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Report: TAB Report
Function: Test, Adjust, & Balance
Date: 10/16/2025
Completed By: National TAB

PROJECT
Consumer Cellular (Madison, WI)

527 S. Gammon Rd.

Madison, WI 53719

Client

Air Temperature Services

5301 VOGES RD

MADISON, WI 53718

National TAB

Project: Consumer Cellular (Madison, WI)

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CERTIFICATION

PROJECT: Consumer Cellular (Madison, WI)

The data presented in this report is a record of system measurements and final adjustments that have been obtained in accordance with the current edition of the NEBB *Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems*. Any variances from design quantities, which exceed NEBB tolerances, are noted in the Test-Adjust-Balance Report Project Summary.

The air distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM: National TAB-Southeast

REGISTRATION NO: 3755

CERTIFIED BY: J. Scott Springer 23312

DATE: 10/16/2025

The hydronic distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM: National TAB-Southeast

REGISTRATION NO: 3755

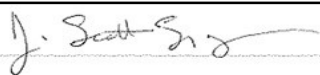
CERTIFIED BY: J. Scott Springer 23312

DATE: _____

Submitted and Certified by:

NEBB TAB FIRM: National TAB-Southeast

TAB PROFESSIONAL: J. Scott Springer

SIGNATURE: 

REGISTRATION NO: 3755 (NTAB) / 23312

CERTIFICATION EXP: 12/31/2025





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Testing, Adjusting, and Balancing Equipment

INTELLIGENCE

Function		Range	Minimum Accuracy	Instrument Information	Calibration Date	Date Due
AIR	AIR PRESSURE	0 in wg to 10 in wg	2% +/- 0.001 in wg	Evergreen S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Evergreen S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 5 % +/- 7 cfm	Evergreen S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	9/9/2025	9/9/2026
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	9/9/2025	9/9/2026
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	9/9/2025	9/9/2026
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	9/9/2025	9/9/2026
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	9/9/2025	9/9/2026
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	9/9/2025	9/9/2026
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 071118034	9/9/2025	9/9/2026
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Fluke 373 True RMS, S/N: 33290686	9/8/2025	9/8/2026
	AMPERAGE MEASUREMENT	0 Amperes to 100 Amperes	2 % reading +/- 5 digits	Fluke 373 True RMS, S/N: 33290686	9/8/2025	9/8/2026
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	SHIMPO DT-207LR S/N: D1530081R	9/9/2025	9/9/2026
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Evergreen Water Module S/N: 2500210B	8/11/2025	8/11/2026
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Evergreen Water Module S/N: 2500210B	8/11/2025	8/11/2026



Abbreviation List

A = Area (ft ²)	S.F. = Service Factor
AHU = Air Handling Unit	SF = Supply Fan
A _k = Effective Area	SP = Static Pressure
BHP = Brake Horsepower (IP) HP	SR = Supply Register
Btu = British Thermal Unit	T = Temperature
Btu/h = Btuh = BTUH = BTU/Hour	T _{ma} = Mixed Air Temperature
CL = Center Distance (used in belt formula)	T _{oa} = Outside Air Temperature
CD = Ceiling Diffuser	T _{ra} = Return Air Temperature
CF = Correction Factor	H = Head (in wc, ft wc, psi)
CFM = Volumetric Flow: Cubic Feet Per Minute	h = Enthalpy
CO ₂ = Carbon Dioxide	HP = Horsepower
CO = Carbon Monoxide	hr = Hour
C _v = Flow Constant	K _v = Flow constant (SI)
d = Diameter (in.) IP	kW = Kilowatt = 1000 Watts
Δ = Difference or Change (Final - Initial)	LAT = Leaving Air Temperature
DB = Dry Bulb	lb = Pounds
EA = Exhaust Air	LWT = Leaving Water Temperature
EAT = Entering Air Temperature	ma = Mixed Air
EF = Exhaust Fan	MIN = Minimum
Eff = Efficiency	MAX = Maximum
EG = Exhaust Grille	N/A = Not Applicable
ESP = External Static Pressure	NA = No Access
EWT = Entering Water Temperature	NL = Not Listed
°F = Degrees Fahrenheit, °F	NPSHA = Net Positive Suction Head Available
FPB = Fan Powered Box	NS = Not Specified
FLA = Full Load Amps	OA = Outside Air
fpm = Feet per Minute (fpm)	OAT = Outside Air Temperature
ft = Foot	PD = Sheave Pitch Diameter
gal = Gallons	P.D. = Pressure Drop
GPM = Gallons Per Minute (GPM)	PF = Power Factor
h = Enthalpy (BTU/lb dry air)	SG = Supply Grille
P = Pressure	SR = Supply Register
ppm = parts per million	TP = Total Pressure
psi = Pounds Per Square Inch	T _{ra} = Return Air Temperature
psid = PSI Differential	TS = Tip Speed (fpm) IP, (m/s) SI
r = Radius (in)	TSP = Total Static Pressure
% _{ra} = % of Return Air	V = Velocity
RA = Return Air	VAV = Variable Air Volume
RAT = Return Air Temperature	VD = Volume Damper
RF = Return Fan	VFD = Variable Frequency Drive
RG = Return Grille	W = Watt
RH = Relative Humidity	WB = Wet Bulb
RPM = Revolutions Per Minute	wg = wc = water gauge = water column
RTU = Roof Top Unit	WHP = Water Horsepower (IP)
SA = Supply Air	ω = Humidity Ratio



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Project: Consumer Cellular (Madison, WI)
Function: Test, Adjust, & Balance

Project Summary

Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report are further details about your building performance including recommendations and asset data. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

RTU's (Roof Top Units) w/ Diffusers

There are two RTUs at this retail store. RTU-1 serves the front sales area. RTU-2 serves the rear of the sales floor as well as the back-office area and restrooms. RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report. Both RTUs had extremely dirty final filters. These filters were removed for testing and need to be replaced with new filters. RTU-1 was off at the disconnect on arrival to the store. The unit was powered on, and airflow was successfully balanced; however, it was discovered that the units cooling is not functional, and it will need service to be fully operational.

Ceiling Exhaust Fans

The ceiling exhaust fans were measured using a flow hood. Both fans have speed controllers installed. The fan speed was adjusted to within design tolerance and the controller marked. Fan operation is interlocked with the restroom lights.

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Project: Consumer Cellular (Madison, WI)
System/Unit: AHU/RTU



Asset: (E)RTU-1

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	NA	TRANE
Serial Num	-	130211554L
Model Num	NA	YHC072
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	36X15
Num PreFilter 1	-	4
PreFilter Size 1	-	16X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	-	1.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	200-230
Rated Amperage	-	4.0-5.0
Service Factor	-	1.5

Drive Data	
	Actual
Motor Sheave Size	1VL40
Motor Bore Size	5/8"
Motor Sheave SetPt	4.5 TURNS OPEN
Fan Sheave Size	AK64
Fan Sheave Bore	1"
Belt CL Distance	10"
Num of Belts	1
Belt Size	AX32

Test Data		
	Design	Actual
SF CFM	2400	2553
SF RPM	-	782
RA CFM	1885	1992
OA CFM	515	561
RL Voltage	208	209/212/211
RL Amperage	-	2.8/2.8/2.7
OA Damper Position	-	MARKED, 1" OPEN
Brake Horse Power	-	0.691

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.18"
Fan Suction SP	-	-0.29"
Fan Discharge SP	-	0.24"
Total ESP	0.70	0.42"
Fan Total SP	-	0.53"
Cooling Coil P.D.	-	0.11"

Notes:
[1] FINAL FILTERS REMOVED FOR TESTING

Written By: Michael McDonnell on 09/30/2025

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Project: Consumer Cellular (Madison, WI)

AHU/RTU



Diffuser Supply (GRD)

(E)RTU-1/SALES FLOOR

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1-1	SALES	A	10	300	405	309	103.0
1-2	SALES	A	10	300	350	326	108.7
1-3	SALES	A	10	300	381	330	110.0
1-4	SALES	A	10	300	417	302	100.7
1-5	SALES	A	10	300	325	315	105.0
1-6	SALES	A	10	300	406	324	108.0
1-7	SALES	A	10	300	485	319	106.3
1-8	SALES	A	10	300	167	328	109.3
Total				2400	2936	2553	106.38%

Diffuser Ret/Exh (GRD)

(E)RTU-1/SALES FLOOR

Asset								
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	FINAL CFM	% to design
R1-1	SALES	D	20X20	945	1.0	1093	964	102.0
R1-2	SALES	D	20X20	940	1.0	1189	1028	109.4
Total				1885		2282	1992	105.68%

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Project: Consumer Cellular (Madison, WI)
System/Unit: AHU/RTU



Asset: (E)RTU-2

AREA:SALES / BOH

Unit Data		
	Design	Actual
MFG	NA	TRANE
Serial Num	-	125110887L
Model Num	NA	YHC072
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	36X15
Num PreFilter 1	-	4
PreFilter Size 1	-	16X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	-	1.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	4.0-5.0
Service Factor	-	1.5

Drive Data	
	Actual
Motor Sheave Size	1VL40
Motor Bore Size	5/8"
Motor Sheave SetPt	4.5 TURNS OPEN
Fan Sheave Size	AK64
Fan Sheave Bore	1"
Belt CL Distance	10"
Num of Belts	1
Belt Size	AX32

Test Data		
	Design	Actual
SF CFM	2400	2507
SF RPM	-	788
RA CFM	2040	2133
OA CFM	360	374
RL Voltage	-	210/209/211
RL Amperage	-	2.7/2.7/2.6
OA Damper Position	-	MARKED, 0.75" OPEN
Brake Horse Power	-	0.67

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.16"
Fan Suction SP	-	-0.27"
Fan Discharge SP	-	0.24"
Total ESP	0.70	0.40"
Fan Total SP	-	0.51"
Cooling Coil P.D.	-	0.11"

Notes:
[1] FINAL FILTERS REMOVED FOR TESTING

Written By: Michael McDonnell on 09/30/2025

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Project: Consumer Cellular (Madison, WI)

AHU/RTU



Diffuser Supply (GRD)

(E)RTU-2/SALES / BOH

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
2-1	SALES	A	10	300	371	319	106.3
2-2	SALES	A	10	300	417	314	104.7
2-3	SALES	A	10	300	344	329	109.7
2-4	SALES	A	10	300	367	315	105.0
2-5	RR	B	6	50	0	54	108.0
2-6	BOH	A	8	200	189	209	104.5
2-7	BOH	A	10	300	292	284	94.7
2-8	RR	B	6	50	71	49	98.0
2-9	BOH	A	6	100	419	109	109.0
2-10	BOH	A	10	300	138	309	103.0
2-11	BOH	A	6	100	135	107	107.0
2-12	BOH	A	6	100	107	109	109.0
Total				2400	2850	2507	104.46%

Diffuser Ret/Exh (GRD)

(E)RTU-2/SALES / BOH

Asset								
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	FINAL CFM	% to design
R2-1	SALES	D	20X20	1275	1.0	1403	1299	101.9
R2-2	BOH	D	16X16	765	1.0	946	834	109.0
Total				2040		2349	2133	104.56%

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Project: Consumer Cellular (Madison, WI)
System/Unit: FAN - Exhaust



Asset: EF-1

AREA:RR

Unit Data		
	Design	Actual
MFG	NA	LOREN COOK
Model Num	NA	GEMINI 160
Serial Num	-	615739
Type	CEILING	CEILING

Test Data		
	Design	Actual
CFM	110	117
System SetPt	-	SPEED CONTROLLER
RL Voltage	115	119
RL Amperage	-	0.42

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Motor Rpm	-	1100
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	0.51

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Project: Consumer Cellular (Madison, WI)
System/Unit: FAN - Exhaust



Asset: EF-2

AREA:RR

Unit Data		
	Design	Actual
MFG	NA	LOREN COOK
Model Num	NA	GEMINI 160
Serial Num	-	615739
Type	CEILING	CEILING

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Motor Rpm	-	1100
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	0.51

Test Data		
	Design	Actual
CFM	110	108
System SetPt	-	SPEED CONTROLLER MARKED
RL Voltage	115	119
RL Amperage	-	0.44