WROCLAW UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF ELECTRONICS

FIELD: Electronics Engineering
SPECIALITY: Advanced Applied Electronics

Applied Wireless Electronics

Data conversion path from RS–232 to FSK transmitter.

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Contents

Chapter 1

Project description

The goal of the following project is to design and prepare the hardware realization of the circuit able to convert RS–232 data to FSK (FM modulation).

To achieve this result, the following assumptions were made:

- data to be transmitted will be send from PC to RS–232 interface,
- the data preparation will be achieved utilizing ARM microcontroller (RS–232 receiving, generating carrier wave, modulating the signal),
- additional analogue circuit will be designed and assembled to perform all necessary signal post–processing (e.g. amplification).

Chapter 2

Design and simulation

The digital part (microcontroller) is responsible for receiving the RS–232 data and performing carrier generation and signal modulation.

It was done by [...]

On the other hand, the analogue circuit deals with [...]

The complete design was prepared in LTSpice, that also allowed to perform a simulations of the circuit.

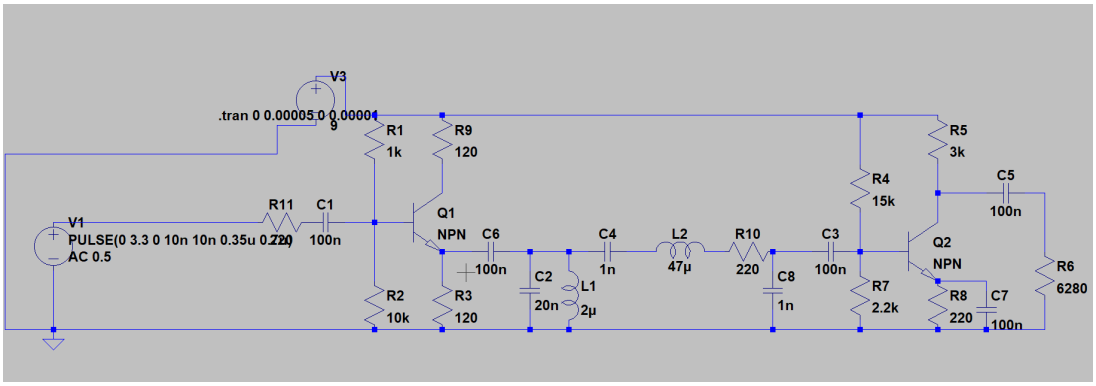

Figure 2.1: LTSpice desing of analogue part.

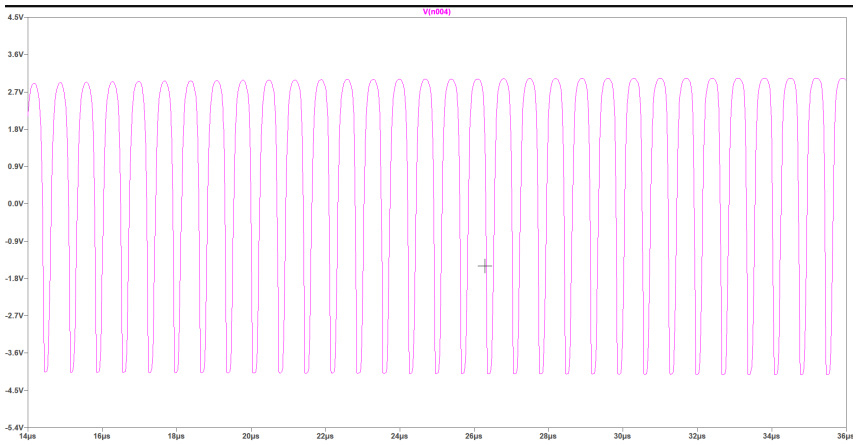

Figure 2.2: Simulated output of the final stage of amplification.

Chapter 3

Physical realization

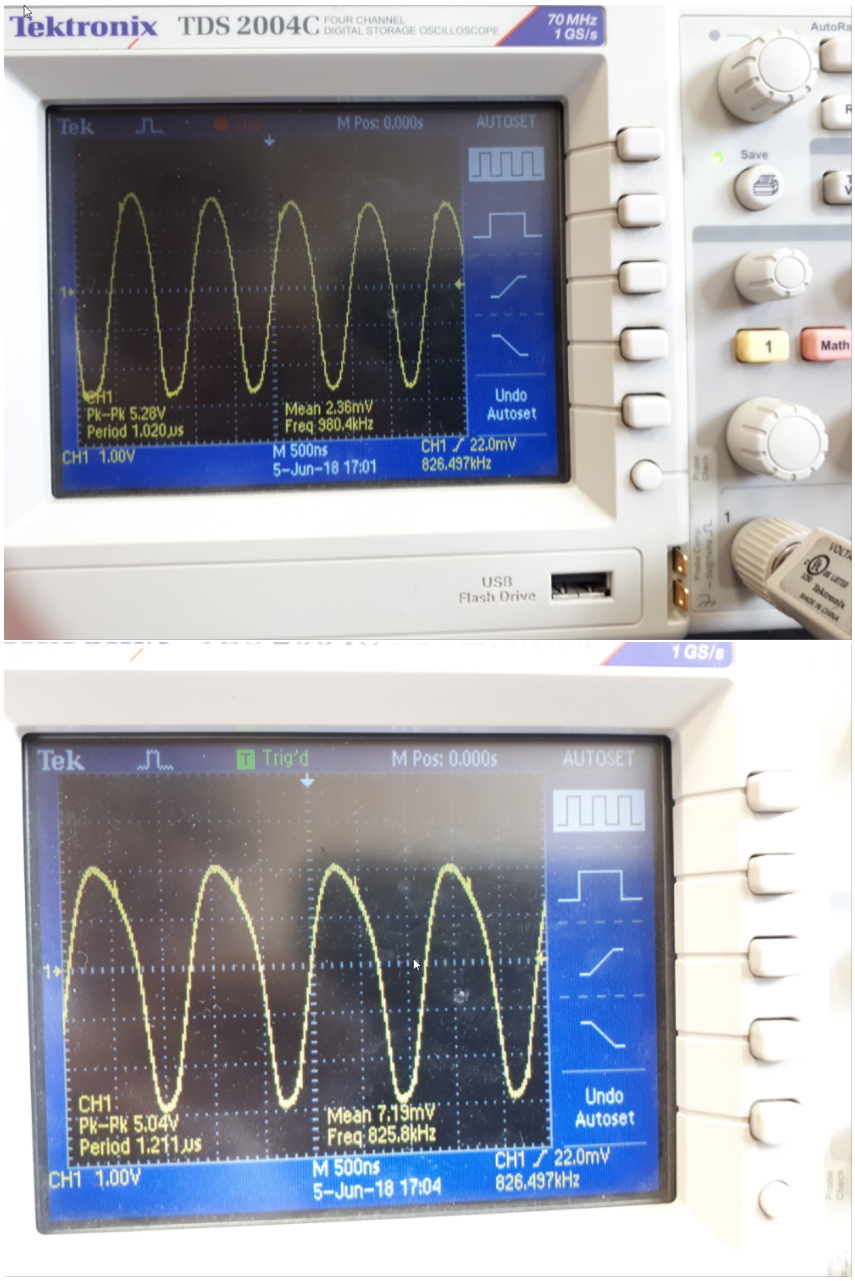

Figure 3.1: Frequency modulation presented at analog circuit output (825 and 980 kHz)

Chapter 4

Conclusions

Bibliography