Project Details

Project Name	Mesh Profile subsystem
Product Type	Profile Subsystem
TCRL Version:	TCRL 2018-2
Referenced Qualified Design(s)	
Previously Qualified Design Used in this Qualification(s)	
Listing Date	2019-07-01
Declaration ID	D046465

Product Listing(s)

Name	Website	Category	Publish Date	Model Number	Description
Mesh Profile Subsystem		Unique Products	7/1/2019 12:00:00 AM	PAN1020	The PAN1020 integrated circuit has a fully integrated radio transceiver and baseband processor for Bluetooth Low Energy. It can be used as an application processor as well as a data pump in fully hosted systems.

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Complete the Project and Submit Product(s) for Qualification

By typing my name or other symbol of my signature into the "Signature" field below, I agree on behalf of Shanghai Panchip Microelectronics Co., Ltd ("Company") to Bluetooth Launch Studio Terms of Use, and I make the following representations and warranties personally and on behalf of Company. The following representations and warranties, together with all project information and the Bluetooth Launch Studio Terms of Use, are the Supplier Declaration of Conformity and Declaration of Compliance described in the Program Reference Document (PRD) and Declaration Process Document (DPD).

☑ I am authorized by Company to submit all of the information included in this project and all information is complete and accurate.

☑ Company does not, by its governing documents or other applicable law, require more than one signatory, a stamp or seal, or a witnessed signature to be legally bound.

☑ I agree on behalf of Company to contract in English and electronically, and adopt the characters and symbols input in the signature field below as my signature, with the same effect as an ink signature.

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If any of the foregoing is not correct or you do not agree, you must exit this form without signing.

Signature:

Li Zemin

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Effective Date: November 10th, 2017.

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To access and use the Launch Studio Tool, you must have an Account (as defined in the WTOU) issued under the membership account of a current Bluetooth SIG member and log into the Launch Studio Tool with that Account. You acknowledge and agree that when you access the Launch Studio Tool that you are doing so on behalf of the member your Account is associated with ("**Member**") and you represent and warrant that you are authorized by Member to access and use the Launch Studio Tool and provide Submissions (defined below) on Member's behalf.

2. BLUETOOTH QUALIFICATION PROCESS.

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(b) contains one or more Portions; and

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(a) You represent and warrant that you have permission to submit to Bluetooth SIG all information and materials (including design information, product information, test reports, and test results) that you provide through the Launch Studio Tool ("**Submissions**") and that all Submissions are true, complete, and accurate.

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(a) if, when you submit a Submission, the "publish date" in your Submission is after the listing date, the following information will be treated as Member Confidential Information and not included in the searchable database on Bluetooth SIG's web site until the "publish date": product name, product number, category, subset ID (if applicable), publish date, and product description and

(b) the test plan and test evidence provided as part of your Submission will continue to be treated as Member Confidential Information for the period of time required under the Bluetooth SIG Confidentiality Policy regardless of any listing date or publish date in the Submission. To the extent that this Section conflicts with the Bluetooth SIG Confidentiality Policy, this Section supersedes the Bluetooth SIG Confidentiality Policy with respect to Bluetooth SIG's obligations of confidentiality of Submissions.

6. RECORD KEEPING AND AUDIT.

You agree to maintain a complete copy of your Submissions as well as all supporting information and documentation related to each Product you submit for qualification through the Launch Studio Tool ("**Records**") in order to document your compliance with the SIG Member Terms and Bluetooth Specifications. You agree that Bluetooth SIG may request copies of Records relating to or pertaining to your Submissions and all Products referenced therein and you will provide copies of Records and permit Bluetooth SIG and its representatives to audit, examine, and make copies of or extracts from all Records (in whatever form they may be kept, whether written, electronic, or other) in order to verify the truth, accuracy, and completeness of your Submissions as well as compliance with the SIG Member Terms and Bluetooth Specifications. Bluetooth SIG will be responsible for the cost of any audit, unless the audit reveals that any Submission is incomplete or inaccurate or that you, Member, any of your Submissions, or any Product fails to comply with the SIG Member Terms or Bluetooth Specifications, in which case Member will reimburse Bluetooth SIG for the costs of the audit within 30 days after receiving Bluetooth SIG's request for reimbursement.

7. ADDITIONAL DISCLAIMERS.

The Launch Studio Tool is not a record-keeping or storage tool. You are responsible for backing up all of Your Content (as defined in the WTOU) submitted to the Launch Studio Tool. In addition to the disclaimers in the WTOU, Bluetooth SIG does not guarantee that Your Content will not be removed, damaged, corrupted, or lost.

Appendix A

Summary ICS

Table 21: Controller Configuration Specification Version

Item	Capability	Reference	Support	Status	Comment

Table 22: EDR Features

Item	Capability	Reference	Support	Status	Comment

Table 24: BR/EDR Controller Electrical Interfaces

Item	Capability	Reference	Support	Status	Comment

Table 31: Host Configuration Specification Version

Item	Capability	Reference	Support	Status	Comment

Table 33: Core Host Electrical Interfaces

Item	Capability	Reference	Support	Status	Comment

Table 34: LE Host Specification Parts

Item	Capability	Reference	Support	Status	Comment

Table 41: AMP Controller Specification Version

Item	Capability	Reference	Support	Status	Comment

Table 42: AMP Controller Specification Parts

Item	Capability	Reference	Support	Status	Comment

Table 43: AMP Controller Electrical Interfaces

Item	Capability	Reference	Support	Status	Comment

Table 51: Low Energy Controller Configuration

Item	Capability	Reference	Support	Status	Comment

Table 52: Low Energy Host Core Specification

Item	Capability	Reference	Support	Status	Comment

Product Type

Table 1: Product Types

Item	Capability	Reference	Support	Status	Comment

Item	Capability		Reference	Support	Status	Comment
1/6	Profile Subsystem	N/A	C.1	☑		C.1: Mandatory to support one and only one Product Type.

Table 2: Controller Core Configuration

Prerequisite: PROD 1/1 or PROD 1/2 or PROD 1/3 or PROD 1/5

Item	Capability	Reference	Support	Status	Comment

Table 3: Host Core Configuration

Prerequisite: PROD 1/1 or PROD 1/2 or PROD 1/3 or PROD 1/4

Item	Capability	Reference	Support	Status	Comment

Mesh Profile

Table 0: Major Profile Version (X.Y)

Item	Capability	Reference	Support	Status	Comment
0/1	Mesh v1.0	[2]	M	☑	

Table 0a: Minor Profile Version (X.Y.Z)

Item	Capability	Reference	Support	Status	Comment
0a/1	Erratum 10395	[5]	C.1	☑	C.1: Mandatory IF MESH 0/1 "Mesh v1.0" is supported, otherwise Excluded.

Table 1: Bluetooth Core Specification v4.0 or Later

Item	Capability	Reference	Support	Status	Comment
1/1	Core Specification v4.0 or later	[1]	M	☑	

Table 2: Roles

Item	Capability	Reference	Support	Status	Comment
2/1	Node	[2] 2.3.11	C.1	☑	C.1: Mandatory to support at least one of 2/1 "Node" OR 2/2 "Provisioner".
2/2	Provisioner	[2] 5	C.1	☑	C.1: Mandatory to support at least one of 2/1 "Node" OR 2/2 "Provisioner".

Table 3: Node Capabilities - Bearers

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
3/1	Advertising Bearer	[2] 3.3.1	C.1	☑	C.1: Mandatory to support at least one of MESH 3/1 "Advertising Bearer " OR MESH 3/2 "GATT Bearer".
3/2	GATT Bearer	[2] 3.3.2	C.1	☑	C.1: Mandatory to support at least one of MESH 3/1 "Advertising Bearer " OR MESH 3/2 "GATT Bearer".

Table 4: Provisioning

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
4/1	PB-ADV	[2] 5.2.1	C.1	☑	C.1: Optional IF MESH 3/1 "Advertising Bearer" is supported, otherwise Excluded.
4/2	PB-GATT	[2] 5.2.2, 6.7.1	C.2	☑	C.2: Mandatory to support at least one of MESH 4/2 "PB-GATT" or MESH 12/5 "Proxy Client" IF MESH 3/2 "GATT Bearer" is supported, otherwise Excluded.
4/3	Device UUID	[2] 3.10.3	C.3	☑	C.3: Mandatory IF MESH 4/1 "PB-ADV" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded.
4/4	Sending Unprovisioned Device Beacon	[2] 3.9.2	C.4	☑	C.4: Mandatory IF MESH 4/1 "PB-ADV" is supported, otherwise Excluded.
4/5	Generic Provisioning Layer	[2] 5.3	C.3	☑	C.3: Mandatory IF MESH 4/1 "PB-ADV" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded.
4/6	Provisioning Protocol (Provisioning Server)	[2] 5.4	C.3	☑	C.3: Mandatory IF MESH 4/1 "PB-ADV" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded.
4/8	Provisioning: Public	[2] 5.4.1.2	C.5		C.5: Mandatory to support at least one of MESH 4/7 "Provisioning: Public Key OOB" OR MESH 4/8

| | Key No OOB | | ☑ | | "Provisioning: Public Key No OOB" IF MESH 4/1 "PB-ADV" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded. |
| 4/12 | Provisioning: Authentication No OOB | [2] 5.4.1.2 | C.3 | ☑ | C.3: Mandatory IF MESH 4/1 "PB-ADV" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded. |

Table 5: Node Capabilities – Network Layer

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
5/1	Transmitting and Receiving Secured Network Layer Messages	[2] 3.4.6.2, 3.4.6.3	M	☑	
5/2	Relay Feature	[2] 3.4.6.1	C.1	☑	C.1: Optional IF MESH 3/1 "Advertising Bearer" is supported, otherwise Excluded.
5/3	Network Message Cache	[2] 3.4.6.4	C.2	☑	C.2: Mandatory IF MESH 5/2 "Relay Feature" is supported, otherwise Excluded.

Table 6: Node Capabilities – Lower Transport Layer

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
6/1	Transmitting and Receiving a Lower Transport PDU	[2] 3.5.4.1, 3.5.4.2	M	☑	
6/2	Segmentation and Reassembly Behavior	[2] 3.5.3.3, 3.5.3.4	M	☑	

Table 7: Upper Transport Layer

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
7/1	Transmitting a Secured Access Payload	[2] 3.6.4.1	M	☑	
7/2	Receiving a Secured Upper Transport PDU	[2] 3.6.4.2	M	☑	
7/5	Heartbeat	[2] 3.6.7	M	☑	

Table 8: Node Capabilities – Access Layer

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
8/1	Transmitting and Receiving an Access Layer Message	[2] 3.7.4.1	M	☑	

Table 9: Node Capabilities – Security

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
9/1	Message Replay Protection	[2] 3.8.7	M	☑	

Table 10: Node Capabilities – Mesh Management

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
10/1	Secure Network Beacon	[2] 3.9.3	M	☑	
10/2	Key Refresh Procedure	[2] 3.10.4	M	☑	
10/3	IV Update Procedure	[2] 3.10.5	M	☑	
10/4	IV Index Recovery Procedure	[2] 3.10.6	M	☑	

Table 11: Node Capabilities – Foundation Mesh Models

Prerequisite: MESH 2/1

Item	Capability	Reference	Support	Status	Comment
11/1	Configuration Server Model	[2] 4.4.1	M	☑	
11/2	Health Server Model	[2] 4.4.3	M	☑	

Table 12: Node Capabilities – Proxy

Item	Capability	Reference	Support	Status	Comment
12/1	Proxy Server	[2] 6.2, 6.6	C.1	☑	C.1: Optional IF MESH 3/1 "Advertising Bearer" is supported, otherwise Excluded.
12/2	GATT Server	[3] GATT 1/2	C.2	☑	C.2: Mandatory IF MESH 12/1 "Proxy Server" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded.
12/3	Advertising with Network ID	[2] 7.2.2.2.2	C.2	☑	C.2: Mandatory IF MESH 12/1 "Proxy Server" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded.
12/4	Advertising with Node Identity	[2] 7.2.2.2.3	C.2	☑	C.2: Mandatory IF MESH 12/1 "Proxy Server" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded.

Table 13: Mesh GATT Services

Prerequisite: MESH 12/2

Item	Capability	Reference	Support	Status	Comment
13/1	Mesh Provisioning Service	[2] 7.1	C.1	☑	C.1: Mandatory IF MESH 4/2 "PB-GATT" is supported, otherwise Excluded.
13/2	Mesh Proxy Service	[2] 7.2	C.2	☑	C.2: Mandatory IF MESH 12/1 "Proxy Server" is supported, otherwise Excluded.

Table 14: GATT Server Requirements

Prerequisite: MESH 12/2

Item	Capability	Reference	Support	Status	Comment
14/1	Discover All Primary Services	[3] GATT 4M/2	M	☑	
14/2	Discover Primary Services by Service UUID	[3] GATT 4/3	M	☑	
14/3	Write without Response	[3] GATT 4/12	M	☑	
14/4	Notifications	[3] GATT 4/17	M	☑	
14/5	Write Characteristic Descriptors	[3] GATT 4/21	M	☑	

Table 15: GATT Client Requirements

Prerequisite: MESH 12/6

Item	Capability	Reference	Support	Status	Comment

Table 16: GAP Requirements

Item	Capability	Reference	Support	Status	Comment
16/1	Broadcaster	[2] 3.3.1 [4] GAP 5/1 OR GAP 38/1	C.1	☑	C.1: Mandatory IF MESH 3/1 "Advertising Bearer" is supported, otherwise Excluded.
16/2	Observer	[2] 3.3.1 [4] GAP 5/2 OR GAP 38/2	C.1	☑	C.1: Mandatory IF MESH 3/1 "Advertising Bearer" is supported, otherwise Excluded.
16/3	Peripheral	[2] 3.3.2, 7.1.1, 7.2.1, 7.2.2.2.1 [4] GAP 5/3 OR GAP 38/3	C.2	☑	C.2: Mandatory IF MESH 12/1 "Proxy Server" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded.
16/4	Peripheral – Security Mode 1	[4] GAP 25/4	C.2	☑	C.2: Mandatory IF MESH 12/1 "Proxy Server" OR MESH 4/2 "PB-GATT" is supported, otherwise Excluded.

Table 17: Provisioner – Bearers

Prerequisite: MESH 2/2

Item	Capability	Reference	Support	Status	Comment
17/1	Advertising Bearer	[2] 3.3.1	C.1	☑	C.1: Mandatory to support at least one of the 17/1 "Advertising Bearer" OR 17/2 "GATT Bearer".

Table 18: Provisioner – Provisioning

Prerequisite: MESH 2/2

Item	Capability	Reference	Support	Status	Comment
18/1	Receiving Unprovisioned Device Beacon	[2] 3.9.2	C.1	☑	C.1: Mandatory to support IF MESH 17/1 "Advertising bearer" is supported, otherwise Excluded.
18/2	PB-ADV	[2] 5.2.1	C.1	☑	C.1: Mandatory to support IF MESH 17/1 "Advertising bearer" is supported,

				otherwise Excluded.	
18/3	Generic Provisioning Layer	[2] 5.3	M	☑	
18/4	Provisioning Protocol (Provisioning Client)	[2] 5.4	M	☑	
18/7	Provisioning: Public Key OOB	[2] 5.4.1.2	M	☑	
18/8	Provisioning: Public Key No OOB	[2] 5.4.1.2	M	☑	
18/9	Provisioning: Authentication Output OOB	[2] 5.4.1.2	M	☑	
18/10	Provisioning: Authentication Input OOB	[2] 5.4.1.2	M	☑	
18/11	Provisioning: Authentication Static or No OOB	[2] 5.4.1.2, 5.4.3	M	☑	

Table 19: Provisioner – Mesh Management

Prerequisite: MESH 2/2

Item	Capability	Reference	Support	Status	Comment
19/1	Receiving Secure Network Beacon	[2] 2.9.3	M	☑	

Table 20: GATT Client Requirements

Prerequisite: MESH 18/6

Item	Capability	Reference	Support	Status	Comment

Table 21: GAP Requirements

Prerequisite: MESH 2/2

Item	Capability	Reference	Support	Status	Comment
21/1	Broadcaster	[2] 3.3.1 [4] GAP 5/1 OR GAP 38/1	C.1	☑	C.1: Mandatory IF MESH 17/1 "Advertising Bearer" is supported, otherwise Excluded.
21/2	Observer	[2] 3.3.1 [4] GAP 5/2 OR GAP 38/2	C.1	☑	C.1: Mandatory IF MESH 17/1 "Advertising Bearer" is supported, otherwise Excluded.