



# **MaxWave Microelectronics Ltd**

MW8113 Application Notes

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## 1. General Description

MW8113 is MaxWave's UHF passive tag product with proprietary intellectual property. It's compatible with EPC GS1 GEN2V2 and ISO 18000-6C standards. Good performance and group consistency make MW8113 well suitable for inventory management applications such as asserts inventory, logistics management.

This document provides some information for MW8113 application with some purpose:

Antenna design

Recommend inlay assembly parameter for DDA15K of Muehlbauer

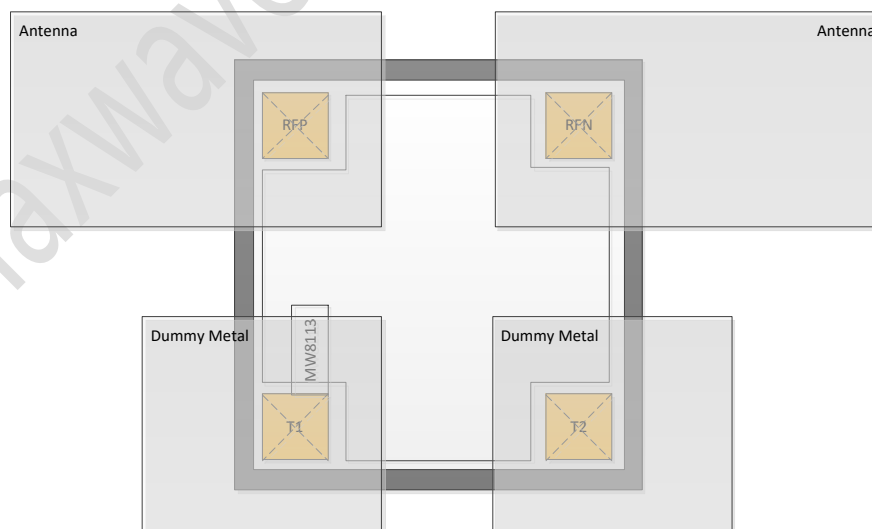
Recommend setting for RFID printer

## 2. Flip Chip bonding

Refer to Figure 3, differential RF input pin RFP and RFN should be bond to antenna, and test pad should be bond to dummy metal

There is a metal print of "MW8113" located near T1 pad, this sign can be used as bonding alignment

Note: MW8113 also support single-slit antenna bonding mode because the test pads T1 and T2 are electrically disconnected and therefore can be safely short to the RF pads, this bonding mode especially suit for very small size inlay design



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### 3. Interface Characteristics for Antenna design

Typical assembled impedance  $11-j202\Omega$  @915MHz

Chip input capacitance: 0.859pF

Additional 100fF assembly+test pad capacitance

### 4. Assembly parameter for DDA 15K of Muehlbauer

Time for presson: 6S

Presson: 1.6N

Temperature: 180°C~190°C

### 5. Inlay/Label encoding notes

MW8113 support Write and BlockWrite (maximum 32bits on even address) commands

MW8113 support Writing result auto-confirmation, no additional Read command needed to verify

About 3.5ms for single word write responding

Big power consumption while writing process, increase the power and let the RSSI bigger than -37dBm

### 6. Additional notes for ChiLi label encoding machine with R220 Reader

Recommend auto mode with big power (let the RSSI bigger than -37dBm)

### 7. Fast configuration for EPC/User mapping

Default factory-programmed: 128bits EPC+ 0 user memory

If another mapping scheme needed, PC words should be written before programming the contents, for example:

If change from 128bits(EPC)+0bits(User) to 96bits(EPC)+32bits(User), first write 0x3400 to PC word, then write 96bit EPC and 32 bits user data

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If change from 96bits(EPC)+32bits(User) to 128bits(EPC)+0bits(User), first write 0x4000 to PC word, then write 128bit EPC

EPC memory mapping:

EPC address and mapping		96bits EPC mapping	128bits EPC mapping
0	StoredCRC(RO)	StoredCRC (RO)	StoredCRC (RO)
1	PC word	0x3400	0x4000
2	EPC word	EPC Word0	EPC Word0
3	EPC word	EPC Word1	EPC Word1
4	EPC word	EPC Word2	EPC Word2
5	EPC word	EPC Word3	EPC Word3
6	EPC word	EPC Word4	EPC Word4
7	EPC word	EPC Word5	EPC Word5
8	EPC word	NA	EPC Word6
9	EPC word	NA	EPC Word7

## 8. Adapted Printer Brand lists :

Status	Brand
<b>Adapted</b>	Zebra, Honeywell, TEC, SATO, Postek, Zmin, Dascom