

N360X SERIES

Compact, Undecoded 2D Imager

N360X Series is Honeywell's “better performance” offering in its line of compact 2D scan engines for mobile devices. Available with LED or laser aimer.

The N360X Series 2D barcode scan engine is a very compact, undecoded 2D imager designed for use in mobile devices. The N360X Series inherits Honeywell's long history of successful decoding experience and hardware performance to provide an easier-to-integrate, enhanced performance device that fits into tight mobile device designs.

Parallel or MIPI interface availability helps simplify integration into mobile devices that require the most current, as well as traditional, processor interfaces. The dimensions (8,1 mm [0.32 in] height x 10,8 mm [0.43 in] depth) are some of the most compact in its class. The reduced footprint frees up room for other technology integration.

Based on a 1 Mpx rolling shutter sensor, the N360X Series increases its read range by 80% versus traditional VGA sensor-based imagers and can read EAN 100% at 541 mm [21.3 in] distance (typical read range). Its new sensor enables the reading of higher resolution codes (down to 3 mils on Code 39 1D barcode) and the white LED illumination system enhances image capture results and readability of colored barcodes. The N360X Series is equipped with either a high definition green LED dot aimer (N3601), adapted for customer facing and healthcare applications, or a thin, bright laser aiming system (N3603) that enables reading multiple barcodes close to each other and is more visible in low light or bright light environments.

The wide operational temperature range (-20°C to 50°C [-4°F to 122°F]) allows expansion into more demanding applications and the lower power consumption (152 mA to 170 mA at 3.3 V, typical) increases the battery life provided by a single charge.



This product is compatible with Honeywell's N660X Series and N670X High Performance 2D Imager and uses the same connector as these two scan engine families, reducing integration time and design costs while increasing design flexibility and choice. The N670X is even slimmer than the N360X Series and both can fit in compact enclosures. This means that you may offer two different levels of barcode scanning performance to your customers without a housing change or additional accessory design.

A new version of N3601 is now available with 1.8 V signals, making it directly compatible with the most recent generation of processors.

Potential applications include use in professional-grade, mobile devices such as tablets, wearable scanners, mobile terminals, accessories in retail stores, warehouses, and healthcare facilities, as well as delivery, pick-up/drop-off, and field servicing.

FEATURES AND BENEFITS



- Compact size allows use in tight mobile device designs.
- Higher performance includes increased read range and higher resolution readability.



- Choice of high definition LED or laser aiming system to match your application requirements.
- White LED enhances image capture and colored barcode readability.



- Wider operational temperature range increases potential applications.
- Lower power consumption increases battery life.



- Compatible with other Honeywell scan engine families for reduced integration time and design costs, as well as increased design flexibility and choice.
- Parallel or MIPI interface availability helps simplify integration.



- Supports optional Honeywell functionalities such as OCR and EasyParse for potential use with driving licenses and boarding passes.
- Now available with 1.8 V signals for direct compatibility with new processor generation.

Honeywell

TABLE 1. MECHANICAL

CHARACTERISTIC	PARAMETER
DIMENSIONS (H X W X D)	8,1 mm x 22 mm x 10,8 mm [0.32 in x 0.87 in x 0.43 in]
WEIGHT	N3601 (LED aimer): 1.8 g [0.06 oz] N3603 (laser aimer): 5 g [0.18 oz]
INTERFACE	parallel or MIPI

TABLE 2. ELECTRICAL

CHARACTERISTIC	PARAMETER
INPUT VOLTAGE	3.3 Vdc ±5%
TYPICAL CURRENT	N3601: 160 mA (parallel); 170 mA (MIPI) N3603: 152 mA (MIPI)

TABLE 3. ENVIRONMENTAL

CHARACTERISTIC	PARAMETER
OPERATING TEMPERATURE	-20°C to 50°C [-4°F to 122°F]
STORAGE TEMPERATURE	-40° C to 70° C [-40° F to 158° F]
HUMIDITY (OPERATING AND STORAGE)	up to 95% RH, non-condensing at 50°C [122°F]
SHOCK	3500 G for 0.4 ms at 23°C [73°F]
VIBRATION	3 axes, 1 hour per axis: 2,54 cm [1 in] peak-to-peak displacement (5 Hz to 13 Hz), 10 G acceleration (13 Hz to 500 Hz), 1 G acceleration (500 Hz to 2,000 Hz)
AMBIENT LIGHT	0 lux to 100,000 lux (total darkness to bright sunlight)
MEAN TIME BETWEEN FAILURE (MTBF)*	N3601: up to 6,954,490 hr (MIPI) N3603: 391,000 hr

TABLE 4. PERFORMANCE

CHARACTERISTIC	PARAMETER
SENSOR	1 Mpx
ILLUMINATION	white LED (exempt risk group)
AIMING	N3601: 521 nm visible green LED N3603: 650 nm high-visibility red laser
TYPICAL FRAME RATE	up to 30 frames/s
FIELD OF VIEW	horizontal: 49°, vertical: 32°
SCAN ANGLES	tilt: 360°, pitch: ±65°, skew: ±70°
SYMBOL CONTRAST	20% minimum print contrast ratio
WARRANTY	15-month limited warranty; the warranty period starts at date of shipment from Honeywell to customer

TABLE 5. SYMBOLOGIES

Linear: Codabar, Code 11, Code 128, Code 2 of 5, Code 39, Code 93 and 93i, EAN/JAN-13, EAN/JAN 8, IATA Code 2 of 5, Interleaved 2 of 5, Matrix 2 of 5, MSI, GS1 Databar, UPC-A, UPC E, UPC-A/EAN-13 with Extended Coupon Code, Coupon GS1 Code 32(PARAF), EAN-UCC Emulation, GS1 Data Bar

2D Stacked: Codablock A, Codablock F, PDF417, MicroPDF417

2D Matrix: Aztec Code, Data Matrix, MaxiCode, QR Code, Chinese Sensible (Han Xin), grid matrix, dot code

Postal: Australian Post, British Post, Canadian Post, China Post, Japanese Post, Korea Post, Netherlands Post, Planet Code, Postnett

TABLE 6. READ RANGES (TYPICAL) **

SYMBOLGY	NEAR DISTANCE (MM [IN])	FAR DISTANCE (MM [IN])	DELTA (MM [IN])
13 MIL UPC	41 [1.6]	541 [21.3]	500 [19.7]
10 MIL C39	31 [1.2]	455 [17.9]	424 [16.7]
20 MIL C39	49 [1.9]	740 [29.1]	691 [27.2]
15 MIL C128	46 [1.8]	630 [24.8]	584 [23]
6,7 MIL PDF417	63 [2.5]	200 [7.9]	137 [5.4]
15 MIL QR	30 [1.2]	297 [11.7]	267 [10.5]

* Based on MIL-HDBK-217F (released December 1, 1991). The calculation is based on the part count method for the Ground Benign (GB) environmental conditions.

** Barcode quality and environmental conditions may affect performance.

**LASER LIGHT-DO NOT STARE INTO BEAM
RAYONNEMENT LASER-NE PAS REGARDER
DANS LE FAISCEAU.** MAX. 1 mW: 650 nm.
IEC 60825-1:2007 and IEC 60825-1:2014.
Pulse duration of 16.8 mSec. Complies with
21CFR 1040.10 and 1040.11 except for
deviations pursuant to Laser Notice No. 50,
dated June 24, 2007.
CLASS 2 LASER PRODUCT.
APPAREIL À LASER DE CLASSE 2.


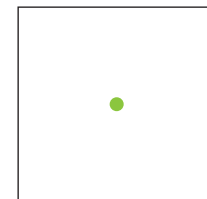



Figure 1. LED Aimer



Figure 2. Laser Aimer

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

ADDITIONAL INFORMATION

- Integration manual is available upon request; contact your Honeywell representative.
- For a listing of common compliance approvals and certifications, please visit our [website](#).

NOTICE

MISUSE OF DOCUMENTATION

- The information presented in this datasheet is for reference only. Do not use this document as a product installation guide
- An installation manual is available by request on our [website](#). Please contact your Honeywell sales representative

FOR MORE INFORMATION

To learn more about Honeywell scan engines and barcode decoding software, visit our [website](#).

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