Test Report

Report No.: CQASZ170401373E-07

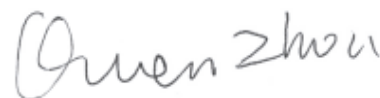|	
Test Description:	**Bluetooth Profile Interoperability Test Report for HFP**
Product/Design Name:	**BLUETOOTH® HEADSET**
Product/Design ID:	**S570, Sxy0(x=5~6,y=0~9), Kx,(x=1~30), S530PLUS , S8xy,(x=0~3,y=0~9), Xy,(y=6~30), S520-TWS，S530PLUS-TWS, S560-TWS, S570-TWS, S590-TWS, Xz-TWS,(z=5~20), EW-BE002, EW-BE010, EW-BE011, EW-BE013, EW-ZR030**
Trademark:	
Applicant:	**Shenzhen KeYueDuo Intelligent Electronics Co., Ltd.**
Manufacturer:	**Shenzhen KeYueDuo Intelligent Electronics Co., Ltd.**
Test Specification:	**Bluetooth Profile Specification Version 1.6 - Hands-Free Profile Bluetooth Hands-Free Profile (HFP) Test Specification: HFP.TS.1.7.1**

Test Report Prepared by..

               Name Aaron Wu

Test Report Reviewed by...

               Name Owen Zhou

Bluetooth® Profile Interoperability Test Report

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1 General Information

1.1 General

1.1.1 Administrative data of Test Facility

Test Facility   Shenzhen Centre Quality Accreditation Technology Co., Ltd.

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1.1.2 Administrative data of Applicant

Applicant: Shenzhen KeYueDuo Intelligent Electronics Co., Ltd.

Applicant Address: F-4, Bldg.A, LiJiaFa Ind. Garden, XinTang Ind. Area, BaiShiXia E., FuYong
                          Sub-dist., Bao'an Dist., Shenzhen, Guangdong, China

Responsible Person: Ruizhi Yang

Phone Number :   +86 18033442650

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1.1.3 Administrative data of EUT Manufacturer

EUT Manufacturer: Shenzhen KeYueDuo Intelligent Electronics Co., Ltd.

Manufacturer Address: F-4, Bldg.A, LiJiaFa Ind. Garden, XinTang Ind. Area, BaiShiXia E., FuYong
                          Sub-dist., Bao'an Dist., Shenzhen, Guangdong, China

Responsible Person: Ruizhi Yang

Phone Number :   +86 18033442650

Fax :

Email :   john.yang@keyueduo.com

1.2 Description of EUT

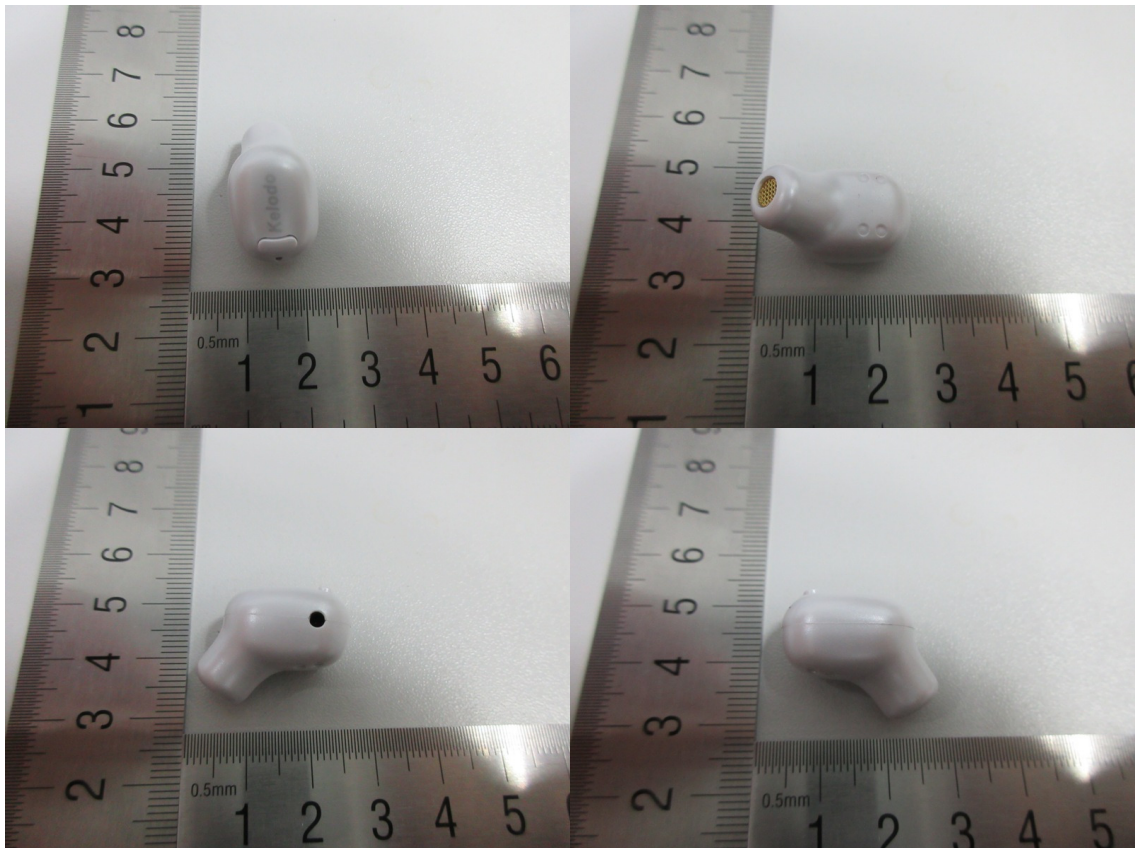**Product name:**   BLUETOOTH® HEADSET

Product description: BLUETOOTH® HEADSET

Product ID/Model: S570, Sxy0(x=5~6,y=0~9), Kx,(x=1~30), S530PLUS , S8xy,(x=0~3,y=0~9), Xy,(y=6~30), S520-TWS，S530PLUS-TWS, S560-TWS, S570-TWS, S590-TWS, Xz-TWS,(z=5~20), EW-BE002, EW-BE010, EW-BE011, EW-BE013, EW-ZR030

Hardware Version: V1.1

Software Version: V1.1

Photos of Product:

2   Summary List of All Test Cases

No	TC identifier	Description	Verdict	Comments
		Hands-Free Profile		
1	TP/OOR/BV-01-I	AG reconnects to HF	Pass	Refer to PTS
2	TP/OOR/BV-02-I	HF reconnects to AG	Pass	Refer to PTS
3	TP/TRS/BV-01-C	Transfer registration status	Pass	Refer to PTS
4	TP/PSI/BV-01-C	Transfer signal strength indication	N/A	
5	TP/PSI/BV-02-C	Transfer roaming status indication	N/A	
6	TP/PSI/BV-03-C	Transfer roaming status indication	N/A	
7	TP/PSI/BV-04-I	Query Operator Selection	N/A	
8	TP/PSI/BV-05-I	Transfer roaming status indication - Roaming function not supported	N/A	
9	TP/ACS/BV-01-I	HF is IUT, HF Initiated, AG is SCO only	N/A	
10	TP/ACS/BV-02-I	AG is IUT, AG Initiated, HF is SCO only	N/A	
11	TP/ACS/BV-03-I	HF is IUT, AG Initiated, AG is SCO only	Pass	Refer to PTS
12	TP/ACS/BV-04-I	AG is IUT, HF Initiated, HF is SCO only	N/A	
13	TP/ACS/BV-05-I	HF is IUT, HF Initiated, AG has eSCO	N/A	
14	TP/ACS/BV-06-I	AG is IUT, AG Initiated, HF has eSCO	N/A	
15	TP/ACS/BV-07-I	HF is IUT, AG Initiated, AG has eSCO	Pass	Refer to PTS
16	TP/ACS/BV-08-I	AG is IUT, HF Initiated, HF has eSCO	N/A	
17	TP/ACS/BV-09-I	HF is IUT, HF Initiated, AG has eSCO allows only SCO	N/A	
18	TP/ACS/BV-10-I	AG is IUT, AG Initiated, HF has eSCO allows only SCO	N/A	
19	TP/ACS/BV-11-I	AG is IUT, HF Initiated eSCO with 18ms latency	N/A	
20	TP/ACS/BV-12-I	HF is IUT, AG Initiates eSCO with 18ms latency	Pass	Refer to PTS
21	TP/ACS/BI-13-I	HF is IUT, AG Initiates eSCO with invalid bandwidth	Pass	Refer to PTS
22	TP/ACS/BI-14-I	AG is IUT, HF Initiates eSCO with invalid bandwidth	N/A	
23	TP/ACS/BV-15-I	HF is IUT, AG Initiates eSCO with S4 Settings	N/A	
24	TP/ACS/BV-16-I	AG is IUT, HF requests eSCO with S4 Settings	N/A	
25	TP/ACS/BV-17-I	HF is IUT, HF requests eSCO over Secure Connections	N/A	
26	TP/ACS/BV-18-I	AG is IUT, AG Initiates eSCO over Secure Connections	N/A	
27	TP/ACR/BV-01-I	Audio release - HF initiated	Pass	Refer to PTS
28	TP/ACR/BV-02-I	Audio release - AG initiated	Pass	Refer to PTS
29	TP/CLI/BV-01-I	Caller ID	N/A	
30	TP/ICA/BV-01-I	Answer incoming call HF - inband ring	Pass	Refer to PTS
31	TP/ICA/BV-02-I	Answer incoming call HF - inband setting	Pass	Refer to PTS
32	TP/ICA/BV-03-I	Answer incoming call HF - ring muting	N/A	
33	TP/ICA/BV-04-I	Answer incoming call HF - no inband ring	Pass	Refer to PTS
34	TP/ICA/BV-05-I	Answer incoming call HF - no inband ring +	Pass	Refer to PTS

		Hands-Free Profile		
No	**TC identifier**	**Description**	**Verdict**	**Comments**
		audio connection		
35	TP/ICA/BV-06-I	Answer incoming call AG	Pass	Refer to PTS
36	TP/ICR/BV-01-I	Reject incoming Call from HF	Pass	Refer to PTS
37	TP/ICR/BV-02-I	Reject incoming Call from AG	Pass	Refer to PTS
38	TP/TCA/BV-01-I	Terminate a Call - HF terminated	Pass	Refer to PTS
39	TP/TCA/BV-02-I	Terminate a Call - AG terminated	Pass	Refer to PTS
40	TP/TCA/BV-03-I	Terminate a Call - Remote party terminated	Pass	Refer to PTS
41	TP/TCA/BV-04-I	Outgoing Call Abandon from HF	Pass	Refer to PTS
42	TP/TCA/BV-05-I	Terminate Ongoing Call - While Call Waiting	N/A	
43	TP/TCA/BV-06-I	Terminate a Call - AG terminated NO CARRIER	N/A	
44	TP/ATH/BV-03-I	HF Initiated Audio Transfer to the HF - No SLC	N/A	
45	TP/ATH/BV-04-I	HF Initiated Audio Transfer to the HF - SLC	N/A	
46	TP/ATH/BV-05-I	AG Initiated Audio Transfer to the HF - No SLC	Pass	Refer to PTS
47	TP/ATH/BV-06-I	AG Initiated Audio Transfer to the HF - SLC]	Pass	Refer to PTS
48	TP/ATA/BV-01-I	AG initiated Audio transfer to the AG	Pass	Refer to PTS
49	TP/ATA/BV-02-I	HF initiated Audio transfer to the AG	N/A	
50	TP/OCN/BV-01-I	Place call - phone number	N/A	
51	TP/OCM/BV-01-I	Place call - memory	N/A	
52	TP/OCM/BV-02-I	Place call - no number at memory location	N/A	
53	TP/OCL/BV-01-I	Place call - last number	N/A	
54	TP/OCL/BV-02-I	Place call - No last number stored in the AG	N/A	
55	TP/TWC/BV-01-I	3 Way - Call waiting- User Busy	N/A	
56	TP/TWC/BV-02-I	3 Way - Drop Active/Retrieve Waiting Call	Pass	Refer to PTS
57	TP/TWC/BV-03-I	3 Way - Hold Active/Retrieve Waiting Call or Held	Pass	Refer to PTS
58	TP/TWC/BV-04-I	3 Way - Join Calls	N/A	
59	TP/TWC/BV-05-I	3 Way - HF Initiated	N/A	
60	TP/TWC/BV-06-I	3 Way - Explicit Call Transfer	N/A	
61	TP/CIT/BV-01-I	Incoming call interrupted - call terminated	Pass	Refer to PTS
62	TP/ENO/BV-01-I	EC/NR OFF - AG supports EC/NR	Pass	Refer to PTS
63	TP/ENO/BV-02-I	EC/NR OFF - AG doesn't support EC/NR	N/A	
64	TP/VRA/BV-01-I	Voice recognition activation HF	N/A	
65	TP/VRA/BV-02-I	Voice recognition activation AG	N/A	
66	TP/VRA/BI-01-I	Voice Recognition Activation from AG to HF Not Supported	N/A	
67	TP/VRD/BV-01-I	Voice recognition deactivation	N/A	
68	TP/VTG/BV-01-I	Phone number/voice tag - AG accepts	N/A	
69	TP/TDC/BV-01-I	Transmit DTMF	N/A	
70	TP/RSV/BV-01-I	Speaker vol ctrl - remote/local	N/A	
71	TP/RSV/BV-02-I	Speaker vol ctrl - remote	N/A	
72	TP/RSV/BV-03-I	Speaker vol ctrl - store settings	N/A	

Hands-Free Profile

No	TC identifier	Description	Verdict	Comments
73	TP/RMV/BV-01-I	Micro gain ctrl - remote/local	N/A	
74	TP/RMV/BV-02-I	Micro gain ctrl - remote	N/A	
75	TP/RMV/BV-03-I	Micro gain ctrl - store settings	N/A	
76	TP/ECS/BV-01-I	Query List of Current Calls	N/A	
77	TP/ECS/BV-02-I	Sending of Correct Call Status on SLC Initialization	N/A	
78	TP/ECS/BV-03-I	Transfer of Current Call Status to Held	Pass	Refer to PTS
79	TP/ECC/BV-01-I	Release Specified Call Index	N/A	
80	TP/ECC/BV-02-I	Private consultation Mode	N/A	
81	TP/ECC/BI-03-I	Enhanced Call Control Not Supported-Release Call	N/A	
82	TP/ECC/BI-04-I	Enhanced Call Control Not Supported-Private Consult Mode	N/A	
83	TP/RHH/BV-01-I	Query Response and Hold Status	N/A	
84	TP/RHH/BV-02-I	Put an Incoming Call on Hold from HF	N/A	
85	TP/RHH/BV-03-I	Put an Incoming call on Hold from AG	N/A	
86	TP/RHH/BV-04-I	Accept a held incoming call from HF	N/A	
87	TP/RHH/BV-05-I	Accept a held incoming call from AG	N/A	
88	TP/RHH/BV-06-I	Reject a held incoming call from HF	N/A	
89	TP/RHH/BV-07-I	Reject a held incoming call from AG	N/A	
90	TP/RHH/BV-08-I	Held incoming call terminated by caller	N/A	
91	TP/NUM/BV-01-I	Query AG with Subscriber Number Information	N/A	
92	TP/NUM/BI-01-I	HF supports SNI - AG does not support SNI	N/A	
93	TP/SLC/BV-01-C	HF Initiates SLC with 3-way	Pass	Refer to PTS
94	TP/SLC/BV-02-C	AG Initiates SLC with 3-way	Pass	Refer to PTS
95	TP/SLC/BV-03-C	HF Initiates SLC. No 3-way	Pass	Refer to PTS
96	TP/SLC/BV-04-C	AG Initiates SLC. No 3-way	Pass	Refer to PTS
97	TP/SLC/BV-05-I	HF Initiates SLC with codec negotiation	N/A	
98	TP/SLC/BV-06-I	AG Initiates SLC with codec negotiation	N/A	
99	TP/SLC/BV-07-I	HF Initiates SLC without codec negotiation	N/A	
100	TP/SLC/BV-08-I	AG Initiates SLC without codec negotiation	N/A	
101	TP/SLC/BV-09-I	SLC, Lower Tester and IUT both support HF Indicator, with some in common	N/A	
102	TP/SLC/BV-10-I	SLC, IUT support HF Indicator, Lower Tester does not	N/A	
103	TP/DIS/BV-01-I	Verify inquiry and discoverability	Pass	Refer to PTS
104	TP/SDP/BV-01-I	Service Search Request	Pass	Refer to PTS
105	TP/ATAH/BV-01-I	Multiple audio transfers during call - AG and HF initiated	N/A	
106	TP/ATA/BV-03-I	Audio transfer by SLC release during an active call	N/A	
107	TP/ATH/BV-09-I	Audio transfer by powering ON HF	N/A	
108	TP/SDP/BV-02-C	SLC during SDP response	N/A	
109	TP/SDP/BV-03-C	Handle dynamic server channel number for	N/A	

		Hands-Free Profile		
No	**TC identifier**	**Description**	**Verdict**	**Comments**
		HFP service		
110	TP/DIS/BV-02-I	HF disallows connections in non-discoverable mode	N/A	
111	TP/ICA/BV-07-I	HF connects to AG during in-coming call	N/A	
112	TP/ICA/BV-08-I	Link loss during in-coming call]	N/A	
113	TP/ICA/BV-09-I	SLC release during in-coming call	N/A	
114	TP/VRA/BV-03-I	Voice Recognition Activation	N/A	
115	TP/OCA/BV-01-I	Place outgoing call by dialing number on the AG	N/A	
116	TP/ACC/BV-01-I	Codec Connection Setup - HF Initiated	N/A	
117	TP/ACC/BV-02-I	Codec Connection Setup following an initial successful Codec Connection Setup - HF Initiated	N/A	
118	TP/ACC/BV-03-I	Codec Connection Setup Failure - HF Initiated	N/A	
119	TP/ACC/BV-04-I	Codec Connection Setup - AG Initiated	N/A	
120	TP/ACC/BV-05-I	Codec Connection Setup Failure - AG Initiated	N/A	
121	TP/ACC/BV-06-I	Codec Connection - AG Initiated - Verify Support for T1 Settings	N/A	
122	TP/ACC/BV-07-I	Codec Connection - AG Initiated - Verify Support for T2 Settings	N/A	
123	TP/ACC/BV-08-I	Codec Connection - AG Initiated - Verify Support for T1 Settings	N/A	
124	TP/ACC/BV-09-I	Codec Connection Setup Failure - HF Initiated	N/A	
125	TP/ACC/BV-10-I	Codec Connection Setup- AG Initiated	N/A	
126	TP/ACC/BV-11-I	Codec Connection Setup following an initial successful Codec Connection Setup - AG Initiated	N/A	
127	TP/ACC/BI-12-I	Codec Connection Setup failure due to invalid eSCO parameters	N/A	
128	TP/ACC/BI-13-I	Codec Connection Setup failure, codec currently unavailable on the HF device	N/A	
129	TP/ACC/BI-14-I	Codec Connection Setup failure, WBS codecs currently unavailable on the HF device	N/A	
130	TP/ACC/BV-15-I	Codec Connection Setup failure due to invalid eSCO parameters	N/A	
131	TP/WBS/BV-01-I	AG SDP record supports WBS service speech service	N/A	
132	TP/WBS/BV-02-I	HF SDP record supports WBS service speech service	N/A	
133	TP/WBS/BV-03-I	Verify HF device correctly supports codec re-negotiation during SLC	N/A	
134	TP/HFI/BV-01-I	HF sends an updated HF indicator value	N/A	
135	TP/HFI/BV-02-I	AG receives an updated HF indicator value	N/A	
136	TP/HFI/BI-03-I	AG receives invalid updated HF indicator values	N/A	
137	TP/IIA/BV-01-I	Activate all indicators using a fixed string	N/A	
138	TP/IIA/BV-02-I	Activate only service indicator	N/A	
139	TP/IIA/BV-03-I	Deactivate only battery level status & signal strength indicator	N/A	

Hands-Free Profile				
No	**TC identifier**	**Description**	**Verdict**	**Comments**
140	TP/IIA/BV-04-I	Activate or deactivate specific indicators	Pass	Refer to PTS
141	TP/IIA/BV-05-I	Active only battery level indicator	N/A	
142	TP/IID/BV-01-I	Deactivate all non-mandatory indicators using a fixed string	N/A	
143	TP/IID/BV-02-I	Deactivate only sig. strength indicator	N/A	
144	TP/IID/BV-03-I	Deactivate all non-mandatory indicators using a fixed string	N/A	
145	TP/IID/BV-04-I	Deactivate only signal strength indicator - Battery status reported	N/A	
146	TP/IIC/BV-01-I	Standard event reporting off and all indicators activated	N/A	
147	TP/IIC/BV-02-I	Register individual indicators configuration when standard event reporting is OFF	N/A	
148	TP/IIC/BV-03-I	Standard indicator read command still works when indicators are deactivated	N/A	

3   Profile Testing

3.1   Description of Test Set-up
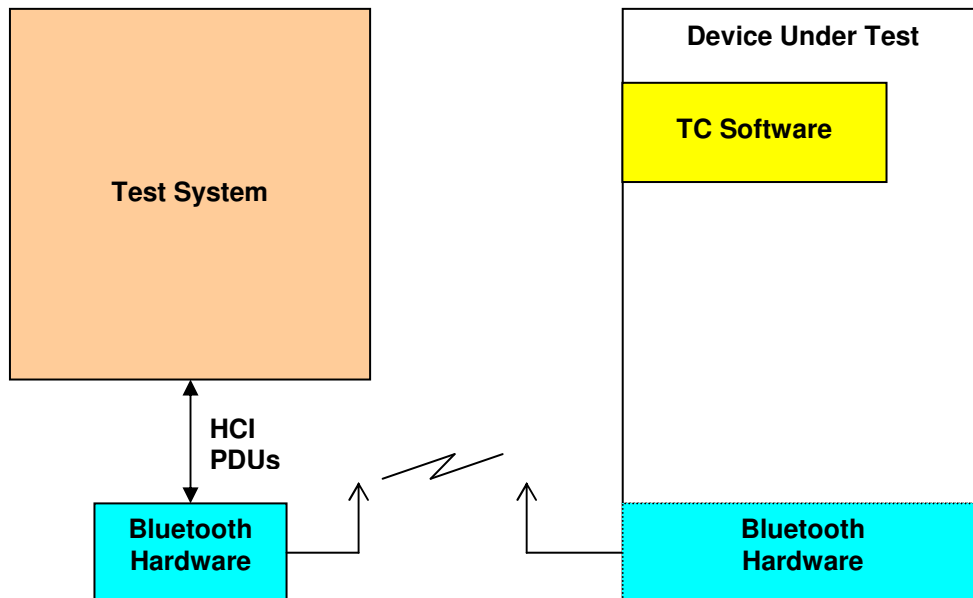
The Test System PTS for Bluetooth is running on a PC System.

The test system communicates with the Bluetooth Hardware via an HCI connection.

The tests are performed as remote tests and all communication between the Test System and the DUT is done via the radio interface.

3.2   List of Performed Test Cases

Profile: HFP   **Role:** ☒ Hands-Free Unit   ☐ Audio Gateway

TC-Identifier	Final Verdict	Date of Test
TP/ACR/BV-01-I	Pass	2017-05-09
TP/ACR/BV-02-I	Pass	2017-05-09
TP/ACS/BI-13-I	Pass	2017-05-09
TP/ACS/BV-03-I	Pass	2017-05-09
TP/ACS/BV-07-I	Pass	2017-05-09
TP/ACS/BV-12-I	Pass	2017-05-09
TP/ATA/BV-01-I	Pass	2017-05-09
TP/ATH/BV-05-I	Pass	2017-05-09
TP/ATH/BV-06-I	Pass	2017-05-09
TP/CIT/BV-01-I	Pass	2017-05-09
TP/DIS/BV-01-I	Pass	2017-05-09
TP/ECS/BV-03-I	Pass	2017-05-09
TP/ENO/BV-01-I	Pass	2017-05-09
TP/ICA/BV-01-I	Pass	2017-05-09
TP/ICA/BV-02-I	Pass	2017-05-09
TP/ICA/BV-04-I	Pass	2017-05-09
TP/ICA/BV-05-I	Pass	2017-05-09
TP/ICA/BV-06-I	Pass	2017-05-09
TP/ICR/BV-01-I	Pass	2017-05-09
TP/ICR/BV-02-I	Pass	2017-05-09
TP/IIA/BV-04-I	Pass	2017-05-09
TP/OOR/BV-01-I	Pass	2017-05-09
TP/OOR/BV-02-I	Pass	2017-05-09
TP/SDP/BV-01-I	Pass	2017-05-09
TP/SLC/BV-01-C	Pass	2017-05-09
TP/SLC/BV-02-C	Pass	2017-05-09
TP/SLC/BV-03-C	Pass	2017-05-09
TP/SLC/BV-04-C	Pass	2017-05-09
TP/TCA/BV-01-I	Pass	2017-05-09
TP/TCA/BV-02-I	Pass	2017-05-09
TP/TCA/BV-03-I	Pass	2017-05-09
TP/TCA/BV-04-I	Pass	2017-05-09
TP/TRS/BV-01-C	Pass	2017-05-09
TP/TWC/BV-02-I	Pass	2017-05-09
TP/TWC/BV-03-I	Pass	2017-05-09

3.3   Referenced Documents

Document Name	Version	Issue Date
Hands-Free Profile 1.5	V1.6	10 May 2011
Hands-Free Profile (HFP) 1.5-1.7 *Bluetooth*® Test Specification	HFP.TS.1.7.1.2	13 Dec 2016
Hands-Free Profile (HFP) 1.5-1.7 *Bluetooth*® Implementation Conformance Statement (ICS) Proforma	HFP.ICS.1.7.1.1	07 Jul 2016
Test Case Reference List	2016-2	13 Dec 2016

3.4   Additional Information

The test results presented in this test report apply only to the particular implementation under test (IUT) Declared in clause 1.2 of this report, for the functionality described in the relevant Protocol Implementation Statement (PICS), as presented for test on the date(s) declared in the relevant Protocol Implementation Extra Information for testing (PIXIT).

This test report does not constitute or imply, by its own, to be an approval of the product by Qualification Bodies, Certification Bodies or competent Authorities.

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Abbreviations in this report: OK, Pass, P = passed
F = failed
N/A = not applicable
NT = not tested
EUT = equipment under test

Explanation of model designation:

The applicant declared that models S570, Sxy0(x=5~6,y=0~9), Kx,(x=1~30), S530PLUS , S8xy,(x=0~3,y=0~9), Xy,(y=6~30), S520-TWS，S530PLUS-TWS, S560-TWS, S570-TWS, S590-TWS, Xz-TWS,(z=5~20), EW-BE002, EW-BE010, EW-BE011, EW-BE013 and EW-ZR030 are identical in both design and implementation and differ only by non-functional characteristics. Tested model is S570.

3.5   Test Sample Information

The following sample was used for testing.

Sample No	Serial No/BT address	Date Of Reception
SZCR170508-01	0011671165DC	2017-05-08

3.6   List of Test Equipments

Profile Tuning Suite: PTS v. 7.0.0
HFP-ETS v. 10.0.0.70
EZURIO 4.0 PTS Dongle

Annex 1 Profile Implementation Conformance Statement

1.1 Roles   [top]

Table 0: Profile Version

Item	Capability	System Spec Reference	Status	Support [Yes] or [No]
1	*(Intentionally left blank)*			○ ◉
2	*(Intentionally left blank)*			○ ◉
3	*(Intentionally left blank)*			○ ◉

C.1: It is mandatory to support only one of the adopted versions.

Table 0b: HF Major Profile Version

Prerequisite: 1/2 (Hands-Free (HF))

Item	Capability	System Spec Reference	Status	Support [Yes] or [No]
1	Hands-Free Profile 1.5 ?	HFP 1.5	C.1	○ ◉
2	Hands-Free Profile 1.6 ?	HFP 1.6	C.1	◉ ○
3	Hands-Free Profile 1.7 ?	HFP 1.7	C.1	○ ◉

C.1: Mandatory to support one and only one profile version.

Table 1: Roles

Item	Capability	System Spec Reference	Status	Support [Yes] or [No]
1	Audio Gateway (AG) ?	2.2	C.1	○ ◉
2	Hands-Free (HF) ?	2.2	C.1	◉ ○

C.1: It is mandatory to support at least one of the defined roles.

Table 3: Capabilities of the HF

Prerequisite: 1/2

Item	Capability	System Spec Reference	Status	Support [Yes] or [No]	
1	Connection Management	4.2; 4.3	M	◉	○
2a	Phone Status Information ("service" and "call" indicators)	4.4; 4.10	M	◉	○
2b	Phone Status Information ("callsetup" indicator)	4.10	O	○	◉
2c	Accept indicator of signal strength	4.5	O	○	◉
2d	Accept indicator of roaming state ("roam:")	4.6	O	○	◉
2e	Accept indicator of battery level ("battchg")	4.7	O	○	◉
2f	Accept indicator of operator selection	4.8	O	○	◉
3	Audio connection handling	4.11; 4.12	M	◉	○
3a	Audio connection establishment independent of call processing	4.11; 4.12	O	○	◉
3b	eSCO support in Audio Connection ⑦	5.7.1	C.7	○	◉
3c	Codec negotiation	4.11	C.5	○	◉
4a	Accept an incoming voice call (in-band ring)	4.13	M	◉	○
4b	Accept an incoming voice call (no in-band ring)	4.13	M	◉	○
4c	Accept an incoming voice call (in-band ring muting)	4.13	O	○	◉
5	Reject an incoming voice call	4.14	M	◉	○
6	Terminate a call	4.15	M	◉	○
7	Audio connection transfer during an ongoing call	4.16; 4.17	M	◉	○
7a	HF-initiated Audio transfer to AG during ongoing call ⑦	4.17	O	○	◉
8	Place a call with a phone number supplied by the HF	4.18	O	○	◉
9	Place a call using memory dialing	4.19	O	○	◉
10	Place a call to the last number dialed	4.20	O	○	◉
11	Call waiting notification	4.21	O	◉	○
12	Three Way Calling ⑦	4.22	O	◉	○

Item	Feature	Ref	Status		
12a	Three way calling (AT+CHLD values 0)	4.22	C.2	○	●
12b	Three way calling (AT+CHLD values 1 and 2)	4.22	C.1	●	○
12c	Three way calling (AT+CHLD value 3)	4.22	C.2	○	●
12d	Three way calling (AT+CHLD value 4)	4.22	C.2	○	●
12e	Originate new call with established call in progress	4.22	C.2	○	●
13	Calling Line Identification (CLI)	4.23	O	○	●
14	Echo cancelling (EC) and Noise reduction (NR)	4.24	O	●	○
15	Voice recognition activation/deactivation ?	4.25	O	○	●
16	Attach a phone number to a voice tag	4.26	O	○	●
17	Ability to transmit DTMF codes	4.27	O	○	●
18a	Remote audio volume control – speaker ?	4.28.1	O	○	●
18b	Remote audio volume control – microphone ?	4.28.1	O	○	●
18c	Volume Level Synchronization – speaker	4.28.2	C.3	○	●
18d	Volume Level Synchronization – microphone	4.28.2	C.4	○	●
18e	HF informs AG about local changes of audio volume	4.28.2	O	○	●
18f	HF informs AG about local changes of microphone gain	4.28.2	O	○	●
19	Response and hold	4.29	O	○	●
20	Subscriber Number Information	4.30	O	○	●
21a	Enhanced Call Status	4.31	O	○	●
21b	Enhanced Call Control	4.32	C.2	○	●
22	Support for automatic link loss recovery	4.3	O	○	●
23	Individual Indicator Activation	4.34	C.6	●	○
24	Wide Band Speech service ?	5.7	C.6	○	●
25	HF Indicators	HFP 1.7 - 4.35	C.8	○	●
26	Support CVSD eSCO S4 setting ?	HFP 1.7 - 5.7.3	C.9	○	●

C.1 Mandatory if (3/12); otherwise Excluded.
C.2 Optional if (3/12); otherwise Excluded.
C.3 Mandatory if 3/18a or 3/18b, otherwise Optional.
C.4 Mandatory if 3/18b, otherwise Optional
C.5: Mandatory if (3/24) otherwise excluded.
C.6: Excluded if (0/1) otherwise optional.
C.7: Mandatory IF 3/26 (S4 Setting) OR 3/24 (Wide Band Speech service) is supported, otherwise Optional.
C.8: Optional IF 0b/1 (HFP v1.5) OR 0b/2 (HFP v1.6) is NOT supported, otherwise Excluded.
C.9: Excluded IF HFP 0b/1 (HFP v1.5) OR HFP 0b/2 (HFP v1.6) is supported, otherwise Mandatory.

Table 4: Requirements towards the Link Control Procedures of the Serial Port Profile (AG and HF)

Item	Capability	System Spec Reference	Status	Support [Yes] or [No]	
1	CVSD audio coding over SCO	2.3	M	◉	○
2	mSBC audio coding over eSCO	5.7.4	C.1	○	◉
3	CVSD audio coding over eSCO (Initiating)	HFP 1.7 - 5.7.3	C.2	○	◉
4	CVSD audio coding over eSCO (Accepting)	HFP 1.7 - 5/7/3	C.2	○	◉

C.1: Mandatory if Wide band speech service is supported (HFP 2/24 or HFP 3/24), otherwise excluded.
C.2: Mandatory IF HFP 2/3b (eSCO support in Audio Connection - AG) OR HFP 3/3b (eSCO support in Audio Connection - HF); otherwise Excluded.

Table 8: Additional Hands-Free Capabilities

It is recommended but not required to support any of the capabilities defined below. The Bluetooth license grant obtained through Qualification is not predicated on passing any test that is linked to support of these capabilities.

Item	Capability	System Spec Reference	Status	Support [Yes] or [No]	
1	Multiple audio transfers during call – AG and HF initiated	N/A	C.1	○	◉
2	Audio transfer by SLC release during an active call	N/A	C.1	○	◉
3	Audio transfer by powering ON HF	N/A	O	○	◉
4	SLC during SDP response	N/A	O	○	◉
5	Handle dynamic server channel number for HFP service	N/A	O	○	◉
6	HF disallows connections in non-discoverable mode	N/A	C.2	○	◉
7	HF connects to AG during in-coming call	N/A	O	○	◉
8	Link loss during in-coming call	N/A	C.3	○	◉
9	SLC release during in-coming call	N/A	C.3	○	◉
10	Voice Recognition Activation	N/A	C.4	○	◉
11	Place outgoing call by dialing number on the AG	N/A	O	○	◉
12	Active call termination - NO CARRIER signal	N/A	C.5	○	◉

C.1: Optional if 2/7a or 3/7a is supported, otherwise excluded.
C.2: Optional if 1/2 is supported, otherwise excluded.
C.3: Optional if 1/1 is supported, otherwise excluded.
C.4: Optional if 2/15 or 3/15 is supported, otherwise excluded.
C.5: Optional if 2/6 is supported, otherwise excluded.

Annex 2 Test plan generated by TPG

Test Cases for HFP			
TP/ACR/BV-01-I	Audio release - HF initiated	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ACR/BV-02-I	Audio release - AG initiated	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ACS/BI-13-I	HF is IUT, AG Initiates eSCO with invalid bandwidth	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:N/A
TP/ACS/BV-03-I	HF is IUT, AG Initiated, AG is SCO only	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:N/A
TP/ACS/BV-07-I	HF is IUT, AG Initiated, AG has eSCO	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:N/A
TP/ACS/BV-12-I	HF is IUT, AG Initiates eSCO with 18ms latency	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:N/A
TP/ATA/BV-01-I	AG initiated Audio transfer to the AG	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ATH/BV-05-I	AG Initiated Audio Transfer to the HF - No SLC	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ATH/BV-06-I	AG Initiated Audio Transfer to the HF - SLC]	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/CIT/BV-01-I	Incoming call interrupted - call terminated	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/DIS/BV-01-I	Verify inquiry and discoverability	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ECS/BV-03-I	Transfer of Current Call Status to Held	HFP.TS.1.7.1.2	HF IUT:N/A;AG IUT:A
TP/ENO/BV-01-I	EC/NR OFF - AG supports EC/NR	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ICA/BV-01-I	Answer incoming call HF - inband ring	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:B
TP/ICA/BV-02-I	Answer incoming call HF - inband setting	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ICA/BV-04-I	Answer incoming call HF - no inband ring	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ICA/BV-05-I	Answer incoming call HF - no inband ring + audio connection	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:B
TP/ICA/BV-06-I	Answer incoming call AG	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ICR/BV-01-I	Reject incoming Call from HF	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/ICR/BV-02-I	Reject incoming Call from AG	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/IIA/BV-04-I	Activate or deactivate specific indicators	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:N/A
TP/OOR/BV-01-I	AG reconnects to HF	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/OOR/BV-02-I	HF reconnects to AG	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/SDP/BV-01-I	Service Search Request	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/SLC/BV-01-C	HF Initiates SLC with 3-way	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:N/A
TP/SLC/BV-02-C	AG Initiates SLC with 3-way	HFP.TS.1.7.1.2	HF IUT:N/A;AG IUT:A
TP/SLC/BV-03-C	HF Initiates SLC. No 3-way	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:N/A
TP/SLC/BV-04-C	AG Initiates SLC. No 3-way	HFP.TS.1.7.1.2	HF IUT:N/A;AG IUT:A
TP/TCA/BV-01-I	Terminate a Call - HF terminated	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/TCA/BV-02-I	Terminate a Call - AG terminated	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/TCA/BV-03-I	Terminate a Call - Remote party terminated	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/TCA/BV-04-I	Outgoing Call Abandon from HF	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/TRS/BV-01-C	Transfer registration status	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/TWC/BV-02-I	3 Way - Drop Active/Retrieve Waiting Call	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A
TP/TWC/BV-03-I	3 Way - Hold Active/Retrieve Waiting Call or Held	HFP.TS.1.7.1.2	HF IUT:A;AG IUT:A