

Light commercial range

Passion at work

Light commercial





Solutions for professionals, from professionals

Toshiba Digital and Super Digital Inverter systems deliver exceptional operating savings and ecological features in extremely compact units.

With state-of-the-art technologies, flexible controls and improved installation they bring comfort

and convenience to any business installation.

A complete range of indoor units satisfies all commercial applications: ceiling cassette, ducted, ceiling-suspended, high-wall and flexi units.

The Digital and Super Digital Inverter systems represent the most economical and ecological approach to air conditioning.

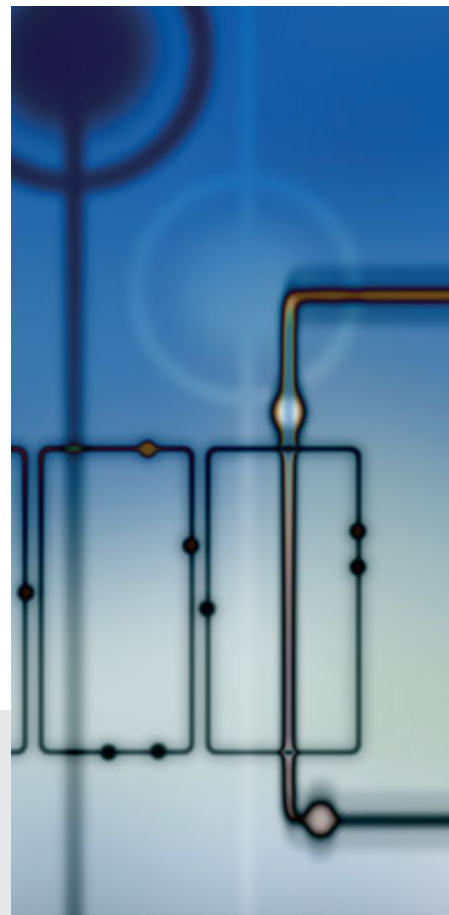
When the inverter becomes digital

The technology of the Digital Inverter control module ensures optimised reproduction of the supply sine wave at the desired frequency, in order to reduce inefficient harmonics that inverters normally emit.

With this innovative control method, the Toshiba Digital Inverter brings state-of-the-art inverter technology to the commercial sector, offering considerable advantages in terms

of capacity, energy savings and optimised comfort.

Compressor operation is practically imperceptible.



TOP PERFORMANCE



Who says that you must choose between improved performance and minimised consumption?

The Toshiba Digital and Super Digital Inverters are powerful and extremely efficient.

They provide air conditioning with great energy savings.

In most applications, these systems can reduce energy consumption by up to 40% compared with traditional fixed speed units.

The variable capacity level of the compressor allows the Digital and Super Digital Inverter to maintain room temperature control and to ensure minimum energy wastage.



Simplicity and beyond

The Digital Inverter range for business applications provides compact, light-weight units with exceptional performance.

Thanks to the TCC-Link communication system, the systems suit any installation with little business disruption.

In addition, the Super Digital Inverter boasts energy efficiency class A and enables an even larger range of applications.

The wide range of indoor units is able to satisfy any kind of requirement and the enhanced DC twin-rotary

compressor delivers stable performance with less friction, making this system very quiet.



IPDU Vectoral

Toshiba's Digital Inverter models use the new, vector controlled, Intelligent Power Drive Unit, which produces a power supply whose frequency and voltage provide superb control and energy efficiency.

The new technology has allowed a much wider range of frequencies and voltages to be achieved.

Performance is further improved by the high-speed converter circuit which calculates the relationship between the compressor's windings and rotor through the currents drawn – allowing instantaneous optimisation of the power supply to the compressor.

The heart of the system

DC Inverter IC Board

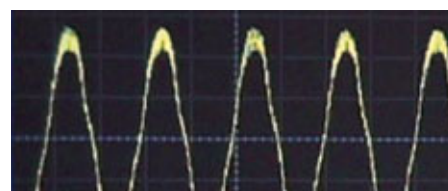
DSP

DC Twin Rotary Compressor

Brushless
DC motor



Wave generated by a traditional inverter.



Wave generated by the new vector IPDU inverter.

Refrigerant R-410A: respect for the environment

R-410A is a blend of R-32 and R-125 and is the most energy efficient, non-ozone-depleting refrigerant available for Light Commercial systems.

The use of this refrigerant is a clear demonstration of Toshiba's commitment and respect of the environment.





Vectoral control inverter

DC Twin-rotary compressor

Refrigerant R410A



DC Twin-rotary compressor: assured efficiency and energy saving

The Toshiba DC twin-rotary compressor has a large capacity interval, with an effective power limitation system, that allows a considerable reduction in the power consumed.

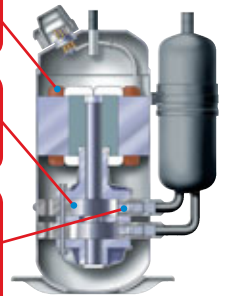
With this type of compressor the desired comfort is reached quickly.

In addition, the inverter technology offers up to 50% more energy saving than conventional models.

Improved motor windings deliver greater motor efficiency

More effective compression thanks to high-precision parts

Flow channels re-designed to deliver more efficient compression



Easy installation

The outdoor units are designed to satisfy any installation need. They are extremely compact and light. An example: only 77 kg for 14 kW of power!

In addition, the system is very flexible, and the condensing units can be positioned in difficult installation spaces, thanks to the refrigerant piping length (up to 75 m).



The importance of the outdoor unit

The condensing unit is the most important element of an air conditioning system. It contains the compressor and the condensing coil.

We know that a perfect unit is the sum of perfection in every detail. Solutions that are studied and verified in every tiny element are recognised universally by air conditioning professionals for their total reliability.



The condensing coil

The condensing coil uses two different pipes to obtain the most efficient heat transfer.

The phase changes from gas to liquid, and the diameter is adapted according to the refrigerant state.

Outdoor unit

NEW

HIGH HEAT EXCHANGER EFFICIENCY IS ACHIEVED BY USING CONDENSER COILS WITH TWO DIFFERENT TUBE DIAMETERS.

In the liquid phase a small diameter allows to achieve increased flow rates.

In the gas phase a large diameter is used to reduce pressure losses.

A powerful breeze

The fan in the outdoor unit has been re-designed to deliver higher static pressure and reduced sound levels to offset a more compact heat exchanger.

New fan blades have been designed to reduce eddy currents and turbulence with "anti-eddy" protuberances and a reverse curved profile.

In this way, despite a more compact coil, air flow has been increased and sound power level decreased.



Outdoor unit

Advanced DC motor and fan

Fan



New Digital Inverter (series 4): the ideal solution to replace old units, reusing existing refrigerant lines

This new system represents the advanced solution that meets the increasing market needs, in terms of comfort and ease of installation.

Thanks to the filter positioned in the refrigerant circuit, the new Digital Inverter system, equipped with R410A refrigerant, can use piping designed for old R22 or R407C refrigerant*.

Thanks to high-mesh filters and to stable lubricant oil against chloride compounds, the new Digital Inverter – series 4 – enables the existing pipework to be used.

This solution offers significant benefits in terms of performances, acoustic comfort and efficiency.

The Digital Inverter – series 3 – is also still available, combining ecology and savings in a smart unit. It offers technology, efficiency and easy installation.

* Provided the existing pipework meets current legislation regarding the pressure rating of R410A



Super Digital Inverter: high performance

The Super Digital Inverter range is dedicated to those who demand the best, without any compromise. In fact, this system offers all the features of the standard series, plus

superior characteristics, such as excellent performance, high energy efficiency and wide operating range.





Indoor units: an extended range of solutions

Toshiba offers a wide range of systems and indoor units, to satisfy any kind of requirement.

They are ideal for shops, offices and restaurants.

They are very flexible and easy to install.

Toshiba's indoor unit range includes discreet cassettes, stylish high-wall and invisible ducted units. Toshiba

can offer the right solution for the most demanding application.

New four-way cassette

This A class unit (series 4) is easy to install and maintain and provides high performance and total comfort. Unobtrusive and flexible, it is ideal for small commercial applications, where space is limited.



Compact four-way cassette

Fits all the standard 600 × 600 mm grid ceilings. Its compact design blends with any room interior, where appearance is as important as functionality.



Ducted

Suitable for a wide range of applications, the ducted unit is completely unobtrusive and ensures uniform air distribution. It is ideal for hotels and banks, due to its very low sound levels.



Ceiling

This ceiling-suspended unit is ideal for offices, classrooms and restaurants. It provides high efficiency and very low noise level.



High-wall

With its stylish and compact design, this high-wall unit easily blends with any room interior. It is particularly suitable for elegant shops and restaurants. The advanced filtration system improves the indoor air quality



Flexi

This flexible unit can be installed either as a low-wall or ceiling-suspended model. Elegant and compact, it easily blends with the room interior.



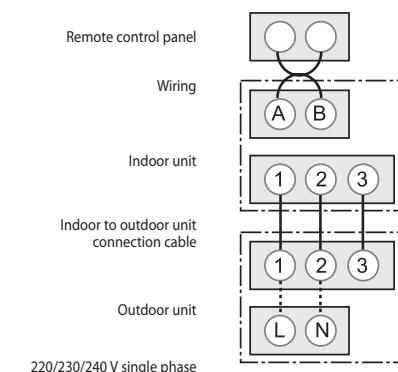
TCC Link. Toshiba simplicity

TCC Link controls have been projected to ensure easy installation and simple maintenance.

The number of wires connecting the indoor and outdoor units has been reduced from three to only two.

In this way the installation is much easier and the possibility of installation errors is greatly reduced.

System Wiring



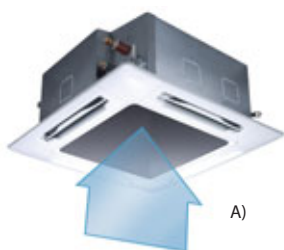
TCC Link. Flexibility re-defined

Unlike in conventional units, the return air (room) temperature sensor can be located in different positions.

In fact, it can be located remotely and independently, on the control panel, or even on the infrared remote control.

In a conventional indoor unit that is subject to wide temperature variations (i.e. close to a door in a public building), reacting to these fluctuations can cause overloading. In this case, moving the sensor from the unit to the remote control overcomes the problem.

An additional benefit is that the desired temperature is achieved near the remote control, i.e. closer to the occupants who should benefit from the system comfort levels.



A) Temperature sensor in return air
B) Remote temperature sensor

TCC Link. Power re-defined

When functioning in group mode, there is another exclusive feature: automatic addressing.

When the system is first set up, TCC Link analyses the network and assigns a virtual address to each indoor unit. A more efficient and secure solution than using hardware addresses with internal switches.

The TCC Link controls can also be used to program and optimise functions according to the characteristics of the space being air conditioned.

TCC Link controlled commercial systems can also be integrated into a BMS network using a dedicated interface.



Toshiba units have everything under control



Wired Control

RBC-AMT32E

The standard remote controller gives access to all of the functions for the indoor unit. It also gives access to the configurable engineer's menu and data retrieval features of the system, such as fault code and sensor information. The device is compatible with the new 4 Series DI/SDI cassette and the existing DI/SDI/SMMS and SHRM indoor units.



Central Controller

TCB-SC642TLE2

The central controller can control up to 64 indoor units individually. All their 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.



Weekly/Schedule Timer

TCB-EXS21TLE

Operates in weekly timer mode and schedule timer mode

6 programming schedules per day

Allows programming of 8 groups

100 hours max. back-up power supply

7 weekly schedule types and 3 programming schedules per day (weekly timer mode): combination of ON and OFF operation with a timer that can be set by a minute unit

Special holiday program



IR Remote Control

TCB-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.



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.

Control Options

Model number	Reference	Description	Used with
RBC-AMT32E	Wired Remote Controller	Main wired remote controller	All indoor units (Excluding DI Flexi type)
RBC-AS21E2	Simplified Wired Remote Controller	As above but designed for hotel and domestic applications	All indoor units (Excluding DI Flexi type)
TCB-EXS21TLE	Weekly/Schedule Timer	A 7 day timer complete with day omit	RBC-AMT32E/TCB-SC642TLE2
TCB-AX31U(W)-E	Infra-red Remote Kit	Wireless remote controller	Four-way cassette
RBC-AX22CE2	Infra-red Remote Kit	Wireless remote controller	All ceiling units and one-way cassettes (SH2 series)
TCB-AX21E2	Infra-red Remote Kit	Wireless remote controller	All other units (including compact four-way cassette)
TCB-T21LE2	Remote Sensor	Remote temperature sensor	All indoor units (Excluding DI Flexi type)
WH-H2UE	Infra-red Remote Controller	Wireless remote unit kit for Flexi units	DI Flexi
TCB-SC642TLE2	Central Remote Controller	Enables the control of up to 64 individual units	1:1 model connection interface required for DI/SDI (Excluding high-wall type)
TCB-CC163TLE2	On / Off Controller	Enables On/Off control (Max. 16 units)	All indoor units (Excluding DI Flexi type)
TCB-PCNT20E	Network / Protocol Adaptor Kit	Enables the integration with the AI network	All indoor units with AI-Network protocol (Excluding high-wall type)
TCB-PCNT30TLE2	1 : 1 model connection interface	Integration with DI, SDI	Allows DI/SDI indoor units to be connected to TCC link network
TCB-IFCB-4E2	Remote location On/Off Control Box	Enables remote location On/Off control	All indoor units (Excluding DI Flexi type)
TCB-PCOS1E2	Application Control kit	Enables night operation control, demand control, operation monitoring	All DI units
BMS-TP0641ACE	Touch Screen Controller	Enables full control of up to 64 indoor units	Network 1:1 model connection interface required for DI/SDI (Excluding high-wall type)
BMS-TP5121ACE	Touch Screen Controller	Enables full control of up to 512 indoor units	Network 1:1 model connection interface required for DI/SDI (Excluding high-wall type)
BMS-TP0641PWE	Touch Screen Controller	Enables full control of up to 64 indoor units with electric billing	Network 1:1 model connection interface required for DI/SDI (Excluding high-wall type)
BMS-TP5121PWE	Touch Screen Controller	Enables full control of up to 512 indoor units with electric billing	Network 1:1 model connection interface required for DI/SDI (Excluding high-wall type)
TCB-IFLN640TLE	Lonworks® Gateway	Allows control of 64 indoor units from a Lonworks based BMS	Network 1:1 model connection interface required for DI/SDI (Excluding high-wall type)

All the flexibility you have ever dreamt of

If you want high performance, compact units and optimum comfort, Toshiba has the ideal product for your requirements.

With the continuous improvement of the inverter control system, Toshiba offers vector control for its DC hybrid inverter, which enhances system efficiency and reduces noise levels in the power lines.

New developments in electronics have been complemented by compressor innovation.

High-tech elements include improved coils, high-precision components and higher refrigerant compression thanks to re-designed compression channels.

This new technology is able to satisfy applications that require cooling at low operating conditions down to -15°C .

Powerful heating capacities are also possible at the same outdoor temperature.

The enhanced DC twin-rotary compressor delivers stable performance with less friction, making it ideal for noise-sensitive applications.



Light Commercial range **Matching table**

Outdoor units		 Single-split DI RAV-SM563/803AT-E		 Single-split SDI RAV-SP562/802AT-E		 Single-split SDI RAV-SP1104/1404AT-E
Indoor units		DIGITAL INVERTER - series 3		SUPER DIGITAL INVERTER		
HP INVERTER	 Four-way cassette RAV-SMxxx UT-E	✓*	✓*	✓	✓	
	 Cassette 600 x 600 mm RAV-SM562MUT-E	✓**		✓**		
	 Ducted RAV-SMxxx BT-E	✓	✓	✓	✓	
	 Ceiling RAV-SMxxx CT-E	✓	✓	✓	✓	
	 High-wall RAV-SMxxx KRT-E	✓		✓		
	 Flexi RAV-SMxxx XT-E	✓				

* 4-way cassette – series 4 – combines to DI4

** availability only for size 563

R-410A HEAT PUMPS**ECO-DRIVING COMPRESSORS****A-CLASS SYSTEM**

Super Digital Inverter 4 Outdoor unit

Features

The new Super Digital Inverter, series 4, sets new standards for industry energy performance.

The units are equipped with the new Eco-driving twin-rotary compressors, where the magnetic action minimises the rotor friction loss.

The compressors can work at very low speed, down to 10 r/s, providing excellent energy performances in both cooling and heating.

The seasonal and the rated efficiencies are the highest in the industry for capacities from 10 to 12.5 kW.

The air management system has also been improved: high efficiency fan motors, larger fans and new fan grille design all contribute to the exceptional energy performance.

Piping and operating limits have also been improved. The new system can work at extremely low temperatures, in cooling and heating. The extended pipe length is now up to 75 m.

SDI4 is designed for R410A refrigerant, and R22 or R407C replacement systems that consume more energy.

Key features

Highest EER/COP values in the industry.

All systems are A-class rated in cooling and heating operation. Thanks to its new Eco-driving compressors, the new systems provide excellent seasonal energy performance, thus saving up to 70% annual energy cost compared to fixed speed systems.

Eco-driving twin-rotary compressors:

The structure and magnetic action of the new Eco-driving twin-rotary compressors provide excellent energy performance at full load as well as in partial load conditions.

Longer pipe runs, up to 75 m length and 30 m elevation for increased installation flexibility.

High static fan operation is possible utilising a dip switch in the outdoor unit enabling the units to be installed in a plant room.

* Provided the existing pipework meets current legislation regarding the pressure rating of R410A

The best EER and COP

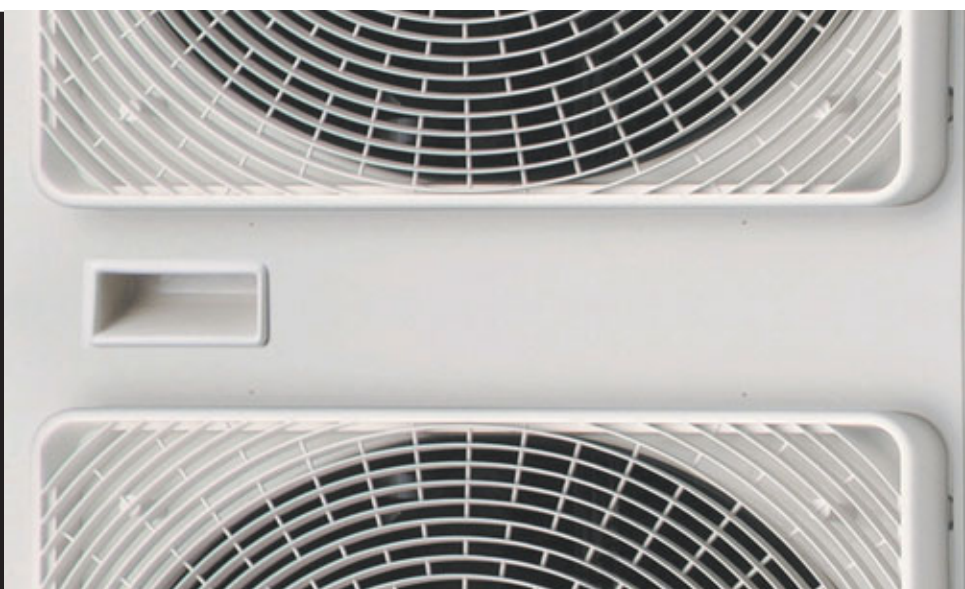
Wide operating range; down to -15°C in cooling and -20°C in heating

Extended pipe runs, up to 75 m length and 30 m elevation



Technical specifications heat pump

Outdoor unit		RAV-SP1104AT-E 4 HP	RAV-SP1404AT-E 5 HP
Air flow	m ³ /h – l/s	6060 – 1683	6180 – 1716
Sound pressure level, cooling	dB(A)	49	51
Sound power level, cooling	dB(A)	66	68
Operating range, cooling	°C	–15 to 43	–15 to 43
Sound pressure level, heating	dB(A)	50	52
Sound power level, heating	dB(A)	67	69
Operating range, heating	°C	–20 to 15	–20 to 15
Dimensions (H x L x D)	mm	1340 x 900 x 320	1340 x 900 x 320
Weight	kg	93	93
Compressor type		DC twin-rotary	DC twin-rotary
Flare connections, gas - liquid	in	5/8 – 3/8	5/8 – 3/8
Maximum pipe length	m	75	75
Maximum height difference	m	30	30
Pre-charged pipe length	m	30	30

R-410A HEAT PUMPS**VECTOR IPDU INVERTER****A-CLASS SYSTEM**

Sizes 562 – 802

Super performance

**Cooling/heating down
to -15 °C outside
temperature**

Super Digital Inverter 2 Outdoor unit

Features

The Super Digital Inverter (SDI) models, with high energy efficiency ratings and enhanced technological innovations, offer superior characteristics and performances.

Key features**High EER/COP values.**

Excellent energy efficiency: most systems are A-class rated, 50% energy cost savings, compared to fixed-speed units.

Vector Intelligent Drive Unit (IPDU): an increased number of smaller steps for more accurate control.

Extended pipe runs: 50 m length and 30 m elevation.

Wide operating range: down to -15 °C.



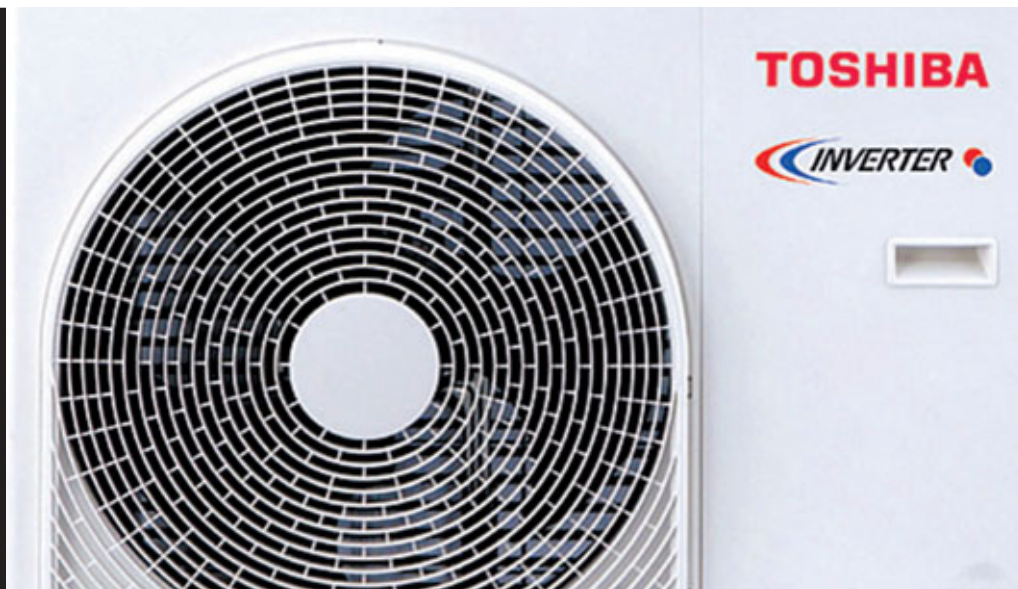
Technical specifications heat pump

Outdoor unit		RAV-SP562AT-E	RAV-SP802AT-E
		2 HP	3 HP
Air flow	m ³ /h – l/s	3420 – 950	3420 – 950
Sound pressure level, cooling	dB(A)	46	47
Sound power level, cooling	dB(A)	63	64
Operating range, cooling	°C	–15 to 43	–15 to 43
Sound pressure level, heating	dB(A)	47	49
Sound power level, heating	dB(A)	64	66
Operating range, heating	°C	–15 to 15	–15 to 15
Dimensions (H x L x D)	mm	795 x 900 x 320	795 x 900 x 320
Weight	kg	55	62
Compressor type		DC twin-rotary	DC twin-rotary
Flare connections			
Gas	in	1/2	5/8
Liquid	in	1/4	3/8
Minimum pipe length	m	5	5
Maximum pipe length	m	50	50
Maximum height difference	m	30	30
Pre-charged pipe length	m	20	30
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50

R-410A HEAT PUMPS

VECTOR IPDU INVERTER

HIGH PERFORMANCE



Sizes 1103 – 1403



Sizes 563 – 803

Digital Inverter 3 Outdoor unit

Features

Toshiba Digital Inverter 3 is an advanced solution that can meet the growing market need for ease of installation and increased consumer comfort.

This new system, which uses the environmentally responsible refrigerant R410A, can use piping designed for old R22 or R407C refrigerants*.

This new solution enables old high-energy consumption air conditioning systems to be replaced by the most advanced inverter units, with significant benefits in terms of performance, acoustic comfort and energy-efficiency.

* Provided the existing pipework meets current legislation regarding the pressure rating of R410A

Key features

Extremely light and compact condensing units: easy to install in small spaces.

Excellent EER with significant savings in annual power consumption.

Compatible with a wide choice of indoor units: ceiling, four-way cassette, compact four-way cassette, ducted, high-wall and flexi units.

Vector Intelligent Drive Unit (IPDU) technology ensures high performance.

Simplified maintenance using the new TCC-Link wired remote control panel.

Excellent EER

Light and compact: easy to install

Compatible with a wide range of indoor units



Technical specifications heat pump

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E
		2 HP	3 HP	4 HP	5 HP
Air flow	m ³ /h – l/s	2400 – 667	2700 – 750	4500 – 1250	4500 – 1250
Sound pressure level, cooling	dB(A)	46	48	53	54
Sound power level, cooling	dB(A)	63	65	70	71
Operating range, cooling	°C	–15 to 43	–15 to 43	–15 to 43	–15 to 43
Sound pressure level, heating	dB(A)	48	50	54	54
Sound power level, heating	dB(A)	65	67	71	71
Operating range, heating	°C	–15 to 15	–15 to 15	–15 to 15	–15 to 15
Dimensions (H x L x D)	mm	550 × 780 × 290	550 × 780 × 290	795 × 900 × 320	795 × 900 × 320
Weight	kg	38	42	77	77
Compressor type		DC twin-rotary	DC twin-rotary	DC twin-rotary	DC twin-rotary
Flare connections gas - liquid	in	1/2 – 1/4	5/8 – 3/8	5/8 – 3/8	5/8 – 3/8
Maximum pipe length	m	30	30	50	50
Maximum height difference	m	30	30	30	30
Pre-charged pipe length	m	20	20	30	30
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50



R-410A HEAT PUMPS

DIGITAL/SUPER DIGITAL
INVERTER

NEW DESIGN CEILING PANEL

New four-way cassette SDI/DI

Features

This new four-way cassette is unobtrusive and flexible and can easily blend in with any room interior.

Thanks to the new ceiling panel design, it enables uniform air distribution, providing total comfort. This system is ideal for small commercial applications.

An A-class cassette throughout.

Key features

Two louver shape options: straight flow louver and wide flow louver; optimum air distribution.

Light-weight unit, for easy and quick installation.

Simple maintenance, thanks to the self-cleaning function and the Ag-ion tip for anti-mould in drain cap.

Individual setting of louver position: three different Swing modes: standard, diagonally opposite, turn-around.

Uniform air distribution

Light and easy to install

Three different setting
modes

Super Digital Inverter (series 4) – Technical specifications **heat pump**

Outdoor unit		RAV-SP1104AT-E	RAV-SP1404AT-E
Indoor unit (cassette)		RAV-SM1104UT-E	RAV-SM1404UT-E
Cooling capacity	kW	10	12.5
EER	W/W	4.52	3.96
Energy efficiency class, cooling		A	A
Heating capacity	kW	11.2	14.0
COP	W/W	4.79	4.36
Energy efficiency class, heating		A	A

Super Digital Inverter (series 2) – Technical specifications **heat pump**

Outdoor unit		RAV-SP562AT-E	RAV-SP802AT-E
Indoor unit (cassette)		RAV-SM564UT-E	RAV-SM804UT-E
Cooling capacity	kW	5.3	7.1
EER	W/W	3.46	3.68
Energy efficiency class, cooling		A	A
Heating capacity	kW	5.6	8
COP	W/W	4.67	3.94
Energy efficiency class, heating		A	A

Digital Inverter (series 3) – Technical specifications **heat pump**

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E
Indoor unit (cassette)		RAV-SM564UT-E	RAV-SM804UT-E	RAV-SM1104UT-E	RAV-SM1404UT-E
Cooling capacity	kW	5.3	6.7	10	12
EER	W/W	3.21	3.21	3.22	3.21
Energy efficiency class, cooling		A	A	A	A
Heating capacity	kW	5.6	8	11.2	14
COP	W/W	3.89	3.62	3.82	3.68
Energy efficiency class, heating		A	A	A	A



R-410A HEAT PUMPS

DIGITAL/SUPER DIGITAL
INVERTER

COMPACT DIMENSIONS

Fits standard 600 x 600 mm
grid ceiling

Easy installation and
maintenance

Slim and unobtrusive
design

New louvre design

Compact four-way cassette SDI/DI

Features

This four-way cassette has been designed to suit all standard 600 x 600 mm grid ceilings, to allow simple and easy installation and maintenance.

Its compact design blends with any room interior, where appearance is as important as functionality and ease of installation.

Draught prevention and clean ceiling functions make this unit ideal for the most demanding applications.

When combined with the Super Digital Inverter outdoor unit, the highest energy label (A) is achieved.

A very effective product for any challenging refurbishment installation.

Key features

Slim-line dimensions: this cassette is suitable for the most demanding installations where ceiling height restrictions apply.

All capacity sizes have the same dimensions: so the installation always looks smarter.

Easy maintenance: ease of access to the corner pockets facilitates installation and adjustment for perfect ceiling fitting.

With a depth of only 30 mm, the unit is unobtrusive in all applications.

TCC Link control panel makes control of the system flexible and simplifies maintenance.

Super Digital Inverter (series 2) and Digital Inverter (series 3) – Technical specifications heat pump

Outdoor unit		RAV-SP562AT-E (SDI)	RAV-SM562AT-E (DI)
Indoor unit (600 x 600 cassette)		RAV-SM562MUT-E	RAV-SM562MUT-E
Cooling capacity	kW	5.0	5.0
EER	W/W	3.46	3.25
Energy efficiency class, cooling		A	A
Heating capacity	kW	5.6	5.6
COP	W/W	4.67	3.90
Energy efficiency class, heating		A	A



R-410A HEAT PUMPS

DIGITAL/SUPER DIGITAL
INVERTER

DISCREET DUCTED UNITS

Infra-red control option

Discharge spigots as
standardHigh static pressure up to
98 Pa

Ducted SDI/DI

Features

Whatever the shape of the room, ducted units ensure uniform temperatures throughout.

Cool or warm air is ducted into the room through diffusers, discreetly positioned in the walls or ceiling.

These units are ideal for hotels, banks and similar applications, where very low sound levels are needed.

Key features

Wide range of applications: the use of ducts ensures flexible installations.

Improved room aesthetics: with its unobtrusive presence.

High static pressure: 98 Pa can be achieved and all the areas of the room can have the same temperature simultaneously.

High-lift drain pump kit: raises drain up to 290 mm for flexible condensate piping layout.

Super Digital Inverter (series 4) – Technical specifications heat pump

Outdoor unit		RAV-SP1104AT-E	RAV-SP1404AT-E
Indoor unit (ducted)		RAV-SM1102BT-E	RAV-SM1402BT-E
Cooling capacity	kW	10	12.5
EER	W/W	3.4	3.26
Energy efficiency class, cooling		A	A
Heating capacity	kW	11.2	14
COP	W/W	4.04	4.11
Energy efficiency class, heating		A	A

Super Digital Inverter (series 2) – Technical specifications heat pump

Outdoor unit		RAV-SP562AT-E	RAV-SP802AT-E
Indoor unit (ducted)		RAV-SM562BT-E	RAV-SM802BT-E
Cooling capacity	kW	5.0	7.1
EER	W/W	3.60	3.38
Energy efficiency class, cooling		A	A
Heating capacity	kW	5.6	8.0
COP	W/W	3.61	3.81
Energy efficiency class, heating		A	A

Digital Inverter (series 3) – Technical specifications heat pump

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E
Indoor unit (ducted)		RAV-SM562BT-E	RAV-SM802BT-E	RAV-SM1102BT-E	RAV-SM1402BT-E
Cooling capacity	kW	5.0	7.1	10.0	12.5
EER	W/W	2.81	2.81	2.81	2.83
Energy efficiency class, cooling		C	C	C	C
Heating capacity	kW	5.6	8.0	11.2	14.0
COP	W/W	3.27	3.32	3.57	3.47
Energy efficiency class, heating		C	C	B	B



R-410A HEAT PUMPS

DIGITAL/SUPER DIGITAL
INVERTER

CEILING-SUSPENDED UNITS

Low sound levels

Slim-line design

Automatic louvre control
plus auto-swing

Ceiling SDI/DI

Features

The SDI and DI ceiling-suspended units meet a wide range of needs, and are the ideal solution for offices, classrooms and restaurants.

Automatic louvre control and low noise level are the key characteristics of this state-of-the-art unit.

In addition, the drain pan inside the unit is mould-proof for maximum hygiene and easily recyclable thanks to its stain-resistant polypropylene resin body.

Key features

Low noise level: the unit operates at only 30 dB(A) (for 2 HP) – half of conventional units, thanks to its new design.

Optimum louvre control: the air flow angle is automatically set to the most suitable setting according to your cooling or heating needs, and an automatic swing mode enables air flow to reach all areas of the room.

Installation efficiency: with the fully re-designed ceiling-mounted system, the unit can be suspended simply by adjusting two screws on the intake grille (compared to a dozen screws for conventional models).

Super Digital Inverter (series 4) – Technical specifications **heat pump**

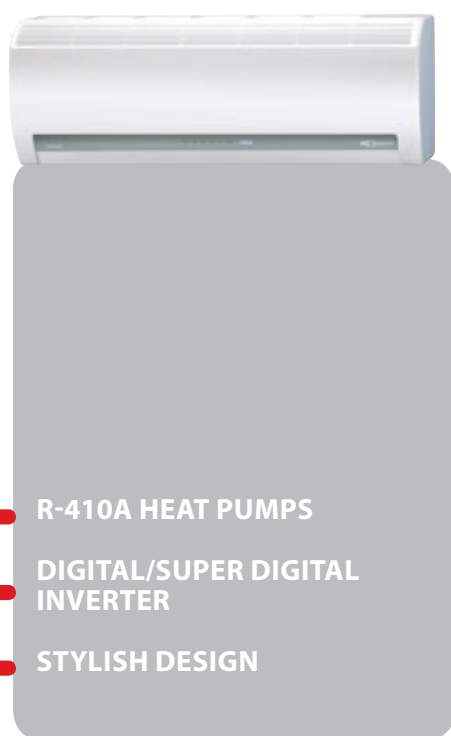
Outdoor unit		RAV-SP1104AT-E	RAV-SP1404AT-E
Indoor unit (ceiling)		RAV-SM1102CT-E	RAV-SM1402CT-E
Cooling capacity	kW	10	12.5
EER	W/W	3.75	3.35
Energy efficiency class, cooling		A	A
Heating capacity	kW	11.2	14.0
COP	W/W	4.27	3.84
Energy efficiency class, heating		A	A

Super Digital Inverter (series 2) – Technical specifications **heat pump**

Outdoor unit		RAV-SP562AT-E	RAV-SP802AT-E
Indoor unit (ceiling)		RAV-SM562CT-E	RAV-SM802CT-E
Cooling capacity	kW	5.0	7.1
EER	W/W	3.55	3.38
Energy efficiency class, cooling		A	A
Heating capacity	kW	5.6	8.0
COP	W/W	3.73	3.64
Energy efficiency class, heating		A	A

Digital Inverter (series 3) – Technical specifications **heat pump**

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E
Indoor unit (ceiling)		RAV-SM562CT-E	RAV-SM802CT-E	RAV-SM1102CT-E	RAV-SM1402CT-E
Cooling capacity	kW	5.0	7.0	10.0	12.3
EER	W/W	2.75	2.77	2.85	2.72
Energy efficiency class, cooling		D	D	C	D
Heating capacity	kW	5.6	8.0	11.2	14.0
COP	W/W	3.41	3.24	3.50	3.38
Energy efficiency class, heating		B	C	B	C



R-410A HEAT PUMPS

DIGITAL/SUPER DIGITAL
INVERTER

STYLISH DESIGN

Zeolite Plus filter

Bio Enzyme filter

Sasa filter
(virus deactivation)Gingko filter
(allergy relieving)

High-wall SDI/DI

Features

With its attractive and slim-line design, this high-wall is suitable for offices, restaurants and other applications where elegance is required.

The filtration system further improves the indoor air quality benefits of this high-wall unit.

Key features

With its slim design, this compact and stylish unit blends with any room setting.

Enhanced filtration system: Zeolite Plus + Sasa filter to deodorise, Bio-Enzyme filter + Gingko filter to purify and new antioxidant Vitamin C filter.

Auto louvre mode allows optimum air distribution throughout.

Wireless controller included.

TCC Link remote control (optional).

Super Digital Inverter (series 2) – Technical specifications **heat pump**

Outdoor unit		RAV-SP562AT-E	RAV-SP802AT-E
Indoor unit (high-wall)		RAV-SM562KRT-E	RAV-SM802KRT-E
Cooling capacity	kW	5.0	6.9
EER	W/W	3.60	2.88
Energy efficiency class, cooling		A	C
Heating capacity	kW	5.6	8.0
Heating range (min. – max.)	kW	2.2 to 7.0	2.2 to 9.5
COP	W/W	3.61	3.33
Energy efficiency class, heating		A	C

Digital Inverter (series 3) – Technical specifications **heat pump**

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E
Indoor unit (high-wall)		RAV-SM562KRT-E	RAV-SM802KRT-E
Cooling capacity	kW	5.0	7.0
EER	W/W	2.93	2.46
Energy efficiency class, cooling		C	E
Heating capacity	kW	5.6	8.0
Heating range (min. – max.)	kW	1.5 to 6.3	1.5 to 9.0
COP	W/W	3.29	3.00
Energy efficiency class, heating		C	D



Flexi DI

Features

The stylish Flexi unit brings a touch of luxury to light commercial interiors. It incorporates the latest Toshiba technology, and meets the needs of all occupants.

Installation flexibility and indoor air quality are two of the many advantages of the system.

Key features

Ultimate flexibility: low wall and ceiling-suspended installations are both possible, with no modification or additional accessories.

Triple-action filtration system: the first step removes large particles, then a passive electrostatic filter removes solid particles down to 0,01 micron in size and finally the Zeolite Plus filter absorbs even smaller airborne pollutants.

Natural air distribution: in ceiling-suspended applications, air can be directed either horizontally, parallel to the ceiling or away from the room occupants for non intrusive air distribution.

High-lift drain pump kit: raises drain piping up to 290 mm for flexible condensate piping layout (option – suitable for ceiling suspended unit only).

R-410A HEAT PUMPS

DIGITAL INVERTER

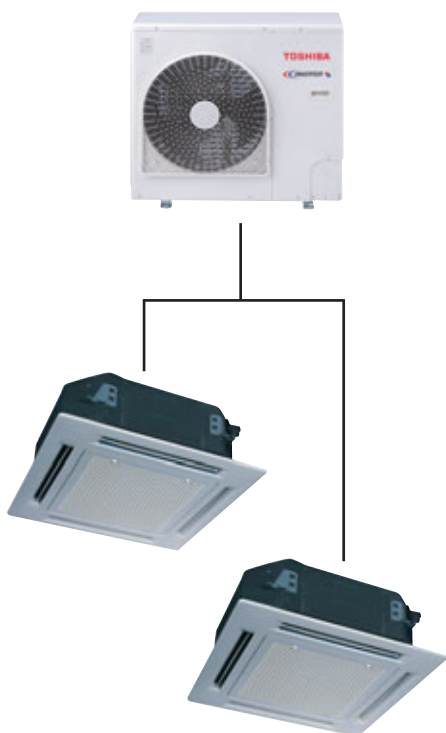
CEILING-SUSPENDED/
LOW-WALL UNIT

Triple action filtering
system

Zeolite Plus filter

Technical specifications heat pump

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E
Indoor unit (flexi)		RAV-SM562XT-E	RAV-SM802XT-E
Cooling capacity	kW	5.0	7.0
EER	W/W	2.67	2.46
Energy efficiency class, cooling		D	E
Heating capacity	kW	5.6	8.0
Heating range (min. – max.)	kW	1.5 to 6.3	1.5 to 9.0
COP	W/W	3.29	3.00
Energy efficiency class, heating		C	D

R-410A TWIN-SPLIT**DIGITAL/SUPER DIGITAL
INVERTER**

Twin-Split SDI/DI

Features

The twin-split system connects two indoor units of the same type and capacity to one outdoor unit in order to ensure more air distribution in a large zone.

One of the units is designated the master unit and it measures the temperature for both indoor units.

These should be installed in the same room, operate simultaneously and share a single controller.

Key features

Twin operation is possible with all light commercial indoor units.

Precise capacity control at all conditions.

Ideal for large shops, open-plan offices and other similar applications.

User-friendly controls.

Compact outdoor unit for easy installation.

Twinning requires a connection kit that includes an electromagnetic noise suppressor and pipe joint.

Super Digital Inverter (series 4) – Technical specifications **heat pump - twin system**

Outdoor unit	RAV-	SP1104AT-E	SP1404AT-E	SP1104AT-E	SP1104AT-E	SP1404AT-E	SP1104AT-E	SP1404AT-E	SP1104AT-E	SP1404AT-E
Indoor unit	RAV-	SM564UT-E	SM804UT-E	SM562MUT-E	SM562BT-E	SM802BT-E	SM562CT-E	SM802CT-E	SM562KRT-E	SM802KRT-E
	Indoor unit model	4-way cassette		Compact 4-way cassette	Ducted		Ceiling		High-wall	
Cooling capacity	kW	10	12,5	10	10	12,5	10	12,5	10	12,3
Cooling capacity (min. – max.)	kW	2,6 – 12,0	2,6 – 14,0	2,6 – 12,0	2,6 – 12,0	2,6 – 14,0	2,6 – 12,0	2,6 – 14,0	2,6 – 12,0	2,6 – 13,5
Power input, cooling	kW	2,21	3,16	2,67	2,94	3,83	2,67	3,73	2,77	3,88
EER	W/W	4,52	3,96	3,75	3,4	3,26	3,75	3,35	3,61	3,17
Energy efficiency class, cooling		A	-	A	A	-	A	-	A	-
Annual energy consumption	kWh	1105	-	1580	1470	-	1335	-	1385	-
Heating capacity	kW	11,2	14	11,2	11,2	14	11,2	14	11,2	14
Heating range (min. – max.)	kW	2,4 – 13,0	2,4 – 16,5	2,4 – 13,0	2,4 – 13,0	2,4 – 16,5	2,4 – 13,0	2,4 – 16,5	2,4 – 13,0	2,4 – 16,5
Power input, heating	kW	2,34	3,21	2,67	2,77	3,41	2,62	3,65	2,8	3,83
COP	W/W	4,79	4,36	4,19	4,04	4,11	4,27	3,84	4	3,66
Energy efficiency class, heating		A	-	A	A	-	A	-	A	-

Digital Inverter (series 3) – Technical specifications **heat pump - twin system**

Outdoor unit		SM1103AT-E	SM1403AT-E	SM1103AT-E	SM1103AT-E	SM1403AT-E	SM1103AT-E	SM1403AT-E	SM1103AT-E	SM1403AT-E
Indoor unit		SM564UT-E	SM804UT-E	SM562MUT-E	SM562BT-E	SM802BT-E	SM562CT-E	SM802CT-E	SM562KRT-E	SM802KRT-E
	Indoor unit model	4-way cassette		Compact 4-way cassette	Ducted		Ceiling		High-wall	
Cooling capacity	kW	10	12	10	10	12,5	10	12,3	10	12
Cooling capacity (min. – max.)	kW	3,0 – 11,2	3,0 – 13,2	3,0-11,2	3,0 – 11,2	3,0 – 13,2	3,0 – 11,2	3,0 – 13,2	3,0 – 11,2	3,0 – 13,0
Power input, cooling	kW	3,11	3,74	3,52	3,56	4,42	3,51	4,52	3,48	4,52
EER	W/W	3,22	3,21	2,843	2,81	2,83	2,85	2,72	2,87	2,65
Energy efficiency class, cooling		A	A	C	C	-	C	-	C	D
Annual energy consumption	kWh	1555	1870	1760	1780	-	1755	-	1740	2260
Heating capacity	kW	11,2	14	11,2	11,2	14	11,2	14	11,2	14
Heating range (min. – max.)	kW	3,0 – 13,0	3,0 – 16,0	3,0-13,0	3,0 – 12,5	3,0 – 16,0	3,0 – 12,5	3,0 – 16,0	3,0 – 12,5	3,0 – 16,0
Power input, heating	kW	2,93	3,8	3,14	3,14	4,03	3,2	4,14	3,14	4,24
COP	W/W	3,82	3,68	3,57	3,57	3,47	3,5	3,38	3,57	3,3
Energy efficiency class, heating		A	A	B	B	-	B	-	B	C



VN(...)TE/KTAE

Air-to-air heat exchangers

Features

The air-to-air heat exchangers can be integrated with the air conditioning system. They use exhaust air to pre-condition the incoming air, thus reducing the cooling or heating load and the overall size of the required air conditioning system. A range of electric heaters is available, together with controls that enable integration with both split and VRF indoor units.

Key features

Five models available with air flow ranges from 70 to 280 l/s (250-1000 m³/h).

Fresh air ventilation: increasingly required in rooms with no window access.

Temperature and humidity: changed by the entering fresh air.

Recycles 20-50% of the energy lost by ventilation.

Improved energy efficiency, particularly during extremes of heat and cold.

Recovers up to 75% heat from exhaust air.

Technical specifications heat pump

Model		VN-250TE	VN-350TE	VN-500TE	VN-800TE	VN-1KTAE
Air flow (h/l)	m ³ /h – l/s	250/170 – 70/48	350/280 – 98/78	500/370 – 140/104	800/650 – 224/182	1000/810 – 218/227
Temperature exchange efficiency (h/l)	%	75/77	75/77	75/77	75/77	75/77
Sound pressure level (h/l)						
Heat reclaim mode	dB(A)	28/21	32/26	34/25	39/32	38.5/31
Bypass mode	dB(A)	28/22.5	32/26	34/26.5	38.5/33	39/31.5
Operating range	°C	–10 to 40°C	–10 to 40°C	–10 to 40°C	–10 to 40°C	–10 to 40°C
Power Input (h/l)						
Heat reclaim mode	W	119/79	154/117	214/151	347/302	445/332
Bypass mode	W	119/79	151/113	210/145	337/297	438/326
Enthalpy exchange efficiency (h/l)						
Heating	%	70/73	69/71	67/71	71/74	71/73
Cooling	%	63/66	66/69	62/67	65/68	65/68
Max.. external static pressure (h/l)	Pa	90/37	95/42	105/38	140/70	90/35
Dimensions (H x L x D)	mm	270 × 599 × 882	270 × 804 × 882	270 × 904 × 962	388 × 884 × 1322	388 × 1134 × 1322
Weight	kg	29	37	43	71	83
Duct diameter	mm	150	150	200	250	250
Filtration efficiency grade (EU3)	%	82	82	82	82	82
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50
Maximum relative humidity	%	85	85	85	85	85



Toshiba Carrier UK Ltd
United Technologies House
Guildford Road
Leatherhead
Surrey KT22 9UT
Tel: 01372 220 240. Fax: 01372 220241.
marketing.uk@toshiba-ac.com
www.toshiba-aircon.co.uk

TOSHIBA AIRCONDITIONING
Advancing the *eco*-evolution