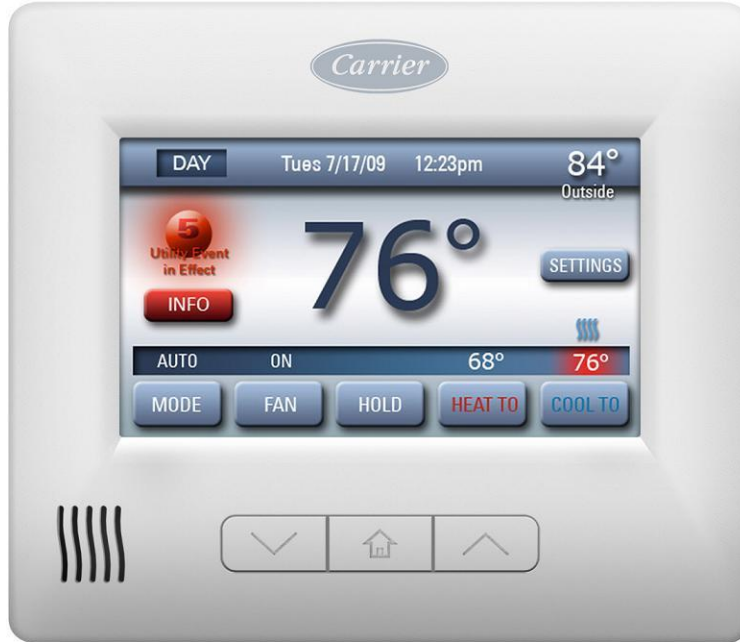


# Carrier ComfortChoice® Touch ZigBee® Certified Thermostat Technical Specifications



## Physical & Operational Characteristics

Height	4.75"
Width	5.5"
Thickness (Stacked)	1.3"
Thickness (User Interface, Un-stacked)	1.06"
Temperature (Operating)	
Display	0°C – 40°C
Control Unit	-20°C – 70°C
Temperature (Storage)	-40°C – 57°C
Humidity	10 – 90% (non-condensing)
Shock (Non-Operating)	100G for 11ms
Vibration	Level 1
Display	4.3" Diagonal 480 x 272 LCD Color Touch Screen
Setpoint Accuracy	± 1° F
Interfaces	USB Support
Firmware Upgrades	Via USB Flash Drive or SE 1.1 OTA
Power Requirements	18-30VAC, <5VA Typical (10VA peak)

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## Reliability

Operational Lifetime	15 years
Relays	225,000 cycles
Compressor	6,000/year
Heating	6,000/year
Fan	15,000/year
Contact Rating	(@ 24VAC)
G, W, W2, Y, Y2, O/B	2 A carry, 5 A surge
Power-on Time	Continuous
Immunity to Voltage Dips	
30%	10ms
60%	100ms
Electro Static Discharge (Contact)	
Display	8kV
Control Unit	6kV
Electro Static Discharge (Air)	
Display	15kV
Control Unit	8kV

## Safety

UL Listing	U.L.916 Energy Management (File E80325)
FCC ID	W7Z-ZICM357SP2 IC: 8254A-ZICM357SP2
NEMA	DC-3-1989
Plastic	UL94-HB rated, RoHS compliant
Control Boards	RoHS compliant

## ZigBee Radio Specifications

Chipset	Ember EM-260
Antenna	Integrated PCB Trace
Frequency Range	2.4 – 2.4835 GHz
Receiver Sensitivity	-92 dBm
802.15.4 Adjacent Channel Rejection	30 dBm
802.15.4 Alternate Channel Rejection	40 dBm
802.11 g Rejection ( $\pm 10$ MHz)	30 dBm
Data Rate	250 kbps, Typ.
Maximum Output Power	100mW
Encryption	AES 128 bit

## Supported ZigBee Clusters

Common Clusters	Key Establishment
	Reporting Capability
	Inter-PAN Communication
	Commissioning
	Thermostat
	Fan Control
	Manufacturer-Specific
Programmable Communicating Thermostat (PCT) Smart Energy Clusters	Demand Response and Load Control
	Time
	Price
	Message

## Zigbee Smart Energy Profile Compliance

Temperature Setback	0 – 77.7° F
Duty-Cycle	0 – 100%
Randomized Start/Stop Times	Supported
Load Control Criticality Levels	6 Voluntary, 3 Mandatory
Event Duration	1 – 1440 Minutes (one day)
Customer Overrides	Allowed for Voluntary Events
Pricing Tiers	Up to Six Supported
Pricing Tier Display	Utility Defined (up to 12 characters)
Time-of-use Periods	Implemented using Pricing Tiers

## Compatible Systems

	1 Stage Cool	2 Stage Cool	1 Stage Heat	2 Stage Heat	3 Stage Heat
AC	■	■	■	■	
Heat Pump	■	■		■	■
Hybrid Heat	■	■		■	■

## Installer Setup Options

Option	Selections
Equipment Type	See above
Replace Filter Reminder	Off, 800-7200 hours
Auto Mode Availability	On, Off
Room Temperature Sensing	Local, Remote, Average
Reversing Valve Configuration	Heat, Cool
F/C (English or metric units)	Fahrenheit, Celsius

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Fan (G) on with W output	Yes, No
Cooling Lockout	Off, On (below 55 °F)
Auxiliary Heat Lock Out Temperature	Off, 5 – 55°F in 5° increments
Heat Pump Lockout Temperature	Off, 5 – 55°F in 5° increments
Minimum Cooling Setpoint	52 – 90°F (subject to deadband)
Maximum Heating Setpoint	50 – 88°F (subject to deadband)
Outdoor Air Temperature Display Adjustment (Offset)	-5 – 5°F
Room Air Temperature Display Adjustment (Offset)	-5 – 5°F
Smart Recovery	Off, 30, 60, 90 minutes
Setpoint Deadband	1 – 6°F
Cycles per Hour	2, 4, 6
Auto Changeover Timer	5, 10, 15, 20, 25, 30 minutes
Time Between Stages	10, 15, 20, 25 minutes
Keypad Lockout Enable	Off, On
Display Pending Utility Events	Off, On
Reset to Factory Defaults	Reset
Installation Type	1 Piece (stacked) or 2 Piece

### Homeowner Setup Options

Option	Selections
Screen Brightness	1 – 8, configurable by Period
Time/Date	Adjustable if not received from network
Sound (Audio Beep)	Off, On
Filter Reminder	Reset
Programming Periods	4 Periods per Day (Wake, Day, Evening, Sleep)
Program Schedule	All Days, Weekday/Weekend, Each Day
Vacation Mode	Select Start/End Date & Time, Mode and Setpoints
Energy Price Offset	0 – 10°F for each of 6 price levels
Keypad Lockout	Unlocked, Setpoints Only, Locked

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## Runtime Data Collection

The Carrier thermostat collects the following runtime data at a once per minute interval with a capacity for 30 days of samples (30 x 24 x 60 = 43,200 samples). Any portion of this data can be downloaded over the ZigBee interface or the data can be copied to a USB memory device.

<b>Data Element</b>	<b>Resolution</b>	<b>Bytes</b>	<b>Size (bytes)</b>
Room Temperature	0.1°	2	86,400
Runtime	Seconds	1	43,200
Status (mode, fan, hold)	-	1	43,200
Heat Setpoint	1°	1	43,200
Cool Setpoint	1°	1	43,200
<b>Runtime Sample</b>	-	<b>6</b>	<b>259,200</b>