TOSHIBA

MiNi-SMMS

Inspired VRF technologies

Better Air Solutions

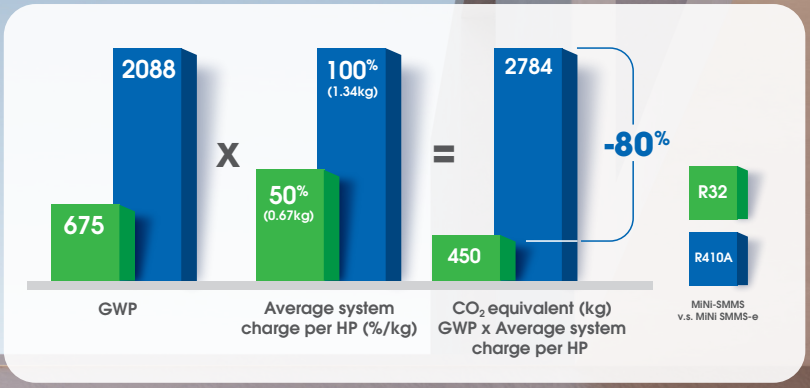
THE WORLD IS TARGETING **ZERO EMISSION**

Today the process of cooling and heating buildings is not the sole challenge. Global warming is an issue that effects us all and Toshiba Air Conditioning is highlighting the decarbonisation of buildings as a top priority.
The compact MiNi-SMMS™ uses inspired R32 VRF technologies to help achieve this goal, whilst also preserving comfort and cost effectiveness.

TOSHIBA R32 REFRIGERANT

Forward-thinking technologies to support building decarbonisation

R32 low GWP refrigerant, combined with MiNi-SMMS lower refrigerant charge, makes it possible to reduce the total equivalent CO_2 by 80%, in comparison with R410A legacy products.



The right choice to make for the benefit of all

Environmental oriented refrigerant, top-class efficiencies and much more to the benefit of all.

Building Owners

Support decarbonisation to raise the value of your buildings.
Boost your investments.

Consultants

Secure your specifications.
Ensure premium comfort.
Ease buildings labelling.

Installers

Differentiate yourself from competitors, choose the expert in inspired R32 technologies since 2014.

Our planet

Always consider the impact.
Go further than just products, create safe low GWP solutions to respect the planet.

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MiNi-SMMS
THE CHALLENGING SPACES SOLUTION

The MiNi-SMMS encompasses into a compact 0.37m² footprint outdoor unit all of Toshiba VRF experience to perfectly answer residential or light commercial buildings heating and cooling requirements.

MADE IN EUROPE

ENHANCED EFFICIENCY

Leading efficiency is part of Toshiba Air Conditioning's DNA. MiNi-SMMS is no exception with strong energy savings for indirect carbon reduction.

The alliance of twin rotary compressor technology, accurate Inverter control and Intelligent VRF control contributes to reach unparalleled seasonal efficiencies.

HEATING	SCOP	UP TO 5.2
	EthasH	UP TO 206%
COOLING	SEER	UP TO 10
	EthasC	UP TO 397%

Your best ally

Toshiba Twin Rotary compressor

40 YEARS OF INSPIRED INNOVATIONS

- Low noise
- Wide operating range
- DLC treatment

SMART COMFORT

With climate changes increasing, preserving comfort inside buildings is becoming increasingly essential. MiNi-SMMS allows users to customise their temperature, with a system that reacts fast to changes, even in the harshest of environments.

Quiet operations

Optimised indoor and outdoor system sound level to preserve users and neighbourhood comfort.

Quiet indoor unit down to **23dB(A)**

Standard operation down to **52dB(A)**

(4HP model)

Night mode operation down to **44dB(A)**

car traffic **70dB(A)**

washing machine **55dB(A)**

rustling leaves **20dB(A)**

Efficient defrost system

The improved defrost function allows the MiNi-SMMS to provide a longer heating operation time for continuous comfort.

CONVENTIONAL MODEL

Heating → Defrost → Heating → Defrost

Less heating operating time

MiNi-SMMS

Heating → Defrost

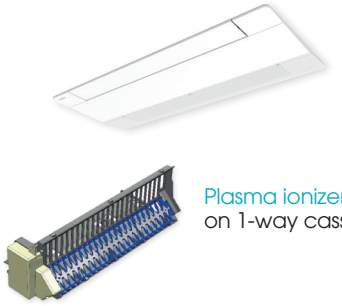
Longer heating operating time

Indoor air quality

Advanced air filtration solutions for healthy living spaces.

Air purifier & PM2.5 filter on standard 4-way cassette

Ultra fresh filter on high wall



Plasma ionizer on 1-way cassette

Your best ally

Control connection

Enhanced control experience with RBC-AWSU52-E wired remote offering Bluetooth connectivity: Connect your smartphone to the remote control and customize your comfort, finding the perfect cooling or heating level.

EXTENDED FLEXIBILITY

At Toshiba Air Conditioning, low carbon footprint products go hand-in-hand with high specification standards. MiNi-SMMS has been designed to enhance system flexibility and maximise project coverage.

Advanced maintenance experience

Save time during commissioning and maintenance. Using the link adaptor, access easily to any system data status. The connection is possible from outdoor & indoor units.

R32 CHALLENGING BY NATURE

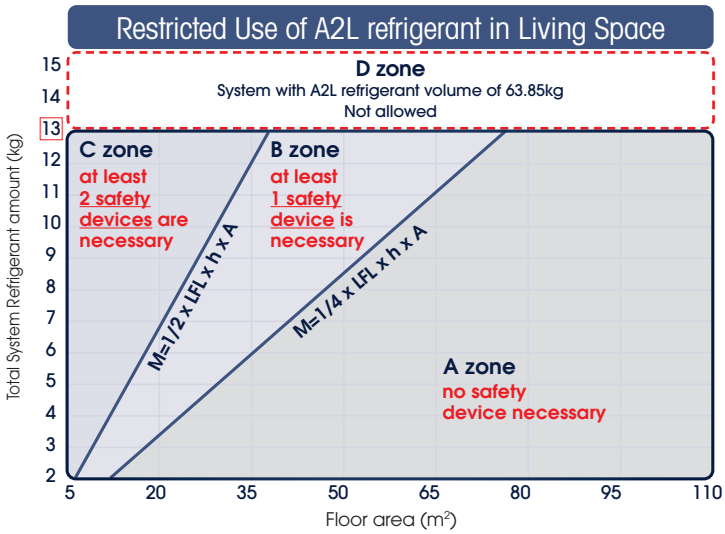
As classified A2L/mid flammable, precautions need to be taken. Toshiba Air Conditioning has thought of everything for your peace of mind.

Following IEC 60335-2-40 edition 6.0, it must be determined if any space would be equipped with safety device(s), based upon the surface and the total refrigerant amount.

The maximum refrigerant volume for the MiNi-SMMS is equal to 13.1kg.

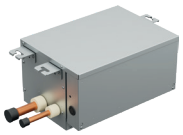
R32 LFL = 0.307 kg/m^3 - H = indoor unit position 2.2m - A = room surface in square metre

Please refer to IM and Toshiba Selection Software for toxicity



Toshiba Solutions Manage safety requirements*

TCB-LD1UPE
R32 leak detector
(audible and visual alarm)



RBM-SV1121HUPE & RBM-SV1801HUPE
Shut-off valve

TCB-BT1UPE
Battery kit to secure Shut-off valve operations in case of power failure (required by IEC603353-2-40 standard)

*Toshiba safety concept certified by 3rd party certification institution following IEC60335-2-40 (Ed.6) regulation

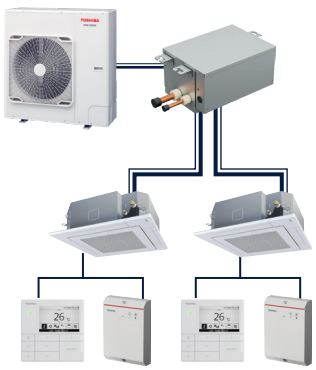
Meet buildings constraints

Select the appropriate answer

For buildings with large spaces

✓Only one shut-off valve is needed

In case of leak detection:
- Audible and visible alarm on concerned leak detector
- Refrigerant pump down
- Fault code on controllers



SYSTEM IS TURNED OFF IN CASE OF LEAK DETECTION

For buildings with many individual rooms

✓Multiple shut-off valves are needed

In case of leak detection:
- Audible and visible alarm on concerned leak detector
- Fault code on controllers
- Individual shut down

SYSTEM CONTINUES TO RUN, ONLY CONCERNED AREA IS TURNED OFF

Rely on Toshiba Selection Software

Toshiba Selection Software has been fully designed with a user-friendly interface allowing novice and expert users alike to create simple, yet detailed VRF system schematics. It is highly versatile to tailor the level of details to customers' expectations. In line with R32 safety regulation, the software identifies the rooms to be equipped with safety devices. Final detailed reports can then be produced and sent to customers in a PDF format that summarises all the information needed to ensure proper installation, good system operation and customer satisfaction.

MAKE YOUR SELECTION

Outdoor Units

Picture	Model		kW / HP
	MCY-MUGxx01HSW-E	R32 refrigerant. Embedded safety devices. 1 fan chassis / 1050mm height. Wave Tool Advance and link adaptor.	12.1 / 04 14 / 05 15.5 / 06 22.4 / 08 28 / 10 33.5 / 12 40 / 14 45 / 16 50.4 / 18

Indoor Units

	Picture		Model		IAQ filter**	kW / HP
Cassette		Smart cassette	MMU-UP_H-E	High efficiency. Low noise. Unique flap design for optimal air diffusion. 5-step air flow. Optional motion sensor for automatic operation.		1.1 / 0.3 1.7 / 0.6 2.2 / 0.8 2.8 / 1 3.6 / 1.25 4.5 / 1.7 5.6 / 2 7.1 / 2.5 8 / 3 9 / 3.2 11.2 / 4 14 / 5 16 / 6
		Standard 4-way cassette	MMU-UP_HP-E	Low noise. Compact chassis height (256mm). Optional motion sensor for automatic operation.	Ionizer + PM2.5	
		Compact 4-way cassette	MMU-UP_MH-E	Flat panel design. 620x620mm to fit perfectly into ceiling. 5-step air flow. Optionnal motion sensor for automatic operation.		
		2-way cassette	MMU-UP_WH-E	Unique air flow control to balance flow into opposite directions. Light weight.		
		1-way cassette	MMU-UP_YHP-E	150mm chassis height. 0.3HP small capacity. Low noise. 5-speed air flow.	Plasma	
Duct		Slim duct	MMD-UP_SPHY-E	210mm height. 0.6HP small capacity. 50Pa available static pressure. 5-speed air flow. Low noise 3DW diffusor available as an option.		
		Standard duct	MMD-UP_BHP-E	Slim design with 275mm height. Low noise. 0.6HP small capacity. Up to 150Pa available static pressure. Spigot available as an option.		
		High static pressure duct	MMD-UP_HP-E(1)	Wide air flow up to 4,800m³/h. Chassis height <300mm. Up to 250Pa available pressure.		
High wall		Standard model	MMK-UP_HP-E	Wide capacity range from 0.3 to 4HP.	Ultra pure filter	
		Without PMV model	MMK-UP_HPL-E			
Ceiling			MMC-UP_1HP-E	Automatic air flow angle setting based on operation mode. Up to 8m air flow distance. Low noise.		

Minimum number of connectable indoor units: 2 units.

Safety Devices

Picture	Model		When required?
	Leak detector TCB-LD1UPE	Stand alone. Powered by the indoor unit. 10-year sensor lifetime.	✓ Required for zone B & C (as 1st safety device)
	Shut-off valve RBM-SV1121HUPE & RBM-SV1801HUPE	To separate leaking indoor units from main refrigerant circuit.	✓ Required for zone C (as 2nd safety device)
	Battery kit TCB-BT1UPE	Keep shut-off valve operation in case of power shutdown. 5-year lifetime. To be positioned inside. FS box/shut-off valve.	✓ Required for zone C (to be installed into shut-off valve unit)

Controls

Wired remote	Central remote	Gateways
 Standard remote RBC-ASCU11-E  Advance remote RBC-AMSU52-E (std) RBC-AWSU52-E (bluetooth)	 64 central remote TCB-SC640U-E  Touch screen BMS-CT2560U-E	 BACnet® gateway BMS-IFBN1281U-E  Modbus® gateway BMS-IFMB1280U-E

For full connectable controller, please consult the catalogue/application manuals.

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Performances

Outdoor unit		MCY-	MUG0401HSW-E	MUG0501HSW-E	MUG0601HSW-E
			4 HP	5 HP	6 HP
Cooling capacity	**kW**	**C**	**12.1**	**14.0**	**15.5**
Power input (rated)	kW	C	2.92	3.73	4.3
EER	W/W	C	4.14	3.75	3.61
EthasC/SEER	W/W	**C**	396.2%/9.98	365.4%/9.21	349.0%/8.8
Running current (rated)	A	C	14.2 - 13.1	17.8 - 16.3	20.3 - 18.6
Heating capacity rated/max	**kW**	**H**	**12.1/14.2**	**14.0/16.0**	**15.5/17**
Power input (rated)	kW	H	2.38	2.95	3.4
COP	W/W	H	5.08	4.75	4.61
EthasH/SCOP		H	205.4%/5.21	194.2%/4.93	189.0%/4.80
Running current (rated)	A	H	11.9 - 10.9	14.4 - 13.2	16.1 - 14.8
Maximum overcurrent protection	A		32	32	32

Physical data

Outdoor unit		MCY-	MUG0401HSW-E	MUG0501HSW-E	MUG0601HSW-E
Airflow	m^3/h		4560	4740	4740
Sound power level	dB(A)	H	52.0	53.0	54.0
Sound pressure level	dB(A)	H	54.0	55.0	56.0
Sound power level	dB(A)	C	69.0	70.0	71.0
Sound pressure level	dB(A)	C	71.0	72.0	73.0
External static pressure available	Pa			20	
Dimensions (hxwxd)	mm			1050x1010x370	
Weight	kg			100	
Compressor type				Hermetic Twin Rotary	
Refrigerant charge R32	kg			2.4	
	TCO_2eq			1.6	
Gas line type - Diameter	inch			Flare - 5/8’	
Liquid line type - Diameter	inch			Flare - 3/8’	
Maximum pipe length	m			300	
Farthest piping equivalent/actual length	m			150/120	
Maximum lift (outdoor unit above/below)	m			50/40	
Maximum number of connected indoor units			8	10	13
Operating range - db	°C	C		-5 to 46	
Operating range - wb	°C	H		-20 to 15.5	
Power supply	V-ph-Hz			220/240-1-50	

Connected indoor unit: MMU-UP_1H-E
C: cooling mode - H: heating mode

Sound pressure level measurement: 1 point measurement at 1.5m height / 1m length from outdoor unit in anechoic chamber.
Cooling conditions: 35°CDB/24°CWB outdoor – 27°CDB/19°CWD indoor
Heating conditions: 7°CDB/6°CWB outdoor – 20°CDB indoor

CE UKCA

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

TOSHIBA Air Conditioning participates in the ECP program for Comfort Air Conditioners (AC). Check ongoing validity of certificate: www.eurovent-certification.com

Toshiba Air Conditioning UK
Elite House
Guildford Road
Leatherhead
Surrey
KT22 9UT
www.toshiba-aircon.co.uk

Better Air Solutions

A Carrier Company