

## COMMUNICATION BETWEEN DSP MICROCONTROLLER POWER GENERATOR AND SERVO MECHANISM OF AN ELECTRICAL DISCHARGE MACHINING (EDM) SYSTEM

AZLI YAHYA<sup>1</sup>, ADE ERWAN MURNI<sup>2</sup>, TRIAS ANDROMEDA  
ABD RAHMAN<sup>3</sup>, NORHISHAM HJK HAMIS<sup>4</sup>, KAMAL  
KHALIL<sup>5</sup>, MUHAMMAD ARIF<sup>6</sup>

**Abstract.** This article describes a communication that has been established within hardware of Electrical Discharge Machining (EDM) system. A DSP hardware is based on an eZdspTM LF2407 and a DC motor M818T is used as the servomechanism. Communication between hardware is explained thoroughly by considering compatibility of input/output voltage level. A User Interface Device is developed to communicate with EDM system. A signal conditioning system and opto-isolator are used for indirect connection. Due to the limitation in data transfer, some of the control sections are developed by using analogue components.

**Keywords:** EDM; Electrical Discharge; Machining; DSP

**Abstrak.** Artikel ini menjelaskan komunikasi yang wujud di antara peralatan sistem Electrical Discharge Machining (EDM). Peralatan DSP adalah berdasarkan pada eZdspTM LF2407 dan motor DC M818T digunakan sebagai mekanisma servo. Komunikasi antara perkakasan dijelaskan secara menyeluruh dengan mengambil kira kesesuaian masukan dan keluaran bekalan kuasa bagi setiap peralatan. Alatan perantaraan pengguna diwujudkan bagi tujuan komunikasi dengan sistem EDM. Sistem penyesuaian isyarat dan peranti opto-isolator digunakan bagi penyambungan tidak langsung. Penghantaran data di dalam system DSP adalah terhad, oleh itu sebahagian dari sistem kawalan dilaksanakan dengan menggunakan komponen analog.

**Kata kunci:** EDM; Electrical Discharge; Machining; DSP

---

<sup>1,2,3,4,5&6</sup> Faculty of Electrical Engineering, Universiti Teknologi Malaysia, 81310, UTM Johor Bahru, Johor Darul Ta'azim, Malaysia

\* Corresponding author: [azli@fke.utm.my](mailto:azli@fke.utm.my)