Network Quality Accreditation: Fibre Light Loss Results

About this document ...

Author

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Content approval

This is the Issue 5 of this document.
The information contained in this document was approved on 10-Oct-2022
by Scott Marshall, Accreditation Professional

Version History

Version No.	Date	Author	Comments
Issue 5	10-Oct-2022	Quality Standards & Accreditation	Changes made to Q11 and Q17.
Issue 4	05-Oct-2022	Quality Standards & Accreditation	Title changed; document moved into new format including the Modular Guidance. Questionnaire changed to include new OTH processes.
Issue 3	01-Apr-2022	Quality Standards & Accreditation	Description changed removed ref to TADDS for partners
Issue 2	04-Nov-2021	Quality Standards & Accreditation	Document moved into new format. Changes made to questionnaire and modular guidance sections.
Issue 1	15-Jul-2021	Quality Standards & Accreditation Network Engineering	Initial issue

Table of Content

1 *Introduction*

This ISIS is reviewed and updated annually. Between reviews any changes are communicated using Access Engineering Communications (AEC).

Links to ISIS documents, accreditation modules and all reference material can be found in:

- [Technical Library](#), [Bookstore](#) or Policy & Build app for Openreach.
- CANDID for Contract Partners.

Answers for all modules are available via the Author of this document (see above).

In order to comply with the requirements of this accreditation module the Assessor must follow the procedure below:

- Allow the time shown for the Delegate to complete.
- Explain that reference documentation can be used.
- The criteria for **all** sections **must** be fulfilled in order to meet the requirements for this module.

2 *Scope*

The target audience for this accreditation is anyone working on the Openreach network including Contract Partners.

This module is essential for anyone carrying out quality assessments or audits on light loss results for Passive Optical Network (PON) build. The overall content is covered in the following Description and Method sections, in more detail.

3 *Description*

This module consists of two parts, a questionnaire and a practical assessment.

Content: It will check the Delegates understanding & ability to complete quality assessments or audits on light loss results of fibre testing in the One Fibre Network (OFN). This will include inspections of live jobs to the current quality standards, using the relevant system.

Duration: Questionnaire 90 mins   **Practical:** Open

4   *Measurement*

Questionnaire: The Delegate must achieve **90%** or greater to be successful. For Openreach people the questionnaire can be found on Learning Home as an online course using the code ORCHK051.

Practical: Using the Module Guidance and ISIS documents for reference, the Assessor will check that the Delegate completes the tasks outlined in the Method section.

There are no Coaching Marks (C) available for this accreditation.

Assessor Note: The exact score required to pass the questionnaire can be found in the Delegates Details section.

Post Assessment: You **must** enter the results onto the Skills Passport or Smart Awards for Contract Partners**.**

5   *Safety*

> **Caution:** If the Delegate displays a disregard for, or lack of knowledge of safety, then STOP THE ASSESSMENT - re-assessment required - refer to –safety module for guidance

Using their mandatory holding of safety and relevant access equipment, the Delegate will demonstrate to the Assessor, the correct safety practices required to successfully complete this accreditation module. This may include a check of:

- Relevant safety modules on National Operative Passport Scheme (NOPS) card (Partners Only).
- Openreach Construction Design Management (CDM) 2015 Regulations Policy followed.
- Relevant New Roads and Street Works Act (NRSWA) qualification.
- Personal Protective Equipment (PPE).
- Equipment checks.
- Gas testing procedure.
- Footway cover lifting.
- Identification of carriageway covers.
- Lifter, Manhole Cover 4 (where applicable).
- Identification of associated keys.
- Method of cover removal/replacement (where applicable).
- Water testing.

6   *Method*

Questionnaire: Using reference documentation where required, the Delegate will complete the questionnaire. A maximum of **90** minutes is allowed for this exercise.

Practical: Using the correct tools, equipment, systems, working practices and quality standards the Delegate will complete a quality assessment or audit on the submitted light loss results for a PON build.

The Delegate should use relevant ISIS documentation, quality guidance and scoresheets as reference material, to correctly complete the quality assessments/audits.

The practical assessment can be completed under live working conditions using one of the below methods:

- On site – Retrospectively audit the light loss results of a completed PON Build.

- Remotely – using an online system i.e. TEAMS or similar platform.

The Assessor will then use the Module Guidance to verify their understanding and ability to carry out the task.

7   *Delegate Details*

Module No	AEI/ACC/M039
Title	Network Quality Accreditation: Fibre Light Loss Results
Date	
Delegate's Name	
Delegate's UIN	
OUC	
Assessor's Name	
Assessor's UIN	
Questionnaire	PASS/FAIL
Practical	PASS/FAIL

Notes	

Questionnaire Scoring:

Total Possible Score	Score Achieved	Required Score to Pass
36		33

8 *Questionnaire*

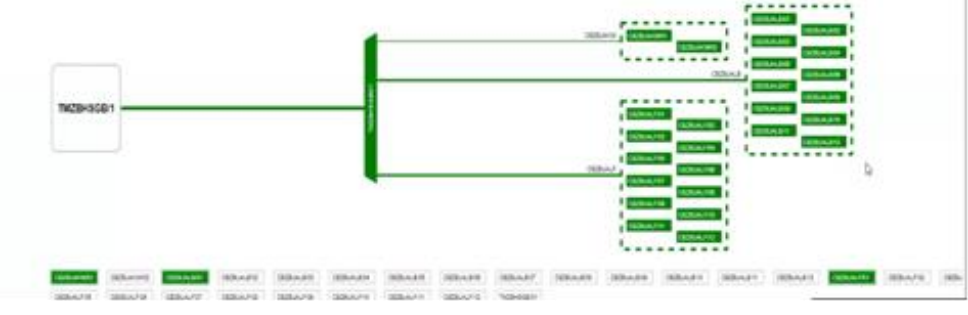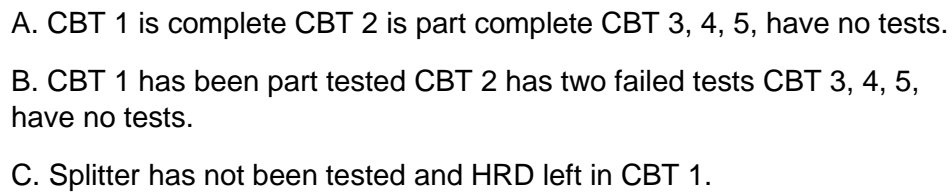| No.	Question	Mark(s)
1	There are 3 basic requirements which are mandatory to be tested during the build of the Fibre To The Premise Network (FTTP), what are they? Select all that apply A. Continuous light from the Headend to the Connectorised Block Terminal (CBT) B. Light of sufficient power to enable Optical Network Termination (ONT) to achieve sync C. Attenuation D. The right OGEA number has been allocated E. The CBT is connected to the Headend port F. Select all	
2	What wavelength does the OTH (Optical Test Head) operate on? A.1600nm B.1650nm C.1690nm	

3	If a Passive Optical Network (PON) has working customers and you run a test using the OTH will this cause a short disturbance to their service? A. No, as the OTH uses an out of band wavelength B. Yes, that is why you have to be really quick C. Yes, but only on the upstream wavelength	
4	The PON network has been designed to work at a maximum light level of what measured at the Optical Network Termination (ONT)? A. -24dBm B. -26dBm C. -27dBm	
5	The variance of distance should be no more than what between ports when testing a CBT? A. 0.5m B. 1m C. 1.5m	
6	The variance of dB insertion loss should be no more than what between ports when testing a CBT? A. 0.2 dB B. 0.3 dB C. 0.4 dB	
7	It is unusual to have a zero variance in the measurement across all ports of a CBT with 6-12 fibres. (e.g for 12 port CBT not all 12 ports should	

	measure the same). This could indicate what? A. Engineer has exceptionally good build skills B. Engineer is overly cleaning ports C. Engineer is manipulating test results from the same port	
8	During the network build from the Headend through to CBTs, issues with some or all of the network means that the normal sequential build cannot be followed. What process must be followed? A. A High Reflective Device (HRD) should be left at the splitter so when testing starts it can be referenced B. No HRD are to be left in until testing has been completed C. All CBTs should have a HRD left in so they can be seen when testing starts	
9	What mandatory information is required to run an Auto Toggle test? A. Device ID, phone number, Head end port, CBT ID B. Device ID, Head end ID, Head end Slot, Head end Port C. Device ID, CBT ID, Head end ID, Head end Port	
10	Which test system allows testing of both vendors - Viavi and Exfo? A. Strategic B. Tactical C. TADDS	
11	How do you confirm the OTH Status for the Exchange being worked on? A. It will be on the job pack. B. SMS "OTHtest" followed by 1141 code or Exchange name to 81192 C. Contact your COW/FBC for the correct information. D. SMS 1057 to 81192	

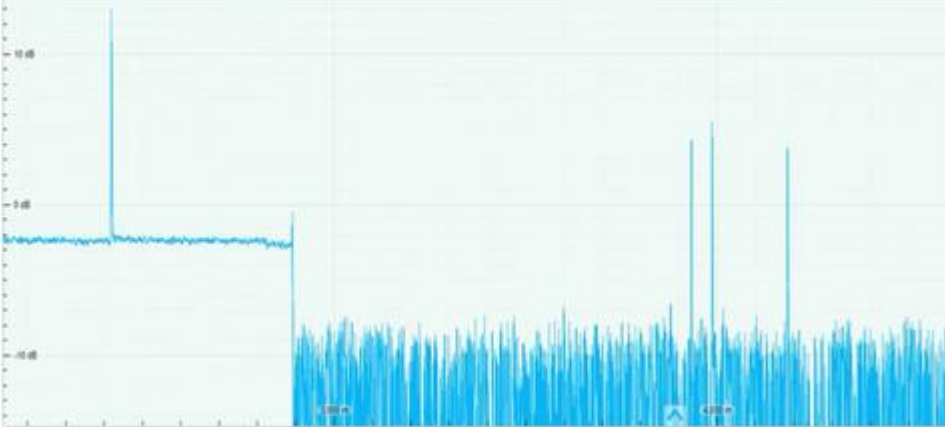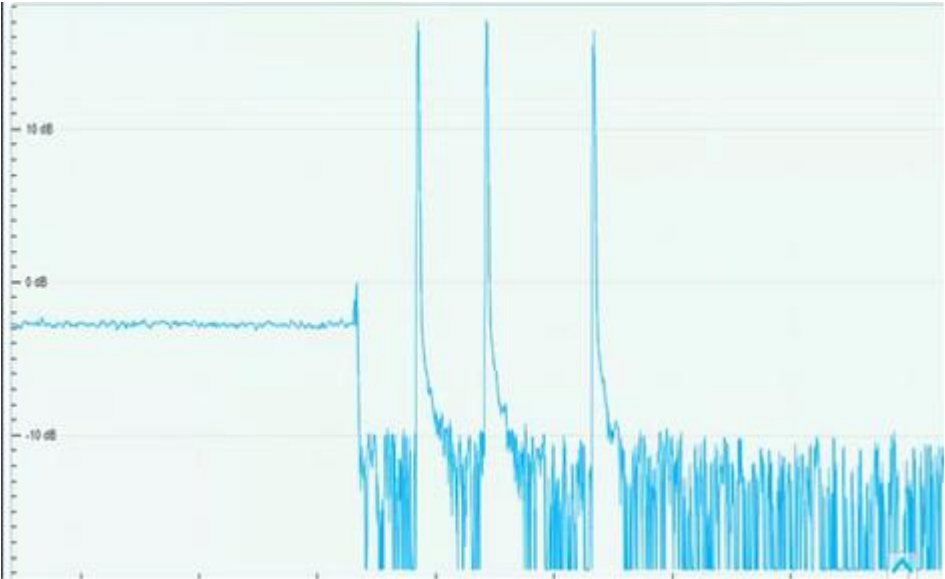|		Tactical Optical Test Head Solution	
12		When looking at the splitter test result using the OTH what 2 events should be seen? A. The splitter and the CBT port one High Reflective Device (HRD) B. The splitter and the High Reflective Device (HRD) 1m apart C. The HRD and the CBT	
13		After all the active ports on a CBT have been tested using the OTH what is the last test to be completed? A. A baseline reference test, this allows the OTH to monitor the network and detect any new events/changes in life B. A speed test using the Optical Speed Hand Tester 4B C. A power test at 1310nm to check the upstream wavelength	
14		When looking at a trace of a completed splitter on the ONMSi system what peak will be the highest? A. The Splitter B. The CBT reflector C. The customers ONT	
15		Ghost Peaks are caused by what? A. Physical intervention in the network causes them B. It's a known fault with Nokia Headend that means you see double peaks on the trace. C. It is the light from the Physical reflection, being re-directed backwards past the original (Physical) reflection.	

16	Please select the true statement. A. The Ghost Peak will be the exact same distance past the Physical Reflection as the Physical Reflection is to whatever is causing the Ghost peak B. The Ghost Peak will be a greater distance past the Physical Reflection as the Physical Reflection is to whatever is causing the Ghost peak C. The Ghost Peak can vary in distance past the Physical Reflection as the Physical Reflection is to whatever is causing the Ghost peak	
17	If the Splitter Aray Sub Assembly (SASA) distance has been recorded incorrectly and is set at a distance longer than that of the CBT you are testing, what will be the result of the test? A. No reference peak detected B. New peak detected C. No peak detected	
18	If a CBT has incorrectly been assigned a reference peak and is preventing further testing, what can you do? A. Log into the ONMSi Trace system and edit your results B. Delete the splitter results and re test all ports on all CBT's C. Visit the site and re test the CBT all ports	
19	The topology image below shows a good example indicating?	

A. All ports highlighted in green need testing.

B. All ports have been tested

C. All ports have been tested and a HRD has been left in port 1

20	The topology image below shows?

A. All ports highlighted in green need testing.

B. All ports have been tested

C. All ports have been tested but no reflectors have been left in port 1

21	The topology image below shows? Select all that apply.

A. CBT 1 is complete CBT 2 is part complete CBT 3, 4, 5, have no tests.

B. CBT 1 has been part tested CBT 2 has two failed tests CBT 3, 4, 5, have no tests.

C. Splitter has not been tested and HRD left in CBT 1.

| 22 | Using the detailed view below is this build ok? |

CBZCLKXP/01	CBZCLKXP	CONNECTED	13/07/2021 21:15	2381.81	17.22	TMZBNXRC/01	122.41	-3.54
CBZCLKXP/02	CBZCLKXP	CONNECTED	14/07/2021 21:17	2381.81	24.5	TMZBNXRC/01	122.41	-3.74
CBZCLKXP/03	CBZCLKXP	CONNECTED	15/07/2021 21:17	2381.81	17.2	TMZBNXRC/01	122.41	-3.56
CBZCLKXP/04	CBZCLKXP	CONNECTED	16/07/2021 21:19	2381.73	17.09	TMZBNXRC/01	122.33	-3.67
CBZCLKXP/05	CBZCLKXP	CONNECTED	17/07/2021 21:19	2381.73	17.04	TMZBNXRC/01	122.33	-3.72
CBZCLKXP/06	CBZCLKXP	CONNECTED	18/07/2021 21:20	2381.73	17.18	TMZBNXRC/01	122.33	-3.58
CBZCLKXP/07	CBZCLKXP	CONNECTED	19/07/2021 21:21	2381.73	17.11	TMZBNXRC/01	122.33	-3.65
CBZCLKXP/08	CBZCLKXP	CONNECTED	20/07/2021 21:22	2381.81	17.14	TMZBNXRC/01	122.41	-3.62
CBZCLKXP/09	CBZCLKXP	CONNECTED	21/07/2021 21:23	2381.81	17.18	TMZBNXRC/01	122.41	-3.78
CBZCLKXP/10	CBZCLKXP	CONNECTED	22/07/2021 21:23	2381.81	16.98	TMZBNXRC/01	122.41	-3.81

A. Yes all ports are under 27db

B. No port 2 has a variance greater than 0.3 dB indicating a bad splice / connection.
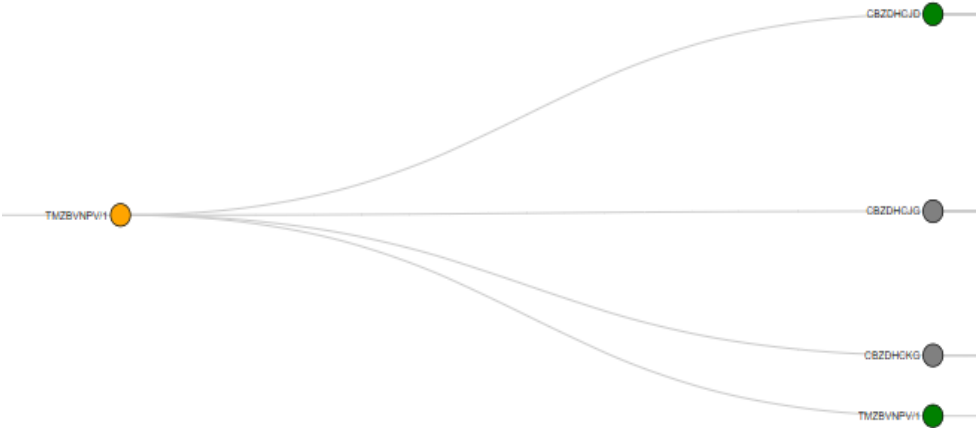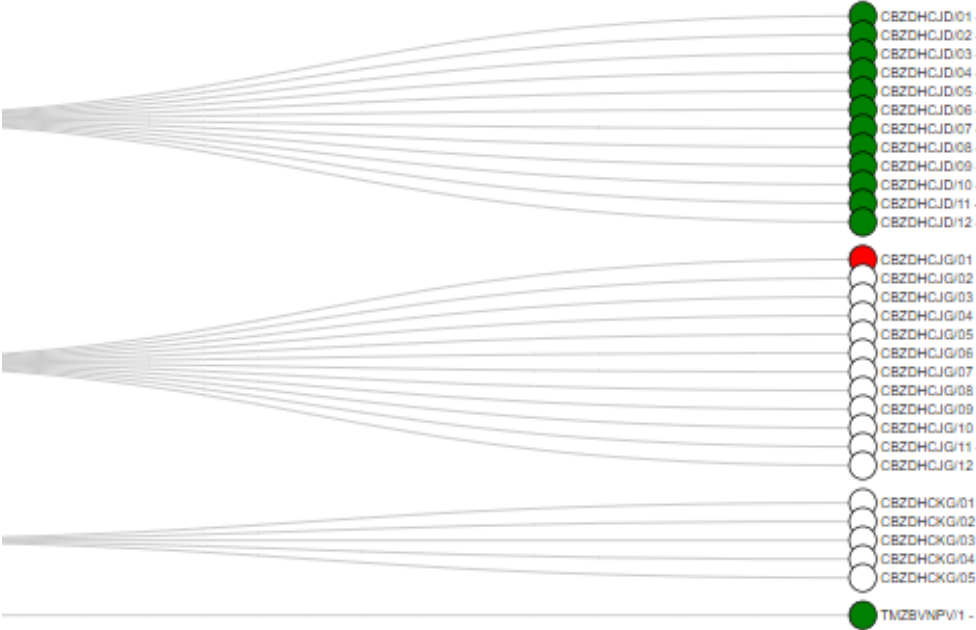
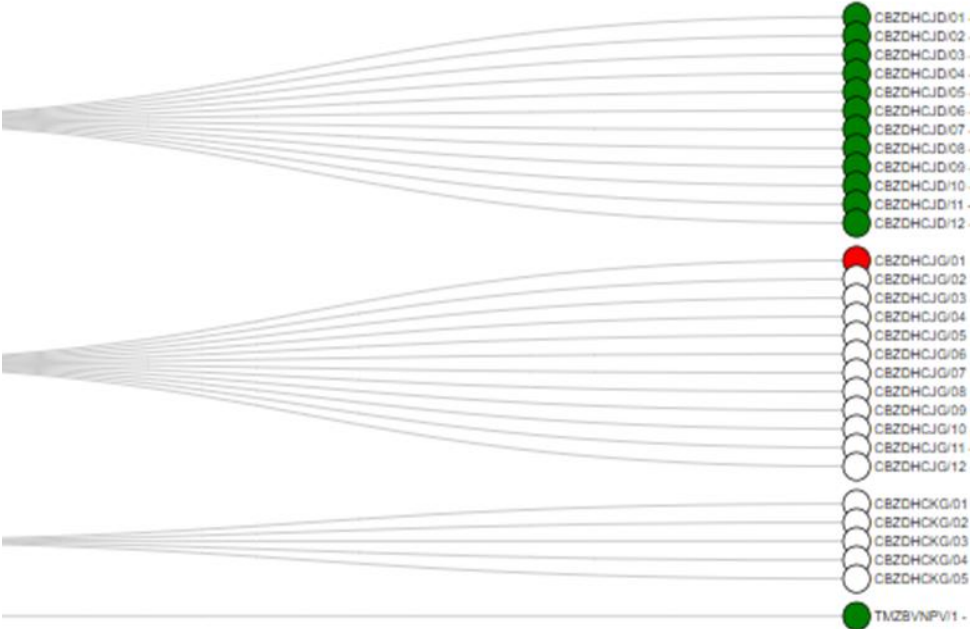| 23 | Using the trace viewer what could cause the spike before the splitter? |

A. Transition joint

B. Bad splice

C. Aggregation Node

24	Using the trace viewer graph below can you identify the peaks from left to right?

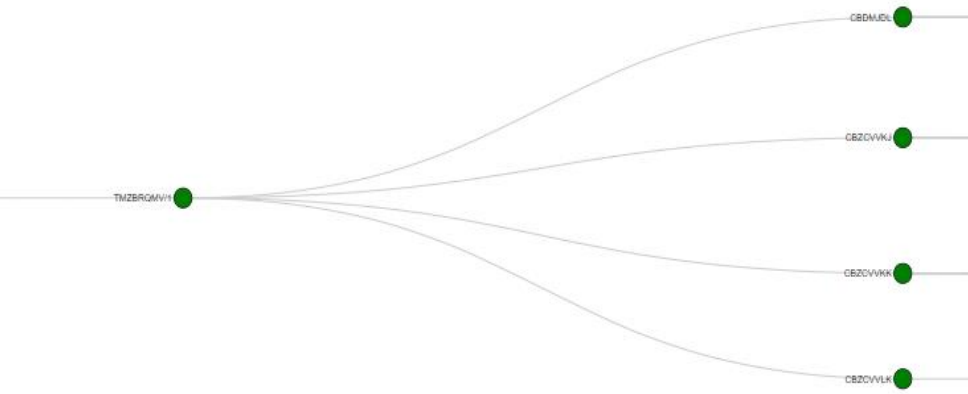A. Splitter, CBT with HRD, CBT with HRD, CBT with HRD.

B. AGG, SASA 1, SASA 2, SASA 3.

	Strategic Optical Test Head Solution	
25	On a Viavi Test Head, the WDM and Splitter can create reflective peaks. What must be done to overcome this? A. Enhance the peak B. Use a launch cable C. Mask the peak	
26	True or False - The Strategic OTH solution is built entirely inhouse allowing us to take ownership for data, testing and security. A. True B. False	
27	What is the maximum test time for a OTH Light Loss Splitter test WITHOUT a reflector? A. 10 seconds B. 20 seconds C. 195 seconds	
28	What is the maximum test time for a OTH Light Loss Splitter test WITH a reflector? A. 10 seconds B. 20 seconds C. 195 seconds	
29	What is the definition of a Co-Located CBT?	

	A. CBTs off the same exchange head end. B. CBTs fed off the same ODF C. CBTs on a wall, pole or in a joint box off the same SASA within +/- 2m distance.	
30	What is the definition of a Shared Distance CBT? A. CBTs with the same amount of ports. B. CBTs off the same SASA, measuring equal distance but in different locations. C. CBTs fed off a Tile ODF	
31	When interrogating the graphical view on the OTH what will you see that indicates an 'event'? A. Red dot B. Upwards peak C. Downwards peak D. Green dot	
32	What will the first event be when analysing a typical trace result using the graphical view on the OTH? A. The WDM within the Optical Distribution Frame (ODF). B. The Splitter C. The Aggregation Node	
33	Looking at the topology diagram shown what is the orange/yellow indicator telling you?	

A. The Splitter has been tested successfully.

B. The test at the Splitter has failed.

C. The Splitter has been partially tested.

34	Looking at the topology diagram show what is the red indicator telling you?	

A. The CBT has been partially tested

B. The CBT test has failed

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	C. The CBT has not been tested yet	
35	Looking at the topology diagram shown what are the white indicators telling you? A. The CBT has been partially tested B. The CBT test has failed C. The CBT has not been tested yet	
36	Looking at the topology diagram shown what would you assume?	

A. The Splitter and CBT require testing

B. The Splitter and CBT have been tested successfully

C. The Splitter and CBT have been partially tested, but are spliced through

9   *Modular Guidance (Practical)*

The below table should be used as a guide for the Assessor to accurately assess the Delegates knowledge and ability during the practical assessment.

All the Assessment Pointers in this module are followed by an '**X**' which shows that there is **no coaching allowed**, as explained in the Measurement section. Failure to meet the standard on the Assessment Pointers means that the standard has not been met for the accreditation a whole.

Task Assessment	Assessment Pointers	Coaching	Document Guidance
Questionnaire	Completed at required % or above.	X	
Trained /Skilled	The Delegate is trained, experienced and craft competent in this skill.	X	

Safety	All safety procedures followed, and safe working practices adopted.	X	
Risk Assessment	An on-site risk assessment should be carried out.	X	
Personal Protective Equipment (PPE)	Correct PPE held, in good condition and used where necessary.	X	
Environment	Weather conditions considered before commencing work.	X	
	All rubbish and waste removed from site when the works have been completed.	X	
Equipment Available	Delegate has the correct tools, and they are in good condition to complete the task to the current work practices and quality standards.	X	
	Tools used correctly and safely.	X	
Systems	Delegate has access to and is proficient in using TADDS Openreach only.	X	
	Delegate has access to and is proficient in using ONMSi.	X	
Quality Assessment/Audit	The Delegate can access current quality standards guidance.	X	
	Assessment/audit No.1 completed successfully.	X	
	Assessment/audit recorded correctly on relevant system.	X	

10 *References*

All the documents below are available through the sites and systems described in the Introduction section. If you require access to external sources within them, then please contact the Author (see above) of this accreditation module.

Assessors Note: All Openreach people should have access to the Policy & Build app via their work mobile phones. Please make sure that this app is accessed during the accreditation.

- Use this bullet point format
- SFY/HSH/A001 - Health & Safety Handbook (Openreach only).
- CPE/NNS/V060 - Guide to Health & Safety Minimum Standards.
- SFY/HSH/C031 - Openreach Construction Design Management (CDM) 2015 Regulations Policy.
- EPT/ANS/A040 - One Fibre Network – Build Quality Manual for Engineers.
- EPT/COF/C008 - Testing practices for PTO engineers testing in the Fibre to the Premises (FTTP) network.
- EPT/COF/D956 - Field Engineer testing practices for the Fibre To The Premises (FTTP) network.
- EPT/COF/D983 - Auto Toggle Practices & Procedures.
- NWK/LNK/C569 - Process of quality FTTP network build in Fibre Cities (Build Stage).
- OTH - Community Home (bt.com) (Openreach Only)

END OF DOCUMENT