### Multicast connectivity

| **Item** | **Description** | **Subclause** | **Value/Comment** | **Status** | **Support** |
| --- | --- | --- | --- | --- | --- |
| U-MC0 | Implements multicast connectivity | Table 5‑1 | ONU implements multicast connectivity per 7.4. | M | [   ] Yes |
| U-MC1 | Clock synchronization | 7.4.2.1.1 | ONU does not synchronize its local MPCP clock using the Timestamp values from the MPCPDUs received over the unidirectional PLIDs | M | [   ] Yes |
| U-MC2 | ONU response | 7.4.2.1.2 | ONU transmits response to a management PDU in an envelope with the primary MLID | M | [   ] Yes |
| U-MC3a | Server-controlled multicast | 7.4.3.1 | ONU supports a server-controlled multicast mode | M | [   ] Yes |
| U-MC3b | Client-controlled multicast | 7.4.3.1 | ONU supports a client-controlled multicast mode | O | [   ] Yes[   ] No |
| U-MC4 | IGMP/MLD forwarding (upstream) | 7.4.3.2.1 | ONU forwards all IGMP / MLD control messages received at the UNI to the ONU\_MDI using a provisioned unicast ESP. | M | [   ] Yes |
| U-MC5 | Service Port Instance | 7.4.4.1 | When one or all mLLIDs are deleted from the ONU, the ONU does not modify or delete any of the rules provisioned into Classifier/Modifier using the *aRuleSetConfig* (0xDB/0x05-01) attribute. | M | [   ] Yes |
| U-MC6a | Multiple frame copies to the same service port | 7.4.4.2 | The ONU rejects a rule with multiple *sResult* sub-attributes pointing to the same instance of a service port. | M | [   ] Yes |
| U-MC6b | Multicast flows to the existing clients | 7.4.4.2 | When a new rule is added at the ONU and the old rule is deleted after that, and if the new rule contains the same *sClause*sub-attributes and some of the *sResult* clauses forwarding traffic to the same queues as the old rule, the Classifier at the ONU does not discard any frames destined to these queues, i.e., the multicast flows to the existing and remaining multicast clients are not interrupted when other clients are added or deleted. | M | [   ] Yes |
| U-MC7 | Multicast forwarding (rules) | 7.4.4.4.2 | ONU forwards multicast traffic based on rules per Table 7‑2. | M | [   ] Yes |

### Multicast connectivity

| **Item** | **Description** | **Subclause** | **Value/Comment** | **Status** | **Support** |
| --- | --- | --- | --- | --- | --- |
| T-MC0 | Implements multicast connectivity | Table 5‑1 | OLT implements multicast connectivity per 7.4. | M | [   ] Yes |
| T-MC1a | Server-controlled multicast | 7.4.3.1 | OLT supports a server-controlled multicast mode | M | [   ] Yes |
| T-MC1b | Client-controlled multicast | 7.4.3.1 | OLT supports a client-controlled multicast mode | O | [   ] Yes[   ] No |
| T-MC2a | UNI Port Instance | 7.4.3.2.2 | If OLT does not know the instance of the UNI port to which the multicast client is connected, it queries the ONU to determine an instance of a UNI port on which the given client’s MAC address has been learned. | M | [   ] Yes |
| T-MC2b | Provisioning of mLLID | 7.4.3.2.2 | If the ONU is not already configured to receive the mLLID carrying the requested IP multicast session, the OLT provisions the mLLID (see 7.4.4.1). | M | [   ] Yes |
| T-MC2c | Provisioning of classification and forwarding rule for multicast session | 7.4.3.2.2 | If the ONU is not already configured to receive the requested IP multicast session, the OLT adds a new classification and forwarding rule to forward the requested multicast session to the specific UNI port (see 7.4.4.2). | M | [   ] Yes |
| T-MC2d | Modification of existing classification and forwarding rule | 7.4.3.2.2 | If the ONU is already receiving the requested multicast session, but the given UNI port is not configured to receive the multicast session, the OLT modifies the existing classification and forwarding rule to include the additional UNI port into the existing multicast group. | M | [   ] Yes |
| T-MC3a | Provisioning of local multicast-bearing ESP | 7.4.3.2.2 | If the IP multicast session requested by a client does not exist in the OLT, the OLT provisions multicast-bearing ESP that forwards multicast traffic identified by the requested IP multicast address to the same mLLID that has been provisioned to the ONUs to receive this multicast stream. | M | [   ] Yes |
| T-MC3b | Last member leave on ONU port | 7.4.3.2.2 | When the OLT determines that there are no multicast clients for an IP multicast session connected to an ONU UNI port, the OLT modifies the associated classification and forwarding rule at the ONU to stop forwarding the indicated multicast session to the UNI port (see 7.4.4.3). | M | [   ] Yes |
| T-MC3c | Last member leave on ONU | 7.4.3.2.2 | When the OLT determines that there are no multicast clients for an IP multicast session connected to any of the UNI ports on an ONU, the OLT configures the ONU to delete the associated classification and forwarding rule on that ONU (see 7.4.4.3). | M | [   ] Yes |
| T-MC3d | Last member leave on mLLID | 7.4.3.2.2 | When the OLT determines that there are no multicast clients connected to any of the UNI ports on an ONU for any of IP multicast sessions being delivered on a specific mLLID, the OLT configures the ONU to delete the mLLID used to deliver these IP multicast sessions (see 7.4.4.1). | M | [   ] Yes |
| T-MC4a | Adding the first service port to a multicast group | 7.4.4.2 | To add the first service port to a multicast group, the OLT generates the *aRuleSetConfig* (0xDB/0x05-01) attribute that includes one or more *sClause*sub-attributes and a single *sResult* sub-attribute with the action set to *QUEUE*, directing traffic to a specific queue associated with a specific service port instance. | M | [   ] Yes |
| T-MC4b | Adidng an additional service port to a multicast group | 7.4.4.2 | To add an additional service port to a multicast group already existing in the ONU, the OLT generates a new *aRuleSetConfig* attribute, that contains an additional *sResult* sub-attribute with the action set to *QUEUE*, but is otherwise identical to the existing rule for the given multicast group. | M | [   ] Yes |
| T-MC4c | Multiple *sResult* sub-attributes pointing to the same instance of a service port | 7.4.4.2 | The OLT does not generate a rule with multiple *sResult* sub-attributes pointing to the same instance of a service port. | M | [   ] Yes |
| T-MC4d | Deleting a service port from an existing multicast group | 7.4.4.2 | To delete a service port from an existing multicast group in the given ONU, the OLT generates a new *aRuleSetConfig* attribute, that does not contain the *sResult* sub-attribute forwarding traffic to the port being deleted, but is otherwise identical to the existing rule for the given multicast group. | M | [   ] Yes |
| T-MC4e | Generates new rule before deleting the old rule | 7.4.4.2 | The OLT generates the new *aRuleSetConfig* attribute before deleting the old rule. | M | [   ] Yes |
| T-MC4f | Deleting the old rule beforereceiving a confirmation from the ONU | 7.4.4.2 | The OLT does not configure the ONU to delete the old *aRuleSetConfig* attribute before it receives a confirmation from the ONU that the new *aRuleSetConfig* attribute was configured successfully. | M | [   ] Yes |
| T-MC4g | Deleting all service ports from a multicast group | 7.4.4.2 | To delete all service ports from an existing multicast group in the given ONU, the OLT deletes the associated *aRuleSetConfig* attribute entirely. | M | [   ] Yes |
| T-MC5a | Retrieving the instance of the service port | 7.4.4.3 | The OLT uses the *acGetUniMacLearned* (0xDD/0x01-08) action to retrieve the instance of the service port on which the given MAC address has been learned. | M | [   ] Yes |
| T-MC5b | Handling of a non-learned MAC address | 7.4.4.3 | The OLT does not generate the new *aRuleSetConfig* attribute if the sub-attribute *sUniPort* contains the value 0xFF, indicating that the given MAC address has not been learned on any of service ports. | M | [   ] Yes |
| T-MC6 | Multicast forwarding rules | 7.4.4.4.1 | OLT forwards multicast traffic based on rules per Table 7‑1. | M | [   ] Yes |

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