# #021 – Poster E04
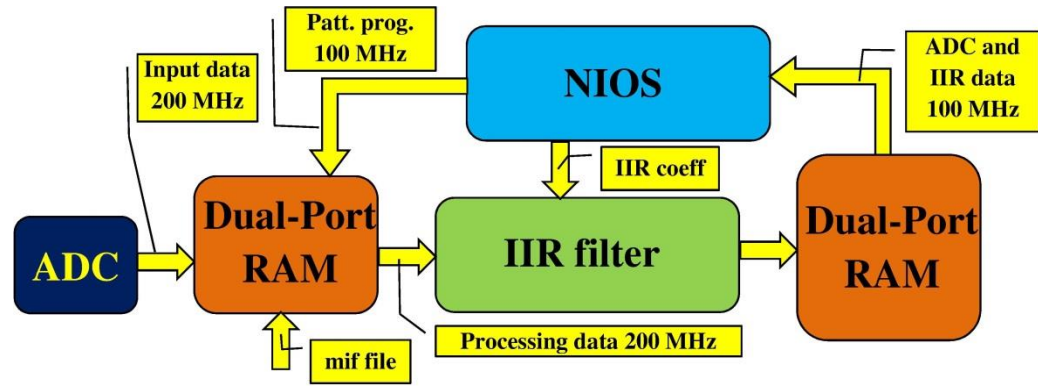# Adaptive IIR-notch filter for RFI suppression in a radio detection of cosmic

## Zbigniew Szadkowski IEEE Member
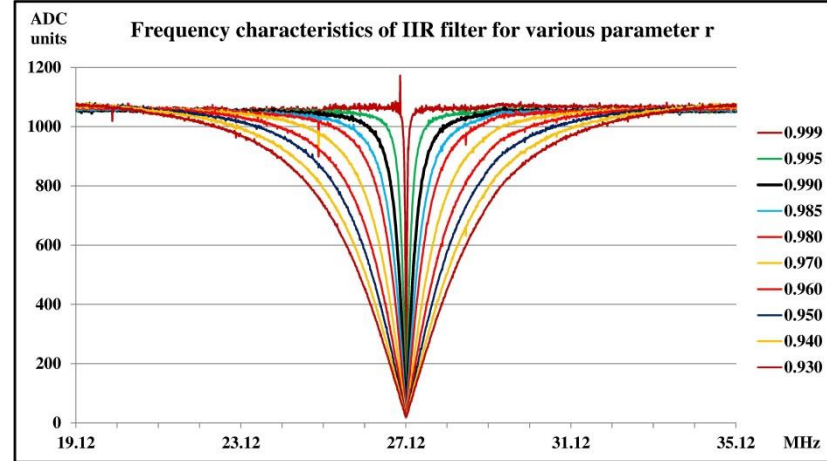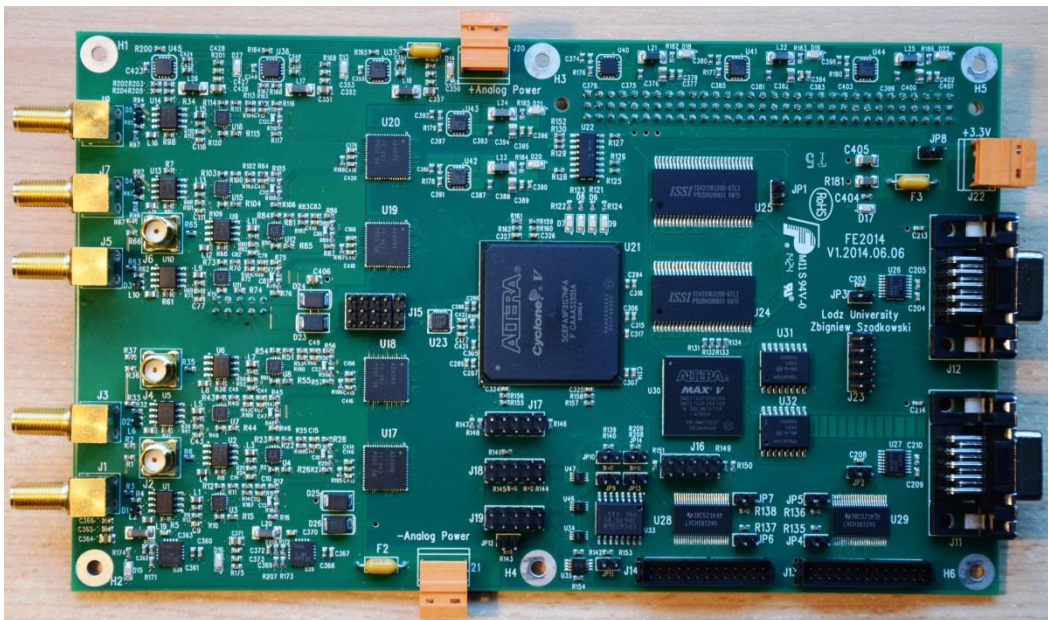### University of Łódź

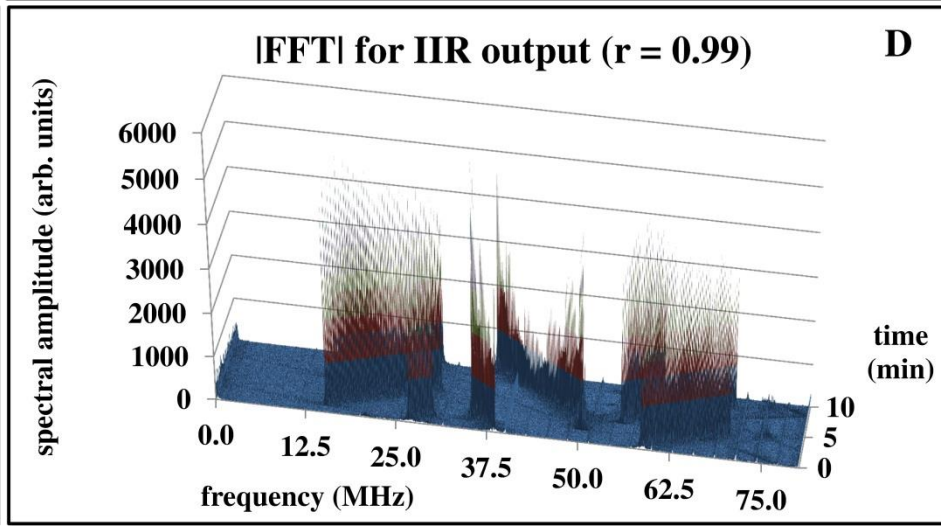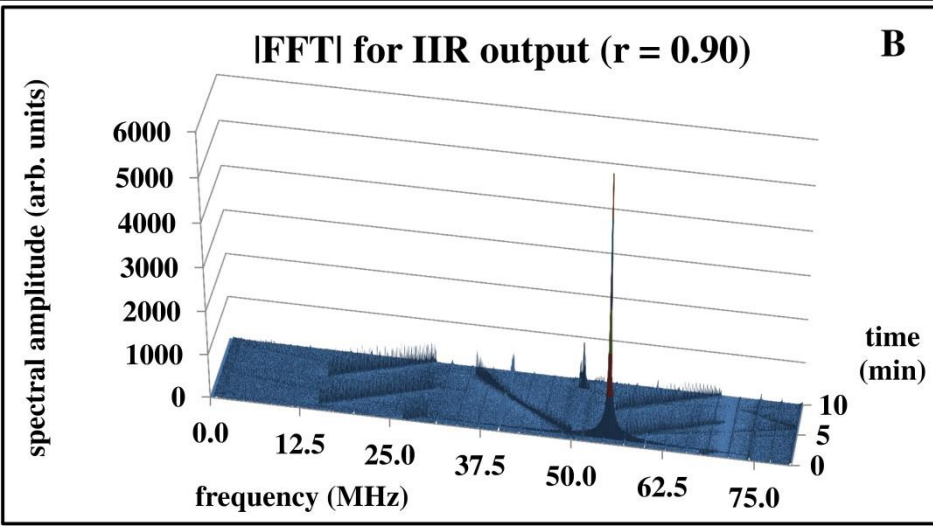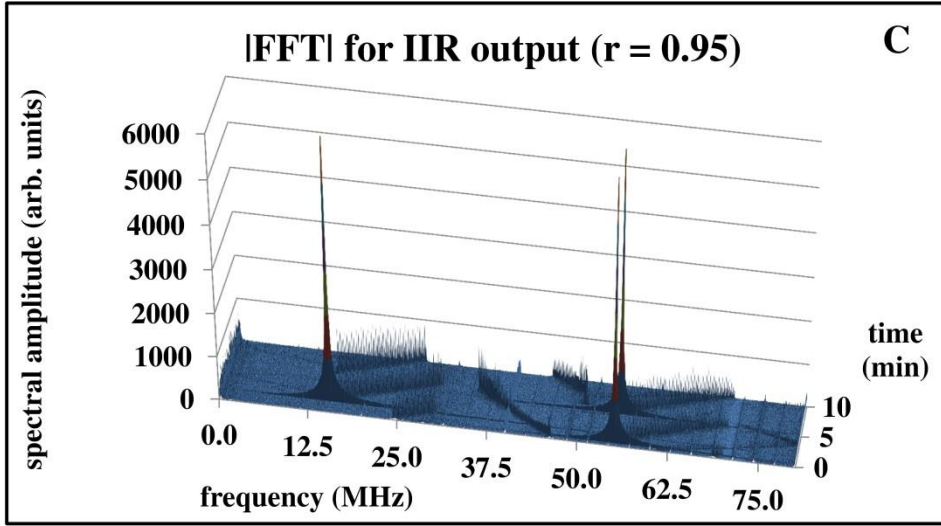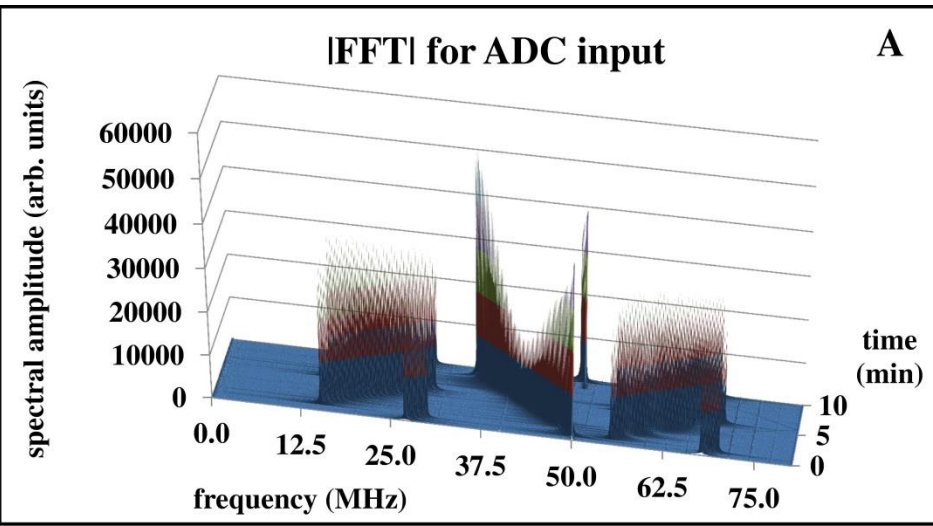# Setup and freq. characteristics



$$y_k = x_k - (Ax_{k-1}) + x_{k-2} + (Ary_{k-1}) - (r^2 y_{k-2})$$
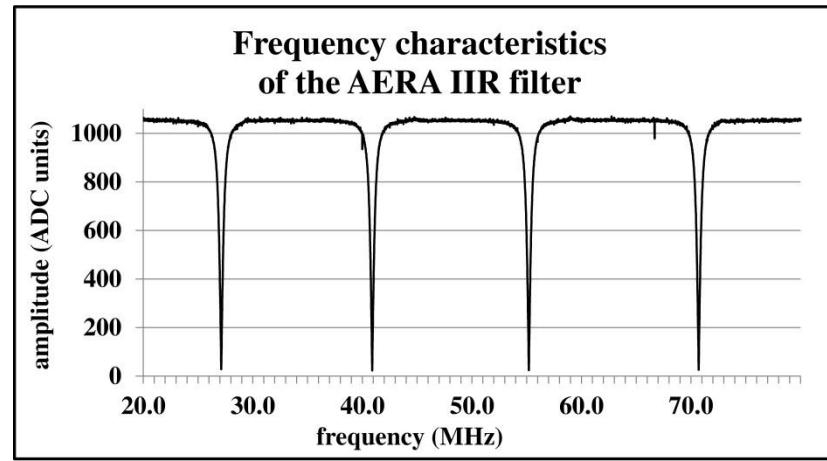
# Suppression efficiency

# Timing and distortions

DURATION OF PROCESSES FOR EP4CE115F29C7 AND 5CEFA9F31I7

| Processes | time (ms) |
|---|---|
| A transfer of 4096 samples from the DP-RAM to NIOS® | ~9.7 |
| Calculation of 4096-point FFT by Danielson-Lanczos algo. | ~618 |
| Calculation of FFT modules | ~97 |
| Calculation and transfer of IIR coefficients for 4 sub-filters | ~13.4 |



|FFT| of selected ADC waveforms — A

Selected ADC waveforms — B