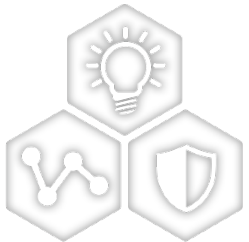


Sponsor Overview



A Leading Provider of Smart, Connected and Secure Embedded Control Solutions



SMART | CONNECTED | SECURE

Barry Dropping

May 6, 2020

Microchip Corporate Overview

- **Leading Total Systems Solutions provider:**
 - High-performance standard and specialized microcontrollers, digital signal controllers and microprocessors
 - Mixed-signal, analog, interface and security solutions
 - Clock and timing solutions
 - Wireless and wired connectivity solutions
 - FPGA solutions
 - Non-volatile EEPROM and Flash memory solutions
 - Flash IP solutions
- **~ \$6 Billion revenue run rate**
- **~19,000 employees**
- **Headquartered near Phoenix in Chandler, AZ**

Timing and Clocks Product Lines

Broadest Clock & Timing Portfolio | 75+ Years of Timing Experience

Wireless LTE/5G



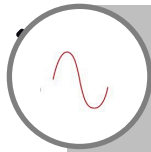
Data Center



Networking

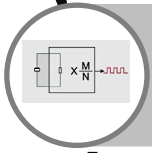


Automotive



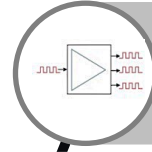
Oscillators

MEMS | Crystal | OCXO | EMXO | TCXO
MCXO | VCXO | VCXO



Clock Generation

Low Jitter | Low Power | Any In/Any Out
Clock Tree On a Chip | Integrated MEMS/Xtal



Clock Distribution

Low Additive Jitter | Any In/Any Out | Fan-Out Buffer
Zero-Delay Buffers | Dividers | Multiplexers

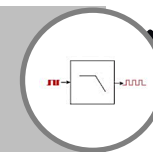


Real Time Clock and Calendar

I²C | SPI | Battery Backup
Unique ID / MAC Address | Digital Trimming

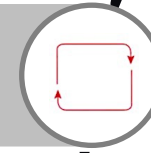
Jitter Attenuation

Jitter Filtering | Clock Translation | Any In/Any Out
Internal EEPROM | Advanced PLL



Synchronization

Synchronous Ethernet | IEEE1588 | Servo Algorithm
OTN/GPS/PLLs | Firmware/Software Support



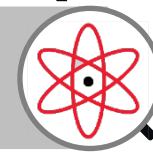
Complementary

Logic Translators | Cross Point Switches | 555 Timers
Backplane & Cable | Flip Flop/Logic Gates | Skew Mgmt.



FTS Atomic Clocks

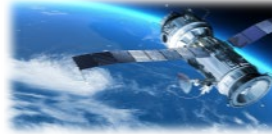
CS Beam Tube | Hydrogen Maser
Chip Scale Atomic Clock (CSAC) | Rb Oscillators



IoT & Smart Devices



Healthcare



Aerospace



Military

Microchip in 5G

5G Infrastructure

Radio & Small Cell

Precision Oscillators
Network Synchronization
SAW Filters
Power over Ethernet
Ethernet Switch/PHY
FPGA
Security
AC-DC, DC-DC

Baseband

Precision Oscillators
Network Synchronization
FPGA
Security
AC-DC, DC-DC

X-Haul

Ethernet PHYs w/ Security & Timing
OTN / Ethernet Fronthaul Processors
Precision Oscillators
Network Synchronization
FPGA
Security
AC-DC, DC-DC

Edge Compute

FPGA / MPU / MCU
Flash/Storage Controllers
PCIe Switch
Network Synchronization
FPGA
Security
AC-DC, DC-DC

5G Enabled Markets

Automotive

Ethernet, PCIe®
FPGA / MPU / MCU
SAW Filters
Timing
Security
AC-DC, DC-DC

Industry 4.0

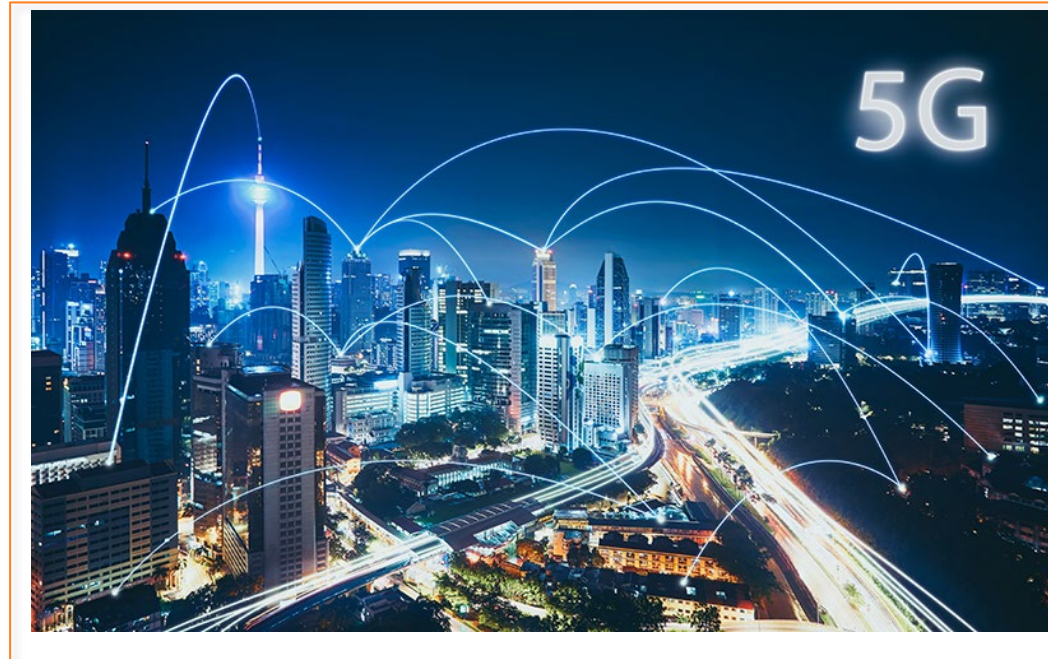
Ethernet,
FPGA
MPU / MCU
SAW Filters
Timing
Security
AC-DC, DC-DC

Smart Home

MPU / MCU
SAW Filters
Security
AC-DC, DC-DC

Medical Devices

FPGAs
MPU / MCU
SAW Filters
Security
AC-DC, DC-DC



Frequency and Time Systems

Mission

Be the trusted source of sync and timing solutions where precision, accuracy, and reliability matter.

Vision

Synchronize the world - from the ocean floor to satellites in space...and everything in between.

Synchronization Products

- Frequency & Time Distribution Systems
- 1588 Grand Masters
- NTP Servers
- GPS Instruments



Clock Products

- CSAC / Rubidium Clocks
- Cesium Clocks
- Hydrogen Masers



Government Systems and SDA

- Frequency References
- High Performance Time & Frequency Solutions
- Space Qualified and Military Oscillators
- Custom and Configurable Systems



MICROCHIP

Frequency and Time Systems

 Symmetricom®

 Microsemi

 MICROCHIP

Frequency and Time Systems Lineage

 MICROCHIP

Time is Essential

Critical infrastructure requires increasingly accurate, precise, secure and reliable time.



Data Centers



Wireline Communications



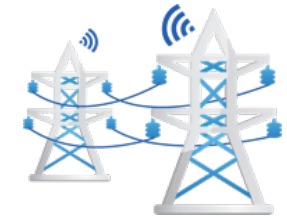
Wireless Communications



Enterprise Communications



Transportation



Power Grid Communications

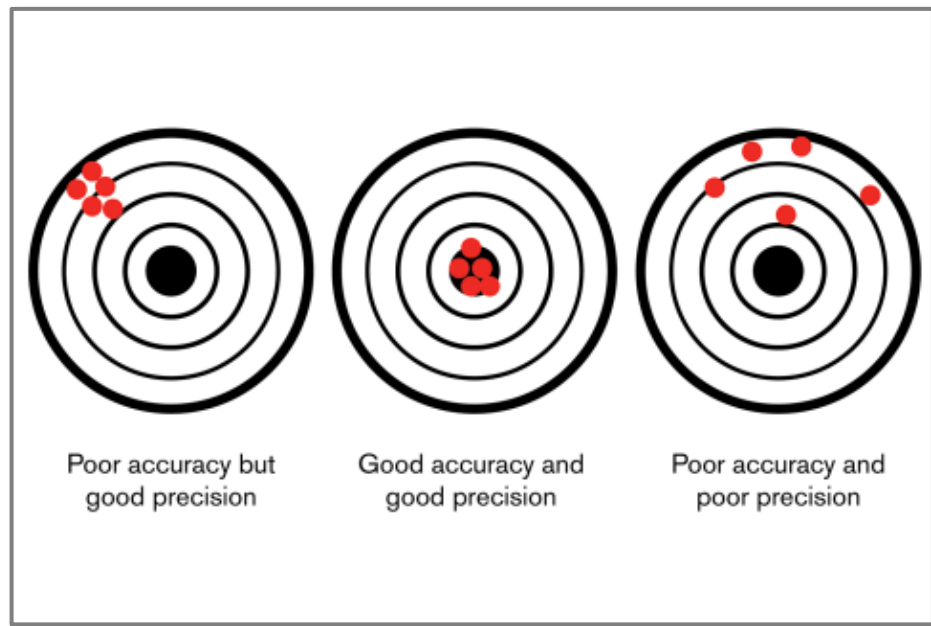


Secure Communications

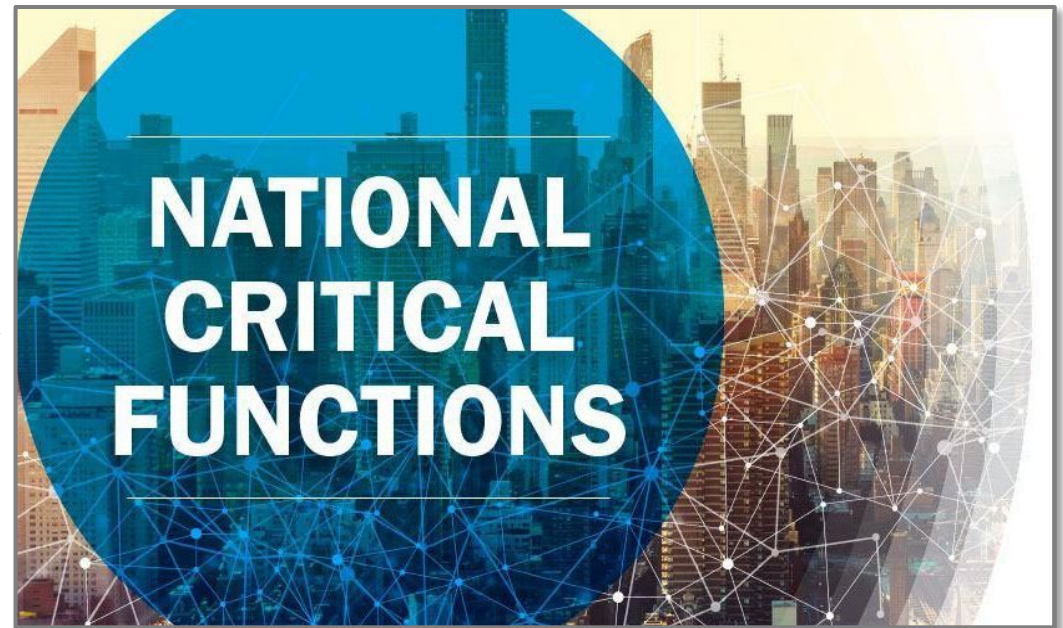


Financial Exchanges

Conversation is Changing



TIMING



SECURITY

Timing Hygiene



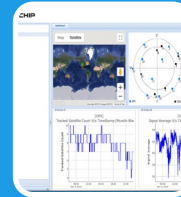
Trusted Source

- Validated Timing Source
- Trusted Supply Chain



Validation

- Live Sky Monitoring
- Anomaly Detection



Visibility

- Analytics
- Situational Awareness
- Heat Maps



Resiliency

- Integrated & External Holdover Clocks
- Autonomous Time-Scales
- Alternate Sources (e.g. eLORAN)

Thank You
