



BASE Fixed Docsis
CPE specification
for Free Modem regulation

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1. Conventions

Throughout this document, the words that are used to define the significance of particular requirements are capitalized. These words are:

"MUST, SHALL" This word means that the item is an absolute requirement of this specification.

"MUST NOT" This phrase means that the item is an absolute prohibition of this specification.

"SHOULD" This word means that there MAY exist valid reasons in particular circumstances to ignore this item, but the full implications SHOULD be understood and the case carefully weighed before choosing a different course.

"SHOULD NOT" This phrase means that there MAY exist valid reasons in particular circumstances when the listed behaviour is acceptable or even useful, but the full implications SHOULD be understood and the case carefully weighed before implementing any behaviour described with this label.

"MAY" This word means that this item is truly optional.

2. Contact

The contact for queries regarding this specification can be found on www.base.be

Please note that this contact is an address for hardware vendors only.

3. Scope

This document describes the BASE residential CPE requirements for attaching a Docsis 3.1 modem with DOCSIS protocol for the Internet Service over the BASE network, in combination with the Wyre or Orange/VOO cable networks, at the dedicated data RF Interface. This describes the main characteristics and modem requirements of connecting to the dedicated data RF interface in the cable network at the user's coaxial passive network termination point, as well as the Ethernet based network termination point. This document refers to the Wyre and Orange/VOO specification and also the specific requirements related to BASE for connecting a Docsis modem hardware type. Telephony service is not provided as part of BASE services and any telephony requirements are not applicable. If a free modem device however has embedded Packetcable eMTA in the hardware, this function must be default be disabled.

4. General requirements

The Wyre and also VOO/Orange specification for Docsis RF termination is normative, please refer to document “Wyre DOCSIS specifications document_20240201 TN.pdf”, and to “VOO-CMP_Specifications-240129.pdf”.

Other BASE requirements:

- Docsis Modem must be EuroDocsis 3.1 capable as minimum
- Docsis aspects must also be EuroDocsis 3.0 backwards compatible
- The PKI Docsis certificate should have a typical lifetime of 30 years from 2024.
- The device must not introduce any new QoS settings on the Docsis or WAN IP interface
- The modem RF shielding on the Docsis tuner hardware must be immune for at least 5V/m field strength interference signals, as measured at 3m distance. This is for LTE and other possible interferers.
- Device must conform to the latest WAN and IP RFC's, and specifically the relevant IPv6 and DS-lite RFC's: RFC4443, RFC8200, RFC8201, RFC8415, RFC3646, RFC3769, RFC7084, RFC9096, RFC6333, RFC6334, RFC8106, RFC4861, RFC4862
- The device MUST support HTTP software downloads triggered through both the docsdev and Supplier-specific upgrade MIBs as specified in RFC4639.
- Firmware used must always be signed (manufacturer must support minimum self-signed)
- Best practice cybersecurity practices must be followed for any CPE. In preparation for upcoming CE RED new cybersecurity regulation, the modem must already support these basic security aspects:
 - Unique login name and password for end-user access to device configuration, so unique per device
 - Regular software updates to be made available for any required security updates
 - Pen testing and related reviews should be done by the manufacturer
 - Device must not be usable for exploits such as Docsis cloning
 - The equipment shall be resilient against brute force attacks to any authentication mechanisms
 - Auto-generated passwords must be random as seed
- If the device contains Wi-Fi it should follow best practices to ensure good co-existence in typical Belgium density and the challenges of Wi-Fi shared spectrum aspects.
 - 2.4GHz band frequency settings should be only selectable for channels 1, 6 and 11 to avoid overlap
 - 5GHz bandwidth setting should be 80MHz maximum or lower bandwidth
 - There should be a channel selection algorithm that chooses the lowest utilized channel
 - The 5GHz radio should support the full spectrum available including DFS channels
 - Wi-Fi 6 should be the minimal norm for Docsis 3.1 related gateways
 - CE regulation and EIRP emission limits must be strictly adhered to, and should be assessed using audits of mass production samples to ensure continuous regulatory compliancy and fair usage of the Wi-Fi medium.

End of document