C & U CREATIVE & UNIQUE

MICRONIX MICROWAVE

Real time IQ data recorder system

MQ5300

The IQ data captured by signal analyzer are recorded in real time.
The ideal system to measure in the maximum 100MHz span,
to measure simultaneously different frequency bands, and to record over 24 hours.

Signal Analyzer Unit

Control Analysis Unit

Outline

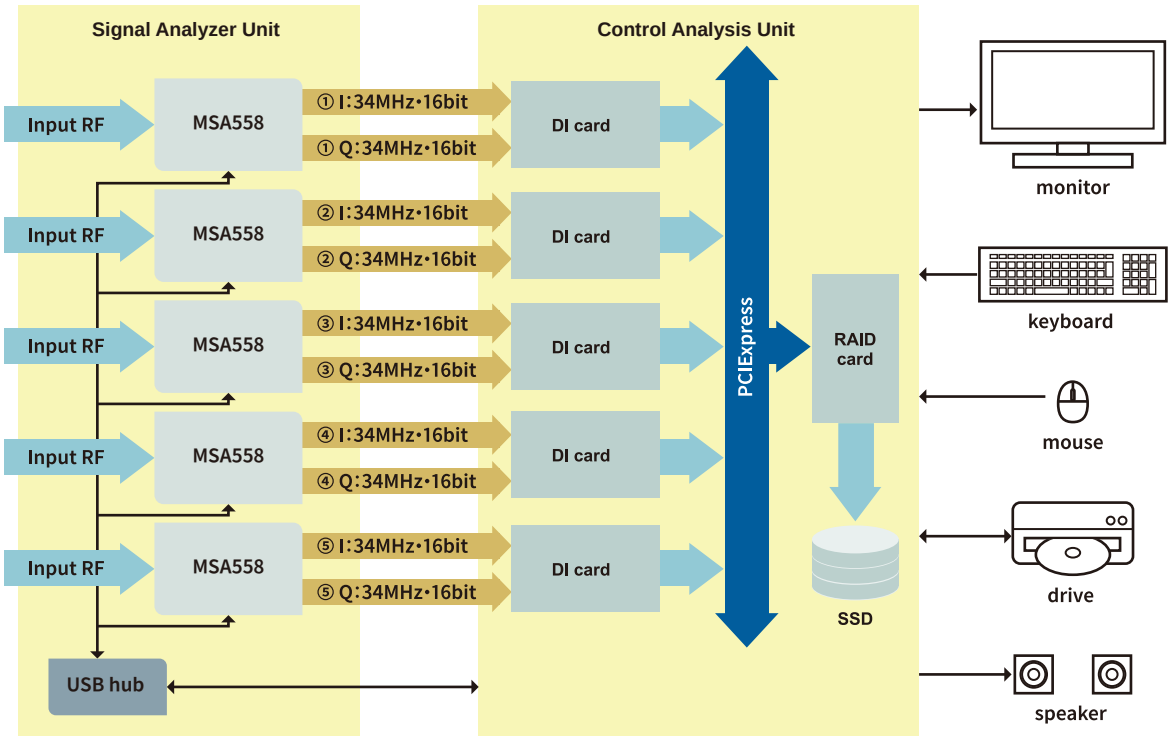
The real time IQ data recorder system MQ5300 is a system that combines a signal analyzer unit and a control analysis unit. RF signals can be continuously recorded as IQ data for a long time and played back or analyzed using software.
Our signal analyzer (MSA538 or MSA558) is built into the signal analyzer unit.

Features

- Equipped with a large-capacity SSD, it can record real-time IQ data for up to 24 hours.
- The frequency span can be measured collectively up to 100MHz. ⁎When operating 5 signal analyzers in parallel
- It is possible to measure different frequency bands that are not continuous (two-way communication by FDD, etc.) at the same time. ⁎When multiple signal analyzers are configured
- The spectrum can be displayed in real time even during IQ data recording.
- There are two measurement frequencies depending on the built-in signal analyzer. 20kHz to 3.3GHz (MSA538) or 8.5GHz (MSA558)
- The recorded IQ data can be easily played back and analyzed using the application software (MAS550).

Specification

■ System block diagram (example when 5 MSA558s are installed)



Signal Analyzer Unit

Basic performance	Real time mode of MSA538 or MSA558
Number of signal analyzers installed	1 to 5 units
Number of RF inputs	1 to 5
Chassis	Rack mount
Dimensions	437(W) x 399(H) x 735(D) mm *Excluding 9U size, protrusions, etc.
Weight	Approx.35 kg *When 5 units are installed
Interface	VHDCI *Unit and cable are integrated
Frequency span	1 unit: 20kHz to 20MHz 2 units: 20kHz to 40MHz 3 units: 20kHz to 60MHz 4 units: 20kHz to 80MHz 5 units: 20kHz to 100MHz *Maximum 20MHz time domain analysis function

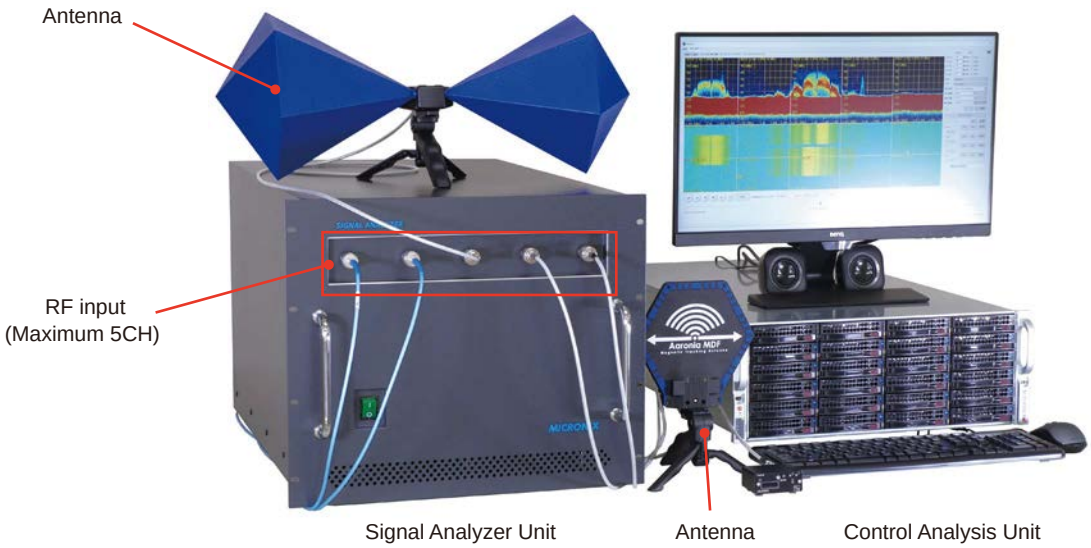
Control Analysis Unit

Chassis	Rack mount
Dimensions	437(W) x 178(H) x 736(D)mm *Excluding 4U size and protrusions
Weight	Approx.35 kg
OS	Windows10 Pro 64bit
Accessories	monitor keyboard mouse drive speaker

MSA500 Catalog

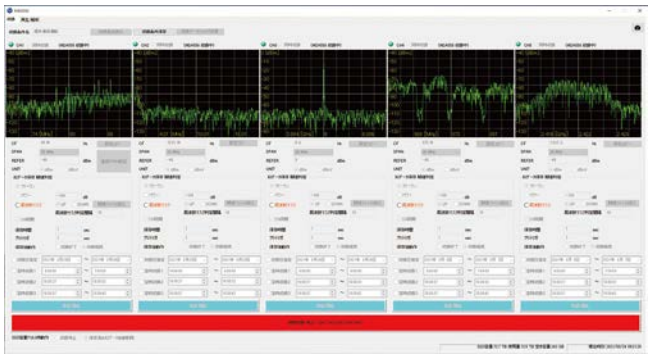
https://micronix-jp.com/eng/file-download/catalog/pdf/MSA500_eng.pdf

Setup Image



Application Software MAS550

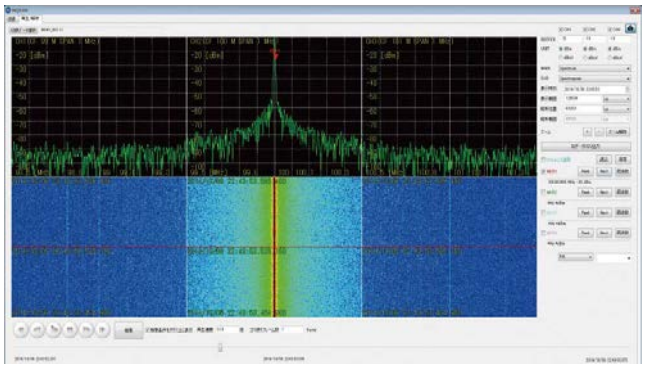
[Recording screen]
Make basic settings for the signal analyzer, threshold settings, and recording start / stop conditions. Up to 5 units can be set collectively or individually.



■ Main functions

- Collective or individual setting of measurement conditions
- Threshold setting (for frequency mask and UP / DOWN judgment)
- Recording time setting
- Start / stop simultaneous or individual recording

[Playback / Analysis screen]
The recorded IQ data can be displayed spectrogramically, and the waveform in the specified range can be played back and analyzed.



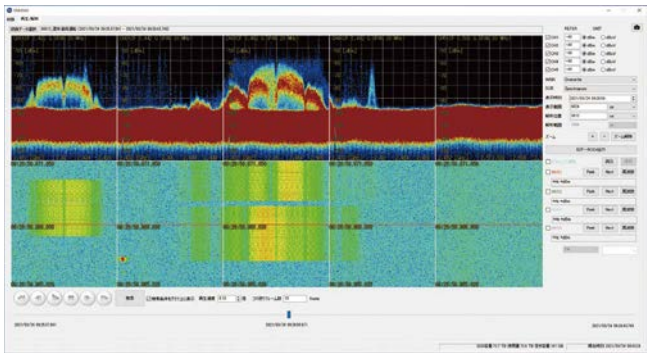
■ Main functions

- Waveform display: Select from 4 types
  Spectrum, overwrite, power vs. time, frequency vs. time
- Audio demodulation of AM and FM signals
- CSV output of IQ data
- Signal search function: Threshold and time specification

Measurement example

[Example 1. Measurement of up to 100MHz span]

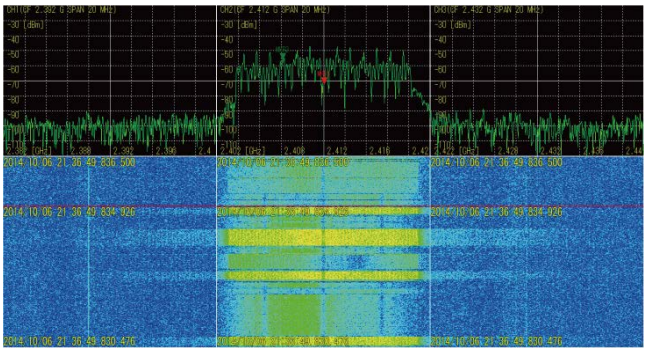
- Carrier frequency interference and interference wave measurement, etc.
- It is possible to accurately capture rare burst signals and hopping signals.
- You can grasp the frequency of signal generation



Upper: Overwrite / Lower: Spectrogram

[Example 2. Record real time IQ data for a long time]

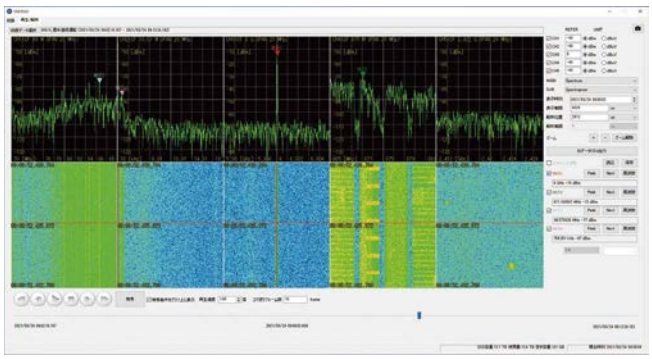
- DFS function measurement of 5GHz band radio equipment, etc.
- Measurements can be made at a maximum of 100 MHz span.
- Up to 30us / frame can capture weather radar signals.
- Frequency transitions can be monitored.



Upper: Spectrum / Lower: Spectrogram

[Example 3. Simultaneous measurement of different frequency bands]

- Measurement of two-way communication in wireless systems, etc.
- Simultaneous recording of FDD system or different frequency bands is possible. (Max. 20MHz span/CH)
- It can be used for stationary measurement and mobile electrical measurement such as LTE and ETC / DSRC.



Upper: Spectrum / Lower: Spectrogram

[Example 4. Real time spectrum display during IQ data recording]

- Illegal radio wave monitoring, site survey, etc.
- You can check the spectrum immediately on the spot.
- Time axis analysis such as power vs. time and frequency vs. time can be performed.
- Audio demodulation of AM signal and FM signal is possible.

Upper: Spectrum / Lower: Settings menu

System configuration example

Measurement frequency: 20kHz to 3.3GHz (Signal analyzer MSA538)

model	Number of RF input ports	Frequency span (maximum)
MQ5300-538/1	1	20MHz
MQ5300-538/2	2	40MHz
MQ5300-538/3	3	60MHz
MQ5300-538/4	4	80MHz
MQ5300-538/5	5	100MHz

Measurement frequency: 20kHz to 8.5GHz (Signal analyzer MSA558)

model	Number of RF input ports	Frequency span (maximum)
MQ5300-558/1	1	20MHz
MQ5300-558/2	2	40MHz
MQ5300-558/3	3	60MHz
MQ5300-558/4	4	80MHz
MQ5300-558/5	5	100MHz

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