ZigBee SE2.0 - IEEE802.15.4
OASIS RF MODULE

FEATURES

- +20dBm (100mW) Nominal Transmit Power
- Dual Antenna Ports for Indoor Applications
- Very small 25mm x20mm x 1.7mm form factor
- Long range-up to 1000 meters LoS
- MKW22D512V 50MHz 32 bit ARM® Cortex™ M4 MCU
- Runs Freescale BeeStack™ Pro, SynkroRF or SMAC
- 2.36-2.4GHz ISM/MBAN band operation
- MMCX, u.fl or off-module RF connection
- 16 Selectable IEEE 802.15.4 RF channels
- Extensive low power modes (<2μA in sleep mode)
- All MCU pins accessible
- Freescale BeeStack™ Pro, Synkro RF or SMAC
- 64K SRAM, 512K FLASH
- AES 128 bit Encryption
- Serial UART, interface
- 2.7v to 3.6v Operation
- -40C to +105C Operation
- RoHS Compliant
- FCC Certified

APPLICATIONS

- ZigBee™ SE2.0
- Smart Energy
- M2M
- Automatic Meter Reading
- Medical (MBAN) Networks
- Residential Automation
- HVAC Control
- Lighting Control
- Asset Tracking

DESCRIPTION

The Oasis RF module is an ultra-low power IEEE 802.15.4 compliant, FCC certified 2.4GHz RF Module with an 100mW PA/LNA for extended range operations. The micro form factor module includes a dual antenna design to support receiver diversity systems. The Oasis is based on the Freescale MKW22D512V fourth-generation ZigBee Pro/IP platform which incorporates a low power 2.4GHz IEEE 802.15.4 compliant radio frequency transceiver combined with a powerful Kinetis mixed signal ARM® Cortex™ M4 MCU, hardware acceleration for both the IEEE 802.15.4 MAC and AES security, and a full set of Microcontroller Unit (MCU) peripherals.

The module brings out all the functional pins of the MKW22D512V MCU for maximum usability and flexibility including:

- 2 UART's
- 7 ADC Inputs
- SPI bus
- I2C bus
- USB
- PWM, Timers
- JTAG
- 8 KBI's

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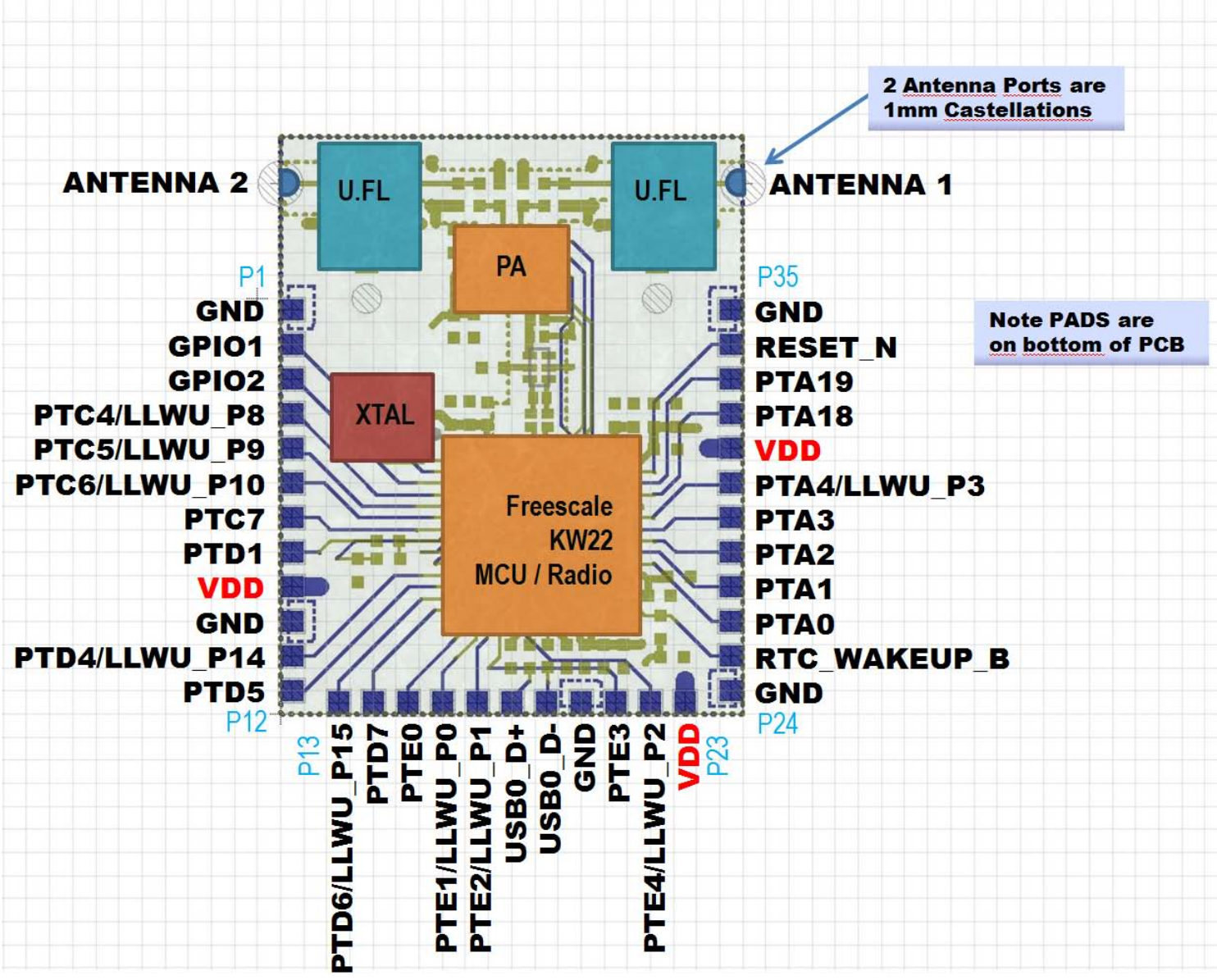
TALON OASIS MODULE PINOUT



TALON OASIS MODULE PINOUT 1/3

MODULE PIN #	MKW22D512 PIN #	PIN NAME	TYPICAL USE	DESCRIPTION
P1	N/A	GND	POWER	
P2	2	GPIO1	RADIO	
P3	3	GPIO2	RADIO	
P4	4	PTC4/LLWU_P8	SPIO	
P5	5	PTC5/LLWU_P9	SPIO	
P6	6	PTC6/LLWU_P10	SPIO	
P7	7	PTC7	SPIO	
P8	8	PTD1	I2C	
P9	N/A	VDD	POWER	
P10	N/A	GND	POWER	
P11	11	PTD4/LLWU_P14	UART0	
P12	12	PTD5	UART0	
P13	13	PTD6/LLWU_P15	UART0	
P14	14	PTD7	UART0	
P15	15	PTE0	TRACE, UART1, I2C	
P16	16	PTE1/LLWU_P0	TRACE	
P17	17	PTE2/LLWU_P1	TRACE	

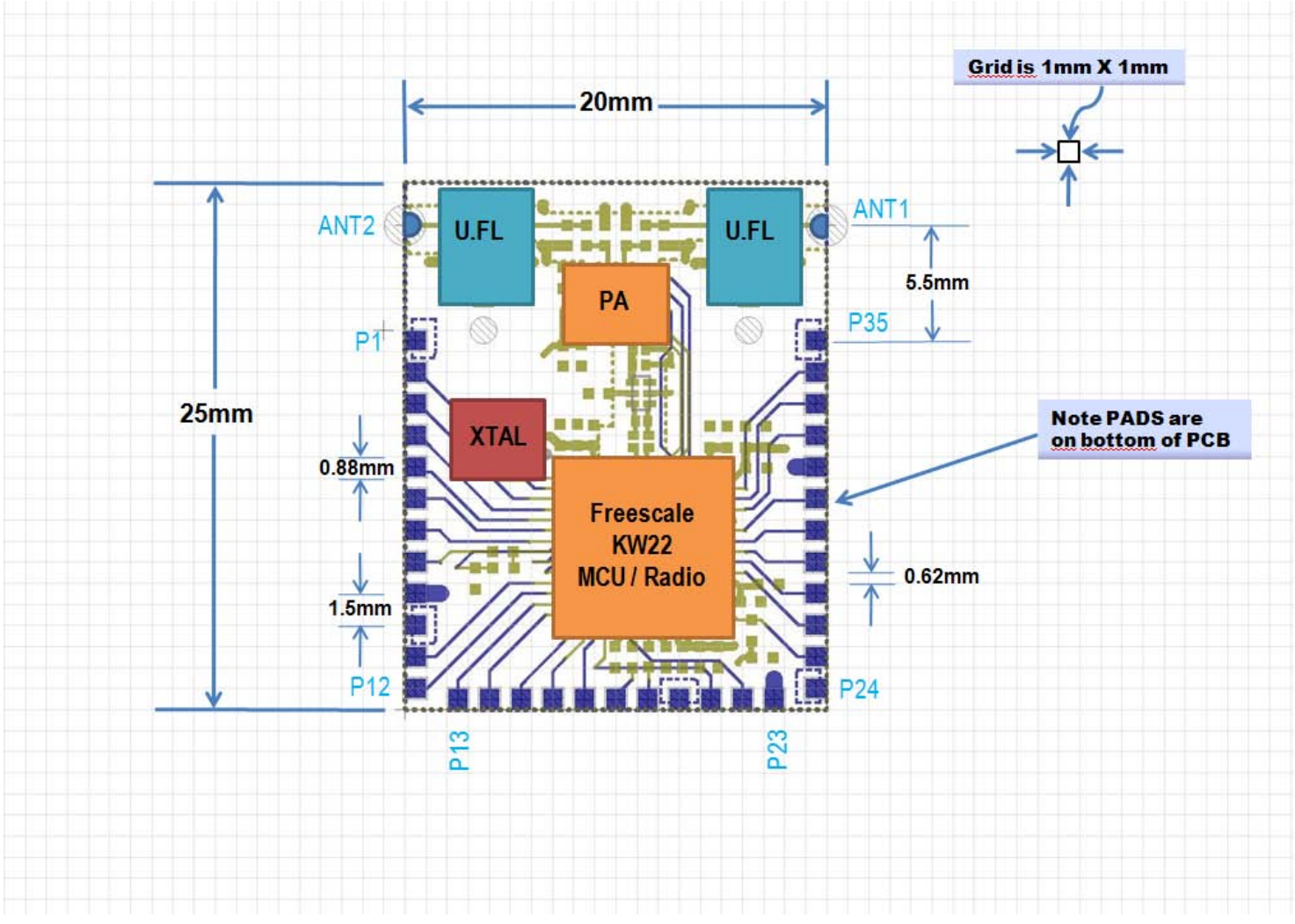
TALON OASIS MODULE PINOUT 2/3

MODULE PIN #	MKW22D512 PIN #	PIN NAME	TYPE	DESCRIPTION
P18	21	USB0_D+	USB0	
P19	22	USB0_D-	USB0	
P20	N/A	GND	POWER	
P21	18	PTE3	TRACE	
P22	19	PTE4/LLWU_P2	TRACE	
P23	23	VDD	USB1	
P24	24	GND	USB1	
P25	29	TAMPER0/ RTC_WAKEUP_B	TAMPER	
P26	33	PTA0	JTAG/TIMER	
P27	34	PTA1	JTAG/TIMER	
P28	35	PTA2	JTAG/TIMER	
P29	36	PTA3	JTAG/TIMER	
P30	37	PTA4/LLWU_P3	NMI	
P31	N/A	VDD	DIGITAL INPUT/OUTPUT	
P32	39	PTA18	DIGITAL INPUT/OUTPUT	
P33	40	PTA19	DIGITAL INPUT/OUTPUT	
P34	41	RESET_N	RESET MCU	

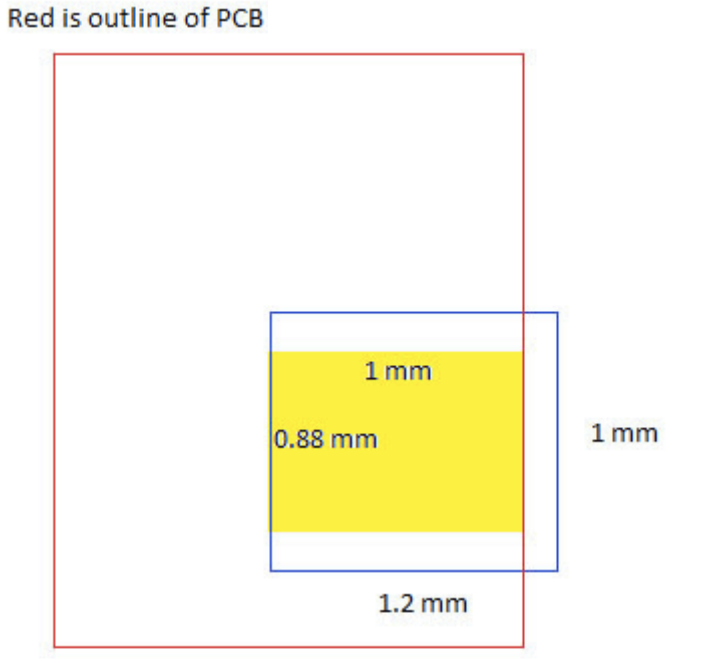
TALON OASIS MODULE PINOUT 3 / 3

MODULE PIN #	MKW22D512 PIN #	PIN NAME	TYPE	DESCRIPTION
P35	N/A	GND	POWER	
ANT1	N/A	UART1_RX	RF POWER AMP OUT 1	
ANT2	N/A	UART1_TX	RF POWER AMP OUT 2	

TALON OASIS MODULE DIMENSIONS



TALON OASIS MODULE LAND PATTERN



TALON OASIS ORDERING INFORMATION

MODULE	RF CONNECTORS
TCI-24ZB-MMCX	MMCX
TCI-24ZB-UFL	u.fl
TCI-24ZB-PIFA	EDGE CASTELLATION

FCC OPERATING NOTES

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ☐ **Reorient or relocate the receiving antenna.**
- ☐ **Increase the separation between the equipment and receiver.**
- ☐ **Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.**
- ☐ **Consult the dealer or an experienced radio/TV technician for help.**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

FCC RF Radiation Exposure Statement Caution: To maintain compliance with the FCC's RF exposure guidelines, place the product at least 20cm from nearby persons.