

# TOSHIBA

Leading Innovation >>>



Super Modular Multi System  
THE FREEDOM OF SIMPLICITY

S-MMS

# Advanced air conditioning solutions.



In recent years user expectations of air conditioning systems have significantly changed.

Not only do they expect zone heating and cooling, but also demand a range of services that optimises room comfort, reduce energy and maintenance costs, combined with **maximised simplicity and operating flexibility.**

The system must be energy-efficient, versatile in installation and functionality, flexible in programming and use, reliable and easy to use. There are more and more requests for central and precise management of

the system, permitting accurate and personalized calculation of the energy consumption. The Super Multi Modular System (S-MMS) provides answers to these requirements: and are increasingly used as an alternative to traditional

water-based heating and cooling systems.



# Typical applications and advantages.

The VRF system offers reliability, ambient comfort, modularity, **flexibility**, ease-of-installation and durability, with considerable energy savings.

Typical applications of this system are those that require product features that are linked to energy savings. Therefore, more and more

commercial centres, office towers, hospitals, hotels and homes have selected this type of system.

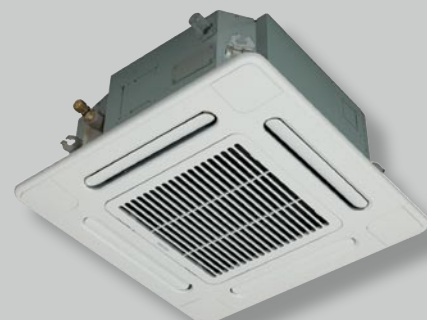


Enormous flexibility.

Optimised product choice.

The ultimate inverter system.

Minimised energy consumption.



## Hotels/Offices.

In this type of application up to 48 indoor units can be installed in a single refrigerant circuit, and it is possible to reduce the capacity of one or more indoor units down to the minimum operating limit. This results in considerable energy savings a faster payback of the investment and optimised comfort.

This system also offers the ideal solution for dual-aspect buildings that require simultaneous heating and cooling, leading to further energy savings and making the systems a reliable choice for many prestigious applications.

## Shopping centres.

S-MMS offers maximum flexibility. They can be used for even the smallest commercial rooms. The main features include providing the required cooling or heating capacity and comfort levels, ease of installation, maximum energy efficiency and reliability.

## Homes.

The air-conditioned area can be divided into small or larger individual zones and here too the large choice of indoor units, including cassettes, ducted, Hi-wall, floor-mounted and many other unit types.

The system is very efficient and unobtrusive, making S-MMS an excellent investment!

## Energy savings according to Toshiba.

The advanced electronic technology in these systems permits capacity control that results in significant energy savings.

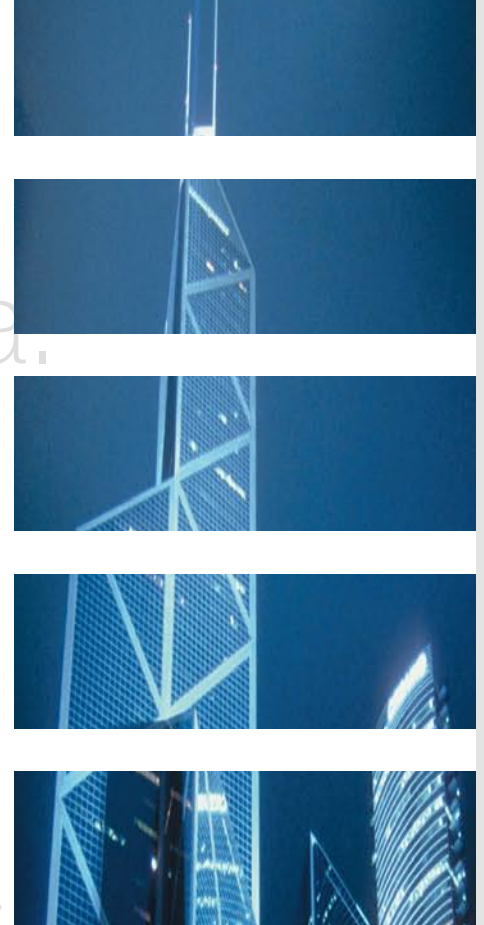
This objective is achieved thanks to the use of **sophisticated inverter control** and modulating control valves in each indoor unit.

These permit linear variation of the refrigerant flow in any circuit, directly proportional to the thermal load, resulting in further energy savings.

In fact the power input of the outdoor

unit is dramatically reduced with the heat load reduction in the areas served. Another factor of energy savings and management cost savings is that the systems are sized for the maximum load, and usually operate at part load.

Maintenance costs are also minimised. No particular routine maintenance is required, except periodical cleaning of the indoor unit filters.



## S-MMS. The freedom of choice.

Variable refrigerant flow benefits from the advantages of direct expansion linked to inverter control and the most sophisticated electronic control. This technology has many advantages, from the system design

to the installation and operation phase. The wide range of indoor units makes VRF a flexible choice to satisfy many building requirements.

Toshiba has two VRF system ranges: the new compact SMMS heat pumps

providing cooling and heating, and Super Heat Recovery System (S-HRM) units providing simultaneous heating and cooling.

## Silence is golden.

As a result of detailed improvements such as the fan drive circuit, fan blade design and construction of the outlet duct our design teams have successfully reduced outdoor unit noise levels.

These studies have eliminated the

peak noise levels at start up, normally associated with fixed-speed systems, by using soft start controls. An optional night operation/sound deadening control circuit board is available for reducing noise levels overnight by limiting the system's

maximum operation.

This has resulted in reduced operating noise levels.

The exclusive use of inverter-driven compressors also significantly contributes to reducing noise emissions.





## Compact four way cassette

This new model suits all the standard 600x600 mm grid ceiling. Its sophisticated design fits with many room interiors, where the appearance is as important as the functionality.

SLIMLINE DIMENSIONS

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EASY MAINTENANCE

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FLEXIBLE CONTROL OPTIONS



## Four way cassette

With the advanced high-lift drain pipe, it offers the ideal solution for small commercial applications.

CLEAN CEILING

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FLEXIBLE INSTALLATION

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EASY MAINTENANCE



## Two way cassette

Discreet and easy to install, it fits any room interior. Thanks to its silent operation, it creates a very quiet and comfortable environment particularly for home theatre rooms.

SLIM DESIGN

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LOW NOISE LEVEL

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FLEXIBLE INSTALLATION



## One way cassette

It's simple to install and is suitable for small areas, such as hotels or offices.

COMPACT HI-TECH DESIGN

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LOW NOISE LEVEL

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FLEXIBLE INSTALLATION

## Standard ducted unit



It can easily be installed in ceiling voids or false ceiling and operates very quietly. This flexible model provides a uniform temperature and air distribution and enhances the Indoor Air Quality.

FLEXIBLE INSTALLATION

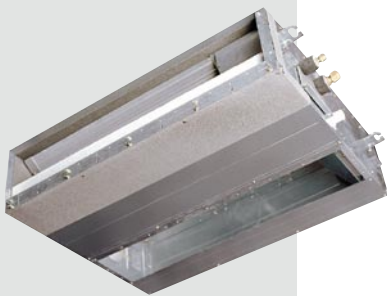
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LOW NOISE LEVEL

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ENHANCED INDOOR AIR QUALITY

## Slim Duct



It offers the ultimate technology with exceptional energy savings, high performance and easy installation.

VERY SLIM DESIGN - 210mm

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LOW NOISE LEVEL

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PERFECT COMFORT

## High static pressure ducted unit



It's Toshiba most powerful ducted unit. Flexible and compact, it can be installed discretely in the ceiling space.

EASY INSTALLATION

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EASY MAINTENANCE

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WIDE RANGE OF OPTIONS AVAILABLE

## Ceiling suspended unit



Thanks to its simple suspension, the installation is very easy. It creates a very pleasing environment, diffusing rapidly and uniformly the required temperature. It's a great solution for solid ceilings.

EASY INSTALLATION

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OPTIMUM LOUVER CONTROL

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PIPING FLEXIBILITY



## Compact Hi-wall

It's compact and lightweight, perfect for modest spaces, such as offices, shops and hotel rooms.

COMPACT AND MODERN DESIGN

LOW NOISE LEVEL

AUTO-SWING AIR DISTRIBUTION



## Hi-wall

Robust design and ideal for high cooling or heating requirements.

RELIABLE

PIPING FLEXIBILITY

TOP FOR COMFORT



## Floor mounted console

It's suitable for refurbishment projects of small spaces.

PIPING FLEXIBILITY

TOP FOR COMFORT

WIDE CHOICE OF INSTALLATION SETTINGS



## Concealed chassis unit

It's the perfect solution for perimeter walls and can be hidden behind a decorative panel to blend with any room interior.

VERY COMPACT DESIGN

LOW NOISE LEVEL

EASY MAINTENANCE



## Floor standing

It's particularly suitable for large rooms with low ceilings. The units offer high air flow rates and air throw values.

HIGH AIR FLOWS

WIDE AIR DISTRIBUTION ANGLE

LARGE CAPACITY RANGE

## Technical specifications heat pump

Model Type	Model Name	Cooling cap. (kW)	Heating cap. (kW)	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)			
Four way Cassette 	MMU-AP0091H	2.80	3.20	256	840	840	20			
	MMU-AP0121H	3.60	4.00				22			
	MMU-AP0151H	4.50	5.00				23			
	MMU-AP0181H	5.60	6.30	319	840	840	28			
MMU-AP0241H	7.10	8.00								
MMU-AP0271H	8.00	9.00								
MMU-AP0301H	9.00	10.00								
Compact Four way Cassette 	MMU-AP0071MH	2.20	2.50	268	575	575	17			
	MMU-AP0091MH	2.80	3.20							
	MMU-AP0121MH	3.60	4.00							
	MMU-AP0151MH	4.50	5.00							
	MMU-AP0181MH	5.60	6.30							
Two way Cassette 	MMU-AP0071WH	2.20	2.50	398	830	550	33			
	MMU-AP0091WH	2.80	3.20		1350		44			
	MMU-AP0121WH	3.60	4.00				48			
	MMU-AP0151WH	4.50	5.00	235	850	400	22			
	MMU-AP0181WH	5.60	6.30							
	MMU-AP0241WH	7.10	8.00							
One way Cassette 	MMU-AP0271WH	8.00	9.00	200	1000	710	21			
	MMU-AP0301WH	9.00	10.00				22			
	MMU-AP0071YH	2.20	2.50				320	550	800	27
	MMU-AP0091YH	2.80	3.20							
MMU-AP0121YH	3.60	4.00								
MMU-AP0152SH	4.50	5.00								
Concealed duct, stand type 	MMU-AP0182SH	5.60	6.30	700	1000	800	30			
	MMU-AP0242SH	7.10	8.00					1350	39	
	MMD-AP0071BH	2.20	2.50	1350			51			
	MMD-AP0091BH	2.80	3.20							
	MMD-AP0121BH	3.60	4.00							
	MMD-AP0151BH	4.50	5.00							
	MMD-AP0181BH	5.60	6.30	380			850	660	50	
	MMD-AP0241BH	7.10	8.00							
MMD-AP0271BH	8.00	9.00								
MMD-AP0361BH	11.20	12.50								
MMD-AP0481BH	14.00	16.00								
Concealed duct, high static pressure 	MMD-AP0561BH	16.00	18.00	470	1380	1250	155			
	MMD-AP0721H	22.40	25.00							
	MMD-AP0961H	28.00	31.50	210	845	645	22			
	MMD-AP0071SPH	2.20	2.50							
	MMD-AP0091SPH	2.80	3.20							
	MMD-AP0121SPH	3.60	4.00							
MMD-AP0151SPH	4.50	5.00								
MMD-AP0181SPH	5.60	6.30								
Under-ceiling 	MMC-AP0151H	4.50	5.00	210	910	680	21			
	MMC-AP0181H	5.60	6.30					1180	25	
	MMC-AP0241H	7.10	8.00		1595		33			
	MMC-AP0271H	8.00	9.00							
Hi-wall 	MMK-AP0361H	11.20	12.50	275	790	208	11			
	MMK-AP0481H	14.00	16.00							
	MMK-AP0072H	2.20	2.50							
Hi-wall 	MMK-AP0092H	2.80	3.20	368	895	210	18			
	MMK-AP0122H	3.60	4.00		1055		19			
	MMK-AP0151H	4.50	5.00							
	MMK-AP0181H	5.60	6.30		1430		25			
	MMK-AP0241H	7.10	8.00							
Floor standing cabinet type 	MML-AP0071H	2.20	2.50	630	950	230	37			
	MML-AP0091H	2.80	3.20							
	MML-AP0121H	3.60	4.00							
	MML-AP0151H	4.50	5.00							
	MML-AP0181H	5.60	6.30							
Floor standing Concealed type 	MML-AP0241H	7.10	8.00	600	745	220	21			
	MML-AP0071BH	2.20	2.50		1045		29			
	MML-AP0091BH	2.80	3.20							
	MML-AP0121BH	3.60	4.00							
	MML-AP0151BH	4.50	5.00							
Tall floor-standing 	MML-AP0181BH	5.60	6.30	1750	600	210	48			
	MML-AP0241H	7.10	8.00							
	MML-AP0271H	8.00	9.00							
	MMF-AP0361H	11.20	12.50			390	65			
	MMF-AP0481H	14.00	16.00							
	MMF-AP0561H	16.00	18.00							

Cooling capacity based on an indoor air temperature of 27°C db/19°C wb and an outdoor air temperature of 35°db

Heating capacity based on an indoor air temperature of 20°C db and an outdoor air temperature of 7°db/6°C wb



## S-MMS. Super Modular Multi System, Outdoor unit.

### Features

The S-MMS system operates with R410A refrigerant and incorporates the latest inverter drive technology in all outdoor unit models.

Capacities range from 14 to 135 kW in cooling mode and 16 to 150 kW in heating mode with a capability to serve up to 48 indoor units.

### Key features

High COP (4.25 with 22.4kW size): for reduced energy consumption and increased savings.

Advanced compressor Oil Management System guarantees improved reliability.

TCC Link: State-of-the-art communication bus system with automatically configured addressing.

Up to 48 indoor units can be connected.

Latest Inverter Technology with the Intelligent Power Drive Unit (IPDU).

Extended pipe runs up to 300m - for greater application flexibility.

### Technical specifications **heat pump**

Outdoor unit	Heat Pump		MMY-MAP0501HT8	MMY-MAP0601HT8	MMY-MAP0801HT8	MMY-MAP1001HT8	MMY-MAP1201HT8
			5 HP	6 HP	8 HP	10 HP	12 HP
Cooling capacity*	kW	CO	14.00	16.00	22.40	28.00	33.50
Power input	kW	CO	3.65	4.64	5.67	7.67	11.92
EER		CO	3.84	3.45	3.95	3.65	2.81
Running Current	A	CO	5.85	7.28	8.62	11.55	18.30
Peak Demand Current	A		20.00	20.00	30.00	30.00	30.00
Heating capacity**	kW	HP	16.00	18.00	25.00	31.50	37.50
Power input	kW	HP	3.84	4.56	5.88	7.97	10.19
COP		HP	4.17	3.95	4.25	3.95	3.68
Dimensions	mm	H x W x D	1800 x 990 x 750				
Weight	kg		228	228	258	258	258

\* based on an indoor air temperature of 27°C db/19°C wb and an outdoor air temperature of 35°db

\*\* based on an indoor air temperature of 20°C db and an outdoor air temperature of 7°db/6°C wb



# S-HRM. Super Heat Recovery Multi System, Outdoor unit.

## Features

Toshiba offers the three-pipe S-HRM that delivers simultaneous cooling and heating and exceptional energy efficiency.

The three-pipe VRF SHRM Systems that have set new standards in the global marketplace.

We now announce simultaneous cooling and heating systems to join the S-MMS range.

For ease of installation and cost saving the outdoor units are modular.

## Key features

Energy consumption efficiency: average COP of 3.97 (22.4 kW).

Increased comfort: cooling or heating is automatically selected on a unit-by-unit basis to suit local area requirements and operating environment, thanks to the compact flow selector unit.

Toshiba's unique piping branch flexibility: the three-way pipe connection between indoor and outdoor units accommodates an installation height variation between indoor units of 35 m (equivalent to a 9-story building).

Enviably reliable with the Active Oil Management system.

Wide control applications: Artificial Intelligence network system available and Building Management System (BMS) compatible.

## Technical specifications heat pump

Outdoor unit	Heat Pump		MMY-MAP0802FT8			MMY-MAP1002FT8			MMY-MAP1202FT8		
			8 HP			10 HP			12 HP		
Cooling capacity*	kW	CO	22.40	28.00	33.50						
Power input	kW	CO	6.07	8.54	12.90						
EER		CO	3.69	3.28	2.60						
Running current	A	CO	9.25	13.15	19.85						
Peak Demand Current	A		30.00	30.00	30.00						
Heating capacity**	kW	HP	25.00	31.50	35.50						
Power input	kW	HP	6.29	8.73	9.65						
COP		HP	3.97	3.61	3.68						
Dimensions	mm	H x W x D	1800 x 990 x 750								
Weight	kg		263								

\* based on an indoor air temperature of 27°C db/19°C wb and an outdoor air temperature of 35°db

\*\* based on an indoor air temperature of 20°C db and an outdoor air temperature of 7°db/6°C wb



# Precision is our top priority.

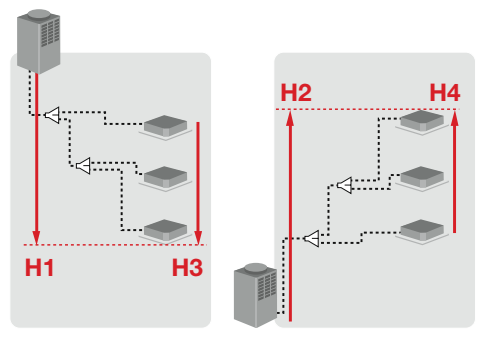
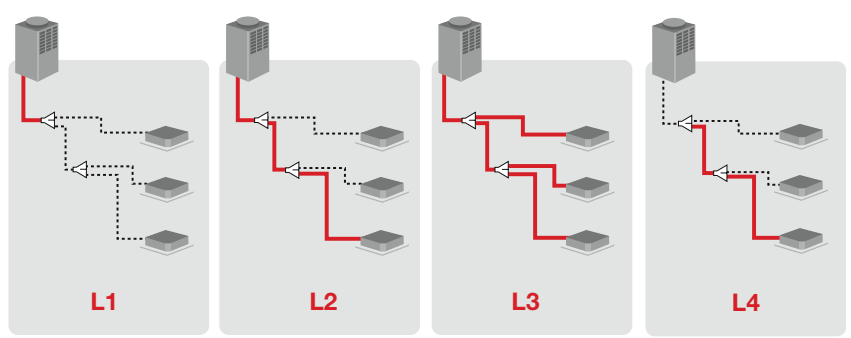
Sophisticated inverter control permits matching the actual refrigerant flow to the capacity required by the application for each indoor unit. This results in optimised efficiency of the refrigerant cycle and increased precision in

maintaining the required temperature, improving comfort for the occupants. The required capacity and the relating technical parameters for each indoor unit are electronically transmitted to the outdoor unit in order to optimise the zone load

calculation and to control the actual refrigerant flow to each indoor unit, using the special Pulsed Modulating Valves (PMV).

## Extended piping capabilities

Indoor unit		SMMS	SHRM
L1	Maximum equivalent length to first branch	85	85
L2	Maximum equivalent length separation	175	150
L3	Total length	300	300
L4	Maximum equivalent length from first branch	65	50
H1	Height difference, outdoor unit above	50	50
H2	Height difference, outdoor unit below	40	30
H3	Height difference between indoor units (Upper outdoor unit)	30	35
H4	Height difference between indoor units (Lower outdoor unit)	30	15



# Technology is nothing without control.

An innovative and complete range of integrated controls for application in the new Toshiba MiNi-SMMS, S-MMS, S-HRM systems ensures maximum comfort and excellent performance by perfectly matching the different requirements.

The range is composed of three control types: local, central and network controls.

# Toshiba network solutions.

Toshiba offers precise control of the new VRF systems.

The innovative solutions of the Toshiba network guarantee maximised integration with other building systems such as elevators, fire protection systems, lighting etc.

Open-network controls are specifically designed for Building Management Systems.



## Control Options

Model number	Reference	Description	Used with
RBC-AMT31E	Wired Remote Controller	Main wired remote controller	All indoor units
RBC-AS21E2	Simplified Wired Remote Controller	As above but designed for hotel and domestic applications	All indoor units
RBC-EXW21E2	Weekly Timer	A 7 day timer complete with day omit	RBC-AMT31E/TCB-SC642TLE2
TCB-AX21U(W)-E2	Infra-red Remote Kit	Wireless remote controller	4-Way Cassette (not Compact Four Way Cassette)
RBC-AX22CE2	Infra-red Remote Kit	Wireless remote controller	Underceiling
TCB-AX21E2	Infra-red Remote Kit	Wireless remote controller	All other units (except High Static Ducted units)
TCB-T21LE2	Remote Sensor	Remote temperature sensor	All indoor units
TCB-SC642TLE2	Central Remote Controller	Enables the control of up to 64 individual units	S-MMS/S-HRM, 1:1 model connection interface required for DI/SDI (Excluding hi-wall type)
TCB-CC163TLE2	On / Off Controller Enables	On/Off control (Max. 16 units)	All indoor units
TCB-IFCB4E2	Remote location On/Off Control Box	Enables remote location On/Off control	All indoor units
TCB-PCMO2E	External Master On/Off control	External Master On/Off control board	S-MMS/S-HRM outdoor units
TCB-PCIN2E	Error Output Control Board	Error output control board	S-MMS/S-HRM outdoor units
TCB-PCDM2E	Power Peak Cut Control Board	Power Peak Cut Control Board	S-MMS/S-HRM outdoor units
BMS-TP0641ACE	Touch Screen Controller	Enables full control of up to 64 indoor units	All the systems
BMS-TP5121ACE	Touch Screen Controller	Enables full control of up to 512 indoor units	All the systems
BMS-TP0641PWE	Touch Screen Controller	Enables full control of up to 64 indoor units with electric billing	All the systems
BMS-TP5121PWE	Touch Screen Controller	Enables full control of up to 512 indoor units with electric billing	All the systems
BMS-IFLSV2E2	TCS-Net Relay Interface	Relay for integration to TCS-Net	Touch Screen
BMS-LSV4E	BACnet @ Server	Allows control of 128 indoor units	S-MMS/S-HRM outdoor units
BMS-STBN03E	BACnet @ Server Software	Allows control of 128 indoor units	S-MMS/S-HRM outdoor units
BMS-IFWH4E2	Energy Monitoring Interface	Relay interface to allow energy monitoring	Touch Screen
BMS-IFDD02E2	Digital I/O Relay Interface	Digital I/O relay interface	Touch Screen
TCB-IFLN640TLE	Lonworks® Gateway	Allows control of 64 indoor units from a Lonworks based BMS	S-MMS/S-HRM outdoor units

# Toshiba units have everything under control.



## Wired Control RBC-AMT31E

The standard remote controller can control an individual indoor unit or a group of 8 indoor units. The remote control allows the operating parameters to be set for the indoor unit. It also allows faults to be displayed and unit configurations to be set up. The weekly timer can be fitted to this remote control.



## Simplified Control RBC-AS21E2

The simplified remote controller is connected in the same way as the standard remote controller, but offers reduced functionality. The remote controller does not have the lapse timer and the ability to set up the indoor unit. Unit fault codes are still displayed.



## Central Controller TCB-SC642TLE2

The central controller can control up to 64 indoor units individually. All their individual functions can be controlled. Malfunction checks are available for each indoor unit.

This controller can also connect to the weekly timer and has volt-free inputs to enable the indoor units and indicate a fault. It has the ability to shut down all units in the event of a fire. Up to four controllers can be connected to the network.



## IR Remote Control RBC-AX21E2

The wireless remote controller can be used with the appropriate indoor units to give full control of the indoor units. Two remote controllers can be used on the same indoor unit. The sensor on the remote controller can be used to control the system. Fault codes are displayed.



## Weekly Timer RBC-EXW21E2

The weekly timer connects directly to the rear of a RBC-AM31 remote controller or a central remote controller.

The timer allows the connected air conditioners to be enabled under a 7-day profile with up to three on/off periods per day.



## LonWorks Gateway TCB-IFLN640TLE

The LonWorks Gateway uses all standard network variables to control the individual functions of the indoor units.

The gateway can also be used with Interactive Intelligence.



## Touch Screen BMS-TP0641ACE - up to 64 indoor units BMS-TP5121ACE - FCU BMS-TP0641PWE- up to 64 indoor units + electrical bill calculation BMS-TP5121PWE- FCU + electrical bill calculation

The Touch Screen Controller is a graphical interface with the air conditioning system. It can control each of the individual indoor units and is capable of providing information from the indoor unit settings and malfunction check codes. It is also used to calculate the energy consumption for the selected indoor units. This controller runs time schedules for the indoor units and allows you to set up data logs.



## BACnet Server BMS-LSV4E

The BACnet server uses standard BACnet protocol to control the individual functions of the indoor units.

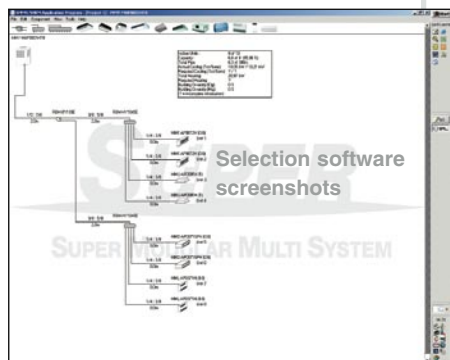
## Product Selection at the click of a button.

Sophisticated system design software has been developed for the whole MiNi-S-MMS, S-MMS and S-HRM range and is a useful and irreplaceable support tool for engineers, architects, installers and in general for anyone who wants to apply the innovative Toshiba solutions.

With this software, the user can put together a complete VRF system by simply clicking

on the icons for the indoor units and the other connection components. It is also possible to define in advance relevant parameters such as outside and inside temperatures, fan speed, pipe system length and routing etc. The software automatically manages all the parameters entered, and the actual system capacity for the conditions required can be quickly calculated and simulated during the design stage.

Using this software, the design of VRF systems is calculated for the project at the given conditions. The software constantly monitors possible design errors and warns the user, when it reaches the system limits.



## Diagnostic software.

In order to assist with the correct commissioning of systems, Toshiba has developed a diagnostic software program. The engineer can connect to the system using a

dedicated interface - enabling the download of all operating parameters and providing detailed information for instant analysis or record.

**TOSHIBA**  
Leading Innovation >>>

Notice: Toshiba is committed to continuously improving its products, to ensure the highest quality and reliability standards, and to meet local regulations and market requirements.

All features and specifications subject to change without prior notice.

Note: All images provided in this brochure are used for illustration purposes only.

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