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Protocol description Zehnder ComfoAir

1 Generally

This document describes the communication protocol of the Zehnder ComfoAir devices. Specifically the ComfoAir 350 (CA350) device.

The devices WHR930 from StorkAir, G90-380 from Wernig and Santos 370 DC from Paul should be largely compatible.

According to reports, the protocol should also work with the ComfoAir 550 (CA550).

With the information presented here, it should be possible to develop your own programs and functions in order to control these systems according to your own ideas.

The basis of reverse engineering is the analysis of the communication connection between the PC with Zehnder Service Tool and the CA350.

Document Structure:

- ÿ Overview of the original control units ÿ Connections on the CA350 ÿ Serial interface ÿ Terms ÿ General information about the protocol ÿ Command description

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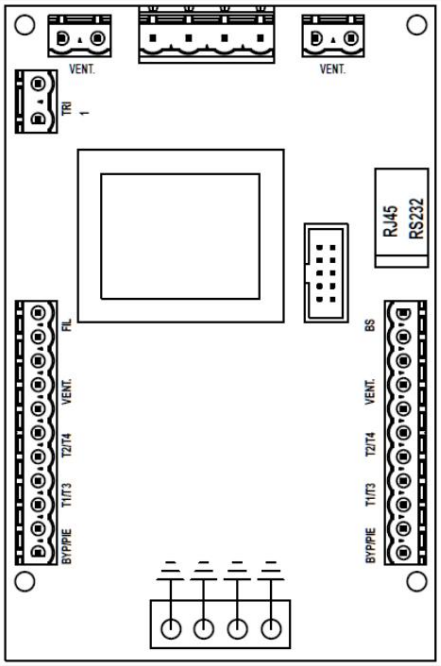
2 control unit

The following control units are officially offered by Zehnder:

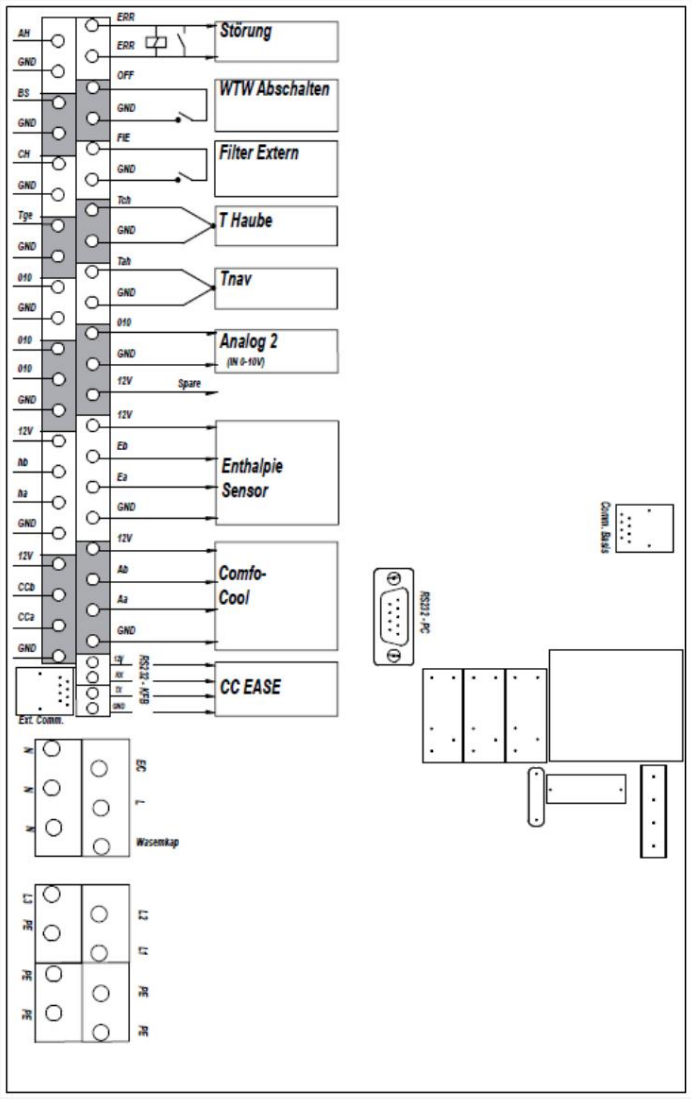
ÿ CC Ease ÿ CC Luxe

3 communication ports

The CA350 has (depending on the variant) two circuit boards. A control board and an optional connector board.



control board



connector board

The control board communicates with the connector board via RS232 connection (RJ45 connection).

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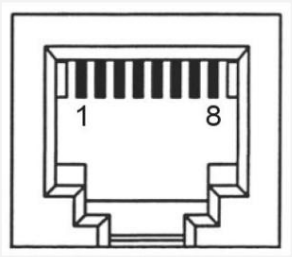
The RS232 interface on the control board uses the RJ45 socket. The pin assignment is as follows:



Pin 1: 12V
Pin 2: RS232 RX ComfoAir
Pin 3: RS232 TX ComfoAir
Pin 4: RA7 / PIC18 (function unknown)
Pin 5: RB2 / PIC18 (function unknown)
Pin 6: RA6 / PIC18 (function unknown)
Pin 7: RB1 / PIC18 (function unknown)
Pin 8: GND

The 12V on pin 1 is the voltage that the control board outputs! An external supply is not necessary.

4 serial interface

The RS232 interface is set to

ÿ 9600 baud ÿ 8
data bits ÿ No parity

ÿ 1 stop bit

5 terms

Abbreviations and definitions:

EWT: soil exchanger or geothermal heat exchanger

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6.0 Protocol Basics

The request to ComfoAir and the response are sent in the same data format. Received data records are always confirmed with an ACK.

The command in the response from ComfoAir corresponds to the command of the request incremented by one (+ 1).

If a 0x07 value appears in the data area, another 0x07 is inserted, but this is not taken into account in the length specification and the checksum.

A data set is structured as follows:

Start	Command	Number of Data (n)	data	checksum	End
2 bytes	2 bytes	1 byte	0-n bytes	1 byte	2 bytes

Description:
Start: 0x07 0xF0
Command: See command list
Number: number of following data bytes
Data: payload data
Checksum: Checksum formed over command, number and data bytes
End: 0x07 0x0F

An acknowledgement is structured as follows:

Ack
2 bytes

Description:
Ack: 0x07 0xF3

Example:
Request from PC (device type query):

Start	Command	Number of Data (n)	Checksum	End
0x07 0xF0			0x00 0x69 0x00 0x16	0x07 0x0F

Acknowledgement from ComfoAir:

Ack
0x07 0xF3

Reply from ComfoAir:

Start	Command	Number of Data (n)	Data
0x07 0xF0	0x00 0x6A	0x0D	0x03 0x14 0x20 0x43 0x41 0x33 0x35 0x30

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Data (continued) 0x20	**checksum** 0x55	**End**
0x6C 0x75 0x78 0x65		0x07 0x0F

Acknowledgement from PC:

Ack
0x07 0xF3

6.1 checksum calculation

The checksum is calculated by adding all bytes (excluding start and end) plus 173. If the value 0x07 appears twice in the data area, only one 0x07 is used for the checksum calculation.

If the checksum is larger than one byte, the least significant byte is used.

Example:
Command: 0x00 0x69
Number: 0x00

Sum = 0 + 105 + 0 + 173 = 278 278 = 0x0116

Checksum = 0x16

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7.0 Command list (PC to ComfoAir) / General

Command: 0x00 0x67 Get bootloader version		
Data:	-	
Answer:	0x00 0x68	
Data:	Byte[1] Byte[2] Byte[3] Byte[4-13]	Version Major Version Minor beta device name (ASCII string)

Command: 0x00 0x69 Get firmware version		
Data:	-	
Answer:	0x00 0x6A	
Data:	Byte[1] Byte[2] Byte[3] Byte[4-13]	Version Major Version Minor beta device name (ASCII string)

Command: 0x00 0xA1 Get connector board version		
Data:	-	
Answer:	0x00 0xA2	
Data:	Byte[1] Byte[2] Byte[3-12] Byte[13] Byte[14]	Version Major Version Minor Device name (ASCII string) Version CC-Ease Bit 7..4 = Version Major Bit 3..0 = Version Minor Version CC- Luxe Bit 7..4 = Version Major Bit 3..0 = Version Minor

Command: 0x00 0x9B Set RS232 mode		
Data:	Byte[1]	0x00 = End 0x01 = PC only 0x03 = PC Master 0x04 = PC log mode
Answer:	0x00 0x9C	
Data:	Byte[1]	0x00 = No connection 0x01 = PC only 0x02 = CC-Ease only 0x03 = PC Master 0x04 = PC Log mode

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7.1 Command list (PC to ComfoAir) / Read commands

Command: 0x00	0x03 Get inputs	
Data:	-	
Answer:	0x00 0x04	
Data:	Byte[1]	Step switch: (1 = active / 0 = inactive) 0x01 = L1 0x02 = L2
	Byte[2]	Switching inputs: (1 = active / 0 = inactive) 0x01 = Bathroom switch 0x02 = Kitchen hood switch 0x04 = External filter 0x08 = Heat recovery (WTW) 0x10 = Bathroom switch 2 (luxe)

Command: 0x00	0x0B Get fan status	
Data:	-	
Answer:	0x00 0x0C	
Data:	Byte[1]	supply air (%)
	Byte[2]	exhaust air (%)
	Byte[3-4]	Speed of supply air fan (rpm**)
	Byte[5-6]	Speed of exhaust fan (rpm**)

Command: 0x00	0x0D Get flap status	
Data:	-	
Answer:	0x00 0x0E	
Data:	Byte[1]	Bypass (%) (0xFF = undefined)
	Byte[2]	Preheating (1 = Open / 0 = Closed / 2 = Unknown)
	Byte[3]	Bypass motor current (ADC raw data)
	Byte[4]	Preheating Motor Current (ADC Raw Data)

Command: 0x00	0x0F Get temperature status	
Data:	-	
Answer:	0x00 0x10	
Data:	Byte[1]	T1 / outside air (°C*)
	Byte[2]	T2 / supply air (°C*)
	Byte[3]	T3 / exhaust air (°C*)
	Byte[4]	T4 / exhaust air (°C*)

Command: 0x00	0x11 Get key status	
Data:	-	
Answer:	0x00 0x12	
Data:	Byte[1]	0x00 = Nothing pressed 0xFF = Error

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Command: 0x00 0x13 Get analog inputs		
Data:	-	
Answer:	0x00 0x14	
Data:	Byte[1]	Analog 1 (0..255 = 0..10V)
	Byte[2]	Analog 2 (0..255 = 0..10V)
	Byte[3]	Analog 3 (0..255 = 0..10V)
	Byte[4]	Analog 4 (0..255 = 0..10V)

Command: 0x00 0x97 Get sensor data		
Data:	-	
Answer:	0x00 0x98	
Data:	Byte[1]	Enthalpy sensor temperature (°C*)
	Byte[2]	Enthalpy Sensor Humidity (%)
	Byte[3]	Analog 1 (%)
	Byte[4]	Analog 2 (%)
	Byte[5]	Enthalpy coefficient (%)
	Byte[6]	Enthalpy Timer (0..240 = 0..2880 Min) 0x00
	Byte[7]	Analog
	Byte[8]	1 to desired (%)
	Byte[9]	Analog 1 from desired (%)
	Byte[10]	Analog 2 to desired (%)
	Byte[11]	Analog 2 from desired (%)
	Byte[12]	Analog 3 (%)
	Byte[13]	Analog 4 (%)
	Byte[14]	Analog 3 to desired (%)
	Byte[15]	Analog 3 from desired (%)
	Byte[16]	Analog 4 to desired (%)
	Byte[17]	Analog 4 from desired (%)

Command: 0x00 0x9D Retrieve analog values		
Data:	-	
Answer:	0x00 0x9E	
Data:	Byte[1]	Analog present: (1 = present / 0 = absent) 0x01 = Analog 1 0x02 = Analog 2 0x04 = Analog 3 0x08 = Analog 4 0x10 = RF
	Byte[2]	Analog control: (1 = control / 0 = control) 0x01 = Analog 1 0x02 = Analog 2 0x04 = Analog 3 0x08 = Analog 4 0x10 = RF
	Byte[3]	Analog positive / negative: (1 = negative / 0 = positive) 0x01 = Analog 1 0x02 = Analog 2 0x04 = Analog 3 0x08 = Analog 4 0x10 = RF
	Byte[4]	Analog 1 Min. Setting (%)
	Byte[5]	Analog 1 Max. Setting (%)
	Byte[6]	Analog 1 Setpoint (%)
	Byte[7]	Analog 2 Min. Setting (%)
	Byte[8]	Analog 2 Max. Setting (%)
	Byte[9]	Analog 2 Setpoint (%)
	Byte[10]	Analog 3 Min. Setting (%)

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	Byte[11]	Analog 3 Max. Setting (%)
	Byte[12]	Analog 3 Setpoint (%)
	Byte[13]	Analog 4 Min. Setting (%)
	Byte[14]	Analog 4 Max. Setting (%)
	Byte[15]	Analog 4 Setpoint (%)
	Byte[16]	Analog RF Min. Setting (%)
	Byte[17]	Analog RF Max. Setting (%)
	Byte[18]	Analog RF setpoint (%)
	byte[19]	Priority control (0 = analog inputs / 1 = weekly program)

Command: 0x00 0xC9 (Time) Get delay		
Data:	-	
Answer:	0x00 0xCA	
Data:	Byte[1]	Bathroom Switch On Delay (Min)
	Byte[2]	Bathroom Switch Off Delay (Min)
	Byte[3]	L1 Switch-off delay (min)
	Byte[4]	shock ventilation (min)
	Byte[5]	Filter Counter (Weeks)
	Byte[6]	RF high time short (min)
	Byte[7]	RF high time long (min)
	Byte[8]	Kitchen hood switch-off delay (min)

Command: 0x00 0xCD Get ventilation level		
Data:	-	
Answer:	0x00 0xCE	
Data:	Byte[1]	Exhaust air absent (%)
	Byte[2]	Exhaust air low / level 1 (%)
	Byte[3]	Exhaust air medium / level 2 (%)
	Byte[4]	Supply air level absent (%)
	Byte[5]	Supply air low / level 1 (%)
	Byte[6]	supply air medium / level 2 (%)
	Byte[7]	Exhaust air current (%)
	Byte[8]	Supply air current (%)
	Byte[9]	Current level (see command 0x00 0x99)
	Byte[10]	Supply air fan active (1 = active / 0 = inactive)
	Byte[11]	Exhaust air high / level 3 (%)
	Byte[12]	Supply air high / level 3 (%)
	Byte[13]	-
	Byte[14]	-

Command: 0x00 0xD1 Get temperatures		
Data:	-	
Answer:	0x00 0xD2	
Data:	Byte[1]	Comfort temperature (°C*)
	Byte[2]	T1 / outside air (°C*)
	Byte[3]	T2 / supply air (°C*)
	Byte[4]	T3 / exhaust air (°C*)
	Byte[5]	T4 / exhaust air (°C*)
	Byte[6]	Sensor present: (1 = present / 0 = absent) 0x01 = T1 / outside air 0x02 = T2 / supply air 0x04 = T3 / extract air 0x08 = T4 / exhaust air 0x10 = EWT 0x20 = after-heating 0x40 = kitchen hood
	Byte[7]	Temperature EWT (°C*)

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	Byte[8]	Temperature afterheating (°C*)
	Byte[9]	Temperature of the kitchen hood (°C*)

Command: 0x00 0xD5 Get status		
Data:	-	
Answer:	0x00 0xD6	
Data:	Byte[1]	Preheating present (1 = present / 0 = absent)
	Byte[2]	Bypass present (1 = present / 0 = absent)
	Byte[3]	type (1 = left / 2 = right)
	Byte[4]	size (1 = large / 2 = small)
	Byte[5]	Options: (1 = present / 0 = absent) 0x01 = Fireplace 0x02 = Kitchen hood 0x04 = After-heating 0x40 = After-heating PWM mode 0x80 =
	Byte[6]	0x00
	Byte[7]	Active Status 1: 0x01 = P10 : 0x80 = P17
	Byte[8]	Active status 2: 0x01 = P18 0x02 = P19
	Byte[9]	Active Status 3: 0x01 = P90 : 0x40 = P96
	Byte[10]	Enthalpy present (1 = present / 0 = absent / 2 = without Sensor)
	Byte[11]	EWT present (1 = regulated / 0 = absent / 2 = unregulated)

Command: 0x00 0xD9 Retrieve faults		
Data:	-	
Answer:	0x00 0xDA	
Data:	Byte[1]	Current error A: 0x01 = A1 : 0x80 = A8
	Byte[2]	Current error E: 0x01 = E1 : 0x80 = E8
	Byte[3]	Last error A 0x01 = A1 : 0x80 = A8
	Byte[4]	Last error E 0x01 = E1 : 0x80 = E8
	Byte[5]	Penultimate error A 0x01 = A1 : 0x80 = A8
	Byte[6]	Penultimate error E 0x01 = E1 :

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		0x80 = E8
	Byte[7]	Second to last error A 0x01 = A1 : 0x80 = A8
	Byte[8]	Second to last error E 0x01 = E1 : 0x80 = E8
	Byte[9]	0x00 = Filter OK 0x01 = Filter full
	Byte[10]	Current error EA: 0x01 = EA1 : 0x80 = EA8
	Byte[11]	Last error EA: 0x01 = EA1 : 0x80 = EA8
	Byte[12]	Second to last error EA: 0x01 = EA1 : 0x80 = EA8
	Byte[13]	Second to last error EA: 0x01 = EA1 : 0x80 = EA8
	Byte[14]	Current error A (high): 0x01 = A9 : 0x40 = A15 0x80 = A0
	Byte[15]	Last error A (high): 0x01 = A9 : 0x40 = A15 0x80 = A0
	Byte[16]	Second to last error A (high): 0x01 = A9 : 0x40 = A15 0x80 = A0
	Byte[17]	Second to last error A (high): 0x01 = A9 : 0x40 = A15 0x80 = A0

Command: 0x00 0xDD Retrieve operating hours		
Data:	-	
Answer:	0x00 0xDE	
Data:	Byte[1-3]	Operating hours absent (h) (Byte[3] = Low Byte)
	Byte[4-6]	Operating hours low / level 1 (h) (Byte[6] = Low Byte)
	Byte[7-9]	Operating hours average / level 2 (h) (Byte[9] = Low Byte)
	Byte[10-11]	Frost protection operating hours (h) (Byte[11] = Low Byte)
	Byte[12-13]	Operating hours preheating (h) (Byte[13] = Low Byte)
	Byte[14-15]	Operating hours bypass open (h) (Byte[15] = Low Byte)
	Byte[16-17]	Operating hours filter (h) (Byte[17] = Low Byte)
	Byte[18-20]	Operating hours high / level 3 (h) (Byte[20] = Low Byte)

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Command: 0x00 0xDF Get status of bypass control		
Data:	-	
Answer:	0x00 0xE0	
Data:	Byte[1]	0x00
	Byte[2]	0x00
	Byte[3]	bypass factor
	Byte[4]	bypass stage
	Byte[5]	Bypass correction
	Byte[6]	0x00
	Byte[7]	Summer mode (1 = yes / 0 = no (winter))

Command: 0x00 0xE1 Get preheating status		
Data:	-	
Answer:	0x00 0xE2	
Data:	Byte[1]	Status flap (1 = open / 0 = closed / 2 = unknown)
	Byte[2]	Frost protection (1 = active / 0 = inactive)
	Byte[3]	preheating (1 = active / 0 = inactive)
	Byte[4-5]	frost minutes (min)
	Byte[6]	Frost resistance (1 = extra safe / 4 = safe)

Command: 0x00 0xE5 Get RF status		
Data:	-	
Answer:	0x00 0xE6	
Data:	Byte[1]	RF Address 4 (Low Byte)
	Byte[2]	RF Address 3
	Byte[3]	RF Address 2
	Byte[4]	RF Address 1 (High Byte)
	Byte[5]	RF ID
	Byte[6]	module present
	Byte[7]	Self-learning mode active

Command: 0x00 0xE9 Last 8 times preheating		
Data:	-	
Answer:	0x00 0xEA	
Data:	Byte[1]	Oldest value (°C)
	Byte[2]	
	Byte[3]	
	Byte[4]	
	Byte[5]	
	Byte[6]	
	Byte[7]	
	Byte[8]	Latest value (°C)

Command: 0x00 0xEB EWT / Recall afterheating		
Data:	-	
Answer:	0x00 0xEC	
Data:	Byte[1]	EWT low (°C)
	Byte[2]	EWT high (°C)
	Byte[3]	EWT speed up (%)
	Byte[4]	Kitchen hood speed up (%)
	Byte[5]	afterheating power
	Byte[6]	Afterheating Power I-Parameter
	Byte[7]	Afterheating T desired (°C)

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7.2 Command list (PC to ComfoAir) / write commands

Command: 0x00 0x99 Set level		
Data:	Byte[1]	0x00 = Auto 0x01 = Away 0x02 = low / level 1 0x03 = medium / level 2 0x04 = high / level 3
Answer:	ACK	
Data:	-	

Command: 0x00 0x9F Set analog values		
Data:	Byte[1]	Analog present: (1 = present / 0 = absent) 0x01 = Analog 1 0x02 = Analog 2 0x04 = Analog 3 0x08 = Analog 4 0x10 = RF
	Byte[2]	Analog control: (1 = control / 0 = control) 0x01 = Analog 1 0x02 = Analog 2 0x04 = Analog 3 0x08 = Analog 4 0x10 = RF
	Byte[3]	Analog positive / negative: (1 = negative / 0 = positive) 0x01 = Analog 1 0x02 = Analog 2 0x04 = Analog 3 0x08 = Analog 4 0x10 = RF
	Byte[4]	Analog 1 Min. Setting (%)
	Byte[5]	Analog 1 Max. Setting (%)
	Byte[6]	Analog 1 Setpoint (%)
	Byte[7]	Analog 2 Min. Setting (%)
	Byte[8]	Analog 2 Max. Setting (%)
	Byte[9]	Analog 2 Setpoint (%)
	Byte[10]	Analog 3 Min. Setting (%)
	Byte[11]	Analog 3 Max. Setting (%)
	Byte[12]	Analog 3 Setpoint (%)
	Byte[13]	Analog 4 Min. Setting (%)
	Byte[14]	Analog 4 Max. Setting (%)
	Byte[15]	Analog 4 Setpoint (%)
	Byte[16]	Analog RF Min. Setting (%)
	Byte[17]	Analog RF Max. Setting (%)
	Byte[18]	Analog RF setpoint (%)
	byte[19]	Priority control (0 = analog inputs / 1 = weekly program)
Answer:	ACK	
Data:	-	

Command: 0x00 0xCB (time) Set delay		
Data:	Byte[1]	Bathroom Switch On Delay (Min)
	Byte[2]	Bathroom Switch Off Delay (Min)
	Byte[3]	L1 Switch-off delay (min)
	Byte[4]	shock ventilation (min)
	Byte[5]	Filter Counter (Weeks)
	Byte[6]	RF high time short (min)

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	Byte[7]	RF high time long (min)
	Byte[8]	Kitchen hood switch-off delay (min)
Answer:	ACK	
Data:	-	

Command: 0x00 0xCF Set ventilation level		
Data:	Byte[1]	Exhaust air absent (%)
	Byte[2]	Exhaust air low / level 1 (%)
	Byte[3]	Exhaust air medium / level 2 (%)
	Byte[4]	Supply air level absent (%)
	Byte[5]	Supply air low / level 1 (%)
	Byte[6]	supply air medium / level 2 (%)
	Byte[7]	Exhaust air high / level 3 (%)
	Byte[8]	Supply air high / level 3 (%)
	Byte[9]	-
Answer:	ACK	
Data:	-	

Command: 0x00 0xD3 Set temperature		
Data:	Byte[1]	Comfort temperature (°C*)
Answer:	ACK	
Data:	-	

Command: 0x00 0xD7 Set status		
Data:	Byte[1]	Preheating present (1 = present / 0 = absent)
	Byte[2]	Bypass present (1 = present / 0 = absent)
	Byte[3]	type (1 = left / 2 = right)
	Byte[4]	size (1 = large / 2 = small)
	Byte[5]	Options: (1 = present / 0 = absent) 0x01 = Fireplace 0x02 = Kitchen hood 0x04 = After-heating 0x40 = After-heating PWM mode 0x80 =
	Byte[6]	0x00
	Byte[7]	Enthalpy present (1 = present / 0 = absent / 2 = without Sensor)
	Byte[8]	EWT present (1 = regulated / 0 = absent / 2 = unregulated)
Answer:	ACK	
Data:	-	

Command: 0x00 0xDB Reset / Self-test		
Data:	Byte[1]	Reset faults (1 = reset / 0 = -)
	Byte[2]	Reset settings (1 = reset / 0 = -)
	Byte[3]	Start self-test (1 = start / 0 = -)
	Byte[4]	Reset filter operating hours (1 = reset / 0 = -)
Answer:	ACK	
Data:	-	

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Command: 0x00 0xED EWT / set afterheating		
Data:	Byte[1]	EWT low (°C)
	Byte[2]	EWT high (°C)
	Byte[3]	EWT speed up (%)
	Byte[4]	Kitchen hood speed up (%)
	Byte[5]	Afterheating T desired (°C)
Answer:	ACK	
Data:	-	

* Sent value is (temperature + 20) * 2
** Sent value is 1875000 / (rpm)

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8.0 Command list (CC-Ease to ComfoAir)

Command: 0x00	0x33 Get data	
Data:	-	
Answer:	0x00 0x38 0x00 0x3E 0x00 0x40 0x00 0x98 0x00 0x9C 0x00 0xAA 0x00 0xCE 0x00 0xD2 0x00 0xE0 0x00 0xE2 0x00 0xEC	
Data:		See command list ComfoAir to CC-Ease

Command: 0x00	0x35 CC-Ease parameters	
Data:	Byte[1]	RTC Day 0x00 = Saturday 0x01 = Sunday 0x02 = Monday 0x03 = Tuesday 0x04 = Wednesday 0x05 = Thursday 0x06 = Friday
	Byte[2]	RTC Hour (0..23)
	Byte[3]	RTC Minute (0..59)
	Byte[4]	Temperature (°C*)
	Byte[5]	Version CC-Ease Bit 7..4 = Version Major Bit 3..0 = Version Minor
Answer:	0x00 0x3C	
Data:		See command list ComfoAir to CC-Ease

Command: 0x00	0x37 CC-Ease Key Status	
Data:	Byte[1]	fan (0..255 = 0..4080 milliseconds)
	Byte[2]	mode (0..255 = 0..4080 milliseconds)
	Byte[3]	clock (0..255 = 0..4080 milliseconds)
	Byte[4]	temperature (0..255 = 0..4080 milliseconds)
	Byte[5]	Plus (0..255 = 0..4080 milliseconds)
	Byte[6]	Minus (0..255 = 0..4080 milliseconds)
	Byte[7]	Status Bits 0x01 = Flashing on/off
Answer:	0x00 0x3C	
Data:		See command list ComfoAir to CC-Ease

Command: 0x00	0x39 Received RF command	
Data:	Byte[1]	Module Type Receiver
	Byte[2]	Module ID Receiver
	Byte[3]	Module Type Transmitter
	Byte[4]	Module ID Sender
	Byte[5]	Lifetime
	Byte[6]	data type

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	Byte[7]	data byte 1
	Byte[8]	data byte 2
	Byte[9]	data byte 3
	Byte[10]	data byte 4
	Byte[11]	data byte 5
	Byte[12]	data byte 6
	Byte[13]	data byte 7
	Byte[14]	data byte 8
	Byte[15]	data byte 9
	Byte[16]	data byte 10
Answer:	0x00 0x40	
Data:		See command list ComfoAir to CC-Ease

* Sent value is (temperature + 20) * 2

8.1 Command list (ComfoAir to CC-Ease)

Command: 0x00	0x38 Set parameters	
Data:	Byte[1]	RTC Day 0x00 = Saturday 0x01 = Sunday 0x02 = Monday 0x03 = Tuesday 0x04 = Wednesday 0x05 = Thursday 0x06 = Friday
	Byte[2]	RTC Hour (0..23)
	Byte[3]	RTC Minute (0..59)
	Byte[4]	Backlight timeout (fixed at 30)
	Byte[5]	backlight (fixed at 100%)
Answer:		
Data:		

Command: 0x00	0x3C Set display	
Data:	Byte[1] (1 = on / 0 = off)	0x01 = Saturday 0x02 = Sunday 0x04 = Monday 0x08 = Tuesday 0x10 = Wednesday 0x20 = Thursday 0x40 = Friday 0x80 = Colon (1 = on / 0 = off) 0x01 = 1AEGED 0x02 = 1B
	Byte[2]	0x04 = 1C 0x08 = Symbol AUTO 0x10 = Symbol MANUAL 0x20 = Symbol FILTER 0x40 = Symbol I 0x80 = Symbol E (1 = on / 0 = off) 0x01 = 2A
	Byte[3]	

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		0x02 = 2B 0x04 = 2C 0x08 = 2D 0x10 = 2E 0x20 = 2F 0x40 = 2G 0x80 = FAN symbol (1 =
	Byte[4]	on / 0 = off) 0x01 = 3A 0x02 = 3B 0x04 = 3C 0x08 = 3D 0x10 = 3E 0 = 3F 0x40 = 3G 0x80 = Kitchen hood symbol (1 = on / 0 = off)
	Byte[5]	0x01 = 4A 0x02 = 4B 0x04 = 4C 0x08 = 4D 0x10 = 4E 0x20 = 4F 0x40 = 4G 0x80 = Preheating symbol (1 = on / 0 = off) 0x01 = 5A
	Byte[6]	0x02 = 5B 0x04 = 5C 0x08 = 5D 0x10 = 5E 0x20 = 5F 0x40 = 5G 0x80 = Frost symbol (1 = on / 0 = off) 0x01 = 6A 0x02 = 6B 0x04
	Byte[7]	= 6C 0x08 = 6D 0x10 = 6E x20 = 6F 0x40 = 6G 0x80 = Symbol EWT (1 = on / 0 = off) 0x01 = 7A 0x02 = 7B 0x04 = 7C 0x08 = 7D
	Byte[8]	0x10 = 7E 0x20 = 7F 0x40 = 7G 0x80 = Symbol afterheating (1 = on / 0 = off) 0x01 = 8A 0x02 = 8B 0x04 = 8C 0x08 = 8D 0x10 = 8E
	Byte[9]	0x20 = 8F 0x40 = 8G 0x80 = period

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	Byte[10]	(1 = on / 0 = off) 0x01 = Symbol Degree 0x02 = Symbol Bypass 0x04 = X1 0x08 = X2 0x10 = X3 0x20 = Symbol House 0x40 = Symbol Supply Air 0x80 = Symbol Extract Air
Answer:		
Data:		

Command: 0x00 0x3E Set RF address		
Data:	Byte[1] Byte[2] Byte[3] Byte[4]	RF Address 4 (Low Byte) RF Address 3 RF Address 2 RF Address 1 (High Byte)
Answer:		
Data:		

Command: 0x00 0x40 Send RF command		
Data:	Byte[1] Byte[2] Byte[3] Byte[4] Byte[5] Byte[6] Byte[7] Byte[8] Byte[9] Byte[10] Byte[11] Byte[12] Byte[13] Byte[14] Byte[15] Byte[16] Byte[17] Byte[18] byte[19] Byte[20] Byte[21]	Module Type Receiver Module ID Receiver Module Type Transmitter Module ID Sender Lifetime date type data byte 1 data byte 2 data byte 3 data byte 4 data byte 5 data byte 6 data byte 7 data byte 8 data byte 9 data byte 10 RF Address 4 (Low Byte) RF Address 3 RF Address 2 RF Address 1 (High Byte) Control bits 0x01 = Repeat previous packet first 0x02 = 250ms pause before sending 0x04 = Receive at sender address
Answer:		
Data:		

* Sent value is (temperature + 20) * 2

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9 test mode (PC on ComfoAir)

Command: 0x00 0x01 Test mode Start mode		
Data:	-	
Answer:	0x00 0x02 Confirmation test mode	
Data:	-	

Command: 0x00 0x05 Set outputs		
Data:	Byte[1]	relay 0x01 = Preheating Relay 0x02 = Preheating Triac 0x04 = EWT Supply 0x08 = EWT Direction 0x10 = Kitchen Hood 0x20 = Error
	Byte[2]	Feedback 0x01 = Filter full LED
Answer:		
Data:		

Command: 0x00 0x07 Set analog outputs		
Data:	Byte[1]	supply air (%)
	Byte[2]	exhaust air (%)
	Byte[3]	afterheating (%)
Answer:		
Data:		

Command: 0x00 0x09 Set flaps		
Data:	Byte[1]	Bypass (1 = open / 0 = closed / 3 = stop)
	Byte[2]	Preheating (1 = open / 0 = closed / 3 = stop)
Answer:		
Data:		

Command: 0x00 0x19 Exit test mode		
Data:	-	
Answer:	0x00 0x1A Confirmation end of test mode	
Data:	-	

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10 Bootloader (PC to ComfoAir)

Command: 0x00	0x65 Start bootloader mode	
Data:	-	
Answer:	0x00 0x66 Confirm bootloader mode	
Data:	-	

Command: 0x00	0x6F Write Flash Block	
Data:	Byte[1] : Byte[64] Byte[65] Byte[66] Byte[67]	data byte 1 data byte 64 start address (high byte) starting address start address (low byte)
Answer:	0x00 0x70	
Data:	Byte[1]	status 0x01 = Success 0x02 = Error 0x04 = Address out of range 0x08 = Data block incomplete

Command: 0x00	0x71 Read Flash Block	
Data:	Byte[1] Byte[2] Byte[3]	start address (high byte) starting address start address (low byte)
Answer:	0x00 0x72	
Data:	Byte[1] : Byte[64]	data byte 1 data byte 64

Command: 0x00	0x73 Exit bootloader mode	
Data:	-	
Answer:	0x00 0x74 Confirmation end of bootloader mode	
Data:	-	