

POLYSMITH 12 ONE BED RECORDING SYSTEM - DMS

Quick Reference Guide

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**This quick reference guide is intended only for quick reference for the Polysmith 12 One Bed Recording System – DMS.

Please refer to the operator's manual for more in-depth reference and operation.



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STARTING A RECORDING

Step 1

Double left click on the POLYSMITH DMS icon be Desktop.

Step 2

A POLYSMITH DMS LOGIN window will appear. If you are using SQL Server Authentication -Verify that the SERVER INSTANCE is correct and enter your username and password in the appropriate field and left click on OK. If you are using Windows Authentication, you will not have to enter your username and password.

Polysmith DMS Logi	n X	<
Server Instance	localhost	
Authentication Type	\bigcirc SQL Server \textcircled{O} Windows (NIHONKOHDEN)	
User Name	9QV63Z2\PSG1	
Password		
	Remember password	
Database	APSS2012 Browse	
Help	OK Cancel	



The Polysmith DMS calendar will appear. (Note: Polysmith DMS will open in the tab that it was last closed by a previous user. Left click on the CALENDAR tab to see the calendar if it opens in one of the SEARCH tabs.)

III v File	Polysmith DMS - 9QI Home Manag	/63Z2\/PSG1@localhost.APS ement	S2012 (full access to all records)			
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Today's date will be in highlighted in blue and indicate "Today." Right click on a blank area within the date box (on the date you wish to schedule the patient) and an options window will appear. (Note: If the patient's name is already on the calendar, right click on the patient's name and skip to page 12 step 5 for instructions on "Start Polysmith Acquisition".)



Step 4

Left click on QUICK SCHEDULE STUDY or SCHEDULE STUDY. Fill in the patient's information and left click on OK. (Note: You must fill in the patient's first name, last name, patient ID and date of birth in order to start a recording)





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Entering Patient Information (Quick Schedule Study Option)

The QUICK SCHEDULE STUDY option allows you to enter a limited amount of patient information and add the patient to the calendar. (Note: A minimum of the FIRST NAME, LAST NAME, and PATIENT ID fields must be completed to add the patient to the calendar.) The QUICK SCHEDULE option is useful for entering a patient into the calendar when pressed for time or when you have limited information about the patient. You can access and add information to the patient's record before, during and after the study.

Quick Schedule Study	×
First MI La Name DC ID Science	st me DB ex Unknown
Scheduling Information Date And 05/12/2020 V 8:00 PM Time	
End Date And Time 05/13/2020 V 6:00 AM	Flexible
Room No Bed No Record ✓ Phase ✓	Record V
Lab Branch:	OK Cancel



Entering Patient Information (Schedule Study Option)

Detailed patient information can be entered during scheduling by selecting the SCHEDULE STUDY option. The SCHEDULE STUDY option and PATIENT INFORMATION dialog box operate and contain the same information. The SCHEDULE STUDY option is used to enter in new patients, and the PATIENT INFORMATION dialog box is used to add, remove or edit patient information that has already been entered into Polysmith DMS.

To add, remove, or edit patient information during study collection, left click on the PATIENT INFORMATION icon in the Polysmith program. To access the PATIENT INFORMATION dialog box in Polysmith DMS, double left click on the patient's name from any of that screen tabs in Polysmith DMS. You can also access the Patient Information dialogue box after the study is completed by right clicking on the patient's name on the Calendar and left click PATIENT INFORMATION.

Patient Information Dialogue Box (Note: Completion of the FIRST NAME, LAST NAME, and PATIENT ID fields are required to start a study and to advance to the next tab in Patient Information.)

Your facility may require you to fill out specific fields in the PATIENT INFORMATION dialogue box (for example: First Name, Last Name, Patient ID, Date of Birth, Weight, Height, Sex, Comment, Medications, Medical History, Sleep Disorder, Primary Doctor, and Operator.). The data fields in the PATIENT INFORMATION dialog box are used in the generation of default and custom reports. Check with your supervisor for specific instructions on which fields are required by your facility. **Patient Tab:** The PATIENT tab allows the user to enter demographic information for the patient including name, date of birth, weight, height, and contact information. The first name, last name, and patient ID are required fields.

tient Photo	Medical History Administrative Staff and Billing Record Status	
Patient First Name:	Last Name:	
Patient ID:	Date of Bith: mm/dd/yyyy	
Weight: Height:	0	
Address		
City:		
Home:	Office: Mobile:	
Pager:	FAX: Emergency:	
Lab		

Note: The FIRST NAME, LAST NAME, PATIENT ID, and DATE OF BIRTH fields must be completed prior to advancing to another PATIENT INFORMATION tab. You cannot select another PATIENT INFORMATION tab until the required data fields are completed.



Photo Tab: The PHOTO tab allows the user to capture, scan, or load an image of the patient in Polysmith DMS, or Polysmith, before, during, or after a study.

The photo tab displays a preview of the currently selected video capture device on the left and displays the current patient photo on the right.

Clicking CAPTURE PHOTO will save the image from the video capture device.

Clicking CHOOSE PICTURE... allows the user to choose an existing JPEG image.

Clicking SCAN PICTURE... allows the user to scan a photo from a TWAIN-compliant scanner.





Medical Tab: Select disorders from the drop-down list and click ADD. The ICSD code list will populate automatically with the proper code. This page also contains fields for questionnaires, respiratory information and neck size. Select INFANT under SCORING TYPE to enable infant sleep staging.

Patient I	nformat	ion							×
Patient	Photo	Medical	History	Administrative	Staff and Billing	Record Status	Change Log		
Diso	rders							Add	
IC	SD	ICSD	Title					Delete Selection	
ESS BAI: BDI:	0		O2 E Res Nec	Delivery Range: piratory Rate: < Size:)cm () In	Snoring: Scoring Type:	0 dB Adult ~ Adult Infant	
							ОК	Cancel	Help

History Tab: The HISTORY tab allows you to insert clinical and generic information about the patient from drop-down lists. The most common clinical text fields are found on the left side. Click on the VIEW FULL LIST buttons to view or edit the CLINICAL INFORMATION and GENERIC INFORMATION fields.

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Administrative Tab: Use the ADMINISTRATIVE tab to enter study-related information including scheduling information and RECORD TYPE. Use the controls on the bottom left to set user access permissions for the study.

	dical History Adr	ninistrative Staff	f and Billing	Record Status	Change Log	
Schedule Record Type: Scheduling Date: Scheduling Time: Scheduling End Date: Scheduling End Time: In/Out-Patient:	SPUT 05/12/2020 10:15 PM 05/13/2020 8:15 AM O In Out	> > ▲ >	Room No: Bed No: EEG No:	Rexible	HL7 Interface Order #: Procedure Code: Encounter #: Recording Recording Phase:	
User Access	ed by all users	SQV63Z2NPSG AnnaRamag BrendWilso	â1	^	Call Log Date Contact	

The patient's CALL LOG information is contained within the ADMINISTRATIVE tab. Left click on the CALL LOG button and the CALL LOG dialog box appears.





Staff and Billing Tab: Use the STAFF AND BILLING tab to select staff members associated with the patient and to enter HOME CARE PROVIDER, INSURANCE PROVIDER, and BILLING CODE information.

Select name by left clicking on drop-down box and scroll till you find the staff names associated with the field.

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	Billing Code		~		
					Cancel Help

Alternatively, left clicking into any text boxes in the STAFF AND BILLING enables auto complete. For example, typing the letters "Sm" filters all drop-down options to names that start with "Sm."

Left click on the OK button to save data.





Starting a PSG, CPAP, or Split-Night Recording

The Patient's information will appear on today's date with patient's last name, first name, room#, bed#, and study type (left of the patient's name is the STATUS TRACKING and PRIORITY status). Right click on the patient's name on today's date and an options window will appear. Left click on START POLYSMITH ACQUISITION to start a study.





After you left click START POLYSMITH ACQUISITION, the NEW RECORD dialogue box will appear:

More	Date of Birth 01/15/1965 ~
Montage (from file)	Bed/Hardware Setup Bed 1 ~ Configure X6H8JH2Y76D7QAT.psxdf
File Size Configuration Super Small (< 120 MB) Osmall (~ 200 MB) Omail (~ 300 MB) Olderand (~ 450 MB)	Disk Space 9192 Hours Remaining (200 Hz) 488.5 08 Free 943.7 08 Total
Data Storage Directory C: Data Files Note	🔓 Browse

In the NEW RECORD window, do the following:

- 1. Verify Patient Name, ID number, and Date of Birth.
- Left click on the MORE button to enter patient information. (See "Entering Patient Information" section starting on page 4 of this Quick Reference Guide for details.)
- 3. Select starting montage from the drop-down box.
- 4. Select file recording size compression.
- 5. Verify that the amount of disk space/hours remaining are adequate for recording a study.
- 6. Left click START MSLT/MWT or START PSG to initiate patient recording.

(Note: DATA STORAGE DIRECTORY path normally reads "D:\Data Files." The DATA STORAGE DIRECTORY is where the sleep recording is saved. It is important to verify the location prior to clicking or START PSG.) The Recording Window will appear. Notice that the waveforms start scrolling across the screen. While the waveforms are scrolling across the screen, there is a WARNING – PREVIEW dialog box in the center of the screen indicating that "Polysmith is not currently saving to disk. To start saving to disk, click the record button." To start saving to disk, click the RECORD button Q.

Patient Patient First Name More ID Test	Last Name Test Date of Birth 01/15/1965 >	
Montage (from file)	Bed/Hardware Setup Bed 1 V Configure X6HBJHZY76D7QAT.psxdf	
File Size Configuration Super Small (< 120 MB) Small (~ 200 MB) Medium (~ 350 MB) e Large (~ 450 MB)	Disk Space 9192 Hours Remaining (200 Hz) 943.7 GB Total	
Data Storage Directory C:\Data Files	Browse	To open the recording window for a PSG, CPAP,

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Left click on RECORD button to start data collection.



Pictured below is a magnified view of the HOME ribbon bar and a description of commonly used buttons.

HOME Ribbon Bar:

Patient Photo C Reset :05 :10 :15 Patient Video Ω Impedance Check ▼ :30 :60 :90 Patient Event Split Montage Workspac Information List Narrative 🔡 Update Database Calibration Mode. 2 5 10 Display Δ Study Acquisition Displa

1	Patient Video	Opens video window
2	Reset	Disconnect amplifier and records flat lines
3	Impedance Check	Disconnects amplifier and displays impedance
4	Calibration	Records calibration waveforms
5	Start/Stop Record	Starts recording
6	Toggle Split Display	Opens look back window
7	Notch Filter	Turns on 60 Hz notch filter
8	Trend Plots	Opens TREND PLOTS Window





Left Click on SHOW VIDEO button Patient Video. A camera window will appear.



Step 7

Depending on your lab procedure, you may wish to take the patient's photo. Left click on the camera icon button to on the main toolbar of the camera window (Note: a camera photo can only be taken when the video recording is stopped).

To start the video recording, left click on the VIDEO RECORDING button • on the main toolbar of the camera window. (Note: The video recording status changes from NOT RECORDING to RECORDING in the camera window.)



To start the data recording, left click on the RECORD button on the Home ribbon bar or the RECORD button on the WARNING-PREVIEW dialog box.



Step 9

To check impedance, left click on the $\Omega^{Impedance Check}$ button.



Step 10

To do machine calibrations, left click on the \mathbf{Q} Galibration Mode button.



To do patient machine calibrations, left click on the individual comments in the EVENT BAR:





After the check impedance, machine calibration, and patient calibrations, left click the LIGHTS OUT comment and left click on the appropriate body position in the EVENT BAR. (Note: System comments are in green print.)



Note: To add a comment (tech note) to the live recording, either left click on a predefined comment in the EVENT BAR or left click on the CUSTOM button and type your comment in the LOG EVENT EDIT box.



OPENING MONTAGE WINDOW

To open the Montage window, left click on the button on the HOME ribbon bar to open the POLYSMITH MONTAGE SETUP window.



You can adjust the current montage or create and save new ones. If you wish to save the altered montage as a new montage or replace a default montage, left click SAVE AS and name it or save as an existing montage to overwrite it. If you want to alter the montage for a single study, you do not need to click SAVE AS. Simply left-click on OK to save the changes for the individual study.

Note: Only choose SAVE AS if you want to use the altered montage as a default montage.



- 1. Set notch filter to always on \boxtimes , always off \bigotimes or link to all channel control.
- Left clicking on the ³(icon links the channel to all channel control. A linked channel will display the linked icon ³ and display the row as blue.
- Saved montages can be accessed by left clicking the "Montage" drop down box.
- 4. Left click on the DELETE button to delete the displayed montage permanently.
- Left click on the PRINT button to print the currently displayed montage.



Channel	Low Voltage	High Voltage	Range Low	Range High	Units	Display	1
EFlow	0.00 uV	1.00 V	0.00	100.00		No Grid	
ETCO2	0.00 uV	1.00 V	0.00	100.00	mmHg	Line & Dots	
Thor	0.00 uV	0.00 uV	0.00	0.00		No Grid	
Abdm	0.00 uV	0.00 uV	0.00	0.00		No Grid	
Sum	0.00 uV	0.00 uV	0.00	0.00		No Grid	L
SA02	0.00 uV	1.00 V	0.00	100.00	26	Line & Dots	
CPAP	0.00 uV	1.00 V	0.00	30.00	cmH	Line & Dots	

Calibration of DC signals

The ADVANCE CHANNEL SETUP window is where DC inputs are configured. Consult the manual of the DC device you wish to connect to the Polysmith System and find the DC output voltage and data ranges (Min and Max values). Verify that the DC device output voltage range are within the Min and Max voltage range of the Nihon Kohden amplifier (Consult the Nihon Kohden Amplifier manual.) Enter the DC device output voltage and data ranges and unit of measure in the ADVANCE CHANNEL SETUP window. After all settings are completed, left click on OK and save the montage.

To calibrate the DC device, start a recording. From the DC device, send a 0V calibration signal from the DC device and note the DC value displaying within the Polysmith recording to determine offset. Open ADVANCE CHANNEL SETUP window and enter in the offset in the RANGE LOW field. For example, the DC channel displays "-1" (when the DC device manual says it should read 0) with a 0V calibration signal. The value in the RANGE LOW and left click OK. The display value in the RANGE LOW and left click OK. The display value in the recording window should read "0." Repeat the above calibration steps for the RANGE HIGH values by sending the high voltage range of the DC device. (Note: Remember to save montage settings after calibration is completed.)



SPLIT-NIGHT STUDY NOTE

Polysmith allows a smooth transition from PSG to a split-night study since all channels are being recorded throughout the study (Note: Channels that are recorded but not displayed are denoted by a red "X" in the montage menu).

Note: **Very Important** – You must left click on the SPLIT NIGHT START comment in the EVENT bar at the beginning of the PAP portion of a split night study. Split night reports use the SPLIT NIGHT START comment to determine the end of the diagnostic portion and the beginning of the treatment portion of the split night study. It can be added later if it was omitted (rescanning the study maybe required).



Left click on CPAP, BILEVEL, or COMPLEX PRESSURE comment to manually add the PAP pressure to the study.



| 24 |

Type the pressure in the POSITIVE AIRWAY PRESSURE dialog box and left click on OK. This example is for CPAP.

Positive Airway	Pressure		×			
PRESSURE Type:	VALUES O Bilevel	○ Complex				
Protocol Name:	~ _	Mask: v	Pressure Device:			
CPAP	0	EPAP -	PS .			
Range	-	Range _	Range			
ADDITIONAL SETTINGS:						
Phase:	PSG/Baseline	Start Split Night	OK Cancel Help			



There are Several Options for Transitioning into a Split-night Study

Option 1:

Start the study in a montage that includes CPAP channels with the view already turned on in addition to a thermistor and pressure transducer channel. This will result in flat lines on the CPAP channels from the beginning of the study until the time that CPAP is applied and flat lines on the thermistor and pressure transducer channels after CPAP is applied. This option allows the reviewer to view the study in its entirety without the need for changing montages or individual channel settings. Apneas and Hypopneas will be scored on the THERM. and PRESS. channels prior to CPAP portion and on CPAP channel thereafter.



Option 1 display of airflow signals before and after CPAP is initiated.





Option 2:

Start the study in a basic PSG montage. When it is time to initiate the CPAP portion of the split-night study, left click on MONTAGE and left click on the red "X" next to C-FLOW and any additional CPAP channels to display the channel (the red "X" turns to a green check mark). Change their position in the montage by left clicking on the number next to the channel in the POS column and left click on the appropriate number position.

Option 3:

Start the study in a basic PSG montage. When it is time to initiate the CPAP portion of the split-night study, choose a CPAP montage from the MONTAGE icon drop-down menu. This action will load a CPAP montage with default settings for sensitivity, channel position, filter settings and etc. Any previous adjustments made to individual channel sensitivities, filters, etc. will need to be repeated since selecting the CPAP montage will reset the settings to their defaults. You can also document the change to a different montage and any channel adjustments as a tech comment for study review.



ENTERING CPAP/BILEVEL/ASV SETTINGS

To enter device pressure settings, left click on CPAP, BILEVEL, or COMPLEX PRESSURE comment in the EVENT BAR list. Enter the appropriate pressure settings and click OK.

	Positive Airway I	Pressure							×
	PRESSURE Type:	VALUES OPAP	O Bilevel	O Comple	x				
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	Backup Rate:	· ·		Humidity:			Max Pressure:		
	Phase:	PSG/Bas	eline	🗆 Start Sj	olit Night		ОК	Cancel	Help



ENTERING SUPPLEMENTAL OXYGEN OR ASV/BILEVEL BACKUP RATE SETTINGS

To enter supplemental oxygen settings, left click on O2 VOLUME and the LOG EVENT EDIT dialog box will appear. Enter the liter flow and click OK.

Split Night Start		Log Event Edit		×
CPAP				
Bilevel				
Complex Pressure				
SaO2 Cal		02 Volume		
02 Volume				
Dental	1			
		OK	Cancel	



STOPPING A RECORDING

Step 1

Left click on LIGHTS ON comment from the EVENT BAR.



Step 2

Left click on the icon on the HOME ribbon bar to stop the study.



A new window will appear asking "Do you want to stop the data acquisition in progress?" Left click on YES.

Step 4

Depending on your configuration, a dialog box may appear asking you the status of the study and if you would like to update the database.



SCORING A STUDY

A study can be manually scored during acquisition or after the recording is complete. To start scoring a study during acquisition, left click on the $\frac{1}{2}$ icon.

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Live Recording	Previously Recorded Data	$\label{eq:second} \begin{split} & (P_{1}, P_{2}, P_{2}) = (P_{1}, P_{2}) + (P_{2}, P$
Presentations Text Text Text Text Text Text Text Text		usteretildeterstation with the state of the
en e		The SPLIT DISPLAY window allows you to score previously re- corded data during acquisition and see live data as well.
96 %	onu 1	0003 0000 31 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

To begin scoring the record, press any number on the numeric keypad associated with a sleep stage applicable to the epoch you are viewing (Num 1=N1, Num 2=N2, Num 3=N3, Num 5=REM) or score any clinical event by left clicking and dragging on the appropriate channel (Ex. Left click and drag over the respiratory event on the PTAF channel to score an Obstructive Hypopnea). Reference page 42 for more details on marking events.

A scorer dialogue box will appear verifying the person scoring. If the name on the display is you, select "Yes." The scorer verification is only done once for each study at the beginning while being scored.


Left click on "Yes" if the displayed name matches the scorer. This confirms that you are the scorer for this record and a unique scoring file is created.

Polysmith		×
? □	o you wish to begin scoring with PSG1 PSG1?	
	Yes No	

Note: A study can be scored by multiple staff members. Each time a new scorer opens a record and stages or marks an event, a verification dialog box will appear to confirm who the scorer is. A separate scoring file is generated for each staff member who scores or modifies the record.



TOGGLING TREND SNAPSHOT BAR

The TREND SNAPSHOT bar displays trend summaries for multiple parameters at the bottom of the review window. It can be displayed in the SPLIT DISPLAY window during acquisition or in the main window in review. The TREND SNAPSHOT bar can be turned on and off by clicking the TREND SNAPSHOT check box in the HOME ribbon bar. When the bar is visible, you can select a trend plot from the drop-down list. You can also show or hide the log event list with the EVENT LIST button. Navigate to different points in the record by left clicking on the trend plot or by double left clicking on a log event in the EVENT LIST dialog box.





TREND SNAPSHOT

The TREND SNAPSHOT gives a quick view of a subset of simplified trend plots (selected in the SETTINGS button) which gives an overview of events throughout the entire study. You can still view the trend in detail by clicking the trend button in the left column.



Left clicking on trend plot label opens a detailed view of that specific trend plot.





The TREND SNAPSHOT SETTINGS dialog box can be accessed by left clicking on the SETTINGS button **●** in the lower left corner of the TREND SNAPSHOT window. The TREND SNAPSHOT SETTINGS window has three lists, PLOT TYPE, SUB PLOT TYPE, and SELECTED PLOTS which are used to add and delete plots to be included in the Trend Snapshot, change color, and arrange the order.

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NAVIGATING A RECORD

The recorded study can be navigated by using the buttons in the NAVIGATION section of the HOME ribbon bar, TIME BAR, or by using the arrow keys on the keyboard.

Navigation on the Home Ribbon Bar

Use these buttons in the main tool bar to navigate through a file. Jump to lights on or lights out, autopage, page one page at a time or select an epoch to jump to. Navigation buttons include: LIGHTS-OUT, AUTO-PAGE BACKWARDS, BACK ONE PAGE, BACK HALF PAGE, GOTO EPOCH, FORWARD HALF PAGE, FORWARD ONE PAGE, AUTO-PAGE FORWARD, and LIGHTS-ON.

K « < < # > > » >

Keyboard

The LEFT-ARROW and RIGHT-ARROW keys on the keyboard will page back and forward respectively. Pressing the UP-ARROW key will begin auto-page forward. Press the UP-ARROW key again to cancel auto-page. Pressing the DOWN-ARROW key will begin auto-page back. Press the DOWN-ARROW key again to cancel auto-page. Jump directly to an epoch number by pressing the + key on the numeric keypad of the keyboard and typing the epoch number desired and pressing ENTER key.



Time Bar

The TIME BAR functions similarly to a Windows scroll bar. Left click on the slider box and drag the box to the desired position on the TIME BAR. The TIME BAR icon on the HOME ribbon bar has a drop-down list to show events on the TIME BAR. Select from APNEAS/ HYPOPNEAS, LOG EVENTS, MICROAROUSALS, SLEEP STAGES, and BODY POSITION. Enabling the TIME BAR events displays both the study record time and epoch above and below the slider box respectively.





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CHANGING THE TIME BASE

Click on the 5s, 10s, 15s, 30s, 60s, 2m, 5m, or 10m button in the DISPLAY section of the HOME ribbon bar to set the time span. You can also cycle through the eight possible time spans by clicking on the "+" or "-" button in the upper left corner of the SPLIT DISPLAY screen.





SLEEP STAGE SCORING

Sleep stage editing is enabled and disabled by selecting ENABLE STAGING button I from the SLEEP STAGE EDIT BAR in the SCORING section of the HOME ribbon bar or by using "F2" key on the keyboard. When ENABLE STAGING I is selected the SLEEP STAGE EDIT BAR will be visible (and not grayed out). Turn ENABLE STAGING off when not in use to prevent accidental scoring. Change the current sleep stage by selecting a stage from the SLEEP STAGE EDIT BAR or by using the number pad on the keyboard.



Note: Use the number pad to stage or change the scoring of the epoch and advance to the next epoch. Use the RIGHT-ARROW key on the keyboard to advance an epoch or the LEFT-ARROW key to go back an epoch without changing the sleep stage.



STAGE ASSIST

Use this feature to assist sleep staging a record. During the automated analysis, Polysmith tags epochs that the system is uncertain about the automated scoring. By scoring the epochs the system is uncertain about, scoring time can be greatly reduced while maintaining scoring quality. To activate this feature, left click the STAGE ASSIST check box in the SCORING portion of the HOME ribbon bar. Polysmith will jump to the first epoch to be scored. Continue scoring as you normally would and the record will automatically jump to the next epoch to be scored. When Stage Assist is enabled, the sleep stage trend plot will display purple tick marks for the epochs that are to be scored. These will disappear as the record is scored.



The table below shows the results of 23 studies that was scored by three scorers and then scored using Stage Assist. The three human scorers were designated as Master, subordinate, or inter-lab. The master scorer is a registered tech or physician with at least 5 years' experience scoring sleep records. The subordinate is a less experienced registered sleep tech in the same lab. The inter-lab scorer is an expert scorer from another lab used as a control. The master scorer is used as the gold standard. The results when using the scoring assist feature are in between the inter-lab results and the intra-lab results.

Subordinate	Inter-lab	Polysmith	Polysmith w/scoring assist
89.5%	82.8%	73.0%	84.4%



USING ONE-CLICK EDIT



ONE-CLICK EDIT allows users to quickly add events with a single left click of the mouse. Enable One-Click editing by left clicking on the check box for ONE-CLICK EDIT under the SCORING portion of the HOME ribbon bar. Left-click to add an event and right-click on an event to delete it. Polysmith determines the type of event by the channel the user clicks on. To change the type of apnea or hypopnea event in the ONE-CLICK EDIT MODE, move the mouse cursor over the event. An event dialog box will appear giving information about the event and displays options to change the event type or delete the event.

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THERM	
PTAF	



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CLINICAL EVENT SCORING

Scoring Apneas or Hypopneas

Apneas are scored on the THERM (Thermistor) channel and hypopneas are scored on the PRESS. (Pressure) channel before the SPLIT NIGHT comment is entered into the record. Both apneas and hypopneas are scored on the C. FLOW channel after the SPLIT NIGHT comment is entered into the record or at the beginning of a PAP study. The THERM., PRESS., and C. FLOW score channels are determined in the montage under the SCAN column.

There are seven types of airflow events (listed in the table on the next page). You can switch between event types by hovering the mouse cursor over the event and using the hot-keys on the keyboard or by left-clicking on the event type from the pop-up EVENT DIALOG box. If there is only one scan channel set, both apneas and hypopneas are scored on the one channel. For a split night (or full night CPAP) study, apneas and hypopneas are scored on different channels as mentioned below:





- If THERM., PRESS. and C. FLOW scan channels are designated in the POLYSMITH MONTAGE SETUP window prior to adding the SPLIT NIGHT START comment, apneas will be scored on THERM. channel and hypopneas will be scored on the PRESS. channel. After the SPLIT NIGHT START (or "CPAP" comment) is added to the record, both apneas and hypopneas will be scored on C. FLOW channel.
- If only THERM. and PRESS. scan channels are designated in the POLYSMITH MONTAGE SETUP window prior to adding the SPLIT NIGHT START comment, apneas will be scored on THERM. and hypopneas will be scored on PRESS. channel. After the SPLIT NIGHT START (or "CPAP" comment) is added to the record, both apneas and hypopneas are scored on the PRESS. channel.

Clinical Event Type	Scan Channel	Hot Key
Obstructive Apnea	THERM., C. FLOW	F3
Central Apnea	THERM., C. FLOW	F4
Mixed Apnea	THERM., C. FLOW	F5
Periodic Breathing Apnea	THERM., C. FLOW	-
Obstructive Hypopnea	PRESS.,C. FLOW	F6
Central Hypopnea	PRESS.,C. FLOW	F7
Mixed Hypopnea	PRESS.,C. FLOW	F8
Oxygen Desaturation	SAO2	-
Snore	SNORE	-
Limb Movement	LEG1 and LEG2	F11
Microarousal	EEG, EOG	F9
Custom Events	Assigned by user	-



Scoring RERAs

Score RERAs on the PRESS. designated scan channel. Left click and drag on the PRESS. channel to add an event or right-click on a respiratory event to edit type or delete it.

Scoring Desaturations

Score desaturations on the "SAO2" designated scan channel. Left click and drag on the "SAO2" channel to add an event or right-click on an event to delete it.

Scoring Limb Movements

Leg movements are scored on the Leg scan channels (LEG1, and LEG2). Left click and drag on the "LEG1" and "LEG2" designated scan channels to add an event or right-click on an existing event to delete it. PLMS (Periodic Limb Movement Series) are automatically scored on the combined leg channels based on the location and frequency of the leg movements as defined in the POLYSMITH SETTINGS dialog box under SCORING. Every time leg events are added, Polysmith will apply AASM scoring rules to mark PLMS automatically.



Scoring Snores

Snores are scored on the SNORE channel. Click and drag on the SNORE channel to add an event or rightclick on an existing event to delete it. SNORE Series are automatically scored on the Snore channel when there are snores with a minimum separation of 1 second and a maximum separation of 6 seconds. The minimum frequency for a snore series is 2 snores. Every time an event is added; Polysmith will adjust Snore Series and instantly show the change.

Scoring Microarousals

Microarousals can be marked on any EEG, EOG, EMG, or EKG scan channel. Microarousals can either have a duration or no duration depending on the configurations in TOOLS ribbon bar -> SETTINGS -> SCORING-> AROUSALS. Right-click on any of these channels to add or delete a Microarousal. The Microarousal event tag will appear near the occiptial channel. Polysmith will automatically associate the Microarousal with any nearby event and prioritize the association according to the AASM scoring rules.

Scoring Custom Events

Custom events are scored on the scan channel designated in TOOLS ribbon bar -> SETTINGS -> CUSTOM EVENTS. To score an event, click and drag over the event on the designated channel. If a series is associated with the custom event, Polysmith will automatically generate the series based on the rules set up in "Custom Events."



ADDING A TECH COMMENT OR SYSTEM EVENT

To add a comment in SPLIT DISPLAY or to a completed record, right click on the epoch you want to enter the comment, left click on ADD LOG EVENT (or Press F12), then choose from the pre-defined drop down list or type directly in the comment box. Left click OK to enter the comment in the record.



Choose from PREDEFINED LOG EVENTS or type your comment in the DESCRIPTION text box.



DELETING A TECH COMMENT OR SYSTEM EVENT

To delete a previously entered tech comment or system event, right-click on the comment and left click on DELETE LOG EVENT. You can also access the entire event list log by left clicking on EVENT LIST in the HOME ribbon bar. Right-click on the comment you want to delete in the EVENT LIST and left-click DELETE to delete it.



Right click on the comment to open the option menu and left click on DELETE EVENT.

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Ð	10	L .	UNKNOWN	Log	00:04:32	22:32:13	•	stretch belts	0	Delete	
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2	11	w	SUPINE	Desat	00:05:01	22:32:41	14.0	Desaturation 35	6, Low C	02: 96, Resp: 13.9	
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r	14	w	SUPINE	Arr	00:06:32	22:34:11	0.0	Arrhythmia PVC,	HR: 81	.0	
)2	15	w	SUPINE	Desat	00:07:01	22:34:41	36.0	Desaturation 19	6, Low C	02: 97, Resp: 22.3	
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r	16	w	SUPINE	Arr	00:07:30	22:35:11	0.0	Arrhythmia PVC,	, HR: 79	.0	
2	18	w	SUPINE	Desat	00:08:32	22:36:11	28.0	Desaturation 25	6, Low C	02: 96, Resp: 22.1	
											> .

Left click on EVENT LIST icon to open EVENT LIST log. Right click on event entry to be deleted. The Options dialog box will open and left click on DELETE.



OPENING A STUDY THROUGH POLYSMITH DMS (CALENDAR)

Right click on the patient's name in the Calendar. Left click on REVIEW IN POLYSMITH. The study will open in Polysmith.

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GENERATING A REPORT

After the patient recording has been completed and scored (manually or auto scored), a report can be generated that will incorporate the scored events and stages. There are several default reports to choose from. To generate a report, open a patient recording (or leave the currently scored study open) and left click on REPORTS from REVIEW portion of the HOME ribbon bar. Left click on the desired report. In this example, the PSG Summary report is selected.

Ta Polyge	nph - 75621 - Row Limitation, IRCO2 (Recorded CE/13/2012) Epoch 25/304 (Scores PSGI PSG1) w Train	_		
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The Report Viewer program will open with the selected report. To regenerate the report or select a different report, left click on the drop-down box of the NEW REPORT is icon in the SURVEYSMITH REPORT VIEWER

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SaOJ Summary				Nation of Contract	_	115	113	510
ERCO2 Summary	/			Contractor .	_		60	10



window.

MANUALLY EDITING A REPORT

Left click on the sicon on the HOME ribbon bar of the SURVEYSMITH REPORT VIEWER window to type directly on the report and make edits. When you are finished editing the report left click the click on once more to exit



EDIT REPORT mode. (Note: Each time you left click the icon, edit mode is toggled on and off.)



SAVING A REPORT

Left click on the in the SURVEYSMITH REPORT VIEWER HOME ribbon bar in the SURVEYSMITH REPORT VIEWER window to save report edits and changes. The SAVE REPORT AS dialogue box will open. If you wish to change the name of the report, type the new name of the report in the FILE NAME box and left click SAVE. If you do not wish to change the name of the report, simply left click SAVE. The report will be saved with the patient study.





PRINTING A REPORT

Reports can be printed from the Report Viewer program. To print a report, open the desired report and left click on 🛒 icon to print the displayed report.

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Ple	ase select	the diagnosis codes appropriate for this study. Report Vewer will a	<i>Association</i>	General Informat	150						
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The PRINT dialogue box will open. Ensure that the printer settings are correct then left click the PRINT button in the PRINT dialogue box.

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General Options	
Select Printer	
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Enter either a single page number or a single page range. For example, 5-12	11 22 33
Prir	t Cancel Apply



COPYING A STUDY TO CD/ DVD OR SERVER LOCATION

Note: The copy function copies the file to a destination disk or drive/server location and updates the database as to the location of the file. (Without a database they perform the same function)

- 1. Go to the computer that the study was collected on.
- *(For CD/DVD only) Insert Blank CD or DVD into the appropriate CD/DVD drive.
- *(For CD/DVD only) In some cases, a window will appear shortly after inserting a blank CD.



4. *(For CD/DVD only) Close out of the CD\DVD Drive window by left clicking on the CANCEL button on the bottom of the window. Double left click on the a icon on the desktop of the PC the study was collected on.



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5. The Polysmith window will open. Left click on FILE UTILITY.





6. The FILE UTILITY window will appear. Left click on the patient's name that you wish to copy. The patient's name will be highlighted. You can choose more than one patient by holding the CRTL button on the keyboard and left-clicking the desired patients. All selected patients will be highlighted along with the total size of the files to be copied.

Status	Patient	ID	Date	Conu
•	Flow Limitatio	123456	03/16/2012 20:59:00	
٠	Con Channel	Coloronale 2	00.01.0000.01.00.00	
•	Flow Limitatio	73603	03/13/2012 22:27:41	
۲	Sum Flow Lim	79083	03/14/2012 21:12:35	
•	Bilevel, Exam	X6AY8JKAR4	03/12/2009 21:18:34	
۲	Seizure, Mont	000102545962	01/22/2009 22:38:16	Delete
۰	SumMultiEve	Multiple	02/09/2012 22:47:39	· · · · · · · · · · · · · · · · · · ·
۰	RBD, PSG	X6H8HYZNJ	04/22/2009 22:37:21	DI NU
۲	PSGPortion,	LTM	04/05/2010 21:00:18	Polysman Lite
				Copy Polysmith
				98
Source				0
				Settings
C:V	Software\2019 PS	i11 Demo Setup\D	emo Files\ 🗸 🏏	2 - 1 EL 0
			Browse	Total File Size
				1338.84 MB
Deshni	sbon		\sim	
CV	Demo Files\		~ [🛁]	Mahara Hambar
	Store files anonem	ourly (Patient Name	e and ID hidden)	volume number
	itore unencrunted	O/DEI	Browse	Local Hard Drive
	store unencrypted	(vpr)		

Left click on the check box next to COPY POLYSMITH in the POLYSMITH LITE section of the FILE UTILITY window to add a copy of Polysmith Lite with the patient file on the CD/DVD. Polysmith Lite allows the patient file to be reviewed on any Windows based computer. Studies cannot be scored using POLYSMITH LITE. Left click on the COPY button to initiate the transfer of the study to CD/DVD.

Verify the TOTAL FILE SIZE is within the CD/DVD storage limits.

Under the DESTINATION box, left click on the BROWSE" button and a new box will appear.



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 Left click on the CD/DVD drive or the server location (Verify that the COPY POLYSMITH box is unchecked when saving to a storage location other than a CD/DVD) and left click on OK. (Note: If applicable, check with your supervisor for the drive letter/name of your server location)

Status	Patient	ID	Date		Copy
0	Flow Limitatio	123456	03/16/2012 20:59:00		
۲	Sum Channel,	. SplitExample2	02/11/2012 21:52:33		
۲	Flow Limitatio	73603	03/13/2012 22:27:41		
۲	Sum Flow Lim.	. 79083	03/14/2012 21:12:35		
•	Bilevel, Exam	X6AYBJKAR4	03/12/2009 21:18:34		
۲	Seizure, Mol	Province for Folder		~	Delete
۲	SumMultiEve *	browse for Folder		^	
	RBD, PSG	Choose a Destinatio	n Folder		Polysmith Lite
•	PSGPortion,				r oyonaar Exo
		the DC			Copy Polysmith
	_	V III III III			000
		Down	uaus		
Source		> Desku	эр 		Settings
0.1	2-6	> 📑 30 00)ects		
0.0	Sortwate (2011	> 🖂 Docun	ients	2	al File Size
		> D Music		E E	4000.04110
Destin	tion	> 🔢 Videos			1030.04 MD
C N	Domo Eilaul	> 📰 Picture	55		
0.0	Demorries	🗸 🔛 Windo	ws (C:)	ple	ume Number
	Store files anor	> Da	ata Files		Local Hard Drive
	Store unencry:	> De	si i	~	account rand Drive

- 8. Left click on the COPY button
- 9. A status window will appear.





10. *(For CD/DVD only) A new dialogue box will appear. If copying to a CD/DVD, Polysmith will ask if you would like to leave the recording session open. Allowing for the recording session to stay open will permit other studies to be added to the CD/DVD later. Answering "NO" will close the CD/DVD burning session and prevent additional studies from being added to the CD/DVD. Note: To make the CD/DVD readable on PC, you will need to close the recording session.

sulate	Patient	ID	Date	Type	
۲	Doe, Jane	8765543	09/14/2009 19:30:40	PSXDF	Copy
	TEst, Test	TEst	05/07/2009 20:31:00	PSXDF	
	Sleeper, Super	X6H8HYZNJ4U	04/22/2009 22:37:21	PSXDF	
۲	Prince, Tim	X6AYBJKAR4S	03/12/2009 21:18:34	PSXDF	Alchivi
۲	Hardin, Charles	000279125170	02/09/2009 23:05:09	PSXDF	
۲	Gilson, Kirk	000102545962	01/22/2009 22:38:16	PSXDF	Delete
Pol	yDbEx There wi Would yo	ll be 295 MB of s ou like to leave th	storage left on thi his disc open for	is medium ; future archi	after writing. ival?
Pol	yDbEx There wi Would yo	II be 295 MB of s ou like to leave th Yes	storage left on thi his disc open for No	is medium a future archi	after writing. ival?
Pol	yDbEx There wi Would yo	II be 295 MB of s ou like to leave th Yes	itorage left on thi nis disc open for No	is medium a future archi	after writing. ival?

11. *(For CD/DVD only) A progress window will appear.





 After the disk has completed recording (For CD/ DVD only - the CD/DVD door will open) or file has been copied/archived to the server location, a new dialogue box will appear.

Click on "Yes" if you want to delete the original off the hard drive. Click on "No" if you want to keep the original copy on the Hard Drive.

Sum U.S.	Pabent	ID	Date	Type	
۲	Doe, Jane	8765543	09/14/2009 19:30.4	0 PSXDF	Lopy
۲	TEst, Test	TEst	06/07/2009 20:31:0	0 PSXDF	
2	Sleeper, Super	X6H8HYZNJ4U	04/22/2009 22:37:2	21 PSXDF	Autoine
۲	Prince, Tim	X6AY8JKAR4S	03/12/2009 21:18:3	34 PSXDF	AUCHIVE
۲	Hardin, Charles	000279125170	02/09/2009 23:05:0	9 PSXDF	
•	Gilson, Kitk	000102545962	01/22/2009 22:38:1	I6 PSXDF	X Delete
Bource	PolyDbEx	ld you like to de	lete the files in t	he Source o	tirectory?
Source	PolyDbEx	ld you like to de Yes	lete the files in t	he Source o	directory?
Source C:VI Destinei R:V	PolyDbEx	ld you like to de Yes	lete the files in t	he Source o	directory?

13. Left click on 🗳 🚥 on the bottom right hand corner of the File Utility window.



KEY NOTES ON ARCHIVING OR COPYING MSLTS

- 1. Copy the MSLT project as well as each individual nap.
- When deleting an MSLT, delete the MSLT project first. Then delete each individual nap after the MSLT is deleted.



APPENDING A FILE

Appending Live Studies

Existing studies can be combined using the Study Creator at any time. You can also append a new recording to an existing study when you start the recording from Polysmith DMS. This is useful if a recording is aborted or if you want to create a combined study at the time the recording is started. To append a new recording, the following criteria must be met:

- 1. The recording must be either a PSG or a MSLT/ MWT study.
- The recording must reside on the same machine that originally recorded the previous study portion.



Patient Information View Patient History Attachments						
Review in Polysmith View Reports						
Schedule Additional Study Schedule Additional Clinic V	isit					
Start Polysmith Acquisition						
Append New Recording 📏						
Start Online Monitoring	<u> </u>					
Start Portable Recording	Append To >	OXTXRRX6TA	MUZIP			
Start Neurofax Acquisition	Patient		Test			
Add Note	More	First Name	Test		ast Name	lest
Block Date		ID	Test		late of Birth	01/15/1965 ~
Blocked Dates	Montage			Bed	/Hardware Si	etup
Link Surveys		(from file)	\sim		Bed Dem	1 ~
Setup Default PQ Survey	Edit			Cor	figure X6H	8JHZY76D7QAT.psxdf
	File Size Co	nfiguration		Disk	Space	
	2	O Super S Small Medium Large	mail (< 120 MB) (~ 200 MB) (~ 350 MB) (~ 450 MB)		9208 469.3 943.7	Hours Remaining (200 Hz) 3 GB Free 7 GB Total
	Data Stora C:\Data	ge Directory Files				Browse
				Appe	end 🔇	Cancel 🥥 Help

To append a new recording, right-click the patient in the calendar view, and select the APPEND NEW RECORDING option. Polysmith will be launched (if it is not already running) and the APPEND TO dialog box will appear. Since the new recording is being appended to an existing one, you will not be able to alter the patient information or the storage path. If you attempt to append to a non-local recording, Polysmith DMS will bring up an error dialog box and tell you which machine the recording is located on.



Appending Previously Recorded Studies (Study Creator)

- 1. Go to the computer that the study was collected on.
- 2. Double left click on the 🤷 icon on the Desktop.
- The Polysmith window will open. Left click on icon.

Image: Constraint of the	Po Po	olysmith	12.0				
	Polysmith DMS	PQ Polysmith PQ	Open study	New Study	BCO2 How Landston (PSXDF) PGG How Landston (PSXDF) Test For (PSXDF) Test For (PSXDF) Test For (PSXDF) Test For (PSXDF) Excepts Here (PSXDF) PGG from Fore Landston (PSXDF) Bert Vider (PSXDF) Bert Vider (PSXDF)		
Study Migrator Settings	XDF Stady Migrator	Settings	() () () () () () () () () () () () () (2 1 27 ²			

4. The STUDY CREATOR wizard will appear. Left click on NEXT button.

Study Creator		×
	Welcome to the Study Creator	
، مەرىلىيەترارىيىدارىرىيەترىسىلەرمە		
and a second	This wizard will guide you through the process of performing one of the following tasks:	
	- Appending two or more recordings together into one study.	
an a	- Creating a MSLT/MWT study.	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- Creating a side show.	
	· Clipping one or more recordings into a single, smaller study	
	(ong-term monitoring).	
~~		
ومرجل المرادرون الدرجا ومعول م		
******		
	< Back Next > Cancel 1	Help



5. The STUDY CREATOR TASKS window will appear. Select APPEND RECORDS and click on NEXT.



6. An APPEND RECORDS window will appear. Left click on ADD.

Append Records				×
Append Record Please select	s the records you wou	id like to append togeth	her.	
Petent Name	Patient ID	Record Time	Туре	Add
		< Back	Finish	Cancel Help



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  - The APPEND FILE window appears. If your study does not appear immediately, click on the BROWSE button and select the appropriate drive location on the appropriate computer. Left click on the first study recording and left click on APPEND.

ame	ID	Record Date	Start Time	Type
est, Test	Test	05/17/2020	19:58:29	PSXDF
est, Test	Test	05/17/2020	19:30:35	PSXDF
Data Files				<ul> <li>Brows</li> </ul>

 Repeat steps 8-9 until all appropriate files are selected. (Note: The append feature will only append files that have the same patient ID and names. For this reason, it is important not to reenter patient information when starting a study or MSLT nap.)



 The selected files will appear in the APPEND RECORDS window. Left click on FINISH when all files that need to be appended appear in the main window.

ppend Records				
Append Record Please select	s the records you wou	ld like to append together.		
Patient Name	Patient ID	Record Time	Туре	Annotate
Test, Test	Test	05/17/2020 19:30:35		Records
lest, lest	lest	05/1//2020 19:58:29		Add Delete
		< Back Finis	#	Cancel Help

10. Click on YES to delete the original files. Select NO to keep the original files.

Patient Nam	2	Patient ID	Record Time	Туре	Annotate
Fest, Test		Test	05/17/2020 19:30:35		Records
Test, Test		Test	05/17/2020 19:58:29		Add
		Clicking Yes w files.	ill delete all files associate	d with the a	ppended
		files: Clicking Yes w files.	ill delete all files associate	d with the a Yes	No
		Tiles: Clicking Yes w files.	nii delete all files associate	d with the a	No



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  - The Study Creator will close. Click on "X" on the top right corner of Polysmith to exit out of the program.
  - 12. Verify the newly appended file by opening the patient's file in Polysmith. The file to select will be the one with the earliest start recording time. (Note: If the ANNOTATE box is checked, the record will make a log entry for each study appended in the sleep record.)



### PRINTING OUT TECH NOTES

- 1. Verify that the printer is powered and online.
- 2. Open study file.
- 3. Left click on EVENT LIST.
- 4. The EVENT LIST window will appear.
- Left click on the EVENT LIST window.

	0								seectsa	/eo Filoer	 <u> </u>
K Ap K Te	nea chridan	X Note	Arr	×	Desat	🗙 Нурор	nea	×La	a	X Pressure Event	
	Epoch	Stage	BP	Type	Record Time	Time	Length	Desc	ription		^
Ð	1	w	UNKNOWN	Log	00:00:00	19:30:35	•	Segr	ient 1		
Ð	1	w	UNKNOWN	Log	00:00:00	19:30:35		Segr	ient 1		
Ð	1	w	UNKNOWN	Log	80:00:00	19:30:43	÷	sdf			
Ð	5	W	UNKNOWN	Log	00:02:00	19:42:48		Segr	sent 2		
*	Z	W	UNKNOWN	Arr	00:03:01	19:43:48	0.0	Anh	ythmia PVC	, HR: 75.0	
tr	8	w	UNKNOWN	Arr	00:03:30	19:44:18	0.0	Anh	ythmia PVC	, HR: 72.0	
*	10	N3	UNKNOWN	Arr	00:04:31	19:45:18	0.0	Anh	ythmia PVC	, HR: 69.0	
Ð	12	W	UNKNOWN	Log	00:05:30	19:58:29		Segr	sent 2		
÷	14	w	UNKNOWN	Arr	00:06:31	19:59:29	0.0	Anh	ythmia PWC	, HR: 75.0	
tr	14	w	UNINOWN	Arr	00:06:32	19:59:29	0.0	Anh	ythmia PVC	, HR: 75.0	
*	14	w	UNKNOWN	Arr	00:06:32	19:59:29	0.0	Anh	ythmia PVC	, HR: 75.0	
÷	15	w	UNKNOWN	Arr	00:07:00	19:59:59	0.0	Anh	ythmia PVC	, HR: 72.0	
÷	15	w	UNKNOWN	Arr	00:07:00	19:59:59	0.0	Anh	ythmia PWC	, HR: 72.0	
÷	15	w	UNKNOWN	Arr	00:07:00	19:59:59	5.0	Anh	ythmia BOG	EMENY, HR: 72.0	
*	15	w	UNKNOWN	Arr	00:07:00	19:59:59	0.0	Anh	ythmia PVC	, HR: 72.0	
÷	15	w	UNKNOWN	Arr	00:07:01	19:59:59	0.0	Anh	ythmia PVC	, HR: 72.0	
-le-	15	w	UNINOWN	Arr	00:07:01	19:59:59	0.0	Ant	uthmia PWC	HR: 72.0	-

6. Follow the instructions in the PRINT dialog box and left click on OK.


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## PRINTING MULTI-TREND PLOTS

- 1. Verify that printer is powered and online.
- 2. Open study file.
- 3. Left click on 🚟 icon on the HOME ribbon bar.
- 4. Select the correct scheme by left clicking on the PAGE SCHEME drop down box and left clicking on the correct scheme (e.g., Sleep Summary).
- 5. Left click on PRINT. Follow the Print dialog box.





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