OpticalProgrammer.com

PROGRAMMING SOLUTIONS FOR OPTICAL MODULES

Tel: +44 750 200 4611 14, Brandon Grove, Stoke-on-Trent. ST4 8EW. UNITED KINGDOM
Email: jon@opticalprogrammer.com Web: www.opticalprogrammer.com
UK VAT: GB395023396 EORI: GB395023396000
OpticalProgrammer.com Ltd, registered number 13470035

Outline Datasheet

v1.6 March 2025

SFP MicroCoder

Small-format programmer for coding:
SFP, SFP+, SFP28, CWDM, DWDM, BiDi etc.

QSFP-DD MicroCoder

Small-format programmer for coding:
QSFP, QSFP28, QSFP-DD, DAC etc.

MiniCoder

Small-format programmer for coding:
SFP, SFP+, SFP28, CWDM, DWDM, GPON, BiDi etc.
and QSFP, QSFP28, QSFP-DD, DAC etc.

OSFP MicroCoder

Small-format programmer for coding: OSFP

Contents

Introduction

The OpticalProgammer.com range of Coders can program almost anything in the SFP-QSFP family of transceivers. They are optimised for re-coding transceivers in the field. They are designed to be rugged enough to throw in a works bag, and cheap enough to give away.

	SFP MicroCoder	SFP-DD MicroCoder	QSFP-DD MicroCoder	OSFP MicroCoder	SFP & QSFP-DD MiniCoder
Status	Available now	Sampling Q2 2025	Available now	Available now	Available now
Custom labelling?	✓	✓	✓	✓	✓
Keyring option?	✓				
SFP	✓	✓			✓
SFP+	✓	✓			✓
SFP28	✓	✓			✓
CWDM	✓	✓			✓
DWDM	✓	✓			✓
Tuneable	✓	✓			✓
Bi-Di	✓	✓			✓
SFP-DD		✓			✓
QSFP			✓		✓
QSFP28			✓		✓
QSFP56			✓		✓
QSFP-DD			✓		✓
OSFP				✓	
OSFP-RHS				Ask	

The whole range is customizable to your branding.

Software

The software we provide is designed to demonstrate the abilities of the coders, and to perform basic coding functions. We will also support you writing your own software, or work with you to create a custom version of our software.

Hardware Overview

All parameters are with T_A = 0 to 30°C.

PARAMETER	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNIT
Input voltage		4.5[1]	5.0	6.0	V
Output voltage to transceivers	P_{OUT}= 1.5W[2]	3.25	3.3	3.35	V
Output voltage to transceivers	P_{OUT}= 7W[3]	3.15	3.3	3.45	V
Output power to transceivers	-	0	-	10[4]	W
Quiescent current	Power to SFP is off LEDs are off Clock = 24MHz	45	52	54	mA
Power monitor accuracy[5]	P_{SFP}= 0 to 5W	-	±1%	±5%	-

PARAMETER	TEST CONDITIONS	TYPICAL	UNIT
ESD protection – contact discharge	Standard IEC 61000-4-2	±8	kV
ESD protection – air discharge	Standard IEC 61000-4-2	±15	kV

Mechanical Properties

SFP MicroCoder
Approximate dimensions: 44mm x 30mm x 14mm
Approximate weight: 13g

QSFP-DD MicroCoder
Approximate dimensions: 80mm x 39mm x 14mm
Approximate weight: 32g

OSFP MicroCoder
Approximate dimensions: 115mm x 45mm x 19mm
Approximate weight: 56g

[1] According to the USB standard, input voltage should never drop below 4.75V. In reality however, loaded ports can sometimes drop well below this, especially with long or poor quality cables.
[2] This represents QSFP-DD power class 1.
[3] This represents QSFP-DD power class 3. In reality, the transceiver will quickly overheat at these power levels. The MicroCoder case is not designed to dissipate that much heat.
[4] This is limited by the USB-C architecture and may not be available depending on the host implementation. The voltage at the transceiver is not guaranteed at maximum power.
[5] For the MiniCoder only.

MiniCoder

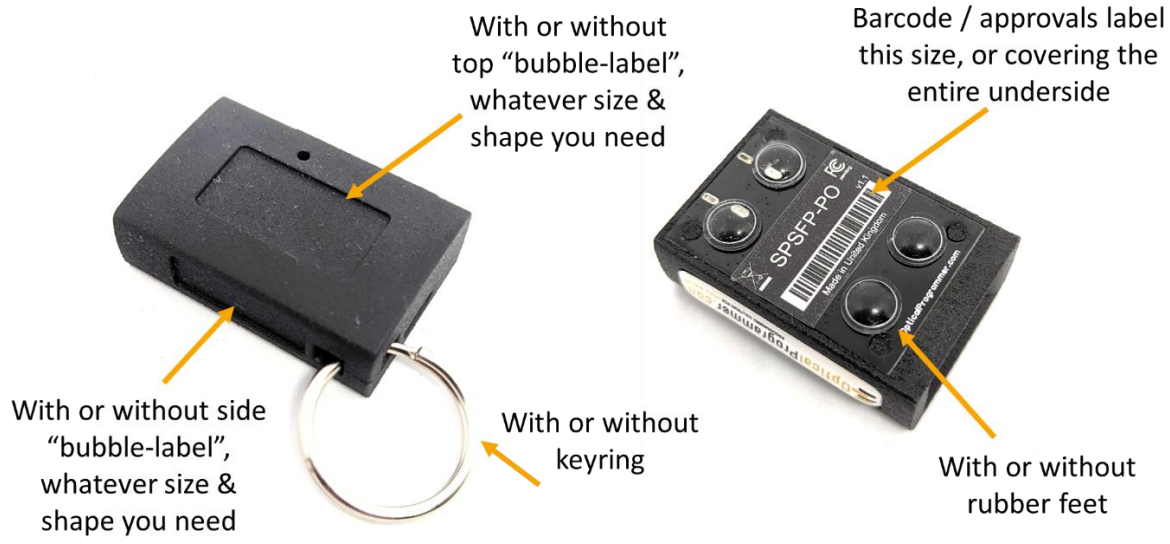
Approximate dimensions: 80mm x 39mm x 14mm
Approximate weight: 31g

All types are optionally supplied with rubber feet.

Customisation

Branding
Both the MicroCoder and MiniCoder labels can easily be customized to your branding.

Case options



Software
If you have your own software team, we can work with them to achieve your desired outcome, providing all the support they need.

Alternatively, we offer a full turnkey solution, with software customized to your needs. We will work with you to define how you would like to software to work, and how you would like it to appear.

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EU Declaration of Conformity

OpticalProgrammer.com Ltd
14 Brandon Grove
Stoke-on-Trent. ST4 8EW.
UNITED KINGDOM

declare, under our sole responsibility, that the products:

SFP MicroCoder (S-OP)
QSFP-DD MicroCoder (Q-OP)
OSFP MicroCoder (O-OP)
SFP-QSFP MiniCoder (QS-OP)

conform with the provisions of the following EU Directives:

EMC Directive 2014/30/EU
Restrictions on Hazardous Substances Directive 2011/65/EU (RoHS2)

Place	Signature	Date
Stoke-on-Trent, UK		24/03/2025

Jon Mason
Director

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UK
CA

UK Declaration of Conformity

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declare, under our sole responsibility, that the products:

SFP MicroCoder (S-OP)
QSFP-DD MicroCoder (Q-OP)
OSFP MicroCoder (O-OP)
SFP-QSFP MiniCoder (QS-OP)

conform with the provisions of the following UK Directives:
Electromagnetic Compatibility Regulations 2016
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Place	Signature	Date
Stoke-on-Trent, UK		24/03/2025

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Statement of FCC Exemption

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declare, under our sole responsibility, that the products:

SFP MicroCoder (S-OP)
QSFP-DD MicroCoder (Q-OP)
OSFP MicroCoder (O-OP)
SFP-QSFP MiniCoder (QS-OP)

are class-A unintentional radiators, exempt from the provisions of FCC Part 15 Subpart B (CFR 47), under the rule 15.103(c) “a digital device used exclusively as industrial…test equipment”.

In addition, these devices are marketed only to industrial users, and is intended to be used by qualified engineers and technicians in an industrial environment.

Place	Signature	Date
Stoke-on-Trent, UK		24/03/2025

Jon Mason
Director

Small print

Terms and Conditions of Sale:
In these conditions, “we” and “us” refers OpticalProgrammer.com Ltd. In placing an order with us, you agree to be bound by the terms and conditions stated herein. The provisions set forth herein are for the sole benefit of the parties hereto, and confer no rights benefits or claims upon any person or entity not a party hereto.

Availability and Pricing
Specifications, availability and pricing are subject to change without notice. Orders are not binding upon us until accepted by us, and until any specified initial payments are received. Prices listed are in British Pounds (GBP). We reserve the right to refuse service, terminate accounts, or cancel orders at our sole discretion.

Payment terms
Payment is due 30 days from the invoice date unless otherwise stated on the invoice (Net30).
Payment options are shown on invoices. Other options may be available, on agreement with us.
Title to all goods or services is retained by us until full and final payment is received.

International Orders
Export orders are accepted on the basis of payment in advance unless agreed otherwise by us. We may also require an initial payment, that is, a proportion of the balance in advance of manufacture. Prices are quoted FCA our company office in Stoke-on-Trent, UK in accordance with Incoterms 2010 and do not include insurance, freight, brokerage, duty or taxes, unless otherwise stated.

In placing an order with us, you agree to comply with all applicable export laws, restrictions and regulations of the United Kingdom or foreign agencies or authorities, and shall not export, or transfer for the purpose of re-export, any product to any prohibited or embargoed country or to any denied, blocked, or designated person or entity as mentioned in any United Kingdom or foreign law or regulation. You warrant that you are not prohibited by law from purchasing the products or services hereunder. You shall be responsible to obtain any license to export, re-export or import as may be required.

Cancellation
In the event of you cancelling an order, we reserve the right to invoice you for a reasonable proportion of the total order value that was originally quoted.

If we cancel an order, we will refund the payment within 5 days of cancellation.

If we fail to ship an off-the-shelf (non-custom) item within 7 days of payment, we will refund the payment within 5 days of the estimated shipment date.

Return and refund policy
Off-the-shelf (non-custom) products may be returned within 60 days of purchase for a full refund of the purchase price minus any shipping, taxes and duties we have paid. Unless agreed, you will be responsible for return shipping to us.

Warranty
Our products are covered by a one-year warranty; this covers parts and labour based on the goods being returned to our address, below.

Privacy Policy
We may ask you to provide us with certain personal date including (but not limited to) your name, email address, phone number and mailing address. We will not share that data with any other company or individual without your permission. We will keep your data safe and we will use your data only in the context of our business relationship with you.

Intellectual Property
For “off the shelf” goods, we retain all intellectual property rights associated with the design and manufacture of any goods or equipment supplied under this agreement. For custom designs, you own the intellectual property rights including PCB designs, schematics, bills of material and any software supplied, unless otherwise agreed.

Liability
We will not be liable for any loss or damage to any goods or equipment on loan to us. We specifically disclaim any and all warranties, either express or implied, with regards to any licensed products. No warranty will apply if products supplied hereunder are in any way altered or modified after delivery. In no event shall we be liable for any damages, including but not limited to loss of profits, revenues, business, goodwill, data, injury, interruption of business, nor for incidental or consequential loss or fitness of purpose damages related to this agreement.

If we provide you with advice, training, applications support, or other assistance which concern any products supplied hereunder, or any equipment, system or the like in which the product may be installed, our giving of such advice or assistance will not subject us to any liability, whether based on contract, warranty, tort (including negligence) or other grounds.

Revision History

v1.6
- Added OSFP-MicroCoder

v1.5
- Removed software instructions.
- Update to roadmap.

v1.4
- Added introduction.
- Added QSFP-DD MicroCoder data.
- Added software state chart.

v1.3
- Added case customisation options.

v1.2
- Complete update, added MiniCoder information.

v1.1
- Changed unused GPIOs to OUTPUTS, which changes the configuration bytes.

v1.1
- Added Micro-coder branding
- Added outline instructions and process flow for demo software
- Formatting changes

v1.0
- Original version