

## Product Specification

<b>Product:</b>	<b>Bluetooth module, Class 2</b>
<b>Model Number:</b>	<b>BM-396</b>
<b>Doc version:</b>	<b>1.0</b>
<b>Antenna Gain:</b>	<b>1.23 dB</b>
<b>Date:</b>	<b>July 04, 2006</b>

**Note** : All electrical and mechanical specification may be changed by CC&C Technologies  
incorporation without notice.

## Revision History

### BM-396 Bluetooth module, Class 2

Version	Reason for revision	Issue Date	Written by
1.0	Initial Document	2006/6/27	Eddie Lin
1.0	Add revision history on Page2.	2008/2/1	Chile Wang

## Description

The Bluetooth module BM-396 is adopted CSR BlueCore 4 External chip solution. Which includes an 8Mbit Flash memory, used with CSR Bluetooth stack, provides a fully compliant Bluetooth system to v2.0 + EDR of the specification for data and voice communications.

## Features

- (1) Fully Qualified Bluetooth v2.0+EDR
- (2) Enhanced Data Rate (EDR) compliant with v2.0.E.2 of specification for both 2Mbps and 3Mbps modulation modes
- (3) Full speed USB v1.1 interface supports OHCI and UHCI host interfaces.  
Compliant with USB v2.0
- (4) UART interface with programmable baud rate up to 3Mbaud with USB and an optional bypass mode
- (5) Support for 8Mbit External Flash
- (6) RoHS compliant
- (7) Bluetooth Class 2 RF output
- (8) 2.4GHz~2.483GHZ ISM band
- (9) Bluetooth stack runs on-chip in a variety of configurations, includes Standard HCI (UART or USB), Fully embedded to RFCOMM, or customized builds with embedded application code.

## Specification

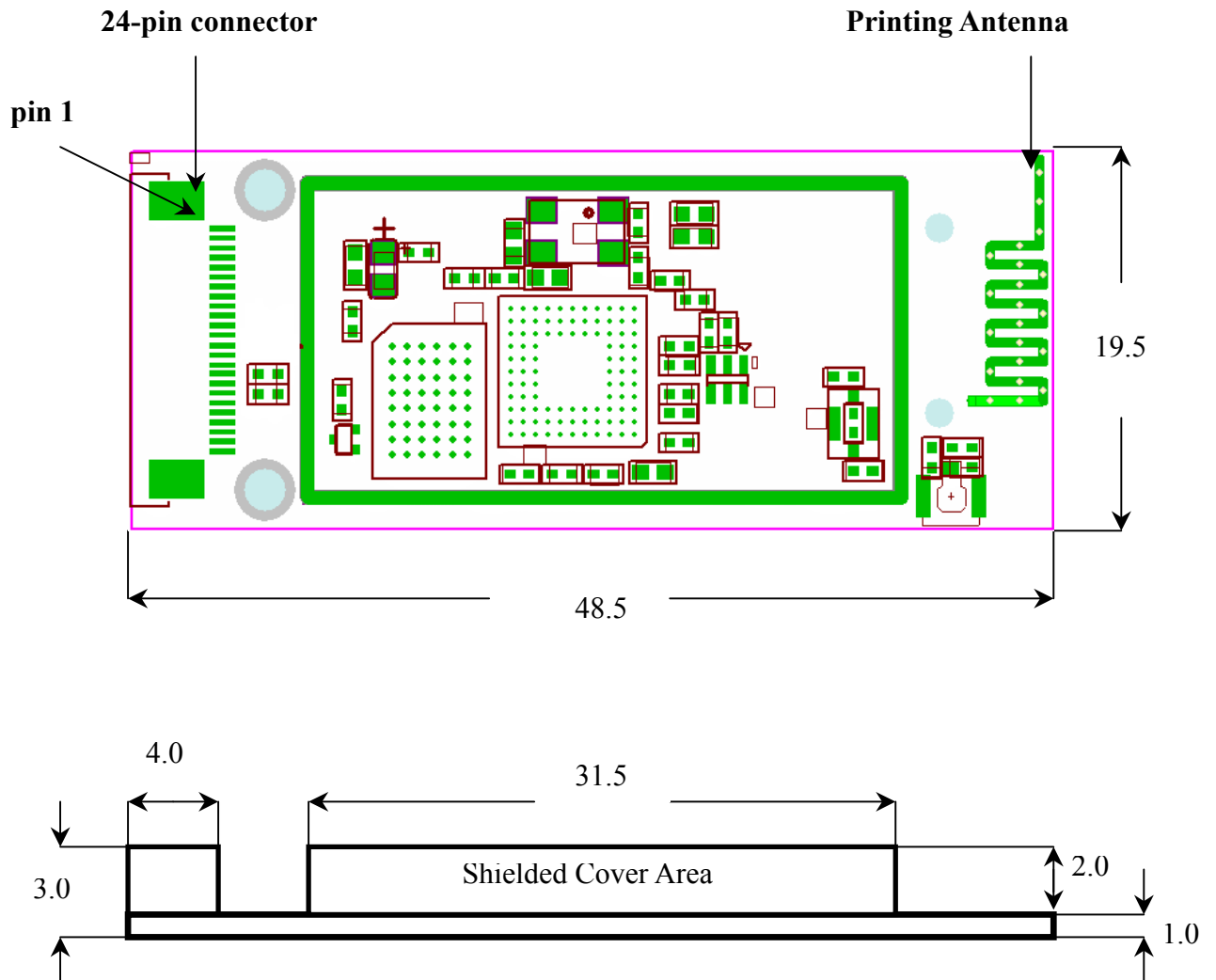
Product Name	Bluetooth Module, Class 2
Model Number	BM-396
Standard	Bluetooth v2.0+EDR
Frequency Band	2.402GHz ~ 2.480GHz unlicensed ISM band
Modulation Method	GFSK for 1Mbps; $\pi/4$ -DQPSK for 2Mbps; 8-DPSK for 3Mbps
Spread Spectrum	FHSS (Frequency Hopping Spread Spectrum)
Transfer rates (Max)	Max UART baud rates of 3Mbps
RF Output Power	Class 2 (under 4 dBm)
Power Consumption	TX (Max) 55 mA
	RX (Max) 45 mA
	Normal 11 mA
Antenna terminal	Printing antenna
DC power	DC 3.3V
Dimension	48.5 x 19.5 mm
Operating Temperature	0 ~ +60°C
Storage Temperature	-10 ~ +70°C
Humidity	5 ~ 90% (non-condensing)

## Electronic Interface Specification

The interface between the module and the host system is through a 24-pin connector defined below.

Pin	Signal	Description
1	VCC_3.3V	DC 3.3V power supply
2	GND	Power ground
3	UART_RX	UART data input
4	UART_TX	UART data output
5	UART_RTS	UART request to send active low
6	UART_CTS	UART clear to send active low
7	RESET	Reset signal input, active high
8	PIO2	Programmable input/output line 2
9	PIO3	Programmable input/output line 3
10	PIO4	Programmable input/output line 4
11	PIO5	Programmable input/output line 5
12	PIO6	Programmable input/output line 6
13	PIO7	Programmable input/output line 7
14	PIO8	Programmable input/output line 8
15	PIO9	Programmable input/output line 9
16	PIO10	Programmable input/output line 10
17	PIO11	Programmable input/output line 11
18	PCM_SYNC	Synchronous data sync
19	PCM_IN	Synchronous data input
20	PCM_OUT	Synchronous data output
21	PCM_CLK	Synchronous data clock
22	USB_D-	USB data minus
23	USB_D+	USB data plus with selectable internal 1.5kohms pull-up resistor
24	GND	Power ground

## Mechanical Specification



**All dimensions are in millimeters.**



Brand / Model : BM-396  
Remark : QPBWLD00202200AR  
Tested by : AARON  
EUT description :

Location: **RF Chamber3**

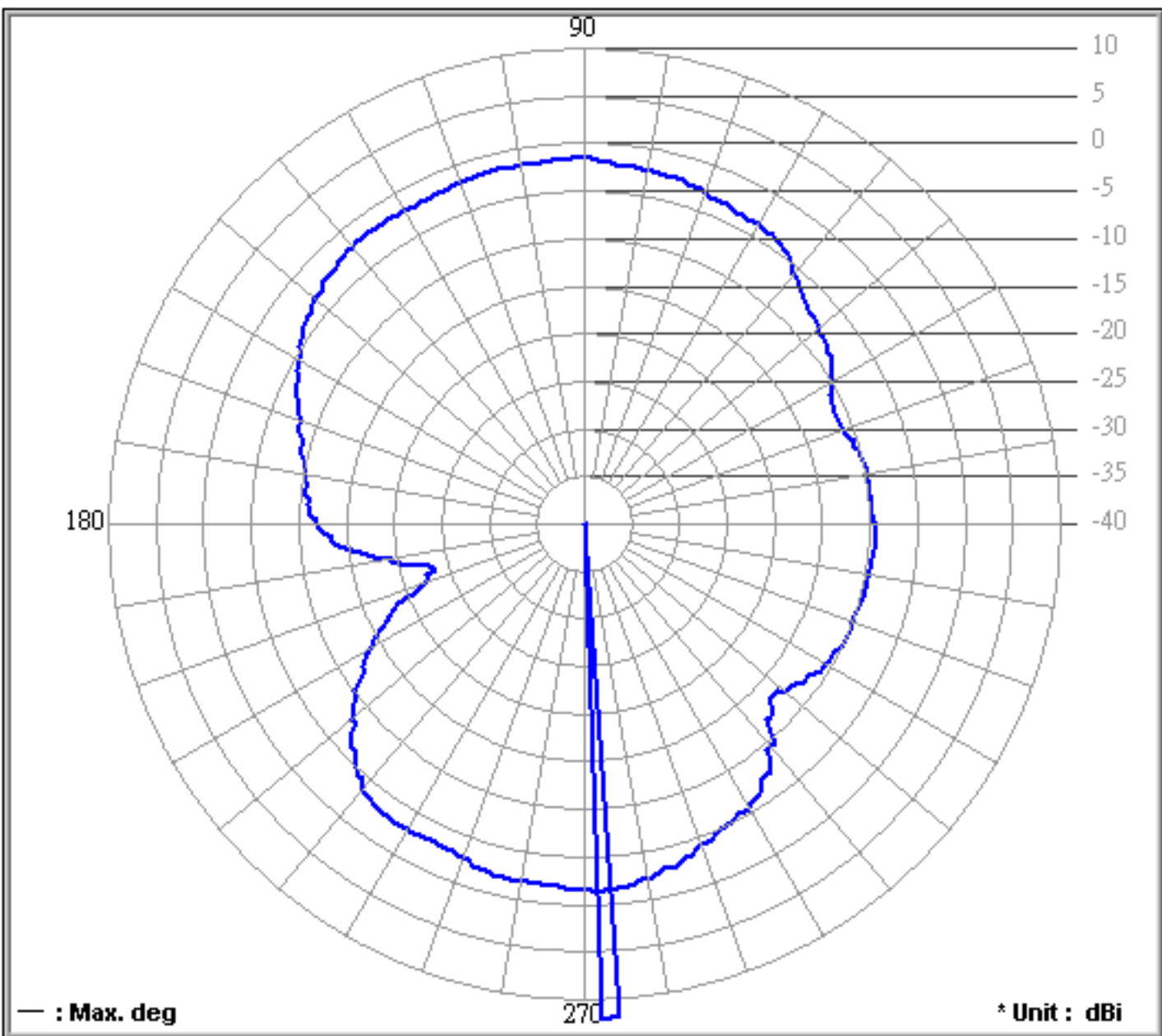
Date: **2006/7/4**

Time: **17:28:15**

Temperatuer (°C): **25**

Humidity (%): **75**

Approved by:



Frequency (MHz) : **2450.00**

Antenna Polarity : **Horizontal**

Average Value (dB) : **-4.95**

Maximum Value (dB) : **-1.36**

Maximum Value (degree) : **272**

Minimum Value (dB) : **-23.58**

Minimum Value (degree) : **197**



Brand / Model : BM-396  
Remark : QPBWLD00202200AR  
Tested by : AARON  
EUT description :

Location: **RF Chamber3**

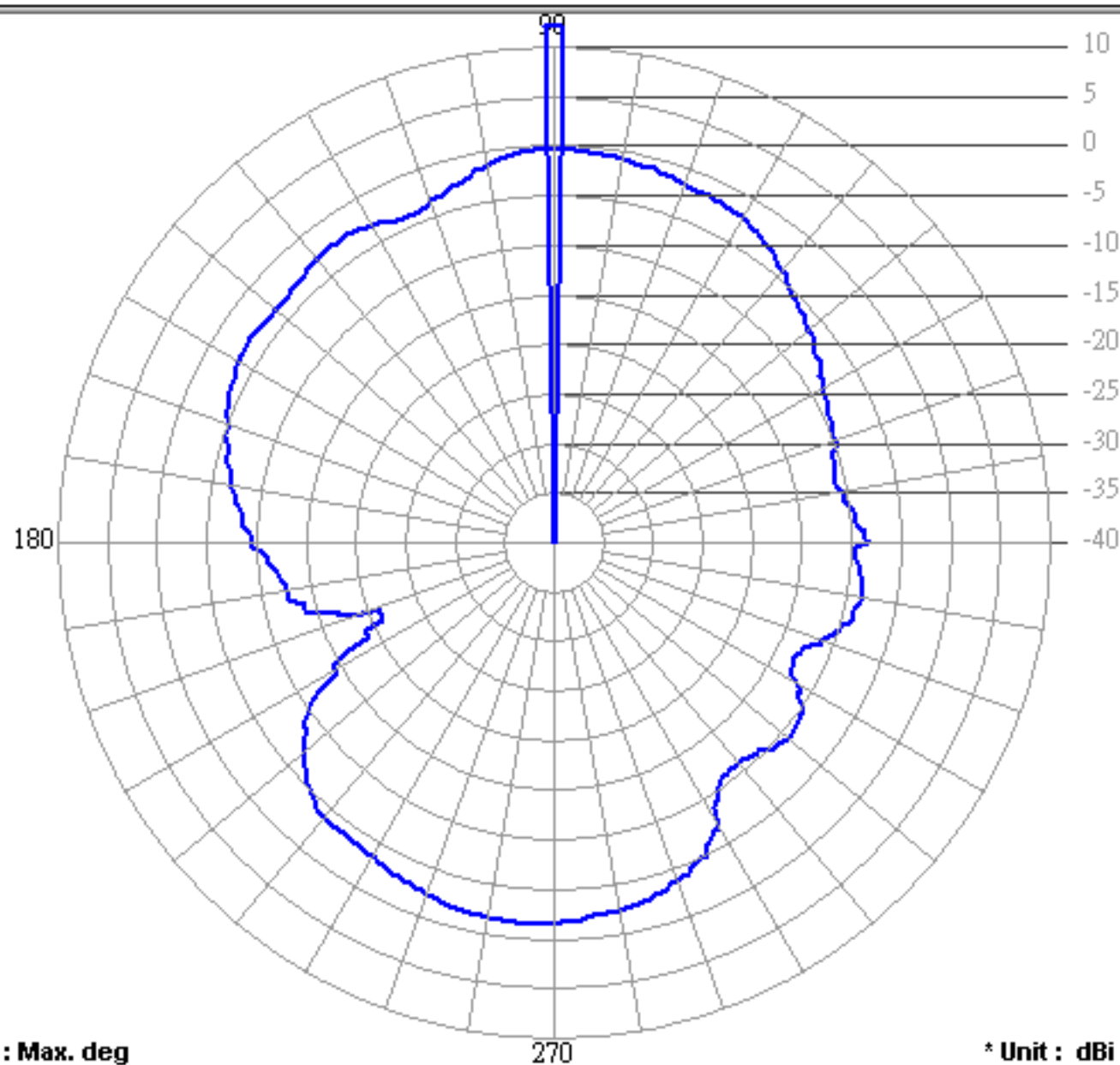
Date: **2006/7/4**

Time: **17:26:19**

Temperatuer (°C): **25**

Humidity (%): **75**

Approved by:



Frequency (MHz) : **2480.00**

Antenna Polarity : **Horizontal**

Average Value (dB) : **-4.52**

Maximum Value (dB) : **-0.29**

Maximum Value (degree) : **89**

Minimum Value (dB) : **-21.22**

Minimum Value (degree) : **201**





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Tested by : AARON  
EUT description :

Location: **RF Chamber3**

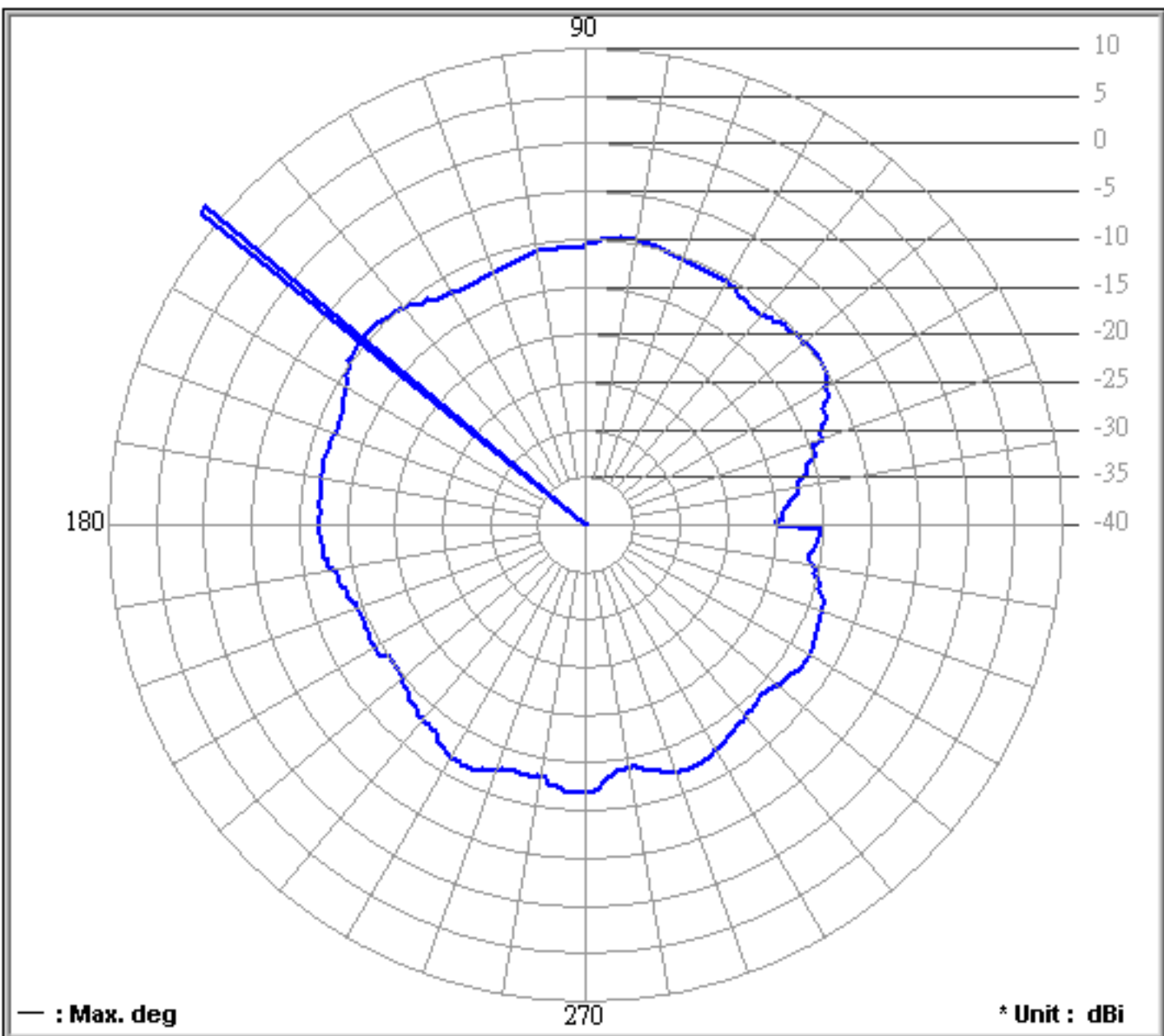
Date: **2006/7/4**

Time: **17:23:39**

Temperatuer (°C): **25**

Humidity (%): **75**

Approved by:



Frequency (MHz) : **2480.00**

Antenna Polarity : **Vertical**

Average Value (dB) : **-12.18**

Maximum Value (dB) : **-9.44**

Maximum Value (degree) : **140**

Minimum Value (dB) : **-19.85**

Minimum Value (degree) : **0**



Brand / Model : BM-396  
Remark : QPBWLD00202200AR  
Tested by : AARON  
EUT description :

Location: **RF Chamber3**

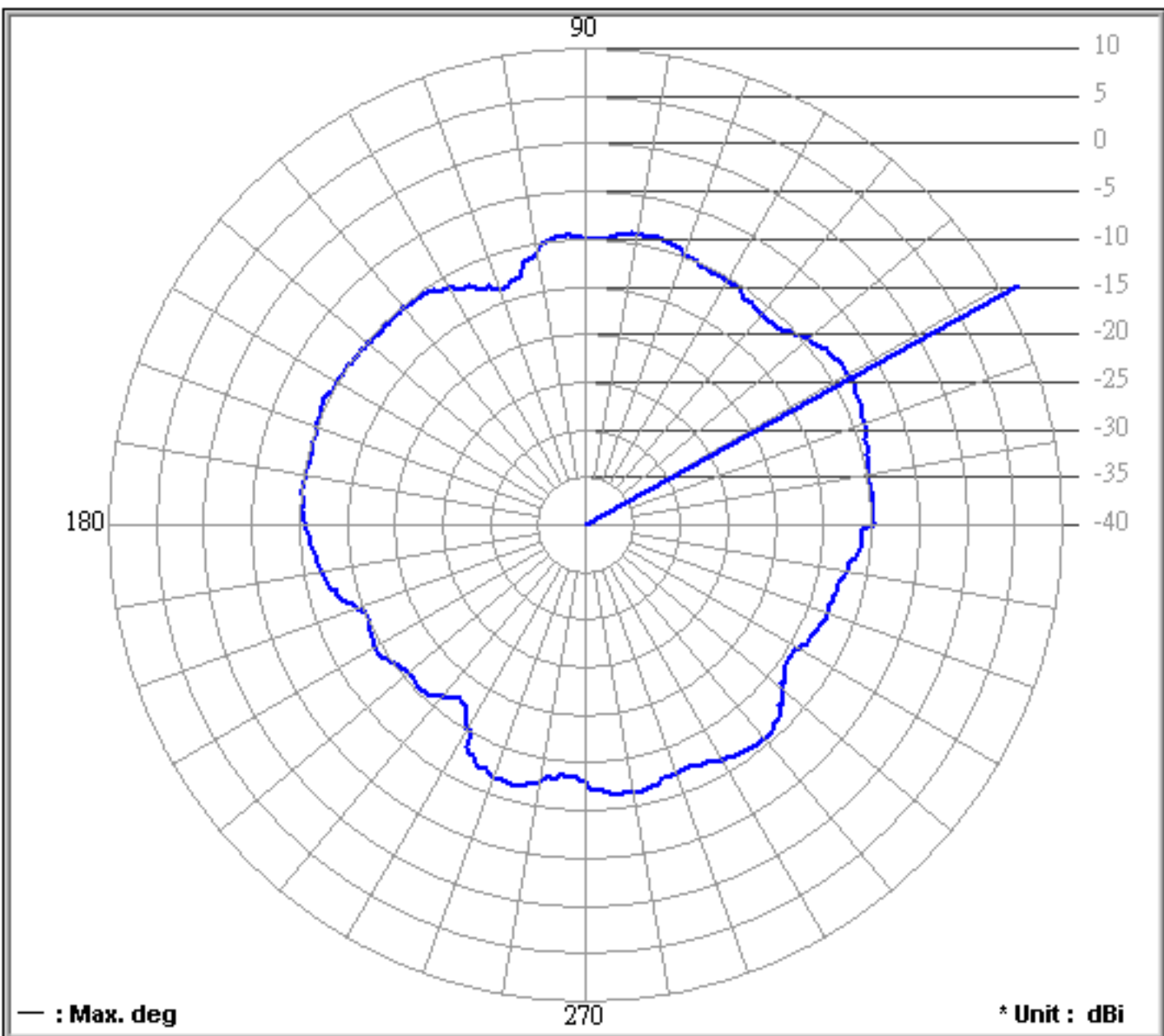
Date: **2006/7/4**

Time: **17:21:44**

Temperatuer (°C): **25**

Humidity (%): **75**

Approved by:



Frequency (MHz) : **2450.00**

Antenna Polarity : **Vertical**

Average Value (dB) : **-11.20**

Maximum Value (dB) : **-8.24**

Maximum Value (degree) : **29**

Minimum Value (dB) : **-17.59**

Minimum Value (degree) : **234**



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Tested by : AARON  
EUT description :

Location: **RF Chamber3**

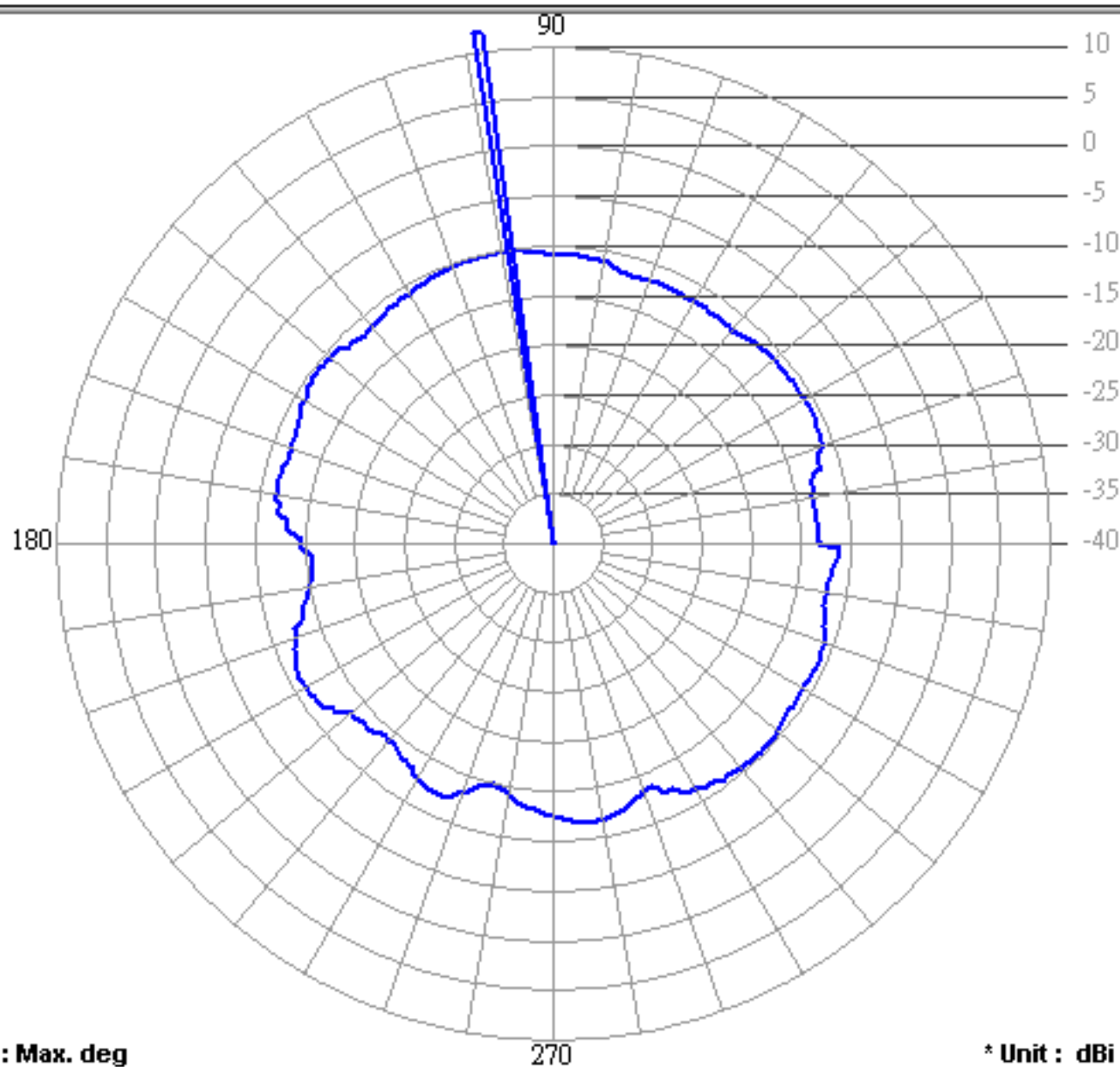
Date: **2006/7/4**

Time: **17:18:43**

Temperatuer (°C): **25**

Humidity (%): **75**

Approved by:



Frequency (MHz) : **2400.00**

Antenna Polarity : **Vertical**

Average Value (dB) : **-11.79**

Maximum Value (dB) : **-10.22**

Maximum Value (degree) : **98**

Minimum Value (dB) : **-15.73**

Minimum Value (degree) : **183**



Brand / Model : BM-396  
Remark : QPBWLD00202200AR  
Tested by : AARON  
EUT description :

Location: **RF Chamber3**

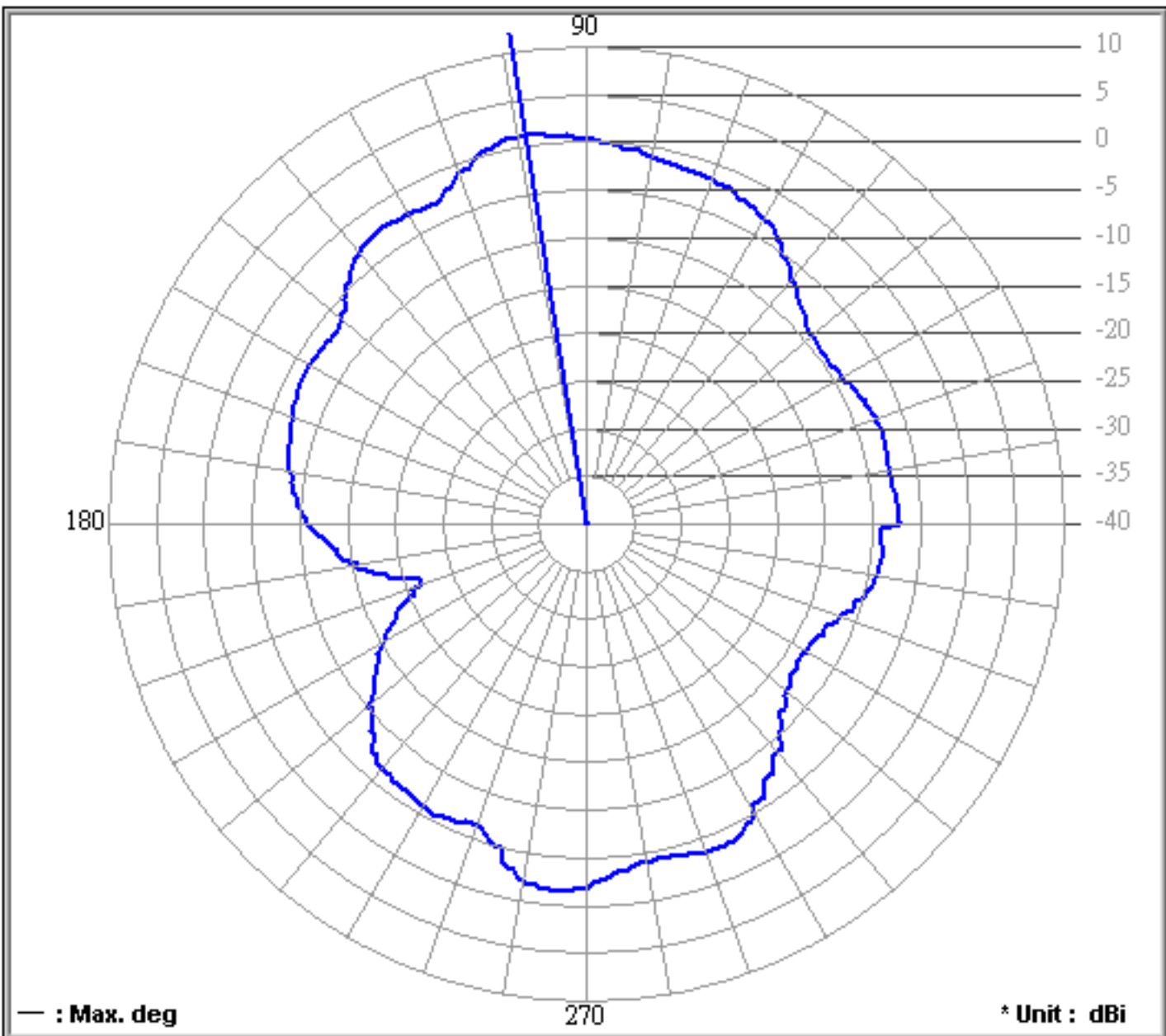
Date: **2006/7/4**

Time: **17:30:05**

Temperatuer (°C): **25**

Humidity (%): **75**

Approved by:



Frequency (MHz) : **2400.00**

Antenna Polarity : **Horizontal**

Average Value (dB) : **-4.87**

Maximum Value (dB) : **1.23**

Maximum Value (degree) : **99**

Minimum Value (dB) : **-21.68**

Minimum Value (degree) : **200**