PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

Assignment ID: PATI474413

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Peratech Holdco Ltd.	08/12/2024

RECEIVING PARTY DATA

Company Name:	Peratech IP Ltd
Street Address:	IPS Innovate Unit 9
Internal Address:	Chartermark Way
City:	Catterick Garrison, North Yorkshire
State/Country:	UNITED KINGDOM
Postal Code:	DL9 4QJ

PROPERTY NUMBERS Total: 44

Property Type	Number
Application Number:	12029099
Application Number:	12547855
Application Number:	13247020
Application Number:	13247082
Application Number:	13259471
Application Number:	14007232
Application Number:	16336523
Application Number:	16354445
Application Number:	16488109
Application Number:	16605771
Application Number:	16638302
Application Number:	16644298
Application Number:	16759472
Application Number:	16764728
Application Number:	16768262
Application Number:	16976571
Application Number:	16976684
Application Number:	17046548
Application Number:	17429514

Property Type	Number
Application Number:	17433144
Application Number:	17434153
Application Number:	17474171
Application Number:	17552876
Application Number:	17553905
Application Number:	17783706
Application Number:	17784691
Application Number:	17784699
Application Number:	17794132
Application Number:	17794345
Application Number:	17794713
Application Number:	17802259
Application Number:	17879928
Application Number:	17880721
Application Number:	17880747
Application Number:	17919305
Application Number:	17919315
Application Number:	17920823
Application Number:	18011241
Application Number:	18108047
Application Number:	18108071
Application Number:	18203600
Application Number:	18234844
Application Number:	18686765
Application Number:	18703179

CORRESPONDENCE DATA

Fax Number: 2166540090

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: (216)654-0090
Email: docketing@cooperlegalgroup.com
Correspondent Name: Marcus A Fischer
Address Line 1: 1388 Ridge Road, Unit 1
Address Line 4: Hinckley, OHIO 44233

ATTORNEY DOCKET NUMBER:	ACG102US
NAME OF SUBMITTER:	Jeanne Liptay
SIGNATURE:	Jeanne Liptay
DATE SIGNED:	09/05/2024

Total Attachments: 41
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EXECUTION VERSION

DATED **12 August 2024**

Peratech Holdco Ltd (1)

and

Peratech IP Ltd (2)

INTRA-GROUP ASSIGNMENT OF INTELLECTUAL PROPERTY RIGHTS

CONTENTS

CLAUSE

SCHEDULE

THIS AGREEMENT is made on **12 August 2024**

BETWEEN:

(1) **Peratech Holdco Ltd**, a company incorporated in England and Wales with company registration number 08908953, whose registered office is at Ips Innovate Unit 9, Chartermark Way, Catterick Garrison, North Yorkshire, England, DL9 4QJ (the **Assignor**);

(2) **Peratech IP Ltd**, a company incorporated in England and Wales with company registration number 15017350, whose registered office is at Ips Innovate Unit 9, Chartermark Way, Catterick Garrison, North Yorkshire, England, DL9 4QJ (the **Assignee**)

(each a "**Party**", and together, the "**Parties**").

WHEREAS:

(A) Subject to the rights and licenses granted to third parties, including those set out in Schedule 4 to this Agreement, the Assignor and the members of the Assignor Group own the intellectual property rights listed in the Schedules (other than Schedule 4) to this Agreement.

(B) The Assignee is a direct wholly-owned subsidiary of Peratech Holdco Ltd, the parent company of the Assignor.

(C) The Assignor has agreed to assign, and to procure the assignment from each member of the Assignor Group, to the Assignee the intellectual property rights owned by the Assignor Group, including as shown in the Schedules to this Agreement (other than Schedule 4 and other than the Excluded IP) on the terms set out in this Agreement.

IT IS AGREED:

1. Definitions and interpretation

The following definitions and rules of interpretation apply in this Agreement.

1.1. Definitions

In this Agreement:

Affiliate	means any entity that directly or indirectly Controls, is Controlled by, or is under common Control with, another entity;
Assigned Rights	means all Intellectual Property Rights owned by the Assignor Group on or after the date of this Agreement, including as specified in Schedule 1 to Schedule 6 (other than Schedule 4), including but not limited to the

	Patents, the Trade Marks, the Registered Designs, the Domain Names, the Know-how, and the Unregistered Assigned Rights, whether in existence on the date of this Agreement or created, developed or acquired thereafter, including all improvements, enhancements or modifications to any of the foregoing, wherever located, but excluding the Excluded IP;
Assignor Group	means the Assignor and its Affiliates;
Business Day	means a day, other than a Saturday, Sunday or public holiday in England, when banks in London are open for business;
Closing Date	means 12 August 2024;
Control	means that a person possesses, directly or indirectly, the power to direct or cause the direction of the management and policies of the other person, whether through the ownership of voting shares, by contract or otherwise, and **Controls** and **Controlled** shall be interpreted accordingly;
CTA	means the Commissioned Technology Development Contract dated on or about the date of this agreement between the Assignor and Pera Electronic Technology (Suzhou) Limited;
Domain Names	means all domain names registered in the name of or held or acquired by the Assignor Group, whether acquired, registered or filed before, on or after the date of this Agreement, including the domain names, short particulars of which are set out in Schedule 5;
Excluded IP	means the Retained Project Intellectual Property (including the Retained Existing IP), as defined in clause 6.4 the CTA;
Financing Agreement	means the secured loan note instrument and the related terms and conditions dated on or about the date of this Agreement between (among others), the Assignor as the issuer, the Assignee as a guarantor and Dark Matter Lend Co Ltd as noteholder;
Intellectual Property Rights	means patents, utility models, rights to inventions, copyright and neighbouring and related rights, trade marks and service

	marks, business names and domain names, rights in get-up and trade dress, goodwill and the right to sue for passing off or unfair competition, rights in designs, database rights, rights to use, and protect the confidentiality of, confidential information (including know-how and trade secrets), and all other intellectual property rights, in each case whether registered or unregistered and including all applications and rights to apply for and be granted, renewals or extensions of, and rights to claim priority from, such rights and all similar or equivalent rights or forms of protection which subsist or will subsist now or in the future in any part of the world;
IP Escrow Agreement	has the meaning given to it in the Financing Agreement.
Know-how	means any confidential information, know-how, trade secrets, experience, drawings, designs, other technical information and information relating to the Assignor Group's business including the benefit of any confidentiality obligations relating to that information, including but not limited to the know-how/trade secrets set out in Schedule 3, excluding the Excluded IP;
Patents	means all patents granted and applications owned or acquired by the Assignor Group, whether acquired, issued, granted or filed before, on or after the date of this Agreement, including the patents and the applications, short particulars of which are set out in Schedule 1, excluding the Excluded IP;
Registered Designs	means all registered designs and applications owned or acquired by the Assignor Group, whether acquired, registered, granted or filed before, on or after the date of this Agreement, excluding the Excluded IP;
Trade Marks	means all registered trade marks and applications and all unregistered trade marks and trade names, in each case, owned or acquired by the Assignor Group, whether acquired, registered, granted or filed, or in existence, before, on or after the date of this Agreement, including the registered trade marks and the applications and the

	unregistered trade marks and trade names, short particulars of which are set out in Schedule 2, excluding the Excluded IP;
Unregistered Assigned Rights	means the unregistered Intellectual Property Rights owned or acquired by the Assignor Group, whether acquired, registered, granted or filed before, on or after the date of this Agreement, short particulars of which are set out in Schedule 6, excluding the Excluded IP;
VAT	means value added tax or any equivalent tax chargeable in the UK or elsewhere; and
VATA 1994	means the Value Added Tax Act 1994.

1.2. Interpretation
In this Agreement:

1.2.1. clause, Schedule and paragraph headings shall not affect the interpretation of this Agreement;

1.2.2. the Schedules form part of this Agreement and shall have effect as if set out in full in the body of this Agreement. Any reference to this Agreement includes the Schedules;

1.2.3. references to clauses and Schedules are to the clauses and Schedules of this Agreement;

1.2.4. a reference to a company shall include any company, corporation or other body corporate, wherever and however incorporated or established;

1.2.5. a reference to a person includes a natural person, corporate or unincorporated body (in each case whether or not having separate legal personality) and that person's personal representatives, successors and permitted assigns;

1.2.6. unless the context otherwise requires, a reference to a gender includes the other gender;

1.2.7. unless the context otherwise requires, words in the singular include the plural and vice versa;

1.2.8. this Agreement shall be binding on, and enure to the benefit of, the Parties to this Agreement and their respective personal representatives, successors and permitted assigns, and references to any party shall include that party's personal representatives, successors and permitted assigns;

1.2.9. any words following the terms including, include, in particular, for example or any similar expression shall be construed as illustrative only and shall not limit the sense of any word, description, definition, phrase or term preceding those terms;

1.2.10. the table of contents, background section and any clause, Schedule or other headings in this Agreement are included for convenience only and shall have no effect on the interpretation of this Agreement;

1.2.11. a reference to legislation or a legislative provision is a reference to it as amended, extended or re-enacted from time to time;

1.2.12. a reference to writing or written includes email;

1.2.13. where any statement is qualified by the expression so far as the Assignor is aware or to the Assignor's knowledge (or any similar expression), that statement shall be deemed to include an additional statement that it has been made after due and careful enquiry;

1.2.14. any obligation on a party not to do something includes an obligation not to allow that thing to be done; and

1.2.15. a reference to this Agreement or to any other agreement or document is a reference to this Agreement or such other agreement or document, in each case as varied from time to time.

2. Assignment

In consideration of the sum of £37.6m (inclusive of any applicable VAT), payable by the Assignee to the Assignor pursuant to the terms of an unsecured promissory note for said amount in form and substance acceptable to the Assignor, executed by the Assignee and delivered to the Assignor at the Closing Date, the Assignor hereby:

2.1. assigns and transfers, and procures that each member of the Assignor Group assigns and transfers, to the Assignee absolutely with full title guarantee all their existing and future rights, title and interests in and to the Assigned Rights, including, without limitation:

2.1.1. the absolute entitlement to any registrations granted pursuant to any of the applications comprised in the Patents, Domain Names, Registered Designs and Trade Marks and, to the extent applicable, in any other Assigned Rights, in each case throughout the world;

2.1.2. all goodwill attaching to the Trade Marks and in respect of the business relating to the goods or services for which the Trade Marks are registered or used; and

2.1.3. the right to bring, make, oppose, defend or appeal proceedings, claims or actions, and obtain relief and to retain any damages recovered, in respect of any infringement, or any other cause of action arising from ownership, of any of the Assigned Rights, whether occurring before, on, or after the date of this Agreement; and

2.2. in respect of the Excluded IP, agrees to procure a perpetual, irrevocable, transferable, sub-licensable, payment-free license from Pera Electronic Technology (Suzhou) Limited to the Assignee with effect from Closing Date.

3. VAT

The Assignee and the Assignor acknowledge that section 43(1) of VATA 1994 will apply to the transfer of the Assigned Rights pursuant to this Agreement.

4. Warranties

The Assignor warrants that:

4.1. a member of the Assignor Group is the sole legal and beneficial owner of, and owns all the rights and interests in, the Assigned Rights and the Excluded IP;

4.2. for each of the applications and registrations of any of the Assigned Rights and the Excluded IP, including as listed in Schedule 1, Schedule 2 and Schedule 5 (together the "**Registered IP**"), it is properly registered as the applicant or registered proprietor, and all application, registration, annuity and renewal fees have been paid and all steps required to be taken in relation to the filing, prosecution, maintenance and renewal in relation to the Registered IP have been taken in accordance with the applicable time limits;

4.3. it has full power to enter into this Agreement;

4.4. no member of the Assignor Group has licensed or assigned any of the Assigned Rights or the Excluded IP except:

4.4.1. with respect to temporary licences, each granted subject to customary terms and appropriate confidentiality undertakings, for the purposes of: (i) testing the Assigned Rights by the licensees; or (ii) use by academic institutions; and

4.4.2. as set out in Schedule 4;

4.5. the Assigned Rights and the Excluded IP are free from any security interest, option, mortgage, charge or lien;

4.6. no member of the Assignor Group has by act or omission caused or permitted, and is not aware of, anything which might jeopardise the registration of any of the Registered IP;

4.7. it is unaware of any material infringement or likely infringement of any of the Assigned Rights and/or the Excluded IP;

4.8. each member of the Assignor Group has used reasonable endeavours to protect the confidentiality of the Know-how including referred to in Schedule 3 and has not by act or omissions caused or permitted, and is not aware of, any circumstances which might jeopardise that confidentiality;

4.9. as far as it is aware, all the Assigned Rights and the Excluded IP are valid and subsisting;

4.10. as far as it is aware, there are and have been no claims, challenges, disputes or proceedings, pending or threatened, in relation to the ownership, validity or use of any of the Assigned Rights and/or the Excluded IP, and there is nothing that might prevent any application for the Registered IP, including as listed in Schedule 1, Schedule 2 or Schedule 5, proceeding to grant in the form and scope as filed;

4.11. as far as it is aware, the use and/or exploitation of the Assigned Rights and/or the Excluded IP (in the same way as used and/or exploited by the Assignor Group in the 12 months prior to the Closing Date) does not and will not infringe the rights (including Intellectual Property Rights) of any third party;

4.12. as far as it is aware, exploitation of any of the Assigned Rights and/or the Excluded IP will not infringe the rights (including Intellectual Property Rights) of any third party; and

4.13. as far as it is aware, all previous assignments of the applications and registrations forming part of the Registered IP, including as listed in Schedule 1, Schedule 2 and Schedule 5 are valid and were registered within applicable time limits.

5. Indemnity

5.1. The Assignor shall indemnify the Assignee against all liabilities, costs, expenses, damages and losses (including any direct, indirect or consequential losses, loss of profit, loss of reputation and all interest, penalties and legal costs (calculated on a full indemnity basis) and all other reasonable professional costs and expenses) suffered or incurred by the Assignee arising out of or in connection with:

5.1.1. any breach of the warranties contained in clause 4; and

5.1.2. the enforcement of this Agreement.

5.2. At the request of the Assignee and at the Assignee's own expense, the Assignor shall, and shall procure that each member of the Assignor Group shall, provide all reasonable assistance to enable the Assignee to bring, defend, counter claim and/or resist any claim, action or proceedings brought (including against or by the Assignee) as a consequence of any breach referred to in clause 5.1.1.

5.3. If a payment due from the Assignor under this clause is subject to tax (whether by way of direct assessment or withholding at its source), the Assignee shall be entitled to receive from the Assignor such amounts as shall ensure that the net receipt, after tax, to the Assignee in respect of the payment is the same as it would have been were the payment not subject to tax.

5.4. Nothing in this clause shall restrict or limit the Assignee's general obligation at law to mitigate a loss it may suffer or incur as a result of an event that may give rise to a claim under this indemnity.

6. Moral rights

At the reasonable request of the Assignee, the Assignor shall procure written waivers from all authors of any copyright works comprised in the Assigned Rights and the Excluded IP in relation to all their moral rights arising under the Copyright, Designs and Patents Act 1988 and, as far as is legally possible, any broadly equivalent rights those authors may have in any territory of the world.

7. Further assurance

The Assignor agrees to, and shall procure that each member of the Assignor Group shall, sign all lawful papers, make all assignments and rightful oaths, and generally do everything reasonably necessary to aid Assignee, its successors, assigns, and nominees to give full effect to this Agreement and to obtain and enforce proper protection for all Assigned Rights in all applicable countries throughout the world. Without prejudice to the foregoing, each Party shall, and shall use all reasonable endeavours to procure that any necessary third party shall, promptly execute and deliver such documents and perform such acts as may reasonably be required for the purpose of giving full effect to this Agreement, including updating any relevant registered intellectual property register in any relevant territory in the world.

8. Waiver

No failure or delay by a Party to exercise any right or remedy provided under this Agreement or by law shall constitute a waiver of that or any other right or remedy, nor shall it prevent or restrict the further exercise of that or any other right or remedy. No single or partial exercise of such right or remedy shall prevent or restrict the further exercise of that or any other right or remedy.

9. Entire agreement

9.1. This Agreement constitutes the entire agreement between the parties and supersedes and extinguishes all previous agreements, promises, assurances, warranties, representations and understandings between them, whether written or oral, relating to its subject matter.

9.2. Each Party agrees that it shall have no remedies in respect of any statement, representation, assurance or warranty (whether made innocently or negligently) that is not set out in this Agreement. Each Party agrees that it shall have no claim for innocent or negligent misrepresentation or negligent misstatement based on any statement in this Agreement.

10. Variation

No variation of this Agreement shall be effective unless it is in writing and signed by the Parties (or their authorised representatives).

11. Severance

11.1. If any provision or part-provision of this Agreement is or becomes invalid, illegal or unenforceable, it shall be deemed deleted, but that shall not affect the validity and enforceability of the rest of this Agreement.

11.2. If any provision or part-provision of this Agreement is deemed deleted under clause 11.1 the parties shall negotiate in good faith to agree a replacement provision that, to the greatest extent possible, achieves the intended commercial result of the original provision.

12. Counterparts

This Agreement may be executed in any number of counterparts and the Parties may execute separate counterparts, each of which one executed and delivered shall constitute an original. All counterparts together shall constitute one and the same instrument.

13. Third-party rights

13.1. This Agreement does not give rise to any rights under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this Agreement.

13.2. The rights of the Parties to rescind or vary this Agreement are not subject to the consent of any other person.

14. Notices

14.1. Any notice or other communication given to a Party under or in connection with this Agreement shall be in writing and shall be:

14.1.1. delivered by hand or by pre-paid first-class post or other next working day delivery service at its registered office (if a company) or its principal place of business (in any other case); or

14.1.2. sent by email to: Doug Balderston in the case of the Assignor and Jonathan Stark in the case of the Assignee.

14.2. Any notice or communication shall be deemed to have been received:

14.2.1. if delivered by hand, at the time the notice is left at the proper address;

14.2.2. if sent by pre-paid first-class post or other next working day delivery service, at 9.00 am on the second Business Day after posting; or

14.2.3. if sent by or email, at the time of transmission, or, if this time falls outside business hours in the place of receipt, when business hours resume. In this clause 14.2.3, business hours means 9.00 am to 5.00 pm Monday to Friday on a day that is not a public holiday in the place of receipt.

14.3. This clause does not apply to the service of any proceedings or other documents in any legal action or, where applicable, any arbitration or other method of dispute resolution.

15. Costs and Expenses

Unless otherwise expressly provided for in this Agreement, each Party will pay its own costs and expenses associated with the execution and implementation of this Agreement.

16. Succession

This Agreement will bind and benefit each Party's successors and personal representatives.

17. Governing law

This Agreement and any dispute or claim (including non-contractual disputes or claims) arising out of or in connection with it or its subject matter or formation shall be governed by and construed in accordance with the law of England and Wales.

18. Jurisdiction

Each Party irrevocably agrees that the courts of England and Wales shall have exclusive jurisdiction to settle any dispute or claim (including non-contractual disputes or claims) arising out of or in connection with this Agreement or its subject matter or formation.

Schedule 1
Patents

Country	Filing Date / Reg Date	Application Number	Registration Number	Status	Description
China	15 Apr 2020	2020102975726	CN 111370243 A	Dual Filing Under Examination	A key module and key mechanism 一种按键模组及按键机构
China	27 Aug 2009	2009 80133978.2	CN 10213 8188 B	In Force	QTC ink
China	06 Jul 2017	2017 208 11 177.9	CN 207008580 U	In Force	Transparent ink II application
China	23 Feb 2018	2018 8001 3816.4	CN 110 337 630 B	In Force	Low power sleep mode
China	17 Apr 2018	201880026162.9	CN 110582744 A	In Force	Dual mode scanning
China	06 Sept 2018	201880058188.1	CN 111051393 B	In Force	Preparation of QTC ink
China	25 Feb 2020	202080013749.3	CN 113424143 A	Pending	One hand scroll
China	25 Oct 2022	202180025243.9	CN 115398383 A	Pending	Predictive tracking
China	28 Sept 2022	202180025238.8	CN 115335800 A	Under Examination	Palm removal
China	09 Aug 2021	202180069162.9	CN 116324358 A	Under Examination	Sensor with dome geometry
China	09 Aug 2021	202180055895.7	CN 116075704 A	Under Examination	Force concentrator structures
China	25 Nov 2021		CN 116710741 A	National Phase Entry	False touch elimination
China	15 Feb 2022			National Phase Entry	Grooved substrate
China	13 Feb 2018	2017208111177.9	CN 207008580 U	In Force	QTC Clear
China	24 May 2022	201780056273.X	CN 109844705 A	In Force	Flexible Matrix Sensor
Germany	27 Aug 2009	2009 785 013.5	EP 2321831	In force	QTC ink

Country	Filing Date / Reg Date	Application Number	Registration Number	Status	Description
Germany	26 Mar 2012	2012717435.7	EP 2689431	In force	Transparent ink II
Germany	23 Feb 2018	2018708167.4	EP 3586218	In force	Low power sleep mode
Germany	17 Apr 2018	2018721437.4	EP 3612918	In force	Dual mode scanning
Germany	17 Oct 2018	2018795705.5	EP 3701363	In force	Scrolling control
European Patent	29 Sept 2017	2017783950.3	EP 3519929	In Force	Flexible sensor
European Patent	15 Aug 2018	2018759663.0	EP 3669152	Pending	V groove
European Patent	06 Sept 2018	2018769768.5	EP 3679088	Pending	Preparation of QTC ink
European Patent	26 Feb 2019	2019710456.5	EP 3760002	Pending	LED-QTC combinations
European Patent	06 Mar 2019	2019712000.9	EP 3765946	In Force	QTC decal
European Patent	10 Apr 2019	2019718906.1	EP 3775818	In Force	Reference resistor integration
European Patent	02 Mar 2020	2020709656.1	EP 3931663	Pending	Foldable display
European Patent	09 Aug 2021	2021765968.9	EP 4193134	Pending	Sensor with dome geometry
European Patent	15 Feb 2022	2022706348.4	EP 4295130	Published	Grooved substrate
European Patent	09 Dec 2020	2020828054.5	EP 4073933	In Force	Switch trigger & power tool
European Patent	11 Dec 2020	2020828056.0	EP 4073482	Published	Foil-type pressure sensor
European Patent	19 Jan 2021	2021701565.0	EP 4094142	Published	Electronic equipment keyboard
European Patent	20 Jan 2021	2021701836.5	EP 4094422	In Force	Touch panel
European Patent	24 Feb 2021	2021710029.6	EP 4111296	In Force	Pressure sensor and touch panel
European Patent	17 Jun 2021	2021737732.4	EP 4168882	Pending	Touch device
GB	25 Mar 2009	09 05 037.8	GB 2468870	In Force	Pressure sensitive tablet
GB	26 Aug 2009	09 14 891.7	GB 2462920	In Force	QTC ink
GB	27 Aug 2009	09 785 013.5	GB 2321831	In Force	QTC Ink

Country	Filing Date / Reg Date	Application Number	Registration Number	Status	Description
GB	29 Sept 2011	11 16 833.3	GB 2484202	In Force	Dual action multiplexed sensor
GB	29 Sept 2011	11 16 834.1	GB 2484203	In Force	Dual action parallel sensor
GB	22 Mar 2012	GB 13 18 558.2	GB 2504412	In Force	Transparent ink II
GB	01 Oct 2016	16 16 751.2	GB 2557894	In Force	Flexible sensor
GB	16 Aug 2017	17 13 123.6	GB 2565564	In Force	V groove
GB	06 Sept 2017	17 14 279.5	GB 2566267	In Force	Preparation of QTC ink
GB	27 Oct 2017	17 17 690.0	GB 2567864	In Force	Scrolling control
GB	15 Nov 2017	17 18 858.2	GB 2571697	In Force	Finger rocking
GB	29 Nov 2017	GB1719836.7	GB 2568891	In Force	Active sensor element
GB	23 Feb 2018	18 708 167.4	GB 3586218	In Force	Low power sleep mode
GB	15 Mar 2018	18 04 134.3	GB 2571976	In Force	QTC decal
GB	17 Apr 2018	EP 18 721 437.4	GB 3612918	In Force	Dual mode scanning
GB	12 Sept 2018	18 14 819.7	GB 2572462	In Force	Display integrated pressure sensor
GB	12 Sept 2018	18 14 821.3	GB 2572835	In Force	Reference resistor integration
GB	24 Feb 2020	21 11 099.4	GB 2595110	In Force	Translucent sensor
GB	04 Feb 2020	20 01 547.5	GB 2591766	In Force	Predictive tracking
GB	04 Feb 2020	20 01 545.9	GB 2591765	In Force	Gesture classification
GB	04 Feb 2020	20 01 544.2	GB 2591764	Pending	Palm removal
GB	17 Dec 2020	20 19 938.6	GB 2602264	Pending	Sensor calibration
GB	09 Aug 2021	23 02 612.3	GB 2613100	Pending	Force concentrator structures
GB	27 Nov 2020	20 18 700.1	GB 2601482	Published	False touch elimination
GB	17 Mar 2022	22 03 737.8	GB 2616660	Pending	Known-load shorting calibration

Country	Filing Date / Reg Date	Application Number	Registration Number	Status	Description
GB	01 Jul 2022	22 09 719.0	GB 2620199	Pending	Sensing system optimisation for FSRs
GB	11 Jun 2021	22 15 767.1	GB 2609148	Pending	Key module and key mechanism
GB	11 Jun 2021	22 16 694.6	GB 2609172	Pending	Key structure and key module
GB	24 Jun 2021	22 17 155.7	GB 2609864	In Force	Pressure sensor and key
GB	11 Apr 2023	GB2305295.4		Pending	Matrix array force sensor patterning for improved tracking accuracy with fewer I/O's
GB	11 Apr 2023	GB2305296.2		Pending	Roll-to-roll sensor patterning & coating
GB	19 Sep 2023	GB2314307.6		Pending	Method and hardware to reduce impact of per key variation in full force keyboards
GB	29 Sep 2023	GB2315013.9		Pending	User Authentication via a Force Sensing Input Element
Japan	27 Aug 2009	2011-524449	JP 5576867	In Force	QTC Ink
Japan	26 Mar 2012	2014 500463	JP 6042863	In Force	Transparent ink II
Japan	29 Sept 2017	2019 516 952	JP 7118054	In Force	Flexible sensor
Japan	23 Feb 2018	2019-545739	JP 7092782	In Force	Low power sleep mode
Japan	17 Apr 2018	2019-556870	JP 7250696	In Force	Dual mode scanning
Japan	15 Aug 2018	2020-508314		To Lapse	V groove
Japan	25 Feb 2020	2021-549511	JP 2022521942	Pending	One hand scroll
Japan	03 Aug 2022	2022-547244	JP 2023531109	Pending	Palm removal
Japan	09 Aug 2021	2023-509 590	JP 2023541792	Pending	Sensor with dome geometry
Japan	09 Aug 2021	2023-508578	JP 2023542467	Pending	Force concentrator structures
Japan	15 Aug2023	PCT/GB2022/000 021		To File	Grooved substrate
Japan	09 Dec 2020	2022-534666	JP 2023509311	Pending	Switch trigger & power tool

Country	Filing Date / Reg Date	Application Number	Registration Number	Status	Description
Japan	11 Dec 2020	2022-535916	JP 2023506804	Pending	Foil-type pressure sensor
Japan	19 Jan 2021	2022-544203	JP 2023517448	Pending	Electronic equipment keyboard
Japan	20 Jan 2021	2022-544347	JP 2023517452	Pending	Touch panel
Japan	25 Aug 2022	2022-551308	JP 2023530045	Pending	Pressure sensor and touch panel
Japan	17 Jun 2021	2022-577786	JP 2023536395	Published	Touch device
South Korea	22 Mar 2012	KR 10-2013-702788	KR 10-1980388	In Force	Transparent ink II
South Korea	29 Sep 2017	10-2019-7009785	KR 10-2483583	In Force	Flexible sensor
South Korea	17 Apr 2018	10-2019-7034240	KR 10-2544681	In Force	Dual mode scanning
South Korea	19 Feb 2020	10-2020-7004831	KR 10-2544697	In Force	V groove
South Korea	06 Sept 2018	10-2020-7007395	KR 10-2593607	In Force	Preparation of QTC ink
South Korea	17 Sept 2021	10-2021 7030177	KR 10-20210127246	Pending	One hand scroll
South Korea	03 Feb 2021	10-2022-7030630	KR 10-20220148829	Pending	Predictive tracking
South Korea	03 Feb 2021	10-2022-7030631	KR 10-20220145346	Pending	Palm removal
South Korea	09 Mar 2023	10-2023-7008353	KR 10-20230082013	Pending	Sensor with dome geometry
South Korea	07 Mar 2023	10-2023-7008135	KR 10-20230052916	Pending	Force concentrator structures
South Korea	15 Feb 2022			To File	Grooved substrate
South Korea	09 Dec 2020	10-2022-7022821	KR 10-20220127241	Pending	Switch trigger & power tool
South Korea	11 Dec 2020	10-2022-7023112	KR 10-20220110281	Pending	Foil-type pressure sensor
South Korea	19 Jan 2021	10-2022-7028842	KR 10-20220150291	Pending	Electronic equipment keyboard
South Korea	20 Jan 2021	10-2022-7028843	KR 10-20220153005	Pending	Touch panel
South Korea	24 Feb 2021	10-2022-7032679	KR 10-20220142522	Pending	Pressure sensor and touch panel
South Korea	17 Jun 2021	10-2023-7001668	KR 10-20230035044	Pending	Touch device

Country	Filing Date / Reg Date	Application Number	Registration Number	Status	Description
US	11 Feb 2008	12/029,099	US 7,941,441	In Force	Media data access system and method
US	24 Mar 2010	13/259,471	US 9,182,845	In Force	Pressure sensitive tablet
US	26 Aug 2009	12/547,855	US 8,449,974	In Force	QTC ink
US	28 Sept 2011	13/247,020	US 8,803,536	In Force	Dual action multiplexed sensor
US	28 Sept 2011	13/247,082	US 9,442,594	In Force	Dual action parallel sensor
US	26 Mar 2012	14/007,232	US 9,546,859	In Force	Transparent ink II
US	29 Sept 2017	16/336,523	US 10,990,235	In Force	Flexible sensor
US	23 Feb 2018	16/488,109	US 10,928,968	In Force	Low power sleep mode
US	17 Apr 2018	16/605,771	US 11,327,623	In Force	Dual mode scanning
US	11 Feb 2020	16/638,302	US 11,385,114	In Force	V groove
US	06 Sept 2018	16/644,298	US 11,692,071	In Force	Preparation of QTC ink
US	17 Oct 2018	16/759,472	US 11,314,381	In Force	Scrolling control
US	15 May 2020	16/764,728	US 11,392,289	In Force	Finger rocking
US	28 Nov 2018	16/768,262	US 11,455,052	In Force	Active sensor element
US	26 Feb 2019	16/976,571	US 11,228,311	In Force	LED-QTC combinations
US	15 Mar 2019	16/354,445	US 11,234,333	In Force	QTC decal
US	16 Dec 2021	17/552,876	US 11,832,394	In Force	QTC decal
US	28 Aug 2020	16/976,684	US 11,481,055	In Force	Display integrated pressure sensor
US	09 Oct 2020	17/046,548	US 11,635,336	In Force	Reference resistor integration
US	23 Aug 2021	17/433,144	US 20220190044	Pending	Translucent sensor
US	09 Aug 2021	17/429,514	US 11,543,955	In Force	One hand scroll
US	26 Aug 2021	17/434,153	US 20220171431	Pending	Foldable display

Country	Filing Date / Reg Date	Application Number	Registration Number	Status	Description
US	03 Aug 2022	17/879,928	US 11,880,526	In Force	Predictive tracking
US	04 Aug 2022	17/880,747	US 20220374124	Pending	Gesture classification
US	04 Aug 2022	17/880,721	US 20220375201	Pending	Palm removal
US	17 Dec 2021	17/553,905	US 20220196499	Pending	Sensor calibration
US	10 Feb 2023	18/108,071	US 20230194366	Pending	Sensor with dome geometry
US	10 Feb 2023	18/108,047	US 20230195251	Pending	Force concentrator structures
US	30 May 2023	18/203,600	US 20230305668	Pending	False touch elimination
US	15 Feb 2022			To File	Grooved substrate
US	09 Jun 2022	17/783,706	US 20230005679	Pending	Switch trigger & power tool
US	13 Jun 2022	17/784,699	US 20230012518	Pending	Foil-type pressure sensor
US	13 Jun 2022	17/784,691	US 20230350493	Pending	Touchpad and keyboard
US	20 Jul 2022	17/794,132	US 20230350500	Pending	Electronic equipment keyboard
US	21 Jul 2022	17/794,345	US 20230142704	Pending	Touch panel
US	22 Jul 2022	17/794,713	US 20230064769	Pending	Pressure sensor and touch panel
US	25 Aug 2022	17/802,259	US 11,868,554	In Force	Pressure sensor and touch panel
US	14 Sept 2021	17/474,171	US 11,909,390	In Force	Button structure and game controller
US	11 Jun 2021	17/919,305	US 20240013990	Pending	Key module and key mechanism
US	11 Jun 2021	17/919,315	US 20230170164	Pending	Key structure and key module
US	24 Jun 2021	17/920,823	US 20230160763	Pending	Pressure sensor and key
US	19 Dec 2022	18/011,241	US 20230341939	Pending	Touch device
WIPO	17 Mar 2023	PCT/GB2023/000 015	WO 2023175290	Pending	Known-load shorting calibration
WIPO	17 Mar 2023	PCT/GB2023/000 016	WO 2023175291	Pending	Contact resistance-free sensor

Country	Filing Date / Reg Date	Application Number	Registration Number	Status	Description
WIPO	17 Mar 2023	PCT/GB2023/000017	WO 2023175292	Pending	Tunable force sensor
WIPO	15 Feb 2022	PCT/GB2022/000021	WO 2022175638	Pending	Grooved substrate
WIPO	29 Jun 2023	PCT/GB2023/000036	WO 2024003515	Pending	Sensing system optimisation for FSRs
WIPO	25 Aug 2022	PCT/GB2022/000072	WO 2023026018	Pending	Key structure and keyboard
WIPO	19 Oct 2022	PCT/GB2022/000083	WO 2023067293	Pending	Pressure module and its structure
WIPO	21 Feb 2023	PCT/GB2023/000007	WO 2023156753	Pending	A composite elastomer structure and key

Schedule 2
Registered Trade Marks

Jurisdiction	Application No.	Registration No.	Filing/ registration date/ Renewal date	Status	Mark	Classes and specification
China	1 450 403	1 450 403	21 Dec 2018	In Force	"QTC"	1, 2, 9
China	1 103 292		08 Nov 2011	In Force	"QTC"	9
China	1 365 833	1 365 833	03 May 2017	In Force	QTC logo	9
China	1 362 551	1 362 551	03 May 2017	In Force	QTC logo with surround	9
China	1 388 162	1 388 162	19 Oct 2017	In Force	"PERATECH"	1, 2, 42
European Union	1 450 403	1 450 403	21 Dec 2018	In Force	"QTC"	1, 2, 9
European Union	1 103 292	1 103 292	08 Nov 2011	In Force	"QTC"	9
European Union	1 362 551	1 362 551	03 May 2017	In Force	QTC logo with surround	9
European Union	1 365 833	1 365 833	03 May 2017	In Force	QTC logo	9
European Union	1 388 162	1 388 162	19 Oct 2017	In Force	"PERATECH"	1, 2, 9, 42
GB		801103292	08 Nov 2011	In Force	"QTC"	9
GB	2 345 974	2 345 974	15 Oct 2003	In Force	"QTC"	9
GB	3 322 969	3 322 969	06 Jul 2018	In Force	"QTC"	1, 2, 9
GB		801450403	21 Dec 2018	In Force	"QTC"	1, 2, 9
GB		801365833	03 May 2017	In Force	QTC logo	9
GB	2 345 976	2 345 976	15 Oct 2003	In Force	QTC logo	9
GB		801362551	03 May 2017	In Force	QTC logo with surround	9
GB	3 229 901	3 229 901	09 May 2017	In Force	"PERATECH"	1, 9, 42
GB	3 757 836	3 757 836	22 Feb 2022	In Force	"HYDRA" device	9, 28
GB	13 Jan 2023	UK00003867 701		Pending	"FUSIONPAD"	9

GB	21 Feb 2023	UK00003880587		Pending	“HYDRA”	9, 28
Japan	1 450 403	1 450 403	21 Dec 2018 / 17 Jul 2020	In Force	"QTC"	1, 2
Japan	1 365 833	1 365 833	03 May 2017 / 26 Oct 2018	In Force	QTC logo	9
Japan	1 362 551	1 362 551	03 May 2017 / 30 Nov 2018	In Force	QTC logo with surround	9
Japan	1 388 162	1 388 162	19 Oct 2017 / 23 Aug 2019	In Force	"PERATECH"	1, 2, 9, 42
South Korea	1 103 292	1 103 292	08 Nov 2011	In Force	"QTC"	9
South Korea	1 450 403	1 450 403	21 Dec 2018	In Force	"QTC"	1, 2, 9
South Korea	1 362 551	1 362 551	03 May 2017	In Force	QTC logo with surround	9
South Korea	1 365 833	1 365 833	03 May 2017	In Force	QTC logo	9
South Korea	1 388 162	1 388 162	19 Oct 2017	In Force	"PERATECH"	2, 9
Taiwan	107 044 404	01 985 332	10 Jul 2018	In Force	"QTC"	1, 2, 9
Taiwan	106 072 644	01 943 792	17 Nov 2017	In Force	"PERATECH"	1, 9, 42
US	79/107,800	4,188,674	08 Nov 2011	In Force	"QTC"	9
US	88/249,578	5,906,937	04 Jan 2019	In Force	"QTC"	1, 2, 9
US	87/786,478	5,640,821	06 Feb 2018	In Force	QTC logo	9
US	87/675,394	5,835,423	07 Nov 2017	In Force	"PERATECH"	2, 9, 42
WIPO	1 450 403	1 450 403	21 Dec 2018	In Force	"QTC"	1, 2, 9
WIPO	1 103 292	1 103 292	08 Nov 2011	In Force	"QTC"	9
WIPO	IA0000234 5976_02	1 362 551	03 May 2017	In Force	QTC logo with surround	9
WIPO	IA0000234 5976_01	1 365 833	03 May 2017	In Force	QTC logo	9
WIPO	IA0000322 9901_01	1 388 162	19 Oct 2017	In Force	"PERATECH"	1, 2, 9, 42

Schedule 3

Confidential know-how/trade secrets

Such information relating to the Assignor's Know-how uploaded to an encrypted internal lockbox maintained in accordance with the terms of the IP Escrow Agreement.

Schedule 4
Licences, Charges and Other Third Party Rights

Name of counterparty to material contract	Nature of right and IPRs affected
Innovobot Inc	Limited licence granted to Innovobot to use relevant Peratech IP for the purposes of providing services to Peratech as set out in a separate consultancy services agreement, with any resultant IP developed (in the "Work Product") vesting in Peratech upon creation. Licence is non-exclusive, worldwide, non-transferable, and royalty-free.

Schedule 5
Domain Names

peratech.com
peratech.info
peratech.net
peratech.co.uk
peratech.org.uk
qtctouch.com

Schedule 6
Unregistered Assigned Rights

Category	Sub-Category	Document/Data Base Name	Description
Capabilities & Processes	Process Parameters	CPP_0003_V2.0 - CM-0701 CPP	Critical Process Parameters for Sensor Printing
Capabilities & Processes	Design Rules	WI_MP-0059 AA06 Design Rule--Rev.06	General Sensor design rules for MP Manufacturing
Capabilities & Processes	Manufacturing Set Up & SOPs	https://peratechholdco.sharepoint.com/sites/Quality242/Shared%20Documents/Forms/AllItems.aspx?FolderCTID=0x012000A5B16289ADDB0F43AC188361DD591F82&id=%2Fsites%2FQuality242%2FShared%20Documents%2FPSZ%20Centre%2F01%2E%20Policies%20%2B%20Procedures&viewid=d0625bcb%2D6b4e%2D48d8%2Dabdf%2D1c949446bc68	Work Instructions for manufacturing and assembly equipment (ex: Screen Printer, Laser, UV (belt) Oven, Box Oven, Hot Roll (Lamination), Testers, etc)
Designs		Part Number Database (https://peratechholdco.sharepoint.com/products/Lists/Products%20Part%20Number%20Log/AllItems.aspx)	Designs for all prototype and mass production parts
Inspection and Error Detection Processes	Inspection Criteria	IC_0001_AA03 - Sensor General Inspection Criteria 20220520 Customer or Part Specific Criteria: https://peratechholdco.sharepoint.com/sites/Quality242/Shared%20Documents/Forms/AllItems.aspx?FolderCTID=0x012000A5B16289ADDB0F43AC188361DD591F82&id=%2Fsites%2FQuality242%2FShared%20Documents%2FPSZ%20Centre%2F03%2E%20Reports%20%2B%20Documentation%2FInspection%20Criteria%2FCustomer%20or%20Part%20Specific&viewid=d0625bcb%2D6b4e%2D48d8%2Dabdf%2D1c949446bc68	Sensor General Inspection Criteria Database of Customer or Part-Specific Inspection Criteria
Inspection and Error Detection Processes	Reliability Testing	https://peratechholdco.sharepoint.com/sites/Quality242/Shared%20Documents/Forms/AllItems.aspx?FolderCTID=0x012000A5B16289ADDB0F43AC188361DD591F82&id=%2Fsites%2FQuality242%2FShared%20Documents%2FPSZ%20Centre%2F03%2E%20Reports%20%2B%20Documentation%2FReliability%20Criteria&viewid=d0625bcb%2D6b4e%2D48d8%2Dabdf%2D1c949446bc68	Database of Reliability Test Plans

Category	Sub-Category	Document/Data Base Name	Description
Tester	Tester Specifications	MP Tester List MP 180 Plus Cost MP 180 Plus Test Function Introduction V1.0	List of Testers by Name, Capability, Status Cost to build an MP 180 Tester MP 180 Plus tester function and capability overview

Software

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
AI Matrix Tracking	Software	Undertake tracking of a single touch input to a matrix sensor via the use of a trained AI model. The accuracy of the tracking has been shown to be higher and more robust than the original center-of-mass method. Code base allows full workflow from training the AI model through to (in development) minimization and deployment to device.	Python, Keras, Tensorflow, Tensorflow Lite	9	7,000	Y
AI-Based Matrix Tracking Demo	Software	A drawing application for demonstration of matrix tracking algorithms.	Python, QT, Tensorflow, Tensorflow Lite, MS Windows	1	1,300	Y
AI Sensor Design Optimisation	App	An automated global optimization process for determining a sensor design to match desired force-resistance characteristics. Utilises customised evolutionary algorithm and AI-powered targeted SPICE emulator for rapid calculation of FR curve.	Python, Keras, Tensorflow, MS Windows	18	10,000	Y
Complete Analysis	Software	Used for automated analysis and graph plotting for force-resistance datasets. Replaces hundreds of person-days of manual analysis time.	MATLAB	9	10,000	Y

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
FR100 Tester Application	Software	Used to control the FR100 force-resistance tester, for gathering single point sensor data (single-point-type sensor testing). Note that these are equivalent lines of code, since LabVIEW does not use lines of code. It is graphical in nature.	LabVIEW	12	20,000	N
FR200 Tester Application	Software	Used to control the FR200 force-resistance tester, for gathering multi-point sensor data (matrix-type sensor testing). Note that these are equivalent lines of code, since LabVIEW does not use lines of code. It is graphical in nature.	LabVIEW	9	10,000	N
R&D Data Uploader	Software	Used to process and upload to Azure database holding R&D test data.	C#, .NET, MS Windows	1	4,000	Y
SSb (Sensor Sandbox)	Software	A parametric 2.5D modelling tool for simulation of FSR sensors. Designed to be used in conjunction with independent mechanical modelling software, as part of Peratech's proprietary sensor-solution simulation workflow. Includes Peratech's know-how on sensor physics and piezo-resistive sensing	Python, MS Windows	18	10,000	Y

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
		principles, alongside a proprietary materials property database.				
SPOT (Signal Processing Optimisation Tool)	Software	Application for automating the optimization of electrical parameters in signal processing circuits, based on sensor test data.	Python, MS Windows	4	1,000	Y
Application Tester Control Software	Software	Command line application for recording sensor test data by controlling testing hardware ("Application Tester") that emulates real-case use of the sensor system.	Python, .NET(C#), MS Windows	4	3,000	Y
Evjia	Firmware	4-key force keyboard firmware with GD mcu	C	1	63,000	N
CFU Bin File Convert Tool	Software	CFU upgrade converts the original bin file to the bin file required by CFU	C++	1	500	N
CFU Update Tool	Software	Windows command line to update firmware according to Microsoft CFU protocol	C++	1	2,000	Y
Electronic Integration App	Software	*Software application to model sensor intergration parameters*	MATLAB	1	5,000	N

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
Voltage Divider Integration Tool	Software	Software application to model sensor intergration parameters	MATLAB	1	5,000	N
R&D Data Uploader	Software	Used to process and upload to Azure database holding R&D test data.	C++, .NET, MS Windows	1	4,000	Y
FDAnalysis	Software	Software application to analyze the relationship between the force and the distance the keyboard is pressed down	Python	1	500	Y
FRAnalysis	Software	Software application to generate Force-Resistance curves from actual sensor testing	Python	1	1,200	Y
UART Update Tool	Software	4-key force keyboard firmware with GD mcu	C++	1	5,000	Y
Argus	Firmware	4-key keyboard firmware used for Lenovo i7 production (Intel variants) for embedded use running on the Zephyr RTOS	C	9	70,000	N
Caterham	Firmware	Firmware for Caterham development board, focused on mobile phone side-key applications	C	14	325,000	N
Elise	Firmware	Firmware for Elise development board, focused on full force keyboard applications	C	6	6,000	Y

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
Elise 2.0	Firmware	Firmware for Elise development board, focused on full force keyboard applications, utilizing libhydra firmware library	C	3	2,000	Y
Esprit	Firmware	Firmware for Visionox board, specific to Visionox phone application (side key under waterfall glass)	C	3	400,000	N
Ginetta	Firmware	Code for Jaguar board to run Ginetta load-cell extension board	C	2	684,000	N
Interpolation	Firmware	Firmware library providing interpolation math functions	C	1	10,000	N
Jaguar	Firmware	Firmware for Jaguar development board, designed to be able to read large (including high-density) matrices	C	12	260,000	N
Lotus (keyboard)	Firmware	Firmware for early implementations of extended force-enabled keyboards (13 key, early full-keyboard) on the Lotus deveopment board	C	7	118,000	N
Lotus (trackpad)	Firmware	Firmware for implementing development demonstrator versions of Peratech's force enabled trackpad, FusionPad, on the Lotus development board	C	3	3,300	N
Morgan	Firmware	Initial 4-key force keyboard firmware for resistive divider board	C	4	62,000	N

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
MorganPlus (Eos)	Firmware	4-key force keyboard firmware used for Lenovo i7 production (AMD variants) for embedded use and on the MorganPlus development board.	C	8	73,000	N
Rover	Firmware	Firmware for Rover board (aka SPDev)	C	2	79,000	N
SDC	Firmware	Firmware to run on several different iteration of matrix sensor boards - customer-specific	C	3	80,000	N
SDC BIO	Firmware	Firmware to capture data from a small matrix sensor	C	8	80,000	N
Spider	Firmware	Firmware for Spider development board, designed to be able to read large (including high-density) matrices	C	6	78,000	N
Westfield	Firmware	Firmware for Westfield development board, focussed on mobile phone back-key applications, including cap/force sensor fusion	C	10	82,000	N
Hydra	Firmware library	Cross-platform firmware library to implement active parts of the Hydra HID disaggregation system - must work in conjucntion with Hydra software	C,C++	6	10,000	Y
PTCursor Library	Firmware library	The library was developed to run on embedded devices for processing matrix data, applying filtering, noise removal, and touchpoints tracking. It is an essential part of trackpad projects. Automated Tests for verification	C, C++	14	14,000	Y

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
Android UI	App	Android Apps developed for Visionox, side keys, slider, grip sensing, volume control, and gaming.	Java	13	6,400	Y
PTNetwork	Protocol	Protocol for communication between Peratech's firmware and software	Protobuf, nanopb	6	1,500	Y
Application Studio	Software	GUI applications for controllling and configuring any of Peratech's range of development boards and recording and analysing sensor test data gathered from those boards	C#, .NET, MS Windows	51	35,000	Y
AT200 Application Tester Applications	Software	Extended suite of command line applications for recording and analyzing sensor test data by controlling testing hardware ("Application Tester") that emulates real-case use of the sensor system.	Python, .NET(C#), MS Windows	4	15,000	Y
Calibration Tool	Software	Software application to read and set calibration value to FW	C++	1	3,000	N
HD Matrix Drawing Application	Software	Drawing application developed to demonstrate capabilities of Peratech's high-density matrix - interfaces to Spider board/firmware	C#, .NET, UWP, MS Windows	2	2,600	
HID FW Live Update Tool	Software	Windows command line tool for upgrading the firmware on boards using the HID live update bootloader protocol provided by Microchip	C	0.5	500	Y

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
Hydra 2	Software	Application to run in conjunction with Peratech's firmware and hardware in the PC environment to provide disaggregation of HID outputs from physical input devices focused on gaming; also provides user control and calibration facilities for the sensor harwdare. Distributed via Microsoft store	C#, .NET, UWP, MS Windows	19	41,000	Y
Hydra 2.1	Software	Development on Hydra 2 with support for full keyboard and more targeting a buisness use case.	C#, .NET, UWP, MS Windows	6	59,000	Y
Hydra 3	Software	Redesign of Hydra 2 with new architecture and code base. Run in conjunction with Peratech's firmware and hardware using the PTNetwork protocol. Support for full keyboard.	C#, .NET, UWP, MS Windows	6	29,000	Y
Hydra Serial Bridge Tool	Software	Software application to serial data conversion	C++	1	1,500	N
KFC (Keyboard Force Controller)	Software	Initial demonstrator software for 4-key force keyboard implementation	C#, .NET, UWP, MS Windows	7	21,000	Y

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
PCBA Test	Software	Software application to verify the validity of PCBA	C#, .NET, MS Windows	2	4,300	Y
Peratech Portal	Software	A cloud-based portal to allow storage and analysis of the data gathered from Peratech manufacturing test systems	C#, .NET, Azure	43	97,000	Y
PTSuite	Software	GUI applications for controllling and configuring older Peratech development boards and recording and analysing sensor test data gathered from those boards	C / C++	24	27,000	Y
SystemTester	Software	Software application to display calibration effects	C#, .NET, WPF	2	3,000	N
MP100 Production Tester Software	Software	Used to control the MP100 force-resistance,force-travel tester, for test/calibrate single sensor/matrix sensor	C#, .NET, MS Windows	12	25,000	N
MP180, MP200 Production Tester Software	Software	Used to control the MP180/MP200 force-resistance,force-travel tester, for test/calibrate single sensor/matrix sensor	C#, .NET, MS Windows	12	24,000	N
Click Ratio Calculation Application	Software	Software application to calculate click ratio and export result report	C#, .NET, MS Windows	1	2,000	N

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
PCBA Noise Test Application	Software	Software application to display ADC and resistance values and the noise, real-time curve tracking	C#, .NET, MS Windows	1	3,500	N
MP Spec Application	Software	Software application to verify the validity of MP data spec	C#, .NET, MS Windows	1	3,500	Y
Single channel force/resistance measurement board	Firmware	Firmware for Single force/resistance measure board, designed to be able to measure one channel force and one channel resistance	C	2	3,000	N
Six-channel force measure board	Firmware	Firmware for six channel force measure board, designed to be able to measure six channel force measure	C	4	4,000	N
Three-axis control board	Firmware	Firmware for three axis control board, designed to be able to control mass production tester (MP100)	C	6	6,000	N
In-application	Firmware	fireware update through Ymodem protocol by UART	C	1	1,500	N

Name of Software	Type (Software/ Firmware/ Library/ App)	General Description of the Software or Application	Associated Platform or Operating System	Time in Development (Months)	Complexity Indicator (Approximate lines of code, algorithms, etc.)	Includes Open Source Modules/ Projects? (Y/N)
programming through Ymodem protocol by UART						
Photoshop SVG Plugin	Software	Export plugin to support embedded vector graphics	C++	12	15,000	N
Illustrator SVG Pluging	Software	Export plugin to support embedded vector graphics	C++	12	150,000	N
Enrich Embedded User Interface Suite	Embedded UI Suite	Embedded UI environmentwith IDE development	C, C#, C++, Javascript	72	500,000	Y

EXECUTION

IN WITNESS WHEREOF the Parties have duly executed this Agreement on the day and year written on the first page.

Signed by Doug Balderston .....

Director

for and on behalf of **Peratech Holdco Limited**

AND

Signed by Jonathan Stark .....

Director

for and on behalf of **Peratech IP Ltd**

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