Toshiba VRF
AC - KNX Gateway

| Product Code	ITR830-0014
Power Supply	KNX Power Supply
Power Consumption	3,3 mA
Push Buttons	1 x KNX Programming Button
LED Indicators	1 x KNX Programming LED
Type of Protection	IP 20
Cable Distance	Max 150 m
Mode of Commissioning	S-Mode
Maximum Air Humidity	< 90 RH
Temperature Range	Operation (-10°C…70°C)
	Storage (-25°C…100°C)
Colour	Light Grey
Dimensions	88 x 62 x 27 mm (W x H x D)
Certification	KNX Certified
Configuration	Configuration with ETS

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DESCRIPTION

ITR830-0014 is an air conditioner gateway used for monitoring and controlling all the functioning parameters of Toshiba air conditioners via the KNX bus line. Toshiba VRF AC - KNX Gateway is compatible with models in VRF types categorized on the compatibility list published by Interra.

Toshiba VRF AC - KNX Gateway has an easy installation feature and can be installed inside the own AC indoor unit or a proper location away from the air conditioner, it connects one side directly to the electronic circuit of the AC indoor unit and in the other side directly to the KNX bus.

Note : Existing commands may vary according to indoor unit model. Please refer to relevant technical documents.

DIMENSIONS & CONNECTION DIAGRAM

- *All values given in the device dimensions are millimetres.*
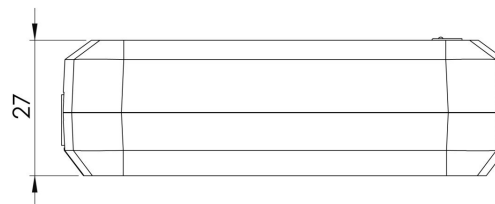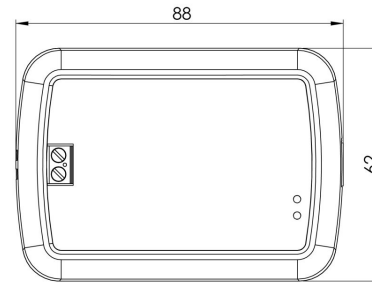
FUNCTIONS

- ITR830-0014 device provides complete bi-directional integration of VRF type air conditioners with KNX bus.

- Includes 4 logical advanced parameters, each logical parameter have up to 4 inputs and can be configured as AND, OR & XOR.

- Includes 8 advanced converter parameters, each converter has four operations math calculations according to input type.

- Logic and converter parameters can be used for energy savings, configurable scenes, temperature limits etc.

- The Toshiba air conditioner unit provides error notifications for errors that may occur in exceptional cases.
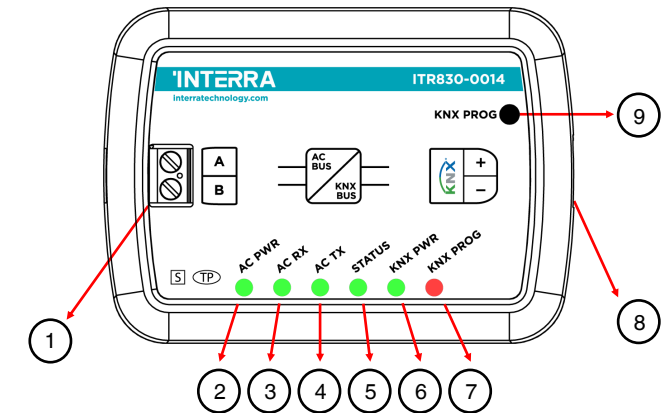
1. AC Indoor Unit Connection
2. AC Power LED
3. AC Receive Signal LED
4. AC Transmit Signal LED
5. Status LED
6. KNX Power LED
7. KNX Programming LED
8. KNX Connector
9. KNX Programming Button

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Gateway - Single Indoor Unit :
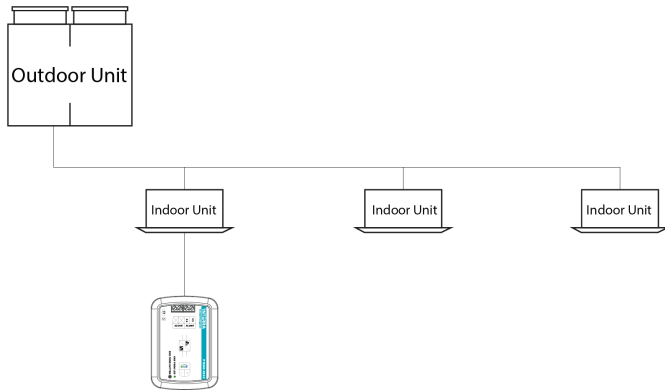

Figure 1

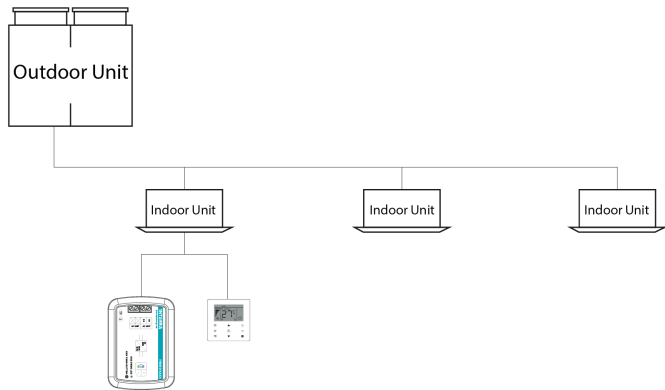**Gateway-Single Indoor Unit + Remote Controller :**

Figure 2

Gateway - Multi Indoor Unit :
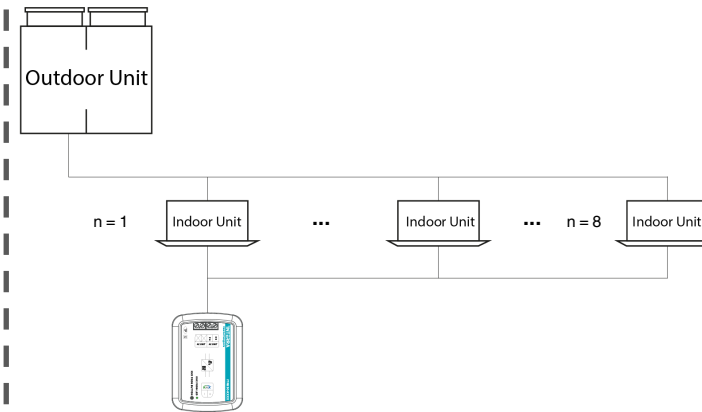
Figure 3

Figure 3 shows the connection diagram between the Toshiba AC-KNX Gateway and multiple air conditioner indoor units. Some indoor unit models do not support multi indoor unit control.

For detailed information, you can contact the air conditioner authorized service.

Gateway - Multi Indoor Unit + Remote Controller :
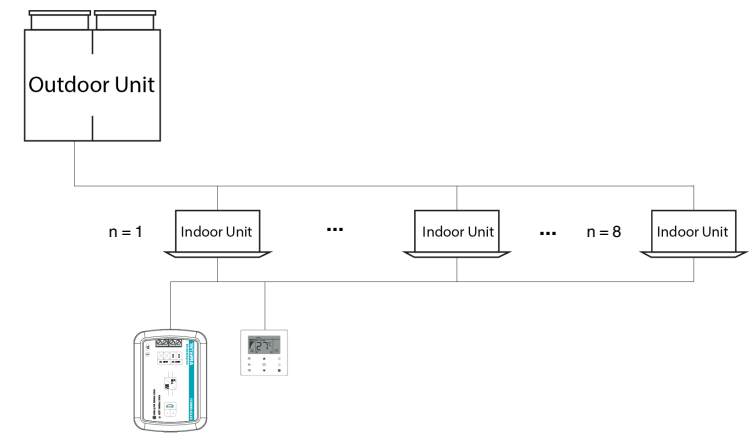
Figure 4

Figure 4 shows the connection diagram between the Toshiba AC-KNX Gateway, air conditioner remote controller and multiple air conditioner indoor units. If more than 2 indoor units are to be connected to an air conditioner remote controller, care must be taken to ensure that the connection is as shown in figure 4. Some Indoor unit models do not support multi indoor unit control.

For detailed information, you can contact the air conditioner authorized service.

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ERROR CODES

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Error Code KNX	Error In Remote Controller	Error Description
0	0	No Error
21	C01	Duplicated setting of control address
22	C02	Central control number of units mis-matched
23	C03	Incorrect wiring of central control
24	C04	Incorrect connection of central control
25	C05	System Controller fault, error in transmitting comms signal, i/door or o/door unit not working, wiring fault
26	C06	System Controller fault, error in receiving comms signal, i/door or o/door unit not working, wiring fault, CN1 not connected correctly
2C	C12	Batch alarm by local controller
30	C16	Transmission error from adaptor to unit
31	C17	Reception error to adaptor from unit
32	C18	Duplicate central address in adaptor
33	C19	Duplicate adaptor address
34	C20	Mix of PAC & GHP type units on adaptor
35	C21	Memory fault in adaptor
36	C22	Incorrect address setting in adaptor
37	C23	Host terminal software failure
38	C24	Host terminal hardware failure
39	C25	Host terminal processing failure
3A	C26	Host terminal communication failure
3C	C28	Reception error of S-DDC from host terminal
3D	C29	Initialization failure of S-DDC
3F	C31	Configuration change detected by adaptor
41	E01	Remote control detecting error from indoor unit, Address not set/Auto address failed. Check interconnecting wiring etc. Re-address system.

Error Code KNX	Error In Remote Controller	Error Description
42	E02	Remote detecting error from indoor unit
43	E03	Indoor unit detecting error from remote
44	E04	Indoor seeing error from outdoor. Qty of i/d units connected are less than qty set. Check; all i/d units are ON, reset turn off all units wait 5min power up
45	E05	Indoor unit detecting error from outdoor unit, Error in sending comms signal
46	E06	Outdoor unit detecting error from indoor unit, Error in receiving comms signal
47	E07	Outdoor unit detecting error from indoor unit, Error in sending comms signal
48	E08	Incorrect setting indoor/controller, Indoor address duplicated
49	E09	Incorrect setting indoor/controller, Remote address duplicated or IR wireless controller not disabled
4A	E10	Indoor unit detecting error from 'option' plug, Error in sending comms signal
4B	E11	Indoor unit detecting error from 'option' plug, Error in receiving comms signal
4C	E12	Auto addressing failed, Auto address connector CN100 shorted during auto addressing
4D	E13	Indoor unit failed to send signal to remote controller
4E	E14	Setting Failure, Duplication of master indoor units
4F	E15	Auto addressing failed, Number of indoor units connected are less than number set
50	E16	Auto addressing failed, Number of indoor units connected are more than number set
51	E17	Group control wiring error, Main indoor unit not sending signal for sub indoor units

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Error Code KNX	Error In Remote Controller	Error Description
52	E18	Group control wiring error, Main indoor unit not receiving signal for sub indoor units
54	E20	Auto addressing failed, No indoor units connected
58	E24	Auto addressing failed, Error on sub outdoor unit
59	E25	Auto addressing failed, Error on outdoor unit address setting
5A	E26	Auto addressing failed, Quantity of main and sub outdoor units do not correspond to the number set on main outdoor unit P.C.B.
5D	E29	Auto addressing failed, Sub outdoor unit not receiving comms for main outdoor unit
5F	E31	Between units, Comms failure with MDC, does E31 remain after power is re-instated? If so replace PCB. & power PCB
61	F01	Indoor Heat Exch inlet temp sensor failure (E1)
62	F02	Indoor Heat Exch freeze temp sensor failure (E2)
63	F03	Indoor Heat Exch outlet temp sensor failure (E3)
64	F04	Outdoor Discharge temp sensor failure (TD) or (DISCH1)
65	F05	Outdoor Discharge temp sensor failure (DISCH2)
66	F06	Outdoor Heat Exch temp sensor failure (C1) or (EXG1)
67	F07	Outdoor Heat Exch temp sensor failure (C2) or (EXL1)
68	F08	Outdoor Air temp sensor failure (TO)
6A	F10	Indoor inlet temp sensor failure
6B	F11	Indoor outlet temp sensor failure
6C	F12	Outdoor Intake sensor failure (TS)
6D	F13	GHP - Cooling water temperature sensor failure
70	F16	Outdoor High pressure sensor failure
71	F17	GHP - Cooling water temperature sensor fault

Error Code KNX	Error In Remote Controller	Error Description
72	F18	GHP - Exhaust gas temperature sensor fault
74	F20	GHP Clutch coil temperature fault
77	F23	Outdoor Heat Exch temp sensor failure (EXG2)
78	F24	Outdoor Heat Exch temp sensor failure (EXL2)
7D	F29	Indoor EEPROM error
7E	F30	Clock Function (RTC) fault
7F	F31	Outdoor EEPROM error
81	H01	Compressor Fault, Over current (Comp1)
82	H02	Compressor Fault, Locked rota current detected (Comp1)
83	H03	Compressor Fault, No current detected (Comp1)
85	H05	Compressor Fault, Discharge temp not detected (Comp1)
86	H06	Compressor Fault, Low Pressure trip
87	H07	Compressor Fault, Low oil level
88	H08	Compressor Fault, Oil sensor Fault (Comp1)
8B	H11	Compressor Fault, Over current (Comp2)
8C	H12	Compressor Fault, Locked rota current detected (Comp2)
8D	H13	Compressor Fault, No current detected (Comp2)
8F	H15	Compressor Fault, Discharge temp not detected (Comp2)
95	H21	Compressor Fault, Over current (Comp3)
96	H22	Compressor Fault, Locked rota current detected (Comp3)
97	H23	Compressor Fault, No current detected (Comp3)
99	H25	Compressor Fault, Discharge temp not detected (Comp3)
9B	H27	Compressor Fault, Oil sensor fault (Comp2)
9C	H28	Compressor Fault. Oil sensor (connection failure)
9F	H31	Compressor Fault. IPM trip (IMP current on temperature)
C1	L01	Setting Error, Indoor unit group setting error

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Error Code KNX	Error In Remote Controller	Error Description
C2	L02	Setting Error, Indoor/outdoor unit type/model mismatched
C3	L03	Duplication of main indoor unit address in group control
C4	L04	Duplication of outdoor unit system address
C5	L05	2 or more controllers have been set as 'priority' in one system - shown on controllers set as 'priority'
C6	L06	2 or more controllers have been set as 'priority' in one system - shown on controllers not set as 'priority'
C7	L07	Group wiring connected on and individual indoor unit
C8	L08	Indoor unit address/group not set
C9	L09	Indoor unit capacity code not set
CA	L10	Outdoor unit capacity code not set
CB	L11	Group control wiring incorrect
CD	L13	Indoor unit type setting error, capacity
CF	L15	Indoor unit paring fault
D0	L16	Water heat exch unit setting failure
D1	L17	Miss-match of outdoor unit with different refrigerant
D2	L18	4-way valve failure
D3	L19	Water heat exch unit duplicated address
D5	L21	Gas type setup failure
E1	P01	Indoor unit fault, Fan motor thermal overload
C8	L08	Indoor unit address/group not set
C9	L09	Indoor unit capacity code not set
CA	L10	Outdoor unit capacity code not set
CB	L11	Group control wiring incorrect
E2	P02	Outdoor unit fault, Compressor motor thermal overload, over or under voltage

Error Code KNX	Error In Remote Controller	Error Description
E3	P03	Outdoor unit fault, Compressor discharge temperature too high (Comp1) over 111 ºC. Low on ref gas, exp valve, pipework damage.
E4	P04	Outdoor unit fault, High pressure trip
E5	P05	Outdoor unit fault, Open phase on power supply. Check power on each phase, inverter pcb, control pcb
E9	P09	Indoor unit fault, Ceiling panel incorrectly wired
EA	P10	Indoor unit fault, Condensate float switch opened
EB	P11	GHP - Water Heat exch low temp (frost protection) fault
EC	P12	Indoor unit fault, Fan DC motor fault
EE	P14	Input from leak detector (If fitted)
EF	P15	Refrigerant loss, high discharge temp and EEV wide open and low compressor current draw.
F0	P16	Outdoor unit fault, Open phase on compressor power supply
F1	P17	Outdoor unit fault, Compressor discharge temperature too high (Comp2) over 111 degC. Low on ref gas, exp valve, pipework damage.
F2	P18	Outdoor unit fault, By-pass valve failure
F3	P19	Outdoor unit fault, 4 way valve failure, i/door temp rises in cooling or fills in heating. Check wiring, coil, pcb output, valve operation.
F4	P20	Ref gas, high temp/pressure fault, heat exch temp high C2, 55-60 degC, cooling over-load, sensor fault
F6	P22	Outdoor unit fan motor fault, fan blade jammed, check connections, does fan turn freely, motor resistance 30-40ohm on each pair, no fan fault, yes pcb fault.
FA	P26	Outdoor unit fault, Compressor overcurrent - check winding resistance, Inverter failure - check internal resistance term HIC + & - to UVW 200-300Kohm or more
FC	P29	Outdoor unit fault, Inverter circuit fault - Motorcurrent Detection Circuit (MDC) fault, check comp windings, sensors C1 & TS, if ok possible pcb failure.
FD	P30	Indoor unit fault, System controller detected fault on sub indoor unit
FF	P31	Simultaneous operation multi control fault, Group controller fault

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