MITSUBISHI ELECTRIC
HVAC Advanced Products Division

City Multi R2 Series System Commissioning Report

INSTALLATION DATA:

Site Address: _____

_____

State: _____ **Postal Code:** _____ **Country:** _____

Installing Contractor: _____ **Telephone:** _____

Commissioning Technician: _____ **City Multi Course Registration Number:** _____

Commissioning Date: _____

System Reference: _____ **CFC Safe Handling Registration Number:** _____

Location: _____

Warranty Number (Provided by MEUS (MESCA) /HVAC on receipt of commissioning data) _____ **Equipment Purchased From:** _____

Before running the system, carry out a full pre-commissioning check of the following points:

1. Refrigeration pipe work has been pressure tested and evacuated as per the pressure test and evacuation method statements on the inside cover of this commissioning booklet.
2. Correct refrigeration trim charge has been added and service valves opened.
3. All units, remote controllers and centralized controllers in the system have correct address settings prior to turning on power to the outdoor unit.
4. Power supply (source voltage) to all units must be checked prior to switching on. Once the unit has been switched on, the crankcase heater must be left on for a 12-hour period prior to start-up. Do not connect M-Net terminals during this period. After the 12-hour period has elapsed, turn off the main power circuit breaker for at least 10 minutes, reconnect M-Net terminals and then turn the main power circuit breaker back on.
5. All control cable installation is complete using 16AWG shielded cable. Cable shield is grounded at the outdoor unit only. (Not to the "S" terminal)
6. All condensate drainpipe work must be complete.

EVACUATION DETAILS:

Pressure Test Details: _____ **Evacuation Details:** _____

Test Pressure: _____ **Vacuum Period:** _____

Test Period: _____ **Vacuum Achieved:** _____

Pressure Rise Test: _____

COMMISSIONING ENGINEER'S COMMENTS AND POINTS FOR ATTENTION:

Commissioning Engineer's Signature: _____

NOTE:
Commissioning Data is to be returned to the following address within 21 days of completion to Validate Warranty and obtain Registration Number.
For USA: Mitsubishi Electric, HVAC Advanced Products Division, 4505-A Newpoint Place, Lawrenceville, GA 30043
For Canada: Mitsubishi Electric Sales Canada Inc, HVAC Division, 4299 14th Avenue, Markham, Ontario L3R OJ2

MITSUBISHI ELECTRIC
HVAC Advanced Products Division

City Multi R2 Series System Pre-Commissioning and Installation Check List

SYSTEM:				
NO.	**SYSTEM AND INSTALLATION STATUS**			**REMARKS**
1	Installation Location	Outdoor Unit	☐ Rooftop ☐ Other Location (_____)	
		BC Controller	☐ Ceiling ☐ Other Location (_____)	
2	Maintenance Accessibility	Outdoor Unit BC Controller Indoor Units	☐ Good ☐ Poor ☐ Good ☐ Poor ☐ Good ☐ Poor	
3	Furthest Piping Length		Outdoor to Indoor: _____ Ft.	
4	Height Difference		Outdoor to BC: _____ Ft. Indoor to BC: _____ Ft. Indoor to Indoor: _____ Ft.	
5	Standard of Pipe-work		☐ Good ☐ Poor	
6	Standard of Pipe Insulation		☐ Good ☐ Poor	
7	Connection of Main Power Source	Outdoor Unit BC Controller Indoor Units	☐ Good ☐ Poor ☐ Good ☐ Poor ☐ Good ☐ Poor	
8	Connection of Control System	Outdoor – BC BC – Indoor Indoor – RC Electric Cable Comm. Cable	☐ Good ☐ Poor ☐ Good ☐ Poor ☐ Good ☐ Poor Type: _____ Size: _____ Type: _____ Size: _____	
9	Standard of Electrical Insulation		☐ Good ☐ Poor	
10	Access to Remove Electrical Covers		☐ Good ☐ Poor	
11	Control Method (if centralized, please specify in remarks column)		☐ G-50A ☐ MJ-103 ☐ MJ-310E ☐ Non-Centralized	
12	Remote Controller Operation	Ventilation Cool / Heat Automatic	☐ Good ☐ Poor ☐ Good ☐ Poor ☐ Good ☐ Poor	
13	Connection of Options		☐ Good ☐ Poor	

OUTDOOR UNIT:						
NO.	**OUTDOOR UNIT OPERATION STATUS**					**REMARKS**
14	Outdoor Unit Details	Model No: _____		Serial No: _____		
15	Compressor Details	Model No: _____		Serial No: _____		
16	Total Indoor Unit Connection Capacity			_____ %		
17	Power Source	Voltage	L1－L2 V	L2－L3 V	L3－L 1 V	
		Current	L1 A	L2 A	L3 A	
18	Control Voltage			_____ V		
19	Vibration / Noise	Compressor Fan	☐ Good ☐ Poor ☐ Good ☐ Poor			
20	Additional Refrigerant Charge			_____ Oz.		
21	BC Controller	Model No: _____		Serial No: _____		
22	Voltage	Power Source Control		_____ V _____ V		

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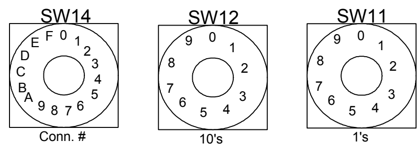
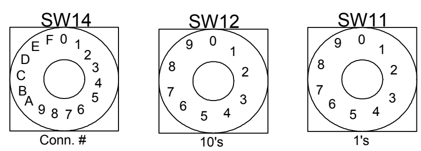
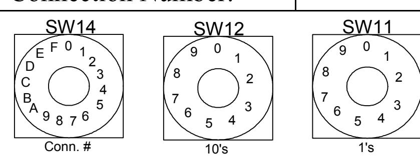
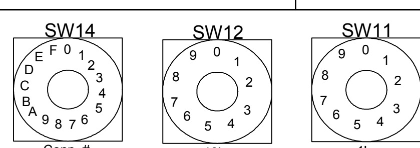
City Multi R2 Series System Pre-Commissioning and Installation Check List

INDOOR UNITS:					
	INDOOR UNIT # _____				REMARKS
Model No.		Unit Address Number:			
		Connection Number:			
Serial No.					
Location					
Remote Controller Address No. (ME)					
Voltage	Line Voltage	____________________ V			
	Control Voltage	____________________ V			
Inlet Temperature	Cooling:	________ DB°F	Heating:	________ DB°F	
Outlet Temperature	Cooling:	________ DB°F	Heating:	________ DB°F	

	INDOOR UNIT # _____				REMARKS
Model No.		Unit Address Number:			
		Connection Number:			
Serial No.					
Location					
Remote Controller Address No. (ME)					
Voltage	Line Voltage	____________________ V			
	Control Voltage	____________________ V			
Inlet Temperature	Cooling:	________ DB°F	Heating:	________ DB°F	
Outlet Temperature	Cooling:	________ DB°F	Heating:	________ DB°F	

	INDOOR UNIT # _____				REMARKS
Model No.		Unit Address Number:			
		Connection Number:			
Serial No.					
Location					
Remote Controller Address No. (ME)					
Voltage	Line Voltage	____________________ V			
	Control Voltage	____________________ V			
Inlet Temperature	Cooling:	________ DB°F	Heating:	________ DB°F	
Outlet Temperature	Cooling:	________ DB°F	Heating:	________ DB°F	

	INDOOR UNIT # _____				REMARKS
Model No.		Unit Address Number:			
		Connection Number:			
Serial No.					
Location					
Remote Controller Address No. (ME)					
Voltage	Line Voltage	____________________ V			
	Control Voltage	____________________ V			
Inlet Temperature	Cooling:	________ DB°F	Heating:	________ DB°F	
Outlet Temperature	Cooling:	________ DB°F	Heating:	________ DB°F	

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City Multi R2 Series System Additional Refrigerant Charge and Total Pipe Run

TOTAL LIQUID PIPE LENGTH:	
L_1: (3/4")	_____ Ft.
L2: (1/2")	_____ Ft.
L3: (3/8")	_____ Ft.
L4: (1/4")	_____ Ft.

Additional amount (oz.)		1.72 x L_1		1.30 x L_2		0.65 x L_3		0.26 x L_4		
oz.	=		+		+		+		+	

Total Capacity of indoor units connected	Additional Refrigerant
PURY-80/100TMU	
33 – 64 BTU/hr.	53 oz.
65 – 130 BTU/hr.	71 oz.

INDEX CAPACITY CALCULATION:	
Indoor Unit	**Unit Size**
1	BTU/hr.
2	BTU/hr.
3	BTU/hr.
4	BTU/hr.
5	BTU/hr.
6	BTU/hr.
7	BTU/hr.
8	BTU/hr.
9	BTU/hr.
10	BTU/hr.
11	BTU/hr.
12	BTU/hr.
13	BTU/hr.
14	BTU/hr.
15	BTU/hr.
16	BTU/hr.
TOTAL	_____ BTU/hr.

$$\text{Total System Index} + \frac{\text{(Total of Indoor Unit Sizes)}}{\text{(Outdoor Unit Size)}} \times 100 = \quad \%$$

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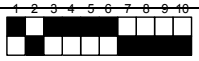
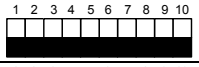
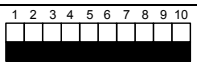
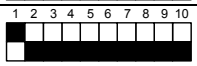
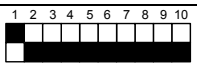
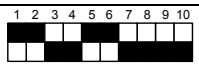
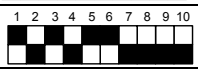
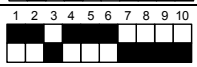
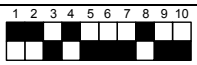
HVAC Advanced Products Division

City Multi R2 Series System Operational Checks (SW1 Functions)

OUTDOOR UNIT OPERATIONAL CHECKS:							
Symbol	**Location**		**Standard Reading**		**Reading**		**Dipswitch SW1 Setting**
	Outdoor Unit		**Cooling**	**Heating**	**C**	**H**	**1 2 3 4 5 6 7 8 9 10**
F	Compressor Frequency	80TMU	20 to 76	20 to 93			
		100TMU	20 to 98	20 to 105			
AL	Accumulator Liquid Level		1 or 0				
SV1	High/Low Bypass Solenoid		LD4 ON: Open OFF: Closed				
SV2	High/Low Bypass Solenoid		LD5 ON: Open OFF: Closed				
SV3			LD6 ON: Open OFF: Closed				
SV4	Condenser Capacity Solenoid		LD7 ON: Open OFF: Closed				
SV5			LD1 ON: Open OFF: Closed				
SV6			LD2 ON: Open OFF: Closed				
TH1	Compressor Discharge Temp.		176 to 230°F				
TH6	Ambient Air Temperature		95°F	47°F			
63LS	Low Pressure		43.5 to 72.5 PSI				
63HS	High Pressure		Faults at 427 PSI				

BC CONTROLLER OPERATIONAL CHECKS:						
Symbol	**Location**	**Standard Reading**		**Reading**		**Dipswitch SW1 Setting**
	BC Controller	**Cooling**	**Heating**	**C**	**H**	**1 2 3 4 5 6 7 8 9 10**
SC6	Sub-cool: T(P3) – TH16	12to 27°F	—			
SH2	Super-heat: TH15 – TH12	0 to 9°F	—			
P1	Saturated Temperature (High Side)	Should read very close to reading from 63HS				
P3	Saturated Temperature (Medium Side)	Should read approximately 40 PSI less than 63HS in heating or the same as 63HS in cooling				

* All figures on this page are for reference point only and not actual

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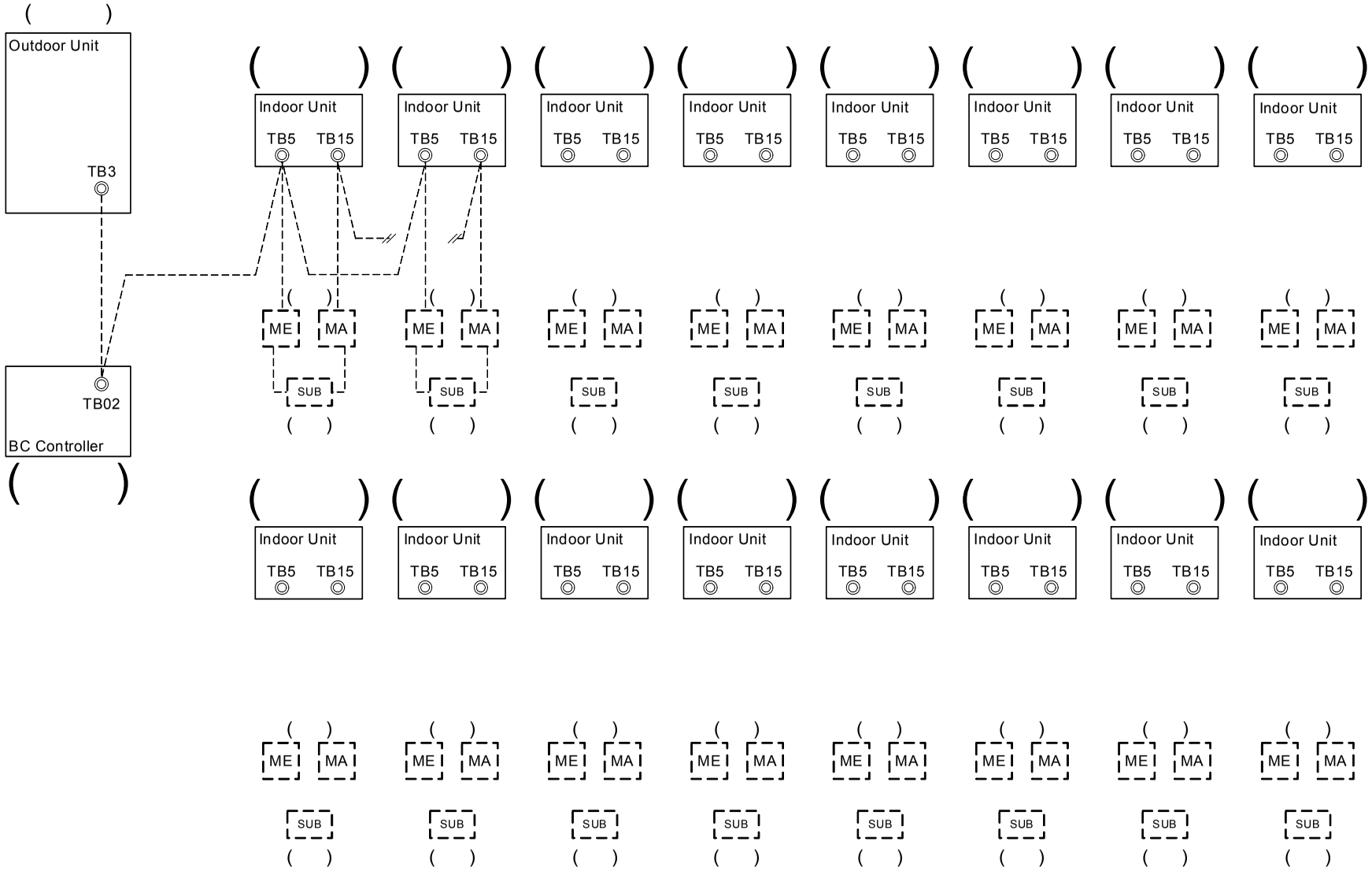
Model: _____

Serial No.: _____

Complete this system wiring diagram by drawing control lines between the system components and remote controllers as actual installed wiring. Fill in system component model numbers address settings and SW14 (BC Controller port assignment) in the brackets provided. Draw boxes around grouped units to signify control system grouping.



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City Multi R2 Series System Periodic Inspection

PERIODIC INSPECTION:

Equipment	Parts	Service Cycle							Detail of Service	Service Action	Trouble when Service is Neglected
		1 Mo	6 Mo	1 Yr	2 Yr	3 Yr	4 Yr	5 Yr			
Common Parts	Insulators / Printed Circuit Boards								Visual inspection.	Tighten terminals as necessary on insulators & printed circuit boards.	Nuisance tripping or failure of components.
City Multi Indoor Unit	Casing (Appearance)								Visual check for damage & dust appearance where required.	Clean with neutral detergent solution. Repaint if necessary.	
	Frame								Visual check for rust. Visual check for integrity of insulation.	Repair if rusting of frame is serious. Repair degraded or improper insulation.	Unit corrosion by rust. Condensation buildup due to improper insulation.
	Fan								Visual check for dust/dirt buildup on fan blades, which may lead to the fan running out of balance.	Clean fan blades as necessary to prevent out of balance run.	Premature failure of fan.
	Motor	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Visual check of wiring. Insulation resistance check to be carried out annually.	Measure insulation resistance. Should read greater than 1MΩ.	Possible failure of motor.
	Heat Exchanger								Check for clogging by dust.	Clean air inlet side as necessary.	Lowered cooling / heating capacity due to low airflow rate.
	Drain Pan								Check for obstructions and free flow of water.	Clean as necessary to eliminate obstructions and check condition of drain pan.	Overflow by clogged drain pan.
	High Efficiency Filter								Check for clogging by dust.	Replace filter as necessary.	Lowered cooling / heating capacity due to low air-flow rate.
	Temperature Readings								Measure supply and return air temperature.	Measure temperature of supply and return air in unit.	
City Multi Outdoor Unit	Frame								Visual check for rust. Visual check for integrity of insulation.	Repair if rusting of frame is serious. Repair degraded or improper insulation.	Unit corrosion by rust. Condensation buildup due to improper insulation.
	Fan								Visual check for dust/dirt buildup on fan blades, which may lead to the fan running out of balance.	Clean fan blades as necessary to prevent out of balance run.	Premature failure of fan.
	Motor	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Visual check of wiring. Insulation resistance check to be carried out annually.	Measure insulation resistance. Should read greater than 1MΩ.	Possible failure of motor.
	Heat Exchanger								Check for clogging by dust.	Clean heat exchanger coils as necessary.	Lowered cooling / heating capacity due to low airflow rate.
	Compressor		Ω						Check high / low pressure. Measure insulation resistance. Audibly check compressor noise level.	Measure insulation resistance. Should read greater than 1MΩ.	Generation of abnormal sound. Compressor burnout / lock.
	Operational Readings								Record operational readings in Cool / Heat.	Use dipswitch SW1 functions (refer to service handbook)	
	Magnetic Contactor								Check for loose terminal connections.	Tighten terminals as necessary.	Improper contact can result in nuisance tripping or coil burnout.
	Electrical Connections								Check all electrical terminal connections (primary power, communications, etc.)	Tighten terminals as necessary on insulators, terminals & printed circuit boards.	Improper contact can result in nuisance tripping or premature failure of components.
	External Panel								Visual check for damage and rust. Wax panels periodically.	Repair / repaint as necessary.	

NOTE: Frequency of maintenance may increase dependent upon the equipment's environment. Failure to maintain the system to the above minimum recommendations may result in the warranty becoming null and void.

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City Multi R2 Series System Maintenance Log

MAINTENANCE LOG:			
Maintenance Date	**Description / Remarks**	**Compressor Run Hours**	**Engineer's Signature**

NOTE: To obtain compressor run hours, use dipswitch SW1 set as shown below.