



**TD NDE**

*Automated UT Solutions*



reliable and precise  
**Thickness  
Measurements**

CNC  
Manual  
Custom  
Robotic  
Ultrasonic  
Solutions



# Mepuls

## CNC MACHINE INTEGRATION

Integrated as a measurement tool, the Mepuls performs ultrasonic measurements at a very high accuracy.

**Ultrasound:** 10 to 20 Mhz local immersion

**Couplant:** Homogenous liquid (cutting fluid, water, oil )

**Power:** Rechargeable 3.7 volt batteries

**Thickness measurement:** 1 to 20 mm

**Wireless communication:** Zigbee 2.4 GHz

wireless ultrasonic device  
for accurate thickness measurements



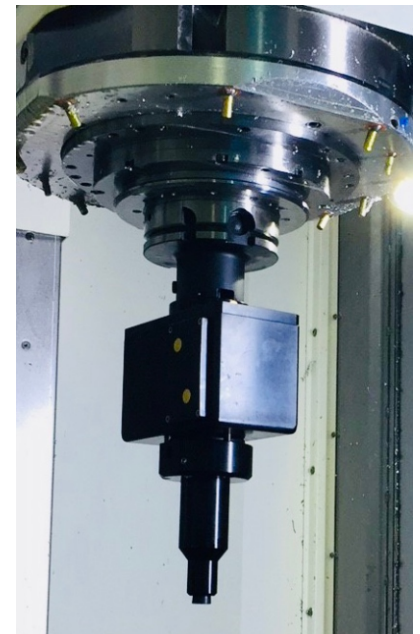
## FEATURES

- Cutting fluid enters the tool from the center or from an external input
- Auto-detection of spurious indications: (chips, no parts, lack of coupling, loss of ultrasonic signal)
- Integrated calibration routines
- !• Statistical analysis of measures for higher accuracy



## SYSTEM DELIVERY

- Measurement head
  - transducer
  - Zig Bee communication card
  - Assembly
- Communication station
  - Mini industrial unit
  - communication receiver
- Software
  - communication
  - ultrasonic



## CNC SOLUTIONS

Automated  
Wireless  
No contact

## INTEGRATED SOLUTION

Controller communication  
Fit in tool changer  
Uses cutting fluid



## MANUAL SCANNERS

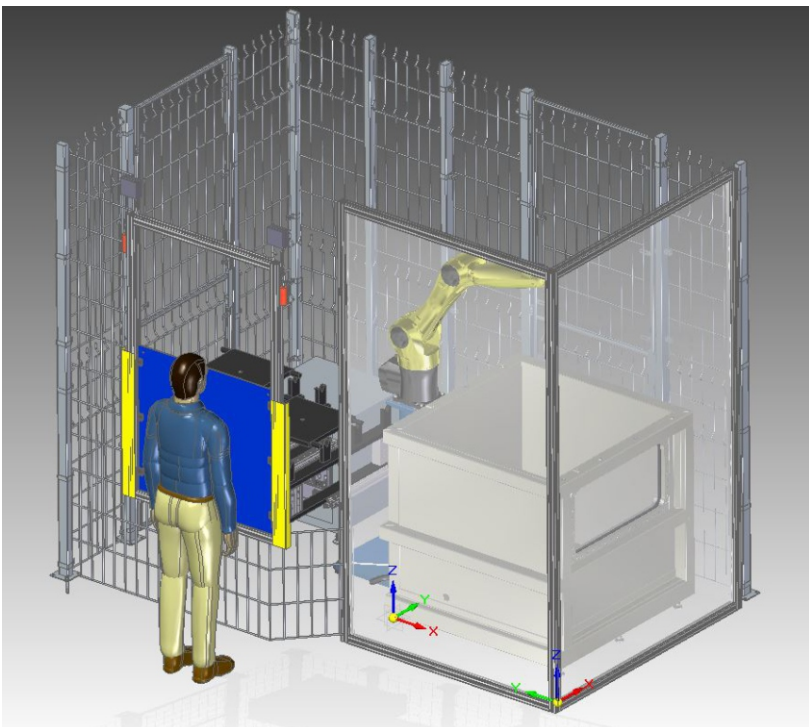
Measurements can be fitted on a custom manual scanner. This is designed on request. The unit can also supplement an X-Y or R theta scanner.



# custom mechanics and automation for more efficient measurements

## ROBOTIC CELLS

The robotic cell is adapted to your parts. It may include entry and exit conveyors, drawer input/output assembly, tank, robot, special gripper and calibration station.



## CUSTOM SOLUTIONS

Our solutions are customized to your applications. There is no one fit all solutions, Our solutions are agile and meant to be adapted to fit your environment.



## INTEGRATED SOLUTIONS

We can interface to your network. Interoperability is offered to connect and communicate inspection status and results.



## ULTRASONIC

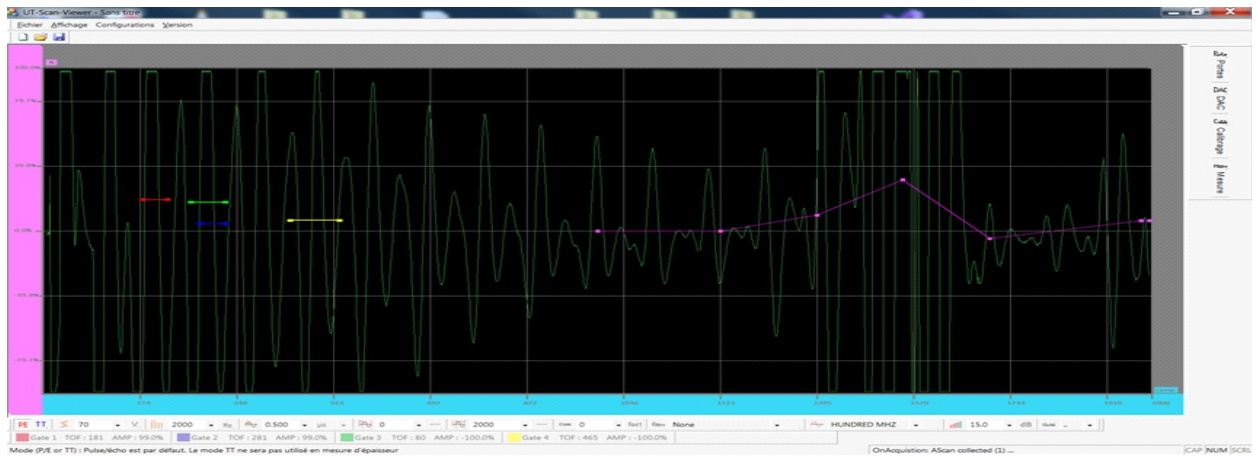
All systems use the same ultrasonic hardware and software. The operator interface is customized as required.

SPECIFICATIONS

- Power; 5 Volt DC
- Voltage: Adjustable 30 to 230 volts
- Input Bandwith: 05 to 25 MHZ at 3dB
- Pulse Width: 5 to 1.272 us
- Analog Gain : 0 to 92 dB
- TCG: 0 to 92 dB, +/- 1 to 10ns
- Digitizer : 100 MHZ, 12 bits
- PRF: 1Hz to 20 KHz
- Interface: Ehternet 1 Ghz or USB 2.0
- Size: 120 mm x 73 mm x 75 mm (w/o enclosure)
- Optional 8 channel multiplexer



# hardware and software designed for thickness measurement



Pulse #	TOF (ns)	Gate 1 TOF (ns)	Gate 2 TOF (ns)	Epaisseur (mm)
GATE1	1.88	GATE1	1.84	3.17
GATE2	2.88	GATE2	1.84	6.83
GATE3	2.88	GATE3	1.84	6.52
GATE4	2.91	GATE4	1.84	3.475

Gate	Start	End	FROM_TO	MAXIMUM_PEAK
Gate 1	12.0	43.71	2.44	FROM_TO
Gate 2	56.4	61.1	4.88	FROM_TO
Gate 3	68.15	75.2	0	FROM_TO
Gate 4	0	0	0	Inactive

Software

- Two interfaces: set-up and acquisition
- Views: A scan, Amp, TOF
- Output: Thickness based on max ampl, first peak, last peak
- Hardware Gates: 4 (calculated directly on the card)

## thickness measurement



2029 Michelin  
Laval, Quebec  
Canada  
450.688.1118  
[www.tdnde.com](http://www.tdnde.com)  
[info@tdnde.com](mailto:info@tdnde.com)