

# Test Agreement

Supporting Document for nbn™ HFC Test Sandpit

## Product Description: HFC Test Sandpit Product

This document is being provided for the purposes of the Test Agreement for the **nbn™** HFC Test Sandpit only. It should not be regarded as an offer to amend the Wholesale Broadband Agreement.



NBN Co Limited

# Product Description – HFC Test Sandpit Product

Supporting Document for **nbn™** HFC Test Sandpit

Version	Description	Effective Date
1.0	Supporting Document for Test Agreement for <b>nbn™</b> HFC Test Sandpit, issued on 30 October 2015	Execution Date of <b>nbn™</b> HFC Sandpit: Test Description
1.1	Removed referencing error in Introduction section	Execution Date of <b>nbn™</b> HFC Sandpit: Test Description

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## Environment

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SFAA – Test Agreement - nbn™ HFC Test Sandpit – Supporting Document - Product Description: HFC Sandpit Test Product



# Introduction

This document describes the NBN Co HFC Test Sandpit Product (**Test Product**) which **nbn** supplies to the Customers under the **nbn** Standard Test Terms and the **nbn** Test Description: **nbn™** HFC Test Sandpit (**Sandpit Test Agreement**).

The Test Product:

- is an Ethernet-based Layer 2 virtual connection; and
- is supplied by means of the NBN Co HFC Test Network.

Type	Product Component / Product Feature	NBN Co Network
Product Components (required)	NNI (described in section 1.1); Test CVC (described in section 2.1); Test AVC (described in section 3.1); Test UNI (described in section 4.1)	NBN Co HFC Test Network

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# 1 Network-Network Interface (NNI)

*This section 1 describes the NNI.*

## 1.1 NNI description

- (a) A **Network-Network Interface** or **NNI** is the interface at a POI where Customer traffic is handed over to the NBN Co Network.
- (b) The NNI is the point of handover for all CVCs and Test CVCs associated with that NNI.
- (c) The **NNI Bearer** is the physical interface between the Customer switch and the **nbn™** Network.
- (d) An NNI Bearer must be configured as a member of an **NNI Group** which is a logical interface comprising one or more NNI Bearers supplied by NBN Co to Customer.

## 1.2 NNI Bearer

The physical interface options for the NNI Bearer are:

NNI Bearer profile	NBN Co Network
1000BaseLX	NBN Co HFC Test Network
10GBaseLR	NBN Co HFC Test Network
1000BaseEX	NBN Co HFC Test Network
10GBaseER	NBN Co HFC Test Network

## 1.3 NNI Group

- (a) An NNI Bearer can only be configured as a member of an NNI Group if its interface rate is the same as the interface rate of the NNI Group.
- (b) Each NNI Bearer must be configured with a logical single or diverse chassis redundancy mode, together forming an NNI Group.
- (c) Single chassis is the only redundancy mode available for an NNI Group comprised of a single NNI Bearer.
- (d) If Test Participant selects single chassis as the redundancy mode for an NNI Group:
  - (i) each NNI Bearer in that NNI Group will be connected to the same chassis; and
  - (ii) the NNI will operate as a single, unprotected interface.
- (e) Each NNI Bearer in an NNI Group where Test Participant selects diverse chassis as the redundancy mode will be connected across a pair of chassis.
- (f) Once an NNI Group is activated, the redundancy mode of that NNI Group cannot be reconfigured.

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## 2 Test Connectivity Virtual Circuit (Test CVC)

*This section 2 describes the Test CVC.*

### 2.1 Test CVC description

- (a) A Test **CVC** is Ethernet-based Layer 2 virtual capacity on the NBN Co HFC Test Network used to carry multiple Customer Test AVC traffic on an aggregated basis between each UNI and the NNI.
- (b) The Test CVC will be TC-4 only

### 2.2 Test CVC TC-4

The Test CVC TC-4 bandwidth profiles are:

Test CVC TC-4 symmetrical Mbps (CIR)	NBN Co Network
0	NBN Co HFC Test Network
150	NBN Co HFC Test Network
300	NBN Co HFC Test Network

### 2.3 Test CVC TC-1

Not available.

### 2.4 Test CVC TC-2

Not available.

## 3 Test Access Virtual Circuit (Test AVC)

*This section 3 describes the Test AVC.*

### 3.1 Test AVC description

- (a) A Test AVC is an Ethernet-based Layer 2 virtual connection on the NBN Co Test HFC Network that carries Customer's traffic to and from a Test UNI used to serve a Premises.
- (b) A Test AVC must be ordered by Test Participant for each Test NTD to which the Test Product will be supplied.
- (c) NBN Co will make the Test AVC available in traffic class 4 (Test AVC TC-4) only.
- (d) Test Participant must order a Test AVC TC-4 in any of the bandwidth profiles set out in sections 3.2.
- (e) NBN Co will map one Test AVC TC-4 to the Test UNI used to serve the relevant Premises and will not map more than one Test AVC TC-4 to the same Test UNI.

### 3.2 Test AVC TC-4

- (a) The Test AVC TC-4 bandwidth profiles for the Test Product supplied by means of the NBN Co HFC Test Network:

Test AVC TC-4 downstream Mbps (PIR)	Test AVC TC-4 upstream Mbps (PIR)	NBN Co Network
12	1	NBN Co HFC Test Network
25	5	NBN Co HFC Test Network
25	10	NBN Co HFC Test Network
50	20	NBN Co HFC Test Network
100	40	NBN Co HFC Test Network

### 3.3 Test AVC TC-1

Not available.

### 3.4 Test AVC TC-2

Not available.

### 3.5 CIR Services

Not available.

## 4 Test User Network Interface (Test UNI)

*This section 4 describes the Test UNI.*

### 4.1 Test UNI description

The Test UNI is a physical port to which NBN Co supplies the Test Product in respect of a Premises.

Type of UNI	Port	Location of UNI port	Number of available ports on NTD	NBN Co Network	Type of Premises
UNI-D	Ethernet	NTD	1	NBN Co HFC Test Network	All Premises

### 4.2 Test Product supplied by means of NBN Co HFC Test Network

- (a) The UNI-D has an electrical interface and will not be made available with an optical interface as part of the Test Product.
- (b) It is a condition of supply of a Test AVC TC-4 that Test Participant acquires a UNI-D in conjunction with that Test AVC TC-4 for each Premises at which the Test Product will be supplied.

### 4.3 UNI mappings and Test AVC bandwidth profiles

The UNI mappings and Test AVC bandwidth profiles available for those UNI mappings are:

NBN Co Network	Test AVC	UNI mapping	Available bandwidth profiles	Ref
NBN Co HFC Test Network	Test AVC TC-4	Default Mapped	12/1, 25/5, 25/10, 50/20 and 100/40 Mbps Test AVC TC-4 only	Section 3.2(a)