USER
MANUAL

**TRANSMISSION RISK
AIR MONITOR**

Honeywell

USER MANUAL FOR THE
HONEYWELL TRANSMISSION RISK AIR MONITOR

PACKING LIST

Standard package includes

Honeywell Transmission Risk Air Monitor (HTRAM) device   X1
User Manual   X1   USB cable   X1

ADDITIONAL ACCESSORIES AVAILABLE

- AC adapter: HTRAM-AD-USC (USC version),
  or HTRAM-AD-EU (EU version) or HTRAM-AD-UK (UK version)
- Wall mount kit (separate instructions provided in kit)

OPERATION

1. HTRAM is a desktop or wall-mounted device. We recommend to keep it plugged-in so it's powered by the external USB charger. There is a rechargeable battery inside that will supply power for up to 10 hours, but we recommend keeping the device plugged-in to conserve battery life.

2. Device On/Off: When the device in OFF status, push and hold button for 3 seconds to turn it on. The device will show information on the screen. After the initial process (approximately 1 minute),

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the device enters normal status and displays readings. When the device is in ON status, push and hold top button for 3 seconds to turn it OFF.

USER INTERFACE

Status LEDs

LCD screen

Power button
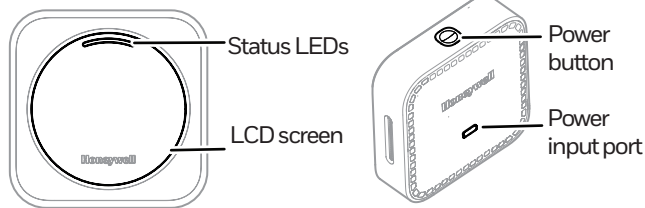
Power input port

SYMBOL	FUNCTION
∗	Bluetooth™ icon
🔋	Battery capacity level
🔋 ⚡	USB power input, icon will show on screen
Low/Medium/High	Risk level based on multiple factors such as CO2, Temp, %RH and activity level etc.
400 CO_2 PPM	CO2 concentration reading

🧍	Low Activity Setting	
🧍	Medium Activity Setting	
🏃	High Activity Setting	
🎛	Custom Setting	
18ºC	Temperature reading, ºC or ºF	
54%RH	Humidity reading	
--	For the first use/power on, the device will initially show "--" for approximately 1 minute	

QUICK START GUIDE

Step 1. Make sure you have everything, then charge the device.

• Make sure these components were in the box. If any are missing, please contact the company from which you purchased the device as soon as possible:

Air Monitor   **USB Cable**   **User Manual**

• Connect the microUSB end to the device, and the USB connector

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to a power adapter or computer. Keep plugged-in until fully charged.
- Make sure the working environment is supported by Bluetooth™ and wireless with Internet access, and a user-supplied smartphone using Apple® iOS® or Android™.

Step 2. Power up the device, download the app and complete the setup:

- Remove the protective film from the monitor display.
- Turn on the Honeywell Transmission Risk Air Monitor by pressing and holding the "Start" button on the top for five seconds.
- Use a smartphone to download the Honeywell air monitor app (App name: Transmission Risk Air Monitor). You can download directly from the Apple™ or Google™ stores, or by scanning the appropriate QR code shown below if your phone has a scanning app or embedded capability.
- Launch the app. Then, complete the connection and setup by following the Bluetooth pairing process in this document.

Google play

App Store

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HOW TO REGISTER

For individual users with less than 10 devices, we recommend going through the self-registration process via the mobile application.

1. Launch the mobile app, and click the"REGISTER" button and agree to the "Honeywell Data Privacy" notice.
2. Enter your email address and choose the region you are located in, then click to send the verification code.
3. Check your email for the verification code and enter it on the mobile app to finish the verification process.
4. Provide your first name and last name, create your password and complete the self-registration process.
5. Go back to the main screen to login to the mobile app.

For enterprise users with more than 10 devices, we recommend going through the enterprise registration process via web portal.

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1. For North American enterprise users, please go to

   for EU enterprise users, please go to

2. Click the "REGISTER" button, and agree to the "Honeywell Data Privacy" notice.
3. Enter the sales order number and click "VERIFY ACCOUNT" to validate purchase of your devices.
4. Enter your email address and click to send the verification code.
5. Check your email for the verification code and enter it on the web portal, then click "NEXT".
6. Enter the required organization information.
7. Enter the Organization Administrator information and then click "SUBMIT" to finish the registration process.

HOW TO PAIR YOUR DEVICE

1. Open the App and enable mobile Bluetooth® in the device's Settings/Bluetooth.

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2. On the App, click the **+Add** New icon to add an air monitor device.
3. Click the **Connect icon** to pair with the device, the Bluetooth icon will blink.
4. Confirm the device is ready for pairing: **See the icon blinking.** Ensure the device's Bluetooth icon is blinking on the screen.
5. The app will pop up a window and request the user to input the **PIN CODE** shown on the device's screen.
6. If two or more devices' Bluetooth are activated, you can use the serial number to identify which device is to be paired. The serial number can be found on the back side of the device.
7. Input the 6-digit **PIN CODE**. Then, click **Connect**.
8. When the Bluetooth icon on the device's screen stops blinking, pairing is complete.
9. If you are individual user and want to connect the device via home or open network WI Fi®, please enter the WIFI® name and password to configure the device network.

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10. If you are an enterprise user and your organization has secured WIFI® network, please reach out to your organization's IT personnel to configure the WIFl® settings for the device network.

Monitors should be placed in the center of activity areas and should be close to breathing height (approximately 1.5 m, depending on the height or age of the room's occupants), out of direct sunlight, and not directly located near induction units, floor fans, or heaters. In an organizational setting, e.g. schools, restaurants, we recommend physically protecting the device by placing a lock on the device enclosure and enabling only authenticated access to the secure devices. Ensure that only authorized personnel have the required keys to physically access the devices.

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DEVICE INDICATION AND RECOMMENDED ACTIONS

DEVICE INDICATION [1]			
	GREEN	**YELLOW**	**RED**
Low Activity Setting[2][3]	<800ppm 0.043% infection risk	800ppm 0.043% infection risk	1100ppm 0.051% infection risk
Medium Activity Setting[2][4]	<700ppm 3.40% infection risk	700ppm 3.40% infection risk	1000ppm 5.41% infection risk
High Activity Setting[2][5]	<500ppm 7.32% infection risk	500ppm 7.32% infection risk	800ppm 25.25% infection risk
Custom Setting	The end user can also choose custom settings on the device to set the alarm threshold levels based on the user's parameters and local, regional and state requirements. **Note: If Custom Settings are used, the user is solely responsible for validating that those alarm settings meet their specific requirements.**		

Recommended Actions	–	– Open windows – Turn on HVAC fan – Move out of room – Additional actions as needed	– Ventilate room immediately – Reduce activities – Move out of room – Additional actions as needed
Alarm	–	One beep	Two beep

1. The HTRAM's preset PPM measurements for each Activity Level are subjective standards based on Honeywell's assessment of U.S. state statutory limits and scientific studies, including the "2020 COVID-19 Aerosol Transmission Estimator" and the "Exhaled CO2 as a COVID-19 Infection Risk Proxy for Different Indoor Environments and Activities" article from the University of Colorado-Boulder (see https://docs.google.com/spreadsheets/d/16K1OQkLD4BjgB dO8ePj6ytf-RpPMIJ6aXFg3PrIQBbQ/edit#gid=519189277 and https://pubs.acs.org/doi/10.1021/acs.estlett.1c00183, respectively) . The user must verify applicable standards or regulations and adapt the product's thresholds to such standards and regulations as required for its usage intended by the user.

2. Please note: A Green designation does not mean no risk for transmission. An increase from Green to Yellow, Yellow to Red or Green to Red does not indicate a linear increase in potential transmission risk within one Activity Setting. Any increase in potential transmission risk across multiple Activity Settings is also not linear. Numerous factors, including without limitation, interaction among individuals in a room, the number of infected individuals present, and the wearing of Personal Protective Equipment (PPE) such as masks and gloves, will affect the potential transmission risk. Users should not rely solely on this device to make a determination of safety.

3. Percent of infection risk calculation is based on the following assumptions and is only intended as guidance: Total number of people: 20, Infected: 1; Time duration: 30 mins and room size: 900sqft.

4. Percent of infection risk calculation is based on the following assumptions and is only intended as guidance: Total number of people: 20, Infected: 1; Time duration: 45 mins and room size: 900sqft.
5. Percent of infection risk calculation is based on the following assumptions and is only intended as guidance: Total number of people: 20, Infected: 1; Time duration: 60 mins and room size: 900sqft.

SCENARIO SELECTION

The device has three pre-programmed scenario settings based on activity levels.

• **Low activity**: Reading, quietly talking, Breathing rate (susceptibles): 0.252 m3/h, CO2 emission rate/person: 0.0052 (@ 273 K and 1 atm), Quanta exhalation rate (infected): 9.4 quanta/h, activity duration for 30 minutes

• **Medium activity**: Eating, talking loudly, Breathing rate (susceptibles): 1.2 m3/h, CO2 emission rate/person: 0.012 (@ 273 K and 1 atm), Quanta exhalation rate (infected): 170 quanta/h, activity duration for 45 minutes

• **High activity**: Running, jumping, exercising, Breathing rate (susceptibles): 3 m3/h, CO2 emission rate/person: 0.016 (@ 273 K and 1 atm), Quanta exhalation rate (infected): 408 quanta/h, activity duration for 60 minutes

- Other general assumptions from risk estimator can be found in the below table:

Parameters	Value	Unit	Source
Length of room	30	ft	
Width of room	30	ft	
Volume	900	sq ft	
Height	16	ft	
Pressure	0.95	atm	
Temperature	20	C	
Relative Humidity	50	%	
Background CO2 Outdoors	415	ppm	
Decay rate of the virus	0.62	h-1	default per.https://tinyurl.com/covid-estimator
Deposition to surfaces	0.3	h-1	default per.https://tinyurl.com/covid-estimator
Additional control measures	0	h-1	default per.https://tinyurl.com/covid-estimator
Total N people present	20	ft	
Infected People	1	person	
Fraction of population immune	0%		default per.https://tinyurl.com/covid-estimator
Exhalation mask efficiency	0%		no mask
Fraction of people w/ masks	0%		no mask
Inhalation mask efficiency	0%		no mask

Quanta Concentration initial value	0.00	no virus at the beginning

- The default setting is the low activity setting with the alarm threshold of 800 ppm for medium and 1100 ppm for high.

DATA HISTORY

1. To review the device's data history, please click the "Data History" tab on the mobile app.
2. You can switch among CO2, temperature, and humidity to view the device's history. It can be viewed by day, week, or month.
3. The device's maximum data storage is approximately 90 days. It will only keep the most recent 90 days worth of data.

DEVICE DEFAULT SETTINGS

- Temperature unit: Select your regional temperature measurement unit on your mobile phone app and it will be displayed on the device screen as °C or °F.
- Alarm sound: Users may enable or disable the device's buzzer function. When the device's alarm sound is enabled, the buzzer will beep at medium or high alarm. When the alarm is sound disabled, the buzzer will not beep when medium or high alarm is triggered.
- Turn off display: users can turn off display on the mobile app. When display is off, users can wake up the device by pushing the top button. Then the display will auto off in 2 minutes.

HTRAM SPECIFICATIONS

SPECIFICATIONS	
CHARACTERISTIC	**PARAMETER**
Dimensions (H × W × D)	80 mm × 80 mm × 22 mm [3.1 in × 3.1 in × 0.87 in]
Weight	140g

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Housing materials	Aluminum alloy
Display	TFT
Input voltage	5 V
Input current	1 A
Battery	Lithium-ion rechargeable battery 10-hour battery time
Battery capacity	2,600 mAh
Operating temperature and humidity	0°C to 40°C, 0% RH to 90% RH
USB port	Micro USB

* The Honeywell Transmission Risk Air Monitor (HTRAM) analyzes specific air quality conditions and alerts the user when conditions are present that may increase risk of potential exposure to airborne viral transmission. It does not prevent or reduce virus transmission nor mitigate viruses that may be present, nor does it detect or warn against the presence of any virus, including but not limited to COVID-19. Even at lower risk levels caution is

required to prevent viral transmission. The HTRAM does not repel or destroy any microorganism, viruses, bacteria, or germs.

• It is buyer's sole responsibility (1) to determine the suitability of the HTRAM for use in its application; (2) to operate the HTRAM in accordance with the User Manual and any other instructions provided by Honeywell and in compliance with all applicable laws, rules and regulations; and (3) to determine, based on buyer's experience, expertise, and other available tools, the suitability of any product or service it may offer or recommend to the end user.

• Buyer is responsible for determining whether the product is appropriate for use under certain international, federal, state or local guidelines, and is likewise responsible for determining whether the HTRAM qualifies for any government programs, including without limitation, reimbursement plans.

• Any recommendations or assistance provided by Honeywell regarding the use or operation of the HTRAM – through our literature, the Honeywell web site, or otherwise – shall not be construed as representations or warranties of

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any kind, express or implied, and such information is accepted at buyer's own risk and without any obligation or liability to Honeywell.

- The information we supply in this data sheet is believed to be accurate and reliable as of this writing. However, specifications may change without notice, and Honeywell assumes no responsibility for its use.
- The HTRAM does not detect for levels of CO_2 that would make for an unsafe or unsuitable breathing environment.

WARRANTY

- Under normal use and maintenance that is consistent with Honeywell manuals and instructions, Honeywell warrants that, for a period of one (1) year from the date of purchase, all components of this product, except software and software components, shall be free from faulty workmanship and defective materials. The software and software components, including any documentation designated by Honeywell for use with such software or software components, are provided "AS IS."

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- These warranties do not apply if the claimed defect or nonconformity is due to accident, misuse, neglect; or improper shipping or handling, installation, or testing; or any failure of electrical power, air conditioning, or humidity control. This warranty is valid only if the product has not been tampered with or serviced by any party not authorized by Honeywell.
- If during the one-year warranty, the customer notifies Honeywell in writing of any alleged defect within 30 days of discovery, and it is determined by Honeywell that any component of the product, except software components, is defective due to faulty workmanship or defective materials, then Honeywell shall repair or replace such Product at Honeywell's sole discretion. Repair or replacement of a product (or any part thereof) does not extend the warranty period for such product. Products which have been repaired or replaced during the warranty period are warranted for the remainder of the unexpired portion of the original warranty period.

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- In case of non-conforming products, users may return such product to the distributor where they made the original purchase.
- Honeywell shall not be responsible for any loss or damage of any form, including any accidental or necessary direct or indirect loss as a result of breach of any warranty or any other acts that damage the product.
- These explicit warranties are the only warranties provided by Honeywell with respect to the product and are in lieu of all other warranties, express or implied. Any implied warranty or guarantee, including merchantability, fitness for a particular purpose, and non-infringement of third party rights, shall not apply.
- This warranty only applies to the main unit of the product, and does not cover the package, manuals, consumables, or other components susceptible to damage or consumption or which have a normal life inherently shorter than the foregoing warranty period.

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- Customers wanting additional warranty beyond the standard one-year warranty offered by Honeywell have the option to purchase a 2-year extended warranty when purchasing the product. Any such extended warranty shall only extend the timeframe of the warranty terms above from three years from the date of purchase, and shall not provide any additional warranty or guarantee, express or implied.

DISPOSAL

This product contains a lithium-ion battery and aluminum alloy materials. Upon receipt of the product, the customer is responsible for proper use, transport, storage and disposal of the product based on the battery and material type, including but not limited to applicable governmental requirements for proper disposal

CAUTION

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

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MANUFACTURER CERTIFICATE

Honeywell Safety and Productivity Solutions certifies that the CO_2 sensor in Honeywell Transmission Risk Air Monitor (HTRAM) device is maintenance-free in normal indoor environments. No calibration at end user is needed. The accuracy of the sensor is +/- 50ppm at 1000ppm CO_2.

$C\!\in$

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, Honeywell Safety and Productivity Solutions declare that the radio equipment type HTRAM-V2-W is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

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Operating Frequency: 2400–2483.5 MHz (Bluetooth): <20 dBm EIRP; 2400–2483.5 MHz (WLAN IEEE 802.11b/g/n): <20 dBm EIRP.

FC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

UK CA

SIMPLIFIED UK DECLARATION OF CONFORMITY
Hereby, Honeywell Safety and Productivity Solutions

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declare that the radio equipment type HTRAM-V2-W is in compliance with UK radio equipment regulation. The full text of the UK declaration of conformity is available at the following internet address:

RECHARGEABLE LI-ION BATTERY

Nominal Voltage: 3.6V
Rated Capacity: 2480 mAh/8.93Wh
Typical Capacity: 2600 mAh/9.36Wh
Limited Charging Voltage: 4.2V
Manufacturer: SCUD (Fujan) Electronics Co., Ltd.
Red Wire: (+) Black wire: (–)
Made in China

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⚠ **WARNING: TO PREVENT INJURY, DO NOT DISASSEMBLE, PUNCTURE, CRUSH, HEAT, OR BURN**
Use the authorized charger only. Never disassemble by yourself. Never short-circuit the battery. Dispose of the battery properly. Exposing the battery to an open flame could cause an explosion.

⚠ **802.11 CAUTION**
Users are responsible for configuring the channels of operation that comply with their country regulatory standards. A Wireless Network Administrator should review the operationg restrictions for the access point.

⚠ **Strangulation HAZARD**: Children have STRANGLED in cords. Keep this cord out of reach of children (more than 3 ft (1m) away). Do not use with an extension cord.

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ATTENTION
- To better reflect the air environment, Honeywell recommends continuously monitoring indoor air using the HTRAM. It is recommended that the device runs for 24 hours for the first time until it is fully charged and initialized.
- For safety and battery performance, the device can only charge the battery indoors in a 0°C to 40°C [32°F to 104°F] temperature range. The charging time from empty to full battery is approximately 6 hours. During charging, the device surface will have a slight temperature rise.