Peripherals

- Cellular modems
- SFP modules
- SFP+ modules

This article describes supported add-on peripherals for RouterBOARD hardware devices.

Cellular modems

RouterOS v6 and v7 supported cellular modems:

- MikroTik modems
- 3rd party modems supported by device class/type:
  - MBIM class USB interface
  - USB-CDC class USB interface
  - RNDIS type USB interface
- 3rd party modem with added support, see modem table below

Please note:

- not all modems are listed in the supported modem table, some may work because modem manufacturers re-use the same hardware IDs and vice versa
- customized, localized and locked units may have compatibility issues
- 3rd party modem may require a modem configuration adjustment before it can be used with RouterOS
- mini-PCIe modems with USB3.0 interface installed in mini-PCIe PCIe/USB2.0 enabled slot USB speed must be limited to USB2.0 speed or mini-PCIe shared PCIe/USB3.0 pins isolated. See the picture below table

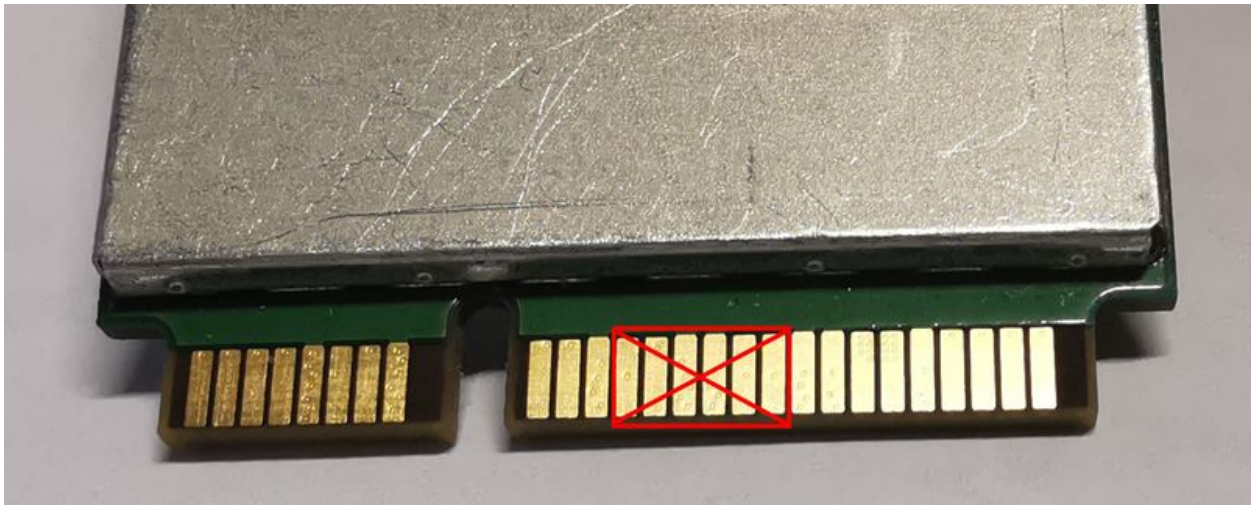
Model	vendor-id	device-id	Tested RouterOS version	Comments	Format
Alcatel IK40			v6.41RC11	Config-less LTE interface	USB
Alcatel IK41			v6.48	Config-less LTE interface	USB
Android usb tethering interface			v6.7	Config-less LTE interface	USB
AnyData ADU-E630WH			v6	(aka "USB Wireless HSDPA/UMTS 2.1GHz GSM/GPRS/EGPRS 900/17000MHz/CDMA 1x EVDO Rev.A")	USB
Anteniti 3372h-153			7.12		USB
BandRich C501			v5.25 and v6.0		USB
D-link DWM-157	0x2001	0x7d02	v6.xx	Works! Data Channel: 2, Info Channel: 3,Modem Init: AT+CFUN=1, vendor-id="0x2001" device-id="0x7d02" Some info from modem: > H/W Ver.: B1, F/W Ver.: 2.0.1eu, revision: +CGMR: MOLY.WR8.W1231.DC.WG.MP.V3, 2013/04/09 02:08 Different HW revisions might not work with RouterOS	USB
D-link DWM-222			v6.38	Multiple modem versions with the same marketing name exist, only H/W ver: A1 supported as config-less LTE interface	USB
Dell DW5821e			v7.4beta4 and higher	MBIM driver. Revision: T77W968.F1.0.0.5.2.VZ.013 044	M.2
Dell DW5821e-eSIM	0x413c	0x81e0	7.11 and higher	MBIM driver. FW: T77W968.F1.0.0.5.2.GC.013. "at-chat" support added	M.2
Dell Wireless 5530 HSPA			v6.1 and higher	Data channel 0, Info channel 0, init: AT+CFUN=1 (needs manualy change profile by command AT*ENAP=1,1)	MiniPCI-e

Ericsson F5521gw			v6.x and higher		MiniPCI-e
Fibocom FM150-AE	0x2cb7	0x0111	v7.1beta5	MBIM driver. Revision: 89603.1000.00.01.01.03	M.2
Fibocom FG621-EA	0x2cb7	0x0a07		MBIM LTE interface	mini-PCIe USB device
Fibocom NL-952-EAU			v7.1beta5	MBIM driver. Revision: 19600.7000.00.04.01.05	M.2
Marvell PXA1802 based modems	0x1286	0x4e31	v7.2.2		mini-PCIe
Huawei E153			v6.31< and higher		USB
Huawei E171			v6.xx	Works! ppp interface, vendorid=0x12d1 deviceid=0x140c	USB
Huawei e3131			v6.xx and higher	ppp interface	USB
Huawei E3372h, E5576h, E8372h	0x12d1	0x14db	v6.8	Config-less LTE interface. Models with suffixes -320 and -608 will not work with RouterOS v6, please use v7 instead. Various customized variants were observed which does not provide LTE interface, but can be used in serial/PPP mode.	USB
Huawei E3276-150			v6.xx	ppp interface	USB
Huawei E3351			v6.24 and higher		USB
Huawei E3531			v6.24 or 6.40 RC25	There are different versions of this modem E3531-6 works from version 6.40RC25 as ppp, mbim supported only from RouterOS V7	USB
Huawei e398			v6.xx and higher	ppp interface	USB
Huawei E5377			v6.36.1	MIFI unit. No serial support, but works with IP on LTE interface	USB
Huawei E5673s-609			v6.xx	LTE interface	USB
Huawei K5160			v6.37 v7.0beta6	v6 and v7 - config-less LTE interface v7 - by default will try to use the modem in MBIM mode	USB
Huawei K5161			v6.47	Config-less LTE interface	USB
Huawei ME909s-120			v6.28	Recommended modem firmware version 11.617.24.00.00 To reduce LTE interface IP subnet mask to /32 configure the modem with at-chat command: /interface lte at-chat [find] input="AT^CUSTFEATURE=3,1"	MiniPCI-e
Huawei ME909u-521			v6.11		MiniPCI-e
Huawei MU609			v6.11		MiniPCI-e
Huawei MU709s-2			v6.28		MiniPCI-e
Huawei MS2372h-517			v7.12beta3	serial/PPP interface	USB
Jaton MT421e			v6.40RC32	config-less LTE interface	MiniPCI-e
Netgear Unite Explore 815S			v6.41	MIFI unit. No serial support, but works with IP on LTE interface.	USB
Novatel USB730L			v6.41RC6	LTE interface	USB

Olivetti Olicard 500			v6.41RC11	ppp interface	USB
Quectel EC20 /EC21			v6.xx	ppp interface, there is page in wiki about Quectel: article	MiniPCI-e
Quectel BG77	0x2c7c	0x0700	v6.47	Serial/PPP interface, single AT/modem channel=2	OEM module
Quectel BG95-M3			v6.47	Serial/PPP interface, single AT/modem channel=2 Will not work in wAP R ac boards.	mini-PCIe
Quectel BG96			v6.45	Serial/PPP interface, 2x AT/modem channels	mini-PCIe
Quectel EC25-EU	0x2c7c	0x0125	v6.42	ppp/LTE interface, there is page in wiki about Quectel ppp mode: article RouterOS v6 CDC-ECM mode - LTE interface receive address in modems internal network. RouterOS v7 MBIM mode - LTE interface uses APN IP address.	MiniPCI-e
Quectel EG25-G	0x2c7c	0x0125	6.48.3	RouterOS v6 CDC-ECM mode - LTE interface receives address in modem internal network. RouterOS v7 MBIM mode - LTE interface uses APN IP address. In some boards may be required to disable SIM hot plug detection: `/interface lte set [find] modem-init="AT+QSIMDET=0,1"`	MiniPCI-e
Quectel EM12-G	0x2c7c	0x0512	v7.1beta5	MBIM LTE interface	m.2
Quectel EP06			v6.42	ppp/LTE interface, there is page in wiki about Quectel: article	MiniPCI-e
Quectel RM500Q-GL	0x2c7c	0x0800	v7.1beta6	MBIM LTE interface	m.2
Quectel RM500Q-AE	0x2c7c	0x0800	v7.1beta6	MBIM LTE interface	m.2
Quectel RM502Q-AE	0x2c7c	0x0800	v7.1beta5	MBIM LTE interface	m.2
Quectel RM510Q-GL	0x2c7c	0x0800	7.9	MBIM LTE interface	m.2
Quectel UC15			v6.xx	Works, ppp interface	MiniPCI-e
Quectel UC20			v6.xx	Works, ppp interface	MiniPCI-e
R11e-4G	0x2cd2	0x0003	v6.42	LTE interface. Supports multiple APN, LTE passthrough	MiniPCI-e
R11e-LTE6	0x2cd2	0x0004	v6.39.2	LTE interface. Supports multiple APN, LTEpassthrough	MiniPCI-e
R11e-LTE	0x2cd2	0x0001	v6.39.2	LTE interface. Supports multiple APN, LTEpassthrough	MiniPCI-e
Sierra Netgear AirCard 320U			6.41	Customer tested the modem with firmware 03.05.23	USB
Sierra wireless MC73xx			v6.xx(ppp) v7.xx (LTE)	Works! PPP interface. And starting with v7.xx it will support LTE interface. MC7304 tested with firmware SWI9X15C_05.05.67.00	MiniPCI-e
Sierra Wireless MC7430			v6.xx and higher	Data channel 2, Info channel 2, Modem init: AT+CGATT=0, Dial-command: AT+CGATT=1;D*99#, also needs USB 3.0 pins isolated	MiniPCI-e
Sierra Wireless MC74xx			v7.1	MBIM LTE interface	mini-PCIe
Sierra Wireless MC7455	0x1199	0x9071	v7.3beta37	MBIM LTE interface with extended support for USB compositions: • 1009 - diag,modem,mbim • 100D - diag,nmea,modem,mbim Regarding available modem USB compositions (device-id) please see modem manual, command AT!USBCOMP	mini-PCIe

Sierra Wireless MC7710 /MC7700 /MC7750			v5.25, v6.0 and 6.40 RC43	If modem uses firmware 3.5 it should be upgraded to 3.5.23.2 firmware release in order to work in RouterOS correctly again.	MiniPCI-e
SIMcom various models	0x1e0e	0x9006	v6.xx	PPP interface	Mini-PCIe USB device
SIMcom various models	0x1e0e	0x9000 0x9001 0x9003 0x901a 0x901b 0x9205	v6.xx	LTE interface Some modems may not work with RouterOS v7 on MMIPS-based RouterBoards (M11G, M33G, LtAP etc), please use RouterOS v6. Regarding available modem USB compositions (device-id) please see modem manual, commands AT+CUSBPIDSWITCH; AT+CUSBCFG	m.2/mini-PCIe USB device
SIMcom various models	0x1e0e	0x9003 0x9005	v7.xx	MBIM LTE interface Regarding available modem USB compositions (device-id) please see modem manual, commands AT+CUSBPIDSWITCH; AT+CUSBCFG	m.2/mini-PCIe USB device
SIMCom SIM8202G-M.2	0x1e0e	0x901e	v7.11	MBIM LTE interface Regarding available modem USB compositions (device-id) please see modem manual, command AT+CUSBCFG=usbid,1e0e,901e	m.2 USB device
SIMCom SIM8262	0x1e0e	0x901e	V7.14	MBIM LTE interface + AT-Chat support	
SXT LTE 3-7			v6	LTE interface. Old version of SXT LTE	m.2
Tele2.ru LTE-D402			v6.47	Config-less LTE interface	
Telecom NZ T-Stick ZTE MF-181			v6.0rc13	Data Channel=2, Info Channel=2, APN internet.telecom.co.nz, PHONE=*99#. Tested ok for both data and SMS on CCR1016-12G	USB
Telit FN980m			v7.5	AT#USBCFG=2	m.2
Telit LE910	0x1bc7	0x1201	v6.xx	ppp interface	MiniPCI-e
Telit LE910C1			v6.46	Non-configurable from RouterOS	MiniPCI-e
Telit LE910C4	0x1bc7	0x1204	v7.xx	Works in MBIM mode : LTE interface + AT-chat	MiniPCI-e
Telit LM940			v6.44	LTE interface In some cases needs 3.0 pins isolated	MiniPCI-e
Telit LM960			v6.46	LTE interface In some cases needs 3.0 pins isolated	MiniPCI-e
TPS (Turning Point Solution) GCT450			v6.48	Config-less LTE interface	MiniPCI-e
Vodafone (Huawei) K4203			v7.xx	Not supported in ROS v6, but as this modem supports MBIM drivers support will be possible in ROS v7.	USB
Vodafone K4201-Z			v6.8	Some settings are ignored. LTE interface.	USB
Vodafone K4305			v6.7	Some settings are ignored.	USB
Vodafone K5160			v6.37	Some settings are ignored.	USB

Yota LU150			v5.22 and v6.4	Some settings are ignored.	USB
Yota wifi modem			v6.7	Some settings are ignored.	USB
Yota WLTUBA-107			v6.0	Some settings are ignored.	USB
ZTE 821D			v6.x	Set Info channel = 1, Data channel = 3, Dial command=ATDT	USB
ZTE AC5730			v6.x		USB
ZTE ME3630-E			v6.40RC26	ppp and LTE interface	MiniPCI-e
ZTE MF110			v6.28 and higher	Set info channel = 2, data channel = 2, Dial command=ATM1L3DT	USB
ZTE MF823			v6.8	Some settings are ignored. For some devices it's needed to enter in FACTORY mode to change operating state.	USB
ZTE MF825A			v6.xx	Some settings are ignored.	USB
ZTE MF827			v6.8	Some settings are ignored.	USB
ZTE MF832S			v7.10	Config-less LTE interface may require to set some settings using at-chat or modem init string	USB
ZTE MF90			v6.44beta32 and higher	LTE interface	USB



mini-PCIe slot shared PCIe/USB3.0 pins

SFP modules

Brand	Model	Rate	Connector /Cable type	Wavelength	Tested with	Works / Doesn't
MikroTik	S-85DLC05D	1,25G	Dual LC, MM	850nm	*Check: SFP/SFP+ compatibility reference table	Natively supported
MikroTik	S-31DLC20D	1,25G	Dual LC, SM	1310nm	*Check: SFP/SFP+ compatibility reference table	Natively supported
MikroTik	S-35LC20D	1,25G	BiDi LC, SM	Tx:1310nm/Rx: 1550nm	*Check: SFP/SFP+ compatibility reference table	Natively supported
MikroTik	S-53LC20D	1,25G	BiDi LC, SM	Tx:1550nm/Rx: 1310nm	*Check: SFP/SFP+ compatibility reference table	Natively supported

MikroTik	S-RJ01	1000/100/10	RJ45, Cat5/Cat6	N/A	*Check: SFP/SFP+ compatibility reference table	Natively supported
Axiom	AXG91632	1000BASE-LX	Dual LC	1310nm	CRS125-24G-1S-RM	Works!
Finisar	FCLF-8521-3	10/100/1000	RJ45, Cat6	N/A	RB2011LS-IN	Works!
Finisar	FCLF-8521-3-MD	10/100/1000	RJ45, Cat6	N/A	RB2011LS-IN	Works!
Finisar	FTRJ8519P1BNL-B1	10/100/1000 1.25 Gb/s 1000Base-SX Ethernet	Dual LC, MM	850nm	RB2011LS-IN	Works!
Finisar	FTLF8519P2BNL	10/100/1000 1.25 Gb/s 1000Base-SX Ethernet	Dual LC, MM	850nm	RB2011LS-IN	Works!
Finisar	FTRJ1319P1BTL	1.25Gb/s 1000Base-LX Ethernet	Dual LC, SM	1310nm	CCR1009-8G-1S-1S+ and CCR1009-7G-1C-1S+	Works!
Unica	SFP-1.25G-T	1000M	RJ45, Cat6	N/A	RB2011LS-IN	Works!
Dell	FTLX8571D3BCL	1,25G	Dual LC, MM	850nm	RB2011LS-IN	Works!
Unica	GP-3124-L2CD-C	1,25G	Dual LC, MM	1310nm	RB2011LS-IN	Works!
Cisco	GLC-T	1.25G	RJ45, Cat6	N/A	RB2011LS-IN	Works!
Cisco	GLC-SX-MM	1000BASE-SX SFP transceiver module for MMF, 1.25G	Dual LC, MM	850nm	RB2011LS-IN	Works!
Cisco	SFP-GE-L	1000BASE-LX/LH SFP transceiver module for SMF, 1.25G	Dual LC, SM	1300nm	Various MT hardware	Works!
6COM	6C-SFP-T	10/100/1000	RJ45, Cat6	N/A	RB2011LS-IN	Works!
6COM	6C-WDM-0210BSD	1,25G	BiDi SC, SM	Tx:1550nm/Rx:1310nm	RB2011LS-IN	Works!
6COM	6C-WDM-0210ASD	1,25G	BiDi SC, SM	Tx:1310nm/Rx:1550nm	RB2011LS-IN	Works!
6COM	6C-SFP-0310D	1,25G	Dual LC, MM	1310nm	RB2011LS-IN	Works!
6COM	6C-SFP-0301D	1,25G	Dual LC, MM	850nm	RB2011LS-IN	Works!
Ingellen	INSP-T(10/100/1000)	10/100/1000	RJ45, Cat6	N/A	RB2011LS-IN	Works!
Ingellen	INSPL-53-BX	1,25G	BiDi LC, MM	1550/1310	RB2011LS-IN	Works!
Ingellen	INSPL-35-BX	1,25G	BiDi LC, MM	1310/1550	RB2011LS-IN	Works!
Ingellen	INSP-LX-SM	1,25G	Dual LC, SM	1310nm	RB2011LS-IN	Works!
Ingellen	INSP-SX-MM	1,25G	Dual LC, MM	850nm	RB2011LS-IN	Works!
AXCEN	AXGT-R1T4-05I1	10/100/1000	RJ45, Cat6	N/A	RB2011LS-IN	Works!
AXCEN	AXGD-37A4-0531	1,25G	BiDi LC, MM	Tx:1550nm/Rx:1310nm	RB2011LS-IN	Works!
AXCEN	AXGD-16A4-0531	1,25G	BiDi LC, MM	Tx:1310nm/Rx:1550nm	RB2011LS-IN	Works!
AXCEN	AXGD-1354-0531	1,25G	Dual LC, MM	1310nm	RB2011LS-IN	Works!
AXCEN	AXGD-5854-0511	1,25G	Dual LC, MM	850nm	RB2011LS-IN	Works!
TP-Link	TL-SM311LS	1,25G	Dual LC, SM	1310nm	RB2011LS-IN	Works!
TP-Link	TL-SM311LM	1,25G	Dual LC, MM	850nm	CCR1036 12G-4S	Works!
OPTIC	OPTIC-SFP-3524S-02-SC	1,25G	BiDi SC, SM	Tx:1310nm/Rx:1550nm	RB2011UAS-RM, RB260GS	Works!
OPTIC	OPTIC-SFP-5324S-02-SC	1,25G	BiDi SC, SM	Tx:1550nm/Rx:1310nm	RB2011UAS-RM, RB260GS	Works!
OPTIC	OPTIC-SFP-S1203-L3302-LC	1,25G	BiDi LC, SM	Tx:1310nm/Rx:1550nm	RB2011UAS-RM, RB260GS	Works!

OPTIC	OPTIC-SFP-S1205-L3302-LC	1,25G	BiDi LC, SM	Tx:1550nm/Rx:1310nm	RB2011UAS-RM, RB260GS	Works!
ROBOFiber	SFP-7120-55	1,25G	Dual LC, SM	1550nm	CCR1036-12G-4S, RB2011	Works!
ROBOFiber	SFP-7120-WA	1,25G	BiDi LC, MM	Tx:1490nm/Rx:1550nm	CCR, RB2011	Works!
ROBOFiber	SFP-7120-WB	1,25G	BiDi LC, MM	Tx:1550nm/Rx:1490nm	CCR, RB2011	Works!
Enguity	SFP-3647603KM.b1310 XT	1,25G	BiDi LC, SM	Tx:1310nm/Rx:1550nm	CCR, RB2011, RB260GS	Works!
Enguity	SFP-3647603KM.b1550 XT	1,25G	BiDi LC, SM	Tx:1550nm/Rx:1310nm	CCR, RB2011, RB260GS	Works!
Enguity	SFP-3647610KM.b1490 XT	1,25G	BiDi LC, SM	Tx:1490nm/Rx:1550nm	CCR, RB2011, RB260GS	Works!
Enguity	SFP-3647610KM.b1550 XT	1,25G	BiDi LC, SM	Tx:1550nm/Rx:1490nm	CCR, RB2011, RB260GS	Works!
AdvOptics MSA	GLC-SX-MM	1,25G	BiDi LC, MM	Tx:1310nm/Rx:1310nm	CCR, RB2011, RB260GS	Works!
AdvOptics MSA	GLC-ZX-SM	1,25G	BiDi LC, SM	Tx:1310nm/Rx:1310nm	CCR, RB2011, RB260GS	Works!
Proline	GLC-BX-D20-PRO	1,25G	BiDi LC, SM	Tx:1490nm/Rx:1310nm	CRS125	Works!
Proline	GLC-BX-D40-PRO	1,25G	BiDi LC, SM	Tx:1310nm/Rx:1490nm	CRS125	Works!
Foundry Networks	E1MG-BXU-AC	1,25G	BiDi LC, SM	Tx:1310nm/Rx:1490nm	RB3011UiAS, hAP ac	Works!
Avago	SFBR-5799APZ	1,25G	Dual LC, MM	850nm	CRS326, CRS112	Works in 1Gbps mode!
Eltex	NTU-SFP-100	1,25G	SC	N/A	RB4011iGS+	Works!

SFP+ modules

Brand	Model	Distance	Rate	Connector /Cable type	Wavelength	Tested with	Works / Doesn't
MikroTik	S+85DLC03D	300m	10G	Dual LC, MM	850nm	All MikroTik products with SFP /SFP+ interfaces	Natively supported
MikroTik	S+31DLC10D	10km	10G	Dual LC, SM	1310nm	All MikroTik products with SFP /SFP+ interfaces	Natively supported
MikroTik	S+23LC10D	10km	10G	BiDi LC, SM	Tx:1270nm/Rx:1330nm	All MikroTik products with SFP /SFP+ interfaces	Natively supported
MikroTik	S+32LC10D	10km	10G	BiDi LC, SM	Tx:1330nm/Rx:1270nm	All MikroTik products with SFP /SFP+ interfaces	Natively supported
MikroTik	S+DA0001	1m	10G	Twinax Copper	N/A	All MikroTik products with SFP /SFP+ interfaces	Natively supported
MikroTik	S+DA0003	3m	10G	Twinax Copper	N/A	All MikroTik products with SFP /SFP+ interfaces	Natively supported
MikroTik	S+RJ10	various, depending on link rate. Check brochure for more details	10G/5G/2.5G/1G/100M/10M	RJ45 - Cat5E /Cat6/Cat7	N/A	All MikroTik products with SFP+ interfaces	Natively supported
Atop	APSP55B30CDL40	40km	10G	Dual LC, SM	1550nm	CRS series, CCR series devices with SFP+ interfaces	Does NOT work!
Cisco	SFP-10G-LR	10km	10G	Dual LC, SM	1310nm	RB2011LS-IN	Works!
Dell (Finisar)	FTLX8571D3BCL	300m	10G	Dual LC, MM	850nm	Most of SFP/SFP+ MikroTik products	Works!
Juniper (Finisar)	FTLX8571D3BCL-J1	300m	10G	Dual LC, MM	850nm	Most of SFP/SFP+ MikroTik products	Works!

Intel (Finisar)	FTLX8571D3BCV-IT	300m	10G	Dual LC, MM	850nm	Most of SFP/SFP+ MikroTik products	Works!
OEM (Juniper?)	EX-SFP-10GE-SR-OEM	300m	10G	Dual LC, MM	850nm	Most of SFP/SFP+ MikroTik products	Works!
Fiberstore	SFP-10G31-40	40km	10G	Dual LC, SM	1310nm	CRS series, CCR series devices with SFP+ interfaces	Works!
Fiberstore	SFP-10G55-40	40km	10G	Dual LC, SM	1310nm	CRS series, CCR series devices with SFP+ interfaces	Works!
Fiberstore	SFP-10G32-40	40km	10G	BiDi LC, SM	Tx:1330nm/Rx:1270nm	CRS series, CCR series devices with SFP+ interfaces	Works!
Fiberstore	SFP-10G23-40	40km	10G	BiDi LC, SM	Tx:1270nm/Rx:1330nm	CRS series, CCR series devices with SFP+ interfaces	Works!
Optech	OPAK-TX1-00-C	30m	10G	RJ45 - Cat 6a /7 Cable	N/A	CCR, CCR, CSS series devices with SFP+ interfaces	Works, starting with v6.40rc20 RouterOS build.
ProLabs	SFP-10G-T-C	30m	10G	RJ45 - Cat 6a /7 Cable	N/A	CCR, CCR, CSS series devices with SFP+ interfaces	Works, starting with v6.40rc20 RouterOS build.