
ENG	FDL	
TITLE	PASTE MASK TOP	SCALE 0 2 4 mm 
PROJECT	STARTER KIT WISMO QUIK	FORMAT --
N° D'IDENTIFIANT		WM9929-010-30

# **PLANS D'EQUIPEMENTS**

## ***ASSEMBLY DRAWINGS***



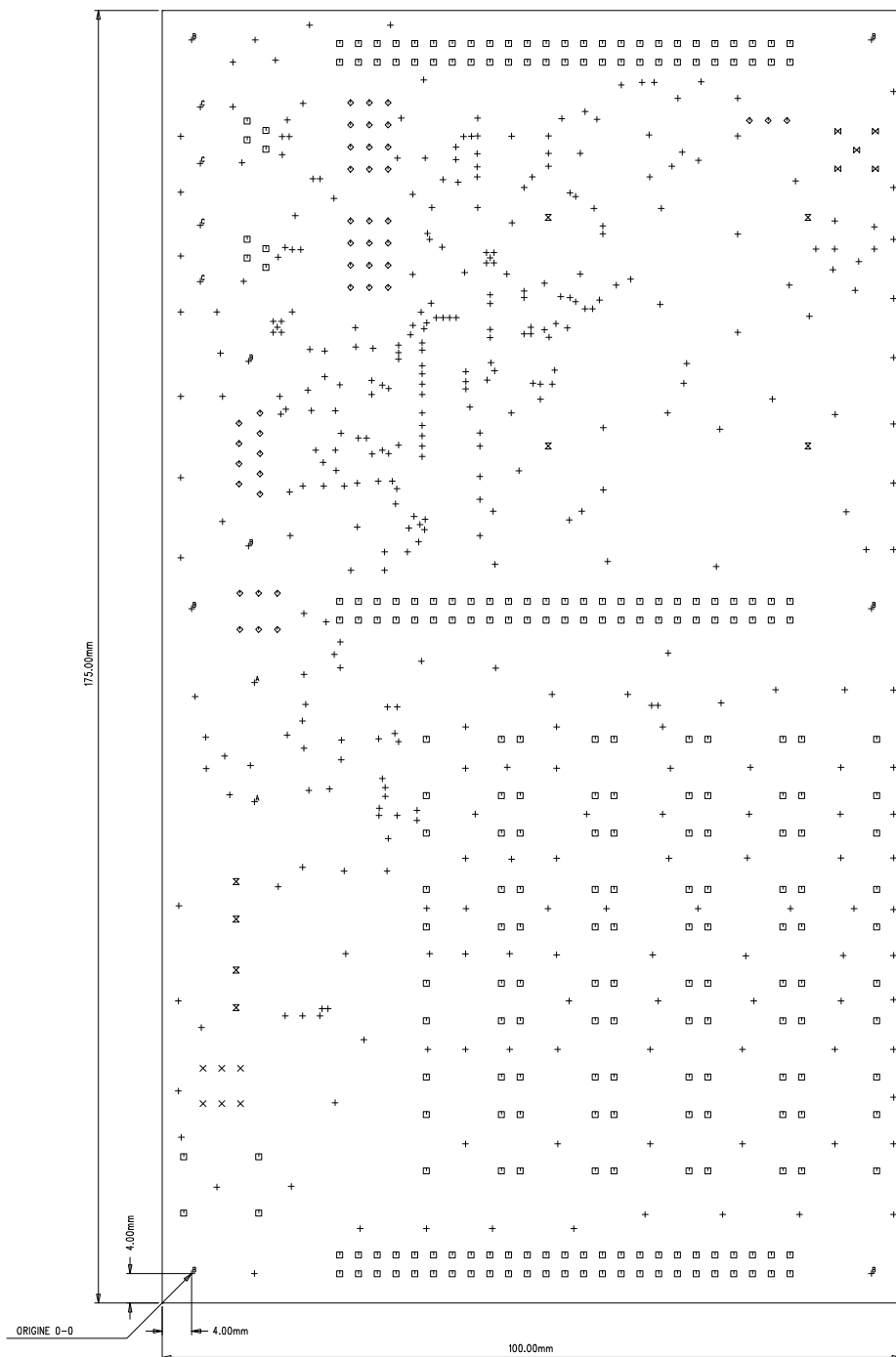


DATE	26/02/2002	<b>wavecom</b> <sup>®</sup>	
VERSION	V3.0		
ENG	FDL		
TITLE		ASSEMBLY DRAWING TOP	SCALE 0 2 4 mm 0 2 4 mm
PROJECT		STARTER KIT WISMO QUIK	FORMAT --
N° D'IDENTIFIANT		WM9929-010-30	

# **DOSSIER DE FABRICATION**

## ***MANUFACTURING FILE***





SIZE	QTY	SYM	PLTD
0.3	381	+	PLTD
0.8	6	x	PLTD
0.9	262	□	PLTD
1	42	◇	PLTD
1.5	8	⊗	PLTD
1.6	5	⊠	PLTD
2.3	2	A	NPLTD
3	8	B	PLTD
3.3	4	C	NPLTD

- PCB CONDITIONS -	
Number of Layers	4
Final PCB Thickness	1.6 mm
Minimal Width of Conductor	210 $\mu$
Minimal Space Between Conductor	210 $\mu$
Material	FR4
Copper Thickness	---
Dimensions (mm x mm)	100 x 175
Solder Mask Top Layer	YES
Solder Mask Bottom Layer	YES
Silkscreen Top Layer	YES
Silkscreen Bottom Layer	NO
Gold Top Layer	YES
Gold Bottom Layer	YES
Ni Au Finition	YES
GERBER Files	4.4 Metric
EXCELLON Files	4.4 Metric

Outline general allowance =  $\pm 0.2\text{mm}$

External copper thickness 17  $\mu$

Internal copper thickness 35  $\mu$

1	360 $\mu$	LAYER TOP	WR
2	760 $\mu$	LAYER MIDL1	PLANE (GND)
3	760 $\mu$	LAYER MIDL2	PLANE (GND)
4	360 $\mu$	LAYER BOTTOM	WR

DATE	26/02/2002	<b>wavecom</b>	
VERSION	V3.0		
ENG	FDL		
TITLE	DRILL DRAWING		SCALE 0,1,2,5mm
PROJECT	STARTER KIT WISMO QUIK		FORMAT --
N° D'IDENTIFIANT		WM9929-010-30	

# **PLAN DE MISE EN PANNEAU**

## ***PANEL OUTLINE***

# **REMARQUES & MODIFICATIONS**

## ***COMMENTS & MODIFICATIONS***

# **DIVERS**

## ***MISCELLANEOUS***