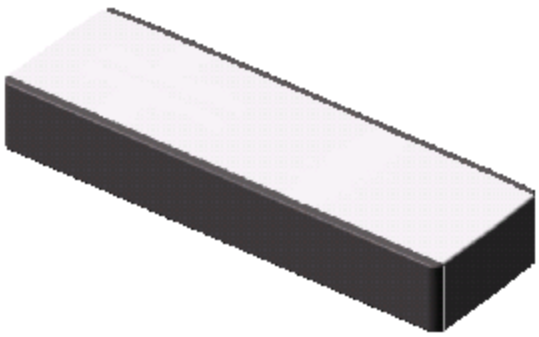

Application note

Ceramic Dual Band Monopole Antenna

EGSM900 and PCN1800

10 mm x 3.2 mm x 2 mm Ceramic Chip Antenna

Ground Cleared Under Antenna:
Version 1: 25 mm x 10 mm
Version 2: 40 mm x 10 mm

Pulse Part Number: W3070

Status

Author	MiJu	Version	4.0.0
Checked by		Date	02.07.2009
Approved by		Date	

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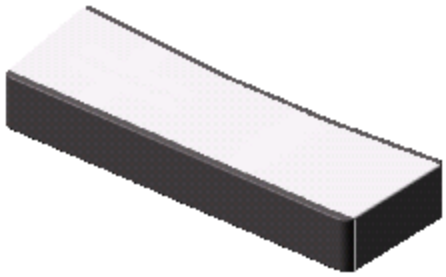
Ceramic Chip Antenna

Ground Cleared Under Antenna

Features

- Low profile
- Compact size W x L x H (10 x 3.2 x 2 mm)
- Low weight (240 mg)
- Lead free materials
- Fully SMD compatible
- Lead free soldering compatible
- Tape and reel packing
- RoHS Compliant Product



Applications

- **EGSM900 and PCN1800 radios**

Electrical specifications @ +25 °C

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and Ground Clearance area size.

W3070 Ceramic Dual Band Monopole Antenna (Version 1: Ground Cleared Under Antenna *25 mm x 10mm*)

Typical performance (test board size 95 mm x 40 mm, PWB ground clearance area 25 mm x 10 mm)

18nH and 10nH series-inductors used for frequency tuning and 6.8nH shunt-inductor used for impedance matching.

Frequency Range [MHz]	3D Max Gain [dBi]	3D Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [°C]
880 - 960	+1.5 (peak) -0.4 (band edges)	70 / -1.55 (peak) 47 ; 40 / -3.3 ; -4 (band edges)	-4.7 ; -3.8 (band edges)	50	-40 to +85
1710 – 1880	+1 (peak) -1 ; +0.5 (band edges)	50 / -3 (peak) 30 ; 40 / -5.2 ; -4 (band edges)	-4 ; -4.6 (band edges)	50	-40 to +85

W3070 Ceramic Dual Band Monopole Antenna (Version 2: Ground Cleared Under Antenna *40 mm x 10mm*)

Typical performance (test board size 95 mm x 40 mm, PWB ground clearance area 40 mm x 10 mm)

18nH and 10nH series-inductors used for frequency tuning.

Frequency Range [MHz]	3D Max Gain [dBi]	3D Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [°C]
880 - 960	+1.2 (peak) -0.4 (band edges)	65 / -1.9 (peak) 47 / -3.3 (band edges)	-5.1 ; -5.3 (band edges)	50	-40 to +85
1710 – 1880	+2.5 (peak) +1.5 ; +2 (band edges)	60 / -2.2 (peak) 50 ; 55 / -3 ; -2.6 (band edges)	-5.8 ; -5.7 (band edges)	50	-40 to +85

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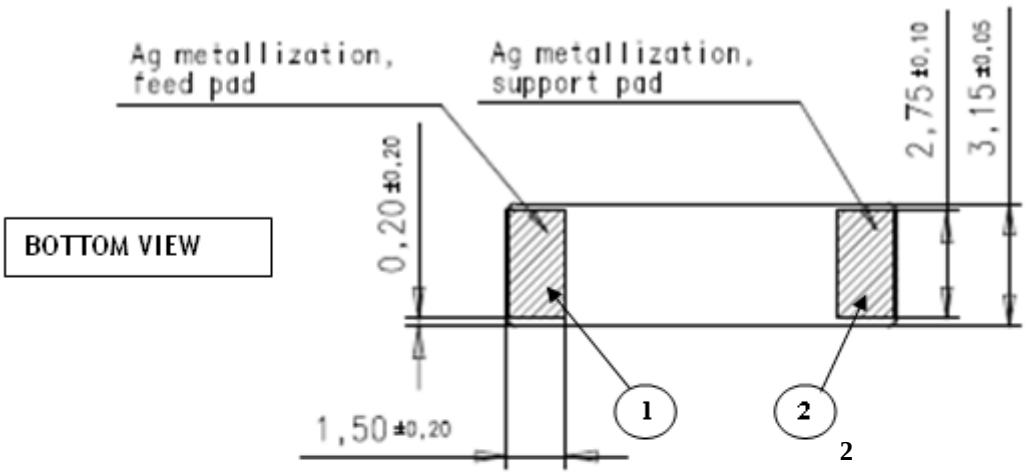
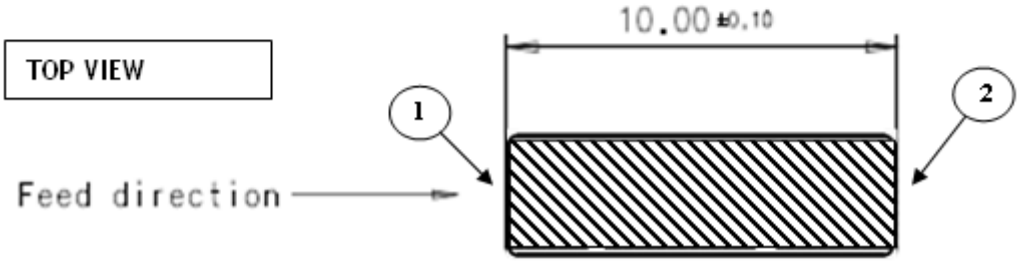
Ceramic Chip Antenna

Terminal Configuration and Antenna Dimensions





No.	Terminal Name	Terminal Dimensions
1	Feed	1.5 x 2.75 mm
2	Support pad	1.5 x 2.75 mm
Antenna is symmetrical and orientation on footprint can be rotated 180 degrees without change in performance		

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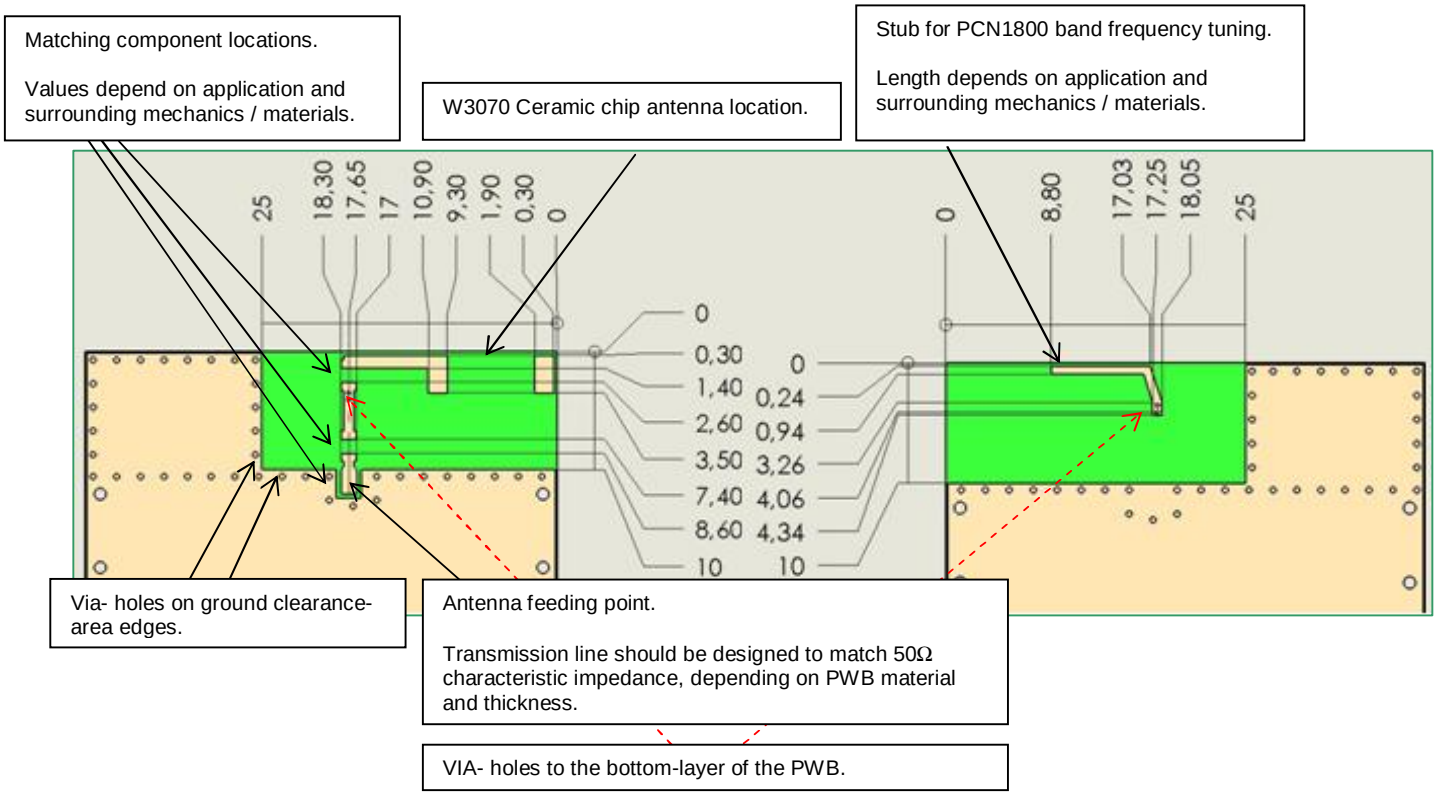
Ceramic Chip Antenna

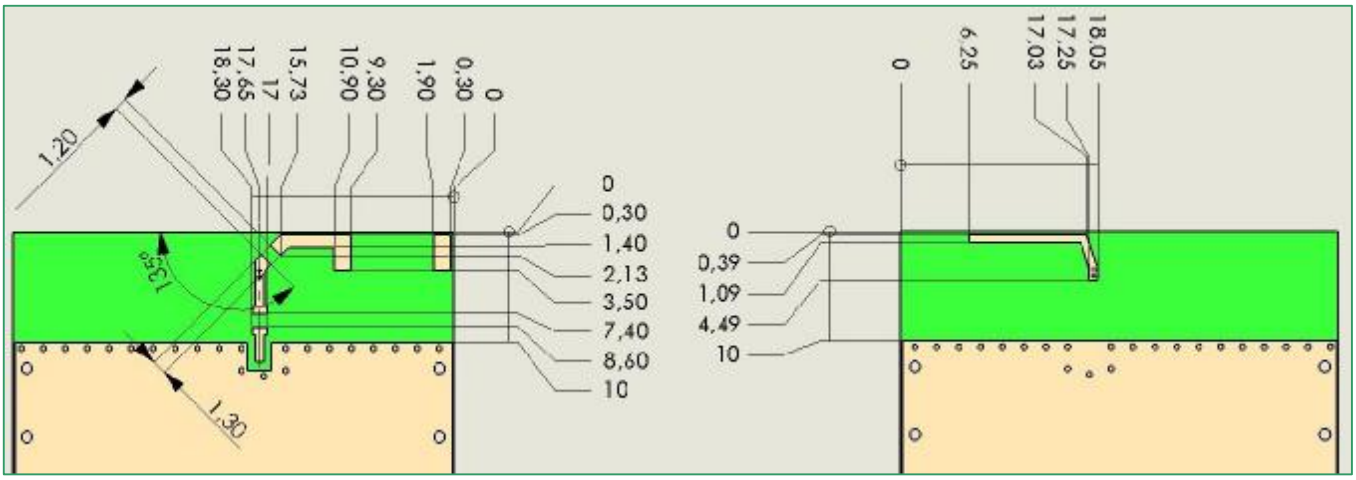
Test Setup for Electrical Measurements

Recommended test board- layout for electrical characteristic measurement. Test board outline size 95 x 40mm.

Ground cleared under antenna, clearance area **25 mm x 10 mm**



Ground cleared under antenna, clearance area 40 mm x 10 mm



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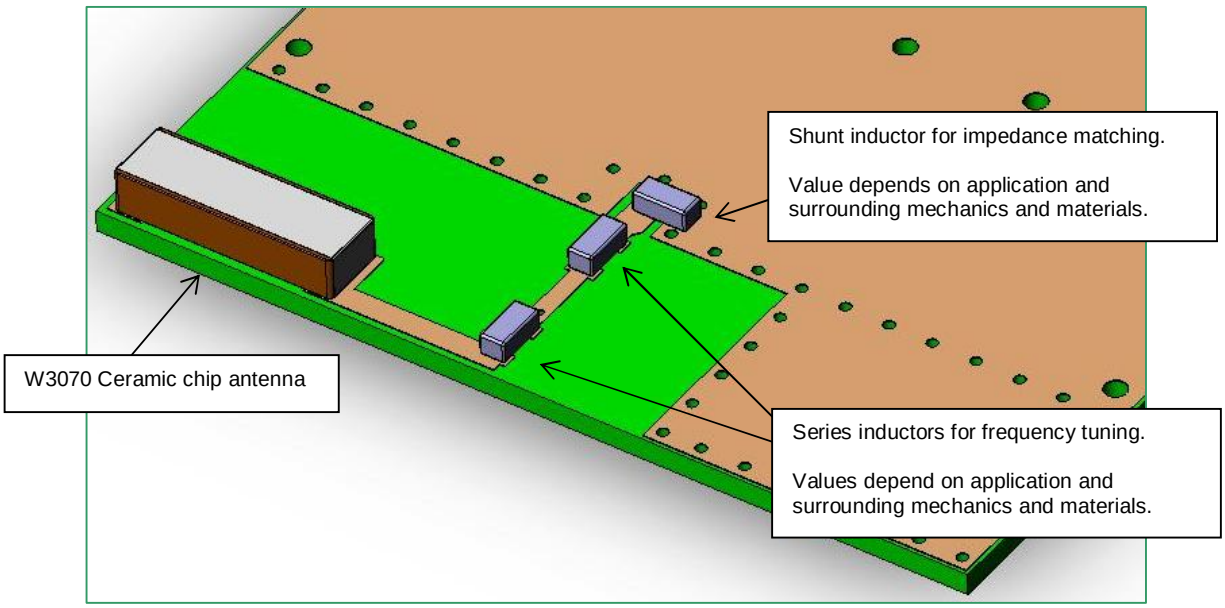
Recommended test board- layout for electrical characteristic measurement. Test board outline size 95 x 40mm.

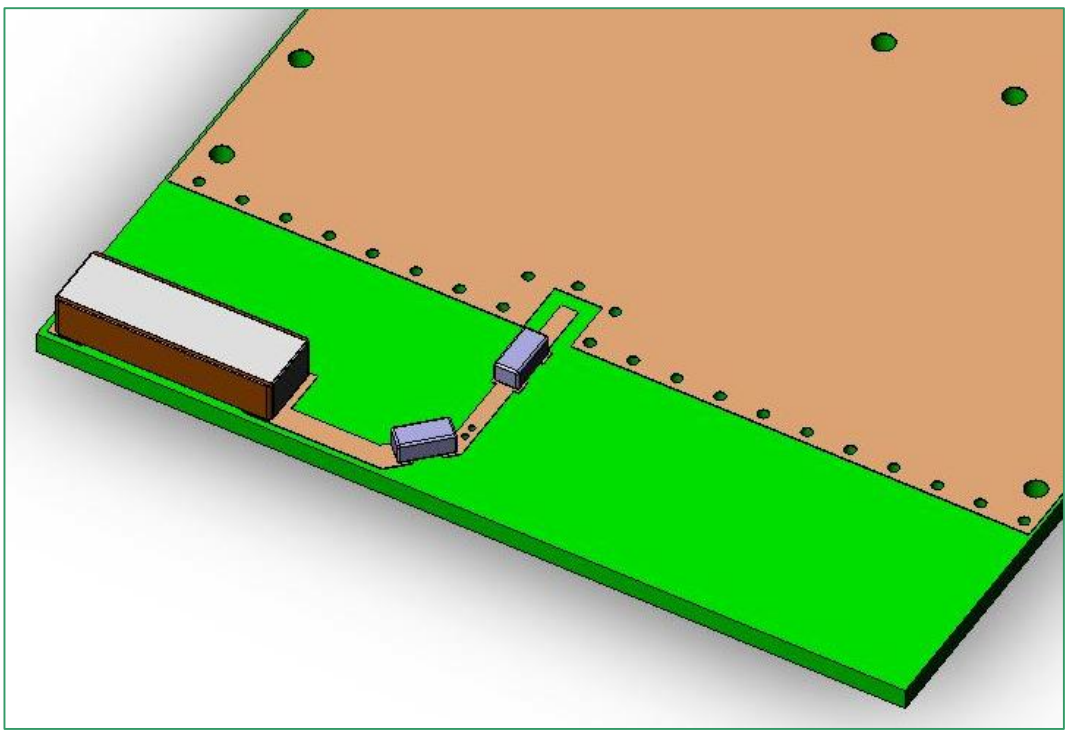
3D- view of Test Setup

Ground cleared under antenna, clearance area **25 mm x 10 mm**



3D- view of Test Setup

Ground cleared under antenna, clearance area **40 mm x 10 mm**



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Ceramic Chip Antenna

Ground cleared under antenna. Clearance areas **25 mm x 10 mm and 40mm x 10mm.**

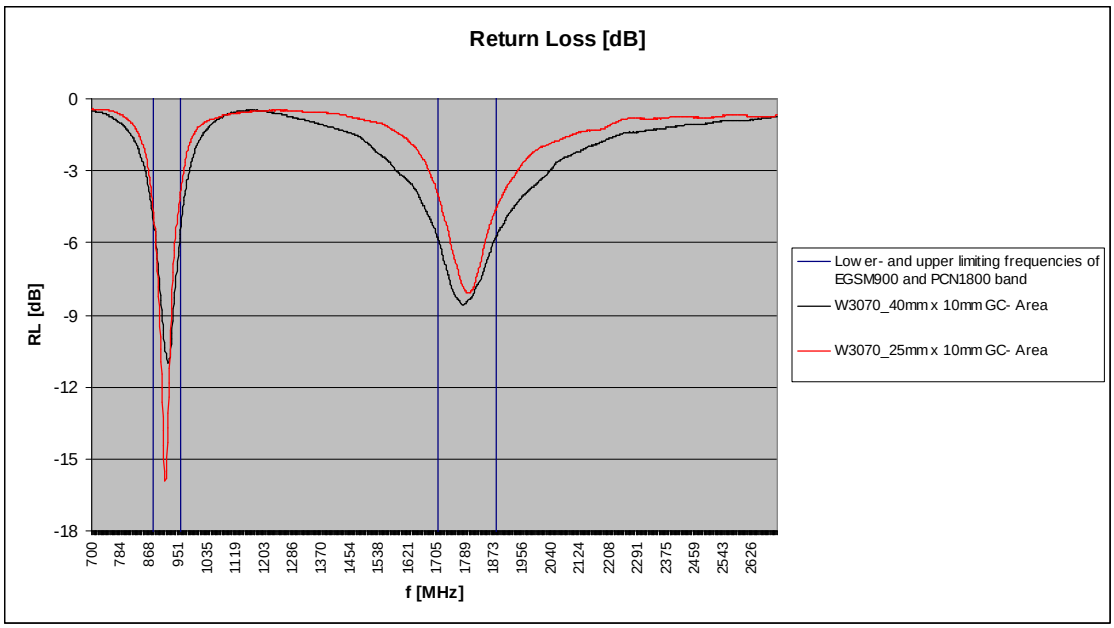
Typical Electrical Characteristics (T=25 °C)

Measured on the 95 x 40mm test board with matching circuit.

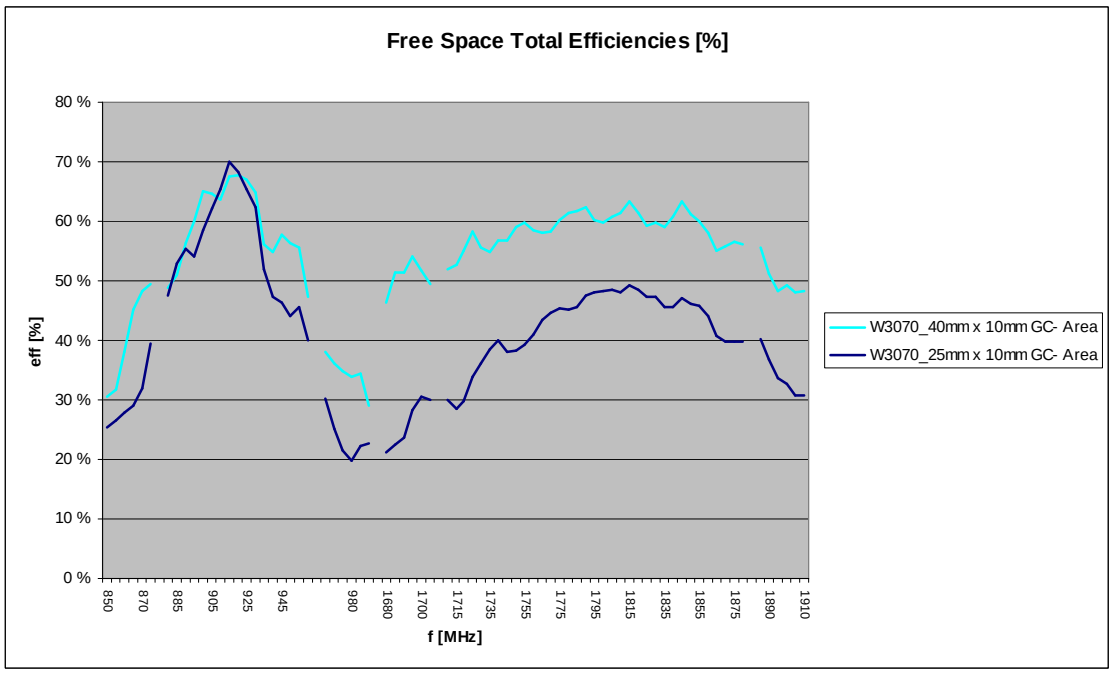
Typical return loss-values at band edges:

880MHz	**960MHz**
-5.1dB	-5.3dB
-4.7dB	-3.8dB
1710MHz	**1880MHz**
-5.8dB	-5.7dB
-4dB	-4.6dB

Typical Return Loss S11



Typical free Space Total Efficiencies [%]



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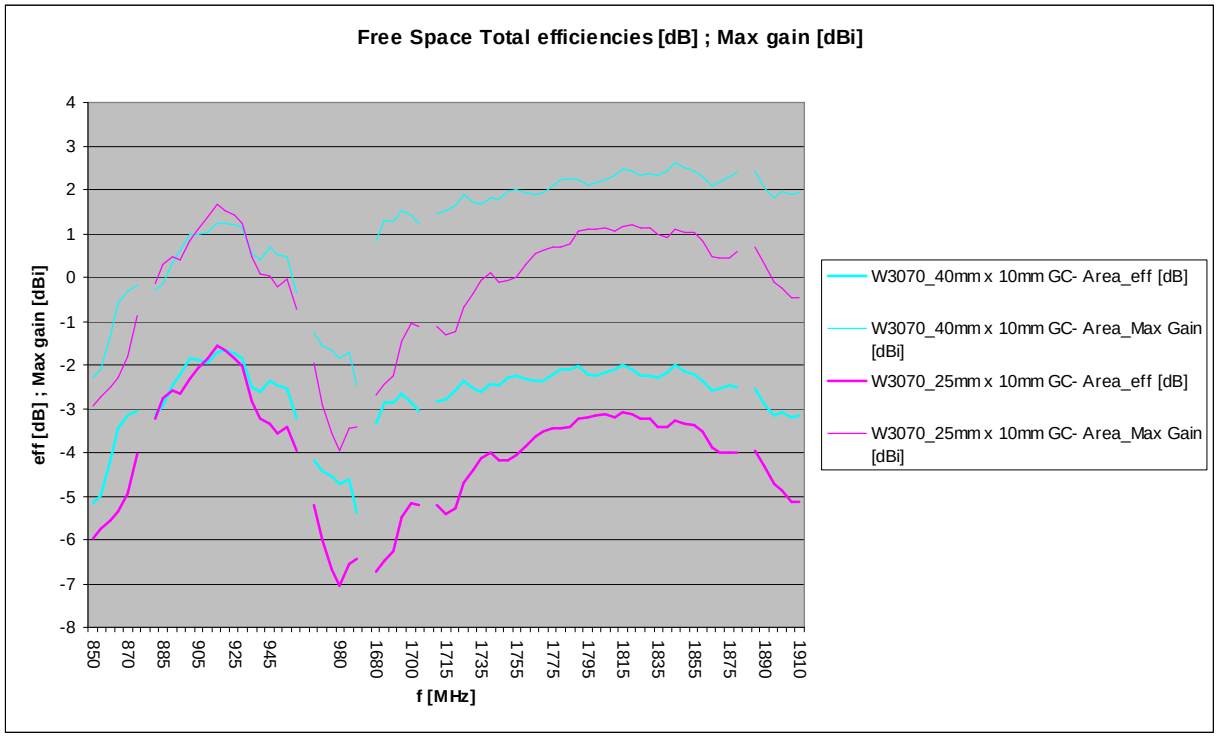
Typical free Space Total Efficiencies [dB] and Maximum Gain [dBi]



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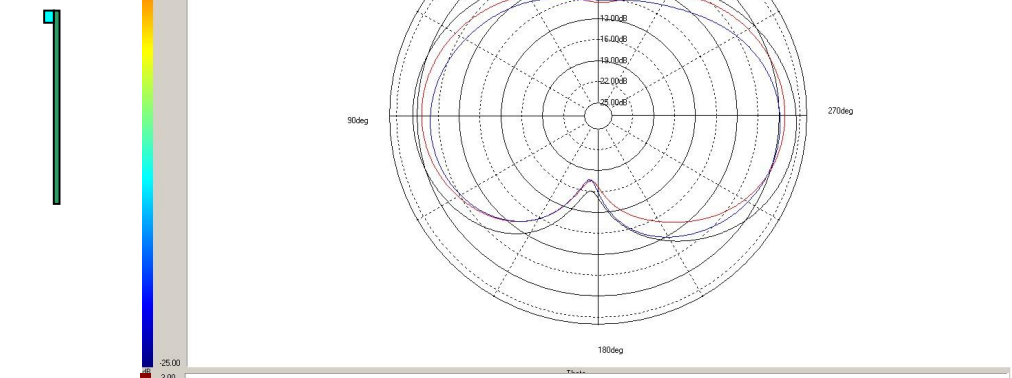
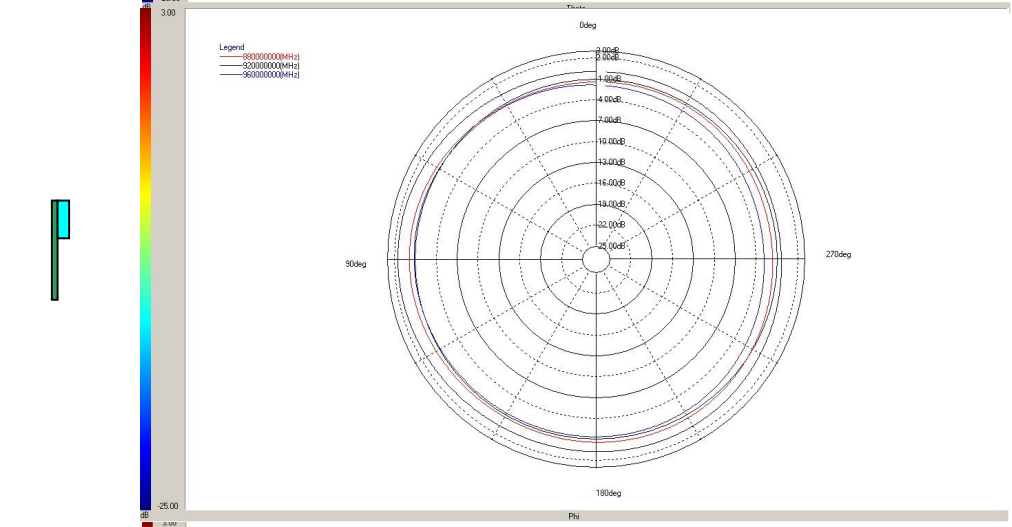
Ceramic Chip Antenna

Ground cleared under antenna. Clearance area **25 mm x 10mm.**

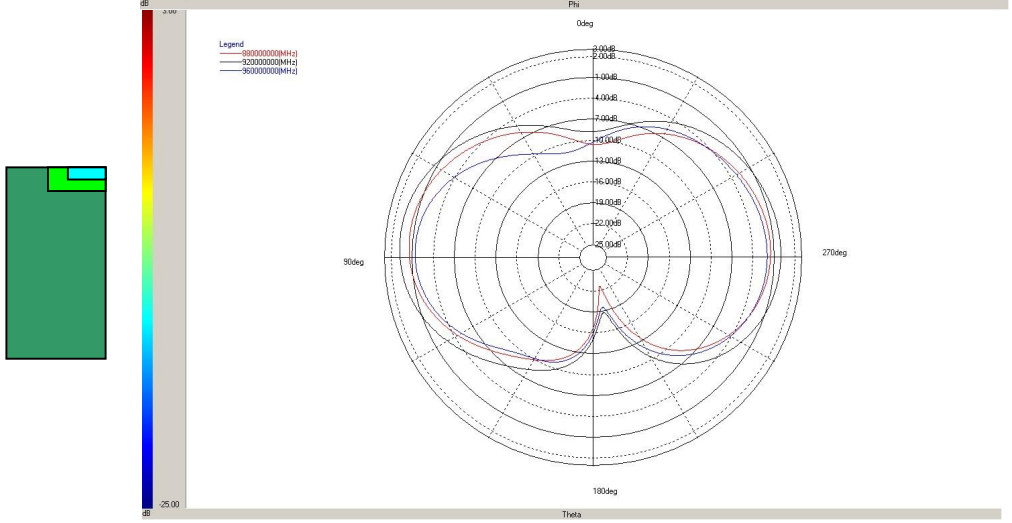
Typical Free Space Radiation Patterns for EGSM900 Band



YZ-PLANE 900MHz



XZ-PLANE 900MHz



XY-PLANE 900MHz

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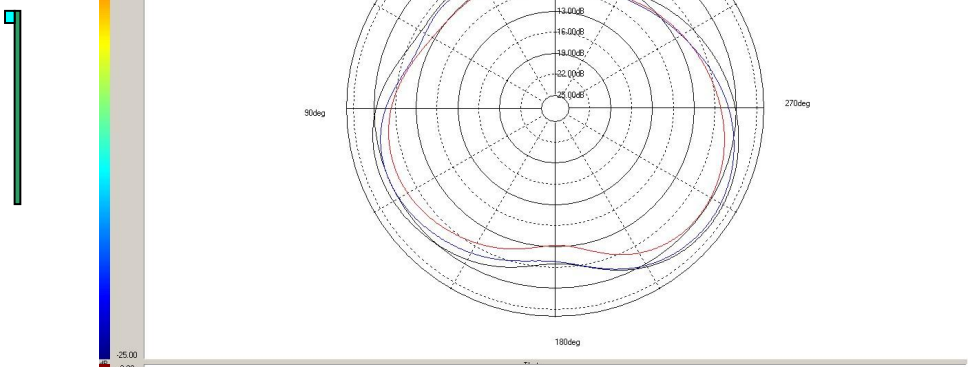
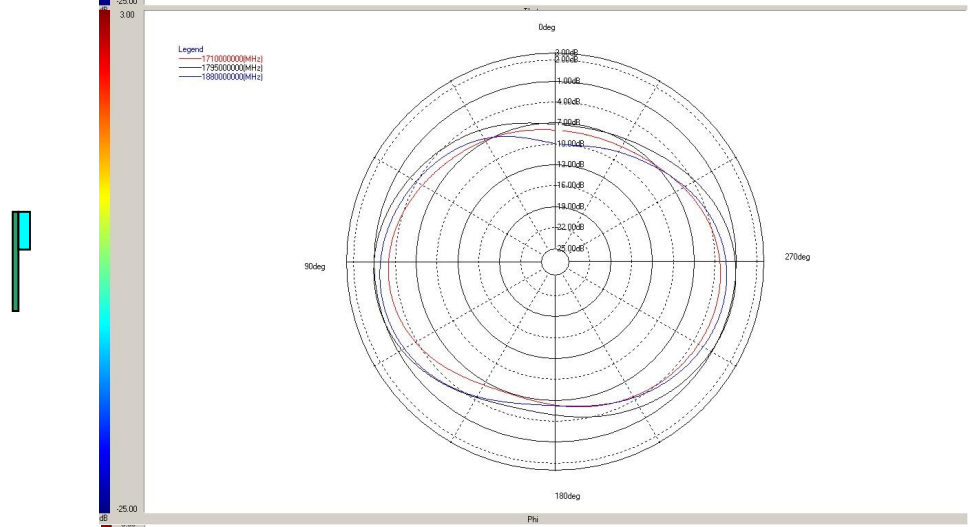
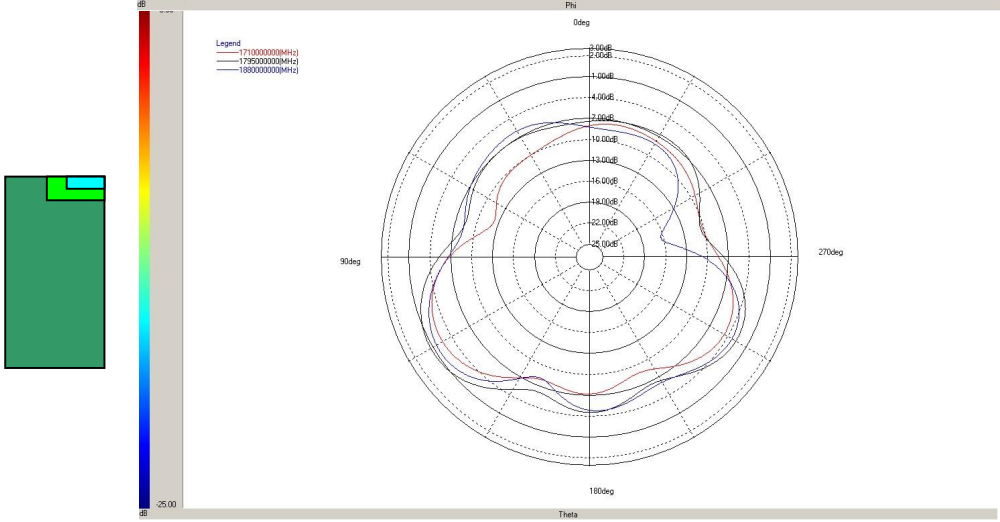
Typical Free Space Radiation Patterns for PCN1800 Band



YZ-PLANE 1800MHz



XZ-PLANE 1800MHz



XY-PLANE 1800MHz

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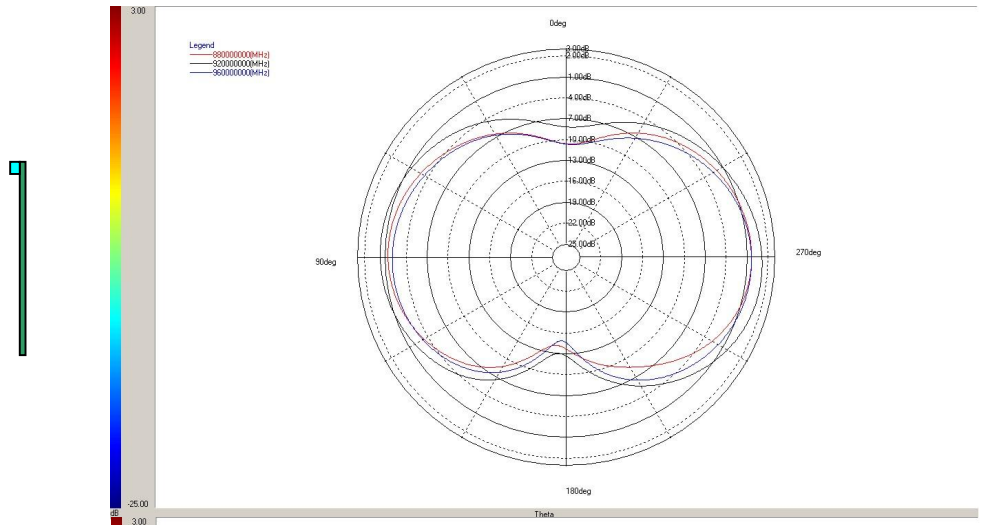
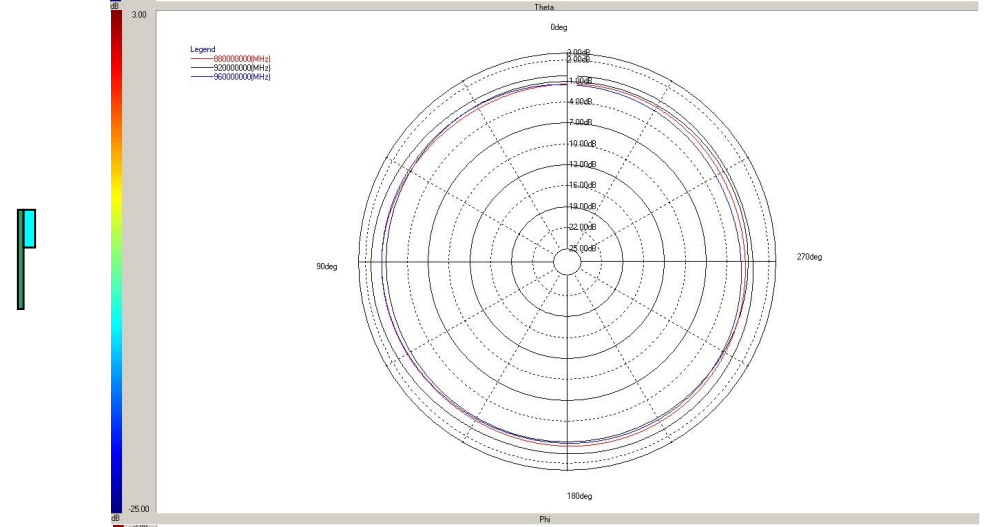
Ceramic Chip Antenna

Ground cleared under antenna. Clearance area **40 mm x 10mm.**

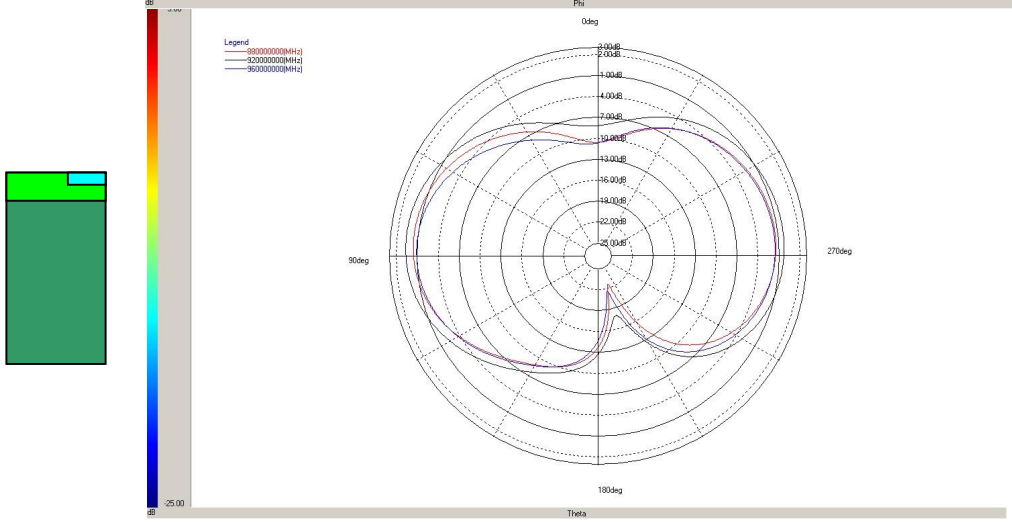
Typical Free Space Radiation Patterns for EGSM900 Band



YZ-PLANE 900MHz



XZ-PLANE 900MHz



XY-PLANE 900MHz

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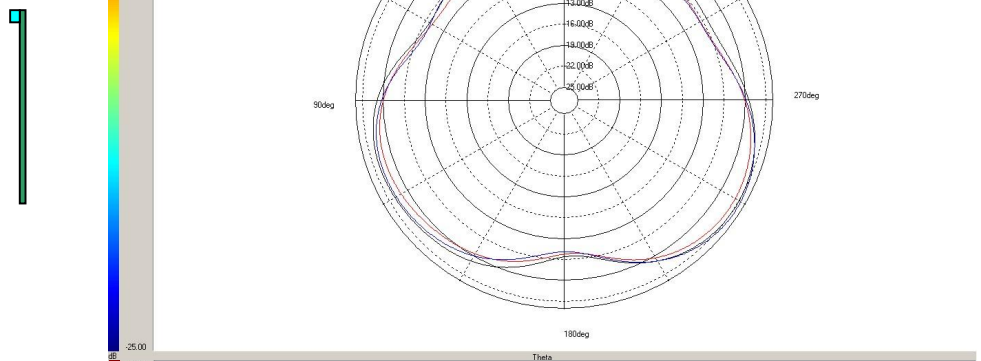
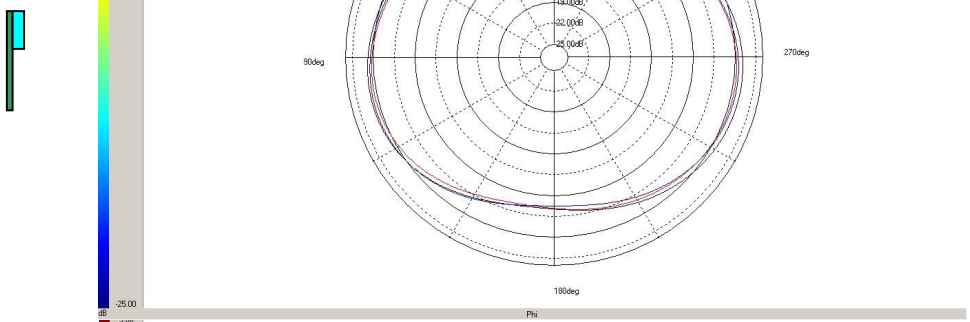
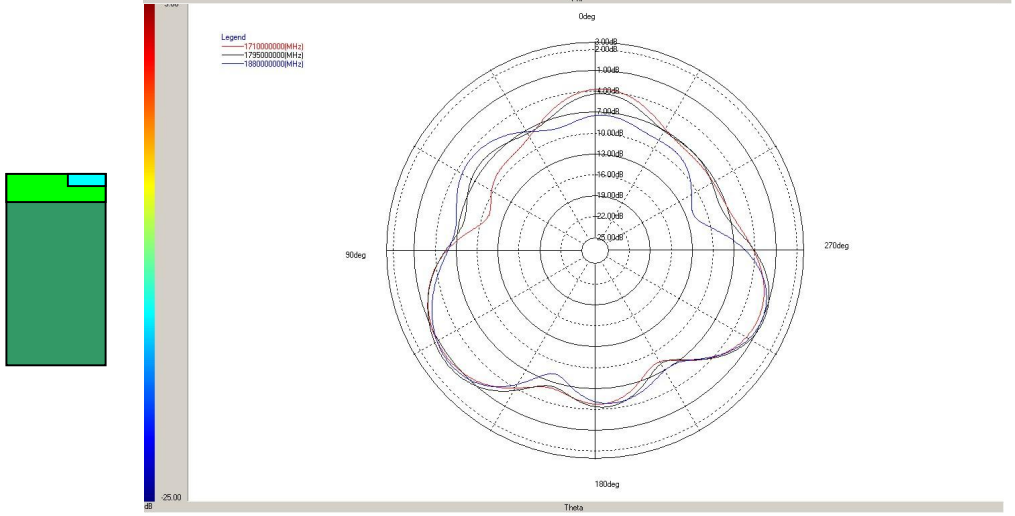
Typical Free Space Radiation Patterns for PCN1800 Band



YZ-PLANE 1800MHz



XZ-PLANE 1800MHz



XY-PLANE 1800MHz

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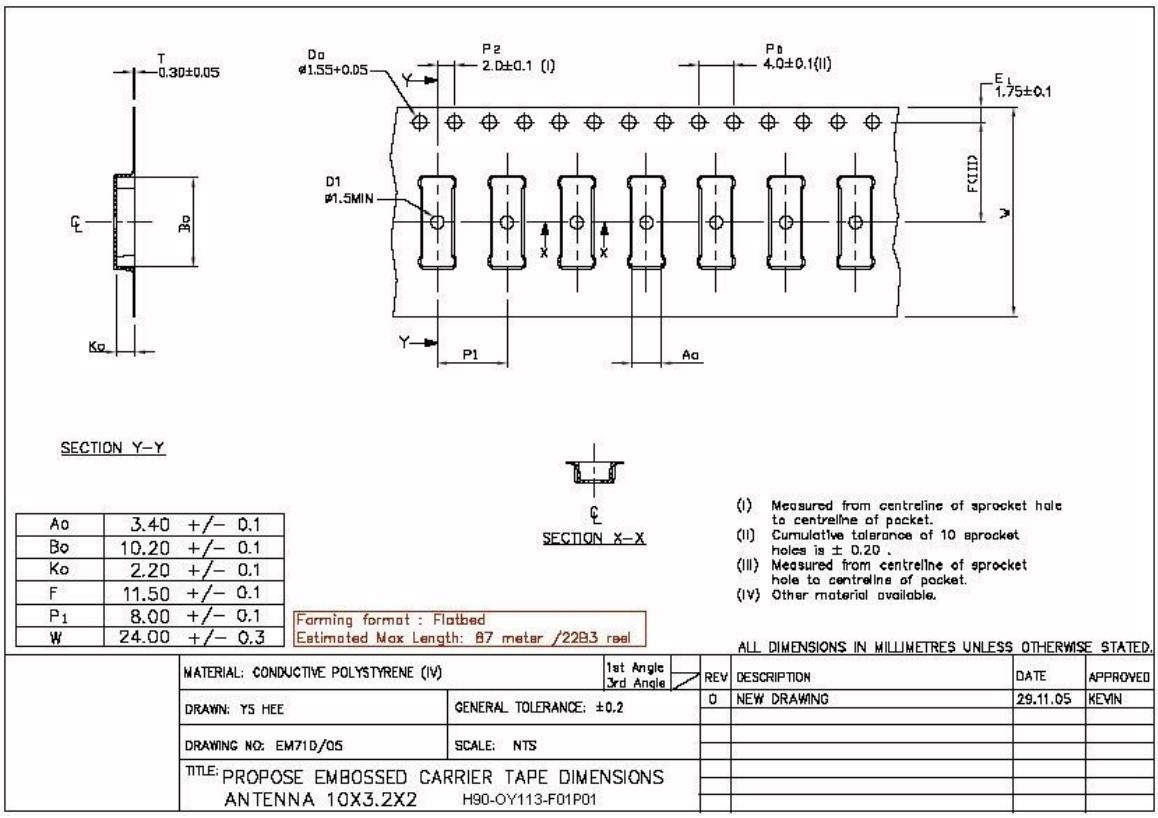
Ceramic Chip Antenna

Packing

General

Tape and reel packing is used. Carrier tape, reel and box dimensions are presented in following pictures.

Carrier tape



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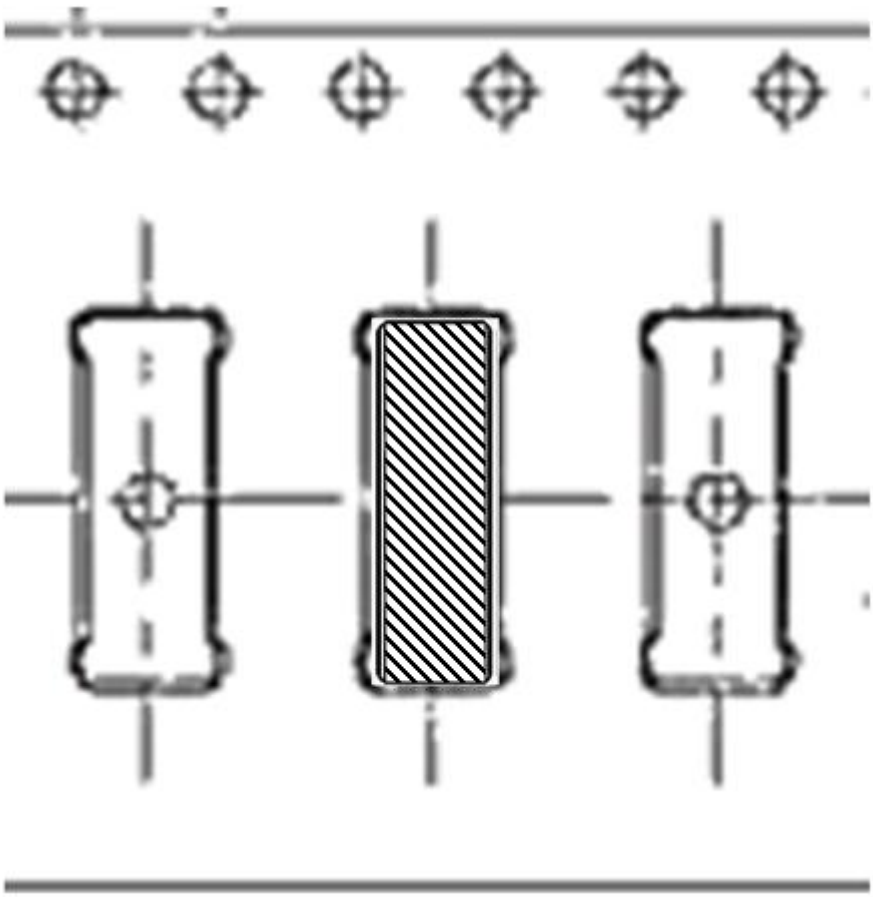
Block orientation

Antenna soldering pads facing down to the bottom of the carrier tape.



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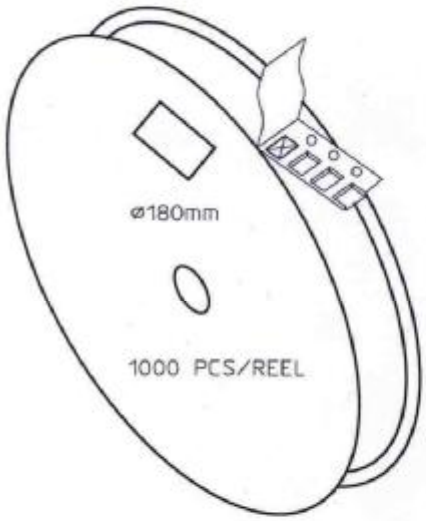
Packing form



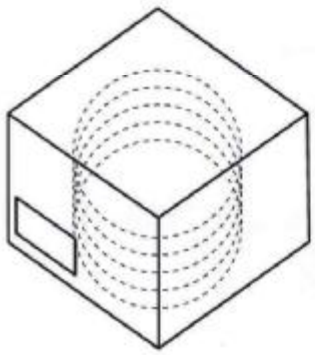
CARRIER TAPE H85-00168
width=24,00 depth=2.20
COVER TAPE H85-00159
width=21.20

LENGTH OF TAPE:

- Leader section: min 350 mm before component section
- Trailer section: min 40 mm after component section.

Empty part cavities at leader and trailer section of the tape must be sealed with top cover tape.

BOX H85-00128 (182x182x125)	1 pcs
- LABEL	1 pcs/BOX
REEL H85-00160 (D180,W28)	4 pcs
- REEL LABEL	1 pcs/REEL



MATERIAL					
HANDLINGS					
	RATIO	DRWN	160107 PeHa	H	
		DGNER		G	
		CHKD		F	
		APPRD		E	
PRODUCT H90-0Y113-F01P01		APPRD BY		D	
				C	
				B	
DENOMINATION PACKING FORM		VERSION		A	MOD/DATE/NAME

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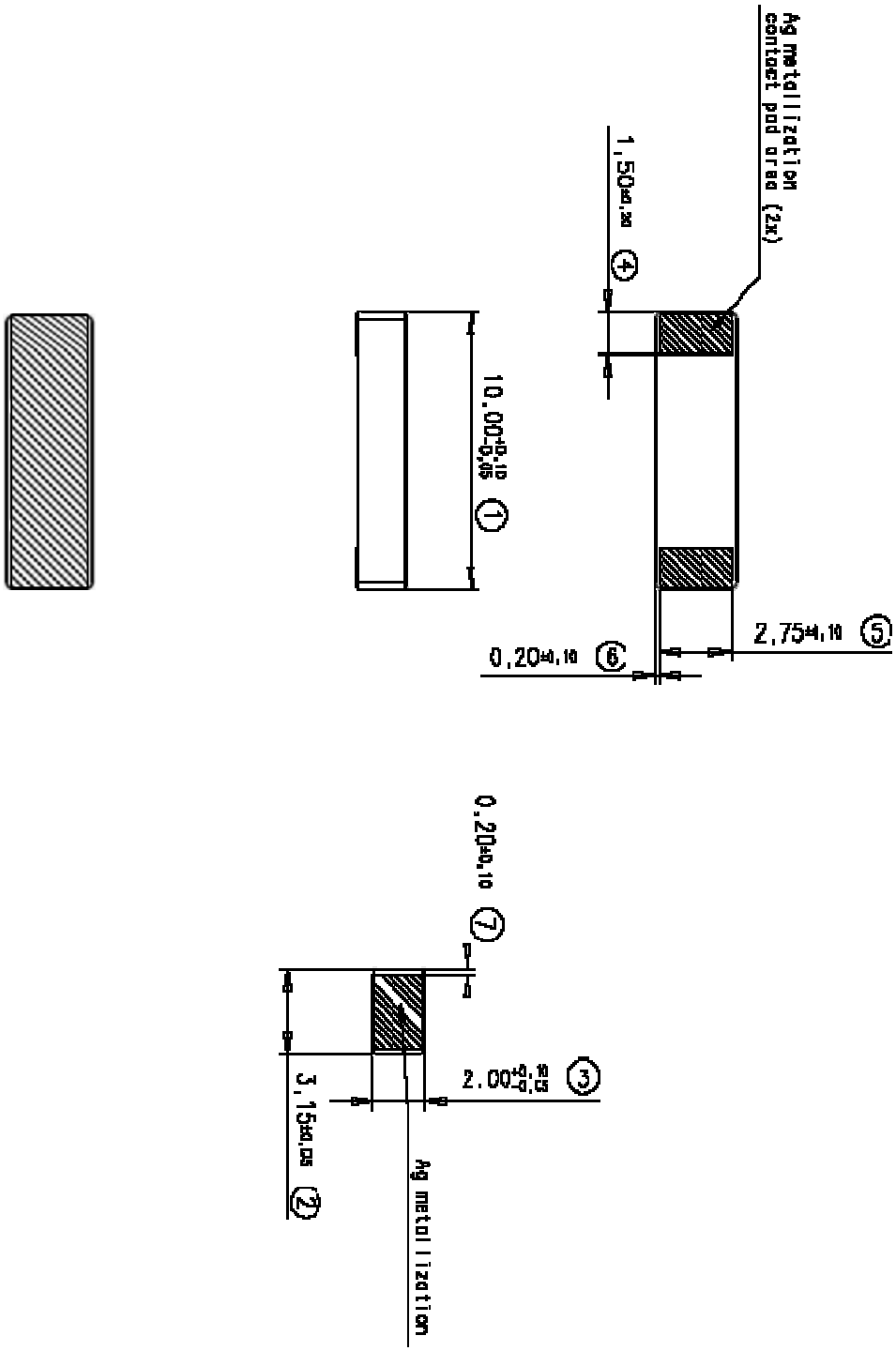
Ceramic Chip Antenna

Mechanical Outline



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LifeElectronics
Живое партнерство

ООО «ЛайфЭлектроникс» **“LifeElectronics” LLC**

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- *Конкурентоспособные цены и скидки постоянным клиентам.*
- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru

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