OCC-55
CWDM Channel Checker

Operating Manual | BN 2277/40

BN 2277/98.24
2008.07
English

JDSU

Please direct all enquiries to your local JDSU sales company.
The addresses can be found at:
http://www.jdsu.com/tm-contacts

The description of additional features of the device can be found at:
http://www.jdsu.com/tm

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Mühleweg 5, 72800 Eningen u. A.

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Note: Changes may be made to specifications, descriptions and delivery information.

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CONTENTS

1 INTRODUCTION

OCC-55 CWDM Channel Checker

The OCC-55 Optical Channel Checker is designed for channel tracking in WDM systems.

Battery operation from four AA batteries and the robust, shock-proof design provide long operating time in the field even under tough conditions. AC line operation via a separate AC adapter and the USB interface for remote control also ensure ease of use in the laboratory or production environment.

Operating manual update

Continuing enhancement and further development of the SmartClass family may mean that this operating manual does not cover all the latest functions of your device.

If the operating instructions about features provided by your device are missing, please visit the JDSU web site to check if additional information is available.

To download the latest operating instructions:

1. Visit the JDSU web site at **www.jdsu.com/test_and_measurement**.
2. Select your model from the product line.
3. Open the download area and download the operating instructions if available.

Symbols used in this operating manual

The following symbols, warnings and character formats are used in this operating manual:

	**CAUTION** Follow the instructions carefully to avoid **damage** to the device. **WARNING** Follow the instructions carefully to avoid **damage** to the device or **injury** to the person. **DANGER** Follow the instructions carefully to avoid **damage** to the device or **severe injury** to the person.
	**High Voltage** Follow the instructions carefully to avoid **damage** to the device or **severe injury** to the person. This safety instruction is given if the danger is due to **high voltage**.
	**Laser** Follow the instructions carefully to avoid **damage** to the device or **severe injury** to the person. This safety instruction is given if the danger is due to **laser radiation**. Information specifying the laser class is also given.
!	**Very important instruction** Follow this instruction carefully; e.g. ! Make sure you protect yourself and others from exposure to laser light.

✓	**Requirement** This requirement must be met first; e.g. ✓ The system is switched on
⇒ 1. 2.	**Instruction** Follow the instructions given (the numbers indicate the order in which the instructions should be followed); e.g. ⇒ Select mode.
Italics	**Result** Indicates the result of following an instruction; e.g. *The page opens.*
Bold type face	**Pages, controls, and display elements** Screen pages, controls, and display elements are indicated in **bold type**.
Text in blue	**Cross references** Cross references are indicated in blue type. When using the PDF version, just click on the blue text to skip to the cross reference.
[Store]	**Instrument keys** Instrument keys are indicated within square brackets.

2 SAFETY INFORMATION

Warning symbols on the unit

Warning symbols indicating a potential hazard

! In all cases where the unit is labeled with a warning symbol, the operating manual must be consulted to learn more about the nature of the potential hazard and any action that must be taken.

Proper use

This instrument is intended for measurements on optical fiber devices and systems.

⇒ Please make sure the device is not operated outside the permitted ambient conditions.

⇒ Always make sure that the device is in proper working order before switching it on.

Laser safety

WARNING

Dangerous laser radiation

Laser radiation can cause irreparable damage to the eye and skin.

The maximum permitted power for the OCC-55 means that the optical input signals can reach Hazard Level 3B.

Bear this in mind when using the OCC-55.

- ! Always be aware of the hazard level of the device to be connected.
- ! Connect all optical fibers before switching on the radiation source.
- ! Switch off the laser source before disconnecting the optical fibers.
- ! Never look directly into the output of a laser source or into an optical fiber connected to it.
- ! Always cover unused ports.
- ! Heed the normal precautions for working with laser radiation and consider local regulations.

Battery Operation

WARNING

Explosion danger

Short-circuiting the batteries can result in overheating, explosion or ignition of the batteries and their surroundings.

- ! Never short-circuit the battery contacts by touching both contacts simultaneously with an electrical conducting object.
- ! Only use AA size dry batteries or rechargeable batteries.
- ! Make sure the batteries are inserted with the correct polarity.

WARNING

Explosion danger

Dry batteries must not be recharged. An incorrect setting will charge dry batteries which may then explode.

- ! Set the device to the correct battery type after you have changed the batteries and switched on the device.

Ventilation

CAUTION

Insufficient ventilation

Insufficient ventilation can damage the device or adversely affect its function and safety.

- ! Ensure adequate ventilation when operating the device.

SNT-121A Adapter/Charger

Safety class

The SNT-121A AC Adapter/Charger Unit is protectively isolated to conform with IEC 60950.

Environmental conditions

CAUTION

Ambient temperature too high/low

Temperatures outside the operating range of 0 to +40 °C can damage the SNT-121A Adapter/Charger or adversely affect its function and safety.

! Only operate the SNT-121A Adapter/Charger indoors.
! The SNT-121A Adapter/Charger must only be operated at ambient temperatures between 0 and +40 °C.

CAUTION

Insufficient ventilation

Insufficient ventilation can damage the SNT-121A Adapter/Charger or adversely affect its function and safety.

! Ensure adequate ventilation when operating the SNT-121A Adapter/Charger.

CAUTION

Condensation

Operation in the presence of condensation can damage the SNT-121A Adapter/Charger or adversely affect its function and safety.

! Do not operate the SNT-121A Adapter/Charger if condensation has formed.
! If condensation cannot be avoided, such as when the SNT-121A Adapter/Charger is cold and is moved to a warm room, wait until the SNT-121A Adapter/Charger Unit is dry before plugging it into the AC power line.

3 GETTING STARTED

Unpacking the device

Packing material

We suggest that you keep the original packing material. It is designed for reuse (unless it is damaged during shipping). Using the original packing material ensures that the device is properly protected during shipping.

Checking the package contents

Your device is shipped with the following accessories:

- 1 adapter (BN 2050/00.xx)
- 4 dry batteries AA size
- Belt bag MT-1S
- Operating manual

Checking for shipping damage

After you unpack the device, check to see if it has been damaged during shipping. This is particularly likely if the packaging is visibly damaged. If there is damage, do not attempt to operate the device. Doing so can cause further damage. In case of damage, please contact your local JDSU Sales Company. Addresses can be found at **www.jdsu.com.**

Recovery following storage/shipping

Condensation can occur if a device that is stored or shipped at a low temperature is brought into a warm room. To prevent damage, wait until no more condensation is visible on the surface of the device before powering it up. Do not operate the device until it has reached its specified temperature range and wait until it has cooled down if the device was stored at a high temperature (see „Ambient temperature", on page 41).

Device overview

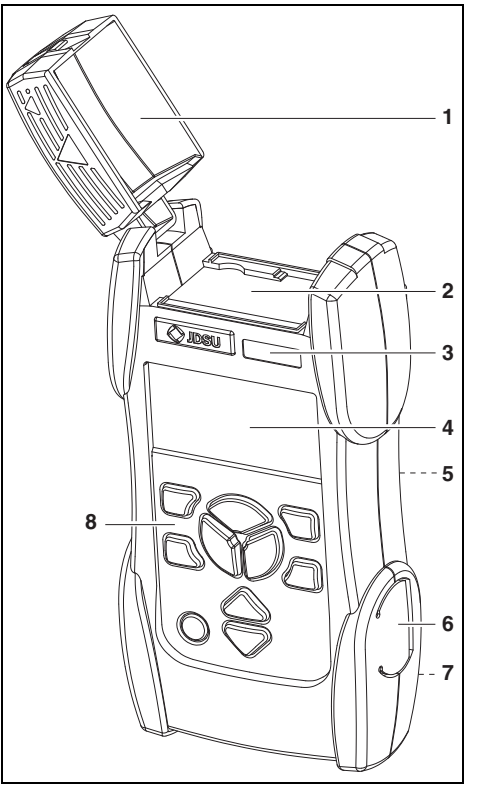


Fig 1 Frontal and side view

1	Test head cover
2	Connector panel (see page 12 for details)

3	Device label
4	Display
5	Stand (on rear of the device)
6	External power supply connector, USB control interface
7	Battery compartment (on rear of the device)
8	Key pad

	Press to switch the backlight on/off.
PREV	Press to go back one menu level (without making any changes).
MENU ENTER	Press to: • open menu and select menu item • store settings
FN	Press to activate the second function of a key.
 **START / STOP**	**Function 1:** Press to start or stop a sweep. **Function 2 (FN):** Press to activate drift mode. The selected channel is measured permanently.
 **STORE**	**Function 1:** Press to store displayed values. **Function 2 (FN):** Press to select a channel in the graph display.
 **TAB**	**Function 1:** Press to show values in a table or in a graph. **Function 2 (FN):** Press to select a channel in the graph display.

⏻	Press to switch the device on and off.
△ ▽	Press to: • shifts y-axis in graphical display mode • scroll up/down in the menus • change values in the menus

Connector panel

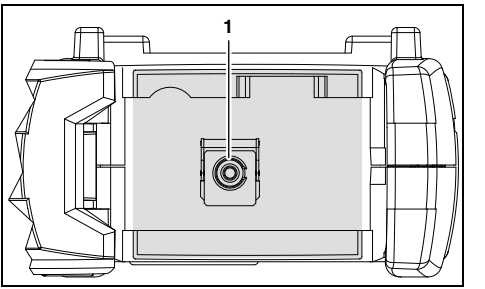


Fig 2 OCC-55 connector panel

1	Optical connector (JAE adapter)

Power supply

The following power sources can be used to operate the OCC-55:

- four 1.5 V dry batteries (Mignon AA size, alkaline type recommended)
- four 1.2 V NiMH rechargeable batteries (Mignon AA size)
- the SNT-121A Adapter/Charger
- via the USB control interface

Battery operation

CAUTION

Dangers when handling batteries

Handling batteries may be dangerous. Please note the following safety instructions.

! Please note the battery operation safety information in the chapter „Battery Operation", on page 6.

Replacing batteries

! Do not replace individual batteries. Always change all four batteries at the same time.
! Always use four batteries of the same type; i.e. do not mix rechargeable and non-rechargeable batteries.

Replacing batteries

The battery compartment is on the back of the instrument.

1. Pull down the lid to open the battery compartment.
2. Fit new batteries or remove the used batteries and replace them with fresh ones.

Notice: Take care to insert the batteries correctly. The correct polarity is indicated by a diagram inside the battery compartment.

3. Close the battery compartment.
4. Press **[**ⓘ**]** to switch on.

After you power up the device, the BATTERY CHANGED menu will prompt you to specify whether dry batteries or rechargeable batteries are being used.

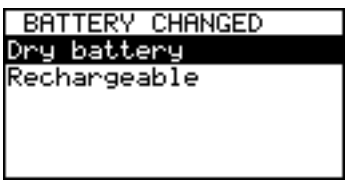


Fig 3 Setup menu for battery type.

5. Select the battery setting that matches the battery type you have inserted and press **[MENU ENTER]**.
6. If **Rechargeable** was selected, the setting must be confirmed by pressing **[MENU ENTER]** again.

Recharging the batteries

If more than 90% of the battery capacity has been used, the batteries will be recharged when the SNT-121A Adapter/Charger and rechargeable batteries are being used to power the device. Complete recharging takes about 3 hours. The instrument switches to trickle charging automatically as soon as the batteries are fully charged.

If the charge cycle does not start although the SNT-121A Adapter/Charger is connected, check the battery type being used by looking in the battery compartment, and check the battery setting in the INFO menu is correct.

Note: The battery type cannot be selected using the instrument keys. To change the battery type, you must open the battery compartment and remove at least one battery for more than five seconds. After you replace the battery, the OCC-55 will query the battery type. The battery type you select will be stored until you change the batteries again.

General tips on using batteries

- Always handle batteries with care.
- Do not drop or damage the batteries or expose them to excessively high temperatures.
- Do not store the batteries for more than one or two days at very high temperatures (e.g. in a vehicle), either separately or fitted in the instrument.
- Do not leave discharged batteries in the instrument for a long time if it is not being used.
- Do not store rechargeable batteries for more than 6 months without recharging them at intervals.
- Avoid deep discharging the batteries as this can cause the cell polarity to reverse and make the battery useless.

Protect the environment

Please dispose of any unwanted dry batteries and rechargeable batteries carefully. They should also be removed from the instrument if it is to be scrapped. If facilities in your country exist for collecting such waste or for recycling, please make use of these rather than throwing the batteries in the normal trash. You will often be able to return used batteries to the place where you purchase new ones. Any dry or rechargeable batteries that you purchased from JDSU can be returned to one of our Service Centers for disposal.

Operation from AC power

Notice: Only the SNT-121A Adapter/Charger must be used to operate the OCC-55 from AC power.

To fit the AC line plug adapter:

7. Slide the AC line plug adapter into the slot.
   The SNT-121A Adapter/Charger is ready for use.

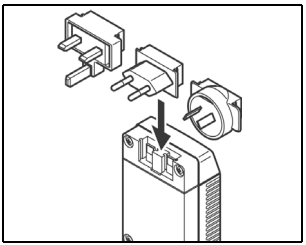


Fig 4 SNT-121A Adapter/Charger.

To change the AC line plug adapter:

1. Place the SNT-121A against the edge of a table or bench as shown (see Fig 5).
2. Push the SNT-121A downwards.
3. Slide a different AC line plug adapter into the slot (see Fig 4).

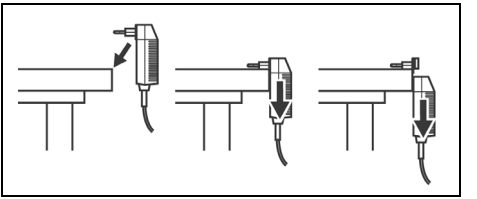


Fig 5 SNT-121A: Changing the AC line plug adapter.

To operate the OCC-55 from AC power:

1. Connect the SNT-121A DC power cord to the OCC-55 DC power socket.
   (The socket is under the cover on the right side.)
2. Plug the SNT-121A into the AC line socket.
   The OCC-55 switches on automatically when powered from the SNT-121A.

Note: The SNT-121A provides power even if dry or rechargeable batteries are fitted in the instrument.

Operation from USB interface power

Although the USB interface is primarily intended for remote control, it can also be used to power the OCC-55.

To power the OCC-55 via the USB interface:

⇒ Just connect a standard USB cable to any USB socket of a PC or USB hub.

Notes:

- The device can be operated manually even if it is powered via the USB interface.
- It is not possible to charge the batteries via the USB interface.
- The device will be powered by the SNT-121A Adapter/Charger if the SNT-121A Adapter/Charger and the USB interface are both connected.

Connecting optical cables

Mounting test adapters

JDSU provides a number of test adapters for connecting the OCC-55 to the interface to be tested.

You can connect all standard optical connector types to the instrument using these adapters. The test adapters are suitable for connectors with planar (PC) and angled end surfaces (APC).

Contact your local JDSU Sales Company for available adapter types.

To mount the JAE test adapter:

1. Open the head cover and remove the protecting cap (if still mounted).
2. Place the test adapter vertically on the optical connector with the locking lever open.
3. Close the locking lever when the test adapter is firmly seated. You will hear the locking mechanism lock.
4. Repeat the procedure if the device is fitted with two ports.
5. Fit the fiber optic cable to the test adapter or close the head cover.

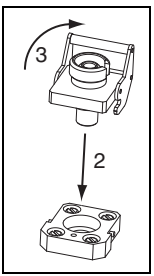


Fig 6 Mounting the JAE test adapter

4 BASIC OPERATION

Switching the device on/off

To switch the device on:

⇒ Press **[ⓘ]** to switch on the device.

To switch the device off:

⇒ Press and hold down **[ⓘ] for more than 2 sec.** to switch off the device.

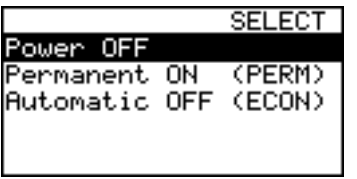
The OCC-55 has two power modes:

- **Permanent ON (PERM):**
  The device is switched on permanently.
- **Automatic OFF (ECON):**
  The device switches off 20 minutes after the last operation. This function is only available when the device is powered from batteries.

Changing the power mode

✓ The device is switched on.

1. Press **[ⓘ]** briefly (for less than 2 sec.).
   The SELECT *menu opens:*



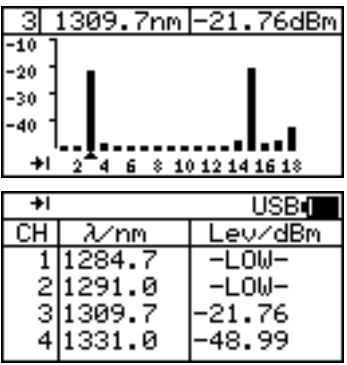
2. Select **Permanent ON** or **Automatic OFF**.
3. Press **[MENU ENTER]** to set the power mode.
   The menu window closes.

Tip: You can also use the **Power OFF** command in this menu to switch off the device. Simply press [⏻] twice (the first press opens the menu, the second selects the item).

Switching the backlight on/off

⇒ Press [💡] to switch the backlight on.
⇒ Press [💡] again to switch the backlight off.

Display elements



Graph mode

Table mode

Fig 7 OCC-55 operation display

	External power supply The OCC-55 is powered by the external AC adapter when this symbol is shown.

	**Battery status** Indicates the battery charge status. If it is not shown, only the AC adapter is active.
USB	Remote Interface
Center of display	**Graph mode:** Shows the measurement values in a graph. **Table mode:** Shows the measurement values in a table.
	• Does only one sweep. - or - • Does permanent sweeping.

Navigating in the menus

✓ The measurement display is shown.

⇒ Press **[MENU ENTER]** to open the MAIN menu.
The MAIN *menu opens.*

To select a menu item:

1. Press **[▲▼]** to highlight an item.
2. Press **[MENU ENTER]** to select the item.

To leave a menu without making any changes:

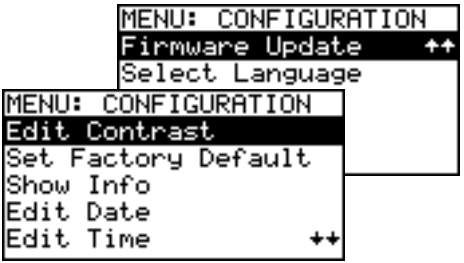
⇒ Press **[PREV]**.

Configuring the device

Configuration menu overview

✓ The measurement display is open.

⇒ Press **[MENU ENTER]** to open the MAIN menu and select **Configuration.**
The CONFIGURATION *menu opens:*

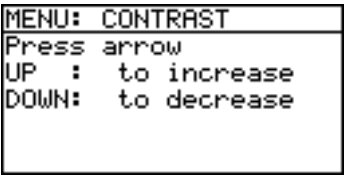


The following table gives a short overview of the menu items. These are explained in the sections below.

Edit Contrast	Adjust display contrast.
Set Factory Default	Set the device parameters and settings to their default values as defined by JDSU. This does not affect any stored measurement results.
Show Info	Display basic device information.
Edit Date	Adjust date.
Edit Time	Adjust time.
Firmware Update	Download the current device firmware version from the internet to the device.
Select Language	Select the language of the device texts.

Setting the display contrast

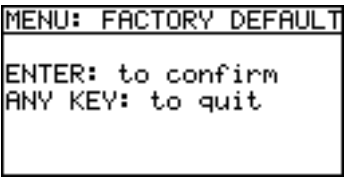
1. Select **Edit Contrast** in the CONFIGURATION menu.
   The CONTRAST menu opens:



2. Press **[▲▼]** to increase/decrease the contrast.
3. Press **[MENU ENTER]** to store the value and exit from the menu.

Setting the factory default values

1. Select **Set Factory Default** in the CONFIGURATION menu.
   The FACTORY DEFAULT menu opens:



2. Press **[MENU ENTER]** to set the factory defaults.
   – or –
   Press any key to exit from the menu without making any changes.

Note: Setting the factory default values does not affect your stored measurement results.

Displaying device information

⇒ Select **Show Info** in the CONFIGURATION menu.
The INFO menu opens and basic device information is shown: device name, family, serial number, calibration date, software version, battery type and, if applicable, date and time.

Setting the date and time

1. Select **Edit date** in the CONFIGURATION menu.
The EDIT DATE MENU opens:

2. Press **[▲▼]** to set year and press **[MENU ENTER]**.
3. Press **[▲▼]** to set month and press **[MENU ENTER]**.
4. Press **[▲▼]** to set day and press **[MENU ENTER]**.
5. Select **Edit time** in the CONFIGURATION menu.
The EDIT TIME menu opens.
6. Press **[▲▼]** to set hours and press **[MENU ENTER]**.
7. Press **[▲▼]** to set minutes and press **[MENU ENTER]**.
8. Press **[▲▼]** to set seconds and press **[MENU ENTER]**.

Note: The date and time will need to be set again if the device is without any power for more than 1 hour.

The device is without any power if

- neither the SNT-121A Adapter/Charger is connected,
- nor a USB connection is established and
- no batteries are fitted or the batteries are discharged.

Updating the firmware

The latest version of the firmware can be downloaded from the internet at any time and stored in the EEPROM.

To find the latest firmware version:

1. Visit the JDSU web site at **www.jdsu.com/test_and_measurement**.
2. Select your model from the product line.
3. Open the download area and download the latest firmware.

You will also find step-by-step instructions on how to update the firmware there.

After downloading the firmware to your PC follow the steps below to install the firmware into your device.

To install the firmware into the device:

Selecting the language

1. Select **Select Language** in the CONFIGURATION menu.
   The SELECT LANGUAGE menu opens:

2. Press **[▲▼]** to highlight the language you want and press **[MENU ENTER]** to select it.

5 OPERATION

The channels

The OCC-55 has 18 channels with nominal wavelengths.

Channel	Preset wavelength	Channel	Preset wavelength
1	1271 nm	**10**	1451 nm
2	1291 nm	**11**	1471 nm
3	1311 nm	**12**	1491 nm
4	1331 nm	**13**	1511 nm
5	1351 nm	**14**	1531 nm
6	1371 nm	**15**	1551 nm
7	1391 nm	**16**	1571 nm
8	1411 nm	**17**	1591 nm
9	1431 nm	**18**	1611 nm

Selecting the display mode

The OCC-55 has two display modes:

- **Graph mode**
  Shows the measurement values in a graph.
- **Table mode**
  Shows the measurement values in a table.

To select a display mode:

⇒ Press **[TAB]** to switch the display mode.

The parameters of the channels and the measurement values are displayed as wavelength (nm).

Selecting the sweep mode

A sweep checks all 18 channels and shows the measured values in a graph (graph mode) or a table (table mode).

The OCC-55 has two sweep modes:

- **Single**
  The OCC-55 checks all 18 channels only one time.

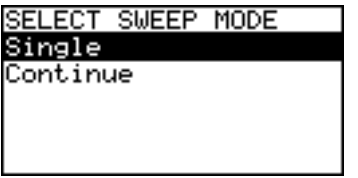
   is shown on the display

- **Continue**
  The OCC-55 checks all 18 channels permanently.

   is shown on the display

To select a sweep mode:

1. Select Sweep Mode in the MAIN MENU.
   The SELECT SWEEP MODE opens



2. Press **[▲▼]** to choose a sweep mode and press **[MENU ENTER]** to select it.

Note: A full sweep of all channels takes about 1 minute.

Starting a measurement

To start a measurement:

⇒ Press **[START / STOP]** in graph or table mode.
The measurement starts.

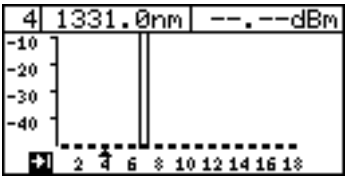


Fig 8 Display in graph mode

Note: During measurement in graph mode the marker skips from channel to channel.

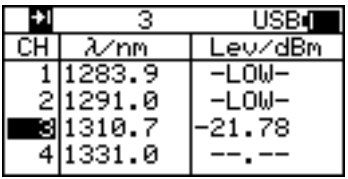


Fig 9 Display in table mode

Note: During measurement in table mode the currently measured channel is indicated by a bar as shown for channel 3 in Fig 9.

⇒ Press **[START / STOP]** again to stop the measurement.

Channel power and wavelength in sweep mode

In sweep mode the OCC-55 measures the power level and wavelength of each CWDM channel. A broad bar in graphical display indicates that the measured wavelength meets the CWDM channel's nominal wavelength ±6 nm. Outside of this range a thin bar tells you that the channel's wavelength offset is more than 6 nm from its nominal value.

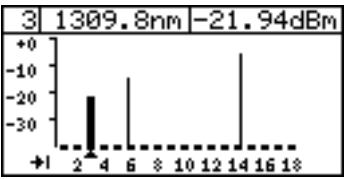


Fig 10 Bar graph mode

Channel 3	The measured wavelength meets the nominal wavelength within ±6 nm.
Channel 6	The measured wavelength is below the limit.
Channel 14	The measured wavelength is above the limit.

Observing a channel

The OCC-55 has a drift mode. In this mode the OCC-55 checks one chosen channel permanently. Other channels will not be checked in dirft mode.

Choosing a channel:

⇒ Press **[FN]** and select a channel with **[◀▶]**.
A small arrow on the x-axis shows which channel is selected. The preset or the measured wavelength is displayed on top of the display.

To activate drift mode:

1. Chose the channel which has to be observed.
2. Press **[FN]** and then **[👁]**.
The OCC-55 now checks the chosen channel permanently and shows the current, maximum and minimum measurement values in a table.

CH: 3	1311nm	USB
	λ/nm	Lev/dBm
MAX	1309.5	-22.01
ACT	1309.5	-22.08
MIN	1309.5	-22.14
FN		00:00:10

6 MEMORY MANAGEMENT

General information

The OCC-55 allows you to save the measured values in a structured data memory and recall them as required. Up to 100 measurements can be stored. All data is saved to a non-volatile memory (E^2PROM).

Data can also be downloaded via the USB interface to a PC for further evaluation.

Two methods of recording values are available to meet individual requirements:

- Measured values stored in successive memory locations.
- Measured values stored in pre-defined memory locations.

Note: In drift mode only one measurement can be saved. Starting a new drift measurement overwrites the old drift measurement.

Saving results successively

Results are stored simply by pressing **[Store]**. Each time the key is pressed, the next memory location will be used to store the current result. If the memory is initially empty, the memory starts with Meas 001. The Meas # then increments each time **[Store]** is pressed (until the memory is full).

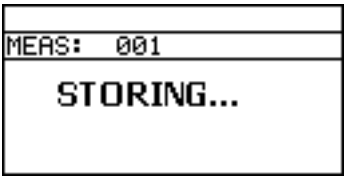
This method is ideal for simple measurement sequences.

To save current results successively:

✓ The entire result memory is empty or the first and subsequent memory locations are empty.

✓ The device is in measure mode.

1. Press **[Store]** to save the first result.
   The display briefly indicates the first memory location, e.g. Meas 001. "STORING ..." confirms the storing process is successful.



2. Press **[Store]** again every time you want to save a further result value.
   The display briefly shows the memory location used. The Meas # increments each time.

If the results are to be stored starting from a different memory location, such as Meas 005, this value must be specified in advance (see „Selecting the store location", on page 33).

If you attempt to store data at memory locations that are already occupied by the results of previous measurements, a warning will be displayed:

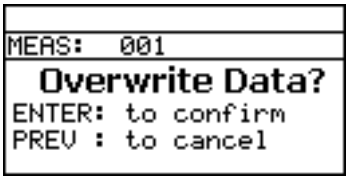


Fig 11 Display if selected memory location is already occupied.

⇒ Press **[MENU ENTER]** to overwrite the old data with new data.

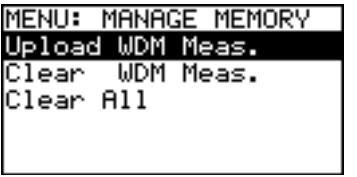
⇒ Press **[PREV]** if you do not want to overwrite the old data.

Displaying stored results

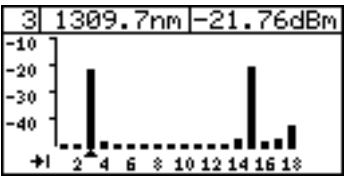
Stored measurement results can be reloaded any time by selecting the appropriate Meas # in the MANAGE MEMORY menu.

To display stored results:

1. Select **Manage Memory** in the MAIN menu and Press **[MENU ENTER]**.
   The MANAGE MEMORY menu opens:



2. Press **[MENU ENTER]** again (**Upload WDM Meas.** is selected).
   The current Meas # will be displayed in graph or table mode:



Graph mode

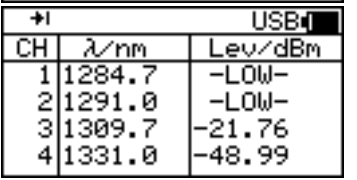


Table mode

3. Press **[▲▼]** to increase/decrease the Meas #.

⇒ Press **[MENU ENTER]** to exit from the menu.

Selecting the store location

When you press **[Store]** in measurement mode, the results are stored at the active memory location. Each time you press the key, the Meas # is incremented. You cannot select the memory location or Meas # in measurement mode.

If you do not want to overwrite existing data or if you want to set a specific Meas number, you must open the MANAGE MEMORY menu and select the location.

The procedure is the same as for displaying a memory location (see „Displaying stored results", on page 32), as the last memory location displayed is always set as the current memory location when storing data.

To save results at a selected location:

1. Select **Manage Memory** in the MAIN menu.
2. Press **[MENU ENTER]**.
   *The MANAGE MEMORY menu opens (**Upload WDM Meas.** is selected).*
3. Press **[MENU ENTER]** again.
   The current Meas # will be displayed in table or graph mode.
4. Press **[▲▼]** to select the Meas #.
5. Press **[MENU ENTER]**.
   The Meas # is now selected. The next time you press **[Store]** the measurement results are stored to this Meas #.

Clearing the memory

You can store up to 100 data sets in the OCC-55. Each data set contains the levels [dBm] of all 18 channels and the date / time the measurement was started.

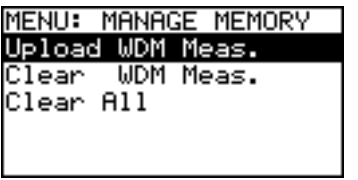
You do not have to clear the entire memory to free up capacity. You can clear individual Meas locations to provide access to specific Meas numbers.

The OCC-55 has the following memory clear functions:

- **Clear WDM Meas.**
  Clears the data of the selected measurement
- **Clear All**
  Clears all the data in the memory.

Clearing memory data

1. Select **Manage Memory** in the MAIN menu.
   The last results stored are displayed.
2. Press **[MENU ENTER]**.
   The MANAGE MEMORY menu opens:



To clear the data from a current measurement:

1. Press **[▲▼]** to select **Clear WDM Meas.**.
2. Press **[MENU ENTER]** to clear the selected Measurement data.
3. Press **[PREV]** to exit from the menu.

Note: If you now store results, they will be stored at the memory location for the cleared Meas # displayed.

To clear the entire memory:

1. Press **[▲▼]** to select **Clear All**.
2. Press **[MENU ENTER]** to clear all memory data.
3. Press **[PREV]** to exit the menu.

Note: If you now store results, they will be stored at memory location Meas 001.

Reading out the result memory

The result memory can be read out in two ways:

- by reading the measurement results to a PC or
- by copying the result memory to a memory stick.

Reading out the measurement results to a PC

The OFS-355 Download Manager can be used to transfer the result memory to a PC via the USB interface. For further details see „OFS-355 Download Manager", on page 38.

7 MAINTENANCE

WARNING

Dangerous voltage and invisible laser radiation

Maintenance or cleaning of the device when it is connected up or operating may damage the device or injure you.

! Make sure that the device is switched off and disconnected from all power sources and optical radiation sources before maintenance or cleaning.

Cleaning the test port

It is a good idea to check that the optical connections are clean and to clean them if necessary before starting measurements. Even very small dust particles on the end surfaces of the plugs or in the test adapters can adversely affect the accuracy of the measurement.

1. Switch off the device.
2. Remove the test adapter from the optical connection. *The plug end surface is now accessible.*
3. Wipe off the plug end surface using a cotton bud soaked in isopropanol. This cleaning method is very effective and leaves no residues.
4. Blow out the test adapter with clean compressed air (available in spray cans, e.g. Anti Dust Spray).

Note: Cover the optical connections with the dust cap whenever they are not in use. This prevents them from getting dirty.

Cleaning the instrument

If the instrument gets dirty through use, you can clean it using a soft cloth moistened with a mild solution of detergent.

CAUTION

Water and cleaning fluids

The device may be damaged or destroyed if water or cleaning fluids get inside it.

! Make sure that water or cleaning fluids do not get inside the instrument.

8 OFS-355 DOWNLOAD MANAGER

The OFS-355 Download Manager is a free download offered by JDSU which allows you to easily transfer stored measurement data to a PC, to enhance the performance of your SMART optical handheld devices, and to speed up production of your test reports.

To download the OFS-355 Download Manager:

1. Go to the JDSU web site: www.jdsu.com
2. Type OFS-355 in the search box.
3. Select OFS-355 from the search results list.
   The OFS-355 information page opens.
4. Select the download tab.
5. Click on the download link to download the software and follow the instructions given.

OFS-355 Download Manager function overview

- Stored measurement data can be transferred to a PC and displayed as an Excel table for later evaluation.

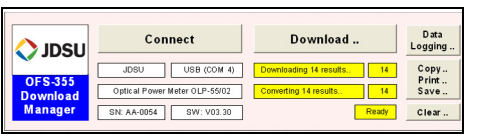
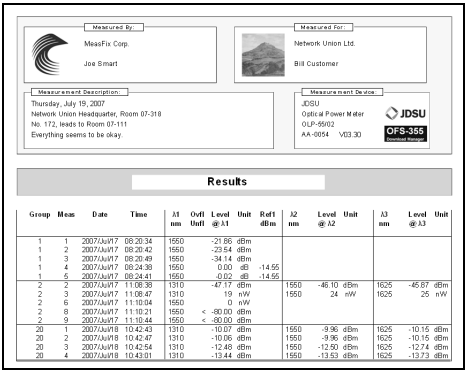


Fig 12 Main menu of the OFS-355 Download Manager.

- A complete acceptance report can be created quickly and easily.



Group	Meas	Date	Time	λ1 nm	Ovfl Undfl	Level @ λ1	Unit	Ref1 dBm	λ2 nm	Level @ λ2	Unit	λ3 nm	Level @ λ3	Unit
1	1	2007/Jul/17	08:20:34	1550		-21.86	dBm							
1	2	2007/Jul/17	08:20:42	1550		-23.54	dBm							
1	3	2007/Jul/17	08:20:49	1550		-34.14	dBm							
1	4	2007/Jul/17	08:24:38	1550		0.00	dB	-14.55						
1	5	2007/Jul/17	08:24:41	1550		-0.02	dB	-14.55						
2	2	2007/Jul/17	11:08:39	1310		-47.17	dBm		1550	-46.10	dBm	1625	-45.87	dBm
2	3	2007/Jul/17	11:08:47	1310		19	nW		1550	24	nW	1625	25	nW
2	6	2007/Jul/17	11:10:04	1550		0	nW							
2	8	2007/Jul/17	11:10:21	1550	<	-80.00	dBm							
2	9	2007/Jul/17	11:10:44	1550	<	-80.00	dBm							
20	1	2007/Jul/18	10:42:43	1310		-10.07	dBm		1550	-9.96	dBm	1625	-10.15	dBm
20	2	2007/Jul/18	10:42:47	1310		-10.06	dBm		1550	-9.96	dBm	1625	-10.15	dBm
20	3	2007/Jul/18	10:42:54	1310		-12.48	dBm		1550	-12.50	dBm	1625	-12.74	dBm
20	4	2007/Jul/18	10:43:01	1310		-13.44	dBm		1550	-13.53	dBm	1625	-13.73	dBm

Fig 13 e. g. Acceptance report of OLP-55

9 SPECIFICATIONS

OCC-55

Number of channels	18
Wavelength range	1260 to 1620 nm
Absolute wavelength accuracy[1)]	±1 nm
Power level range/channel	+10 dBm to -50 dBm
Maximum composite power	+22 dBm
Channel power repeatability	±0.4 dB
Channel power accuracy[1)]	±0.8 dB
PDL	±0.3 dB
Sweep time (full span)	typ. 60 sec
Optical interface	Universal PC (FC/SC/ DIN...)
Return Loss	>35 dB
Input Power	+10 dBm max. single channel +22 dBm max. all Channels
Fiber Type	9/125 µm

1) T = 23° C ± 5° C.

General specifications

Display

Display type	Graphical display, 64 x 128, b/w. backlight function

Connectors

Connector type	ST, FC, SC
Optical adapter system	Interchangeable adapter from BN 2150/00.xx range

Power supply

Dry batteries	4 x AA, 1.5 V
Rechargeable batteries	NiMH, 4 x AA, 1.2 V, internal battery charging
Operating time with dry/rechargeable batteries[1)]	typ. 7 h (without backlight)
AC line operation	with separate SNT-121A Adapter/ Charger
Power saving mode	auto power-off after approx. 20 min (can be disabled)

1) Single sweep mode

Electromagnetic compatibility (EMC)	IEC 61326-1
Recommended calibration interval	3 years

Memory

Memory Capacity	>26 measurement results

Ambient temperature

Operation	-5 to +55°C
Storage and transport	-40 to +70°C
SNT-121A Adapter/ Charger	0 to +40°C

Air humidity

Relative humidity up to +30°C	5 to 95%
Absolute humidity, > +30°C	1 to 29 g/m^3

Occasional condensation is permissible.

Dimensions and weight

Dimensions (w x h x d)	95 x 60 x 195 mm
Weight	approx. 540 g (including batteries)

SNT-121A Adapter/Charger

Power supply type	FW 75550/12
Nominal line voltage range	100 to 240 VAC
Nominal line frequency range	47 to 63 Hz
Power consumption	max. 8.5 W
Output	12 V ⎓ / 1.25 A
Temperature range	0 to +40°C

Condensation – even occasional – is not tolerable.

10 ORDERING INFORMATION

OCC-55 CWDM Channel Checker	**BN 2277/40**

Accessories

Optical adapter	BN 2150/00.xx
OCK-10 Optical cleaning kit	BN 2229/90.21
Cleaning tape for optical connectors	BN 2229/90.07
Spare tape for optical cleaning tape	BN 2229/90.08

NiMH cells (AA size, 1.2 V)	BN 2237/90.02
SNT-121A Adapter/Charger (worldwide compatibility)	BN 2277/90.01

Belt bag MT-1S	BN 2277/90.02
Soft case 2 instruments MT-2S	BN 2126/03
Soft case 3 instruments MT-3S	BN 2126/04
Hard case 3 instruments MK-3S	BN 2093/31

INDEX

JDSU Environmental Management Program

Superb performance and high quality have always characterized JDSU datacom and telecom measurement technology products. In this same world-class tradition, JDSU has an established, proactive program of environmental management.

Environmental management is an integral part of JDSU's business philosophy and strategy requiring the development of long-term, productive solutions to problems in the key areas of economics, technology, and ecology.

A systematic environmental management program at JDSU is essential in regard to environmental policy and enhances cooperation between ourselves and our business partners.

The JDSU Environmental Management Program considers:

Product design and manufacture
Environmental restrictions and requirements are taken into account during planning and manufacture of JDSU products. This attention ranges form the raw materials and finished components selected for use and the manufacturing processes employed, through to the use of energy in the factory, and right on up to the final stages in the life of a product, including dismantling.

Hazardous materials
JDSU avoids or uses with care any hazardous or dangerous material in themanufacturing process or the end product. If the use of a dangerous material cannot be avoided, it is identified in product documentation and clearly labeled on the product itself.

Packaging materials
Preference is given to reusable or biodegradable single-substance packaging materials whenever possible.

Environmental management partnerships
JDSU encourages our customers and suppliers who take this responsibility seriously to join JDSU in establishing their own environmental management programs.

Recycling used products
This product is subjected to the European Union Waste Electrical and Electronic Equipment directive (WEEE), 2002/96/EC. This product should not be disposed of as unsorted municipal waste and should be collected separately and disposed according to your national regulations.

In the European Union, all equipment purchased from JDSU after 2005-08-13 can be returned for disposal at the end of its useful life. Measuring systems affected by this can be recognized by the symbol on the right of a crossed-out trash can and a black bar. This symbol can be found either on the device or in the accompanying documents.

Contact your local Technical Assistance Center (TAC) for return and collection services available to you.If you would like specific information about the JDSU Environmental Management Program, please contact us at:

If you would like specific information about the JDSU Environmental Management Program, please contact us at **www.jdsu.com**

The following pages provide with respect to Chinese Requirements information with regard to the location of restricted hazardous substances within this equipment.
As measuring equipment this equipment is excluded from the European regulations for the restriction of hazardous substances (RoHS).

"中国RoHS"

《电子信息产品污染控制管理办法》（信息产业部，第39号）
附录 (Additional Information required for the Chinese Market only)

本附录按照"中国RoHS"的要求说明了有关电子信息产品环保使用期限的情况，并列出了产品中含有的有毒、有害物质的种类和所在部件。本附录适用于产品主体和所有配件。

环保使用期限：

本标识标注于产品主体之上，表明该产品或其配件含有有毒、有害物质（详情见下表）。

其中的数字代表在正常操作条件下至少在产品生产日期之后数年内该产品或其配件内含有的有毒、有害物质不会变异或泄漏。该期限不适用于诸如电池等易耗品。

有关正常操作条件，请参见产品用户手册。

产品生产日期请参见产品的原始校准证书。

有毒、有害物质的类型和所在部件

元器件 (Component)	有毒、有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
产品主体 (Main Product)						
印刷电路板组件 (PCB Assemblies)	X	O	O	O	O	O
内部配线 (Internal wiring)	O	O	O	O	O	O
显示器 (Display)	O	O	O	O	O	O
键盘 (Keyboard)	O	O	O	O	O	O
塑料外壳零件 (Plastic case parts)	O	O	O	O	O	O
配件 (Accessories)	O	O	O	O	O	O

O：代表该部分中所有均质材料含有的该有毒、有害物质含量低于SJ/T11363-2006标准的限值。
X：代表该部分中所有均质材料含有的该有毒、有害物质含量高于SJ/T11363-2006标准的限值。