Measurement of weather radar by signal analyzer

◇ Radio wave measurement example of weather radar by applying the trigger function of signal analyzer

＊Application ＊

When measuring the modulation signal of weather radar using a conventional spectrum analyzer, the measurement itself can't be done or the missed time may occur, because the pulse width is very short and the appearance time is also short.

By using our handheld signal analyzer (MSA558) and 5GHz band antenna (M406) as a tool to solve these problems, it is possible to measure the radio wave of weather radar with high accuracy.

Since the hardware trigger (IF level, power and external) of MSA558 has the time resolution of up to 14.7ns, almost all burst signals won't be missed.

Further, for example, since the measurement of 5GHz band wireless LAN is possible, it can also be used to check DFS function at the time of radar detection. …… Dynamic Frequency Selection: the wireless LAN communication is stopped within 10 seconds and must be switched to another channel.
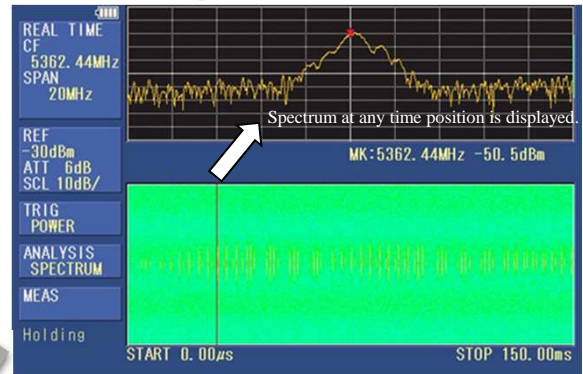
＊Solution ＊

■ The weather radar wave is measured using the real time function of handheld signal analyzer.

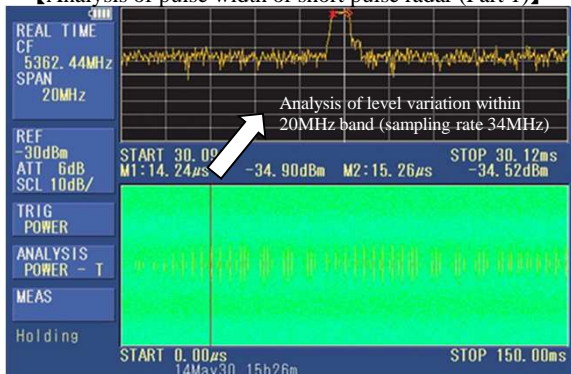【Specifying the frequency by the wideband sweep】

<MAX HOLD>
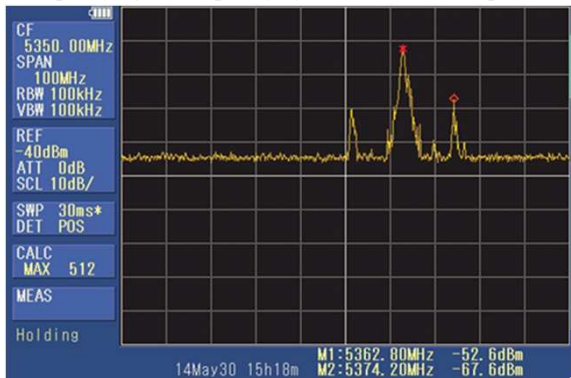
【Observation of spectrum waveform in real time mode】
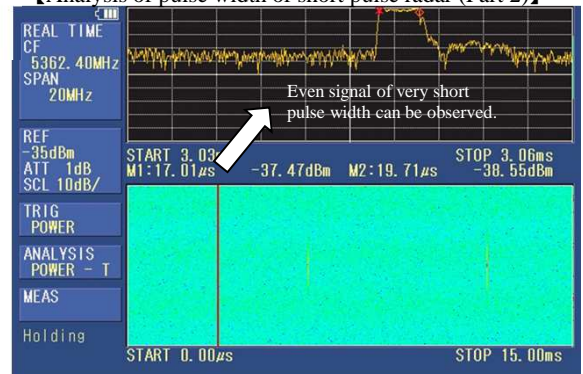

Upper<spectrum> Lower<spectrogram>

Analysis

【Analysis of pulse width of short pulse radar (Part 1)】

Upper<power vs time> Lower<spectrogram>

■ Measuring pulse width by DUAL marker function
15.26us（MK2）－14.24us（MK1）＝1.02us

Measured at different time.

【Analysis of pulse width of short pulse radar (Part 2)】

Upper<power vs time> Lower<spectrogram>

■ Measuring pulse width by DUAL marker function
19.71us（MK2）－17.01us（MK1）＝2.7us

＊System configuration ＊

Handheld signal analyzer（MSA558）

Lithium-ion battery（MB400）

Wireless LAN band antenna（M406）

Handheld signal analyzer
MSA558
Frequency range：20kHz to 8.5GHz

※1. In real time mode,
maximum SPAN is 20 MHz.

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