

Parcelcube Dimensioning System

User Manual PC900 & PC900 XL

Version 1.1



INDEX

Package contents	2
Assembly	3-5
Installation and initial start-up	6-11
Main screen	12
Configuration screen	13-14
Configuration and main screen in-depth	15
Manual calibration without calibration object	15
CSV-file	16
Scale indicator calibration	17
Scale indicator unit selection kg/lbs	18
API	19-22











Assemble the back piece and height sensor with the scale platform as shown in pictures. Be sure to mount the back piece at a right angle.













Software installation

Make sure to carefully follow the installation instructions below Only with Windows 7. Windows 10 will automaticaly install USB serial driver.

Log in as Administrator to install the software and drivers.

Download serial driver

www.parcelcube.com/support/serial installer.exe Run the serial installer, again as administrator

Insert the USB cable into the PC. The found new hardware wizard will install the USB Seriial interface

Download Software

<u>www.parcelcube.com/support/pcclientlatest.zip</u> Extract to your final desitnation (where you will run the software from normaly c:\)

Run setup.exe (located in c:\parcelcube R2\publish)



2. Click Install





Once installation is finished, you will be presented with the below window.

Parcelcube R2		
File Edit Run Metric		la en el ciere
	\square	Item stacking
A Register		Lengun 🔽 🔽 pcs
R (Enter)		Size per item
Height E		Width 1 🖨 pcs
Volume m3		Size per item
Weight		
		Height 1 🌩 pcs
User defined values		Size per item
Barcode		
Customer		weight per item
user_value3		Item Counting
user_value4		Set weight of 10pcs
user value5		# of pcs
		•
user_value/		
		<u>_ELCUBE</u>
IP Address Port Com Port: TARE 10000 000	www.parcelcube.com	

The software is pre-configured, although there are some settings that need to be adjusted.





Determine which serial port the scale was assigned to by navigating to the Device Manager (*Start > Control Panel > Device Manager*). Look for USB serial port (COMx) as shown above.



Parcelcube R2	
File Edit Run Metric	
Configuration	Item stacking
Auto Calibrate dimensions	Length I 🔽 pcs
Width Admin login	Length per item
Heigh DimWei login	Width 1 🖨 pcs
Volume m3	Width paritam
	Height 1 🖨 pcs
User defined values	Height per item
Barcode	
Customer	Weight per item
user_value3	Item Counting
	Set weight of 10pcs
user_value5	# of pcs
user_value6	
user_value7	
	<u></u>
IP Address Port Com Port: TARE 10000 000 www.parcelcube.com	

Click *Edit* > *Admin login* to enable the configuration menu item. The password is *dimwei*.

Click *Edit* > *Configuration* to open the configuration window.



(Configuration				↔	– 🗆 X
Table dimensions in cm	User defined value	5			Scale calibration
Length 64	user_value1	Barcode	Clear	Not Nul	Tare 10000
Width 64	user_value2	Customer	Clear	Not Nul	Multiple 80
Teight 90,4	user_value3	user_value3	Clear	Not Nul	
High res Smoothing	user_value4	user_value4	Clear	Not Nul	-Volume Weight —4
Imperial Auto RUN	user_value5	user_value5	Clear	Not Nul	Dim factor 250
	user_value6	user_value6	Clear	Not Nul	COM Fort
Indicator connected	user_value7	user_value7	Clear	Not Nul	~
None ~ 2	user_value us	ed as camera prefix None	• ~]	5
			Keyboard p	paste configurati	ion
CSV directory c:\Dimensional Scale			Length = low Width = low Weight = low Volume = lo Vol. weight TAB = lowe	wer case 1' wer case 'w' wer case 'h' apital 'W' wer case 'v' er case t' over case t'	F-Key F9 Delay 50 ms mm / liter
WebServer API		3	Line feed =	:lowercase "f" capital B	Cr
Bind to IP address 127.0.0.1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		nogistor = (oup.ton n	
Denote Web and C	his to shart to t		Wtitwt	h	
Remote iveoservice un. Clear t	nis to disabled				
			Secondary	/ display	Save
			COM10	✓ Ena	able Cose
Copyright Gripner Production	AB Build	12.0.1.32			

1 Check *Metric* and *Smoothing* check boxes.

2 Check *Indicator connected* check box and select RinstrumR320.

3 Set the *Bind to IP address* to the computer's IP address.

4 Enter the *Dim factor* for your freight company.

5 Choose the *COM Port* in the drop down box that corresponds

to the scale serial port shown in Device Manager.

Click Save.



Parcelcube R2		– 🗆 ×
File Edit Running Metric Lengt Auto Calibrate dimensions Width Admin logout Heigh DimWei login Volume m3 Weight = User defined values Barcode		Item stacking Length 1
127.0.0.1 9091 COM1 TARE 10000 000		
127.0.0.1 0081 CONT TAKE 10000 000	www.parceicube.com	

The scale is pre-calibrated for weight, but the dimensioning system must be calibrated. I Click *Edit* > *Auto Calibrate dimensions*.

I Follow the on screen instructions.



Parcelcube R2	
1File 2 Edit 3 Run 4 Metric 5Length	Item stacking Length 1 pcs Length per item
8Volume m3 9Weight = 10 Vol. Weight 11 18 User defined values 13 Barcode	Width per item Height 1 Pcs Height per item Weight per item Item Counting Item Counting Item Counting # of pcs
USIvalue7	

- 1 File menu
- 2 Edit menu
- **3** Start the scale software communication with the hardware and Webservice
- 4 Toggle Metric or Imperial units.
- 5 Measured objects length (L)
- 6 Measured objects width (W)
- 7 Measured objects height (H)
- 8 Volume in (L x W x H)
- 9 Weight
- **10** Volume weight (calculated from dimensions and dim weight)
- **11** Green if weight > Volume Weight. Red if volume weight > Weight
- **12** Save all measurement data and additional information as User defined fields in .csv file.
- If you have configured Remote Webservice uri, a call will also be made with all the data.

13 Seven (7) User definable fields. First field will always have focus at program startup and after registering data.

- 14 Number of items stacked along the length
- 15 Length per item
- **16** Number of items stacked along the width
- 17 Width per item
- **18** Number of items stacked along the height
- 19 Height per item
- 20 Weight per item
- **21** Set the weight for 10 pcs
- 22 Number of pcs
- 23 camera preview (only displayed if camera is licensed and enables)



You must click *Save* to apply any changes to the configuration and re-starting the software is recommended.

Configuration			- 🗆 X
Table dimensions in cm 1	User defined values 7a		Scale calibration
Length 63,9	user_value1 Barcode	Clear Not Null	Tare 10000
Width 64,2	user_value2 Customer	Clear Not Null	Multiple 80
Height 91	user_value3 user_value3	Clear Not Null	
High res 🗌 Smoothing	user_value4 user_value4	Clear Not Null	Volume Weight 9
Imperial Auto RUN	user_value5 user_value5	Clear Not Null	Dim factor 250
2	user_value6 user_value6	Clear Not Null	COM Port 10
Indicator connected	user_value7 user_value7	Clear Not Null	~
RinstrumR320 V 3	user_value used as camera prefix N	one v 7b	
CSV directory C:\parcelcube R2 WebServer API Bind to IP address 127.0.0.1 Bind to Port 8081 Remote Webservice uri. Clear	ELCUBE 4 5 this to disabled	Length = lower case 1' Width = lower case 'w' Height = lower case 'h' Weight = capital 'W' Volume = lower case 'v' Vol. weight = lower case 'v' Camige return = lower case 'c Line feed = lower case 'f' Register = capital R W.t.l.t.w.t.h	F-Key F9 ~ Delay 50 ms or'
Camera	Laser aim	COM1 V Enab	ble
Camera Logitech HD P	ro Webcam C920 🗸 Tum On		Save
Resolution {Width=1920, 13	Height=1080} ~ 14		Close
Copyright Gripner Production	AB Build 2.0.1.45		

1 Scale table dimensions in cm – Calibration values for dimensioning

2 High res – Dimensions measured with 1 decimal

Smoothing – Stabilizes the dimensional measurements

Imperial – Use imperial measurements instead of metric

Camera – Enables USB camera interface

Auto RUN – Automatically runs scale software when PC is restarted

mm / liter Not used

Continues on next page.



3 Indicator connected – Must be checked and RinstrumR320 must be selected

4 CSV directory – Location where the .csv file will be saved as well as pictures from camera

5 WebServer API – IP address and port the scale software will bind to

6 Remote Webservice uri – See pages 18–21

7 a User defined values – Rename the 7 user-defined fields of additional data saved with the .csv file.

Each field can be configured to clear after enter.

b User value can be used to add prefix to pictures standard date-time based file name.

- 8 Scale calibration Not used
- 9 Dim Factor Freight carrier dimensional weight factor
- **10** COM Port Serial port of PC used to connect to the scale
- **11** F9 Configuration See page 15
- **12** Secondary display Not used
- 13 Camera settings
- 14 Aiming tool to aim laser, Not used on SN1 and BN1 models



Item stacking

If you wish to measure many small objects (smaller than the minimum size allowed) you can use item stacking. As an example, if you have 200 business cards, stack them along the height, put in 200 in the height pcs field. The field height will show total height and the field size per item under item stacking will show the size of each business card.

Measuring oversized objects

If you have an object too big to fit on the scale, you can still use the scale to register the data. Under *File* menu choose *Pause Serial*. Now you can manually enter the dimensions and weight. Register the data and when complete, click *File* menu and choose *Start Serial*.

F9 configuration

This option allows you to configure the scale software to emulate a keyboard typing in the volume and weight data to any application. Say you want to save the measurements to an Excel file with the column layed out as:

Length Width Height Weight

You configure the F9 as l,t,w,t,h,t,W,lf

The Excel file will be filled in when you press the F9 key: (fictional volume and weight data) Length Width Height Weight

23	41	12	0.77
43	23	12	1.33

Auto calibrating dimensions

To do an auto calibration you need to be logged in as admin in the software. *Edit > Admin login* (password dimwei). Once logged in you have access to *Edit > Auto calibrate dimensions*. You need to follow the on-screen instruction and have the calibration object. Make sure you followed the steps outlined during assembly, installation and start-up.

Choose *Edit* > *Admin* login to enable configuration (password is dimwei)

Choose *Edit* > *Configuration* to open up the configuration window. Select *High res*, ensuring that *Smoothing* is NOT selected.

Click Save and OK.

Position the main window and configuration windows so that you can see both windows at the same time.

Calibrate dimensions (Must be done using centimeters, not inches)

Place an object of known size, for example 20 x 20 x 20 cm (8 x 8 x 8 in) and preferably made of wood or metal on the scale. Observe the dimensions in the main window. If a dimension, such as width, is listed as too small, such as 19.5, in the configuration window, manually change the width under Table Dimensions in cm to current value + (20 - 19.5). So if the current value was 63.5 you would change it to 64. If, for example, the length shows as 20.5 you would then decrease the current length value according to current value - (20.5 - 20). Thus, if the current value was 64.5 you would then change it to 64.



File > View CSV

							View CSV				
	Date time	Lenght	Width	Height	Volume	Weight	Vol. Weight	User Value 1	User Value2	User Value3	
	2013-08-05 23 43 42	22.2	22.5	55.3		29.96	5.524				
	2013-08-05 23:43:44	22.2	22.5	55.2		29.96	5.524				
	2013-08-05 23 43 45	22.2	22.5	55,3		29.96	5.524				
	2013-08-05 23:55:40	22.2	22.5	55.3	0.028	29.96	5.524				
	2013-08-05 23:55:40	22.2	22.5	55.3	0.028	25.96	5,524				
1	2013-08-05 23:55:40	22.2	22.5	55.3	0.028	29.96	5.524				
	2013-08-05 23:55:41	22.2	22.5	55.3	0.028	29.96	5.524				
	2013-08-05 23 55 42	22.2	22.5	55,3	0.028	29.96	5,524				
	2013-08-05 23:55:43	22.2	22.5	55.3	0.028	29.96	5.524				
	2013-08-05 23 55:44	22.2	22.5	55.3	0.028	29.96	5.524				
	2013-08-05 23:55:45	22.2	22.5	55.3	0,028	29.96	5.524				
1	2013-08-05 23:55.46	22.2	22.5	55,3	0.028	29.96	5,524				
	2013-08-05 23:56:30	22.2	22.5	55,3	0.028	29.96	5.524	283547	EAN-13-283547	Bobby	
	2013-08-05 23 56 31	22.2	22.5	55.3	0.028	29.96	5.524	283547	EAN-13-283547	Bobby	
	2013-08-05 23:56:32	22.2	22.5	55.3	0.028	29.96	5.524	283547	EAN-13-283547	Bobby	
	2013-08-05 23:56:33	22.2	22.5	55.3	0.028	29.96	5.524	283547	EAN-13-283547	Bobby	

This option will bring up a view of the current CSV data.

The CSV file is located in the path defined in the configuration form.

The scale CSV file format is as follows:

- Field 1 Date and time in computer's current format, variable size
- Field 2 Length, variable size
- Field 3 Width, variable size
- Field 4 Height, variable size
- Field 5 Volume, variable size
- Field 6 Weight, variable size
- Field 7 Volume Weight, variable size
- Field 8User Value 1, variable size
- Field 9 User Value 2, variable size
- Field 10 User Value 3, variable size
- Field 11User Value 4, variable size
- Field 12 User Value 5, variable size
- Field 13 User Value 6, variable size
- Field 14 User Value 7, variable size
- Field 15 Item stacking length, variable size
- Field 16 Item stacking width, variable size
- Field 17 Item stacking height, variable size
- Field 18 Item stacking weight, variable size
- Field 19 Item counting # of pcs

Each field ends with a semicolon except the last field, which ends with CRLF.



Indicator Zero / Span Calibration Procedure

With the indicator powered on and in normal weighing mode, perform the following functions to calibrate the Rinstrum scale indicator.

- 1. Press Power & "F" key together for 2 seconds to access setup mode.
- 2. Press ZERO key (2X) until CAL Menu is displayed.
- **3.** Press TARE key (1X) and "ZERO" will be displayed.
- 4. Remove all weight from the scale platform.
- 5. Press GROSS/NET Key (1X). Display will flash current weight.
- **6.** Press PRINT key (1X). Display shows "Z in P" (Zero in Process) followed by the newly captured zero reference flashing on the display.
- 7. Press TARE key (1X) to return to ZERO menu.
- 8. Press 🖤 TARE key again (1X) to display SPAN menu.
- 9. Press GROSS/NET key (1X). Display will flash current weight.
- **10.** Add calibration weight to scale platform.
- **11.** Press GROSS/NET key (1X) to enter the calibration weight value.

OSS/NET will select the digit.

PRINT will edit the digit (scroll up).

- **12.** Press "F" key to accept weight value and perform calibration. Display shows "S in P" (Span in Process) followed by the newly captured span reference flashing on the display.
- **13.** Press + Power & "F" keys together for 2 seconds to save settings and exit.



Indicator: Enabling Unit Switching

With the indicator powered on and in normal weighing mode, perform the following functions to enable unit switching on the indicator (NOT PC interface).

- 1. Press Power & "F" Key together for 2 seconds to access setup mode.
- 2. Press ZERO key (3X) until SPEC Menu is displayed.
- **3.** Press TARE key (9X) until PUR.FN parameter is displayed.
- **4.** Press GROSS/NET Key (1X). Display will show the current setting "NONE" by default.
- **5.** Press PRINT key (1X) to change the setting to "UNITS".
- 6. Press "F" key to accept the new value and return to PWR.FN.

Press Press Power & "F" keys together for 2 seconds to save settings and exit.



There are two methods for retrieving data from the ParcelCube client software. These methods are the *Webservice* and the *Remote Webservice uri*. The Webservice is used to *pull* data from the ParcelCube client and the Remote Webservice uri is used to *push* data from the ParcelCube client to a web service that is awaiting the data.

1. Webservice (pull data)

In order to utilize the Webservice for pulling data from the ParcelCube client there must be software written (web or desktop) to perform an HTTPWebRequest (e.g. button or link click). The web request must be made to the PC where the ParcelCube client software resides.

Example c# code:

Dim request As HttpWebRequest = CType(WebRequest.Create("http://192.168.43.37:8080/"), HttpWebRequest) // IP and port should be the one in the parcelcube config Dim response As HttpWebResponse = CType(request.GetResponse(), HttpWebResponse) ' Get the stream associated with the response. Dim receiveStream As Stream = response.GetResponseStream() ' Pipes the stream to a higher level stream reader with the required encoding format. Dim readStream As New StreamReader(receiveStream, Encoding.UTF8) 'MsgBox(readStream.ReadToEnd()) Dim parcelcube string() As String Try parcelcube string = readStream.ReadToEnd().Split(";") Catch End Try item_lenght_txtbox.Text = parcelcube_string(0) item width txtbox.Text = parcelcube string(1) item height txtbox.Text = parcelcube string(2) item weight txtbox.Text = parcelcube string(4) response.Close() readStream.Close()

parcelcube_string() has all the data, even though this example only uses 4 values. If you want the calculated volume parcelcube string(3) will hold it.



Configure ParcelCube client Web Service

In the ParcelCube client software configuration screen fill in the following fields: 1 Bind to IP Address – This is the IP address of the PC that is running the ParcelCube client software (127.0.0.1 may be used for testing locally on the PC).

2 Bind to Port – Enter the port number.

* Note – If you have problems connecting, verify that the port entered is allowed in your firewall.

Table dimensions in cm -1	User defined value	es /a			Scale call	bration -
Length 63,9	user_value1	Barcode	Clear	Not Null	Tare	10000
Width 64.2	user_value2	Customer	Clear	Not Null	Multiple 8	80
Height 91	user_value3	user_value3	Clear	Not Null		
High res 🗌 Smoothing	user_value4	user_value4	Clear	Not Null	- Volume W	/eight _9
Imperial 🗌 Auto RUN	user_value5	user_value5	Clear	Not Null	Dim factor	250
2	user_value6	user_value6	Clear	Not Null	-COM Port	10
mm / liter	user_value7	user_value7	Clear	Not Null		~
RinstrumR320 V 3	user value us	ed as camera prefix None	e ~	7b		
CSV directory	ELCL	<u>JBE</u>	Keyboard p Length = lo Width = lov Height = lov Weight = c Volume = lo Vol. weight	paste configurat wer case 1' wer case 'w' wer case 'h' apital 'W' wer case 'v' = lower case 'v'	F-Key F9 Delay w'	11 ~
CSV directory CSV directory C:\parcelcube R2 WebServer API Bind to IP address 127.0.0. Bind to Port 8081		JBE 4	Keyboard (Length = lov Width = lov Height = lov Volume = lov Volume = lov Carige retu Line feed = Register = o	paste configurat wer case 't' wer case 'w' wer case 't' apital 'W' wer case 't' = lower case 't' m = lower case lower case 't' capital R	ion F-Key F9 Delay 50 w' 50	11 m mespin
CSV directory C:\parcelcube R2 WebServer API Bind to IP address Bind to Port 8081 Remote Webservice uri. Clea	I vitis to disabled	JBE 4 5 6	Keyboard (Length = lo Width = lov Height = lo Weight = c Volume = lo Vol. weight TAB = lowe Carrige retu Line feed = Register = lowe Wt.J.t.w.t.	wer case 1' wer case 'i' wer case 'w' wer case 'n' wwer case 'n' apital 'W' wwer case 's' " a case 's' mr = lower case lower case 'f' capital R	ion F-Key F9 Delay 50 * 'cr' Tir	11 mespin
CSV directory C:\parcelcube R2 WebServer API Bind to IP address 127.0.0. Bind to Port 8081 Remote Webservice uri. Clear	I vitis to disabled	JBE 4 5 6	Keyboard (Length = lo Width = lov Height = lo Volume = lo Volume = lo Vol. weight TAB = lowet Carige red Register = 0 WtJ.t.wtJ	baste configural wer case 1' ver case 'N' wer case 'N' aver case 'N' = lower case 'V' = lower case 'V' er case 'I' m = lower case lower case 'I' capital R display	ion F-Key F9 Delay w' 50 , 'cr' Tir	11 mespin
CSV directory C:\parcelcube R2 WebServer API Bind to IP address 127.0.0. Bind to Port 8081 Remote Webservice uri. Clean Camera	I Classifier Contract of the second s	JBE 4 5 6	Keyboard (Length = lo Width = lov Height = lo Volume = lo Vol. weight TAB = lowe Carrige retu Line feed = Register = Wt.t.l.t.w.t.l Secondary COM1	wer case 1' wer case 'w' wer case 'w' wer case 'h' wer case 'h' swer case 'v' elower case 'v' er case t' mr = lower case lower case 'f' capital R display	tion F-Key Delay 50 s 'cr' Tir	
CSV directory C:\parcelcube R2 WebServer API Bind to IP address 127.0.0. Bind to Port 8081 Remote Webservice uri. Clean Camera Camera Camera	1 v r this to disabled	4 5 6 Laser aim	Keyboard (Length = lo Width = lov Height = c Volume = lo Vol. weight TAB = lowe Carrige retu Line feed = Register = l WtJ.t.wtJ Secondary COM1	wer case 1' wer case 'i' wer case 'w' wer case 'n' apital 'W' wwer case 's' = lower case 'ower case 'i' im = lower case lower case 'f' capital R display En	ion F-Key Delay 50 · 'cr' Tir	11 , mespin

Test Connectivity

To test connectivity on your network PC. With the ParcelCube client software running, enter http://192.168.10.80:8080 (*substitute your IP and Port*) using either Microsoft Internet Explorer or Mozilla Firefox on a network PC. After you press the Enter key the ParcelCube client should return the following:



2. Remote Webservice uri (push data)

In order to utilize the Remote Webservice uri for pushing data from the ParcelCube client to your host application there must be a web service written and running that has a variable waiting to be populated (e.g. variable named *data*).

Example :

The web server that is running your web service has an ip address of 192.168.10.20 and uses port 9090.

Your web service name is *pcdata* and contains a variable that is expecting an **http: get.** The uri that you would put into the *Remote Webservice uri* in the ParcelCube client would be as

follows: http://192.168.10.20:9090/pcdata?data ip address port webservice?variable

Configure ParcelCube client

In the ParcelCube client software configuration screen fill in the following field:

• Remote Webservice uri

Configuration			- 🗆 ×
Table dimensions in cm 1	User defined values 7a		Scale calibration
Length 63,9	user_value1 Barcode	Clear Not Null	Tare 10000
Width 64,2	user_value2 Customer	Clear Not Null	Multiple 80
Height 91	user_value3 user_value3	Clear Not Null	_
High res Smoothing	user_value4 user_value4	Clear Not Null	Volume Weight 9
🗌 Imperial 🔲 Auto RUN	user_value5	Clear Not Null	Dim factor 250
2	user_value6 user_value6	Clear Not Null	COM Port 10
mm / liter	user_value7 user_value7	Clear Not Null	
RinstrumR320 V 3	user_value used as camera prefix Non	ie ∨ 7b	
CSV directory C:\parcelcube R2 WebServer API Bind to IP address 127.0.0.1 Bind to Port 8081 Remote Webservice uri. Cleart	4 5 this to disabled	Keyboard paste configurati Length = lower case 1' Width = lower case 'N' Height = lower case 'N' Volume = lower case 'N' Volume = lower case 'N' TAB = lower case 'N' TAB = lower case 'N' Carrige return = lower case Line feed = lower case 'N' Register = capital R WtJt.wt.h	on 11 F-Key F9 V Delay 50 ms 'cr' Timespin
Camera Camera Logitech HD Pr Resolution {Width=1920, H 13 Copyright Gripner Production	ro Webcam C920 V Height=1080} 14 AB Build 2.0.1.45	COM1 V Ena	Save Close



Usage

Once your web service is in place and you have configured the *Remote Webservice uri* in the ParcelCube client you simply click on the *Register* (Enter) button in the ParcelCube client software and it will be retrieved by the web service in the format.

Example of data returned to your web service: http://192.168.10.20:9090/pcdata?data=12;8.6;6.5;0.388194;1.5;4.041; ; ; ; ; ; ; ; ;12;8.6;6.5


