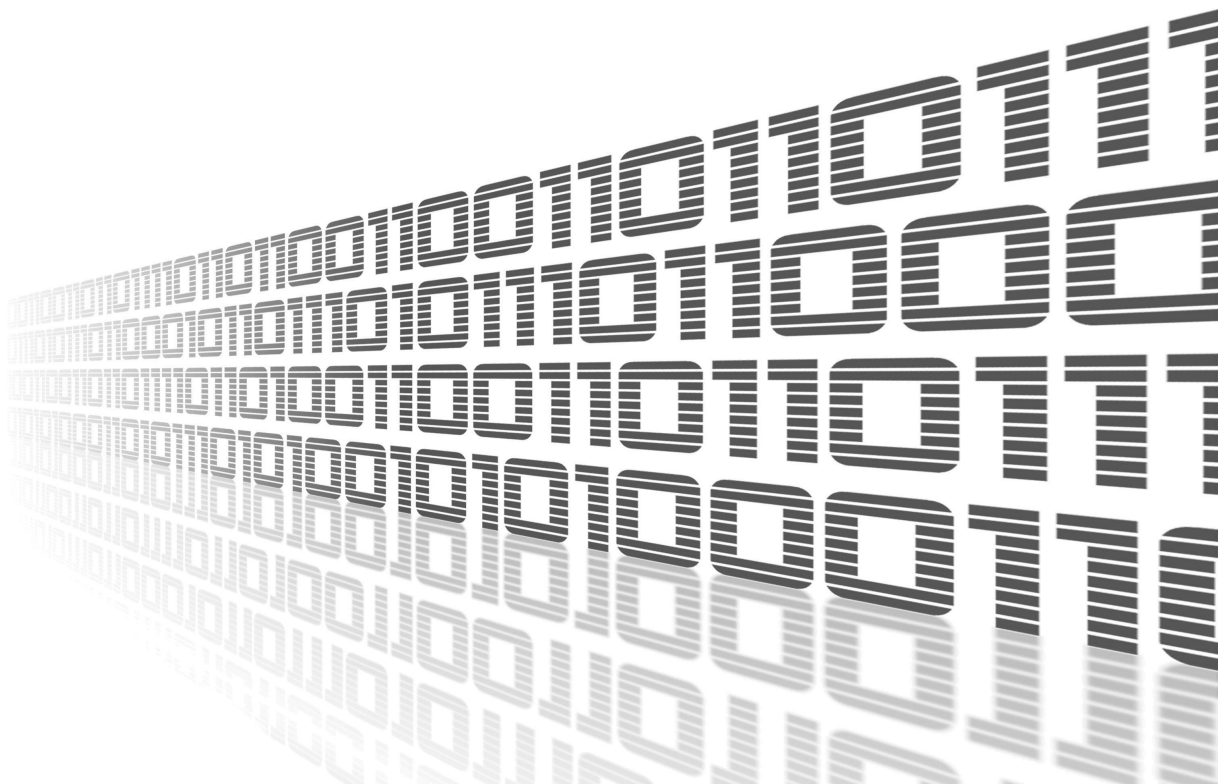




User Module

Band Select

APPLICATION NOTE



AVANTECH

Used symbols



Danger – Information regarding user safety or potential damage to the router.



Attention – Problems that can arise in specific situations.



Information, notice – Useful tips or information of special interest.



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1. Description of User Module



Please use this user module with caution and observe the legal restrictions.



This user module is not installed on *Advantech* routers by default. See *Configuration Manual* for the description how to upload a user module to the router. For more information see [1], [2], [3] or [4], chapter *Customization -> User Modules*.

Please note that this user module is intended only for routers with following cellular modules:

- **Celient**
 - MPL200
- **Cinterion**
 - PHS8-E
 - PHS8-P
 - PLS8-E
 - PLS8-X
 - PLS83-EP
 - PLS83-W
 - PLS83-X
- **Huawei**
 - ME909s-120
 - ME909s-821
- **Quectel**
 - BG96
 - EC25-AF
 - EC25-AU
 - EC25-E
 - EC25-EU
 - EC25-EUX
 - RM505Q-AE
 - EM12-G

- **Sierra Wireless**

- MC7304
- MC7710
- MC8705

- **Telit**

- LE910–EU V2
- LE910–NA V2
- LE910–NA1
- LE910–SV1

Type of the cellular module installed in the router can be found in the *Mobile WAN* status in the *Mobile Network Information* part.

Band Select module allows user to adjust the portfolio of frequency bands which router supports. What are frequency bands? Frequency bands are groupings of radio frequencies that are used by mobile networks to communicate. For example for cellular network in Europe are used frequency bands 900 MHz and 1800 MHz. For cellular network in USA is mainly used frequency band 1900 MHz. So for a router to work properly in USA as well as in Europe, it would need to support the 1900 MHz band and one or both of the 900 MHz or 1800 MHz bands used in Europe.

1.1 Web Interface

The web interface available for configuration of the *Band Select* user module can be invoked by pressing the module name on the *User modules* page of the router's web interface. The left part of the web interface (i.e. menu) contains only the *Return* item, to switch back to the router's web interface. In case of routers with two cellular modules, there are *Modul 1* and *Modul 2* items available to manage both cellular modules of the router separately.



Figure 1: Menu of the Band Select user module for a router with two cellular modules

The actual configuration of the *Band Select* user module is performed via the form on the right of the web interface. The possible configuration is displayed according to the cellular module installed in the router. The module must be activated by *Enable Band Select*. Choose the desired frequency bands for the module and then confirm with the *Send* button.

1.2 Examples for a Few Cellular Modules

Band select

| Customization | Band select !!use carefully!! |
|--|--|
| Information Modul 1 Return | <input checked="" type="checkbox"/> Enable Band select <hr/> Module type: PLS8-E <hr/> GSM <input checked="" type="checkbox"/> GSM-900 (900 MHz) <input checked="" type="checkbox"/> GSM-1800 (1800 MHz) <hr/> UMTS <input checked="" type="checkbox"/> B1 (2100 MHz) <input checked="" type="checkbox"/> B3 (1800 MHz) <input checked="" type="checkbox"/> B8 (900 MHz) <hr/> LTE <input checked="" type="checkbox"/> B1 (2100 MHz) <input checked="" type="checkbox"/> B3 (1800 MHz) <input checked="" type="checkbox"/> B7 (2600 MHz) <input checked="" type="checkbox"/> B8 (900 MHz) <input checked="" type="checkbox"/> B20 (800 MHz) <hr/> <input type="button" value="Send"/> |

Figure 2: Configuration form for module PLS8-E

Band select

| Customization | Band select !!use carefully!! |
|--|--|
| Information Modul 1 Return | <input checked="" type="checkbox"/> Enable Band select <hr/> Module type: EC25AU <hr/> GSM <input checked="" type="checkbox"/> GSM-850 (850 MHz) <input checked="" type="checkbox"/> GSM-900 (900 MHz) <input checked="" type="checkbox"/> GSM-1800 (1800 MHz) <input checked="" type="checkbox"/> GSM-1900 (1900 MHz) <hr/> UMTS <input checked="" type="checkbox"/> B1 (2100 MHz) <input checked="" type="checkbox"/> B2 (1900 MHz) <input checked="" type="checkbox"/> B5 (850 MHz) <input checked="" type="checkbox"/> B8 (900 MHz) <hr/> LTE <input checked="" type="checkbox"/> B1 (2100 MHz) <input checked="" type="checkbox"/> B2 (1900 MHz) <input checked="" type="checkbox"/> B3 (1800 MHz) <input checked="" type="checkbox"/> B4 (1700 MHz) <input checked="" type="checkbox"/> B5 (850 MHz) <input checked="" type="checkbox"/> B7 (2600 MHz) <input checked="" type="checkbox"/> B8 (900 MHz) <input checked="" type="checkbox"/> B28 (700 MHz) <input checked="" type="checkbox"/> B40 (2300 MHz) <hr/> <input type="button" value="Send"/> |

Figure 3: Configuration form for module EC25AU

Band select

| Customization | Band select !!use carefully!! |
|---------------|--|
| Information | <input checked="" type="checkbox"/> Enable Band select |
| Modul 1 | Module 1 type: MC8705 |
| Modul 2 | All bands <input checked="" type="radio"/> |
| Return | GSM 900/1800 <input type="radio"/> |
| | GSM All <input type="radio"/> |
| | WCDMA All <input type="radio"/> |
| | WCDMA 900/2100 <input type="radio"/> |
| | <input type="button" value="Send"/> |

Figure 4: Configuration form for module MC8705

2. Related Documents

- [1] Advantech Czech: **v2 Routers – Configuration Manual** (MAN-0021-EN)
- [2] Advantech Czech: **SmartFlex – Configuration Manual** (MAN-0023-EN)
- [3] Advantech Czech: **SmartMotion – Configuration Manual** (MAN-0024-EN)
- [4] Advantech Czech: **SmartStart – Configuration Manual** (MAN-0022-EN)
- [5] Advantech Czech: **ICR-3200 – Configuration Manual** (MAN-0042-EN)



Product-related documents can be obtained on *Engineering Portal* at icr.advantech.cz address.