Dyna Doctor Tool

Dyna Doctor Tool Operation Manual for RAS Inverter model.

This tool Toshiba Carrier company we are provide service tool for support sale entity or service team use this tool software and hardware for connect with inverter unit to get the detail information of system during operation / stand by that it collect data from sensor thermistor and other hardware / software processing

1. How to connect hardware to access data information from Inverter unit Service team need to provide

Dyna Doctor Kit as below model





2. Down load DDT program then installation in PC or laptop and

How to connect DDT to CDU Inverter unit.

1) Turns it off power supply to unit, Ensure no power supply to unit when connect lead of DDT tool for safety with device and service man.

2) Open the top cabinet, front cabinet and cover inverter unit to connect DDT kit device (Connector 6 pin) with SWRT connector housing on CDU PCB of each type as below table.

No.	PCB type	Model apply	Reference connector position	SWRT connector
1	WP-030	RAS-07, 10, 13S3AV RAS-10N3ACV RAS-10N3AV RAS-13, 16,18, 22, 24BAV RAS-13, 16,18, 22, 24BAV RAS-16, 18,22,24J2AVG RAS-16, 18,22,24,25PAVSG RAS-16, 18,22,24TAVG RAS-16, 18,22,24TAVG RAS-18, 24, 28U2ACV RAS-18, 24, 28U2ACV RAS-13, H18J2ACV RAS-H13, H18J2ACV RAS-H148, H24U2ACV RAS-H18, H24U2ACV RAV-GM301AT RAV-GM401AT		CN82

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No.	PCB type	Model apply	Reference connector position	SWRT connector
2	WP-032	RAS-05,07,10,13BAV RAS-05J2AVG RAS-05TAVG RAS-05,07,10, 13U2AV RAS-07,10, 13PAVSG RAS-10, 13PACVG RAS-10, 13BACV RAS-10, 13BACV RAS-10, 13PACVG RAS-10, 13PAVSG RAS-10, 13J2AVG RAS-10, 13J2AVG RAS-10, 13J2AVRG RAS-10, 13J2ACVRG RAS-10, 13J2ACVRG RAS-110, H13J2ACVRG-V RAS-H13PACVG-V RAS-H13U2ACV2G	<image/>	
3	WP-042	RAS-10U2ACVG RAS-H10U2ACV2G		
4	MCC- 1686	RAS-10U2ACV RAS-H10J2ACV RAS-H10U2ACV		CN82

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No.	PCB type	Model apply	Reference connector position	SWRT connector
5	MCC- 1571	RAS-24N3A RAV-SP804AT		
6	MCC- 1626	RAV-GExx01A8 RAV-GM11, 1401AT8 RAV-SM11, 1401AT8 RAV-TE1401A8		
7	MCC- 1648	RAS-30PA RAV-GE2501AP RAV-GE3001AP RAV-GE3601AP RAV-TE1001AP RAV-TE1251AP RAV-GM1101AT RAV-GM1401AT RAV-SM1104AT RAV-SM1404AT		CN803
8	MCC- 1731	RAV-SM1404ATP		CN803
9	WP-044	RAV-GE13,18,2401AP RAV-SM804ATP		
10	MCC- 1645	RAS-10,13,16G2AVP RAS-22, 24PAV RAS-25, 35S3AVP-ND RAV-GM561AT RAV-GM801AT		CN804

No.	PCB type	Model apply	Reference connector position	SWRT connector
10	MCC- 1713	RAV-GP561AT		
11	MCC- 1656	RAS-18N3A RAS-22N3A RAV-SM304AT RAV-SM404AT RAV-TE401AP		CN804

Table 2.2.1 Location of SWRT of each PCB type

3) Connect DDT USB lead or RS232 to PCB and computer (Check sure computer have installation diver before if no please down load as link URL above and installation for ready to used).

4) Power supply on to standby or operate start.

3. How to used DDT for RAS (Inverter) model

- 1. Installation software or upgrade on PC and register program for continues use in case of service man never installation before.
- 2. Set shortcut then double click at shortcut icon as below to open program or click start from window bar.



Figure 3.2.1 How to open program

3. Click OK after window Welcome to Dyna Doctor display

Welcome to Dyna Doctor	
TOSHIBA Carrier	License is finished with authentication
Dyna Doctor	Ver. 1.1.2.0 OK
for IES/DI/SDI	
Copyright (C) 2012-2019 Tost	hiba Carrier Corporation. All Rights Reserved.

Figure 3.3.1 Software version

Remark:

This software need for register or activate within 30 Day for new user, if overdue program cannot use, so **please execute license before date of expiration**, In case of upgrade program not need to do for execute license.

Operation manual for IES/DI/SDI Modify for RAS Inverter edition



Figure 3.3.2 Message reminder

4. Select setting for monitor mode or history mode.

No.	Monitor mode	History mode
1	Setting Image: Constant of the set of the	Setting Image: Constraint of the setting RAS (Inverter) Image: Constraint of the setting Refrigerant Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constraint of the setting Image: Constra
2	Select and setting as below. Model setting → RAS (Inverter) Refrigerant → R410A Maker → TOSHIBA Model → Export Unit type → Single Mode→ Monitoring mode Comp port auto display*	Select and setting as below. Model setting → RAS (Inverter) Refrigerant → R410A Maker → TOSHIBA Model → Export Unit type → Single Mode-→ History mode
3	Select or click complete then click start	Start

Table 3.4.1 Main menu setting

*Comport → Select port from USB Manager, if only one device connect program will auto display.

5. After click start window will change display as below.

View Window Log	Help		
📑 💷 🐝 🙊			
Table (RAS (Inverter))			
Outdoor Unit			
CONTROL MODE	OFF		TIME: 00:00:4
OPERATION MODE	0.0	Protection-Mode	055
INSTRUCTION REV	0.0	TC-RELEASE	OFF
ACTUAL REV	0.0	TD-RELEASE	OFF
ACTUAL CURRENT	0.0	CURREN T-RELEASE	OFF
OD-FAN REVOLUTION	0	4	_
OD-FAN AC	OFF	Sancar Tomporatura	
* 4-WAY VALVE	OFF	TD	
* PRE-HEATING	OFF	* TC	
* PMV A	Close	* TC	
		13	
2			
		20	-
*Depending on the model, t	he output content	s may be difference.	
Indoor Unit			
	UNIT-A		
OPERATION MODE	OFF		
ORDER-REVOLUTION	0.0		
TA TEMP			
TC TEMP			
			repending on the model, the

Figure 3.5.1 Table data

6. How to record file, Click File \rightarrow Save data $\bigcirc \blacksquare \blacksquare \textcircled \land \land \blacksquare \land \land \blacksquare$ then select directory for record file.

Z	岩 Dyna Doctor for IES/DI/							
	File	View	Record					
	÷	Mode Sel	ect					
٢		Save Data						
		Exit						

Figure 3.6.1 How to record

Display will change as below then please set record interval for table data.

Dyna Doctor for IES/DI/SDI [RA	6 (Inverter)]			
File View Record Window	w Log Help		_	
🎯 🔚 💷 🐝 🚧		1 Sec 👻	• 11	
岩 Table [RAS (Inverter)]	1 Sec 5 Secs			
Outdoor Unit		10 Secs		
Control		1 Min		TIME: 00:09:53
OPERATION MODE	OFF	2 Mins	le	
INSTRUCTION REV	0.0	TC-REL 10 Mins		OFF
ACTUAL REV	0.0	TD-RELEASE		OFF
ACTUAL CURRENT	0.0	CURRENT-RELEASE		OFF
* OD-FAN REVOLUTION	0	4		Þ
* OD-FAN AC	OFF		_	
* 4-WAY VALVE	OFF	Sensor-Tempera	ature	
* PRE-HEATING	OFF	TD		
* PMV A	Close	* TE		
		* TS		
		ТО		
				Þ

Figure 3.6.2 Time interval set

Click record start at red mark e for start record, (Click = Pause record or click = Stop record.

Select directory for file for save, usually name will auto set by DDT software 190310_A.dat (19= Year 2019, 03= Month (Jan =01, Feb=02, Mar=03),10= date of record or service man can Make new file name Up to they can understood then click Save.

🚰 Save As					×
🔾 🗸 🖉 🖉 🖉 🖉	PES + QAM job + DDT license + DD_Ver1	.1.0.0_Global ► DDT file	▼ 4 9	Search DDT file	Q
Organize 👻 New fold	er			8== 👻	0
🔆 Favorites	A Name	Date modified	Туре	Size	
🧮 Desktop	BF1_WP-032.dat	3/5/2019 5:08 PM	DAT File	8,919 KB	
〕 Downloads	DSK8_MCC-1645.dat	3/5/2019 11:37 AM	DAT File	1,092 KB	
🔛 Recent Places	L-C_MCC-1626_5HP.dat	3/4/2019 1:48 PM	DAT File	1,493 KB	
	RAC-24k_WP-030.dat	3/4/2019 4:46 PM	DAT File	2,264 KB	
📜 Libraries	-				
File name: D:\R	equest PES\QAM job\DDT license\DD_Ver1.1.0	0.0 Global\DDT file\190310 A.dat			•
Save as type: Dyna	Doctor Data Files(*.dat)				•
Hide Folders			ſ	Save	el
					.d

Figure 3.7.1 How to save file

Display will change as below, during record symbols change from red 🧕 to gray 💿 color.

岩 Dyna Doctor for IES/DI/SDI [RAS (Inverter)]							
File View Record	d Window Log Help						
i 🎯 🔚 🖿 🎎 救	D:\Request PES\QAM job\DDT licens. 1 Sec 🛛 🔻 🥌 💵 🔳						
岩 Table [RAS (Inve	rter)]	- • •					
Table [RAS (Inve Outdoor Unit	rter)]						

Figure 3.7.2 Display symbols during record

8. During record service man can monitor Table, Map and Graph by click of each icons 💷 🗱 🔅 then display will show as below.

😸 Dyna Doctor for IES/DI/SDI [RAS (Inverter)]	a Table (AS Grown)
File View Graph Window Log Help	Control The Linker OPENING CONTRACTOR
	OPERATION MODE COOL Protector-Micke OPERATION MODE COOL Protector-Micke
	PISTRUCTION REV 39.6 TC-RELEASE OFF ACTIAL 39.6
# Table (RAS (Inverter))	ACTUGE REF 940 TOPECON
	+ OD-FAN REVOLUTION 640 L L
e way [rAs (inverter)]	* OD-FAN AC ON Senso-Temperature *
Control INDOOR: A CLASS:	* PRE-MEATING OFF TE 20.8
OPERATION MODE CONTROL OPERATION MODE : OFF	* PRV A Small + TS 12.2
INSTRUCTION REV OCERCENTION TO RELEASE OFF ORDER. 0.0	
ACTUAL REV INSTRUCTION : 0.0 CURRENT-RELEASE : OFF	*Depending on the model, the output asstants may be difference.
ACTUAL CURRENT ACTUAL : 0.0	- Sofor Unit
* OD-FAN REVOLUTION ACTUAL CURRENT : 0.0	
* OD-FAN AC *PRE-HEATING : OFF	
	TA TIDIP 24.0
	TC TEMP 11.0 "Dopending or the model, the TC TEMP
PRE-HEATING TD:	The solution
* PNV A	
4 TS: 100 OD	gruph (RAS (inverter))
*Depending on the model th	OPERATION M
	110 INSTRUCTION
Indoor Unit 20	100
	80
OPERATION MODE -20	20
	50 ····································
	40
TO TTUE	20
	10
	-10
OUTDOOR TEMP : 1	-20
	u u

Figure 3.8.1 Window of each display

How to change graph.
9.1)After click graph *^(k)*

aph 🞘 🛛 display graph will display as below picture.



Figure 3.9.1 Initial graph

9.2) Default factory setting no any item on graph then user need for addition items that they are interesting to monitoring by click S "Data select" for display and Interval(sec) then click OK Can select max 8 items.

$\sum_{i=1}^{i} a_{i} a_{i$	camo data tablo to match wit	h number during dicplay on window
	Same uata table to match wit	



Figure 3.9.2 Data select for display trend

9.3 Scale setting b	oy Click 🧳 for scale se	tting as below.			
	Graph [RAS (Inverter)] 110 90	ACTUAL REV ACTUAL REV ACTUAL CURR • OD-FAN REV • III •	Scale Y-Min Y-Max X-Min X-Max	Setting	(-50 ~ 19999) (-49 ~ 20000) (0 ~ 179) (1 ~ 4000) Cancel

Figure 3.9.3 Scale setting

4. How to check history file

4.1) Select model setting RAS (Inverter)

4.2)Select history mode then click start



Start

Figure 4.2.1 Set display for history mode

4.3)Browse file name from directory folder that file record are keep then double click for file need for open then click open and click "File Open" for start"

History Co History F D_Ver	ntrol ile 1.1.0.0_Global\DD`	「 file\190310_(▶	C.dat	Browse File Open	
	Figure 4.3	1 browse	file f	or open	
af Open	t PES → QAM job → DDT license → DD	_Ver1.1.0.0_Global DDT file	•	Search DDT file	حم م
Organize • New fol	der				. 0
E Recent Places *	Name	Date modified	Туре	Size	
Computer Comput	199310, Gate 199310, Gate	3/10/2028 3-43 PM 3/10/2028 3-616 PM 3/10/2028 5-60 PM 3/3/2028 5-60 PM 3/3/2028 5-60 PM 3/3/2029 3-68 PM 3/4/2029 3-46 PM 3/4/2029 3-46 PM	DAT File DAT File DAT File DAT File DAT File DAT File	0 KB 0 KB 0 KB 1,922 KB 1,923 KB 2,224 KB 2,224 KB	('.dat) • Cancel
	Figure 4.3	.2 Select	file fo	or open	1



Figure 4.3.3 Cursor to slide for monitor



Items	Table		Мар	Graph	
Display	Image: Second	THE 12-51-14 THE 12-51-14 OFF FOF EASE OFF 31.4 13.2 24.4 Propending on the model, the obtained into any be addresses.	et Mathadoweni Terrer versioner in the second seco	Graph [RAS (inverter)] 10 0	



4.5)Trend graph when user open file need for adjust scale to match with time of each file from recording and user can select or slide cursor to monitor number on the trend of graph as below.



Figure 4.5.1 Cursor slide on history control bar

4.6) Method for adjust scale when open new file.

	4.o.1) Need for set scale to match with file update record.				
No	Items	Figure	Description		
1	Graph after open file	PicyNG COLOR (0) Image: Color (0) Color (0) Image: Color (0) <td< td=""><td>Graph show in some area</td></td<>	Graph show in some area		
2	Scale setting	Scale Setting Y-Min Set (-50 ~ 1999) Y-Max 110 - (-49 ~ 2000) X-Min 0 - (0 ~ 35673) X-Max 9053 - (1 ~ 35674) OK Cancel	If need to show with full trend need change setting X-Max from 9053 to 35674 then click K OK trend graph will change as below.		
3	Graph after scale setting	Graph [IAAS Sworth:]	We can see trend of record with full time record.		

Table 4.6.1 How to setting scale graph

4.6.2) In any open new file name or change file need to doing on detail of table 4.6.1

5. Wording definition on Table data

Unit	No	Items	Meaning
Indoor	1	TA temp	Room temperature (Return air to unit)
	2	TC temp	Coil temperature (Center of coil)
	3	TCJ temp	Coil temperature (Outlet)
Outdoor	1	TD temp	Discharge temperature
	2	TE temp	Coil temperature before out condenser
	3	TS temp	Suction temperature
	4	TO temp	Outside temperature (Detect temp before entry condenser

Table 5.1 Definition of sensor temperature