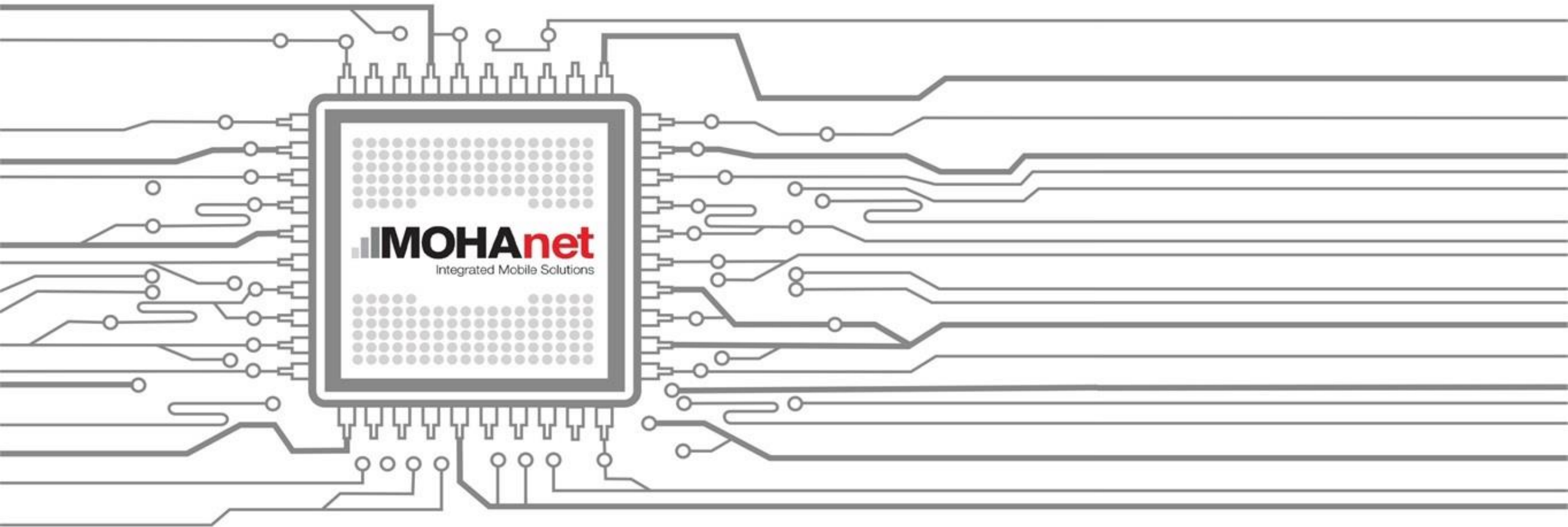# iMachine - Smart metering

Impulse based meter reading
Functioning

- Almost all meters (gas, electricity, water) have a pulse output, to which the **iMachine** pulse counter input (pulse receiver) can be attached with 2 wires.

- The data received from the meter is forwarded by iMachine via an encrypted channel to the **Monitoringbook** monitoring system, which on one hand will store the actual consumption data, and on the other hand, create consumption charts for the operator.

- Pulse counting is real time, but the actual forwarding of meter readings is regulated by a pre-set script, **iMachine** can support messaging on a second, minute, hourly or daily basis.

Remote reading of electric meters

The 20/21 terminal is at the right corner of the electric meter, as shown, to which the iMachine pulse counter input can be attached with 2 wires.

Terminology:

- Each meter has 1 passive, DIN S0 compatible (EN 62053-31) pulse output. The plug is under the meter's terminal cover, in terminal 20-21.

- 1 kWh = 500 pulse equivalent, pulse width 40 msec

- Maximum voltage is 27 VDC, which must be ensured by the pulse receiver (iMachine)

Remote reading of gas meters

- For gas meters an explosion-proof version is needed, given the pulse counter being intrinsically safe, therefore a reed relay must be applied. The reed relay can be purchased from the iMachine producer directly.

- The pulse counter equipped with black wire is shown on the lower left picture.

- For household gas meters:
  0.01 m3 = 1 pulse

- For industrial gas meters:
  0.1 m3 = 1 pulse

Remote reading of water meters

- For <u>remote</u> reading of water meters, the same methodology applies.

- For household water meters: 0.01 m3 = 1 pulse

- For industrial water meters: 0.1m3 = 1 pulse

Thank you for your attention.