

Carrier Enterprise

VRF Technical Training

Dyna-Doctor Diagnostic Software & Communication Adapter



Toshiba Carrier Dyna-Doctor

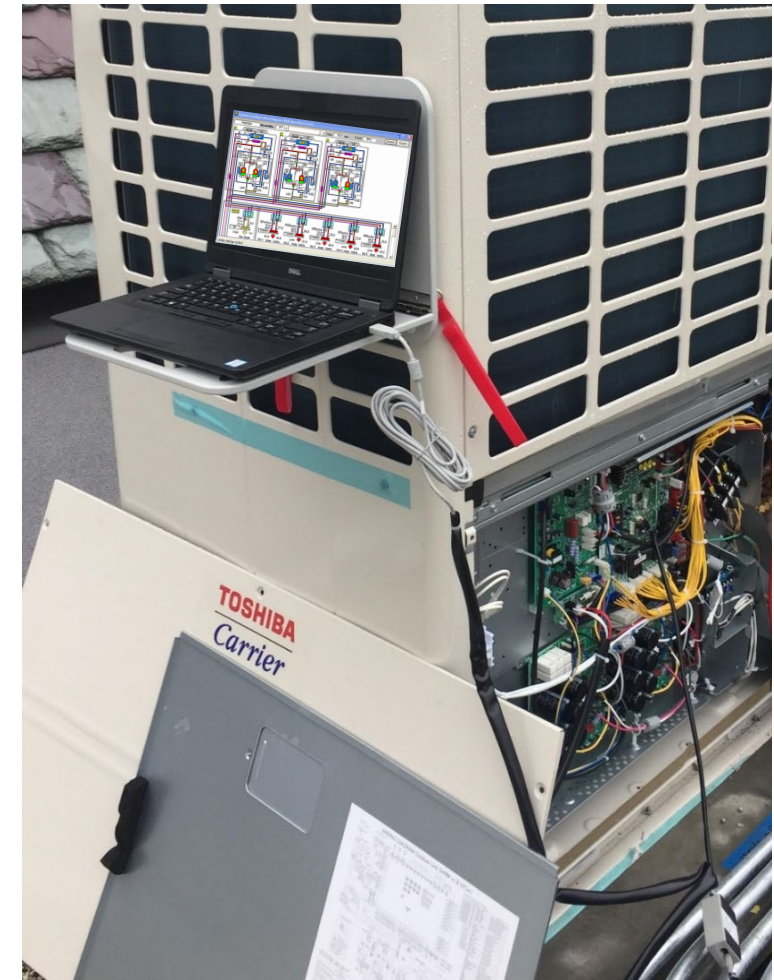
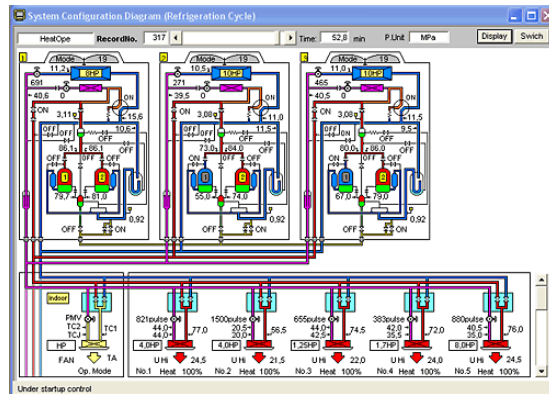
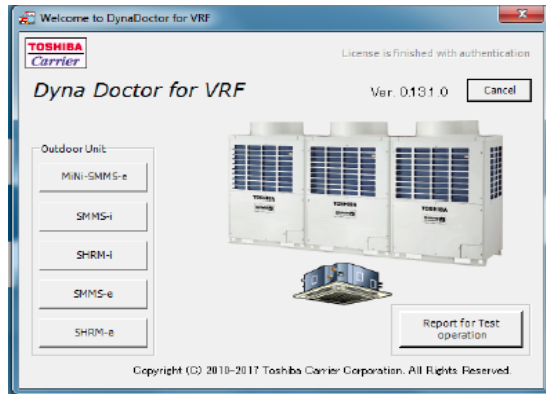


Attention:
Windows based PC only

Toshiba Carrier MCY/MMY VRF Dyna-Doctor Diagnostic Software & Communication Adapter

Dyna-Doctor diagnostic software can provide a user a view across the VRF entire system. The technician will be able to see valve positions, refrigerant pressures, thermistor readings, compressor speeds, operational modes and much more.

We recommend you use the software to record a base line of each VRF system you Start Up/Service. The recorded operational data can help when performing yearly routine maintenance on the same systems or when trying to diagnose operational errors.



Part # TCB-DK01SS-E List \$922.00
3.2022

Toshiba Carrier Dyna-Doctor

Toshiba Carrier MCY/MMY VRF Dyna-Doctor Diagnostic Software & Communication Adapter

NOTE: The following Dyna-Doctor Guide will help you Connect, Activate and Record using Dyna-Doctor. Not all features of the Software will be shown.

- Dyna-Doctor allows the technician to see a large amount of data all in one place. No need to put gauges on the outdoor unit or take a temperature at the coil inlet/outlet and much more.
- Dyna-Doctor will not do any diagnostics for you. The technician will need to review the data and make determinations for themselves.
- The only way to be successful at using Dyna-Doctor is to use it. The more you use it on properly operating systems, the better you will catch systems not operating correctly.
- Dyna-Doctor is best used in conjunction with the Factory Service Manual for the Outdoor Unit.
- You can only connect to one VRF system at a time, even if the outdoor units are daisy chained to a central controller.
- Operation Modes can be changed, set point cannot.
- Some windows and the values shown take longer to update than others, be patient.

Toshiba Carrier Dyna-Doctor

Toshiba Carrier MCY/MMY VRF Dyna-Doctor Diagnostic Software & Communication Adapter

What's in the Box

USB Cable

Three connector cables

Dyna-Doctor Communication Adapter

Serial cable, not used at this time

Software CD

Three User Manuals
(20+ languages)



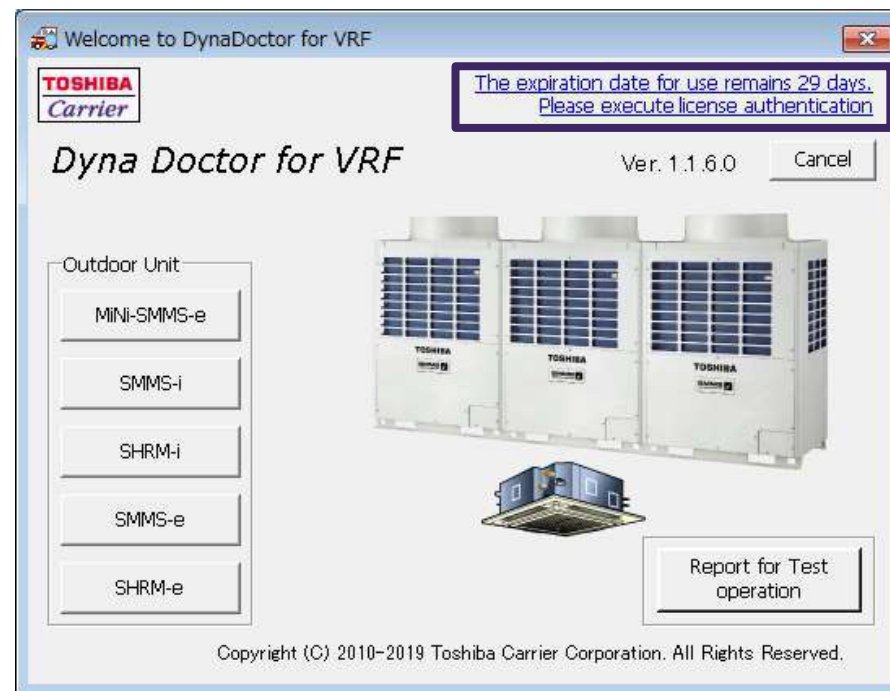
Toshiba Carrier Dyna-Doctor



Attention:
Windows based PC only

Toshiba Carrier MCY/MMY VRF Dyna-Doctor Diagnostic Software

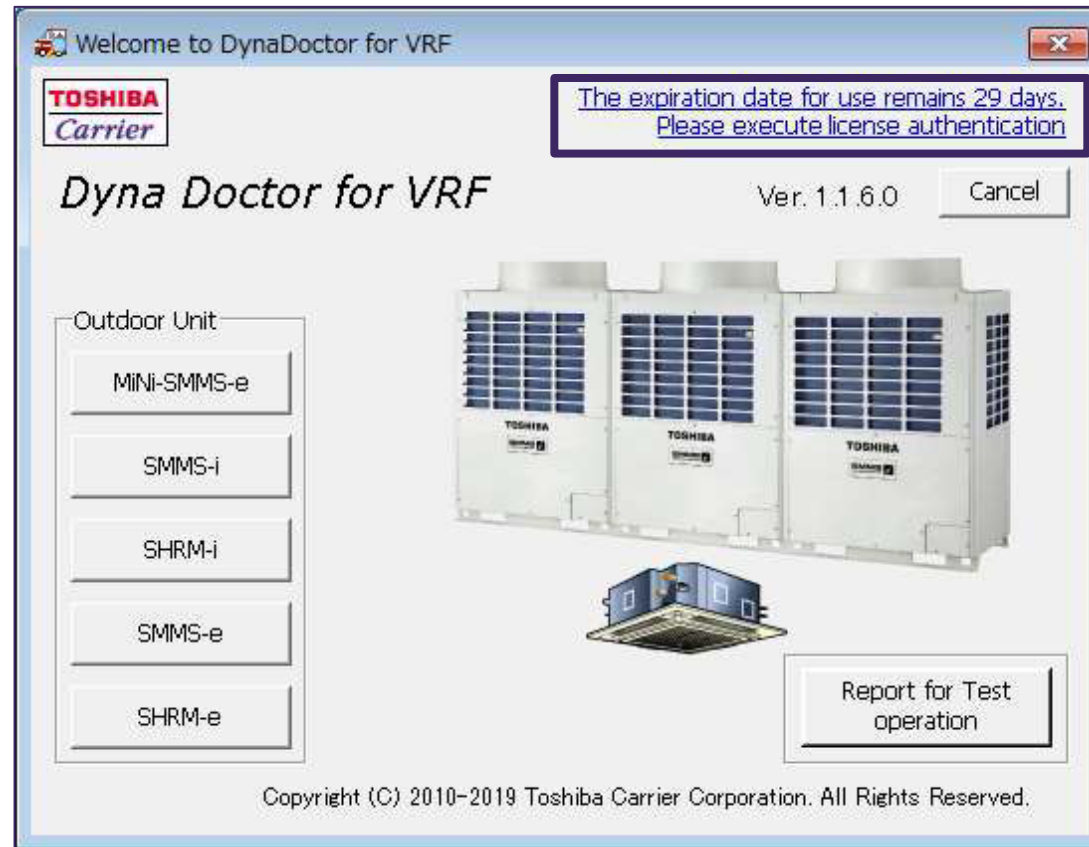
- Load Dyna-Doctor software on Windows computer/laptop to be used.
- Use the included CD or contact CE Tech Support for the latest version of software.
- The manufacture updates Dyna-Doctor software approximately once a year or as required by product enhancements.
- Once loaded, the software will only work for 30 days unactivated. We highly recommend you activate the software as soon as it's loaded. It can take up with 2 days for the activation email to be returned.



Toshiba Carrier Dyna-Doctor Activation

Activating Dyna-Doctor Software

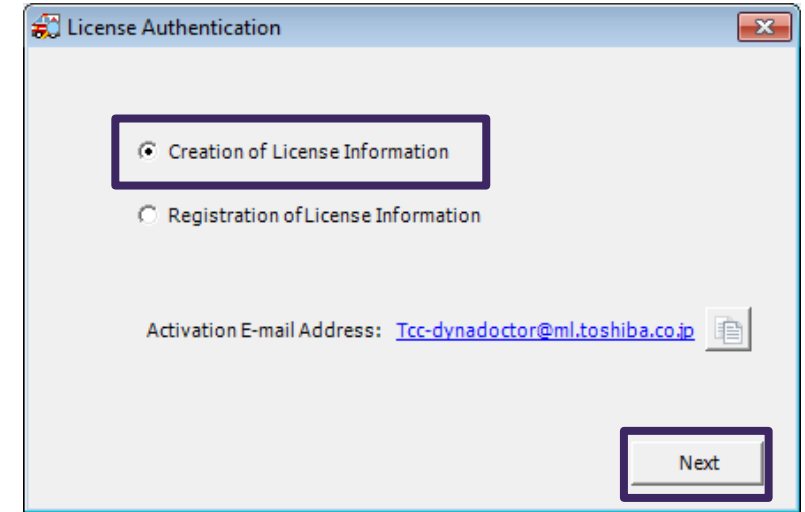
1. Start "Dyna-Doctor" and click on the message which says "The expiration date for use remains XX days. Please execute license authentication" to display the license authentication screen.



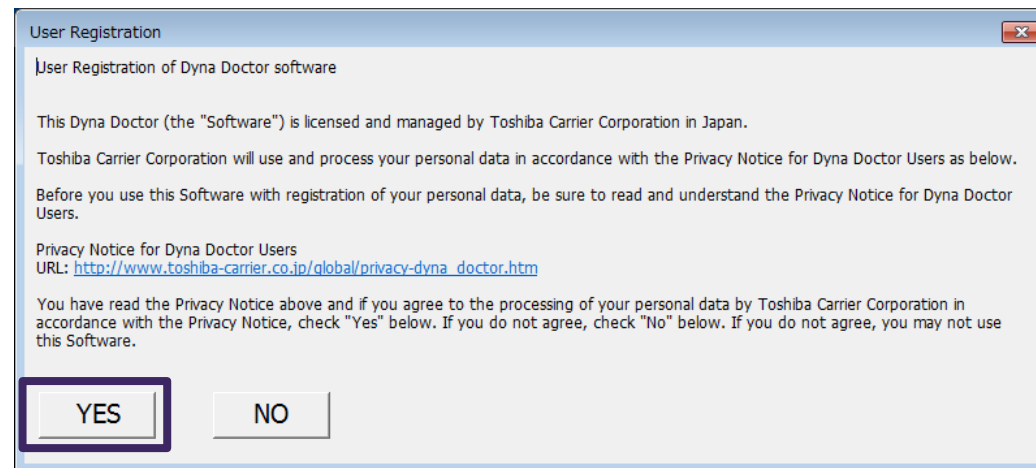
Toshiba Carrier Dyna-Doctor Activation

Activating Dyna-Doctor Software (cont.)

2. Select “Creation of License Information” and click the “Next” button.



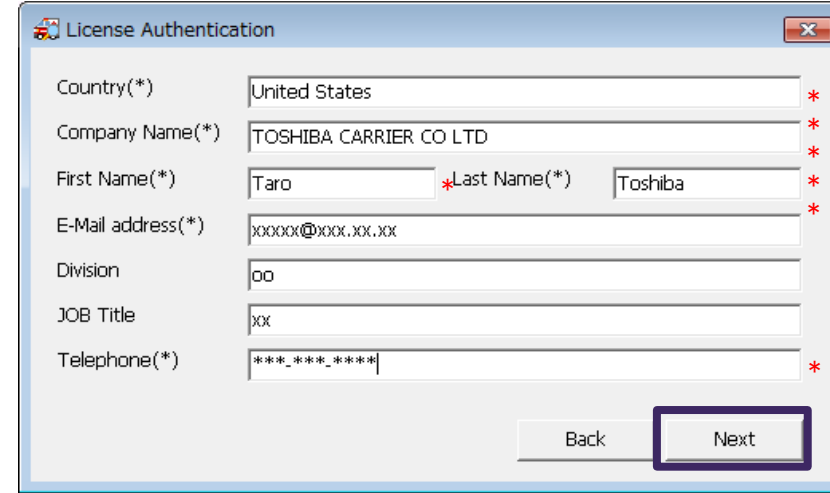
3. If you agree to processing of your personal data by Toshiba Carrier Corporation in accordance with the Privacy Notice, click the “YES” button.



Toshiba Carrier Dyna-Doctor Activation

Activating Dyna-Doctor Software (cont.)

4. Fill in the necessary sections (*) and click the “Next” button.

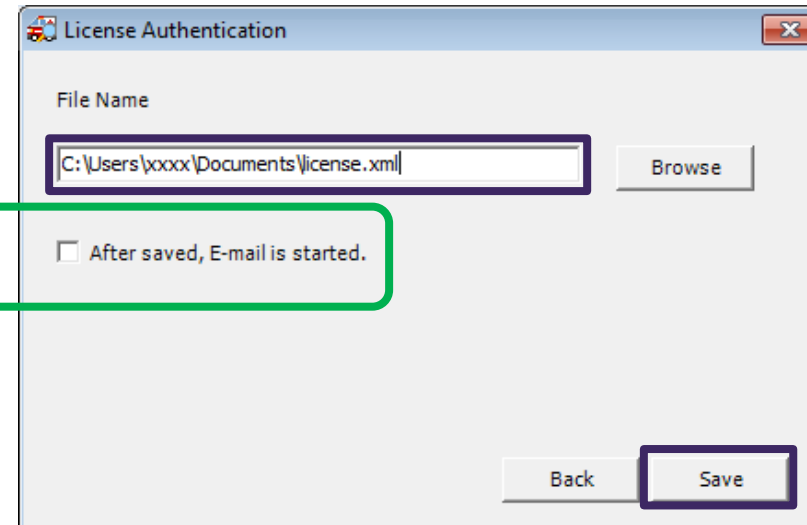


The 'License Authentication' dialog box contains the following fields and values:

Field	Value	Required (*)
Country(*)	United States	Yes
Company Name(*)	TOSHIBA CARRIER CO LTD	Yes
First Name(*)	Taro	Yes
Last Name(*)	Toshiba	Yes
E-Mail address(*)	xxxxx@xxx.xxx.xxx	Yes
Division	00	No
JOB Title	xx	No
Telephone(*)	***-***-****	Yes

Buttons: Back, Next (highlighted with a red box).

5. To save the created license information, enter a file name and click the “Save” button.
File location defaulted to save in Document folder or select another location/folder instead.



The 'License Authentication' dialog box shows the 'File Name' section with the following details:

Field	Value
File Name	C:\Users\xxxx\Documents\license.xml

Buttons: Browse, Back, Save (highlighted with a red box).

Checkbox: ☐ After saved, E-mail is started.

Only check if you have a default email program set up, otherwise start new email after and attached license.

Toshiba Carrier Dyna-Doctor Activation

Activating Dyna-Doctor Software (cont.)

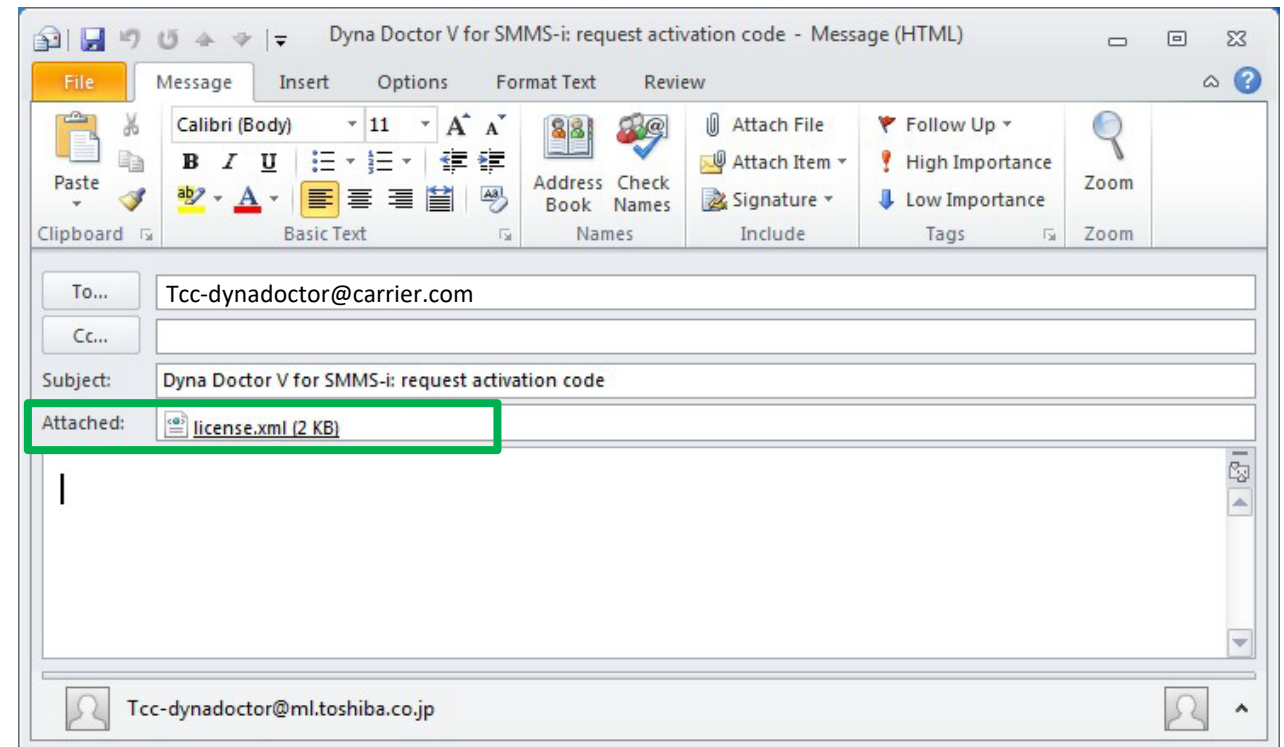
6. Attach the saved license information file to a new email and send. When the license is authenticated, an authentication email with an attached authenticated license information file will be sent from tcc-dynadoctor@carrier.com.

Use the following format for the request email:

To: tcc-dynadoctor@carrier.com

Subject: Dyna Doctor for VRF: request activation code

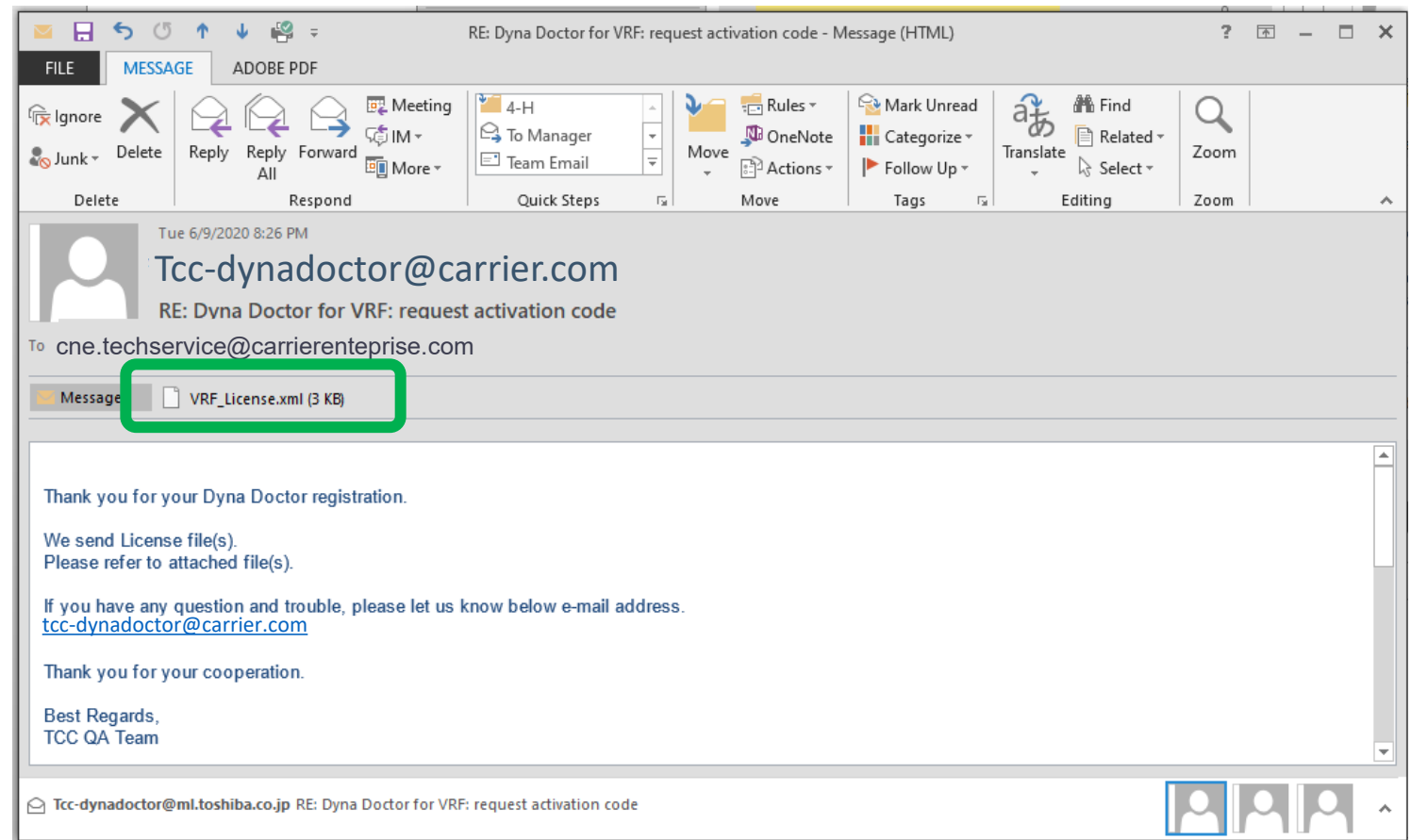
Attachment: License information file (.xml)



Toshiba Carrier Dyna-Doctor Activation

Activating Dyna-Doctor Software (cont.)

7. When email response is received. Copy the new license file to Documents of other location. Make sure you make note of where it is copied.

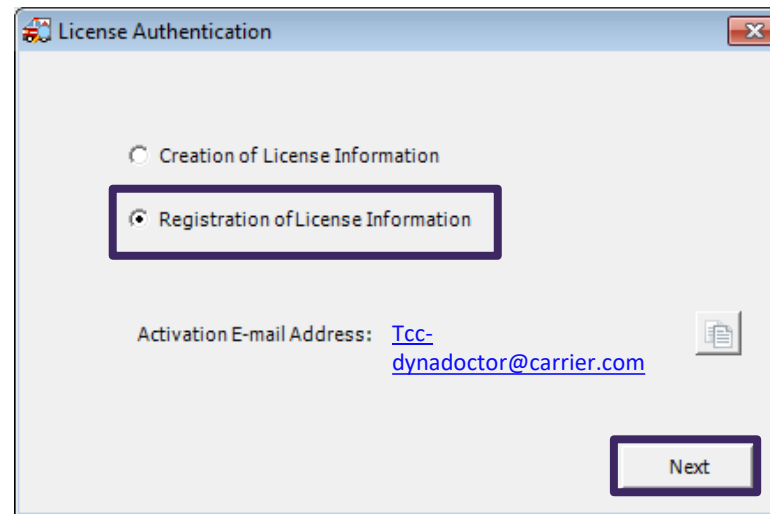
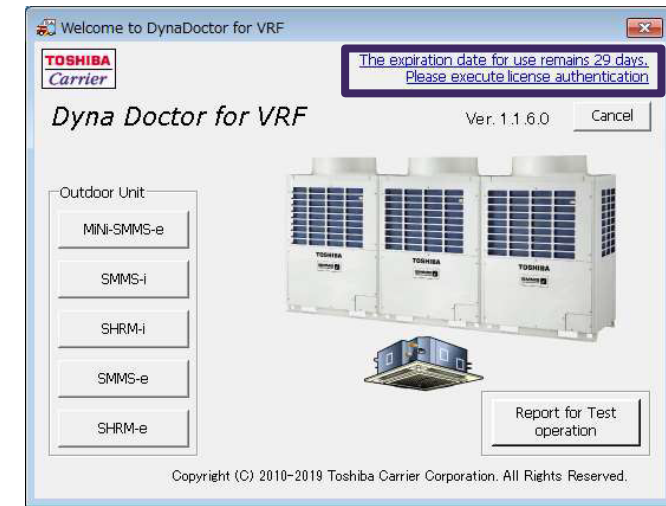


Toshiba Carrier Dyna-Doctor Activation

Activating Dyna-Doctor Software (cont.)

8. Start "Dyna-Doctor" and click on the message which says "The expiration date for use remains XX days. Please execute license authentication" to display the license authentication screen.

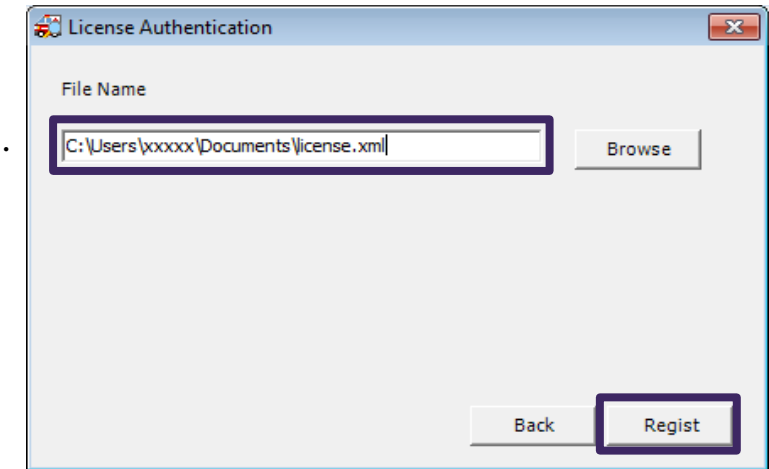
9. Select "Registration of License Information" and click the "Next" button.



Toshiba Carrier Dyna-Doctor Activation

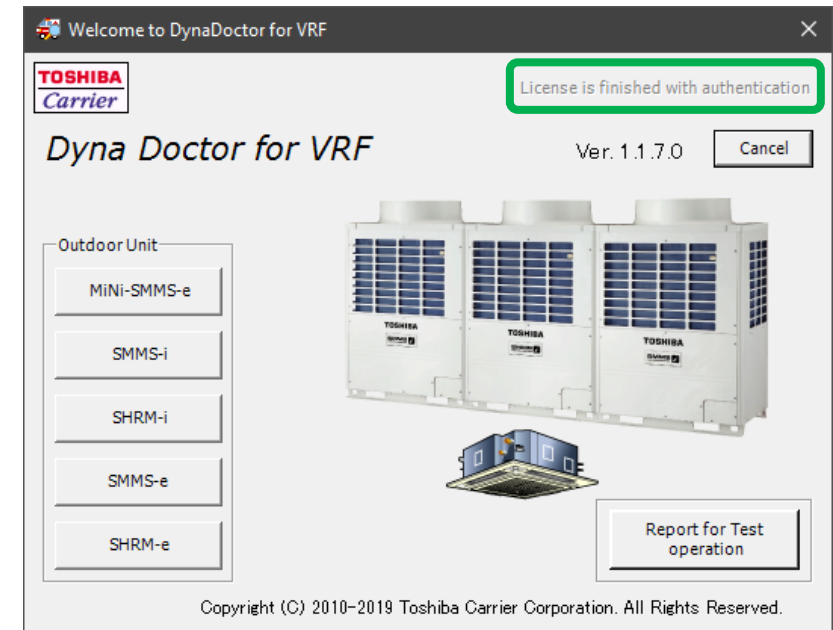
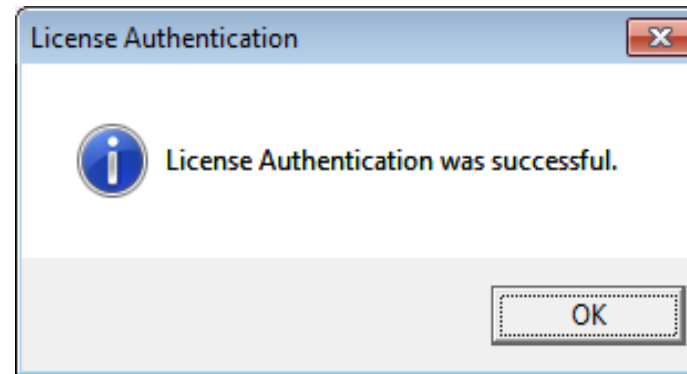
Activating Dyna-Doctor Software (end)

10. Select the authenticated license information file and click the “Regist” button.



If the license authentication is successful, the following message is displayed.

The software is now activated.

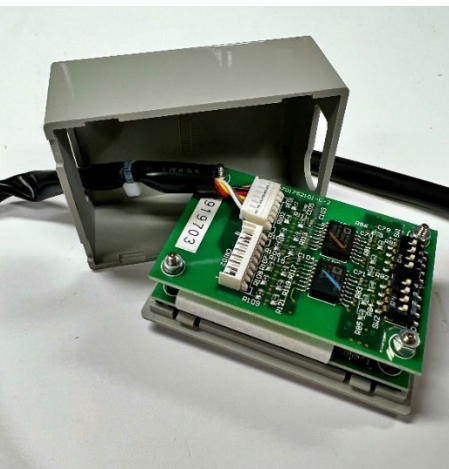


Toshiba Carrier Dyna-Doctor

Connecting Toshiba Carrier MCY/MMY VRF Dyna-Doctor Communication Adapter

Connecting Adapter/Cables:

- Select cable “B” for all 1PH Heat Pumps
- Select cable “C” for 3PH Heat Pumps & all Heat Recovery Systems
- A small flat screwdriver is required to open the communication adapter
- Insert cable “B or C” through opening and connect to CN101

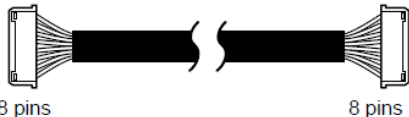
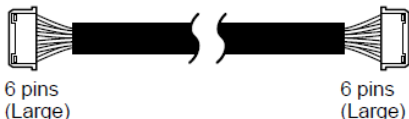
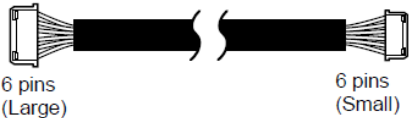


Cable “A” not used at this time

1PH Heat Pumps

3PH Heat Pumps
All Heat Recovery



Cable type	Appearance		Representative Air conditioner
	DYNA-KIT side — Air conditioner side		
A	 8 pins 8 pins		Air to Water Heat Pump (Hydro unit)
B	 6 pins (Large) 6 pins (Large)		SDI Series (Outdoor unit) (*) DI Series (Outdoor unit) (*) • For Japan SPE Series (Outdoor unit) (*) SME Series (Outdoor unit) (*) *: Connector type may differ with some models.
C	 6 pins (Large) 6 pins (Small)		MiNi-SMMS (Outdoor unit) SMMS (Outdoor unit) SHRM (Outdoor unit) • For Japan SMMS (Outdoor unit) FLEX (Outdoor unit)

Toshiba Carrier Dyna-Doctor

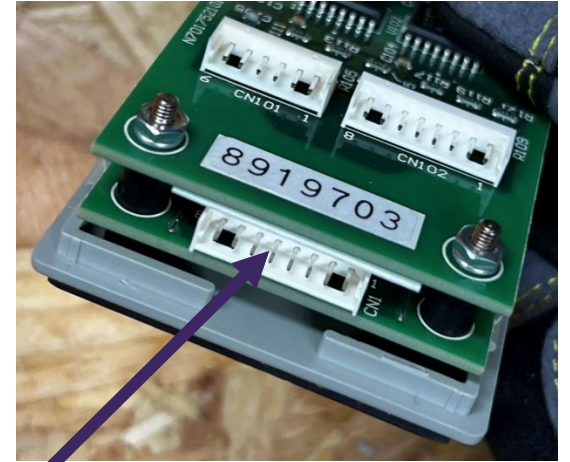
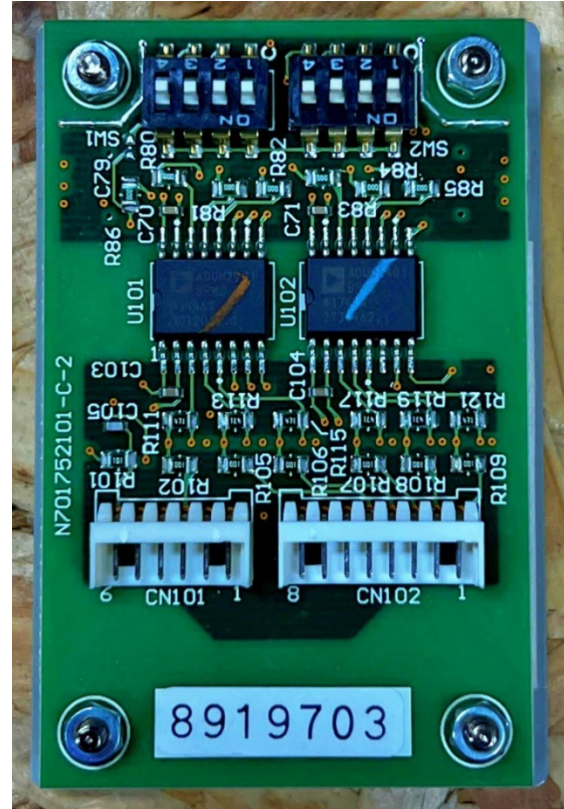
Connecting Toshiba Carrier MCY/MMY VRF Dyna-Doctor Communication Adapter

Connecting Adapter/Cables (cont.):

- Leave all DIP switches in the OFF position
- Close cover 



CN101 Connect Cable "B or C" here



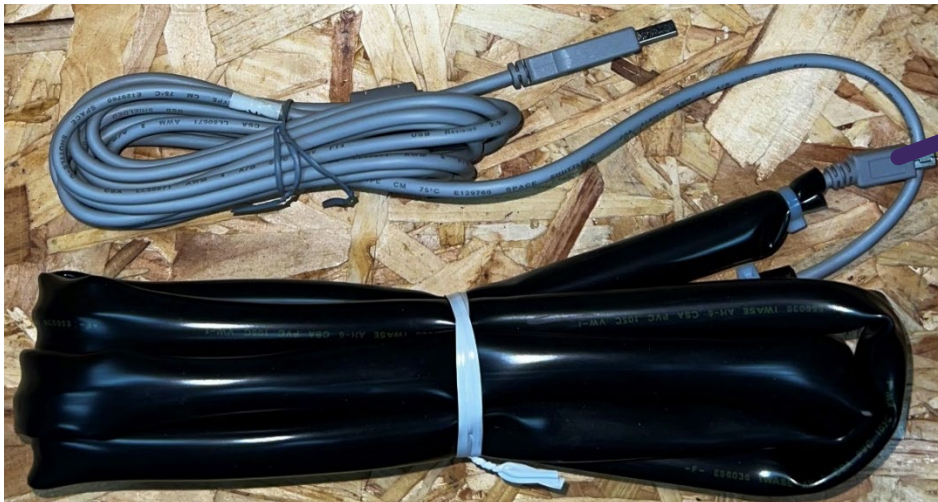
CN1 (underneath) connection not used
CN102 connection not used

Toshiba Carrier Dyna-Doctor

Connecting Toshiba Carrier MCY/MMY VRF Dyna-Doctor Communication Adapter

Connecting Adapter/Cables (cont.):

- Plug Mini-USB end into Communication Adapter
- Plug USB end into computer
- Turn VRF system OFF at outdoor unit's disconnect
- Plug Cable "B or C" (depending on ODU type) into CN800 on Main Interface PCB
- Turn VRF system ON at outdoor unit's disconnect



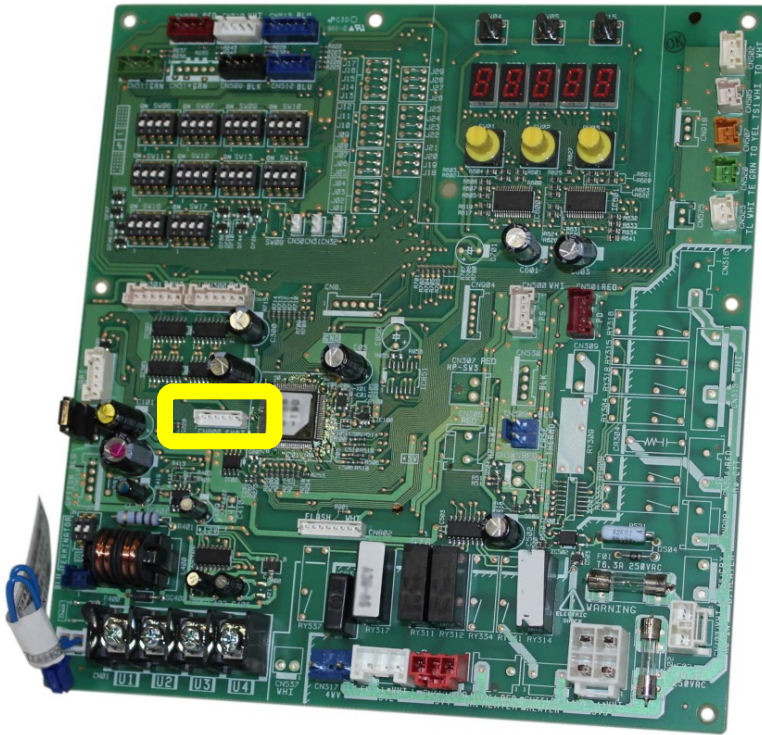
For Serial Cable, not used

Toshiba Carrier Dyna-Doctor

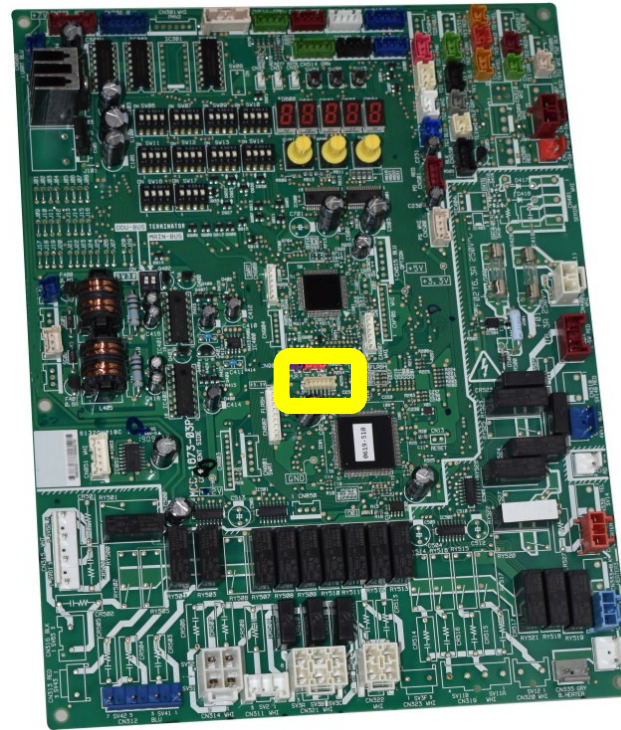
Connecting Toshiba Carrier MCY/MMY VRF Dyna-Doctor Communication Adapter (end)

Connecting Adapter/Cables (end):

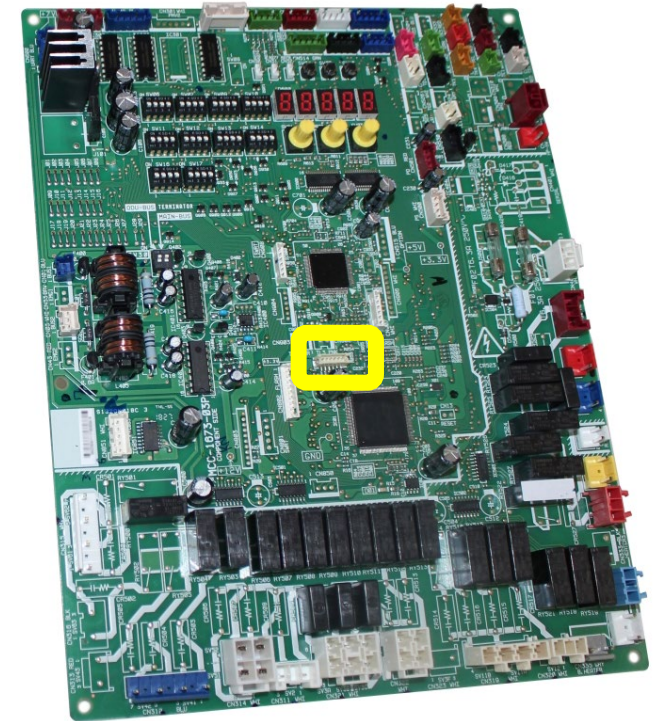
- Where to find CN800 on the Main Interface PCB



1PH Heat Pump
CN800



3PH Heat Pump
CN800

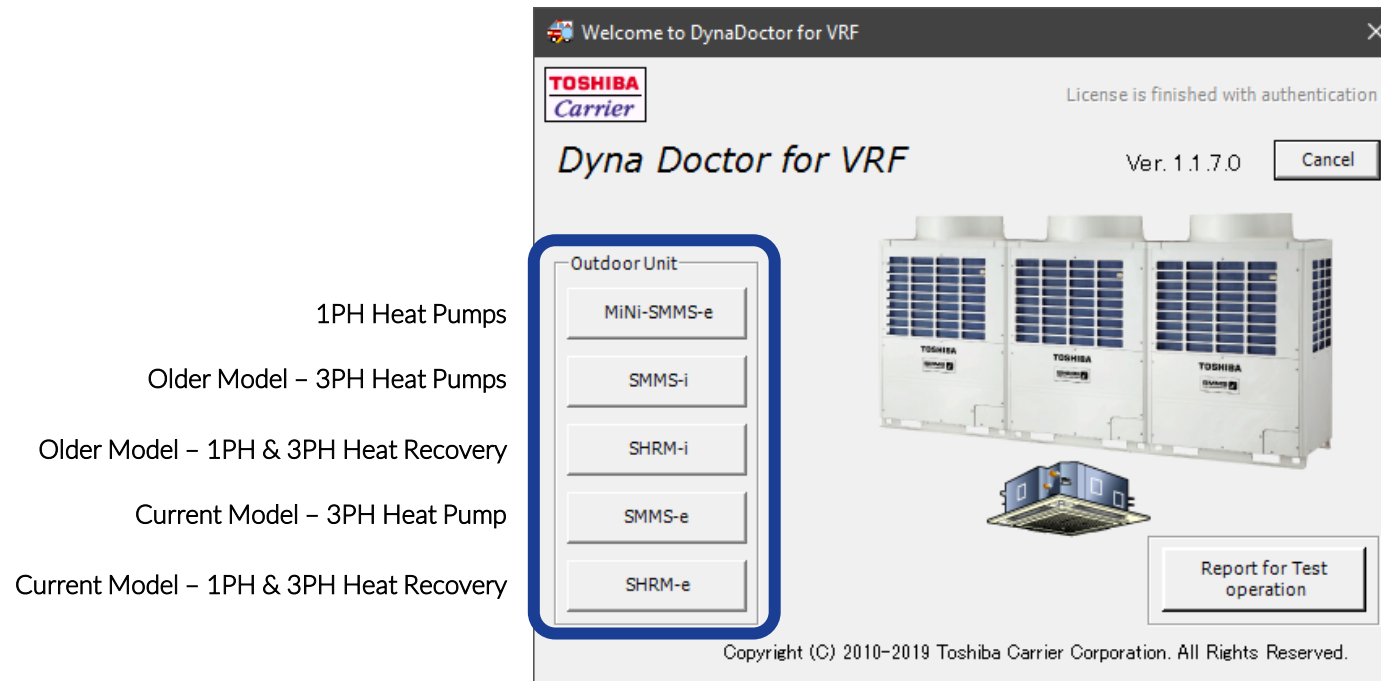


1PH & 3PH Heat Recovery
CN800

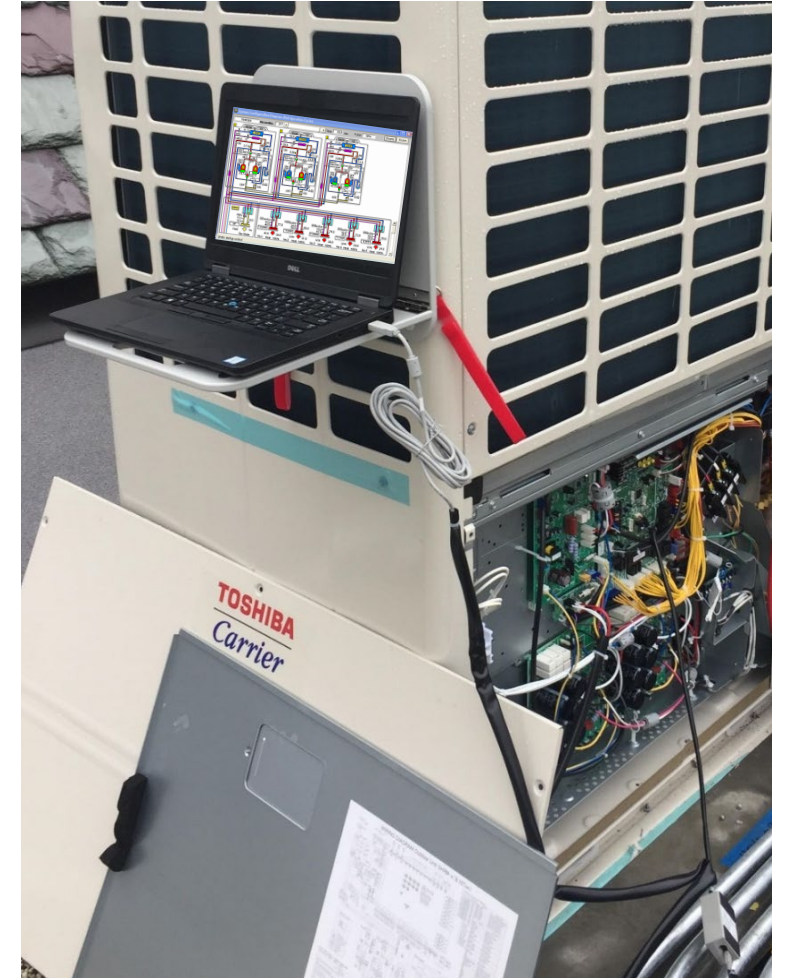
Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software

- Start Dyna-Doctor software
- Select the Outdoor Unit connected



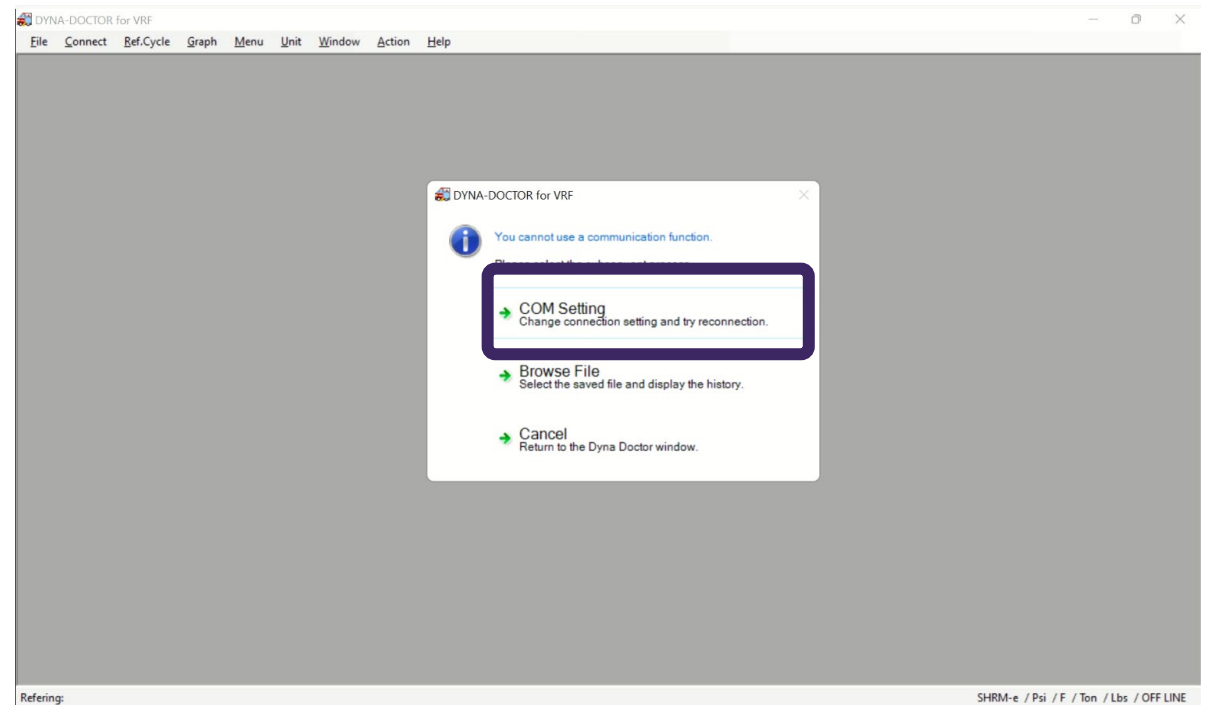
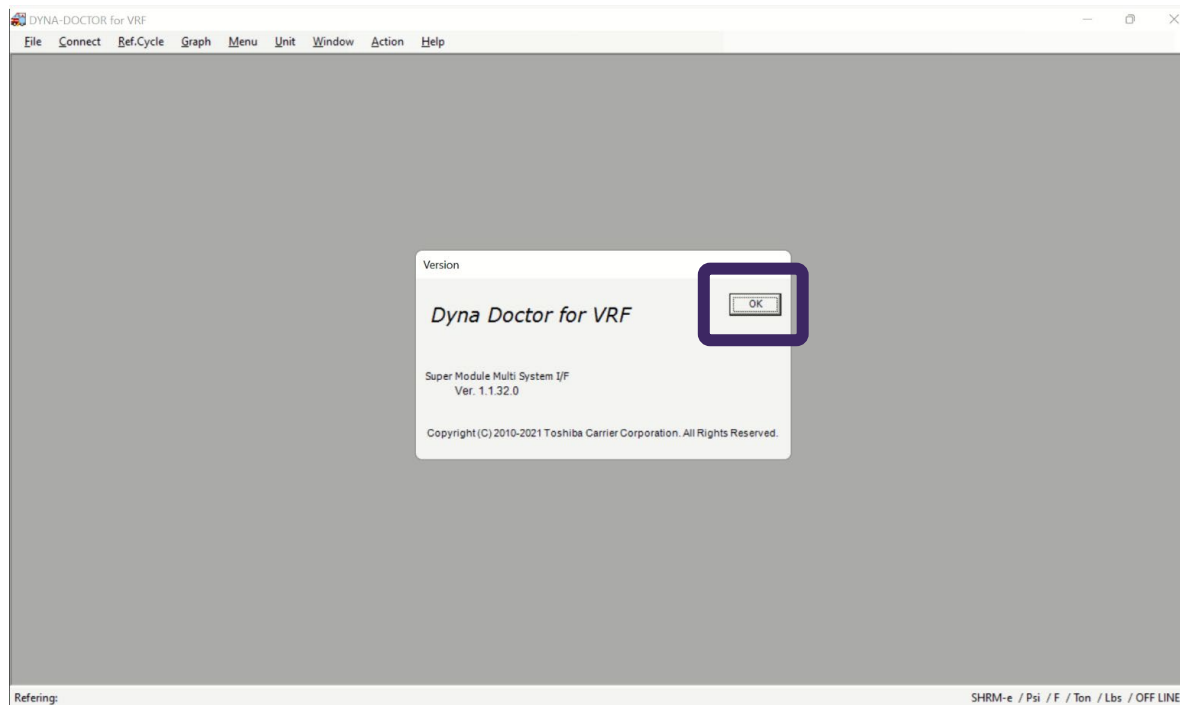
Look for label on Outdoor unit's cover that displays "SHRM-i" or "SMMS-i" or other.
All 1PH H/Ps are "MiNi-SMMS-e"



Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

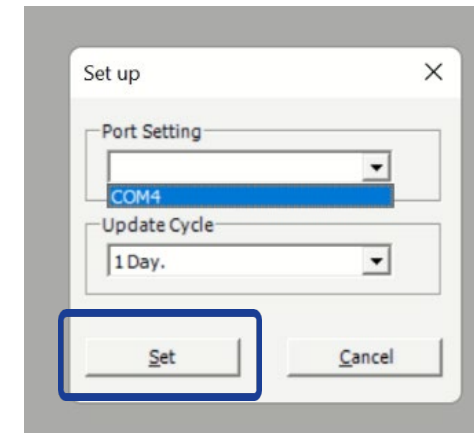
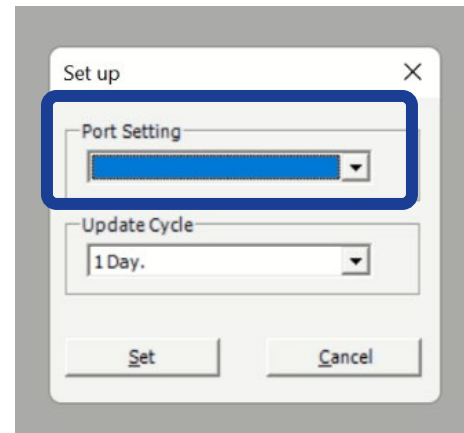
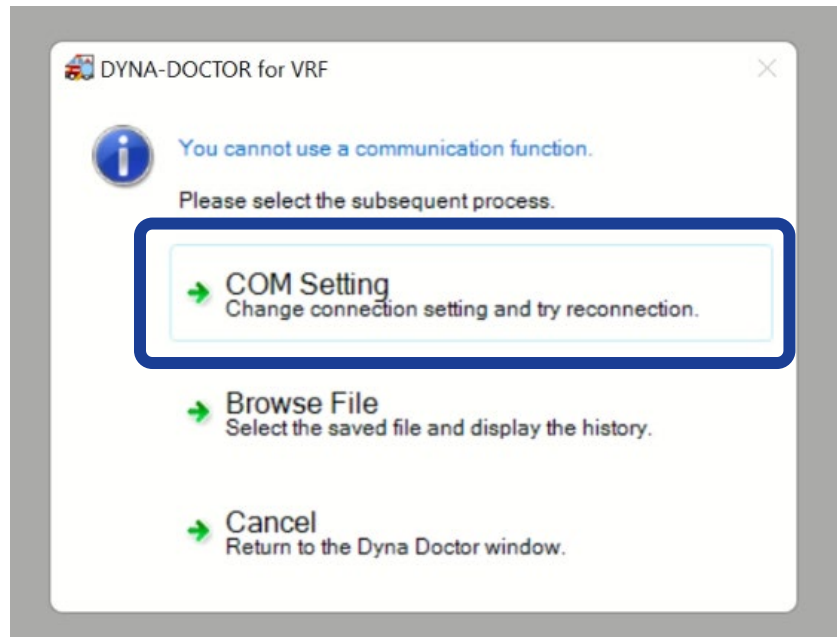
- After selecting the type of system, click “OK”
- Next Click on “COM Setting”



Toshiba Carrier Dyna-Doctor Software Navigation

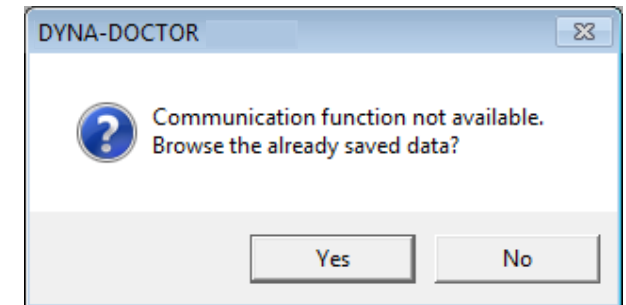
Navigating Dyna-Doctor Software (cont.)

- After “COM Setting”, click the drop down for Port Setting and select the port Dyna-Doctor is connected to (USB Port).
- If you do not know the Port# (COM#), you can try each one until communication is established or see next page.



When communication can not be established the following.

If this happens, check COM Setting 1st.
Next power down ODU, check CN800 connection, check USB connections, restart laptop/software

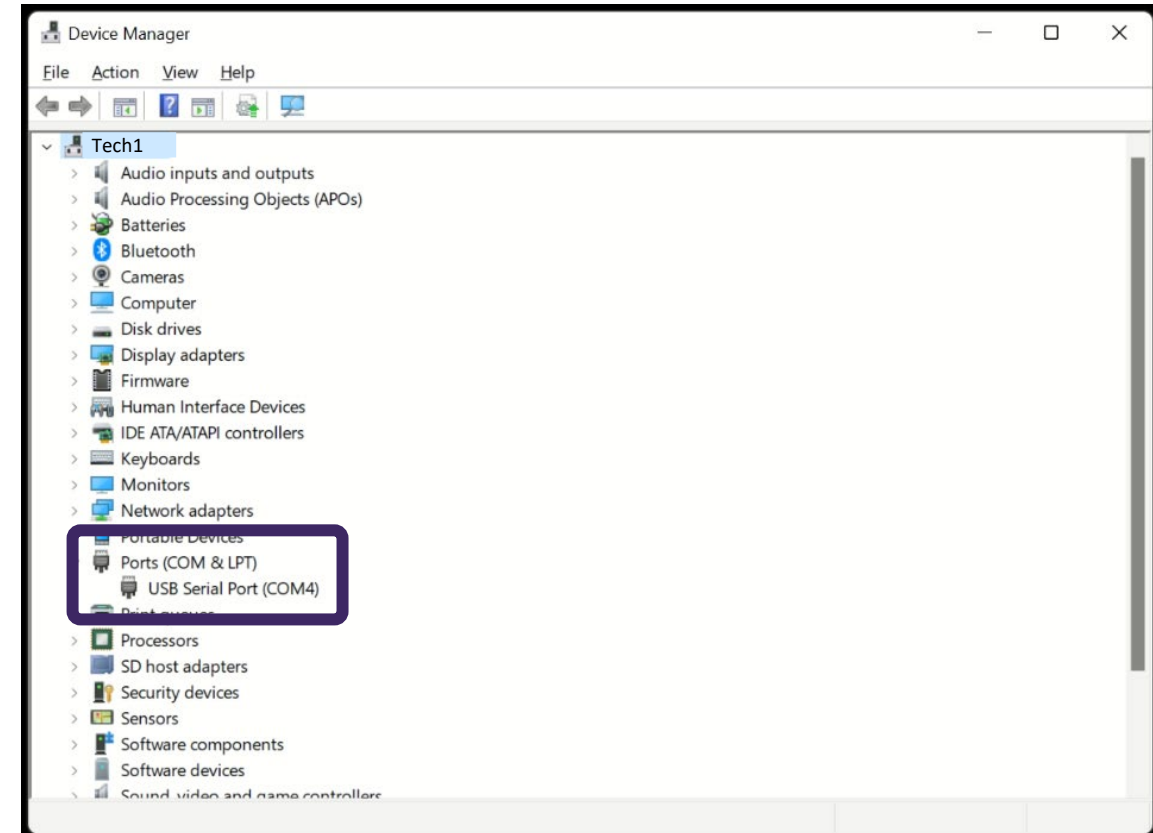
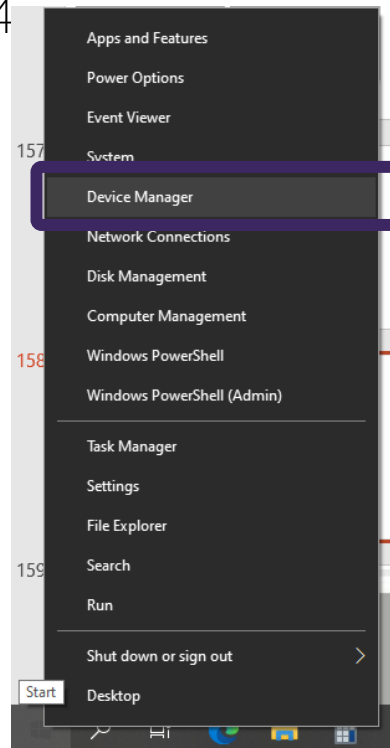


Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

How to find COM Port ID #

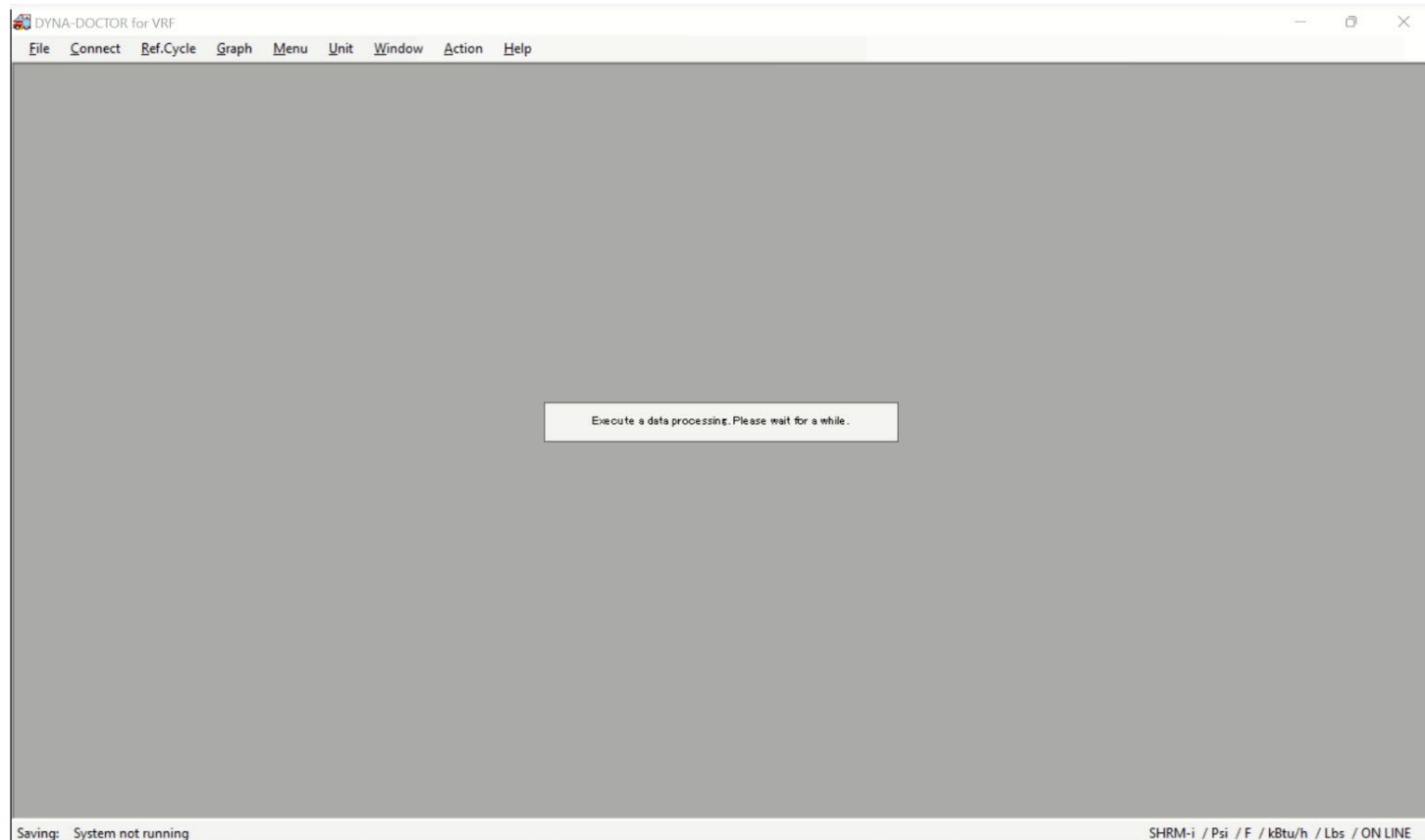
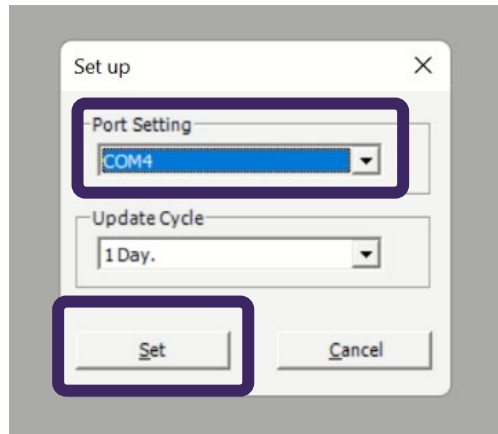
- Right click your mouse on the Windows Button
- Select “Device Manager”
- Scroll if needed and expand “Ports (COM & LPT)”
- In this case Dyna-Doctor is using COM4
- Close the Device Manager



Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Select the COM Port that was identified and click “Set”, after 15 to 30 seconds a message will appear and next a new “System Configuration Diagram” window will automatically open. Length of time depends on system size and if tech had previously connected to system.



Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Once this window opens you have successfully connected to the system.

Immediately you will see the status of each fan coil as well as some outdoor unit information.

Unit Address

5

IDU Type

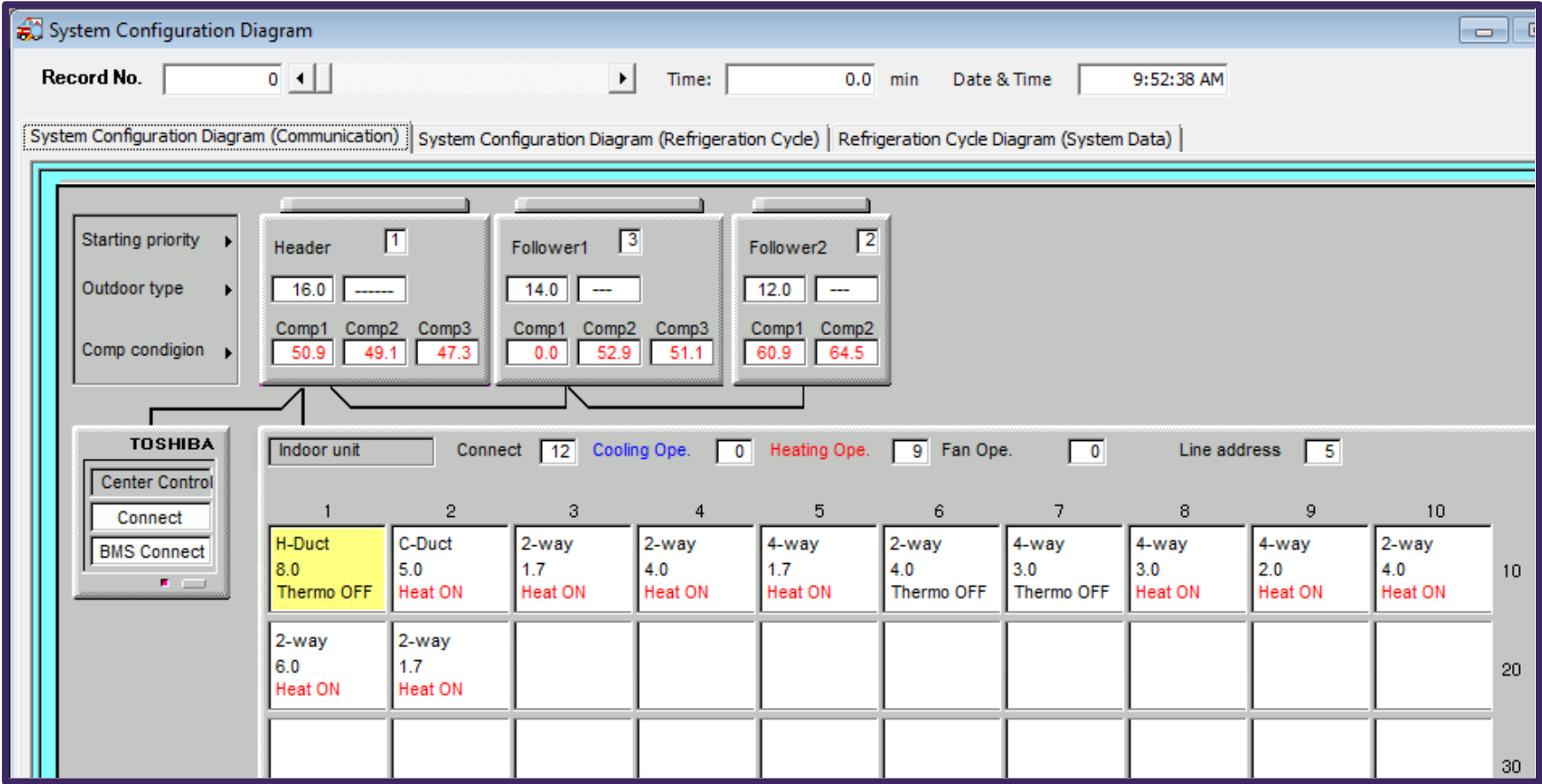
4-way

Tonnage

1.7

Status

Heat ON



Toshiba Carrier Dyna-Doctor Software Navigation

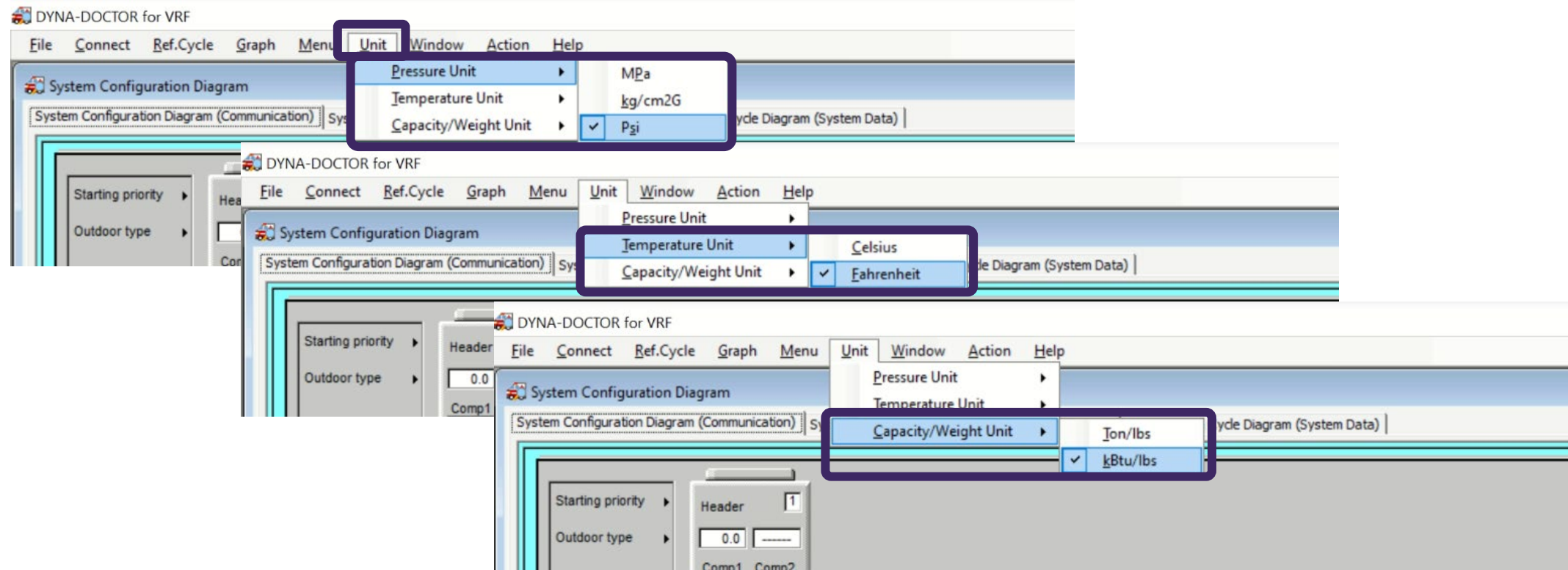
Navigating Dyna-Doctor Software (cont.)

On the first time you open Dyna-Doctor we recommend you select the desired units of measurements.

They do not come defaulted to the common units used in the United States and Canada.

Here we have selected PSI, Fahrenheit & kBtu/lbs.

The next time you open Dyna-Doctor these values are saved and will not need to be set.

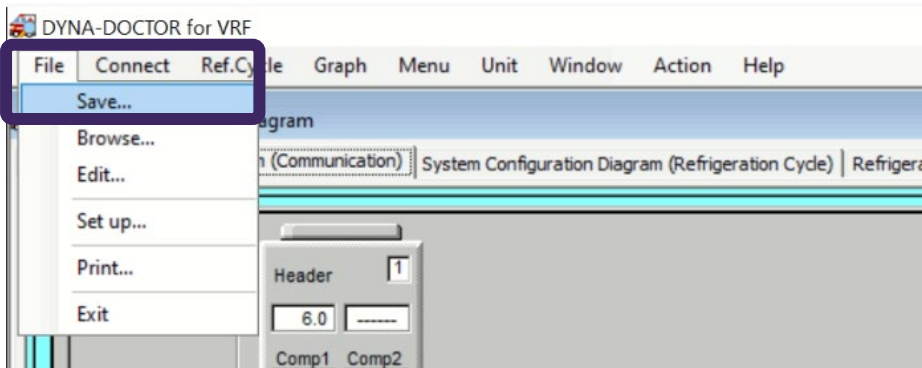


Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Before you start reviewing data and system operation we recommend you start recording the data file. This way you can use it in the future for a comparison.

1. Click “File” then “Save”



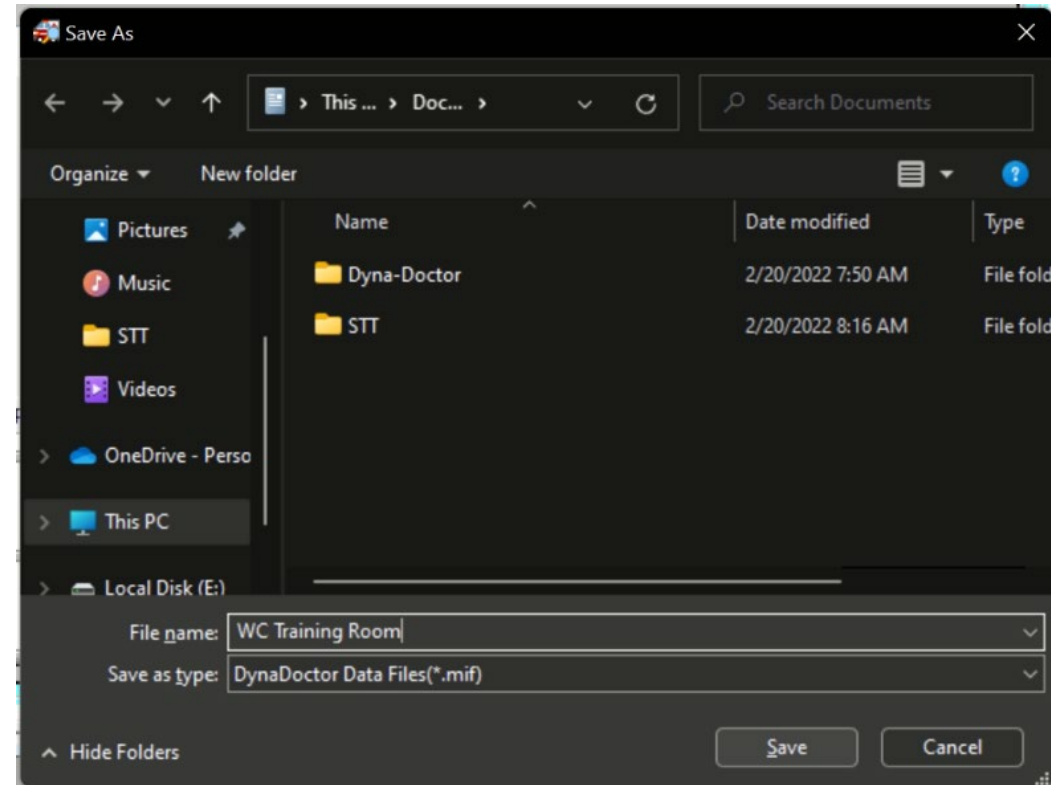
“Browse” lets you view previously recorded Data files.

“Edit” is used to view and add/edit comments.

“Set up” is used to update Port Setting and Update Cycle settings.

“Print” lets you print what is on the screen

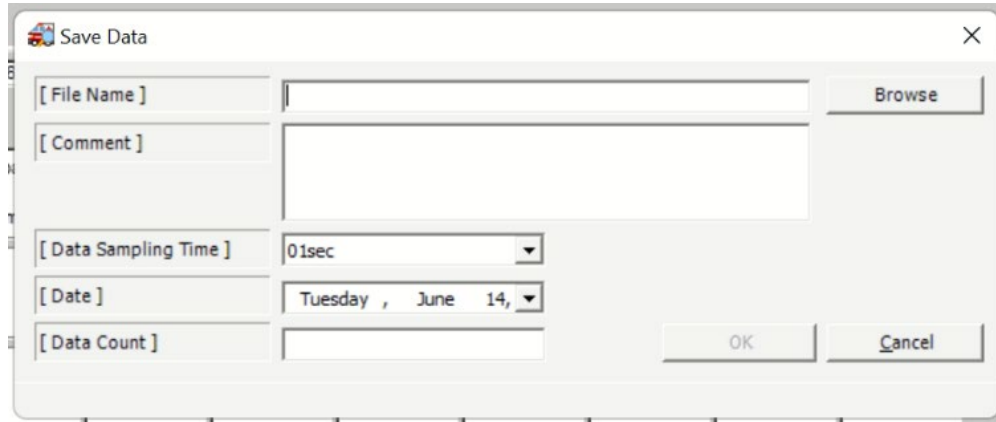
2. Next name the file and select the location to save it to.



Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

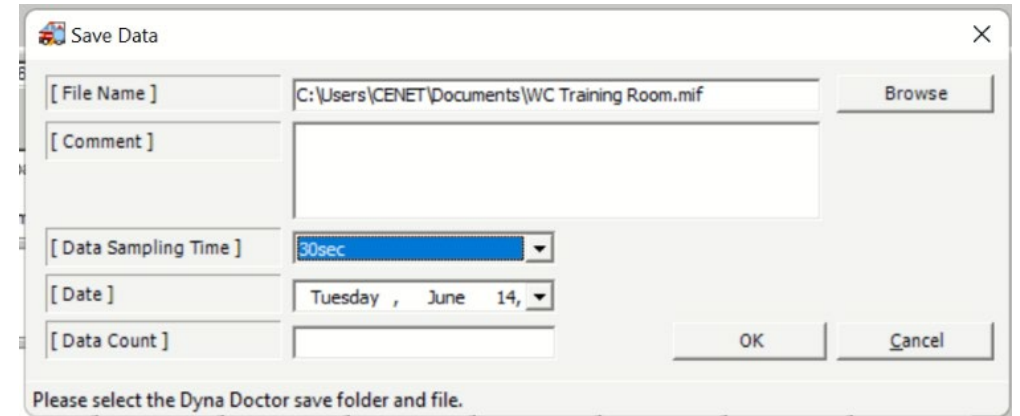
3. Select the file sampling rate, typical settings are 30 sec to 5 min.



The 'Save Data' dialog box is shown. It contains the following fields and controls:

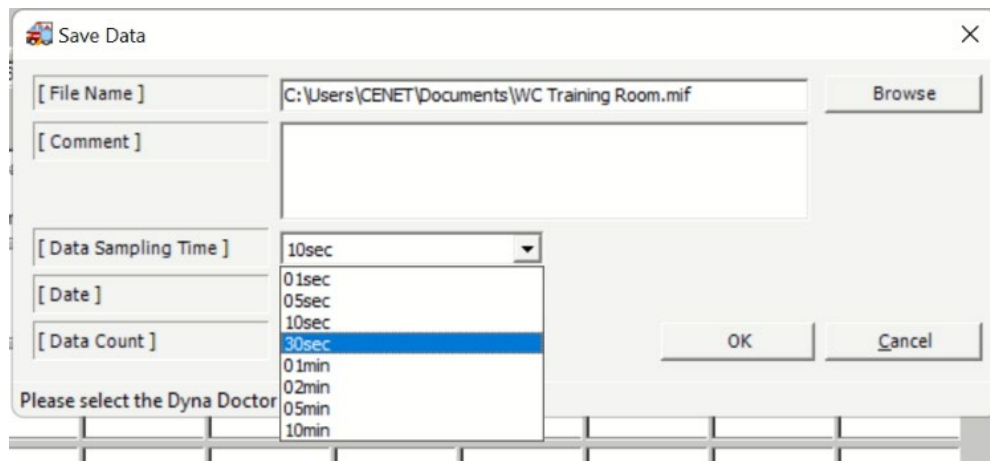
- [File Name]: A text box with a 'Browse' button to its right.
- [Comment]: A large text area.
- [Data Sampling Time]: A dropdown menu currently set to '01sec'.
- [Date]: A dropdown menu showing 'Tuesday , June 14,'.
- [Data Count]: A text box.
- Buttons: 'OK' and 'Cancel' at the bottom right.

4. Finally click "Set"



The 'Save Data' dialog box is shown. It contains the following fields and controls:

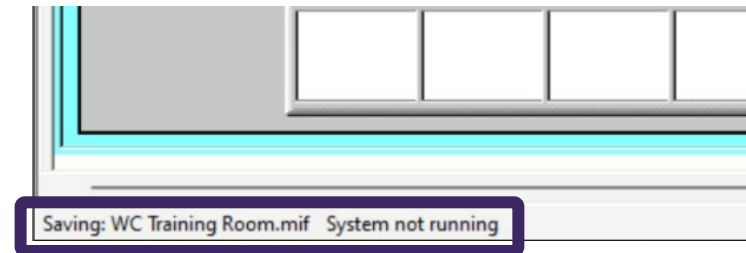
- [File Name]: A text box containing 'C:\Users\CENET\Documents\WC Training Room.mif' with a 'Browse' button to its right.
- [Comment]: A large text area.
- [Data Sampling Time]: A dropdown menu currently set to '30sec'.
- [Date]: A dropdown menu showing 'Tuesday , June 14,'.
- [Data Count]: A text box.
- Buttons: 'OK' and 'Cancel' at the bottom right.
- Text at the bottom: 'Please select the Dyna Doctor save folder and file.'



The 'Save Data' dialog box is shown with the 'Data Sampling Time' dropdown menu open. The dropdown list contains the following options:

- 01sec
- 05sec
- 10sec
- 30sec (highlighted)
- 01min
- 02min
- 05min
- 10min

In the bottom left corner, you should see "Saving"



Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

The Record No. (number) is how many data sets (sampling times) have been saved. You can use the scroll buttons to look back while the data is being saved.

The total time record is shown as well as date/time each data set was taken.

The screenshot displays the 'DYNA-DOCTOR for VRF' software interface. The 'System Configuration Diagram' window is active, showing a record number of 42, a time of 20.6 min, and a date/time of 6/14/2022 8:43:16 AM. The interface includes a menu bar (File, Connect, Ref.Cycle, Graph, Menu, Unit, Window, Action, Help) and a toolbar with navigation buttons. The main area shows a 'System Configuration Diagram (Communication)' and a 'System Configuration Diagram (Refrigeration Cycle)'. The 'Refrigeration Cycle' diagram includes a 'Header' section with 'Comp1' and 'Comp2' values, and a 'TOSHIBA' section with 'Center Control' and 'Indoor unit' settings. The 'Indoor unit' section shows a table of 10 units with their respective capacities and thermostat settings.

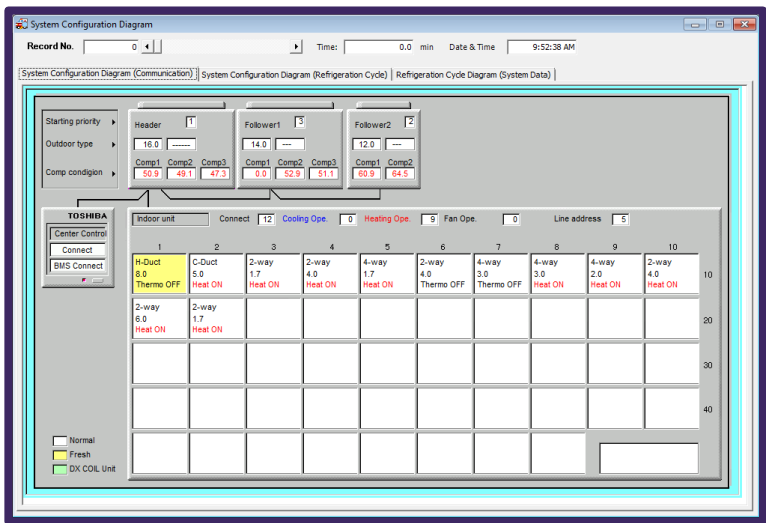
1	2	3	4	5	6	7	8	9	10
U-Ceiling 1.5 Thermo OFF	4-way 1.5 Thermo OFF	Compact 0.6 Thermo OFF	S-Duct 0.6 Thermo OFF	H-Duct 2.5 Thermo OFF	F-Cabinet 0.6 Thermo OFF				

SHRM-i / Psi / F / Ton / Lbs / ON LINE

Toshiba Carrier Dyna-Doctor Software Navigation

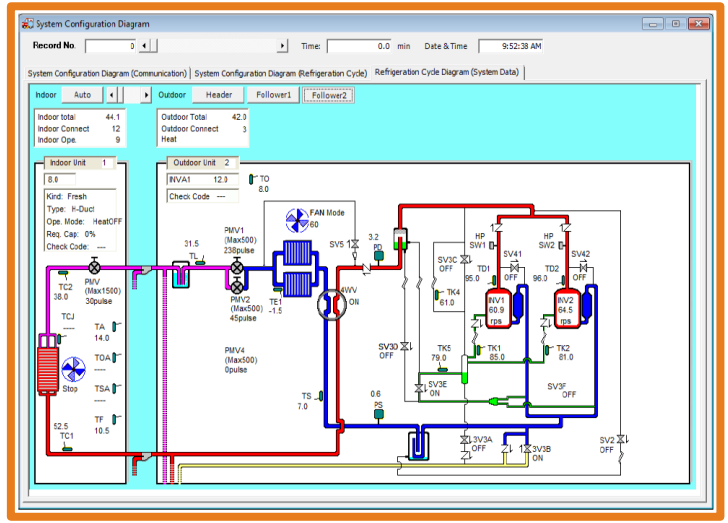
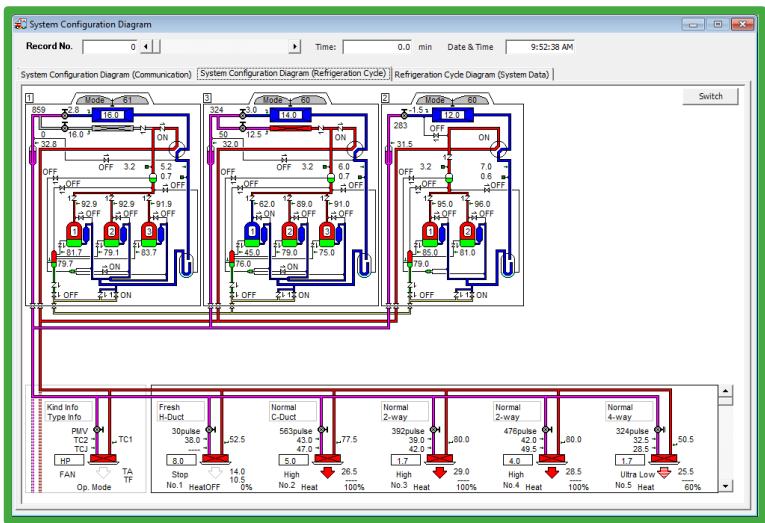
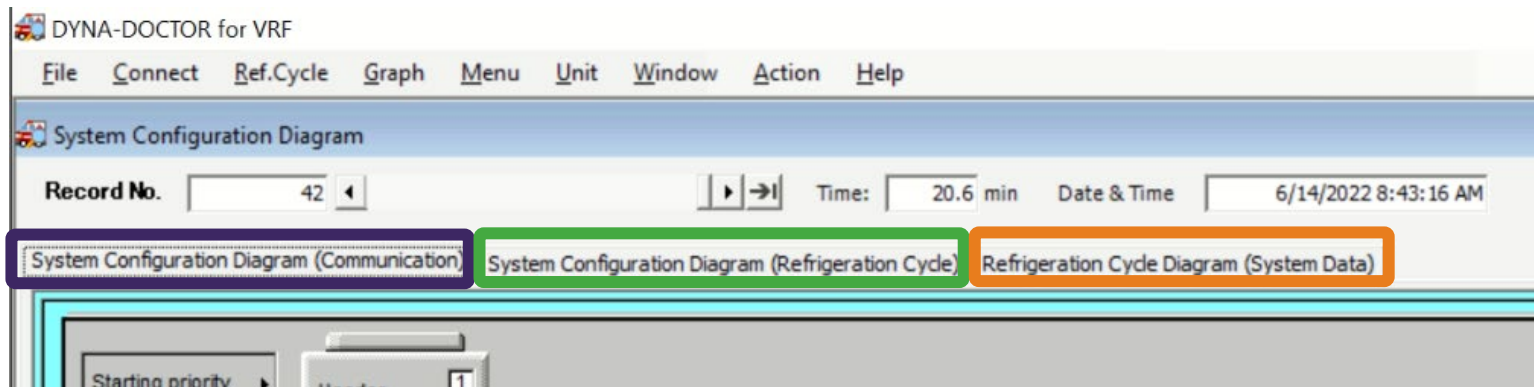
Navigating Dyna-Doctor Software (cont.)

System Configuration Diagram window



The “System Configuration Diagram (Communication)” can be used to check the indoor/outdoor unit connection or operation status.

The “System Configuration Diagram (Refrigeration Cycle)” tab in the system configuration diagram window to display a refrigerant cycle diagram for the whole system.



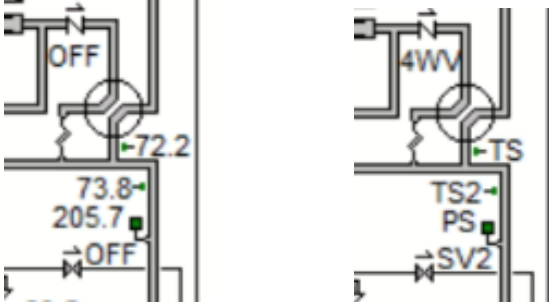
Select “Refrigerant Cycle Diagram (System Data)” to display a refrigerant cycle diagram for each air conditioner currently connected or being browsed can be displayed.

Toshiba Carrier Dyna-Doctor Software Navigation

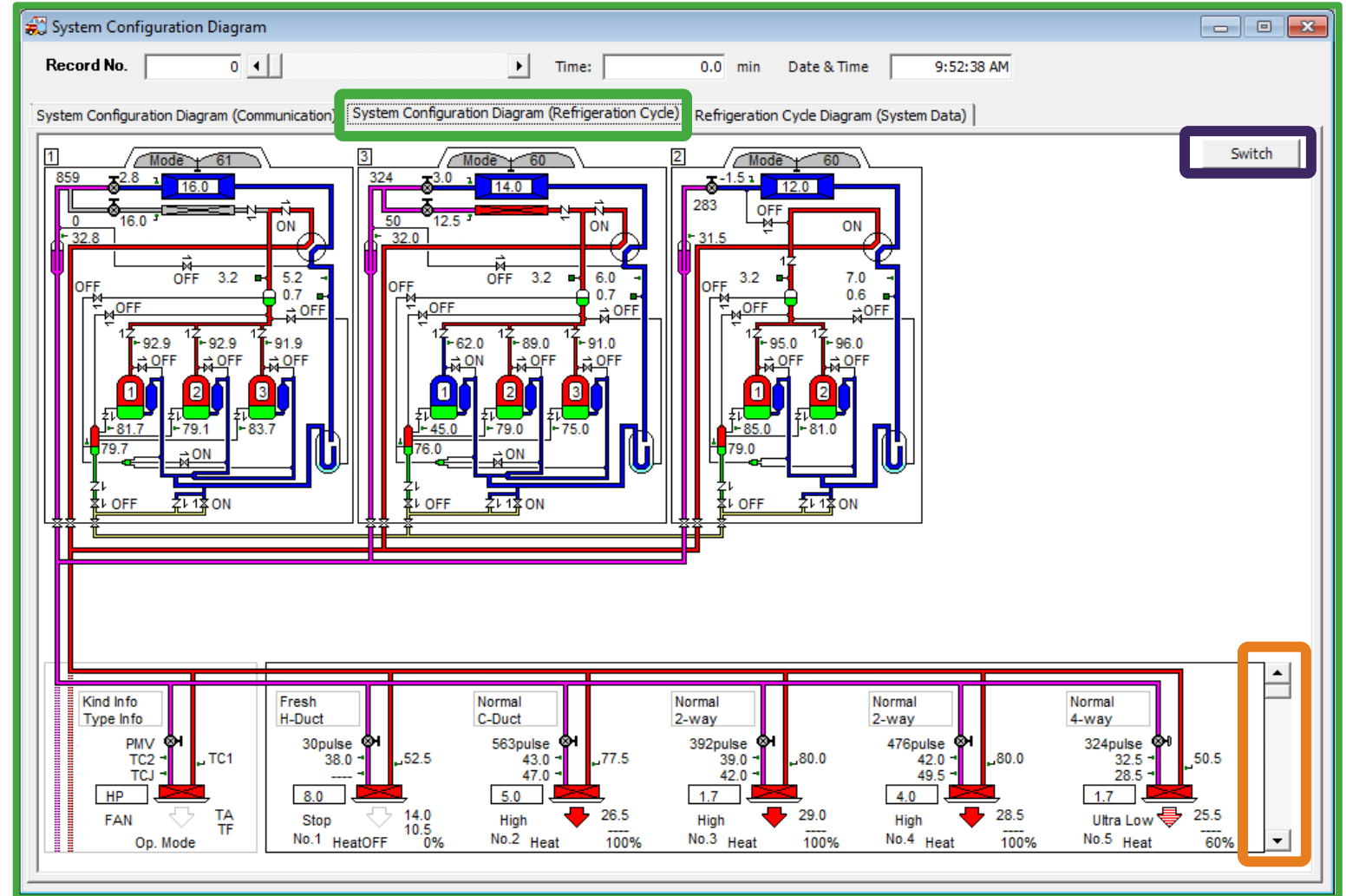
Navigating Dyna-Doctor Software (cont.)

System Configuration Diagram (Refrigeration Cycle) window

- The “Switch” button will toggle between the component’s value and it’s name.

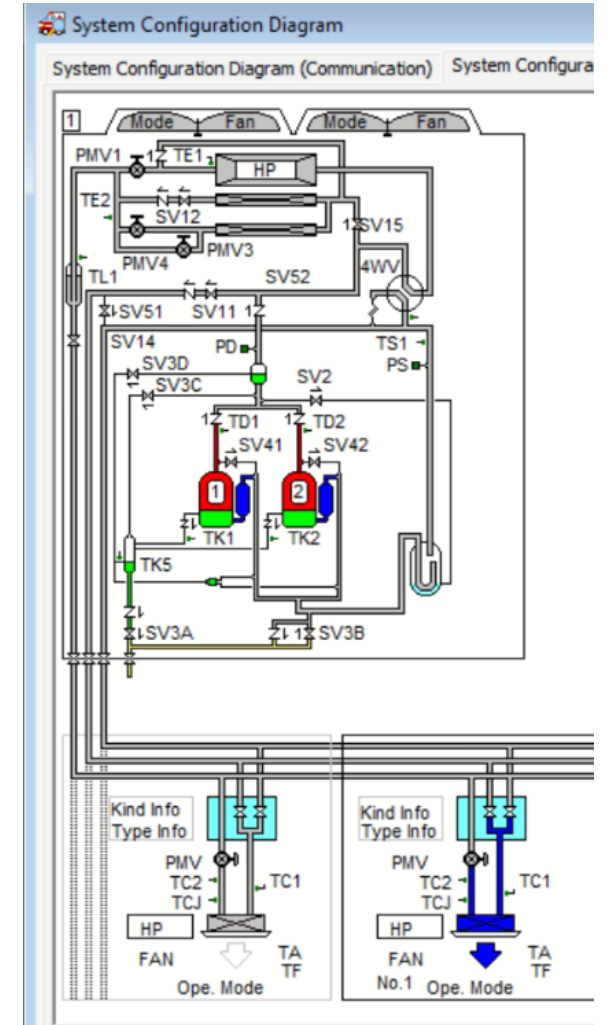


- Use the scroll arrows (located bottom right) to cycle through the indoor units.



Navigating Dyna-Doctor Software (cont.)

- When the system is operating, the diagram will tell you status, temperatures and pressure values.
- The indoor unit values: PMV, fan, mode, temperature values (coil split) can be seen.
- Note: When the Compressors are Blue they are OFF, when they are Red they are ON.

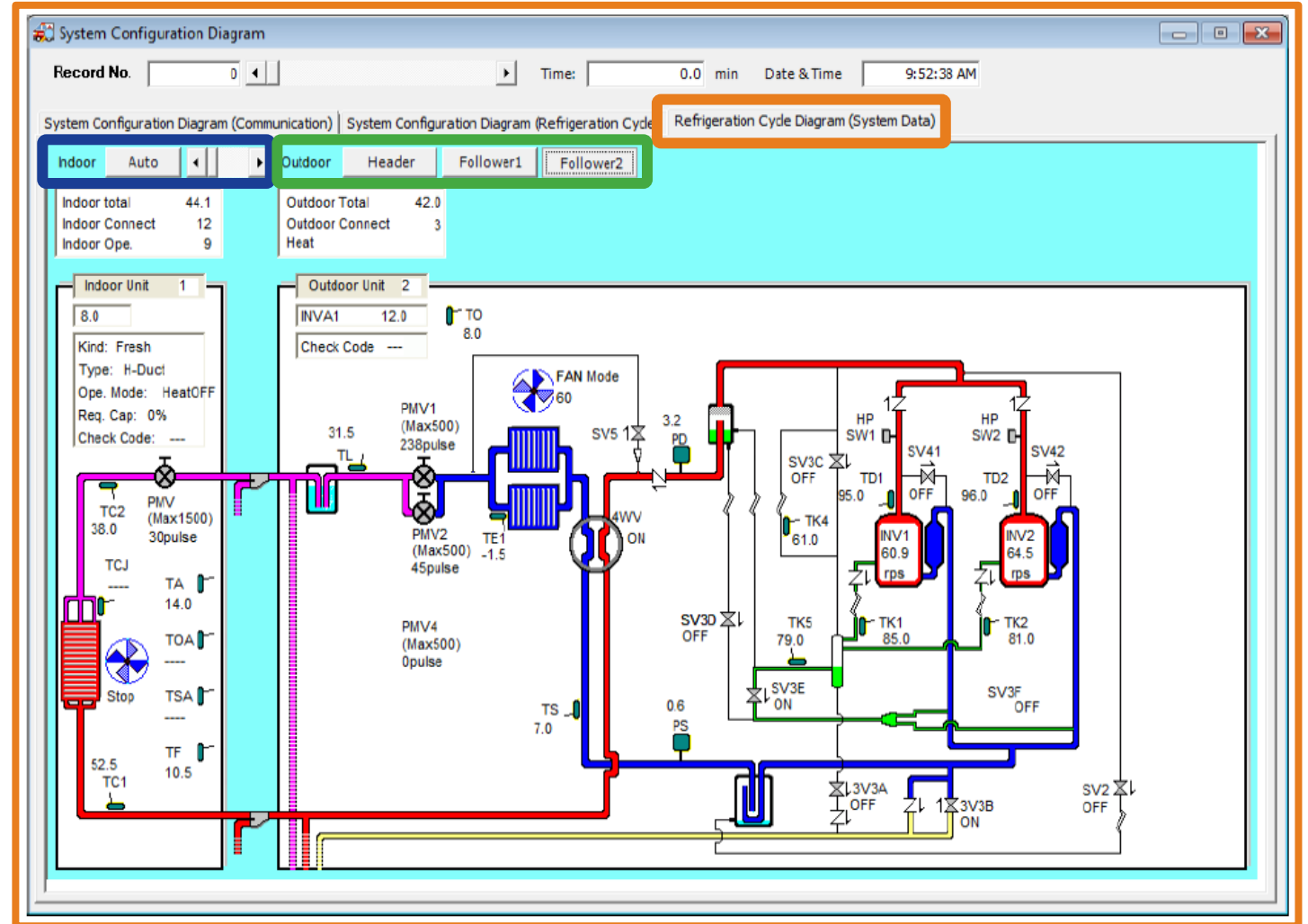


Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

System Configuration Diagram (System Data) window

- The view is defaulted to “Auto” mode the indoor unit values change once a second.
- If “Fixed” is selected mode the unit being viewed can be changed using the Indoor unit scroll bar, to the right of the “Auto/Fixed” button.
- The Outdoor unit being displayed can also be changed, if systems has more then one module. Click the “Header”, “Follower 1”, and “Follower 2’ buttons to choose an outdoor unit to be displayed.

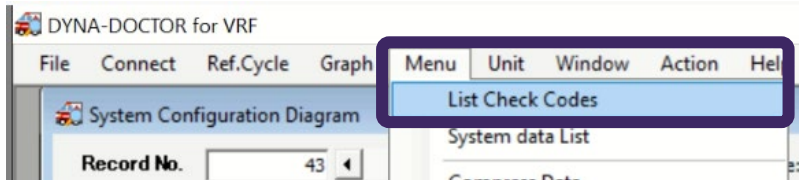


Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

List of System (Error) Codes

- Go to “Menu”, then click “List System Codes”



- Check Codes are broken down by Operating Element, Determining Method and what to Check.

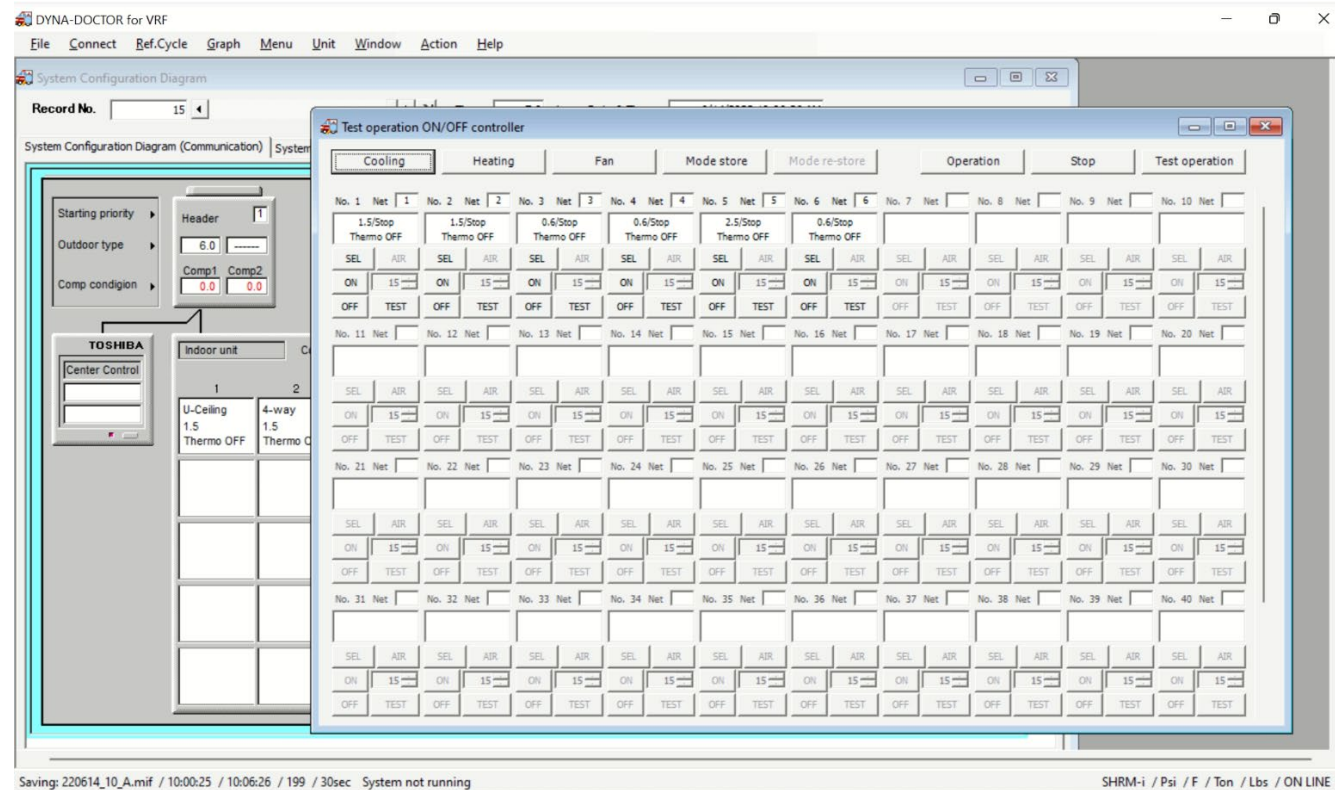
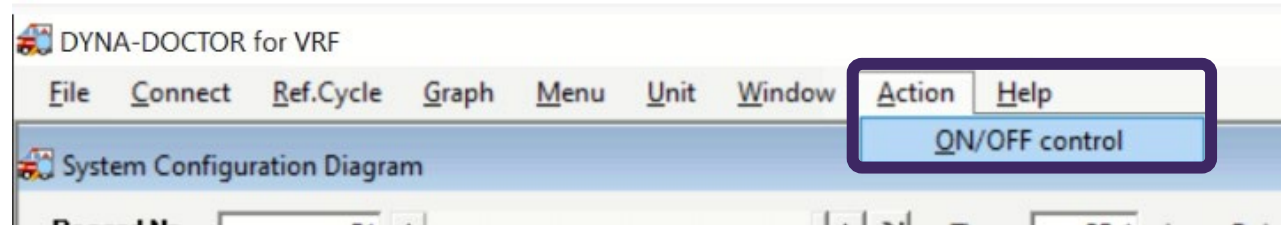
List of Check Codes			Detailed Information	
Check code	Detecting	Operating Element	Check Code	A01
A01	Indoor (M-HW)	Flow switch operation trouble	Operating Element	Flow switch operation trouble
A02	Indoor (M-HW)	Water temperature decrease	Determining Method	When water flow rate is reduced.
A04	Indoor (M-HW)	Activation of water heat exchanger frost protection		
A05	Indoor (H-HW)	Activation of water High-temperature protection	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A06	Indoor (H-HW)	Activation of low-pressure protection		
A07	Indoor (H-HW)	PMV2 trouble	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A08	Indoor (H-HW)	Reversal of inlet water temperature and outlet water temperature.		
A09	Indoor (H-HW)	Mixed refrigerant	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A10	Indoor (H-HW)	TD/TE/TS sensor trouble		
A11	Indoor (H-HW)	TD/TE/TS sensor connection trouble	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A12	Indoor (H-HW)	Pressure sensor error (PD, PS)		
A13	Indoor (H-HW)	EEPROM (I/F) trouble	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A14	Indoor (H-HW)	Heat sink overheat trouble		
A15	Indoor (H-HW)	IGBT short-circuit protection trouble	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A16	Indoor (H-HW)	Current detection circuit system trouble		
A17	Indoor (H-HW)	Compressor trouble (lock)	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A18	Indoor (H-HW)	Compressor breakdown		
A19	Indoor (H-HW)	Compressor position detection circuit system trouble	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A21	Indoor (H-HW)	Inverter DC voltage (Vdc) trouble (compressor)		
A22	Indoor (H-HW)	Compressor case thermo operation	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A23	Indoor (H-HW)	High-pressure SW system trouble		
A24	Indoor (H-HW)	TH sensor trouble	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A25	Indoor (H-HW)	Discharge temperature TD trouble		
A26	Indoor (H-HW)	Gas leak detection (R134a)	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
A27	Indoor (H-HW)	High-pressure protective operation		
A28	Indoor (H-HW)	H-HWM communication trouble between I/F and IPDU.	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)
E01	Remote contri	Indoor-remote controller communication trouble (detected at remote		
E02	Remote contri	Remote controller transmission trouble	Check Contents	Check the pump. Check the strainer. Check the flow switch. (Type, direction of attachment and point of contact)

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Initiating Test Operation

- Select “Action” then “ON/OFF control”

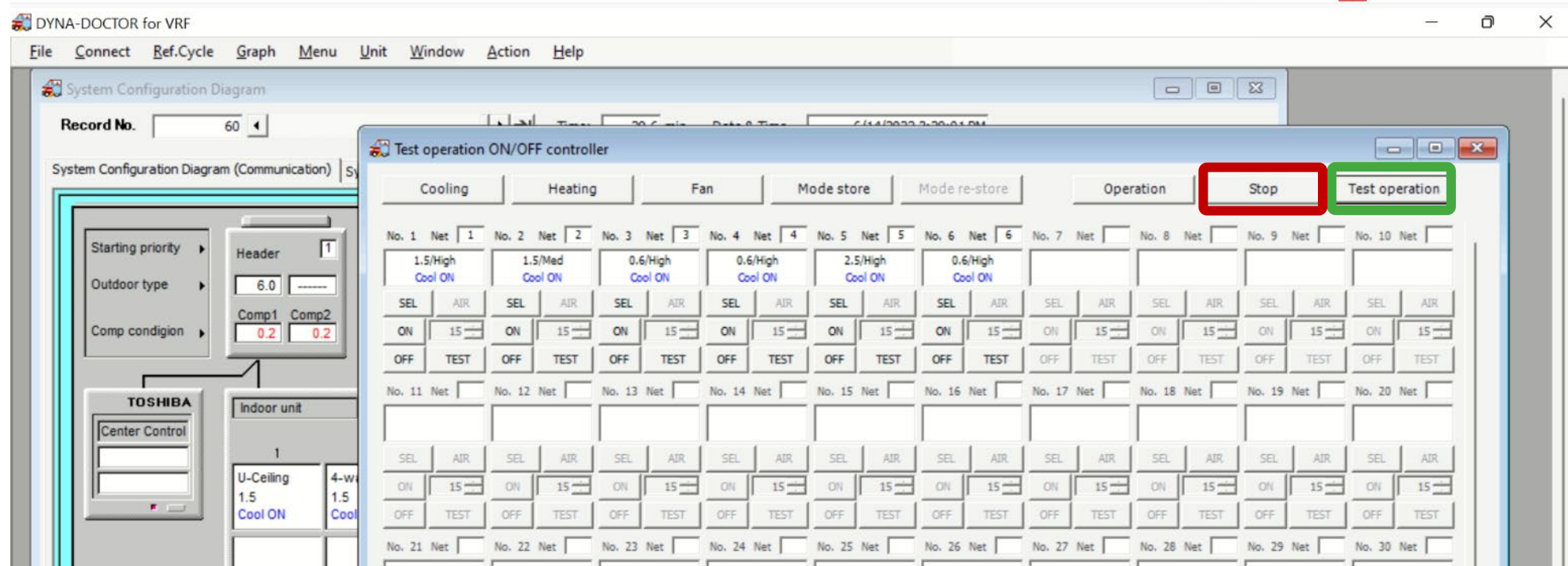


Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Initiating Test Operation

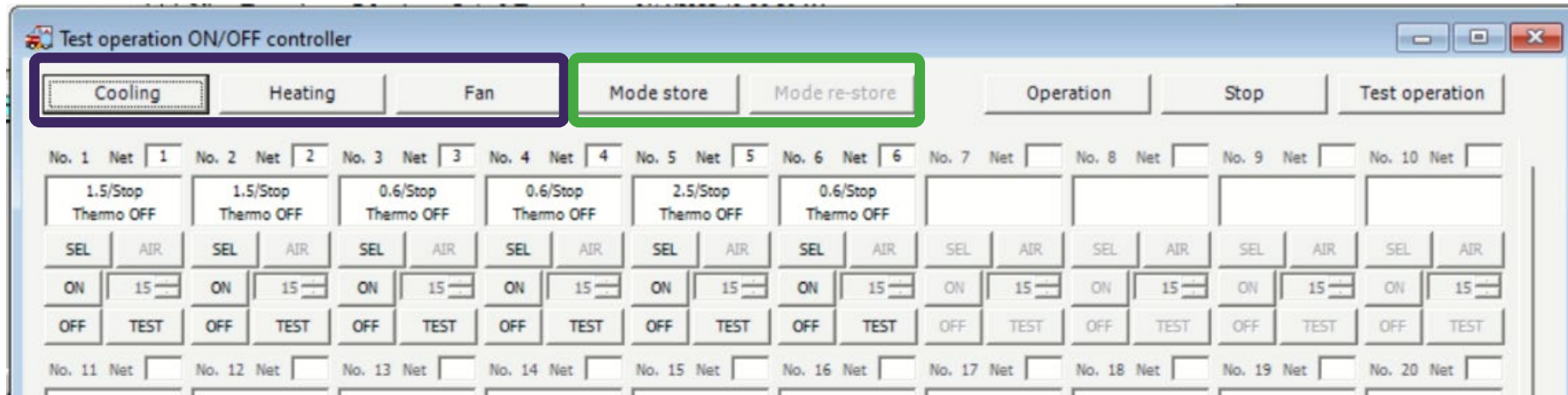
- If recording has not been started we recommend starting it before the test.
- Click “Test operation”. Within 5 to 20 seconds the IDU’s status will change and the test will start.
- Test Operation last about 1 hour.
- Once complete, the system will go back to what it was set at prior to the test.
- If you need to exit the test, click “Stop”.



Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

“Cooling”, “Heating” and “Fan” mode can also be selected from this window.



“Mode store” & “Mode re-store” can be used to first clicking “Mode store” prior to you making any changes to the operation using Dyna-Doctor. Once you are done simply click “Mode re-store” and the system should revert to the setting before you made any changes.

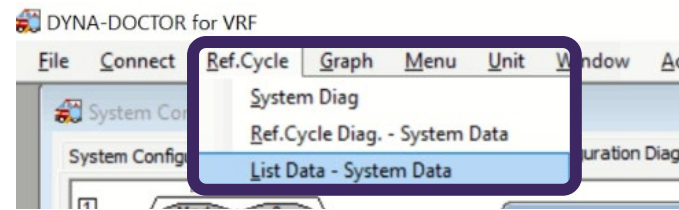
Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

List Data - System Data (2 views)

View 1 – Outdoor Units

Outdoor data is on the left, Indoor data is in the middle and System data is on the right. Scrolling may be required to see all available information.

A screenshot of the 'System data table' window in Dyna-Doctor. The window has a title bar 'System data table' and a record number '8'. It contains three main data columns: 'Outdoor', 'Indoor', and 'System Data'. The 'Outdoor' column is highlighted with a green border, the 'Indoor' column with an orange border, and the 'System Data' column with a red border. The 'Outdoor' column lists various parameters like Outdoor Unit kBTu, Starting Priority, Comp(1) Hz, etc. The 'Indoor' column lists parameters like Adr Cycle, No. NET, kBTu, Ope. Mode, Cap. Req, PMV Open, etc. The 'System Data' column lists parameters like Line Address, Refrigerant, Capacity Control, etc. There are also summary statistics at the bottom of the 'Indoor' and 'System Data' columns.

Outdoor				Indoor						System Data	
	Header	Follower 1	Follower 2	Adr Cycle	No. NET	kBTu	Ope. Mode	Cap. Req	PMV Open	Line Address	
Outdoor Unit kBTu	0.0			1	1	18.0	Cool	100%	358	Refrigerant	R410A
Starting Priority	1			2	2	18.0	Cool	100%	150	Capacity Control	100%
Comp(1) Hz	61.2			3	3	7.5	Cool	100%	524	Oil Recovery(Cool)	.
Comp(2) Hz	57.6			4	4	7.5	Cool	100%	528	Oil Recovery(Heat)	.
Outdoor Unit FanMode	37			5	5	30.0	Cool	60%	328	Cooling Start	.
4way Valve	OFF			6	6	7.5	Cool	100%	364	Heating Start	.
Pd:High Pressure	349.5										
Ps:Low Pressure	93.0										
TD1:Discharge Temp	188.1										
TD2:Discharge Temp	186.3										
TE:Heat Exchanger Temp	101.8										
TE2:Heat Exchanger Temp2	84.2										
TL:Liquid pipe Temp	95.7										
TG:High Pressure Temp	105.8										
PMV1	620										
PMV3	0										
PMV4	0										
SV11	OFF										
SV12	OFF										
SV14	OFF										
SV15	OFF										
SV2	OFF										
IndoorTotal kBTu	88.5			Total Ope.						Stop Keep Timer	0
Total Cap.	86.4%			Total Connect						On time From start	00:45:08

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

List Data - System Data (2 views)

View 1 – Check (Error) Code

If Check Code is displayed, click on the code to bring up more detailed information on error.

List of Check Codes

Check code	Detecting	Operating Element
E02	Remote contr	Remote controller transmission trouble
E03	Indoor	Indoor-remote controller communication trouble
E04	Indoor	Indoor-outdoor communication circuit trouble
E06	I/F	Signal lack of indoor unit
E07	I/F	Indoor-outdoor communication circuit trouble
E08	Indoor I/F	Duplicated indoor address
E09	Remote contr	Duplicated master remote controller
E10	Indoor	Indoor inter-MCU communication trouble
E11	Indoor	Communication trouble between indoor P.C. board and indoor P.C. board
E12-**	I/F	Automatic address starting trouble
E13	DDC(0-10V) in	Indoor (DX) P.C. board - DDC(0-10V) interface P.C. board communication trouble
E14	Indoor (DX)	Indoor (DX) P.C. board - DDC(0-10V) interface P.C. board communication trouble
E15	I/F	Indoor unit not found during automatic address setting
E16-**	I/F	Too many indoor units connected
E17	Indoor	Indoor unit(s) -FS unit(s) communication trouble
E18	Indoor	Trouble in communication between indoor header and follower units
E19-**	I/F	Trouble in number of outdoor header units
E20-**	I/F	Connection to other line found during automatic address setting
E23	I/F	Outdoor-outdoor communication transmission trouble
E25	I/F	Duplicated follower outdoor address
E26	I/F	Signal lack of outdoor unit
E28	I/F	Outdoor follower unit trouble
E31-**	I/F	IPDU communication trouble
E31-80	I/F	Communication trouble between MCU and Sub MCU
F01	Indoor	Indoor TCJ sensor trouble
F02	Indoor	Indoor TC2 sensor trouble
F03	Indoor	Indoor TC1 sensor trouble
F04	I/F	TD1 sensor trouble

Detailed Information

Check Code

E03

Operating Element

Indoor-remote controller communication trouble

Determining Method

There is no communication from remote controller (including wireless) or network adaptor.

Check Contents

Check remote controller and network adaptor wiring.

System data table

View1 | View2

Outdoor		
	Header	Follower 1
TO:Outdoor Air Temp	69.8	
TK1:Oil Temp1	72.6	
TK2:Oil Temp2	72.6	
TK3:Oil Temp3	----	
TK4:Oil Temp4	71.8	
...		
Check Code	E-03	
...	...	
Comp Forced	[0] [0] [-]	
...	...	

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

List Data - System Data (2 views)

View 2 – Indoor Units

Detailed operational data can be seen for each indoor unit. Scroll to the right for more.

DYNA-DOCTOR for VRF

FileConnectRef.CycleGraphMenuUnitWindowAc

System Diag
Ref.Cycle Diag. - System Data
List Data - System Data

System data table

Record No. 29Time: 14.5 minDate & Time 6/13/2022 1:38:28 PM

View1View2

Indoor

Adr Cycle	No. NET	Kind	Type	kBtu	Ope. Mode	Requirement Capacity	Fan Mode	PMV	TC1	TC2	TC3	Room temp			TF	Indoor unit error code	Sv
												TA	TOA	TSA			
1	1	Normal	U-Ceiling	18.0	Cool	100%	High	358	47.3	51.8	37.4	76.1	----	----	----	----	OFF
2	2	Normal	4-way	18.0	Cool	100%	Med	150	52.7	34.7	32.9	73.4	----	----	----	----	OFF
3	3	Normal	Compact	7.5	Cool	100%	High	524	46.4	42.8	35.6	68.0	----	----	----	----	OFF
4	4	Normal	S-Duct	7.5	Cool	100%	High	528	48.2	55.4	39.2	77.9	----	----	----	----	OFF
5	5	Normal	H-Duct	30.0	Cool	70%	High	338	61.7	38.3	36.5	68.9	----	----	----	----	OFF
6	6	Normal	F-Cabinet	7.5	Cool	100%	High	368	47.3	41.9	36.5	81.5	----	----	----	----	OFF

Outdoor

Pd:High Pressure	352.3	TG:High Pressure Temp	105.8	TO:Outdoor Air Temp	73.0	Oil Recovery(Cool)	0	Stop Keep Timer	0sec
Ps:Low Pressure	93.0	TU:Low Pressure Temp	26.6	Defrost	-	Oil Recovery(Heat)	0	On time From start	00:56:08

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

List Data - System Data (2 views)

View 2 – Check (Error) Code

If Check Code is displayed, click on the code to bring up more detailed information on error.

The screenshot displays two windows from the Toshiba Carrier Dyna-Doctor software. The top window, titled 'System data table', shows a table of system data with columns for Record No., Time, Date & Time, and various sensor readings. A red box highlights the 'Indoor unit error code' column, which shows 'P-10'. The bottom window, titled 'List of Check Codes', shows a table of check codes with columns for Check code, Detecting, and Operating Element. The 'P10' code is highlighted, and a detailed information panel on the right shows the error description: 'Indoor overflow trouble (Safety contact)*'. Below this, the 'Check Contents' section provides a list of troubleshooting steps: 'Check float switch connector.', 'Check operation of drain pump.', 'Check drain pump circuit.', 'Check drain pipe for clogging.', 'Check for trouble in indoor P.C. board. (Check outside device trouble.)*', 'Check the terminal [C5] & [C6] are closed.)*', 'Check connector CN34)*', and 'Check for trouble in indoor P.C. board.)*'. A note at the bottom states '*:For DX COIL unit.'

Record No.	Time	Date & Time	Indoor unit error code
29	14.5 min	6/13/2022 1:38:28 PM	P-10

Check code	Detecting	Operating Element
P05-00	I/F	Detection of open phase/phase sequence
P05-**	I/F,IPDU	Inverter DC voltage (Vdc) trouble (compressor) MG-CTT trouble
P07-**	I/F,IPDU	Heat sink overheating trouble
P10	Indoor	Indoor overflow trouble (Safety contact)*
P12	Indoor	Indoor fan motor trouble
P13	I/F	Outdoor liquid backflow detection trouble
P15-01	I/F	Gas leak detection (TS1 condition)
P15-02	I/F	Gas leak detection (TD condition)
P17	I/F	Discharge temperature TD2 trouble
P18	I/F	Discharge temperature TD3 trouble
P19	I/F	4-way valve reversing trouble
P20	I/F	Activation of high-pressure protection
P22-#0	IPDU	Outdoor fan IPDU trouble
P22-#1	IPDU	Outdoor fan IPDU trouble
P22-#3	IPDU	Outdoor fan IPDU trouble
P22-#4	IPDU	Outdoor fan IPDU trouble
P22-#C	IPDU	Outdoor fan IPDU trouble
P22-#D	IPDU	Outdoor fan IPDU trouble
P22-#E	IPDU	Outdoor fan IPDU trouble
P26	IPDU	IGBT/IPM shortcircuit protection trouble
P29	IPDU	Compressor position detection circuit trouble
P31	Indoor	Other indoor trouble (group follower unit trouble)
C05	TCC-LINK	TCC-LINK central control device transmission trouble
C06	TCC-LINK	TCC-LINK central control device reception trouble
C12	General-purpo	Batch alarm for general-purpose device control interface
P30	TCC-LINK	Duplicated central control address
P30	TCC-LINK	Group control follower unit trouble

Detailed Information

Check Code: P10

Operating Element: Indoor overflow trouble (Safety contact)*

Determining Method: Float switch activated. Float switch circuit is open-circuited or disconnected at connector. (Outside trouble input terminal signal was input to (CN34).)*

Check Contents: Check float switch connector. Check operation of drain pump. Check drain pump circuit. Check drain pipe for clogging. Check for trouble in indoor P.C. board. (Check outside device trouble.)* (Check the terminal [C5] & [C6] are closed.)* (Check connector CN34)* (Check for trouble in indoor P.C. board.)*

*:For DX COIL unit.

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

List Data - System Data (2 views)

View 2 – Flow Selector Box Values

If Heat Recovery system, operational data can be seen for the Flow Selector Units.

Scroll window to the right for this information.

System data table

Record No. 29Time: 14.5 minDate & Time 6/13/2022 1:38:28 PM

View1View2

Indoor

Adr Cycle	TC2	TCJ	Room temp			TF	Indoor unit error code	SVD	SVS	SVDD	SVSS	W_Pump	Heater	Valve	Comp	Pd	Ps	TD
			TA	TOA	TSA													
1	51.8	37.4	76.1	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
2	34.7	32.9	73.4	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
3	42.8	35.6	68.0	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
4	55.4	39.2	77.9	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
5	38.3	36.5	68.9	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
6	41.9	36.5	81.5	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----

Outdoor

Pd:High Pressure	352.3	TG:High Pressure Temp	105.8	TO:Outdoor Air Temp	73.0	Oil Recovery(Cool)	0	Stop Keep Timer	0sec
Ps:Low Pressure	93.0	TU:Low Pressure Temp	26.6	Defrost	.	Oil Recovery(Heat)	0	On time From start	00:56:08

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

List Data - System Data (2 views)

View 2 – Flow Selector Box Values

System data table

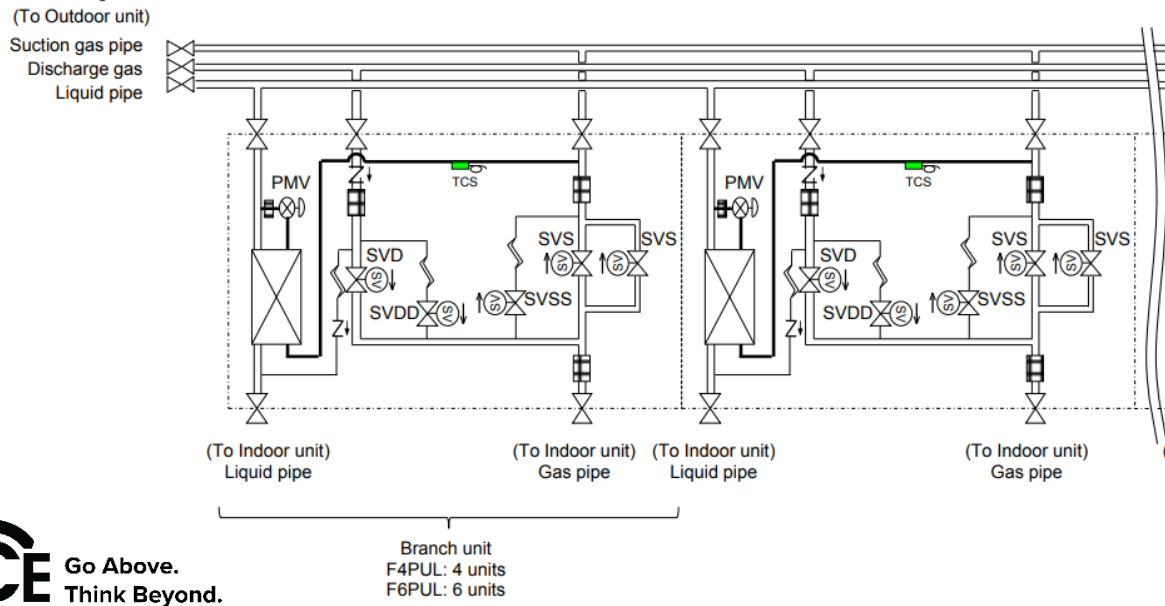
Record No. 29 Time: 14.5 min Date & Time 6/13/2022 1:38:28 PM

View: View2

Adr Cycle	TC2	TCJ	Room temp				Indoor unit error code	SVD	SVS	SVDD	SVSS	W_Pump	Heater	Valve	Comp	Pd	Ps	TD
			TA	TOA	TSA	TF												
1	51.8	37.4	76.1	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
2	34.7	32.9	73.4	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
3	42.8	35.6	68.0	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
4	55.4	39.2	77.9	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
5	38.3	36.5	68.9	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----
6	41.9	36.5	81.5	----	----	----	----	OFF	ON	OFF	ON	----	----	----	----	----	----	----

Use the diagram and table from the Factory Service Manual to help trace and understand refrigerant flow.

Multi port FS unit



Functional parts name		Function outline
Solenoid valve	SVD	(Discharge gas block valve) 1) High-pressure gas circuit at heating operation
	SVS	(Suction gas block valve) 1) Low-pressure gas circuit at cooling operation
	SVDD	(Pressure valve) 1) To increase pressure when No. of indoor heating units are increased
	SVSS	(Regulator valve) 1) To recover refrigerant in the stopped cooling thermostat-OFF indoor unit 2) To decrease pressure when No. of indoor heating units are decreased
Pulse motor valve	PMV	1) Controls flow volume of the double-pipes bypass circuit
Temp. sensor	TCS	(Only Multi port FS unit) 1) Detects refrigerant temp. at outlet of the double-pipes bypass circuit to check an abnormality of PMV

Dyna-Doctor does not show these two values

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Graphing Data

Using a graph to see the data trends can be very useful to spot irregularities in the equipment operation.

- Select “Graph” then “Outdoor Unit – System data”

The screenshot displays the Toshiba Carrier Dyna-Doctor software interface. The main window is titled "Outdoor Unit - System Data" and is highlighted with a blue border. The interface includes a menu bar with options: File, Connect, Ref.Cycle, Graph, Menu, Unit, Window, Action, and Help. The "Graph" menu is open, showing "Outdoor Unit - System Data" as the selected option. The main display area shows a "System Configuration Diagram" with a grid of units. The units are labeled with their type, capacity, and status. The status for units 1 through 5 is "Cool ON", while unit 6 is "Thermo OFF". The units are arranged in a grid with columns for different unit types and rows for different capacities. The status of each unit is displayed in a color-coded box. The interface also includes a "TOSHIBA Center Control" panel on the left and a "Test operation" panel on the right. The status bar at the bottom indicates "Saving: Suspended by an error" and "SHRM-i / Psi / F / Ton / Lbs / ON LINE".

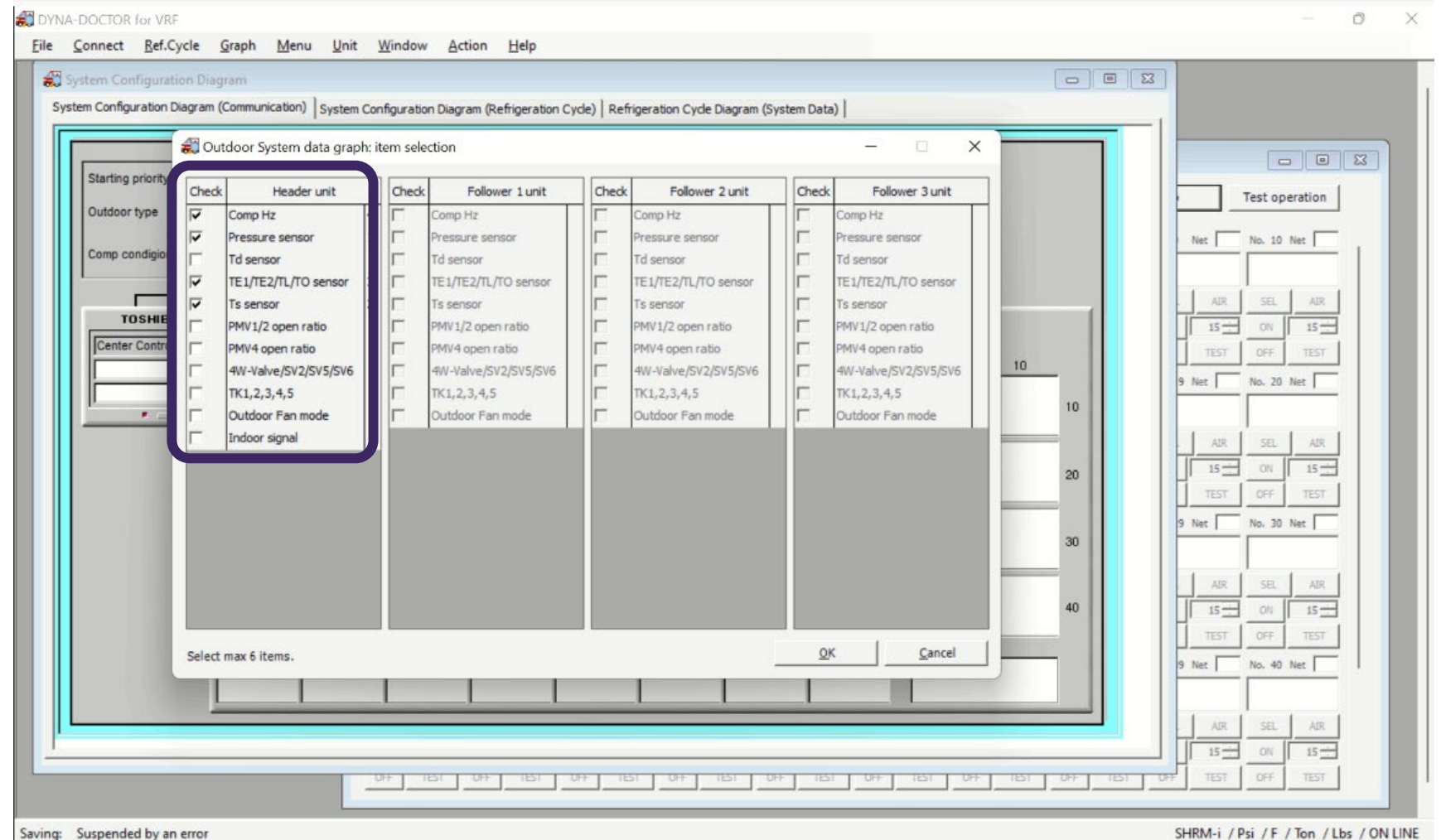
Unit	Type	Capacity	Status
1	U-Ceiling	1.5	Cool ON
2	4-way	1.5	Cool ON
3	Compact	0.6	Cool ON
4	S-Duct	0.6	Cool ON
5	H-Duct	2.5	Cool ON
6	F-Cabinet	0.6	Thermo OFF

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Graphing Data

- Now select the data points you wish to see. Data points can be selected for each outdoor unit in the system up to a four-module system.

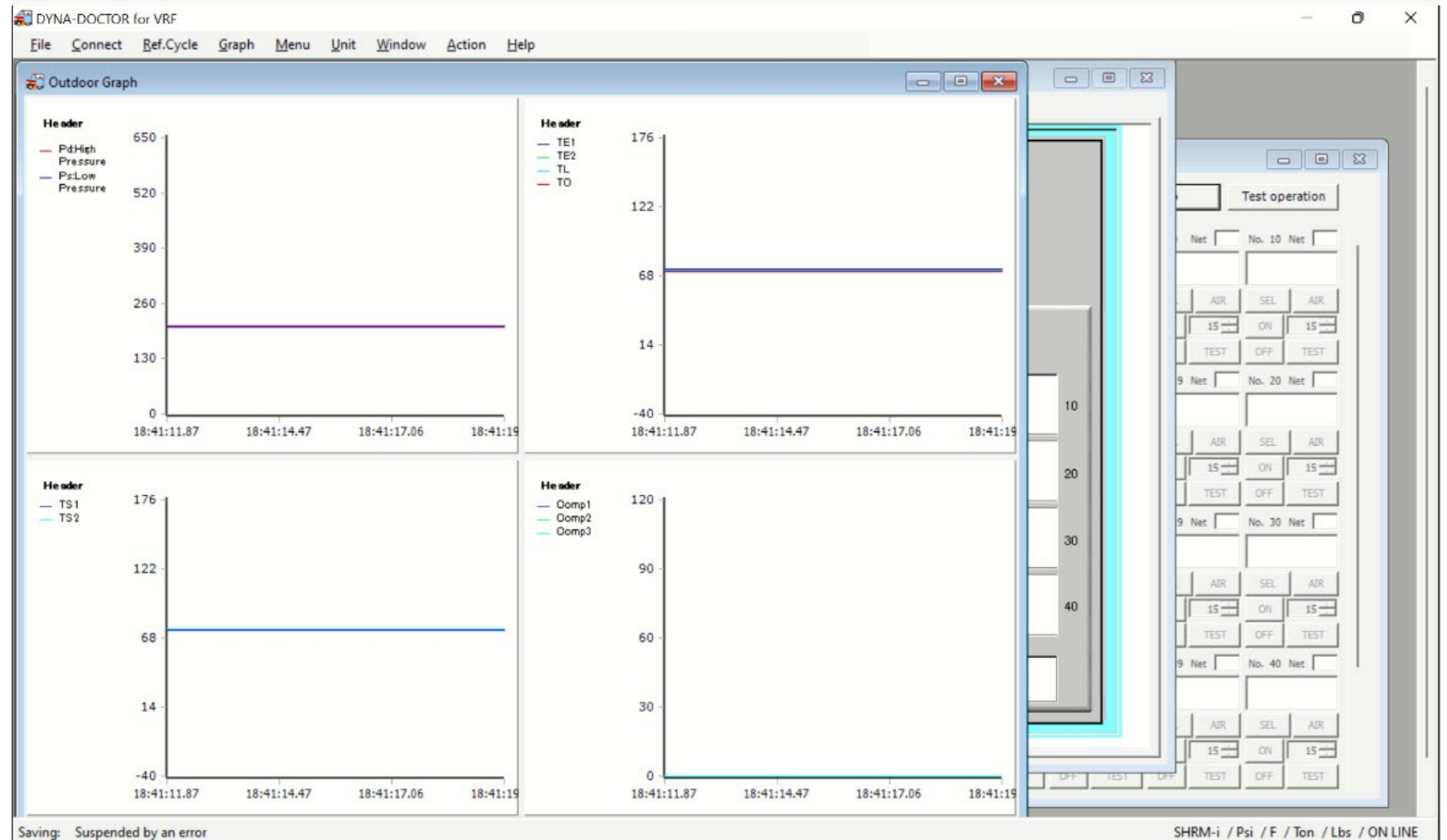


Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Graphing Data

- When viewing a system live, the data points update based on what you selected.
- When viewing a recording of a system, data only updates when manually scrolling through data sets.



Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Graphing Data

The same can be done for the Indoor Units.

- Select “Graph” then “Indoor Unit”

The screenshot displays the DYNADOCTOR for VRF software interface. The 'Graph' menu is open, and 'Indoor Unit' is selected. The main window shows the 'System Configuration Diagram' with a table of indoor units. The table has columns for unit type, capacity, and status. The first row shows units 1 through 10. Units 1 through 5 are 'Cool ON', unit 6 is 'Thermo OFF', and units 7 through 10 are empty. The status bar at the bottom indicates 'Saving: Suspended by an error'.

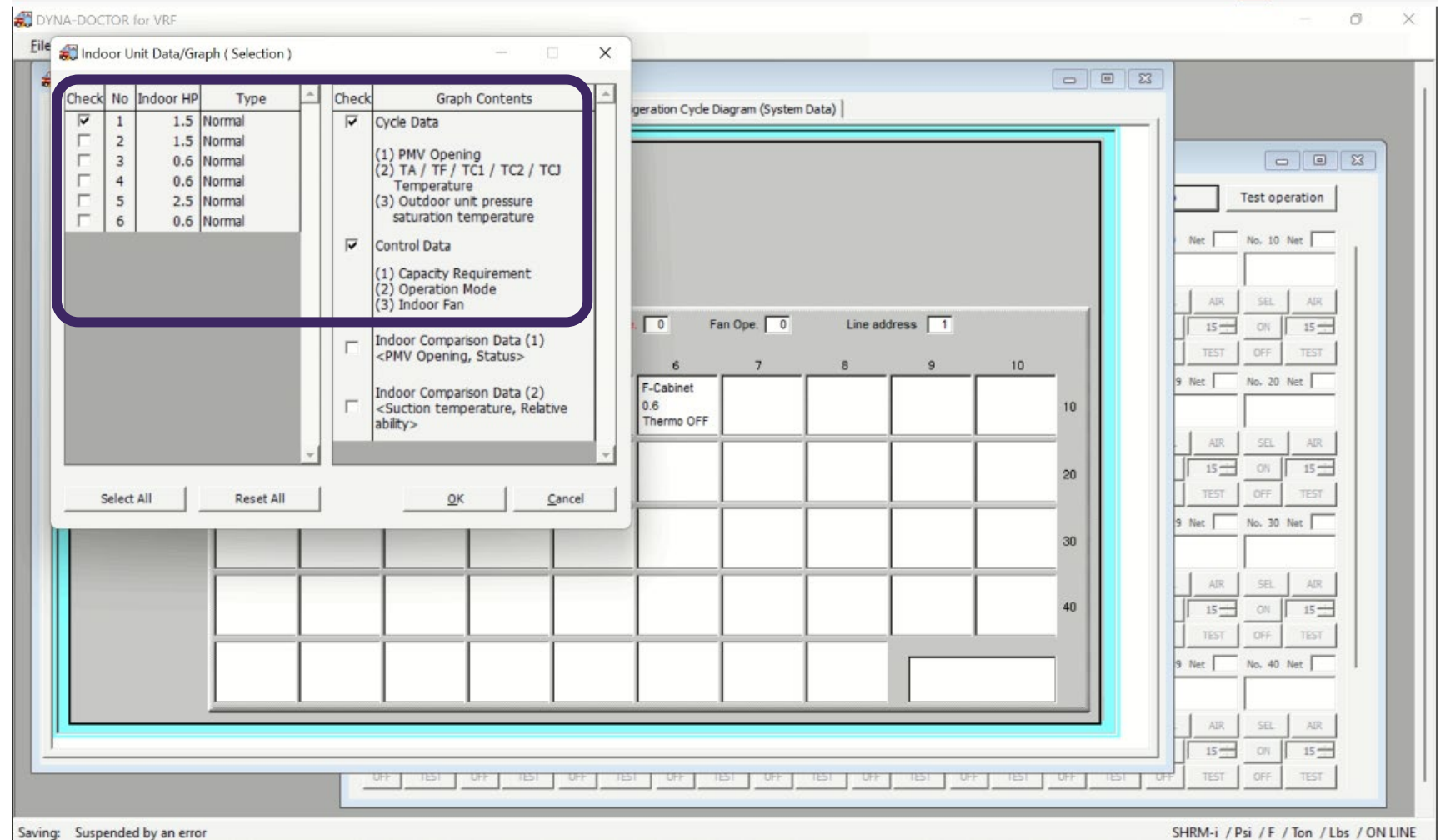
1	2	3	4	5	6	7	8	9	10
U-Ceiling 1.5 Cool ON	4-way 1.5 Cool ON	Compact 0.6 Cool ON	S-Duct 0.6 Cool ON	H-Duct 2.5 Cool ON	F-Cabinet 0.6 Thermo OFF				

Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Graphing Data

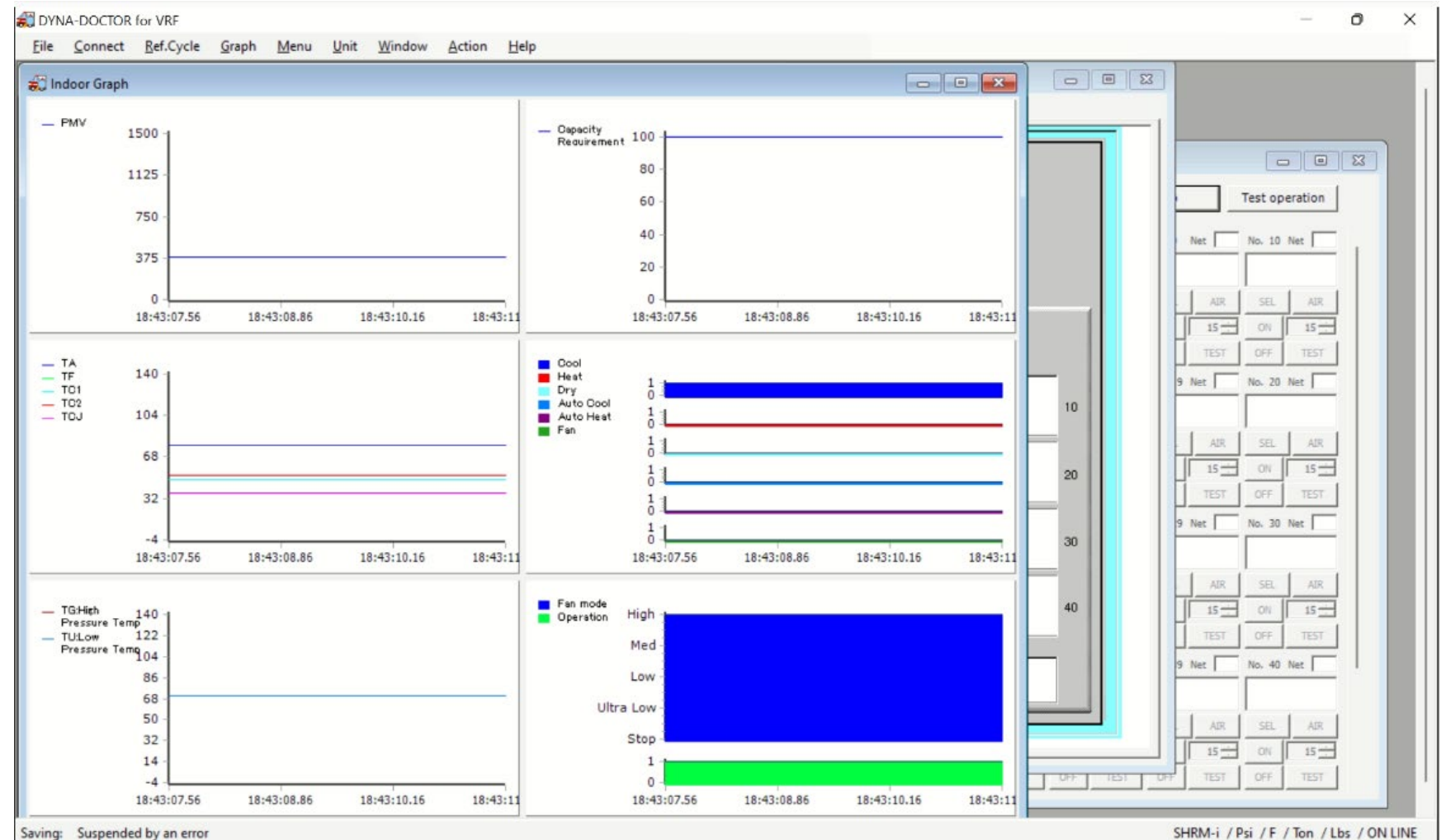
- Now select the Indoor Unit and the data points you wish to see.
- Not all Graph Contents can be seen at one time.
- Cycle Data and Control Data can be selected.



Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Indoor Unit - Cycle Data and Control Data



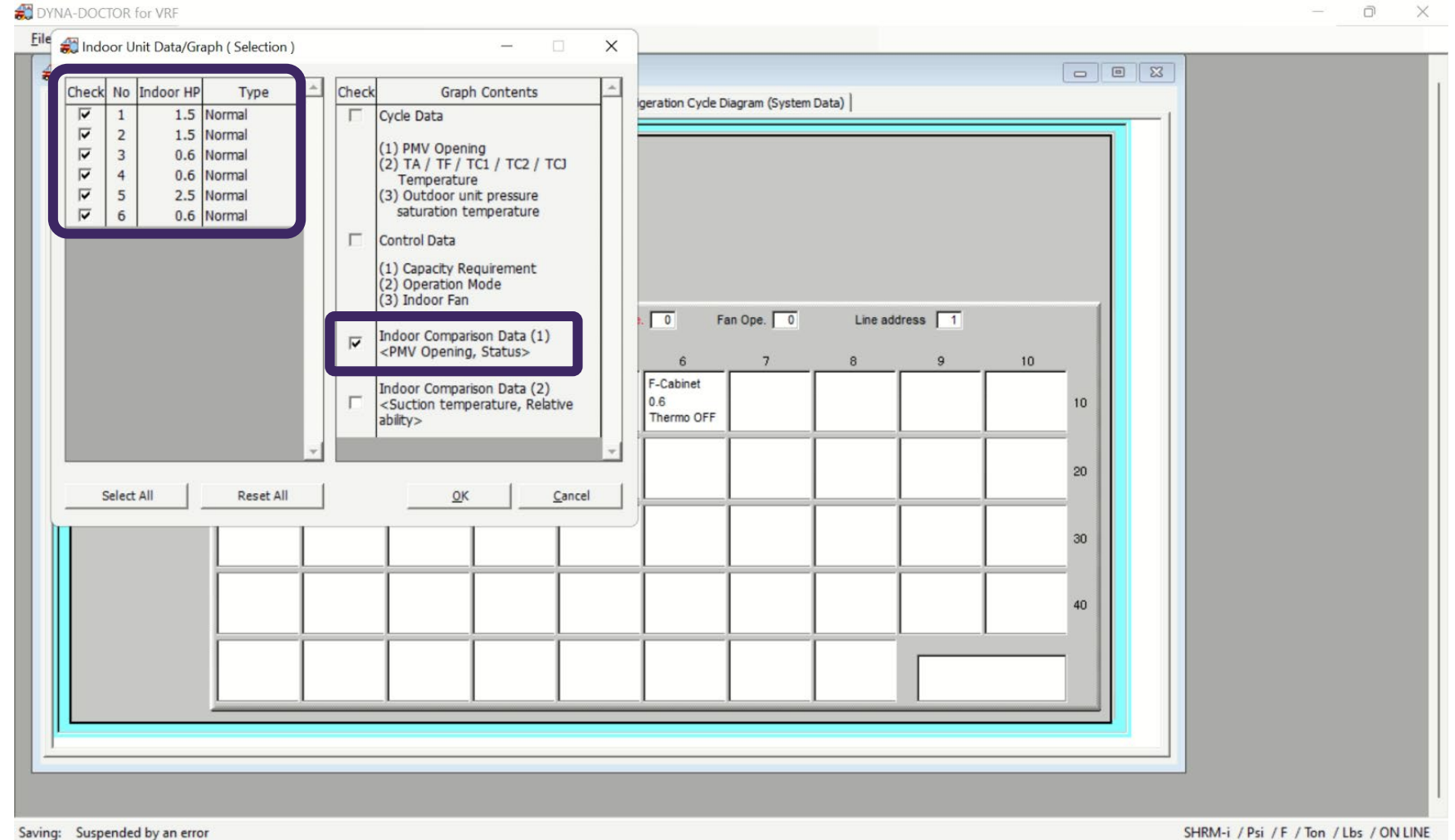
Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Indoor Unit Comparison Data 1

PMV Opening Status

- If you want to compare two or more Indoor Unit's PMVs, select the ones you want to compare and then select "Indoor Comparison Data 1".

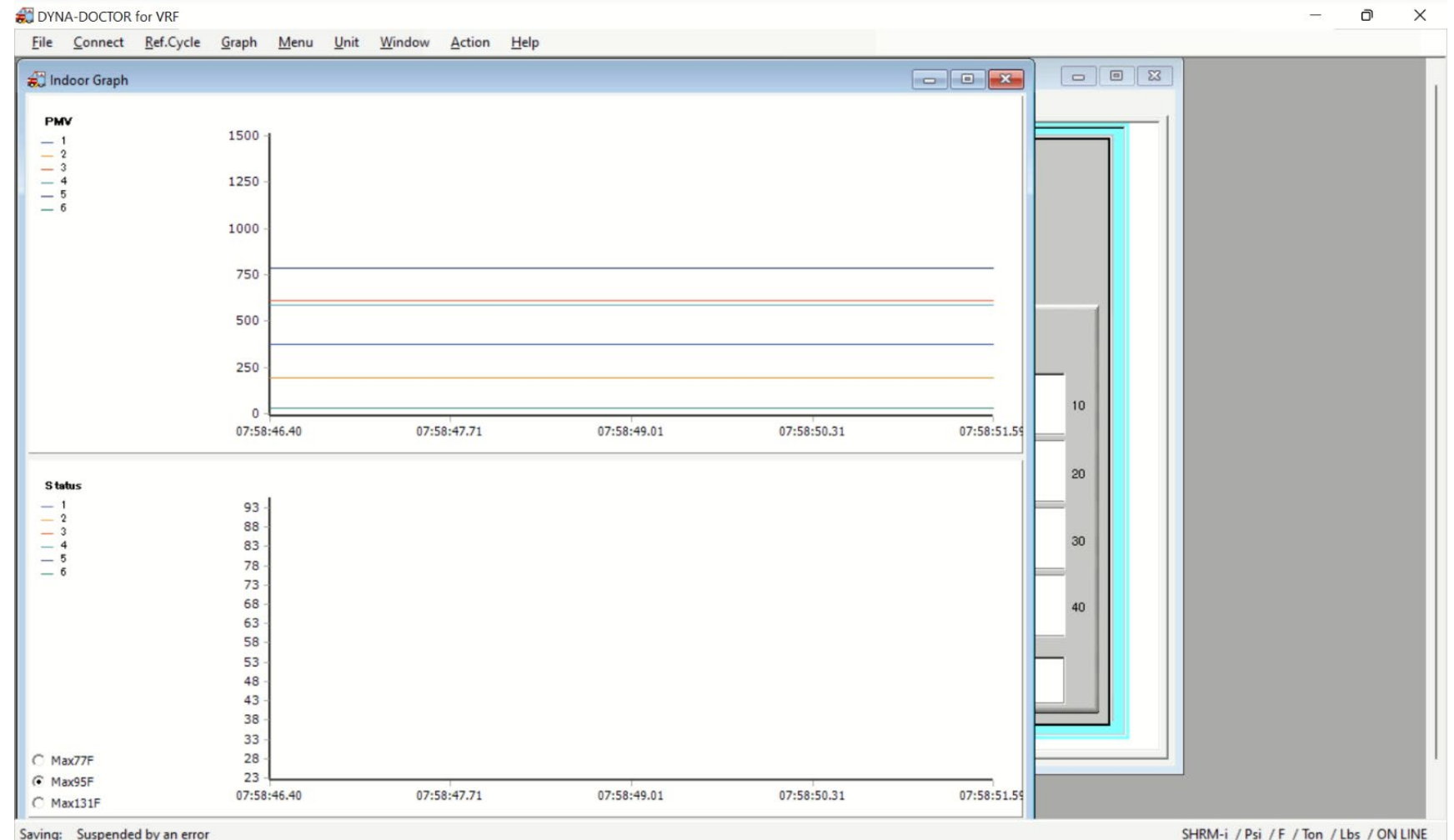


Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Indoor Unit Comparison Data 1

PMV Opening Status



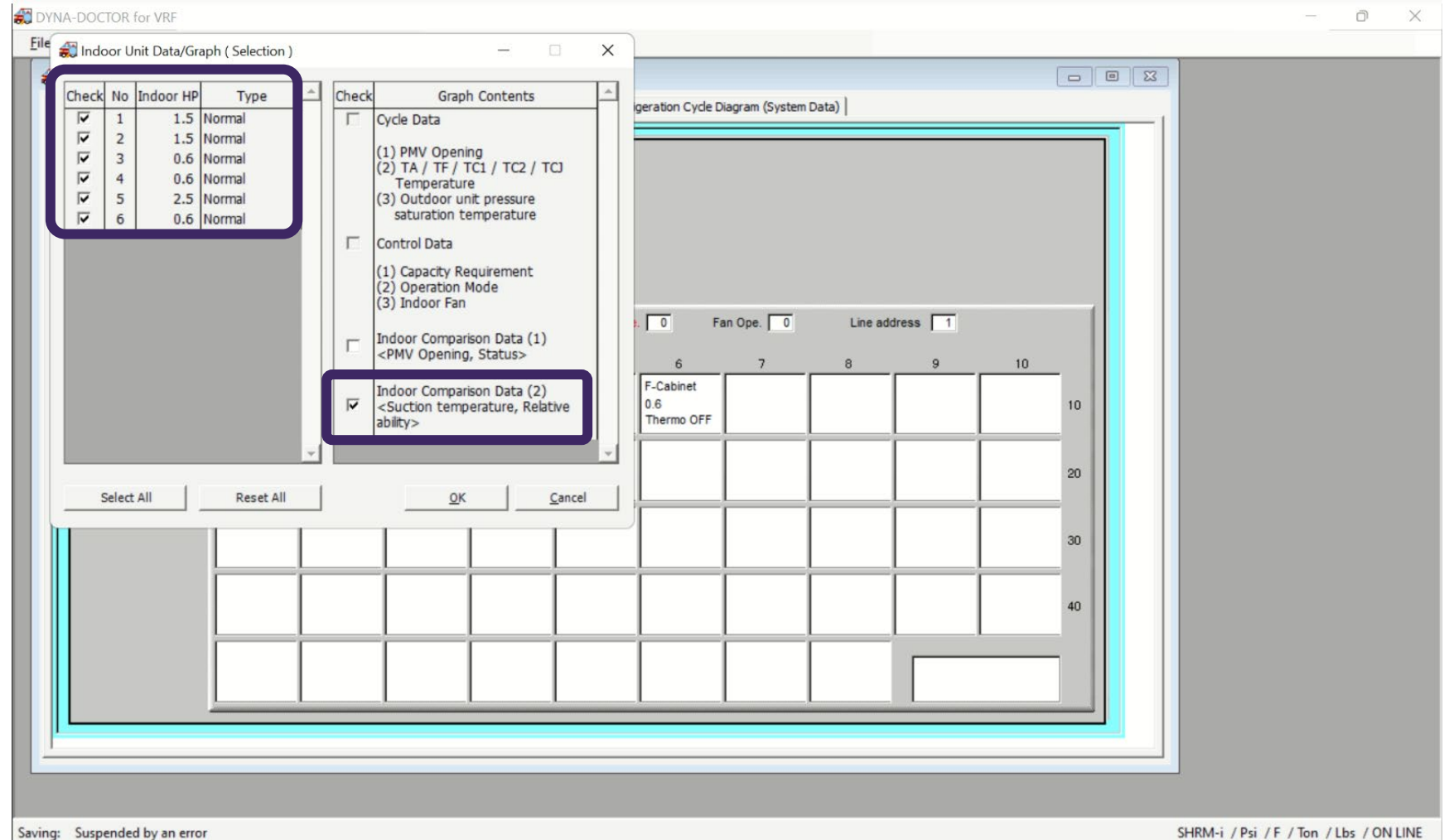
Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Indoor Unit Comparison Data 2

Suction Temp, Relative Ability

- If you want to compare two or more Indoor Unit's Suction Temp, Relative Ability (capacity), select the ones you want to compare and then select "Indoor Comparison Data 2".

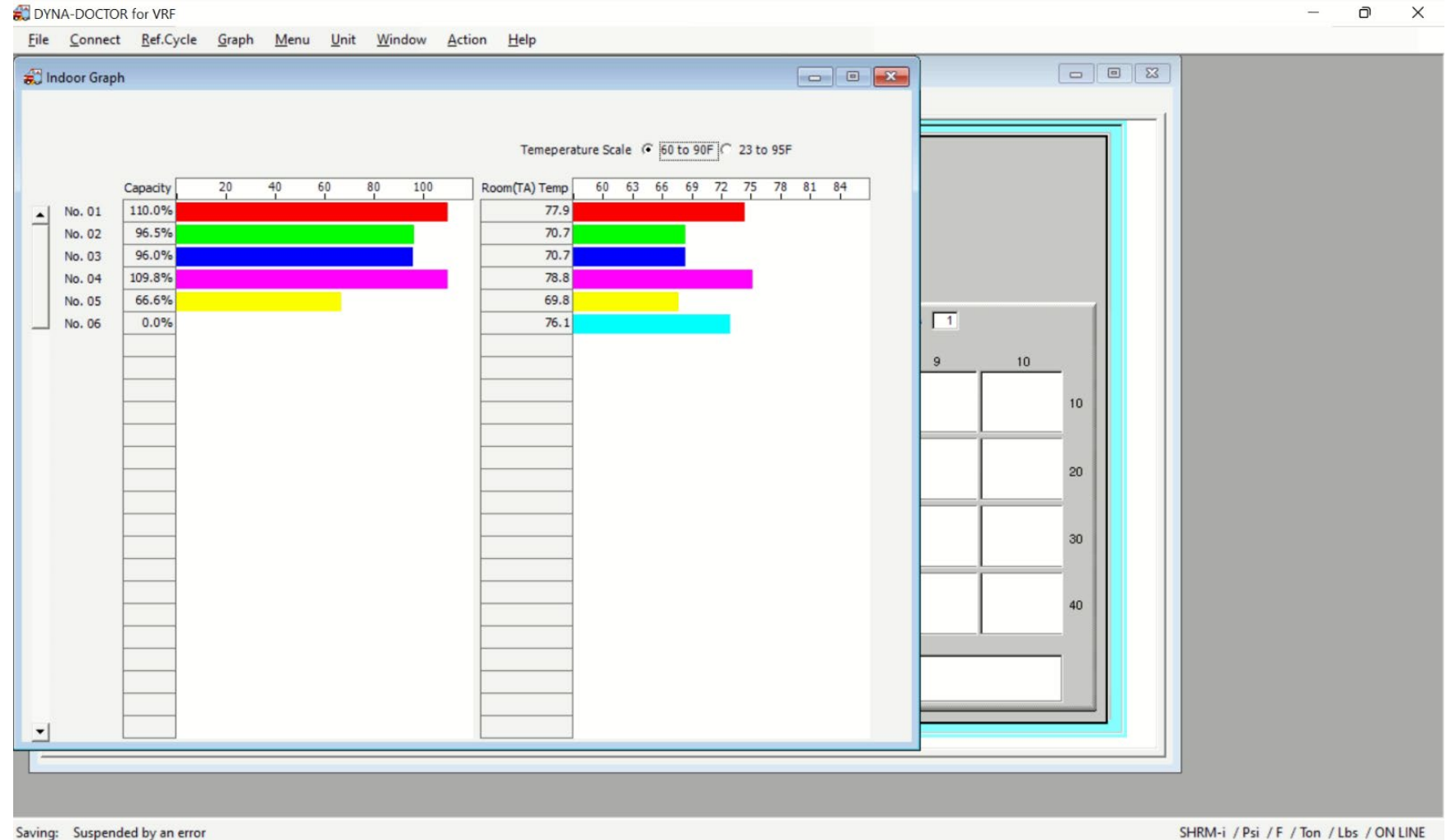


Toshiba Carrier Dyna-Doctor Software Navigation

Navigating Dyna-Doctor Software (cont.)

Indoor Unit Comparison Data 2

Suction Temp, Relative Ability



Toshiba Carrier Dyna-Doctor

Toshiba Carrier MCY/MMY VRF Dyna-Doctor Diagnostic Software & Communication Adapter

Important items to remember about Dyna-Doctor

- Dyna-Doctor will not diagnose the system for you. The Technician needs to review the data and make determinations based on findings.
- Dyna-Doctor is best used in conjunction with the Factory Service Manual for the Outdoor Unit.
- You can only connect to one VRF system at a time.
- Operation Modes can be changed, set point cannot.
- Some windows and the values shown take longer to update than others, be patient.
- The more you use Dyna-Doctor the better you will be at seeing irregularities in the operational data.

This guide was made by Carrier Northeast
Technical Services Department.

Information within is subject to change



**Go Above.
Think Beyond.**