

A person wearing a blue long-sleeved shirt is sitting on a couch, using a silver laptop. The laptop screen displays the Ameren website, which includes a navigation menu and several content cards. The person's hands are on the keyboard, and they are wearing a ring on their left hand. A semi-transparent white box with a thin black border is overlaid on the center of the image, containing the text for the webinar.

Air Source Heat Pump Webinar

Samsung HVAC

Today's Speakers

Jose De La Portilla

Samsung HVAC
National Training Manager



Laurie Sherman

Samsung HVAC
Distribution Area Sales Manager





Ductless Disruption

SAMSUNG

Today's Journey



Ductless Market Data



Ductless/Mini Split Solutions

**WHAT'S YOUR
NEXT STEP?**

Ductless Disruption

Disruption

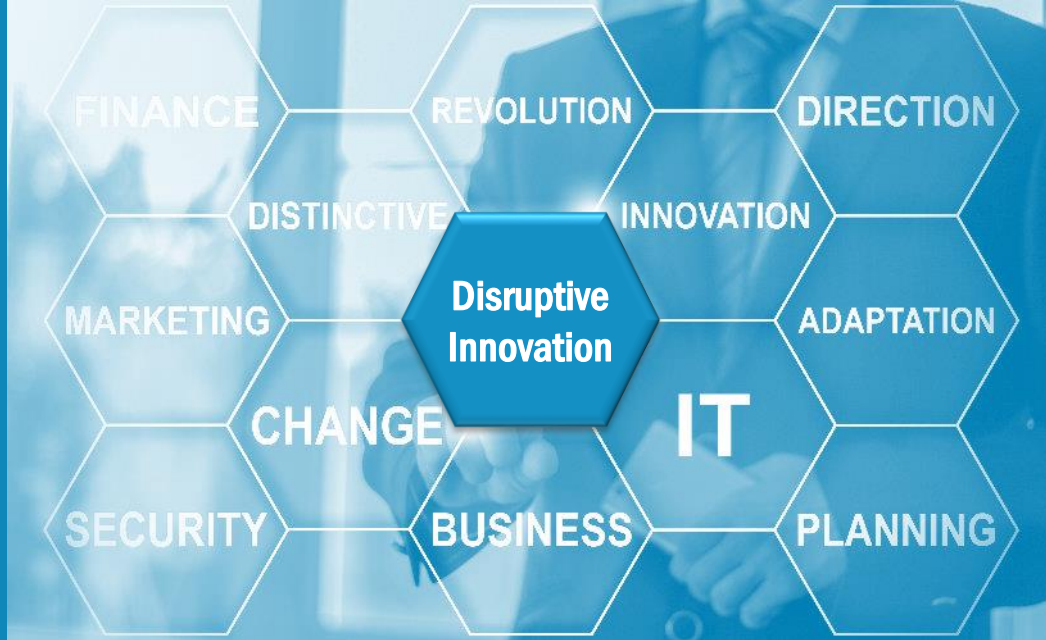
Disturbance or problems which interrupts an event, activity, or process



Ductless Disruption

Disruptive Innovation

- The process in which an underrated product or service starts to become popular enough to replace, or displace, a conventional product or service



Ductless Disruption

Disruptive Innovation

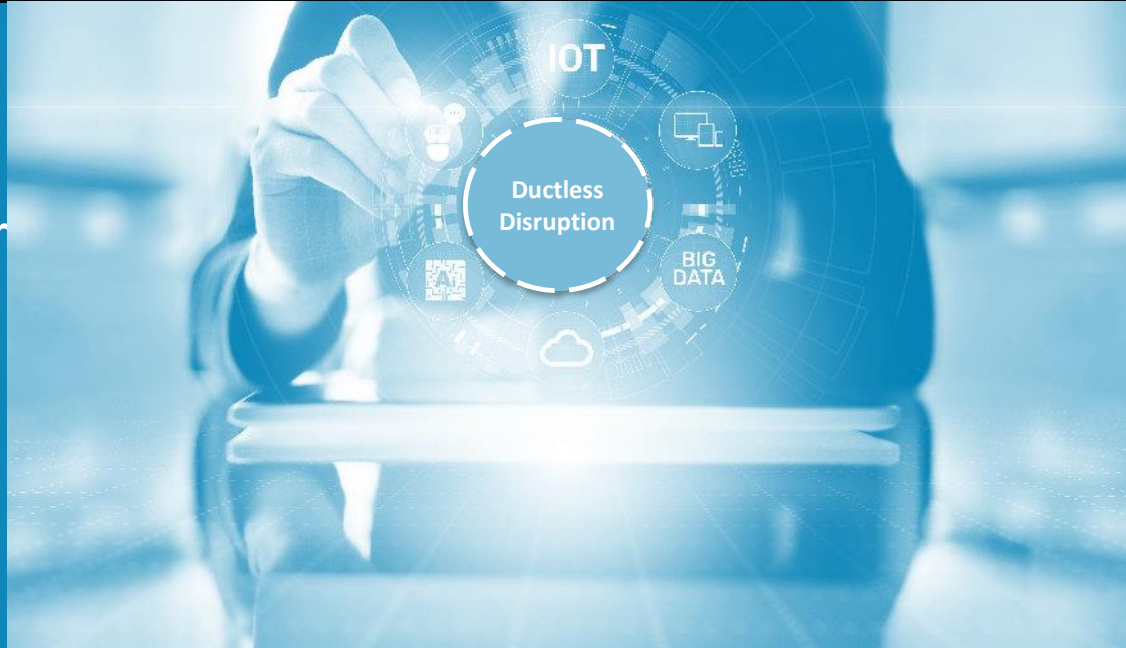
- With “true” disruptive innovation, the product takes root in the bottom of a market - and in many cases, develops a bad or low-class reputation because of it.



Ductless Disruption

Disruptive Innovation

- However, due to low costs, higher accessibility, or other advantages, the product eventually becomes more appealing than its contemporaries within the industry.



Ductless Disruption

“Due to advancements in technology and efficiency and the swelling consumer awareness, ductless equipment continues to be one of the fastest-growing sectors throughout the HVACR industry.”

- ACHR the NEWS

Let's Do The Math

Ductless Unit Sales	\$500,000
Assumed Growth Rate	15%

Earning Potential	\$575,000
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Let's Do The Math

What if you increased your ductless sales by 25%?

$$\$500,000 \times 25\% = \$625,000$$

And the market grew 15%, you could make:

Do you want to leave this money on the table?

What if the projection is higher?

$$\$625,000 \times 25\% = \$781,250$$

Critical Question: Where do you fit in?

- How much of your business is dedicated to Mini Split systems?
- What is your plan to capture your portion of this growing market?
- What is your plan to help your dealers capture their portion?
- Will you take part in this disruptive innovation or get left behind?

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Companies Effected by Disruptive Innovation?

Netflix

Amazon

Uber

Google



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Not participating in the Mini Split market?

Competitive Disadvantage



Obsolescence in a
Key Growth Market



Declining Market Share



Customer Turnover



Lack Of Growth



Not participating in the Mini Split market?

Obsolescence



Lack of Solutions



**Missed
Opportunities!**

Lack of Compliance



Lack Of Innovation

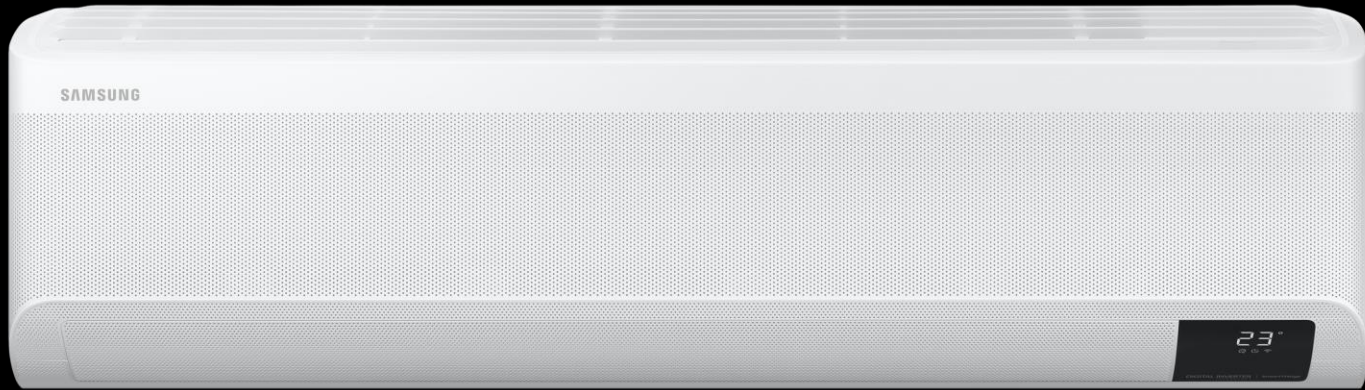


It's Easier To Build A Customer, Than It Is To Replace One!

- According to Forbes
 - “It can cost five times more to attract a new customer, than it does to retain an existing one.”
 - “Increasing customer retention rates by 5% increases profits by 25% to 95%”



What are you doing to grow your customers in the Mini Split Market?



Wind-Free™* 2.0

Unitary Problems & Mini Split Solutions

*The Wind-Free™ unit delivers an air current that is under 0.15 m/s while in Wind-Free™ mode. Air velocity that is below 0.15 m/s is considered "still air" as defined by ASHRAE 55-2013 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers).

The Challenge: Sound Issues

Traditional Condensing Units

- Large clunky outdoor unit
- Sound levels up to 82dBa
- Violates certain code



Mini Splits

- Smaller outdoor units
- Sound as low as 45dBa
 - Wind-Free™* as low as 23dBa
- Meets code requirements



*The Wind-Free™ unit delivers an air current that is under 0.15 m/s while in Wind-Free™ mode. Air velocity that is below 0.15 m/s is considered "still air" as defined by ASHRAE 55-2013 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers).

The Challenge: Duct Leakage/Loss & Gain

Average duct leakage
= 12% supply 24% return

Air handlers installed in unconditioned space
= 25% loss of system capacity

Must be accounted for in a load calculation

Leads to larger equipment being installed



The Solution

- Install Air Handlers in conditioned spaces
- Smaller size equipment being installed
 - Better airflow into zone
 - Better zone control



The Challenge: Hot Spots

- Hot spot causes
 - Poor duct design
 - High internal loads
 - Lack of adequate exposure diversity
 - Fenestration loads/
solar gain



The Solution

- Flexible multi-zoned solutions
 - Individual indoor units
 - Individual controllers
- System modulation adjusts the system's capacity to match the load
- Compressors capable of frequencies > than 60 Hz
 - Allows fast cooling
 - Reach set point faster



The Challenge: System Cycling

- Equipment is designed for peak occurrence
 - Worst case design
- How often is the equipment running at peak conditions?
 - 1%

Location	Elevation Feet	Latitude Degrees North	Winter	
			Heating 99% Dry Bulb	Cooling 1% Dry Bulb
Alabama				
Alexander City	686	33	22	93
Anniston AP	612	33	24	93
Auburn	776	32	22	93
Birmingham AP	644	33	23	92
Decatur	592	34	16	93
Dothan AP	401	31	32	93
Florence AP	581	34	21	94
Gadsden	569	34	20	94
Huntsville AP	620	34	20	92
Mobile AP	218	30	30	92
Mobile CO	26	30	29	93
Montgomery AP	221	32	27	93
Ozark, Fort Rucker	356	31	31	94

The Solution

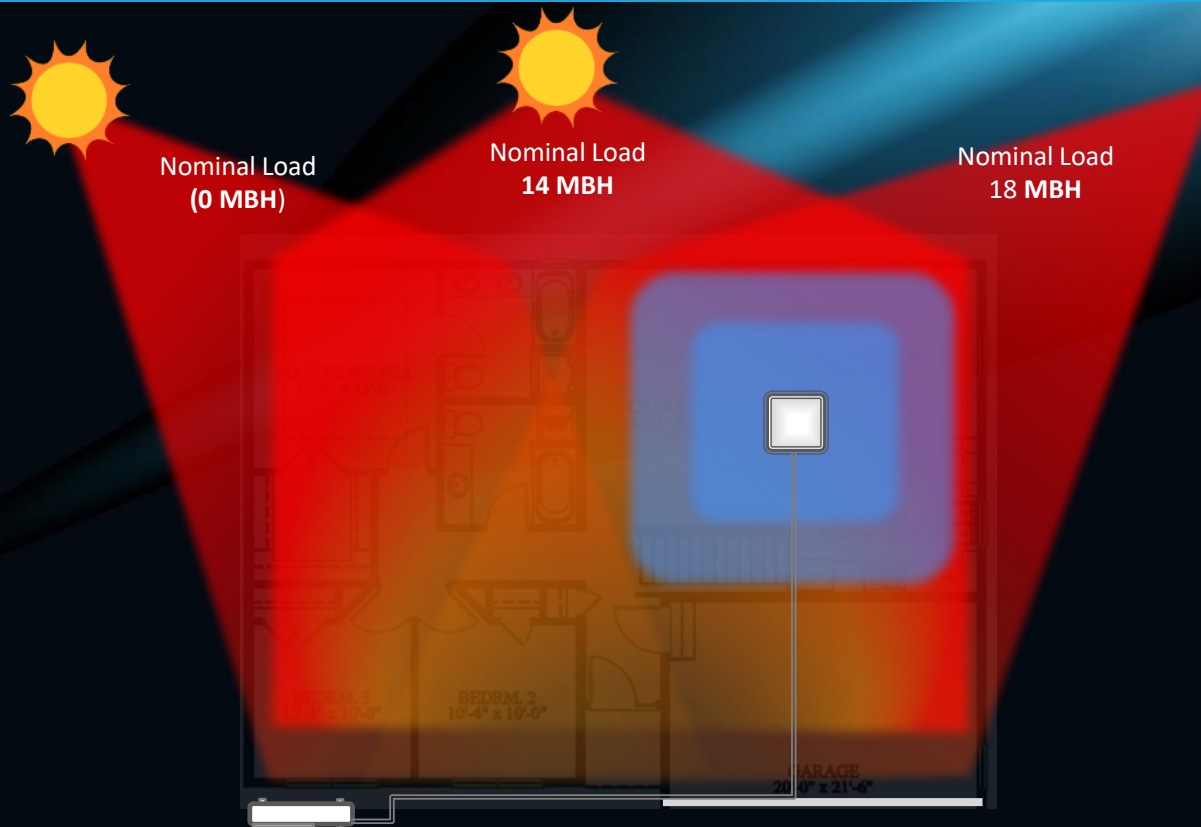
- Inverter driven equipment modulates with the load
 - Longer run times
 - Better temperature and humidity control
 - Reduced energy consumption
 - Less starts and stops

Model	Indoor Unit Model Number		AC018NN4DCH/AA
	Outdoor Unit Model Number		AC018JXADCH/AA
Performance	Nominal Capacity	Cooling / Heating (Btu/h)	18,000 / 20,000
	Capacity Range	Cooling (Btu/h)	5,000 - 21,000
		Heating (Btu/h)	3,800 - 25,000
	SEER / EER		20.10/ 11.70
	COP (nominal heating)		3.66
	HSPF		10.00
AHRI Certification Number		202087965	
Power	Voltage	ø / V / Hz	1 / 208-230 / 60
	Working Voltage Range (VAC)		176 - 254 (max. 3% deviation from each)
	Operating Current (min. / std. / max.)	Cooling (A)	2.1 / 7.1 / 10.0
		Heating (A)	1.7 / 7.4 / 12.0
	Max. Breaker	Amps	15
Min. Circuit Ampacity (A)		8.1	

The Solution

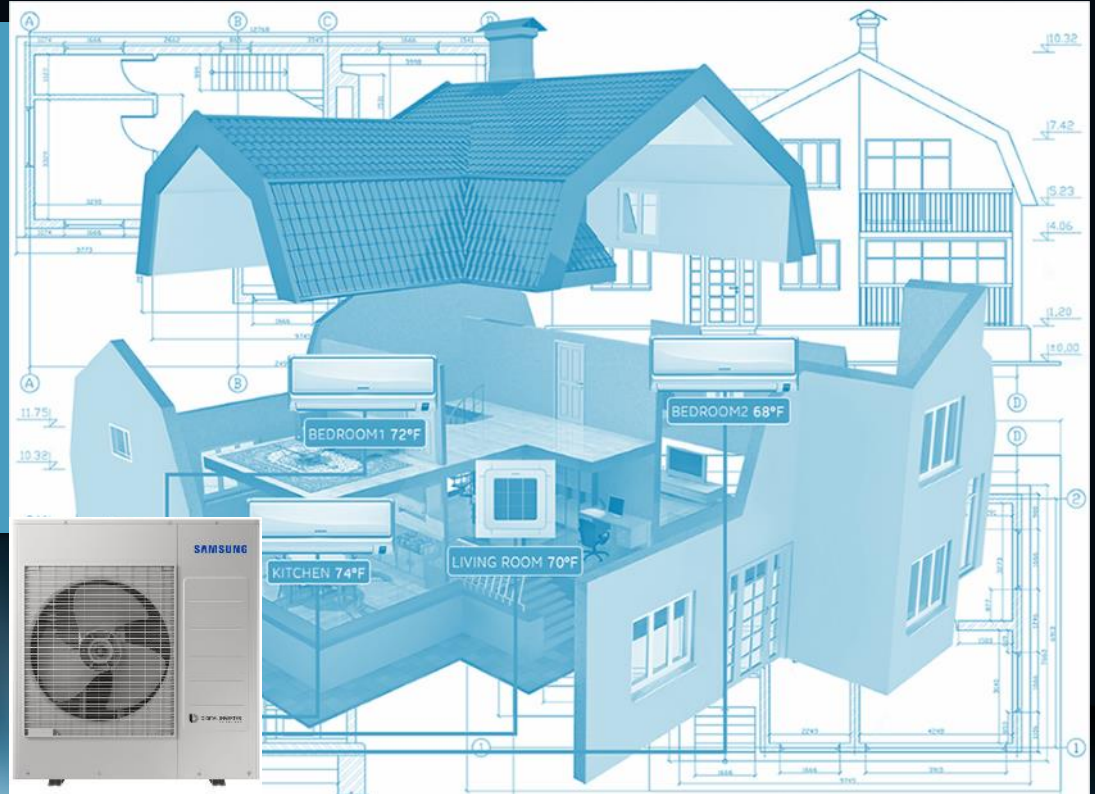


SAMSUNG 18 MBH 4-Way
cassette system



Free Joint Multi - The Multi Zone Solution

- Hot and cold spots
- System cycling
- Lack of adequate exposure diversity
- All at the same time!



FJM SYSTEM DESIGN - Indoor ZONE LOADS

Example: **36 MBH** (heat loss) block load



(1) AJ036JCJ5CH **36 MBH** Outdoor Unit

Indoor Units:



- Master Bed: **12 MBH Wall**
- Bedroom 2: **7 MBH Wall**
- Bedroom 3: **7 MBH Wall**

• Living Room: **18 MBH Cassette**

INDOOR TOTAL: **44 MBH** COMBINED

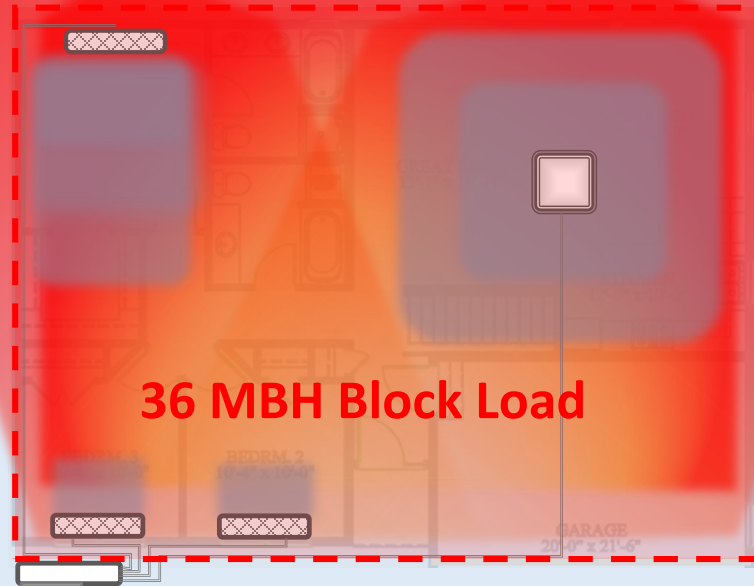


Nominal Load
(12+7+7+0= **26MBH**)



Nominal Load
(12+14+3+3 = **32MBH**)

Nominal Load
(6+18+5+0 = **29MBH**)



36 MBH Block Load

(44MBH ÷ 36MBH = **122 % Connection Ratio**) ✓



Ducted Opportunities

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Why Ducted Mini Splits?

“In the US most homeowners have central heating and cooling systems that utilize duct work, when it comes time to replace, they usually opt for another central system.

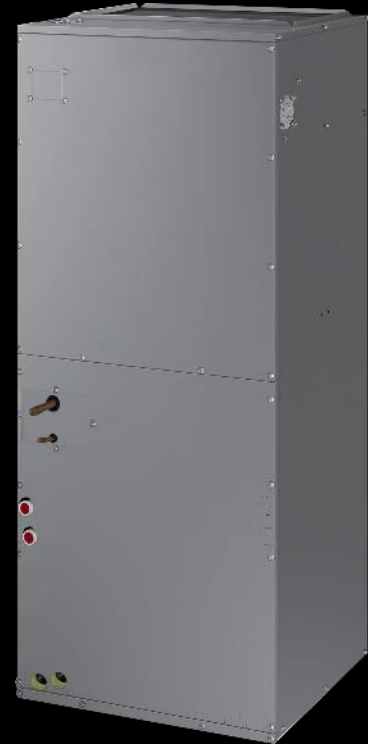
However The amount of energy savings the homeowner may see with a ducted Mini Split system can be significant on the order of 30 - 40%.”

- ACHR the NEWS

Multi Position Air Handlers

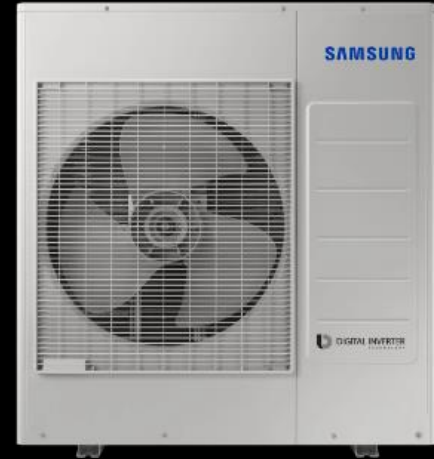
- Up flow, Downflow, Horizontal Right/Left
 - 18 – 54 MBH
 - 17 – 20 SEER
 - 48 – 56 db(A)
 - Line length up to 246'
 - Vertical separation up to 98'

– Optional thermostat adaptor



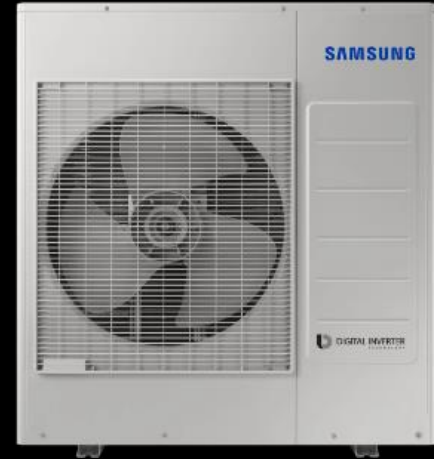
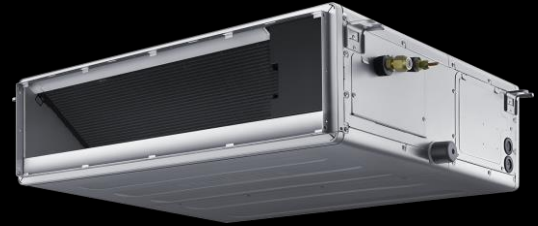
Free Joint Multi Slim Duct

- Multi Zone System
- Low Static System
 - Less ductwork
 - Less leakage
 - Can be used in conjunction with other air handlers



Free Joint Multi Duct S

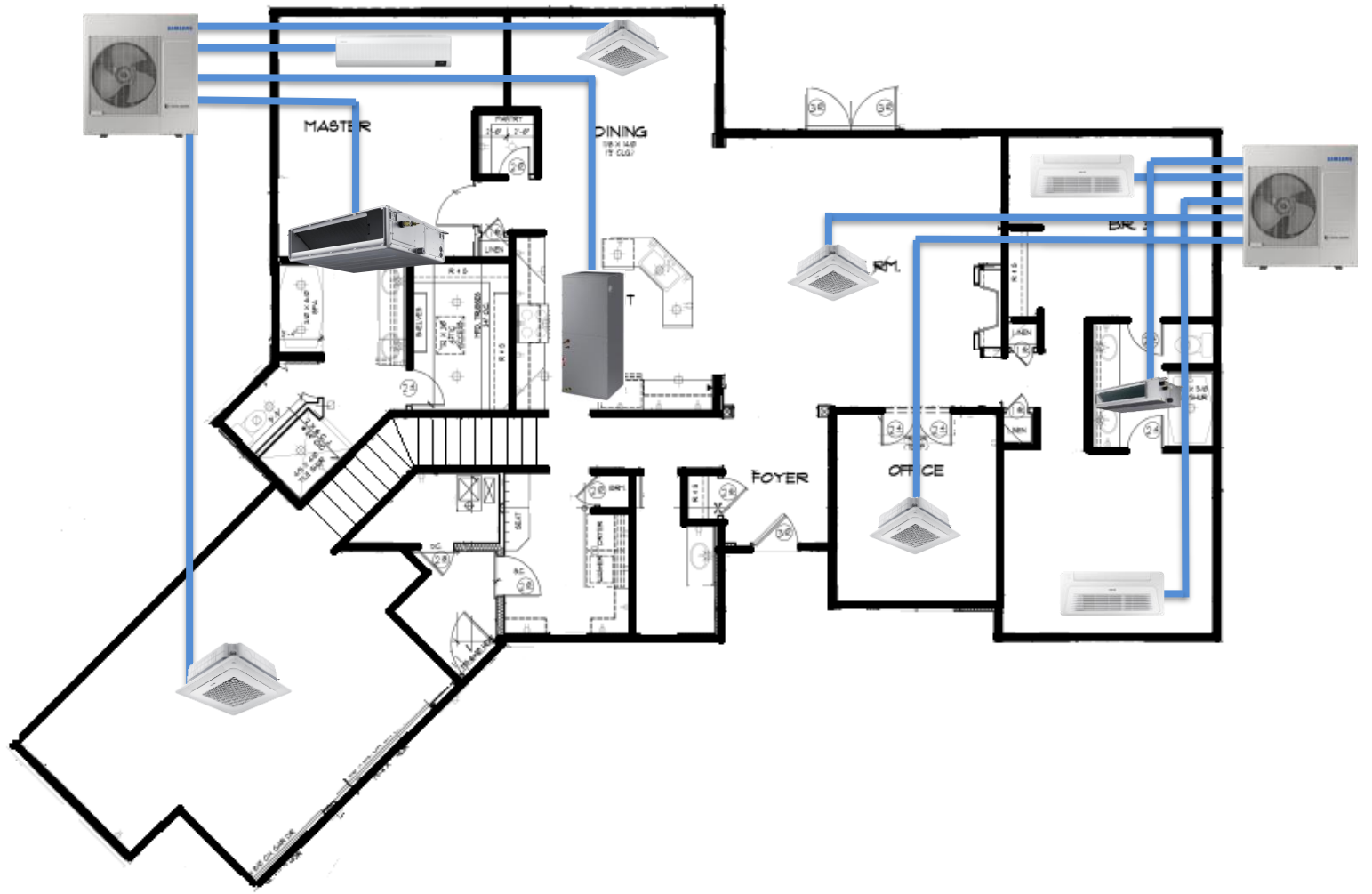
- Multi Zone System
- Higher static capability
 - Less ductwork
 - Less leakage
 - Can be used in conjunction with other air handlers



Free Joint Multi Multi-position Air Handler

- Multi Zone System
- Higher static capability
 - More traditional style air handler
 - Works with more complex duct systems
 - Can be used to condition larger area





What are the benefits to the Contractor?

- Differentiation
- Innovation
- Ability to provide HVAC solutions
- Ability to offer green technology
- Dealer program benefits
- Easier Installation



What are the benefits to the Homeowner?

- Energy rebates
- Green technology
- Alternative fuel source
- Lower utility bills
- Precise temperature control
- Quieter systems
- Better warranty



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In Closing

Mini Split/Ductless Products offer benefits to all

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Q & A