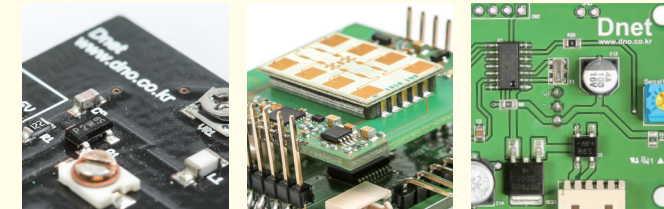


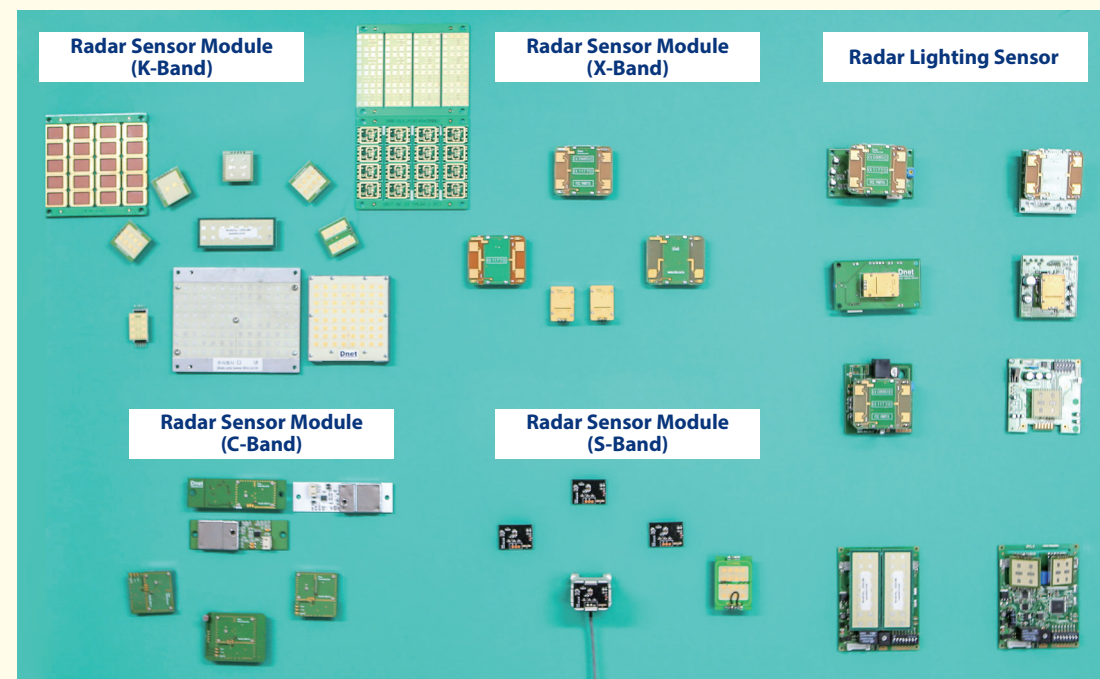
<http://www.dno.co.kr>  
<http://www.dnetgroup.kr>



# Dnet

Microwave Radar Sensor

## Radar Sensor Module & Detector



**Dnet**  
Microwave Radar Sensor

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**Dnet**  
Microwave Radar Sensor

Strive to Develop,  
produce and sell **the products**  
**corresponding to customers**

Rader Sensor development  
Leading manufacturer

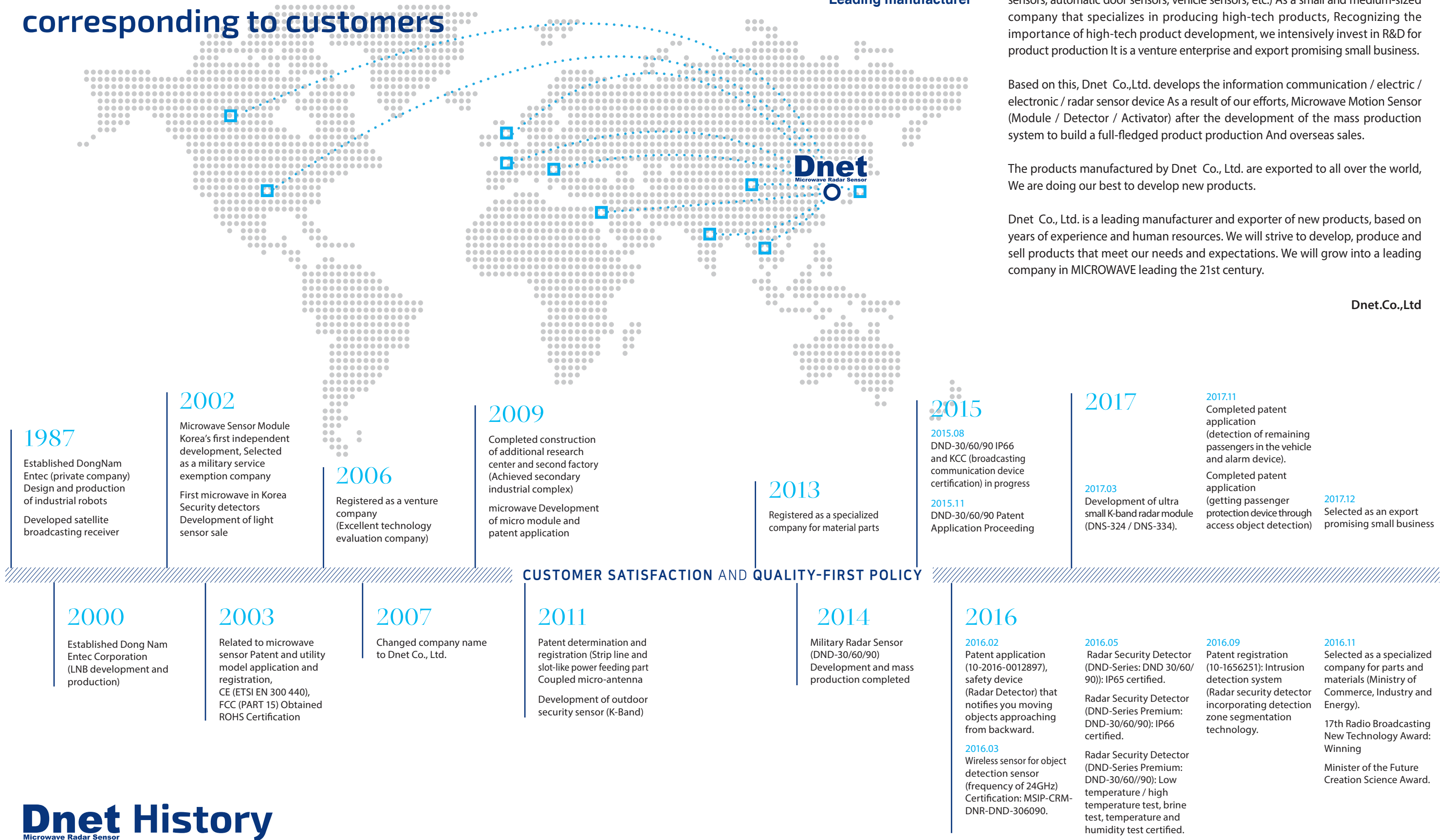
Dnet is a leading manufacturer of microwave sensors (lighting sensors, security sensors, automatic door sensors, vehicle sensors, etc.) As a small and medium-sized company that specializes in producing high-tech products, Recognizing the importance of high-tech product development, we intensively invest in R&D for product production It is a venture enterprise and export promising small business.

Based on this, Dnet Co.,Ltd. develops the information communication / electric / electronic / radar sensor device As a result of our efforts, Microwave Motion Sensor (Module / Detector / Activator) after the development of the mass production system to build a full-fledged product production And overseas sales.

The products manufactured by Dnet Co., Ltd. are exported to all over the world, We are doing our best to develop new products.

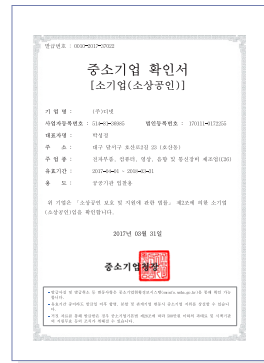
Dnet Co., Ltd. is a leading manufacturer and exporter of new products, based on years of experience and human resources. We will strive to develop, produce and sell products that meet our needs and expectations. We will grow into a leading company in MICROWAVE leading the 21st century.

Dnet.Co.,Ltd

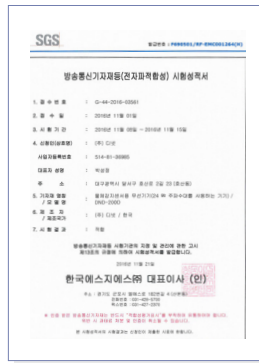




## Certificate



Small Business Certification



Broadcasting communication equipments (radio compatibility) Certificate of conformity



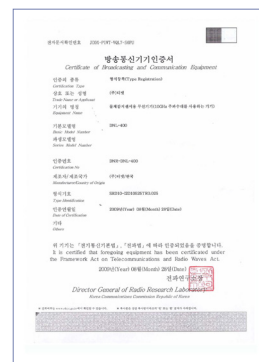
Broadcasting communication equipments (wireless) Certificate of conformity



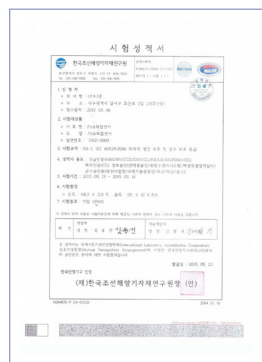
Certificate of suitability for broadcasting and communication equipment



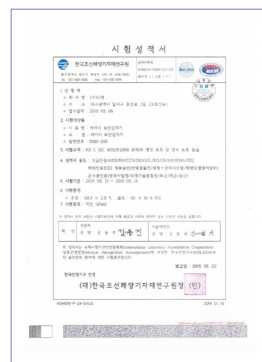
Intrusion detection system patent certificate



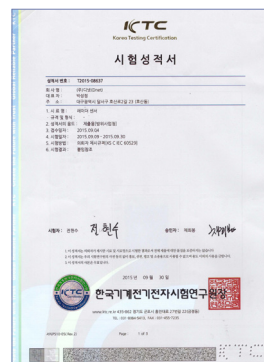
Certificate of broadcasting communication equipment (DNL-400)



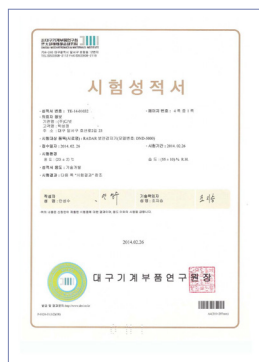
Test report (DND-3000)



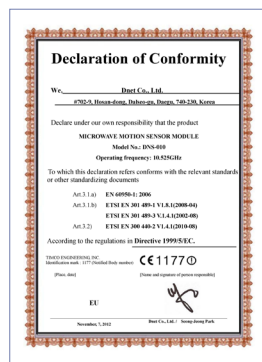
Test report (DND-200)



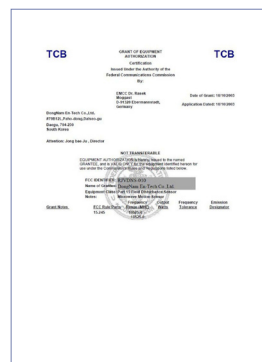
Test report (Radar sensor)



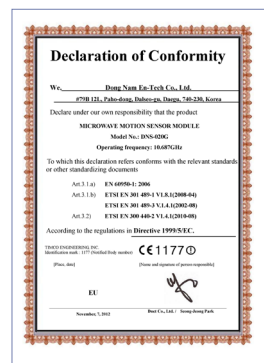
Test report (DND-5000)



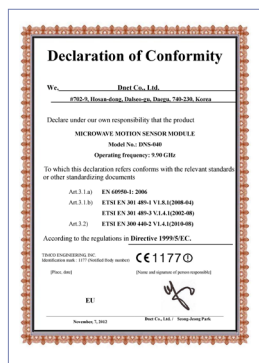
Declaration of Conformity (DNS-010)



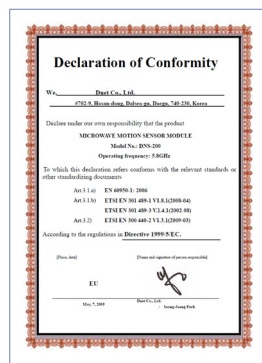
Grant of equipment Authorization



Declaration of Conformity (DNS-020G)



Declaration of Conformity (DNS-040)



Declaration of Conformity (DNS-200)



ES Declaration of Conformity (DNS-200)

## DND-Family (DND-30L/W,60L/W,90L/W) DND-Premium

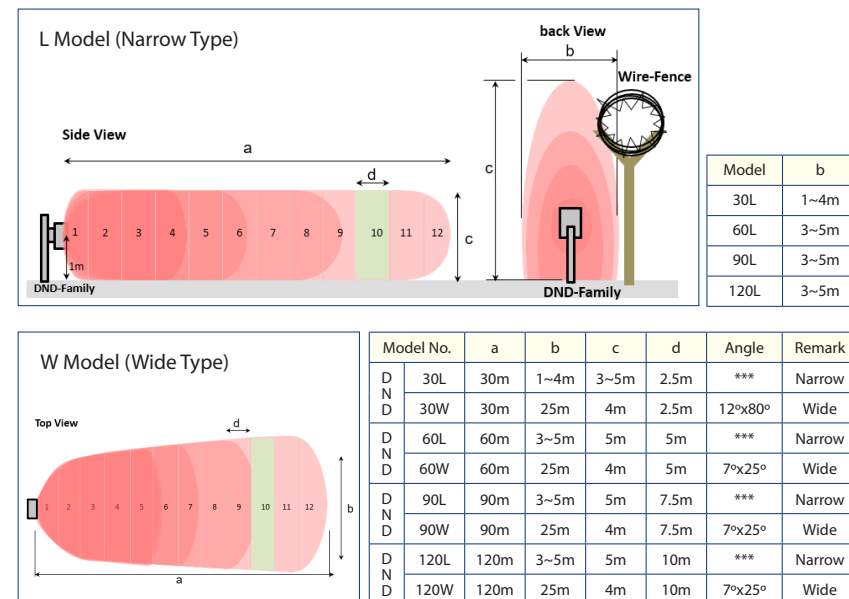
### Feature

- Controlled by intelligent digital technology using Radar Sensor Module.
- It can be divided into 12 zones (2.5, 5, 7.5m \* 12) and can control and release the desired zone.
- Signals are leveled irrespective of detection distance and stable, with little malfunction.
- Remote control via RS-485 communication.
- Anti-Masking function.
- PET Immunity and environmental immunity. (snow, rain, storm, etc.)
- High voltage trouble avoiding function.
- Suitable for various terrain security boundaries. (screen barrier, ravine, flat ground, etc.)

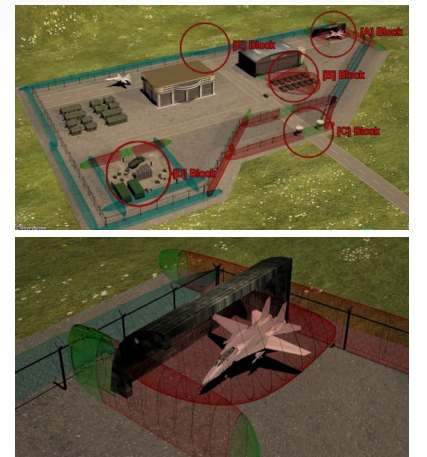
### Specification

Specification	Type	Specification	Type
Voltage	15V ~ 30Vdc	Alarm Outputs	Relay(Normally closed)
Current consumption	80mA~100mA	Dimensions (H*W*D)	197mmX125mmX55mm (Bracket except)
Speed	0.3~8M/sec	Weight	0.6kg
Frequency	24.125GHz	Operating Temp	-40°C ~ +85°C
Detection Distance	Sense area table reference	Mounting Style	Wall,fence.etc
Detection Height	Sense area table reference	Mounting Height	1M
Detection Width	Sense area table reference	Interface	RS-485

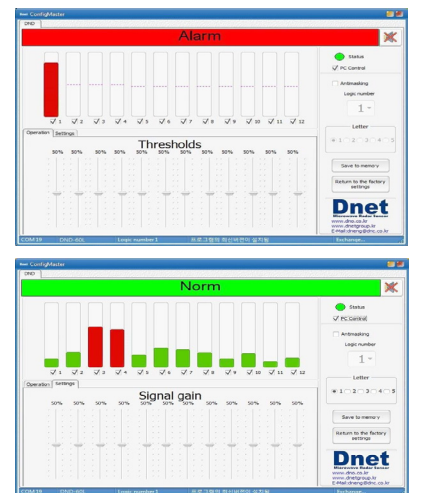
### Detection Range



### 3D Image



### Setting Program



Depending on the installation environment, the detection distance (width / detection / angle) may be different.



## DND-200D / 200A Microwave Barrier Rader Detector



### Feature

- Detection range : Max. 200m (Ground install.)  
Max. 80 ~ 100m (Fence install.)
- Operating temperature : -40 °C to + 65 °C.
- Input power: 9 ~ 30 Vdc.
- An intruder senses walking, running or crawling.
- Quick and easy installation on pillars, fences and walls.
- No maintenance required. High RFI / EMI Immunity.
- Remote control via RS-485 communication.
- Installation Height: 80 ~ 90cm height based on the ground.  
(When installing on a fence, install it at 20 ~ 30cm height but within 2.5~3m height from the ground)

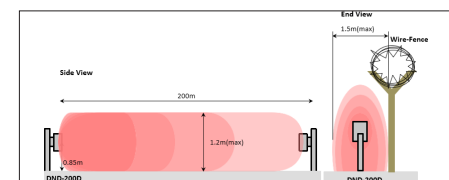
### Specification

Microwave Frequency	Weather Proofing
Scope (Length of Protection zone)	Max. 200m
Lobe Witdh	1.5m(Max)
Lobe Height	1.2m(Max)
Range of Power Supply Voltage	9 ~ 30 Vdc
Current Consumption	35mA
Relay Contacts Values	N.C 28 Vdc, Maximum current 0.1 A
Alarm Period	3 Sec (Max.)
Tamper Switch	N.C 28 Vdc Maximum current 0.1 A - open when cover is removed
Detection Speed (Target Velocity)	0.1 ~ 10 m/sec
Remote testing	Built-in self-test generator simulates actual intrusion signals
Flatness of Ground	Approx. 0.3 m
Maximum Height of Grass on the ground	0.3 m
Maximum Height of Snow on the ground	0.5 m
Alarm Output - Switching over of relay Contacts for the time	Minimum 3 Sec
Dimensions of Unit (trans./rec.) W/O bracket	211x138x105mm
Weight (T,Rand Accessories)	1.2Kg
Operating Temperature Range	-40°C ~ +65°C
Interface	RS-485
Weather Proofing	<ul style="list-style-type: none"> <li>· All openings with gasket and sealed</li> <li>· Conformal coated circuit board</li> </ul>

### Note

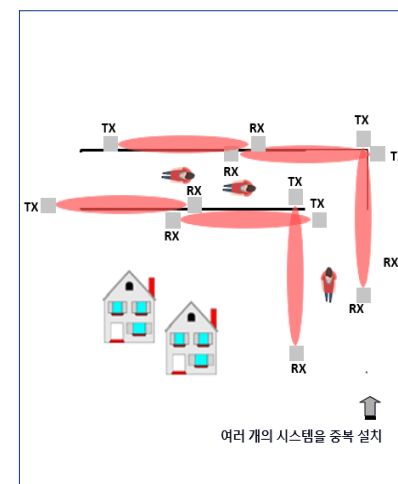
- Depending on the installation location and installation environment, there may be differences in detection distance, detection width, and detection height.
- This detector is a fence detector. Due to its nature, the detection width and alarm output are not the same.
- Therefore, the detection width is 1 ~ 1.5m, but no unconditional alarm is output within this width, Outputs an alarm when the signal passes through the center of the dial (that is, when it enters about 50% of the detection range).

### Detection Range

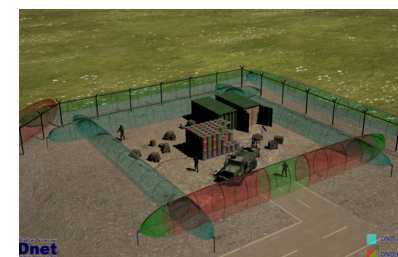


- Depending on the installation location and in stallation environment, there may be differences in detection distance, detection width, and detection height.
- Installation must be 80 ~ 90cm height from the ground.

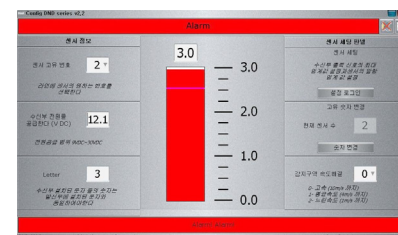
### Detection Range



### 3D Image



### Setting Program



## DND-50B,100B IR & Radar Security Detector



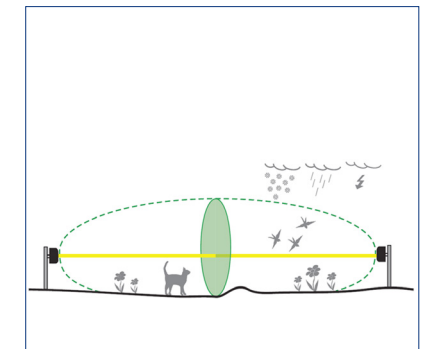
### Feature

- Dual sensor with little malfunction.
- Used for security of long distance area.
- Installed in small, large-scale factories, military bases, and harbors.
- Has high interference immunity against natural and artificial factors and general obstructions
- High interference immunity due to dual detection of microwave (radar) and infrared (IR).

### Specification

Specification	Type	Specification	Type
Voltage	15V ~ 30Vdc	Alarm Outputs	Relay (Normally closed)
Current Consumption	0.05A	Dimensions (H*W*D)	211mmX138mmX105mm
Housing protection level	IP-55	Weight	3kg
Frequency	24.125GHz	Operating Temp	-40°C ~ +65°C
Detection Range	50m (DND-50B) 100m (DND-100B)	Mounting Style	Wall,fence.etc
Detection Width	0.2m	Interface	RS-485,USB and Bluetooth (upon request)

### Detection Range



## DND-300 / 300M Indoor,10.525Ghz



### Feature

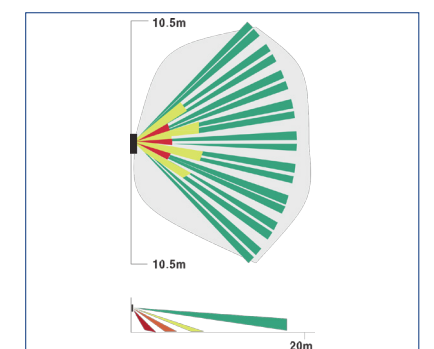
- Detection distance: 15 ~ 20m
- Detection angle: 120 degrees or more
- Utilizing Doppler Rader Principle
- No pet detection function
- Bi-directional temperature compensation
- Indoor security detector



### Specification

- Detection Method : Quad element PIR & microwave pulse Doppler
- Power Input : 8.2 to 16Vdc
- Current Draw Active : 25.5mA : Standby: 16.5mA
- Temperature · Compensation YES · Alarm Period 2 +/- 1 sec
- Alarm Output : N.O 28Vdc 0.1 A with 10 Ohm series protection resistors
- Tamper Switch : N.C 28Vdc 0.1A with 10 Ohm series protection resistor – open when cover is removed
- Warm Up Period : 1 min
- LED Indicator : Yellow LED is blinking during warm up period and self testing Red LED: ON during alarm Green LED: Pir Channel Yellow LED: MW channel
- Dimensions 115mm x 61mm x 37.5mm
- Weight : 120g
- Option : Wall & Ceiling Mount Bracket

### Detection Range







## DND-3000 Double Quad PIR & Microwave Outdoor Detector



### Feature

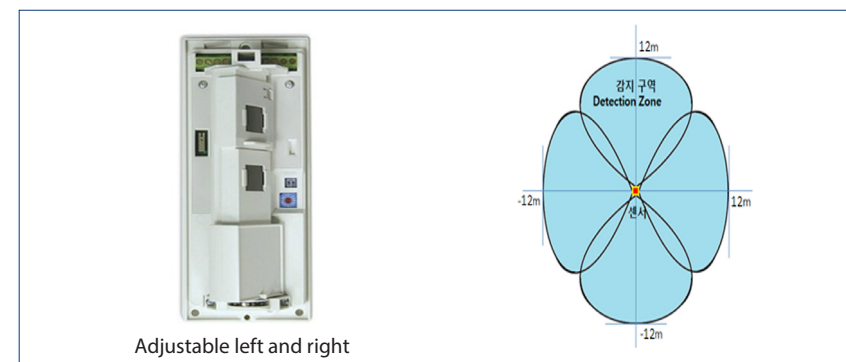
- PIR & Microwave Complex
- Detection coverage 360 °
- Strong polycarbonate housing and automatic temperature compensation
- User selectable sensitivity control
- Superior RFI immunity (RFI immunity)
- Superior filtering for sunlight and white light - Dust / Waterproof: IP65

### Specification

Specification	Type	Specification	Type
Voltage	9.6~ 16Vdc	Detection Distance	12M
Current (MAX)	24mA (+/- 5%)	Tamper Switch	Two Switches
Current (Stand by)	21mA(+/- 5%)	Operating Temp	-35°C ~ +55°C
Microwave Power	13dBm EIRP	Led Indicator	Led is ON during ALARM
Frequency	24.000 ~ 24.250GHz	RF immunity	10V/m plus 80% AM from 80MHz to 2GHz
Communication Mode	Ethernet	Mounting Style	Pole
Warm up Period	120 sec(+/- 5sec)	Mounting Height	0.8M ~1.5M
Alarm Period	2 sec(+/- 0.5sec)	Weight	2Kg
Alarm Output	Form C (NC,NO,COMMON)	Dimensions (H*L*W)	200 x 240 x 240 mm

### Detection Range

- The DND-3000 uses PIR and microwave Detect up to 12m by combining detection patterns (1.0 to 1.2 meters above the surface of the earth)
- The DND-3000 has an internal moving housing (Two PIR and microwave devices Can be adjusted to the left and right, It is used in the range of 360 °.



### Reference

- The DND-3000 consists of one radar sensor and two infrared sensors.
- The DND-3000 is suitable for application in an external environment with a unique passive infrared and microwave detection. (Detection rate 99%)
- The DND-3000 is designed for outdoor use and can be used in very harsh environments, detecting people, vehicles, animals (over 40Kg).
- The combination of dual technology hardware and sophisticated software technology provides high reliability, There is almost no alarm malfunction. (Less than once a month)
- The inside is made of double optics, advanced microwave detector and a beautiful, hard plastic body.
- This detector, coupled with a microwave Doppler sensor, maintains high safety standards that detect intruders within the protected area.
- Make sure you remove mistakes. Sensing sensitivity and angle can be adjusted with 16 digital measurement levels with digital rotary switch, and the effective pattern is set every time It's possible.
- The DND-3000 is designed for wide area protection, it can be easily installed on the wall for firm protection, and it can be installed with "PET MASK" It effectively removes disturbances from birds and small animals.



## DND - Alpha series Alpha / Alpha W

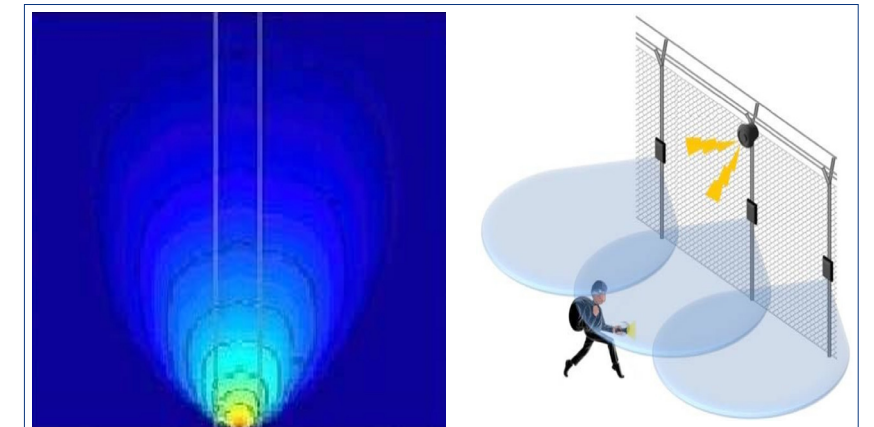
### Feature

- Smart Rader Security Detector
- Applied Microwave K-band (24.125GHz) Dual Signal
- Detection Angle is 80 ~ 90 ° or 130 ~ 140 °
- Anti-Frequency Collision Function
- Small animals, Rain, Snow, Lightening and White Light Evading Function(Pattern Recognition)
- ID Granting Function through RS-485 Communication Function
- Sensitivity adjusting function can be selected
- No housing(PCB Ass'y). Housing is option.
- Can be used Indoor and Outdoor

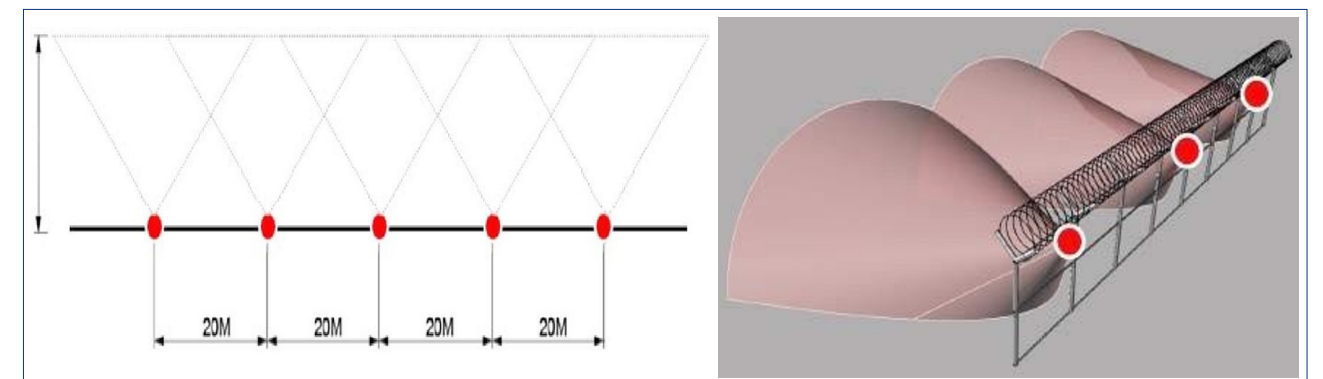
### Specification

- Detection Method : Radar(Microwave) Doppler
- Microwave Frequency : 24.125GHz
- Detection Range : Alpha Max. 25m
- Detection Range : \* Alpha: 80°(H) \* 12°(V)  
\* Alpha W : 130°(H) \* 12°(V)
- Input Power : 12.0 ~ 30.0Vdc
- Alarm Output : Serial Data(RS-485) N.C or N.O(Relay Signal)
- Alarm Period : 2 +/- 1 sec
- Detection time : 50m sec typical
- Operating Temp. : - 40°~ + 60°
- LED Indicator : Blue LED - ON during alarm
- Weight : 200g
- Option : Housing

### Detection Area (Antenna Radiation Pattern)



### Detection Area (Installation Method)

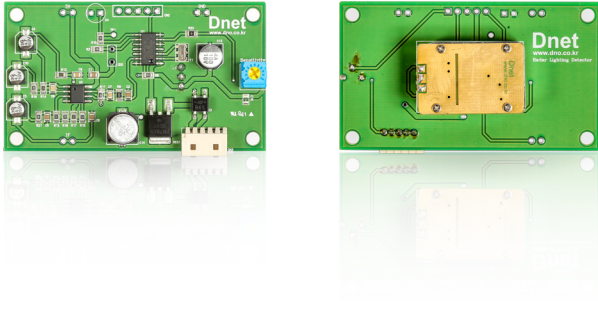


## DNL-400LED

### Lighting sensor

#### Feature

- Radar Motion Lighting Sensor
- Used a RF the Microwave Motion Sensor Modules.
- Applying the Doppler radar principle.
- Input Voltage : DC Only(12VDC ~ 24VDC) .
- Low cost & Low Power Consumption.
- Connection : Jack Type
- Ceiling Type



## DNL-400MR, 400MRDC

### Lighting sensor

#### Feature

- Microwave Motion Sensor Light Modules
- Used a RF the Microwave Motion Sensor Light Modules.
- Applying the Doppler radar principle.
- Input Voltage : AC Only(220V ~ 240V)
- Low cost & Low Power Consumption.
- Ceiling Type



## DNL-400XH

#### Feature

- Microwave Motion Lighting Sensor -
- Used a RF the Microwave Motion Lighting Sensor
- Connection of Module and Controller.
- Applying the Doppler radar principle.
- Low cost and Low Power Consumption.
- Small size and 220VAC(Input Power)

#### Model NO.

Model NO.	Model Name		Remark
DNL-400XH	I	X-Band Microwave Lighting Sensor	10GHz
	II		
DNL-400CH		C-Band Microwave Lighting Sensor	5GHz
DNL-400SH		S-Band Microwave Lighting Sensor	2GHz

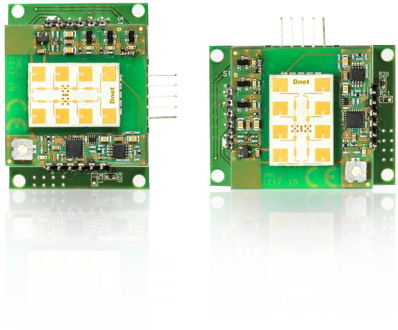


## DNC-Series

### DNC-314S, 324S, 334S

#### Feature

- K-Band Radar Sensor
- Ultra-compact radar sensor with small, thin and slim design
- Detection distance: up to 5~12m
- Detection range adjustment function
- proximity switch for detecting objects at distance of less than 10 cm
- Speed (1 ~ 30km / h) confirmation function
- Motion detection
- Direction (forward / backward) confirmation function(1.5 ~ 5m)
- Open collector output and UART interface available
- ECO mode with low power consumption (up to 90% reduction)
- Detection of stationary objects: detection of stationary objects
- Target detection: 5 target object detection

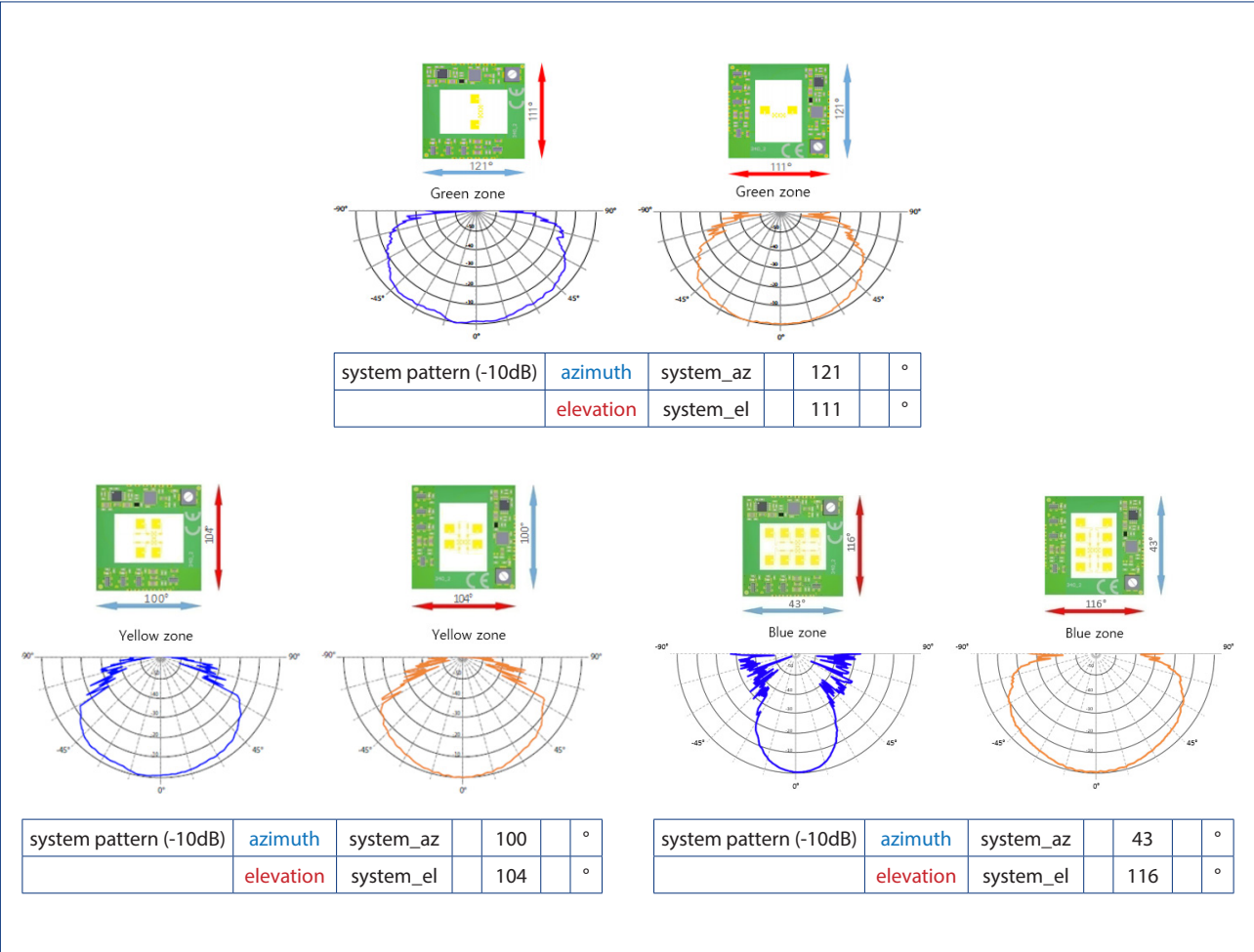


#### Specification

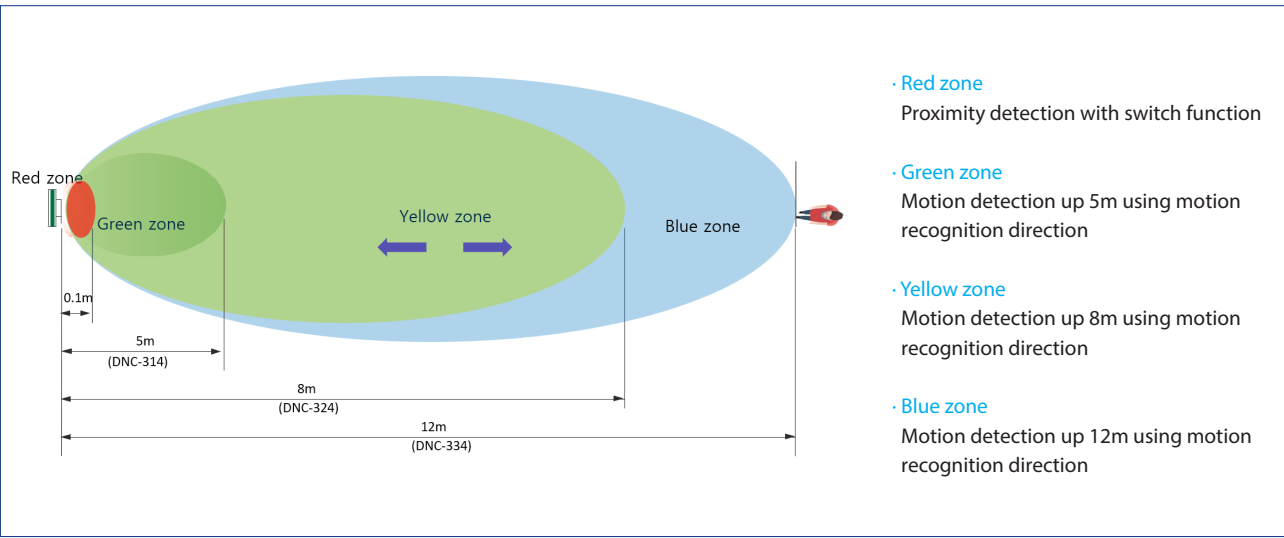
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
<b>Radar</b>					
transmit frequency		24.050		24.250	GHz
output power (EIRP)				20	dBm
<b>Sensor</b>					
max adjustable detection range	motion detection for an RCS = 1m <sup>2</sup>			12	m
	switch functionality E.g. Detection of a hand			0.1	m
range for direction of movement recognition	E.g. Detection of a person	1.5		12	m
activation time switch			400		ms
velocity range		0.7		34	km/h
antenna pattern (10dB width)	compare plot on page		43		°
			116		°
<b>Power supply</b>					
supply voltage		12		15	v
supply current	full operation	55	60	65	mA
<b>Environment</b>					
operating temperature		-20		+60	°C
storage temperature		-40		+85	°C
<b>Mechanical Outlines</b>					
outline dimensions	height length width		16.0 34.0 45.5		
<b>Weight</b>					
			13.2		g



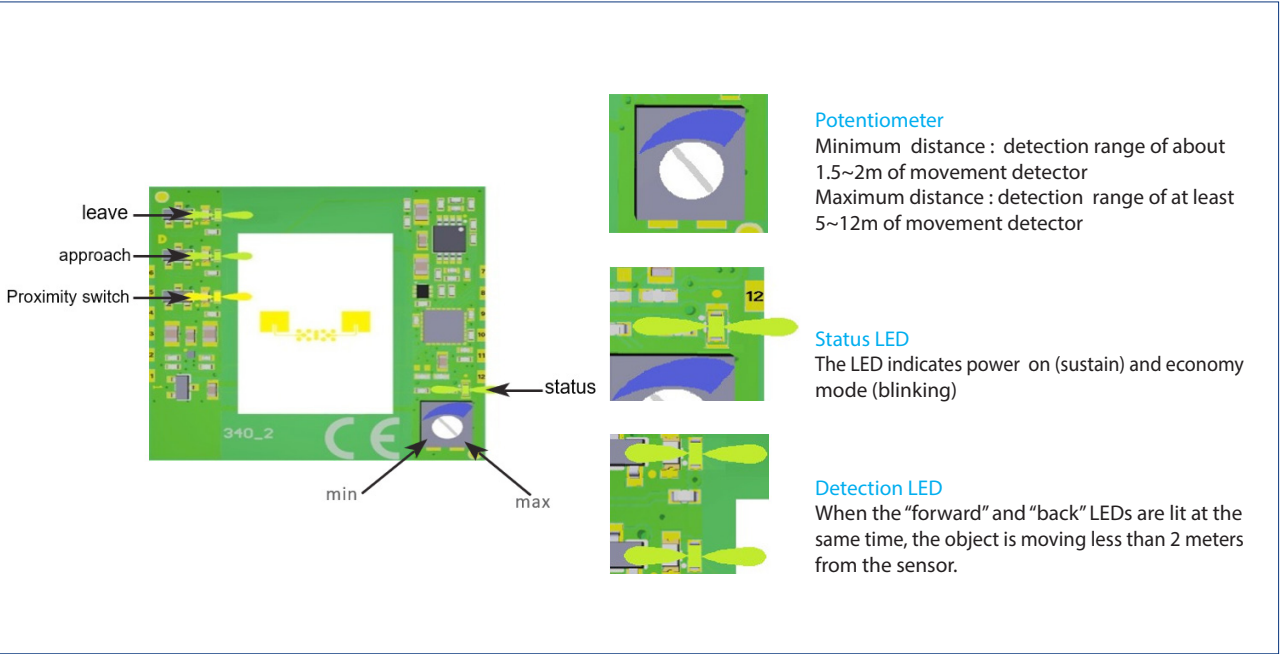
### Antenna Pattern



### Detection Zone



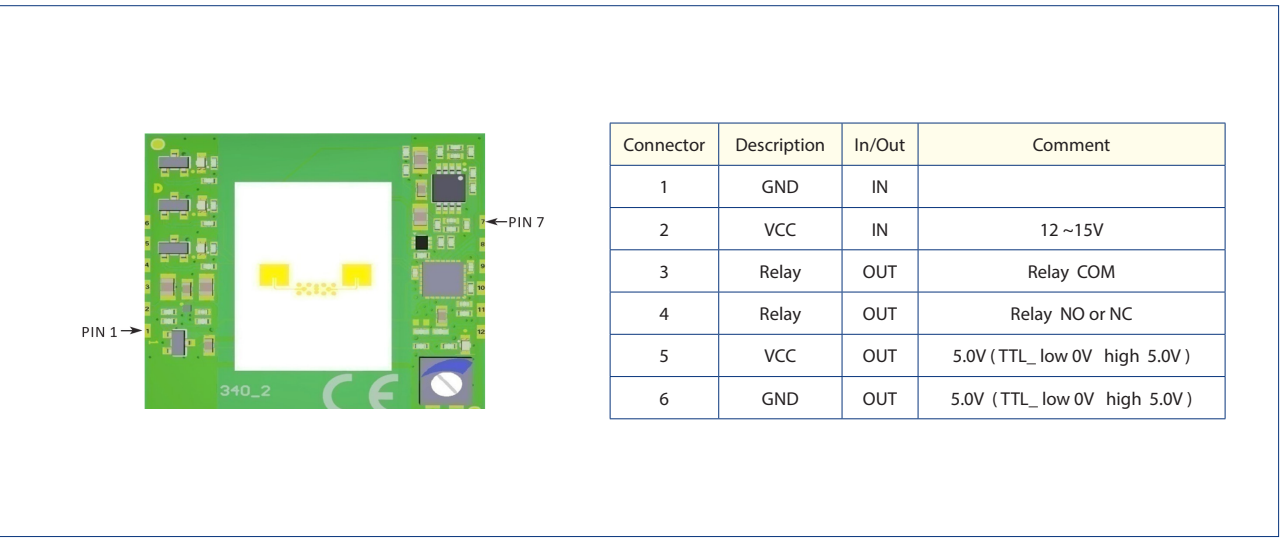
### Function Description

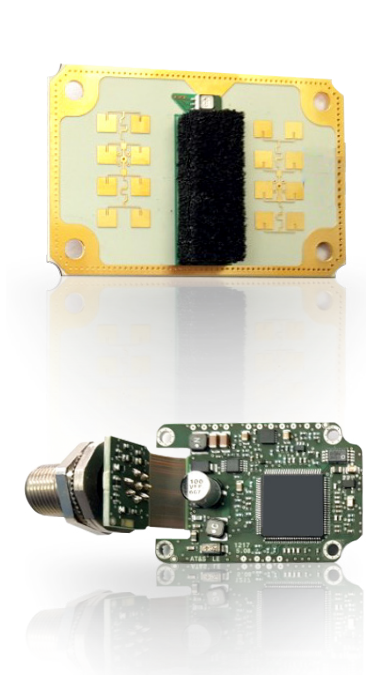


The sensor can switch from continuous operation to power-down ECO mode by pulling down pin # 10 and pulling pin # 1 down to standby mode. In ECO mode, the sensor operates once per second and the status LED blinks to generate a beep. For detection, the sensor remains active for 5 seconds.

- Proximity switches are activated by sensing at distances of less than 10 cm.
- The following parameters can be modified via the UART interface (default in square brackets).
- Time to activate output after motion detection (0.5sec)
- Output activation time after motion detection (1sec)
- Motion detection output can be disabled individually
- Time to activate proximity switch after object detection (0.3sec)
- Minimum time between activation of two proximity switches (0.6sec)

### Interface & Outline





## DNC-4001

### Features

- Radar-based motion measurement system operating in 24Ghz ISM band
- Distance measurement of moving objects
- Measuring distance from 0.3m to 150m with accuracy
- Configurable detection range
- Speed detection from 0.8 km / h to 250 km / h
- Rugged metal housing designed for outdoor use

### Technology

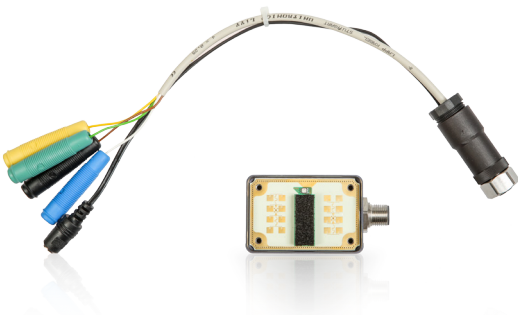
- K-band based motion detector with intelligent  $\mu$ C decision unit.
- Moving objects within a speed range from 0.8 km / h (0.48 mph) to 250 km / h (155.32 mph) Can be detected.
- The sensing range is from 0.3 m (1ft) to 150 m (492.5 ft) (depending on the RCS of the moving object).

### Parameter

- The DNC-4001 consists of a 24 GHz Radarfrontend (RFE) equipped with a DSP board to measure the distance and radial velocity of objects.
- The sensor provides three outputs that can be configured within a specified range
- Communication is performed with the RS232 interface for PWM output signals or for digital outputs (open drain). Sensor configuration can be done with GUI.

### Specification

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Radar						
transmit frequency		f	24.000		24.250	GHz
output power (EIRP)		Pout			20	dBm
Sensor						
detection distance		dr			150	m
speed range		vr	0.8		250	Km/h
standard detection field	compare with plot on page 3	horizontal		34		°
		vertical		49		°
Power supply						
supply voltage		VCC	10		30	V
supply current	@ 12V without digital out current	ICC_12V		135	150	mA
supply current	@ 24V without digital out current	ICC_24V		76	85	mA
Digital Output Current						
OUT1	open drain	IOut			-400	mA
OUT2	open drain	IOut			-400	mA
OUT3	open drain	IOut			-400	mA
digital total current		IOut			-800	mA
Environment						
operating temperature		TOP	-25		+60	°C
storage temperature		TSTG	-25		+60	°C
Mechanical Outlines						
outline dimensions		height length width		43.4 75.6 40.0		mm



## DNC-4004

### Feature

- K-Band Microwave Sensor Module
- Radar-based distance measurement system operating in 24GHz ISM band
- Distance measurement of fixed object
- Measuring distance from 1.1m to 35m with accuracy (Distance can be supplied according to request upon request)
- Configurable detection range
- Rugged metal housing designed for outdoor use

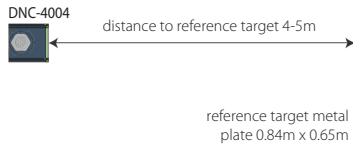
### Technology

K-band distance with intelligent  $\mu$ C crystal device Measurement system. This system incorporates the latest MMIC technology Based so that the best for temperature and aging Measurement stability is provided. Depending on the available bandwidth, (3.6 ft.) To 35 m (115 ft.) You can detect a stationary object.(Depending on the RCS of the object)

### Parameter

- The DNC-4004 consists of a 24 GHz MMIC based RFP (Radarfrontend) with a DSP board that can measure distances to fixed objects. With the MMIC technology used This has little effect on temperature and accuracy of measurement for aging. The sensor Provides three outputs that can be configured within a specified range.
- Communication is performed with the RS232 interface for PWM output signals or for digital outputs (open drain). Sensor configuration can be done with GUI.

#### TEST CONDITIONS FOR DISTANCE MEASUREMENT



The following test conditions apply to verify the accuracy of the DNC-4004.

### Specification

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
<b>Radar</b>						
transmit frequency		f	24.000		24.250	GHz
occupied bandwidth	EU-version	<sup>®</sup> EU			250	MHz
	US/UK/France - version	<sup>®</sup> US			100	MHz
output power (EIRP)	@ 25°C	P <sub>out</sub>			20	dBm
<b>Sensor</b>						
detection distance	EU-version	<sup>d</sup> r_EU	1.1		35	m
	US/UK/F - version	<sup>d</sup> r_US	2.7		35	m
accuracy @ 250MHz band- width	compare test conditions on page 3	<sup>a</sup> EU		±3		cm
accuracy @ 100MHz bandwidth		<sup>a</sup> US		±7.5		cm
update rate				75		ms
resolution	@ 250MHz	<sup>r</sup> EU			60	cm
	@ 100MHz	<sup>r</sup> US			150	cm
standard detection field	compare with plot on page 4	horizontal		34		°
		vertical		49		°
<b>Power supply</b>						
supply voltage		V <sup>CC</sup>	10		30	V
supply current	@ 12V without digital out current	I <sup>CC</sup> _12V		135	150	mA
supply current	@ 24V without digital out current	I <sup>CC</sup> _24V		76	85	mA
<b>Digital Output Current</b>						
OUT1	open drain	I <sup>Out</sup>			-400	mA
OUT2	open drain	I <sup>Out</sup>			-400	mA
OUT3	open drain	I <sup>Out</sup>			-400	mA
digital total current		I <sup>Out</sup>			-800	mA
<b>Environment</b>						
operating temperature		T <sup>OP</sup>	-25		+60	°C
storage temperature		T <sup>STG</sup>	-25		+60	°C
<b>Mechanical Outlines</b>						
outline dimensions		height / length / width	43.4 / 75.6 / 40.0			mm



# X-Band Series

## DNS-010,010CX,020,030,040

### Feature

- X-Band Radar Sensor Module(Standard Type)
- Used a RF the Microwave Sensor.
- The up-to-date sense which uses Doppler principle.
- Low cost & Low Power Consumption.
- Small and Flat Profile & pin type.
- Reliable Construction & High Sensitivity.



### Receiver

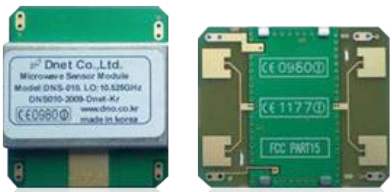
- Sensitivity (10dB S/N ratio) in 3Hz to 80Hz bandwidth:-85dBm
- Noise in 3Hz to 80Hz bandwidth:10μV
- Antenna Gain:8dBi
- E Plane 3dB Beam width:40'
- H Plane 3dB Beam width:80' (Module Characteristics)
- Power/Temp. Coefficient(over operating temp. range) :3dB
- Frequency/Temp. Coefficient(over operating temp. range) : 6.5MHz
- Operating Temperature Range : -20'C to +55'C
- Storage Temperature Range : -30'C to +70'C
- Detection Range : 15M ~ 20M(Max.)
- Weight : 6 grams. Size(mm,+/-0.2) : 40.0 \* 47.0 \* 8.3
- CE" approval mark (CE ETSI EN 300 440: RF part) and "FCC" approval mark (PARTS 15.245) and "ROHS" approval mark

### Transmitter

- Frequency : 10.525GHz.
- Frequency Setting Accuracy:3MHz
- Power Output (Min.):10dBm EIRP
- Operating Voltage:+5V +/- 0.3V
- Operating Current (CW): 30mA~35mA typical Harmonic Emissions: -30dBm

Model No.	Frequency	Remark
DNS-010	10.525GHz	FCC, CE
DNS-010V	10.525GHz	FCC, CE
DNS-010CX	10.525GHz	FCC, CE
DNS-020	10.687GHz	FCC, CE
DNS-030	10.587GHz	FCC, CE
DNS-040	9.900GHz	FCC, CE

## DNS-010V



### Receiver

- Sensitivity (10dB S/N ratio) in 3Hz to 80Hz bandwidth:-85dBm
- Noise in 3Hz to 80Hz bandwidth:10μV
- Antenna Gain:8dBi
- E Plane 3dB Beam width:40'
- H Plane 3dB Beam width:80' (Module Characteristics)
- Power/Temp. Coefficient(over operating temp. range) :3dB
- Frequency/Temp. Coefficient(over operating temp. range) : 6.5MHz
- Operating Temperature Range : -20'C to +55'C
- Storage Temperature Range : -30'C to +70'C
- Detection Range : 15M ~ 20M(Max.)
- Weight : 6 grams. Size(mm,+/-0.2) : 40.0 \* 47.0 \* 8.3
- CE" approval mark (CE ETSI EN 300 440: RF part) and "FCC" approval mark (PARTS 15.245) and "ROHS" approval mark

### Feature

- X-Band Radar Sensor Module(Standard Type)
- Used a RF the Microwave Sensor.
- The up-to-date sense which uses Doppler principle.
- Low cost & Low Power Consumption.
- Small and Flat Profile & pin type.
- Reliable Construction & High Sensitivity.

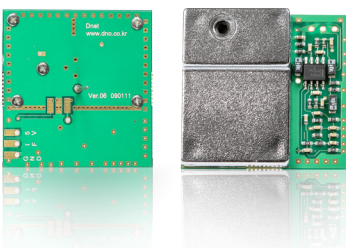
### Transmitter

- Frequency : 10.525GHz.
- Frequency Setting Accuracy:3MHz
- Power Output (Min.):10dBm EIRP
- Operating Voltage:+3V +/- 0.3V
- Operating Current (CW): 30mA~35mA typical Harmonic Emissions: -30dBm

# Rader Antenna Module

## C-Band Series

### DNS-200,200S,200L



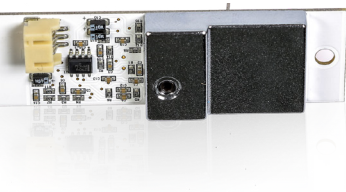
### Receiver

- C-Band Microwave Sensor Module
- Used a RF the Microwave Sensor.
- Applying the Doppler radar principle.
- CW Radar, ISM Band
- Small size.
- Used Pin Antenna & Amplifier Inclusion.
- Microwave technology.
- Low cost & Low Power Consumption.

### Specification

- Electrical characteristics.
- Operating Voltage : 4.7. ~ 5.3VDC .
- Operating Current : 10~20mA
- Center Frequency : 5.800GHz (5.75GHz ~ 5.85GHz)
- Output Power : < 10mW
- ABSOLUTE MAXIMUM RATINGS
- DC Input Voltage 5VDC(4.7 ~ 5.3VDC)
- Operating Temperature Range - 30 to +50'C
- Storage Temperature Range - 40 to +80'C
- Relative Humidity 95% at 35'C
- GENERAL CONTENTS
- Size 34mm \* 36mm \* 8.3mm(Pin Ant. : exclusion)
- Detection Range & Angle : (Wall) 15 ~ 20m (Max.) / 130'~ 150' (Ceiling) 10 ~ 15m Dia (Max.) / 360'
- Radiated MW Energy 10~30 micro Watt(at least)

## DNS-200L



### Receiver

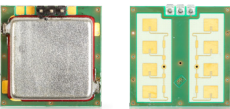
- C-Band Microwave Sensor Module
- Used a RF the Microwave Sensor.
- Applying the Doppler radar principle.
- CW Radar, ISM Band
- Small size.
- Used Pin Antenna & Amplifier Inclusion.
- Microwave technology.
- Low cost & Low Power Consumption.

### Specification

- Electrical characteristics.
- Operating Voltage : 4.7. ~ 5.3VDC .
- Operating Current : 10~20mA
- Center Frequency : 5.800GHz (5.75GHz ~ 5.85GHz)
- Output Power : < 10mW
- ABSOLUTE MAXIMUM RATINGS
- DC Input Voltage 5VDC(4.7 ~ 5.3VDC)
- Operating Temperature Range - 30 to +50'C
- Storage Temperature Range - 40 to +80'C
- Relative Humidity 95% at 35'C
- GENERAL CONTENTS
- Size 34mm \* 36mm \* 8.3mm(Pin Ant. : exclusion)
- Detection Range & Angle : (Wall) 15 ~ 20m (Max.) / 130'~ 150' (Ceiling) 10 ~ 15m Dia (Max.) / 360'
- Radiated MW Energy 10~30 micro Watt(at least)

## K-Band Series

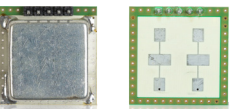
DNS-060



### Features

- Doppler radar-based motion detector
- Available in different frequency ranges
- Advanced PHEMT-oscillator with low current consumption
- Split transmit and receive path for maximum gain
- Mono (single channel) operation for motion detection
- Very small outline dimensions

### DNS-070DL

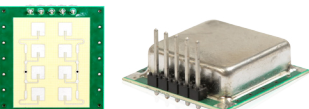


### Features

- Doppler radar-based motion detector
- Available in different frequency ranges
- Advanced PHEMT-oscillator with low current consumption
- Split transmit and receive path for maximum gain
- Dual channel(I/Q) operation
- Very small outline dimensions

## Rader Antenna Module

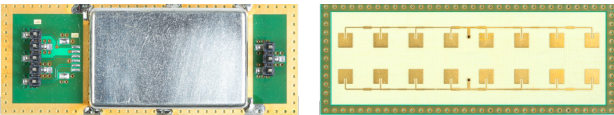
### DNS-060FM



### Features

- Radar-based motion detector working in the 24GHz - ISM - Band.
- FMCW capable ; therefore measurement of distance as well as recognition of stationary objects is possible slit transmit and receive path for maximum gain
- Advanced VCO-oscillator with low current consumption
- Split transmit and receive path for maximum gain.
- Dual channel operation for direction of motion identification

### DNS-080

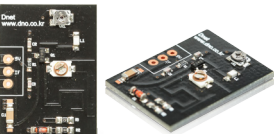


### Features

- 24 GHz short range transceiver
- Beam aperture 80°/12°
- 250MHz wide sweep FM input
- Optional IF amplifier (DNS-080:V2)
- Narrow - wide asymmetrical field pattern
- High sensitive LNA receiver
- I/Q IF outputs
- Compact size: 66mm x 25mm x 6mm

## S-Band Series

DNS-100



### Features

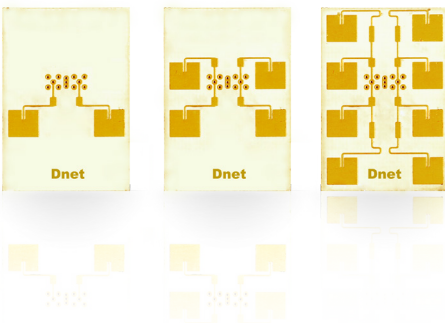
- Used a RF the Microwave Sensor Module.
- Applying the Doppler radar principle.
- ISM Band
- Small size(28mm \* 20mm).
- Microwave technology.
- Low cost & Low Power Consumption.

### Specification

- Electrical characteristics
- Operating Voltage : 4.5 ~ 5.3VDC
- Operating Current : 5~10mA Center
- Frequency 2.45GHz(2.30~2.80GHz)
- Frequency Stability : 5MHz max.(-30°C to +55°C)
- Output Power : + 5dBm E.I.R.P. type
- Return Loss Sensitivity :- 90dBc type
- Antenna Beam width(-3dB) : E-plane 45 deg. nom.
- H-plane 70 deg. nom. Antenna Gain 4~5dbi
- Pulse mode operation
- Pluse Width
- Separate Pluse Control Input
- Absolute Maximum Ratings
- DC Input Voltage : 5.3Vdc
- Operating Current : 10mA
- Operating Temperature Range :- 30 to + 50°C
- Storage Temperature Range :- 40 to + 80°C
- Relative Humidity 95% at 35°C
- Vibration G=10
- Shock G=20
- GENERAL CONTENTS
- Size 28mm \* 20mm
- Detection Range 8m(standard)
- Radiated MW Energy 30 micro Watt(at least)

## K-Band Series

DNS-314, 324, 334 / 314F, 324F, 334F



### Features

- VCO Transceiver working in the 24GHz - ISM - Band
- Detection of direction and velocity as well as distance of moving and stationary objects
- Integrated Prescaler for easy frequency control
- Integrated Low Noise Amplifier
- Mounting by standard SMT-Process (delivery on Tape & Reel)
- Extended temperature range from -40°C up to +85°C
- Very small outline dimensions
- Available with different antenna patterns by same interface

### Specification

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Radar						
VCO frequency range		<sup>f</sup> VCO	24.050		24.250	GHz
Tuning voltage	to cover VCO frequency range	<sup>v</sup> tune	0.7		2.5	V
VCO tuning sensitivity	within VCO frequency range	<sup>k</sup> VCO		720	2000	MHz/V
output power (EIRP)		<sup>p</sup> out			20	dBm
IF output DC-Offset		<sup>f</sup> 1/2_DC-offset	1.4	1.8	2.2	V
IF-Bandwidth (-3dB)		B	0		1M	Hz
signal level (RCS = 0.5m <sup>2</sup> @ 5m)		<sup>f</sup> 1/2	120		360	μVrms
noise level	100Hz...1kHz	<sup>n</sup> 1/2			20	μVrms
Power supply						
supply voltage		<sup>v</sup> CC	3.2	3.3	3.4	V
supply current		<sup>i</sup> CC		47	57	mA
Frequency Divider						
Prescaler division ratio	<sup>v</sup> CC_PTAT = 0 V,	<sup>p</sup> DIV		16		
	<sup>v</sup> CC_PTAT = 3.3 V	<sup>p</sup> DIV		8192		
Prescaler supply voltage		<sup>v</sup> CC_DIV	3.2	3.3	3.4	V
Prescaler supply current		<sup>i</sup> CC_DIV		19		mA
Environment						
operating temperature		<sup>T</sup> OP	-40		+85	°C
storage temperature		<sup>T</sup> STG	-40		+85	°C
Mechanical Outlines						
outline dimensions		Height length width		3.1 21.4 15.0mm		mm