FMK24-A Series Microwave Ranging Radar
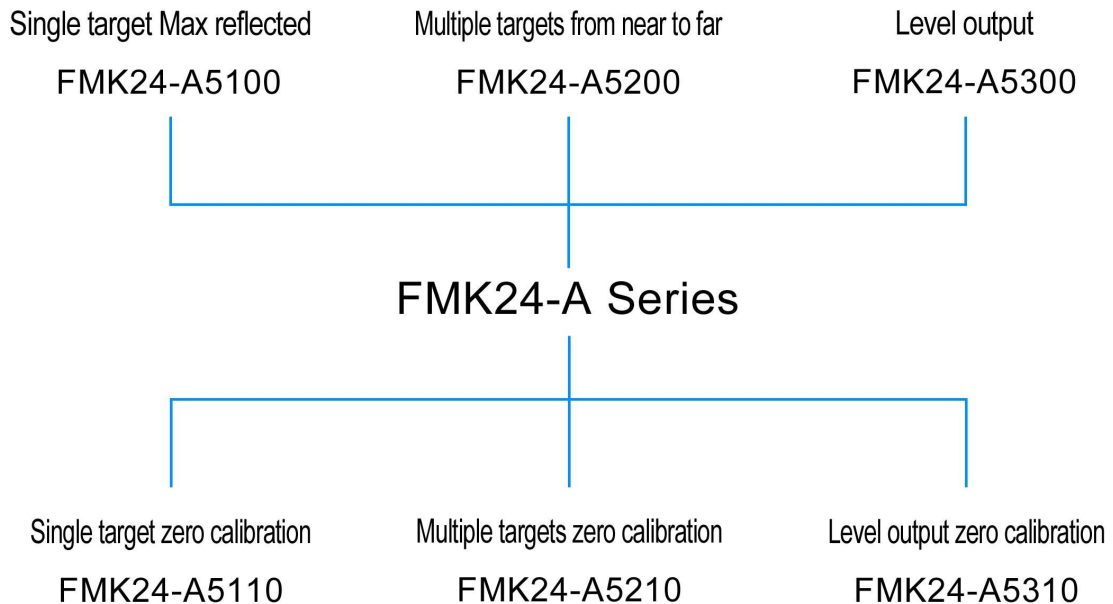
Product manual

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Product description

Microwave ranging radar is one kind of electronic sensor which can measure distance to target objects by transmitting and receiving radio wave.Compared with the ranging sensors which are based on the other principles, this product is smaller in size, in light weight,and with penetrability(i.e. smoke,dust,non-metallic materials),and has capabilities of multiple targets detection and measurement,etc.

A Series products including

Single target Max reflected	Multiple targets from near to far	Level output
FMK24-A5100	FMK24-A5200	FMK24-A5300

FMK24-A Series

Single target zero calibration	Multiple targets zero calibration	Level output zero calibration
FMK24-A5110	FMK24-A5210	FMK24-A5310

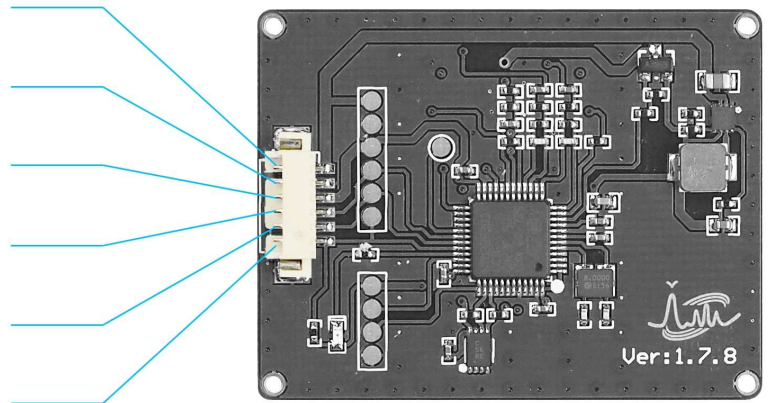| Function of FMK24-A series radar	
FMK24-A5100	Range output:distance data of Max reflector, radar position as zero.
FMK24-A5110	Range output:distance data of Max reflector,calibration position as zero.
FMK24-A5200	Range output: distance data of all the targets(with different distance),radar position as zero, from near to far.
FMK24-A5210	Range output:distance data of all the targets(with different distance),calibration position as zero,from near to far.
FMK24-A5300	Output level data,radar position as zero,in the selected scope, high level indicates existence of objects,low level indicates nonexistence of objects.
FMK24-A5310	Output level data,calibration position as zero,in the selected scope,high level indicates existence of objects,low level indicates nonexistence of objects.

Specifications

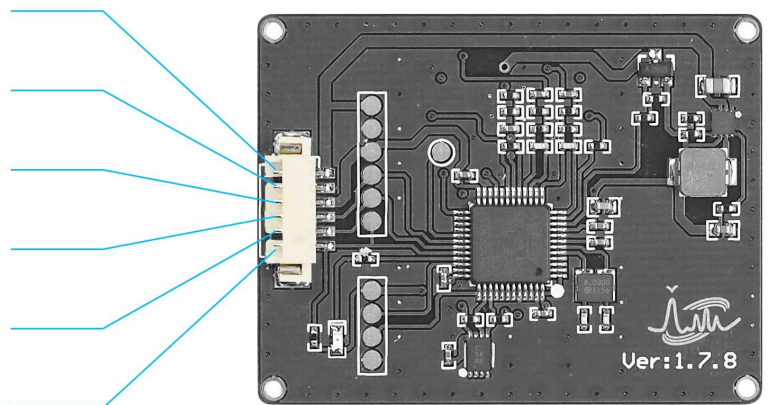| Parameter	Min	Typ	Max	Unit
Tuning frequency	24.000		24.500	GHz
TX power Eirp	0	6	10	dBm
Modulation type		FMCW		
Rang-measurement range	0.5		20	m
Rang-measurement accuracy	-0.1		+0.1	m
Range resolution		0.01		m
Antenna pattern HOR		78(-3db)		deg
Antenna pattern VER		23(-3db)		deg
Supply voltage	4.5	5	8	V(DC)
Power consumption		400		mW
Updating rate		10		Hz
Storage temperature	-40		85	℃
Operating Temperature	0		70	℃
Weight		8		g
Dimensions		44*34*5		mm

Pin Configuration

FMK24-A5100,FMK24-A5110
FMK24-A5200,FMK24-A5210

Pin1：DC（4.5-8V）

Pin2：Power Negative（GND）

Pin3：Auxiliary power output（3.3V, Max 100mA）

Pin4：data output（3.3V_TTL level）

Pin5：NC

Pin6：zero calibration（3.3V weak internal pull-up,
GND for zero calibration, NC for normal operation）

FMK24-A5300,FMK24-A5310

Pin1：DC（4.5V-8V）

Pin2：Power Negative（GND）

Pin3：Auxiliary power output（3.3V, Max 100mA）

Pin4：signal output（+3.3V if target existence,
0V if target nonexistence）

Pin5：NC

Pin6：zero calibration（3.3V weak internal pull-up,
GND for zero calibration, NC for normal operation）

Communication Protocol

Applicable models:FMK24-A5100,FMK24-A5110,FMK24-A5200,FMK24-A5210

Interface type:3.3V_TTL level asynchronous serial communication

Baud rate:57600(115200 or 9600 can be customized)

Data format:all data output adopt ASCII code format

Communication Protocol:

Each group of data ending with line break (\n)

Has 2 types of Data output: target existence/target nonexistence

target nonexistence: 'E' + ':' + '\n'

target existence: '1' + ':' + 'x'+'x'...'x'+'\n'

         '2' + ':' + 'x'+'x'...'x'+'\n'

         '3' + ':' + 'x'+'x'...'x'+'\n'

And so on,for situations with more targets,single target model only

outputs "1:".

Unit of range output(CM).

Installation dimensions

44mm

34mm

31mm

41mm

φ1.4mm

FM24-NP100