

Mandatory commands:

- to initialize a device, use the commands 'mfc init <wanmac> <hwrev> <countrycode> <sn> <pin>'.
(for example, mfc init 00:0c:43:87:31:ef A1 EU 1234567890123 12345670).
 - to reset config after initialization and all preproduction tests, use the command 'mfc reset'.
- Attention! Please assign unique values of wanmac, sn, and pin for every device. Values of wanmac (MAC ID), hwrev (H/W ver.), sn (SN), and pin (WPS PIN) must match the relevant values on sticker.

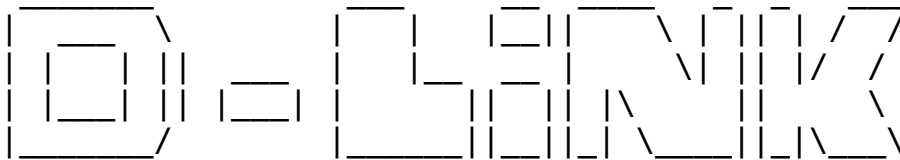
Commands for tests:

- to check current FW version, use the command 'mfc ver'.
- to check default config status, use the command 'mfc isfreset'.
- to view mfc help, use the command 'mfc help' or 'mfc wifi help'.
- to check whether values of wanmac, sn, pin, hwrev, and country_code are initialized, use the command 'mfc dump'.
- to tests LEDs and HW buttons, use the next commands: 'mfc led off', 'mfc led on', 'mfc button on', 'mfc button off'.

Example of device initialization and basic tests:

```
$ telnet dlinkrouter.local
Trying 192.168.0.1...
Connected to dlinkrouter.local.
Escape character is '^]'.
```

```
dlinkrouter login: admin
Password:
Welcome to
```



= Building Networks for People =

BusyBox v1.26.2 (2019-06-25 15:02:21 MSK) built-in shell (ash)

```
$ mfc ver
NAME:          DIR_1210A1_WW
VERSION:       3.0.14
SYSBUILDTIME:  Tue Jun 25 14:55:56 MSK 2019
VENDOR:        D-Link Russia
BUGS:          <support@dlink.ru>
SUMMARY:       Root filesystem image for DIR_1210A1_WW
OK
$ mfc isfreset
No
OK
$ mfc help
usage: mfc <command> <args>
```

```
button off - stop buttons test
button on  - start buttons test
```

```

country_code get 5g - print country code for 5GHz
country_code get [2g] - print country code for 2GHz
country_code set 5g - set country code for 5GHZ (max 4 characters)
country_code set [2g] - set country code for 2GHz (max 4
characters)
dump - Dump environment variables
eth ports show - print ethernet ports info
hwrev get - print hwrev
hwrev set - set hwrev (max 9 characters)
init <wanmac> <hwrev> <countrycode> <sn> <pin> - Init flash
isfreset - check if the device is reset to factory default
led off - stop leds test
led on [pri] - start leds test (primary)
led on sec - start leds test (secondary)
mac get - print MAC
mac set xx:xx:xx:xx:xx:xx - set MAC
reboot - reboot device
reset - reset to default and reboot device
sn get - print serial number
sn set - set serial number (13 characters: digits and uppercase
letters)
ver - print version
wifi channel get - print 2GHZ channel
wifi channel get 5g - print 5GHZ channel
wifi channel set - set 2GHZ channel
wifi channel set 5g - set 5GHZ channel
wifi dfs_enable get - get DFS state
wifi dfs_enable set {0|1} - set DFS
wifi encryption get - show 2GHZ encryption
wifi encryption get 5g- show 5GHZ encryption
wifi encryption set 5g aes- set 5GHZ encryption aes
wifi encryption set 5g open - set 5GHZ encryption open
wifi encryption set 5g wep- set 5GHZ encryption wep
wifi encryption set aes - set 2GHZ encryption aes
wifi encryption set open - set 2GHZ encryption open
wifi encryption set wep - set 2GHZ encryption wep
wifi help
wifi info - print information about wifi`s calibration data
wifi pin get - print WPS PIN
wifi pin set nnnnnnnn - set WPS PIN
wifi pwr_limit set {2g|5g} - get Power Limit
wifi pwr_limit set {2g|5g} {index} - set Power Limit for country
wifi rate - get 2GHZ rate
wifi rate 5g - get 5GHZ rate
wifi ssid get - print 2GHZ SSID
wifi ssid get 5g - print 5GHZ SSID
wifi ssid set - set 2GHZ SSID
wifi ssid set 5g - set 5GHZ SSID
wifi use_band get - get information about 2,4GHz bandwidth
wifi use_band get 5g - get information about 5GHz bandwidth
wifi use_band set - set bandwidth for 2,4GHz; use 20|40
wifi use_band set 5g - set bandwidth for 5GHz; use 20|40|80
$ mfc wifi help
format: mfc wifi MIB_NAME get/set <value>

format for byte array ([h] - mean hexadecimal value, [d] - decimal value):

```

all values in one line: [h][h]...[h][h]
values separated by space: [d] [d] ... [d] [d] or 0x[h] 0x[h] ... 0x[h]
0x[h]

available mibs:

[HW_WLAN1_11N_XCAP] (DEC) - len: 1 bytes
[xcap <2g>] (DEC) - len: 1 bytes
[HW_WLAN1_11N_THER] (DEC) - len: 1 bytes
[ther <2g>] (DEC) - len: 1 bytes
[HW_WLAN0_11N_XCAP] (DEC) - len: 1 bytes
[xcap <5g>] (DEC) - len: 1 bytes
[HW_WLAN0_11N_THER] (DEC) - len: 1 bytes
[ther <5g>] (DEC) - len: 1 bytes
[HW_WLAN1_11N_TRSWITCH] (HEX) - len: 1 bytes
[trswitch <2g>] (HEX) - len: 1 bytes
[HW_WLAN1_TX_POWER_CCK_A] (HEX) - len: 14 bytes
[tx_power_cck_a <2g>] (HEX) - len: 14 bytes
[HW_WLAN1_TX_POWER_CCK_B] (HEX) - len: 14 bytes
[tx_power_cck_b <2g>] (HEX) - len: 14 bytes
[HW_WLAN1_TX_POWER_HT40_1S_A] (HEX) - len: 14 bytes
[tx_power_ht40_1s_a <2g>] (HEX) - len: 14 bytes
[HW_WLAN1_TX_POWER_HT40_1S_B] (HEX) - len: 14 bytes
[tx_power_ht40_1s_b <2g>] (HEX) - len: 14 bytes
[HW_WLAN1_TX_POWER_DIFF_HT40_2S] (HEX) - len: 14 bytes
[tx_diff_ht40_2s <2g>] (HEX) - len: 14 bytes
[HW_WLAN1_TX_POWER_DIFF_HT20] (HEX) - len: 14 bytes
[tx_diff_ht20 <2g>] (HEX) - len: 14 bytes
[HW_WLAN1_TX_POWER_DIFF_OFDM] (HEX) - len: 14 bytes
[tx_diff_ofdm <2g>] (HEX) - len: 14 bytes
[HW_WLAN0_TX_POWER_5G_HT40_1S_A] (HEX) - len: 196 bytes
[tx_power_5g_ht40_1s_a <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_5G_HT40_1S_B] (HEX) - len: 196 bytes
[tx_power_5g_ht40_1s_b <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_DIFF_5G_20BW1S_OFDM1T_A] (HEX) - len: 14 bytes
[tx_diff_5g_20bw1s_ofdm1t_a <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_DIFF_5G_20BW1S_OFDM1T_B] (HEX) - len: 14 bytes
[tx_diff_5g_20bw1s_ofdm1t_b <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_DIFF_5G_40BW2S_20BW2S_A] (HEX) - len: 14 bytes
[tx_diff_5g_40bw2s_20bw2s_a <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_DIFF_5G_40BW2S_20BW2S_B] (HEX) - len: 14 bytes
[tx_diff_5g_40bw2s_20bw2s_b <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_DIFF_5G_80BW1S_160BW1S_A] (HEX) - len: 14
bytes [tx_diff_5g_80bw1s_160bw1s_a <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_DIFF_5G_80BW1S_160BW1S_B] (HEX) - len: 14
bytes [tx_diff_5g_80bw1s_160bw1s_b <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_DIFF_5G_80BW2S_160BW2S_A] (HEX) - len: 14
bytes [tx_diff_5g_80bw2s_160bw2s_a <5g>] (HEX) - len: 196 bytes
[HW_WLAN0_TX_POWER_DIFF_5G_80BW2S_160BW2S_B] (HEX) - len: 14
bytes [tx_diff_5g_80bw2s_160bw2s_b <5g>] (HEX) - len: 196 bytes

\$ mfc mac get

MAC: 12:23:34:67:78:89

OK

\$ mfc init 12:23:34:78:89:9a A1 EU 1234567890123 12345670

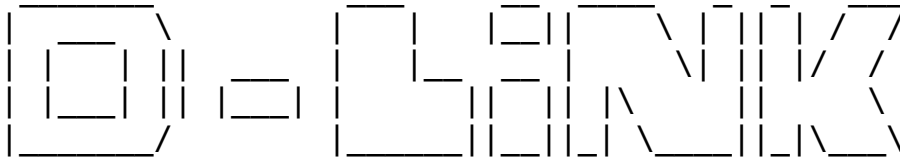
OK

\$ mfc reboot

\$ Connection closed by foreign host.

```
$ telnet dlinkrouter.local
Trying 192.168.0.1...
Connected to dlinkrouter.local.
Escape character is '^['.
```

```
dlinkrouter login: admin
Password:
Welcome to
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```
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```

```
$ mfc ver
NAME:          DIR_1210A1_WW
VERSION:       3.0.14
SYSBUILDTIME:  Tue Jun 25 14:55:56 MSK 2019
VENDOR:        D-Link Russia
BUGS:          <support@dlink.ru>
SUMMARY:       Root filesystem image for DIR_1210A1_WW
OK
$ mfc isfreset
No
OK
$ mfc dump
MAC: 12:23:34:78:89:9a
PIN: 12345670
Country code: EU
Serial number: 1234567890123
Hwrev: A1
OK
$ mfc button on
Start test the LEDs and buttons.
OK
$ WPS button press
WPS button press
WPS button press
WPS button press
Wi-fi button press
Wi-fi button press
reset button press
Reset button press
mfc button off
Stop test the LEDs and buttons.
OK
$ mfc led off
$ mfc led on
$ mfc led off
$ ifconfig
```

br0 Link encap:Ethernet HWaddr 12:23:34:78:89:9B
inet addr:192.168.0.1 Bcast:192.168.0.255 Mask:255.255.255.0
inet6 addr: fd00::1/8 Scope:Global
inet6 addr: fe80::1023:34ff:fe78:899b/64 Scope:Link
inet6 addr: fd01::1/64 Scope:Global
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:768 errors:0 dropped:0 overruns:0 frame:0
TX packets:188 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:84533 (82.5 KiB) TX bytes:25533 (24.9 KiB)

eth0 Link encap:Ethernet HWaddr 12:23:34:78:89:9B
inet6 addr: fe80::1023:34ff:fe78:899b/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:100 errors:0 dropped:0 overruns:0 frame:0
TX packets:111 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:7304 (7.1 KiB) TX bytes:13703 (13.3 KiB)
Interrupt:4

eth0.2 Link encap:Ethernet HWaddr 12:23:34:78:89:9B
inet6 addr: fe80::1023:34ff:fe78:899b/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:100 errors:0 dropped:0 overruns:0 frame:0
TX packets:118 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:5504 (5.3 KiB) TX bytes:13957 (13.6 KiB)

eth1 Link encap:Ethernet HWaddr 12:23:34:45:56:67
UP BROADCAST MULTICAST MTU:1500 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)
Interrupt:4

lo Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MULTICAST MTU:65536 Metric:1
RX packets:2 errors:0 dropped:0 overruns:0 frame:0
TX packets:2 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:192 (192.0 B) TX bytes:192 (192.0 B)

wlan0 Link encap:Ethernet HWaddr 12:23:34:78:89:9B
inet6 addr: fe80::1023:34ff:fe78:899b/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:566 errors:0 dropped:0 overruns:0 frame:0
TX packets:16 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:63956 (62.4 KiB) TX bytes:3568 (3.4 KiB)
Interrupt:5

wlan1 Link encap:Ethernet HWaddr 12:23:34:78:89:9D
inet6 addr: fe80::1023:34ff:fe78:899d/64 Scope:Link

UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:102 errors:0 dropped:0 overruns:0 frame:0
TX packets:61 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:13273 (12.9 KiB) TX bytes:8262 (8.0 KiB)
Interrupt:6

```
$ cat /etc/.hashes
PROFILE=DIR_1210A1_WW
VERSION=3.0.14
TYPE=release
BUILD_DATE=2019.06.25-14.55
SDK_REPO=sdk
SDK_HASH=689b91052e7ac244ef2f465d8a9fb71a53bb71bf
THE_UUID=696c156c-77cc-4cc5-b9ee-50dd13619a7c
```

```
ANWEB_COMMIT=8f27168373aff09c16d884b0f902661ac57e269d
BUSYBOX_COMMIT=2e3fde0e9673d788ef9a960359fcc55794a47775
CIVETWEB_COMMIT=a7a377e476e827993873319c291901f3e9ebf463
CURL_COMMIT=65fe4ff55f9b9ba8005ad3682341c8f1903a2923
DNSMASQ_COMMIT=4d24f115b402c693ca5afe29424262c979b35110
DX509GEN_COMMIT=36da5e2ce62c7c4cf00dfc8627b8e0365e77e493
EBTABLES_COMMIT=2f6494ad2791a3b22274d8fabd5a3553795eff7c
EXPAT_COMMIT=8a8ed69bb6e2aa99250f840f2f66b3bd1f48547c
FW_UPDATER_COMMIT=07f384b9d35bbc79c79cf2f7dc2ca9fc6309ecd0
GPIO_MODULE_COMMIT=56f2e480b4c63cf970062444f14de3239967a156
HOST_AUTOCONF_COMMIT=fb6b4f4327dcde0de7cf673ed240921b6cd9b4c5
HOST_AUTOMAKE_COMMIT=7cac046d570199a5a2ee79029a688e0739319e60
HOST_CVIMG_COMMIT=6a1f55fb8476337db277d64f86ef07706195d862
HOST_GAWK_COMMIT=a9620ae8ea0983d2adcc60fbd9f25c4f4d4cd185
HOST_LIBTOOL_COMMIT=2ab6fa25d1fa277f9d84ccd5553f10ba35f2b2f5
HOST_M4_COMMIT=406587de1987c2b92f200eaad8c48e3b5066135a
HOST_PKG_CONFIG_COMMIT=3efb10ef7e40684f972c480f1fb5f7aae4ff643f
HWDATA_COMMIT=4af2e844c714edc9a93ae2434d44499c884c6e56
IGMPX_COMMIT=3fb6f876db0bd9639d59d4e388bf75a4fc4d8ab2
IMPROXY_COMMIT=56174fdb33ce8313986a0ae13f34cf06be3af530
INADYN_COMMIT=46bc92b20968a97673850048b3e0763b5cc2d0f6
IPROUTE2_COMMIT=bc2851c6633b0eb9a37b7030933d8c442559216d
IPSEC_TOOLS_COMMIT=1fa0eafdcef8a04ffc376d7f959a3d8d695e225e
IPTABLES_COMMIT=fe9d642415307ae34c3cff552bcca8c4b8c36fa2
JANSSON_COMMIT=83b14f56d3d506593efe525fb5b48fa385a9f67c
JANSSON_TOOLS_COMMIT=81daf9552ed0b3519cd52c0c291f47396283b7ac
KERNEL_COMMIT=f8396f2b38e458dbbce60a5879fe16be07befa99
LIBAES_GPL_COMMIT=7d4cf1a4969befc59eca4c56b5105c0047687813
LIBLOGGER_COMMIT=3fb6f876db0bd9639d59d4e388bf75a4fc4d8ab2
LIBMD5_RFC_COMMIT=806c4b5ae4285565f174ee103213dd11af38ef6c
LIBMNL_COMMIT=7497002ccae43b1a16dcb7ca9943c89b99f7a0ed
LIBMTD_COMMIT=ca784d361d916fa371623512ef39ac9e337772d0
LIBNFNETLINK_COMMIT=71794def7693f3adac3a38218bd54c845674bc66
LIBNVDRAM_COMMIT=7ae2d68bb79a11f5888dec69df1aa44c31893c7c
LIBSHARED_COMMIT=5e1fbfcb2de0992c36683f4b378f49bd6ea07dfa
LINK_WATCHER_COMMIT=5eef5d501f88776d15eb6b1d220b4778e9544933
LOCDNS_COMMIT=88338df3403f2a87b733e84f92fae698a10923d1
MINIUPNPD_COMMIT=c65275409b445a83d23ae9dad5d6fa20811a2766
MINI_UPNP_RLT_COMMIT=623ed18c2db0c80bd55ff4386732ff363f71ca60
ODHCP6C_COMMIT=3ae4e92ec0e18105a1ac01312588d50a0f62fcf2
```

OPENSSL_OPENSSL_1_0_2_COMMIT=575c69f97ca7c8cfaf2a448272f7a1615308acdd
PPPD_COMMIT=9a9325c496c98ac1910692a34661937bf2e92000
PPTPCLIENT_COMMIT=b1a9e74540a4b38e083458d8fe4f956c4a21a902
QUAGGA_COMMIT=434bb89704a7f35ae4e9d9d04ce01a2a51d9be1e
RESIDENT_COMMIT=cb9108f3ed0e32007bafea7fcf006b5d7e78455c
RLX_UTILS_COMMIT=c4ef9ad85594959017d51736ffbc1241f30a2a0d
RLX_WIFI_MIBS_COMMIT=446bfe5d0a13f12373a88ceeb71b906fd17347a2
ROAMINGD_COMMIT=94b1dbb4e3fe97c96058935dc3d3ade223ad703e
RTL_WIFI_COMMIT=521d62fa04687726832de39e2ff435212670d30d
TINYSVCMDNS_COMMIT=8b71e425b5e242c348ad29d06664f93ae53da3ad
TR069CLIENT_COMMIT=1afeac932810c696dec6f11aa94fa6caa8e80a9a
UDPXY_COMMIT=74d34e9934508ba148a47dc55ce759f7eebdc23f
VLAN_COMMIT=64b9e400bf1c77b76108342fffb78a814da5827a
WIRELESS_TOOLS_COMMIT=c3a69c7510f1e4f9cafbdb62fbd00aba467d92472
WPA_SUPPLICANT_COMMIT=9a2fc09c57e8efc16556b8442b18d24a33454cba
WSCD_RLT_COMMIT=2fa6af1b2a7f83c3ee20d0de512b3ada601509d0
XL2TP_COMMIT=c01db0f6ad5c5121aff9b52a202cd04937dfc7e5
ZLIB_COMMIT=307fe15177d69afaa0cd37aa6338b94f1697eac0

WEBADMIN_BRANCH=
WEBADMIN_PROFILE=
\$ free

	total	used	free	shared	buffers	cached
Mem:	42460	24636	17824	0	2300	6332
-/+ buffers/cache:		16004	26456			
Swap:	0	0	0			

\$ mfc reset

OK <20>

\$ Connection closed by foreign host.