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PRODUCT SPECIFICATIONS

Project Name : BlueSky2

Product Applications : Bluetooth Headset

Market Segment : Universal

Customer : TBC

Model Number : BSH-6300 Series

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Sign				
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SCOPE OF THIS DOCUMENT

This document comprises product specifications for the BlueSky Bluetooth Headset; its features, electrical specifications Man-Machine Interface and certifications acquired. All specifications are subject to change without prior notice.

1. INTRODUCTION

The BlueSky Bluetooth Headset offers users a unique, wireless experience using Bluetooth wireless technology. It is a model of efficiency, offering hands-free, wireless connections between most phones. The headset's compact over-the-ear style adds convenience and comfort.

The headset is Bluetooth v2.0 compliance and is compatible with most of the Bluetooth enabled mobile phones. It is backward compatible with audio devices with v1.2 or earlier. Its operation range is up to 10m (open space); operating power mode is Class 2 (0-4dBm). It should have more than 9hrs talk-time and more than 240hrs of standby-time.

The Li-Poly battery in the headset is self-contained; service-center replaceable. It uses a universal traveler adaptor, charging via mini-USB connector. For optimal use, it should reach full charge within 2.5hrs.

The Man-Machine Interface (MMI) is combination of 3-button and 2-color LED display. The features supported are Call Reject, Call Wait, Call Hold, Call Swap, Conference Call, Voice Dial and Last Number Redial.

2. APPEARANCE

3. GENERAL SPECIFICATIONS

- **Bluetooth Compliance : Bluetooth Specifications version 2.0**

- **Chipsets : CSR, BlueCore4-AudioROM or equivalent**
- **Supported Profiles : Headset and Handsfree**
- **Frequency Band : 2.4GHz ISM Spectrum; frequency hopping 79 channels**
- **Modulation : GFSK (Gaussian Frequency Shift Keying); 1 Mbps**
- **RF Power : Class 2, 0-4dBm**
- **Receivers Sensitivity : -82dBm at 0.1% BER**
- **Operating Range : Up to 10m (Line-Of-Sight)**
- **Talk Time : Up to 15hrs**
- **Standby Time : Up to 200hrs**
- **Connection : Point-to-Point**
- **Security : Security mode 3 (pairing, encryption, authentication)**
- **Power Source : Rechargeable Li-Polymer 180mAh; replaceable**
- **Charging : Universal Adaptor 5V/180mA; charging time up to 2.5hrs**
- **Compatibility : Mobile phones support Bluetooth v1.1(and above); Headset and/or Handsfree profiles**
- **Dimension : 59.0Lx19.5Wx12.0H mm**
- **Weight : 16.0g (with ear-hook)**

4. FEATURES LISTS

The headset supports the following functions:

- **Call Receive : Accept incoming call**
- **Call End : End an active call**
- **Call Transfer : Transfer active call from headset to phone; and vice verse**
- **Call Reject : Reject an incoming call**
- **Mic Mute : Muting the headset microphone**
- **Voice Dial : Support voice dialing**
- **Last Number Redial : Redial last called number**
- **Volume Adjust : Volume control increase/decrease in step**
- **Low Battery Indication : Emits 3 short beeps tone at 20 sec interval and flash LED when low battery level**

5. MAN-MACHINE INTERFACE (MMI)

There are 3 buttons on the headset: one multi-functional button for on/off, making/receiving call, transfer call, call wait and etc. The other two buttons for volume control. There are 2 LEDs (2-color

LED) on the headset, a red and blue/green; these are used to indicate the different states of the headset. In addition, audible beeping tones from the earpiece.

BlueSky is interchangeable with various chipsets solution from CSR; i.e., the MROM-based standard headset chip or Flash-based BC3-Audio Flash and BC4-Audio Flash chip. The MMI differ accordingly:

User State		Button Press			LED Indicator		Audible
Current	Next Action/Status	MFB	Vol+	Vol-	Blue	Red	Tone
OFF	To Power On/Standby	Hold 2s			Flash 3x		Medley
ON/Stand by	To Power Off	Hold 5s				Flash 3x	Medley
ON/Stand by	To Pairing	Hold 2s		Hold 2s	Blue Flash 3x; alternate Red/Blue for 2mins		Beep 1x
Pairing	Pairing Passed				Flash 3x		
Pairing	Pairing Failed/Timeout						Beep Long
Standby	Connected to Phone						Beep 2x
Standby	Disconnected from Phone						Beep Long
Standby	To Make Call; from phone	Follow normal ways on phone keypads					
Standby	To Make Call; voice dial	Once			After Beep tone; say voice tag		
Standby	To Make Call; last number redial	Hold 2s					Beep 1x
Standby	To Swap Phones (1)	Once		Once			Beep 1x
Call Incoming	To Answer	Once upon ring tone					Ring tone
	To Answer; from phone	Follow normal ways on phone; talk on phone					
Call Incoming	To Reject	Hold 2s upon tone					Ring tone
Talk	To End Call	Once					Beep 1x
Talk	To Transfer between Headset		Hold 5s				Beep 1x

	and Phone; vice verse						
Talk	To Mute / Unmute Call	Once	Once				Beep 1x; beep/20s
Talk	To Hold / Unhold Call			Hold 2s			Beep 1x
Hold	To Make Another Call	Make call from phone; 2 active calls					
Talk	To Call Wait (answer 2nd call)			Hold 2s			Beep 1x
Talk	To Swap Calls			Hold 2s			Beep 1x
Talk	To Conference Calls		Hold 2s				Beep 1x
Standby/Talk	To Increase Volume		Once/step				Beep 1x
Standby/Talk	To Decrease Volume			Once/ step			Beep 1x
Standby/Talk	Low Battery					Flash/4s	Beep 3x /30s

5.1. Function Key Definition:

Function Key	Item	Function	Mode	Operation
Multifunction Button (MFB)	1 button	Power On	Off	Hold MFB for 2s
		Power Off	Standby	Hold MFB for 5s
		Pairing	Standby	Hold MFB & Vol- for 2s
		Swap Phone	Standby	Press MFB & Vol- Once
		Last No. Redial	Standby	Hold MFB for 2s
		Voice Dial	Standby	Press MFB Once
		Answer Call	Standby	Press MFB Once
		Reject Call	Standby	Press MFB Once
		End Call	Talk	Press MFB Once
		Mute/Unmute Call	Talk	Press MFB & Vol+ Once

Volume Up (Vol+)	1 button	Increase Volume	Standby/Talk	Press Vol+ Once/step
		Transfer Call	Talk	Hold Vol+ for 5s
		Conference Call	Talk	Hold Vol+ for 2s
Volume Down (Vol-)	1 button	Decrease Volume	Standby/Talk	Press Vol- Once/step
		Hold/Unhold Call	Talk	Hold Vol- for 2s
		Call Wait	Talk	Hold Vol- for 2s
		Swap Call	Talk	Hold Vol- for 2s
Alert Tone		Refer MMI table above		
Passkey Code		Default “0000”; pre-programmed at factory		

5.2. Operation Indication:

Operation Mode	Visual Indication	Audio Indication
Power On	Blue LED flashes 3x	Medley tone
Power Off	Red LED flashes 3x	Medley tone
Standby	Blue LED flashes once every 4s	None
Pairing	Blue LED flashes 3x; follows by alternating Red/Blue for 2mins	1 short beep tone
Pairing – Passed	Blue LED flashes 3x	None
Pairing - Failed/Timeout	None	1 long beep tone
Connected to Phone	Blue LED flashes 2x every 4s	2 short beep tone
Disconnected from Phone	Blue LED flashes once every 4s	1 long beep tone
Make Call – Phone key in	None	None
Make Call – Last Number Redial	None	1 short beep tone
Make Call - Voice Dial	None	Speak after 1 beep tone
In Coming Call	None	Ring Tone
Talk (Conversation)	Blue LED flashes 2x every 4s	None
Swap Call, Hold, Un-Hold, Call Waiting	None	1 short beep
Conference Call(1)	None	1 short beep
Swap Phone(1)	None	1 short beep
Volume Increase/Decrease	None	1 short beep per step
Volume Maximum/Minimum	None	2 short beep tone
Microphone Mute	None	1 short beep every 20s

Low Battery	**Below 3.4V Red LED flashes 3 short beeps at 30s interval; auto power off when voltage falls below 3.0V**	**Medley tone every 1min**
Charging	**Red LED on**	**None**
Charging complete (full)	**Red LED off**	**None**

Note: Short beep approx. 0.5s, long beep approx. 1.0s

6. OPERATION PROCEDURE

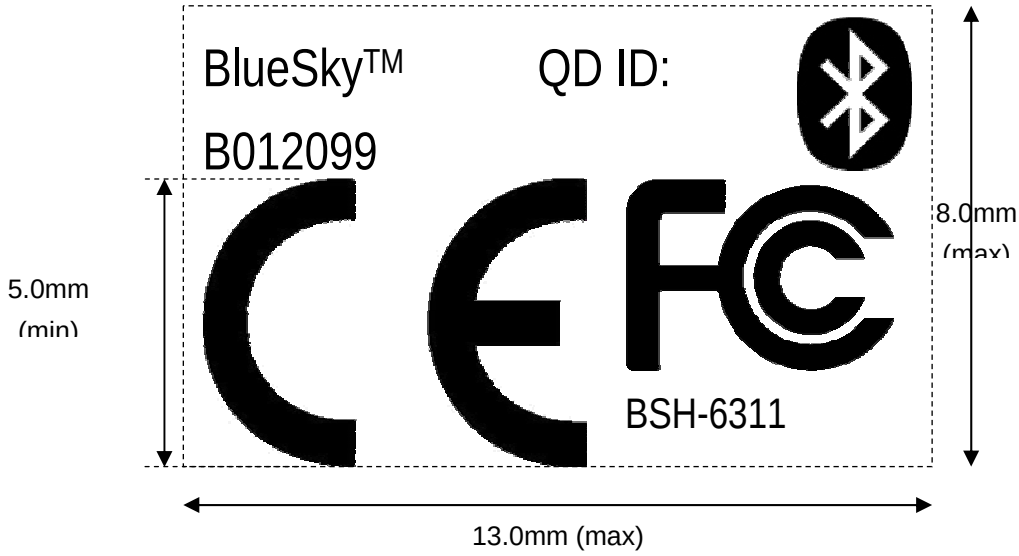
Function	Actions	Result
Power On	**From Off state, press and hold MFB for 2s**	**Blue LED flashes 3x; follows by medley tone. Device goes to standby mode, Blue LED continues flashing every 4s**
Power Off	**In standby, press and hold MFB for 5s**	**Red LED flashes 3x; follows by medley tone**
Pairing	**1. In standby, press and hold MFB & Vol- for 2s**	**Blue LED flashes 3x; follows by Red/Blue flashes alternatively for 2mins**
	2. Perform device discovery from phone	
	3. Search devices from phone	**It may take a few seconds to discover all devices within vicinity**
	4. Select device from phone	**It may take a few seconds to make connection**
	5. Enter passkey “0000”, then “OK” to pair the headset with the phone	**The device ID is stored in the phone device listing. Blue LED flashes 3x indicates pairing success**
Pairing Failed/Timeout	**Devices not paired within 2mins time frame**	**A long beep tone; device in standby mode**
Making Call	**From phone; follow normal ways on phone keypads**	
	Last number redial; press and hold MFB for 2s	**A short tone follows by dialing (last dialed no.)**

	Via voice activation; press MFB once, follows by voice tag after a short tone	A short beep tone prompt the user to speak the voice tag (the person user wishes to call). The phone finds the entry and place the call
Answer Incoming Call	From phone; follow normal ways on phone	Talk on phone
	Using headset, press MFB once after hearing the ring tone from the headset	Ring tone stops and talk via headset
Reject Incoming Call	Wait for the ring tone in the headset; press and hold MFB for 2s	Ring tone stops and device goes to standby mode
Ending Call	Drop an active call by pressing the MFB once; or via phone key in the normal way	Call ends and device goes to standby mode
Transferring Call	During an active call, press and hold Vol+ for 5s	After a short beep tone, call transfers from headset to phone; or vice verse
Mute Call	During an active call, press MFB & Vol+ once	After short beep tone, headset mic muted;
Unmute Call	To unmute active call, press MFB & Vol+ once	After short beep tone, headset mic activated
Increase Volume	Press Vol+ repeatedly till desired volume level	A short beep tone with volume increases at 5dB per step; 2 short beep tone while reaching maximum volume level. Total 6 levels
Decrease Volume	Press Vol- repeatedly till desired volume level	A short beep tone with volume decreases at 5dB per step; 2 short beep tone while reaching minimum volume level. Total 6 levels

7. ACOUSTIC SPECIFICATIONS

- **Transmitter : Level : 114dB+/-3dB at 0.387 1kHz Sine Wave**
  Frequency response: reference sample +/-4dB
- **Receiver : Level : 105dB+/-4dB (level 3) at 1kHz**
  Frequency response: reference sample +/-4dB

8. MARKING ON HEADSET



9. CHARGER SPECIFICATIONS

The output voltage shall be statically regulated for all combinations of load, line and environmental conditions; including cross regulations.

General Specifications:

- **Nominal Input Voltage:110/220Vac @50/60Hz**
- **Input Current : 90mAac @220Vac**
- **Input Voltage Range : 90-264Vac @47-63Hz**
- **Nominal Output Voltage : 5.0-5.8Vdc; at 90-264Vac, Io: 0-180mA**
- **No Load Output Voltage : 5.6Vdc; at 220Vac, Io: 0mA**
- **Full Load Output Voltage : 5.3Vdc; at 220Vac, Io: 180mA**
- **Output Current Limit : 500mA (max)**
- **Max. Line Regulation : 3%; at 90-264Vac @50/60Hz, Io: 0-180mA**
- **Max. Load Regulation : 7%; at 90-264Vac @50/60Hz, Io: 0-180mA**
- **Insulation Resistance : >10Mohm at 500Vdc**
- **Dielectric Strength (Hi-Pot) : Primary to Secondary, 3kVac, cut-off current: 10mA**

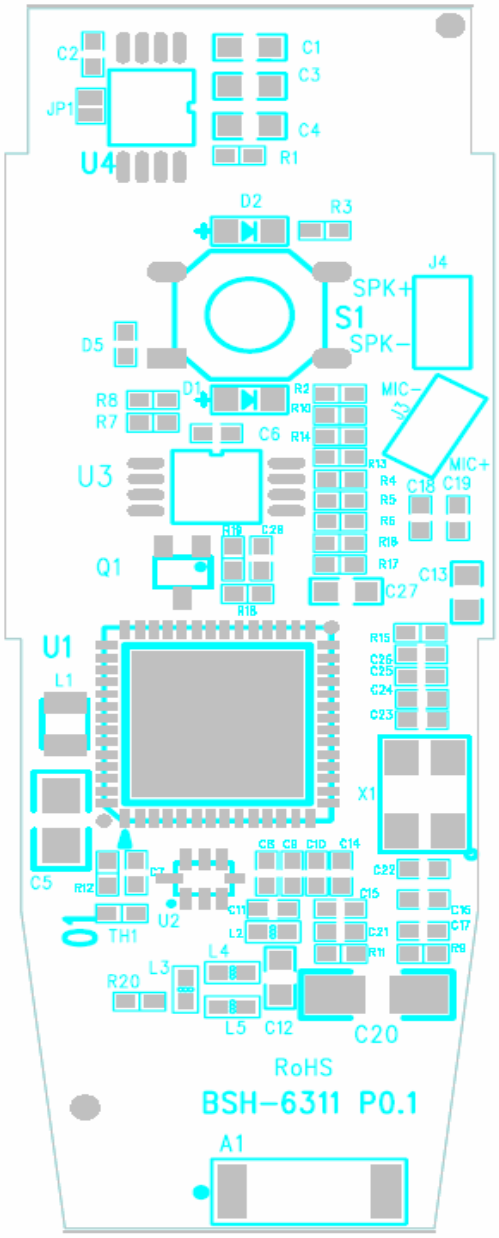
Device Under Charging

Condition	Voltage Output	Charging Current

Charging	**5V+/-0.25Vdc**	**100mA+/-10mA(2)**
Trickle Charge	**5V+/-0.25Vdc**	**30mA+/-5mA**
Full Charge	**5V+/-0.25Vdc**	**0mA**

Note (2): Applicable for BSH-6306

10. PCB SILKSCREEN



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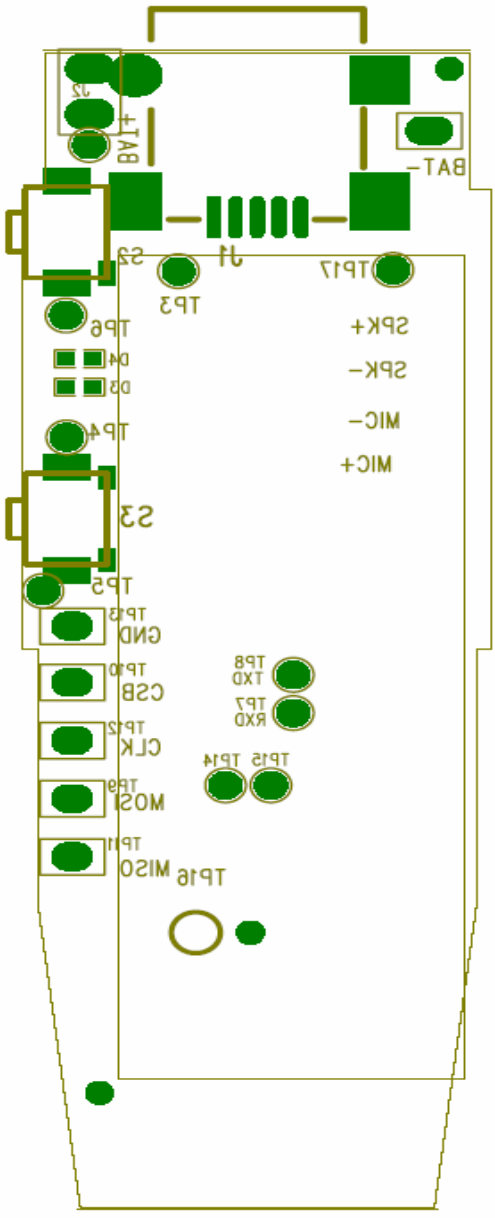
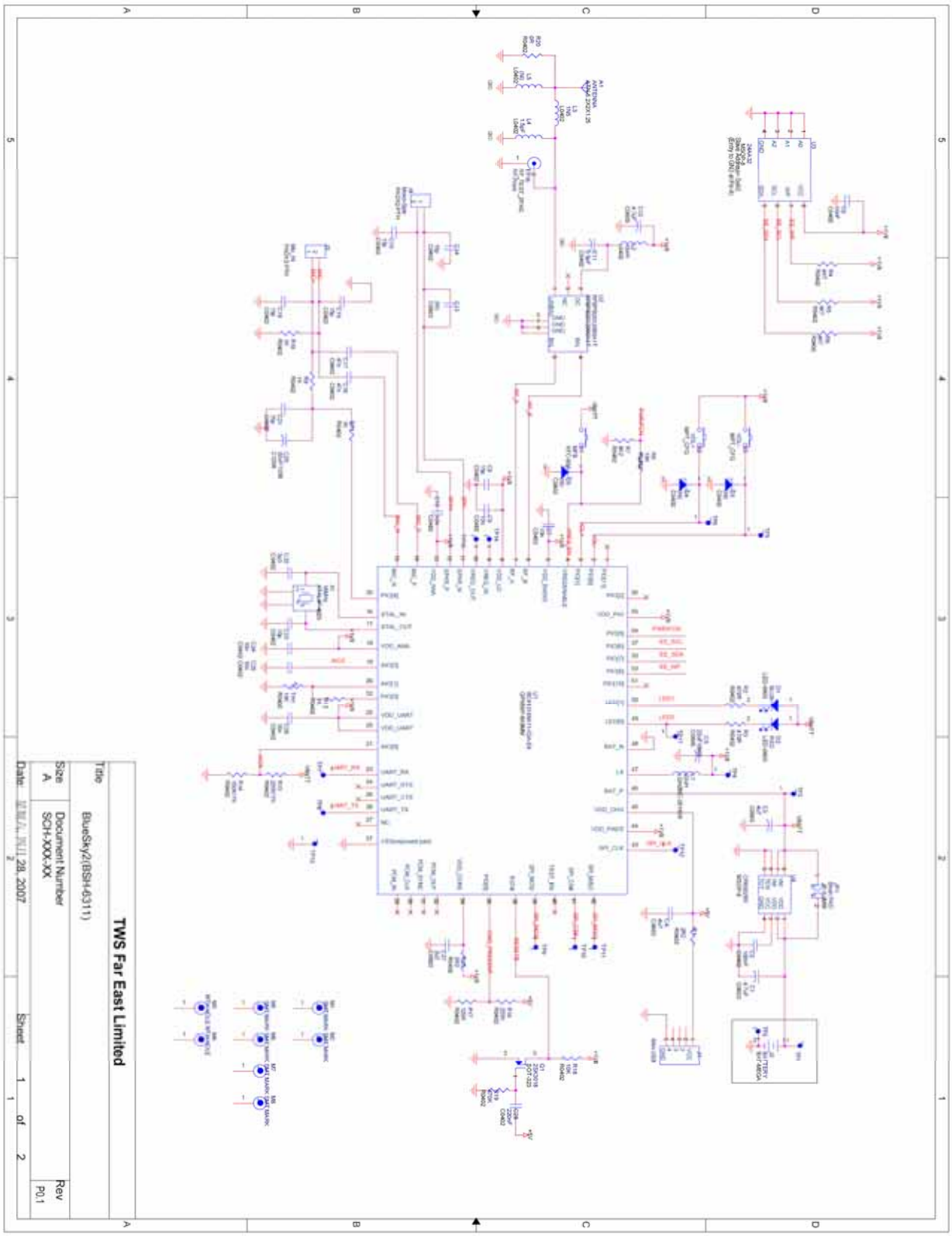
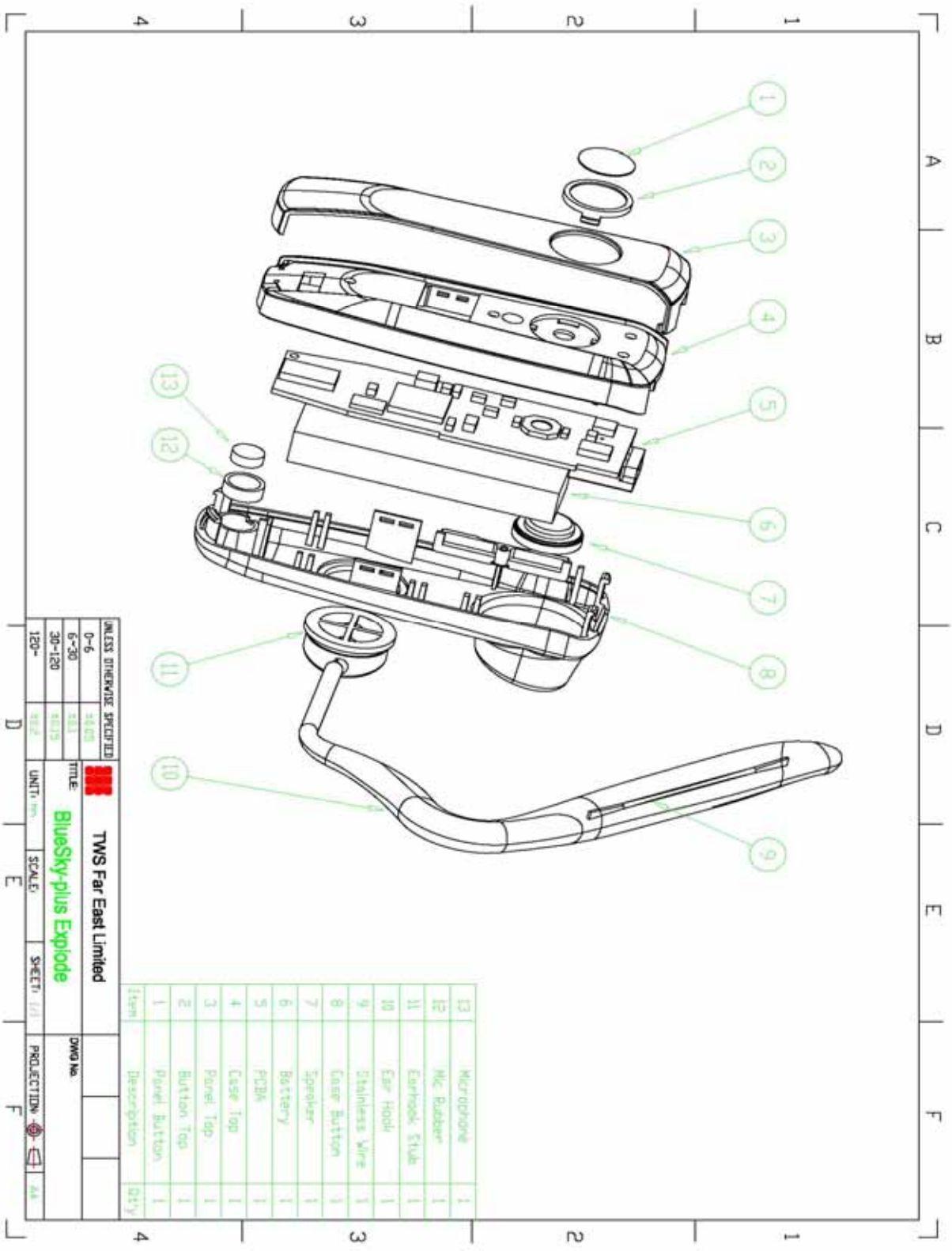


Bottom Layer

11. CIRCUIT DIAGRAM



12. MECHANICAL DIAGRAM