

Bluetooth voice remote control User Manual

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4.1 概况 General information

目的 Purpose	本文档包含 AOC Q27G4XY 遥控器的要求 This document contains the requirements for the AOC Q27G4XY remote
产品特征概述 Product Main Feature	红外, 蓝牙, 语音 IR, BLE, Voice

4.2 外观规格 Visual specification

编号 No.	检验项目 Check Item	规格/说明 Description/Specification
1	外围尺寸 Overall dimension	Dim: 162.0 (L) x 43.2mm (W) x 20.7mm (H) (including key height)
2	外壳材质 Case material	ABS
3	导电胶材质 Rubber keypad material	Rubber
4	擦痕 Scratch	从 0.3 米远处观察无明显伤痕 No major scratch observed at 0.3m distance
5	总键数 Number of keys	21keys
6	装配 Assembly	整机内所有零件完全固定 No moving parts inside the unit
7	塑壳外观 Plastic visual	无明显伤痕, 裂缝, 污物和变形 No visual of scratch, crack, contamination and deformation
8	印刷外观 Printing visual	与图纸一致, 文字清晰无缺划、断裂、歪斜现象 Printings and Indications are the same as drawing

4.3 机械性能 Mechanical specification

编号 No.	检测项目 Check Item	规格/说明 Description/Specification
1	键操作力 Key operating force	2.5N±0.5N
2	按键行程 Key stroke	0.2~1.0mm
3	按键 Rubber key press	键在按下松开后能迅速弹起 Key should return fast after key released
4	导电胶强度 Rubber strength	以 3kgf 的力按下键并持续 3 秒钟, 导电胶无变化 No change after 3 seconds pressed with 3kgf
5	按键寿命 Key operating life	按键在 5N 下测试 30 万次后合格 Key should be okay after test it under 5N by 300,000 times
6	按钮操作手感 Button operating feel	按下按钮时有清晰的段落感 When pressing buttons, there shall have a clear click feeling
7	跌落测试高度 Drop Test Height	1M

8	压力测试 Compression strength	插入电池后, 用 100N 的力同时按压遥控器正反面 15 秒, 不影响外观和功能。 After inserting batteries, press both front and back of the remote with 100N force for 15 seconds, No impact with the appearance and function.
9	电池盖插拔寿命 Battery cover life	每分钟拔插电池盖 3 次, 连续拔插 100 次以上 Pull out and insert battery cover 3 times per minute for more than 100 times
10	产品重量 Weight	Appr.75g (Batteries excluded)
11	使用电池数量 No. of battery	2
12	电池种类 Battery Type	AAA

4.4 电气性能 Electronic specification

编号 No.	检验项目 Check Item	规格/说明 Description/Specification
1	载波频率 Carrier frequency	38KHz $\pm 2\%$
2	红外编码格式 Infrared coding format	NEC
3	工作电压 Operating Voltage	DC 2.4-3.2V
4	静态泄露电流 Leakage current	Standby current $\leq 10\mu\text{A}$ (Before BT Paired) Standby current $\leq 3\text{mA}$ (After BT Paired) Deep sleep current $\leq 35\mu\text{A}$
5	工作电流 Operating current	IR $\leq 40\text{mA}$ Bluetooth button $\leq 10\text{mA}$ Bluetooth Voice $\leq 15\text{mA}$
6	按键功能 Key Function	Refer to 6.2 the key code page
7	红外发射距离和角度 IR Range and angle	1. Straight line $40\mu\text{W}/\text{cm}^2$, distance $\geq 10\text{m}$ 2. RC side: $\pm 15^\circ$ (up and down, left and right) $20\mu\text{W}/\text{cm}^2$, distance $\geq 8\text{m}$ 3. RC side: $\pm 30^\circ$ (down, left and right) $\geq 5\text{m}$
8	蓝牙 RF 发射距离 RF range	1. Keys $\geq 10\text{m}$ 2. Voice $\geq 7.2\text{m}$
注:本规范不能作为最终评价标准。需要在客户提供主机后进行测试验证 Note: This specification cannot be used as the final evaluation standard. It needs to test and verify after the host was provided by customer.		

4.5 环境性能 Environmental specification

编号 No.	检验项目 Check Item	规格/说明 Description/Specification
1	工作温度 Operating Temperature	0°C~40°C
2	存储温度 Storage temperature	-25°C~60°C

5.可靠性试验 Reliability testing

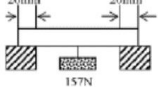
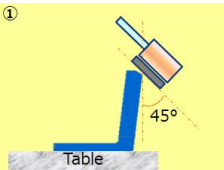
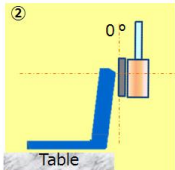
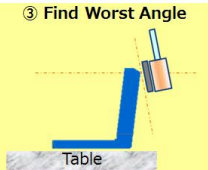
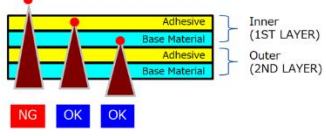
5.1 电气特性 Electrical Characteristics

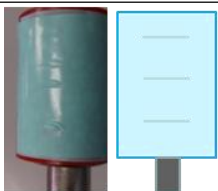
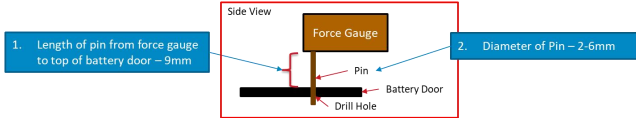
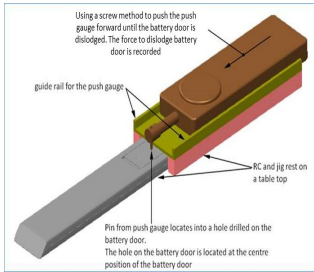
编号 No.	检验项目 Check Item	测试条件 Test condition	判定标准 Judgment
1	接触电阻 Contact Resistance	以按键中心荷重 200g, 导电树脂接触碳手指间距 1mm 测试 Load 200g at the center of the key and the conducting resin and button should be tested at intervals of 1mm	< 2000Ω
2	ESD 测试 Electric-Static Discharge Test	通过空气±15KV B 级和接触±8KV B 级 Pass AIR ±15KV Class B and Contact ±8KV Class B (IEC6100-4-2-2008 Level 4)	B、无功能故障, 无部件损坏。RC 必须在不移除电池或重置的情况下恢复到完全功能 Class B: No functional failures and no parts should suffer damage. RC must recover to full function without removal of batteries or reset

5.2 结构特性 Mechanical Characteristics

编号 No.	检验项目 Check Item	测试条件 Test condition	判定标准 Judgment
1	动作力 Operating Force	4mm 大头针按压测动作力 Press the key with a diameter 4mm pin and measure the operating force	2.5N±0.5N
2	回弹力 Return Force	直径 4mm 的针, 按下测量回力 Press the key with a pin of diameter 4mm and measure the return force	> 0.4N
3	按键与上盖匹配 Matching test of key and upper cover	与按键上、下、左、右周边位置施力1.0kgf, 持续1分钟 Apply 1.0kgf to upper, lower, left and right of the key for 1 minute	按键不能卡住上盖 The upper cover cannot get stuck by the key
4	过重测试 Overweight test	与按键中央垂直方向施力 29.4N(3.0kgf),持续 3 秒 Apply 29.4n (3.0kgf) in the vertical direction and in the center of the key for 3 seconds	不可有任何机构破坏及 PCB 不能有裂痕 No functional failures and no parts should suffer damage.
5	振动测试 Vibration test	垂直方向振动:频率30-50-30Hz 位移0.75mm,轴线扫频5 周期 Vibration in vertical direction: Frequency: 30-50-30hz	检查外观,PCB 及焊点不能有裂痕 No functional failures and no parts should suffer damage.

		Displacement: 0.75mm Axis frequency sweep 5 cycles	
6	按键寿命测试 Key life test	遥控器不装电池，按键同时以下列条件测试 (Keys: Up,Down,Left,Right,OK,Vol+/-,Ch+/-,Power,Home,Back) (1).动作力：200g (2).速度：80-90 次/分 (3).次数：300,000 次 Remote control without batteries and each key is tested under the following conditions at the same time (Keys: Up,Down,Left,Right,OK,Vol+/-,Ch+/-,Power,Home,Back): (1) Operating force: 200g (2) Speed: 80-90 times / minute (3) Times: 300,000 times 遥控器装入电池后，任选一键以下列条件测试 (1).动作力：200g (2).速度：20-30 次/分 (3).次数：100,000 次 Remote control with batteries and select any key to test under the following conditions: (1) Operating force: 200g (2) Speed: 20-30 times / minute (3) Times: 100,000 times	无功能故障，无部件损坏 No functional failures and no parts should suffer damage.
7	丝印附着力测试 Printing and Painting test	(1) 使用 Press-sensitive type, Brand Name: Eagle 胶带贴与文字印刷表面，且快速向上掀起胶带成 45 度；连续使用共 20 次 (1) Use tape (press-sensitive type, Brand Name: Eagle) to attach the surface of text printing, and quickly lift the tape up to 45 degrees; Repeat 20 times (2) 使用 95%酒精棉花加重力 500gf 来回擦拭印刷表面 200 次 (2) Use the cotton with 95% alcohol and load 500gf to wipe the printing surface 200 times (3)使用Pentel ZEH产品橡皮擦，加荷重500gf来回擦拭200次 (3)USE the eraser (Pentel ZEH) and load 500gf to wipe the printing surface 200 times	文字依然清晰 The text printing is still clear
8	跌落测试 Drop test	从 1.2m 高度自由跌落在木地板上(包含电池) 遥控器的跌落面应与冲击面平行，冲击面应水平、平坦、结实和坚硬,以致试验时不移动、不变形。试验时按所规定的试验面，按3→2→4→5→6→1顺序进行跌落 注：3(bottom)、2(face)、4(Left side)、5(Right side)、6(back)、1(eradiate side) 注：木板规格有待厂商确定，暂定合板/三夹板 (Plywood), 2.5cm厚 Fall on the wood board (including battery) from 1.2m height. The falling surface of the remote control shall be parallel to the impact surface. The impact surface shall be horizontal, flat, solid and hard, so that it will not move or deform during the test. Drop the test surface in the order	检查外观,PCB 及焊点不能有裂痕 No permanent damage and no functional failure allowed. Batteries and Battery Lid are allowed to fall out during the test.

		of 3 → 2 → 4 → 5 → 6 → 1 Note: 3 (bottom), 2 (face), 4 (left side), 5(right side), 6 (back), 1 (eradiate side) Note: The specifications of the wood board are subject to confirmation by the manufacturer and make a tentative arrangement to Plywood which thickness is 2.5cm	
9	电池盖开合测试 Battery cover opening test	电池盖安装/取出100次 Installed/removed the battery cover for 100 times.	1.容易安装不需要工具 2.外观不能有裂痕或断裂 3.盖子不可以容易脱落 1. Easy to install without tools 2. There shall be no crack or fracture on the appearance 3. The cover shall not fall off easily
10	电 池 插 拔 测 试 Battery Insertion	电池安装/取出100次,每次按电源键功能是否正常 Install/remove the battery 100 times. Press the power key every time to check whether the function is normal	确定电池电源是否导通,弹簧是否脱离 1. Confirm whether the battery power is on or off 2. Confirm whether the springs is off
11	静负荷强度测试 Static load test	在产品的上方和另一侧分别施加157N的力(静态),持续1分钟。 Load 157N force(static) to both the top side and the other side of a commander for 1 minute. 	1. 各功能运行正常 2. 无外观损伤(=裂纹) 3. 无 PCB 裂纹 1. All functions operate normally. 2. There is no cosmetic damage (=crack) 3. There is no PCB crack.
12	锐边测试 Sharp Edge Test	Tester Devices: 1. Tester : UL Approved Sharp Edge Tester SET-50. 2. Tape : Inner layer = 3M Japan Limited sole mat No. 5900 (Thickness = 0.06mm). Outer layer = 3M Japan Limited sole mat No. 5900 (Thickness = 0.06mm). Checking Method: ● Move the sharp edge tester back & forth over a distance 50mm (total distance 100mm). ● Mount the UL-prescribe red “tape cap” to the tip of sharp edge tester. ● The edge should be passed with any angle of sharp edge tester. At least, evaluate at 3 kinds of angle without Protection Film. ① 45° ② 0° ③ Worst Angle based on finger feeling at every time.   	锐边标准: 如果滑动后内层和外层都有割伤或裂口, 应将边缘剔除 ● Sharp Edge Criteria: If there is any cuts or splits on both inner & outer layers after sliding, the edge should be rejected. 

			
13	电池盖开启力 Battery door opening force	RC is fixed securely to a horizontal surface. A hole is drilled in the exact center of the battery door. Force gauge pin of diameter 2-6mm and length 9mm is inserted into the hole. Force gauge is placed on a movable jig. Using a screw method to push the push gauge forward until the battery door is dislodged. The force to dislodge battery door is recorded.  	

5.3 环境试验 Environmental Test

编号 No.	检验项目 Check Item	测试条件 Test condition	判定标准 Judgment
1	低温测试 Low temperature Test	遥控器不含电池在-25±2℃的环境中放置96小时，置于常温常湿1小时，然后1小时内测试 Without battery, put the remote control with -25±2℃ temperature and keep 96 hours, then take it to normal temperature and normal humidity for 1 hour, then check within 1 hour	无功能故障，无部件损坏 No functional failures and no parts should suffer damage.
2	高温测试 High temperature Test	遥控器不含电池在 60±2℃的环境中放置 96 小时，置于常温常湿 1 小时，然后 1 小时内检查 Without battery, put the remote control with 60±2℃ temperature and keep 96 hours, then take it to normal temperature and normal humidity for 1 hour, then check within 1 hour	无功能故障，无部件损坏 No functional failures and no parts should suffer damage.
3	温湿测试 Humidity test	遥控器装入电池，在 40±2℃，相对湿度 90-95%，放置 168 小时后，置于常温常湿 1 小时，然后 1 小时内测试 With battery, put the remote control with 40±2℃ temperature and relative humidity 90-95%, keep 168 hours, then take it to normal temperature and normal humidity for 1 hour, then check within 1 hour	无功能故障，无部件损坏 No functional failures and no parts should suffer damage.
4	温循环试验 Temperature cycles	遥控器不含电池，以下条件测试 (1)温度:-25℃~+70℃	无功能故障，无部件损坏 No functional failures and no parts

	test	(2)放置时间:-25°C2小时, +70°C2小时, 10次循环 (3)置于常温常湿1小时, 然后在1小时内测试 Without battery and test the remote control under the following conditions (1) Temperature: - 25°C ~ + 70°C (2)Time : - 25°C 2 hours, + 70°C 2hours,cycle 10 times (3) Take it to normal temperature and normal humidity for 1 hour, then check within 1 hour	should suffer damage.
5	电池弹片盐雾测试 Salt spray test of battery spring	以 5% 的盐水浸泡 72 小时 Soak in 5% Salt water for 72 hours	未出现生锈现象 No rust
6	耐液体测试 Liquid test	在 RC 上倒入 50ml 液体。立即转动 RC, 以使大多数液体被清除, 并使用纸巾或布吸收掉残留在间隙中的液体污渍。5 分钟后测试产品。在室温下干燥 48 小时, 然后再次测试产品。 Pour 50ml of liquid over the RC. Immediately turn the RC in such way that most liquid will be removed and using tissue paper or cloth to absorb out the liquid stain that is residual in the gap. Test the product after 5mins. Dry it for 48 hours at room temperature, then test the product again. Liquids to be tested: 1. 5% salt water 5%盐水 2. Edible Oil 食用油 3. 60°C water 60°C水 4. Coffee. 咖啡 	RC 必须在测试期间正常工作 RC must be functional during tests.

6.1 产品外观 Product Artwork



Top part black, Silk printing ☐ white

Bottom part black, No silk printing

Battery cover black, No silk printing

Rubber keypad black, white; Silk printing (Except marking) white ☐

6.2 码值表 Keycode Table

Model:Q27G4XY , BT Name:MNT21-B1 (BT+IR+Voice- google protocol, Pairing launch combination: HOME+BACK) RCU Chipset: RTL8762ERF							
Buttom Number	Button	Button Function	Icon	Usage Page	HID Usage ID	NEC IR (Custom code: 0x8877)	Remote Button Image
1	POWER	Power		//	//	0x21	
2	MUTE	Mute		0x0C	0x0E2	0x25	
3	PROFILE_SWITCH	Profile		0x0C	0x19C	0x59	
4	Google Assitant	Assistant		0x0C	0x221	0x46	
5	NOTIFICATION(Dashboard)	Dashboard		0x0C	0x09F	0x10	
6	DPAD_UP	UP		0x0C	0x042	0x15	
7	DPAD_LEFT	LEFT		0x0C	0x044	0x17	
8	DPAD_CENTER	OK	OK	0x0C	0x041	0x19	
9	DPAD_RIGHT	RIGHT		0x0C	0x045	0x18	
10	DPAD_DOWN	DOWN		0x0C	0x043	0x16	
11	BACK	Back		0x0C	0x224	0x48	
12	Home	Home		0x0C	0x223	0x47	
13	TV_INPUT	Source		0x0C	0x1BB	0x60	
14	SHOWCUT	RTK Quick Access		0x0C	0x2F2	0xC2	
15	Dial_point/Game Model	Dial_point/Game Model		0x0C	0x2F1	0xC1	
16	VOLUME_DOWN	Vol-		0x07	0x081	0x24	
17	VOLUME_UP	Vol+		0x07	0x080	0x23	
18	BUTTON_3(YouTube)	YouTube		//	//	0x64	
19	BUTTON_4(Netflix)	Netflix		//	//	0x63	
20	BUTTON_2(Amazon)	Prime Video		0x0C	0x076	0x1F	
21	ALL APPS	Google All Apps		0x0C	0x1A2	0x57	
Group Key	BACK+OK	Bug Report		N/A	N/A	0x96	
Group Key	BACK+DOWN	Talkback		N/A	N/A	0xD0	

FCC STATEMENT

1. 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.

2. any Changes or modifications 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.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

DÉCLARATION DE LA FCC

1. Cet appareil est conforme à la partie 15 des règles de la FCC. L'exploitation est soumise aux deux conditions suivantes :

(1) Cet appareil ne peut pas causer d'interférences nuisibles, et (2) Cet appareil doit accepter tout le brouillage reçu, y compris le brouillage qui peut causer un fonctionnement indésirable.

2. Tout changement ou modification non expressément approuvé par la partie responsable de la conformité pourrait annuler le pouvoir de l'utilisateur d'utiliser l'équipement.

REMARQUE : Cet équipement a été testé et déclaré conforme aux limites d'un numérique de classe B conformément à la partie 15 des règles de la FCC.

Ces limites sont conçues pour fournir une protection raisonnable contre les interférences préjudiciables dans un installation résidentielle.

Cet équipement génère, utilise et peut émettre de l'énergie radiofréquence et, s'il n'est pas installé et utilisé conformément aux instructions, peut provoquer des interférences nuisibles aux communications radio.

Cependant, il n'y a aucune garantie que des interférences ne se produiront pas dans une installation particulière.

Si cet équipement provoque des interférences nuisibles à la réception de la radio ou de la télévision, ce qui peut être déterminé en éteignant et en rallumant l'équipement, l'utilisateur est encouragé à essayer de corriger le l'interférence d'une ou de plusieurs des mesures suivantes :

Réorientez ou déplacez l'antenne de réception. Augmenter la distance entre l'équipement et récepteur. Branchez l'équipement sur une prise sur un circuit différent de celui auquel le récepteur est connectée. Consultez le revendeur ou un technicien radio/TV expérimenté pour obtenir de l'aide.

Déclaration d'exposition aux rayonnements de la FCC

Cet équipement est conforme aux limites d'exposition aux rayonnements de la FCC établies pour un environnement.

ISED Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

L'appareil a été évalué pour répondre aux exigences générales d'exposition aux RF. L'appareil peut être utilisé dans des conditions d'exposition portable sans restriction.