

# Digital RI-CPT

Digital Radio-Isotope Cone Penetration Test system



## Features

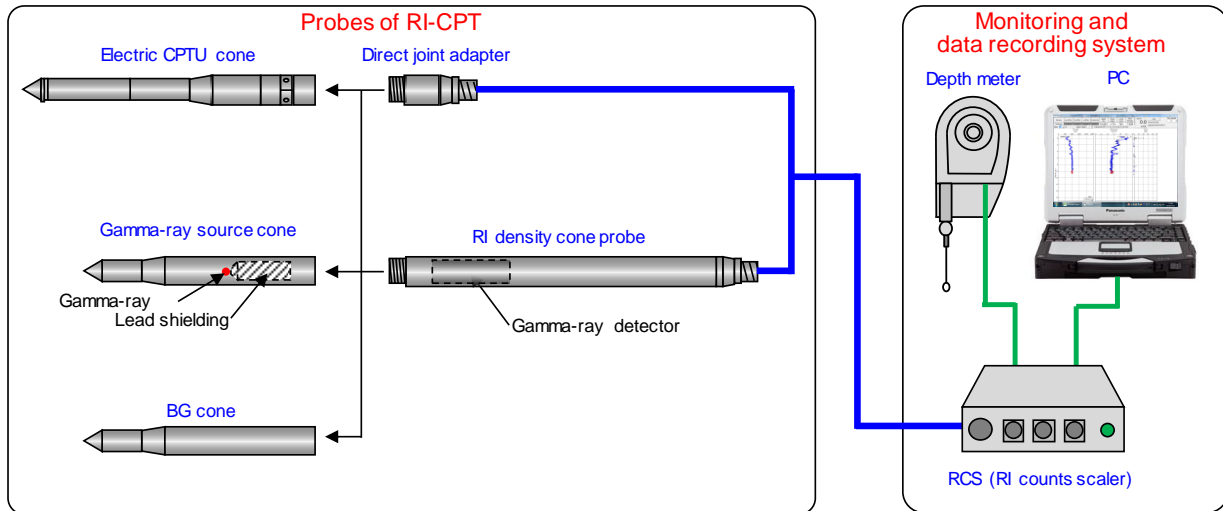
- Digital RI-CPT system is an electric cone penetration test (CPTU) that can measure the density distribution profile of subsurface soil mass by an on board 24bit ADC.
- It has lower noise and a simpler system than conventional analog RI-CPT, because entirely digital data is transferred by Control Area Network (CAN).
- Its density measurement can achieve much better precision than that of mechanical sampling.
- Digital RI-CPT system is applicable onshore and offshore.

**SRE** Soil and Rock Engineering Co., Ltd.

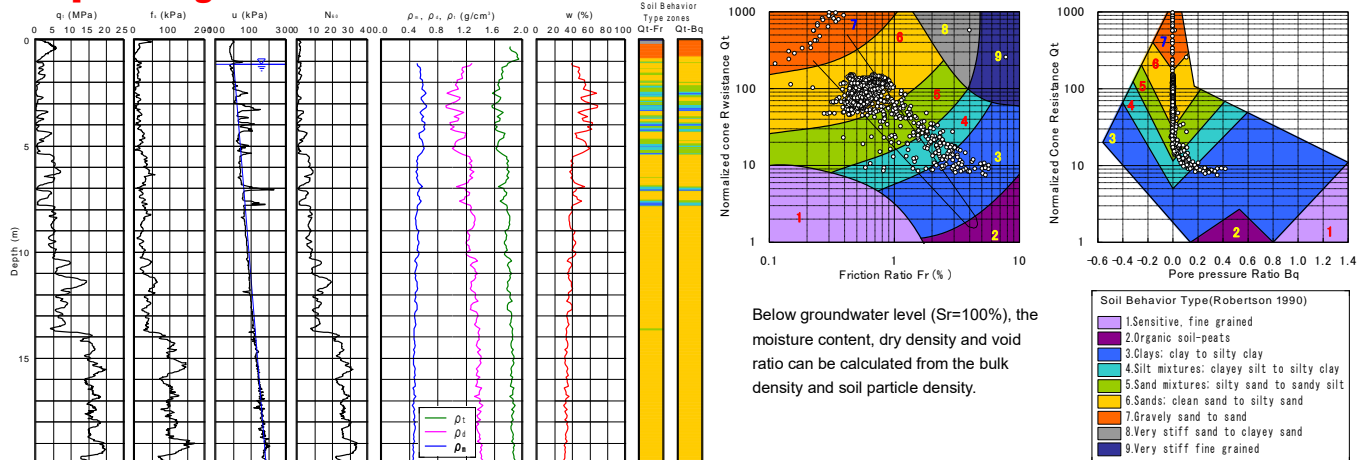
## Introduction

Digital RI-CPT system can measure the conventional CPTU log (tip resistance( $q_c$ ), sleeve friction( $f_s$ ) and pore pressure( $u$ )) together with the density distribution profile. The RI (Radio-Isotope) based technique (Nuclear method) is used to realize the continuous and virtually non-destructive detection of density in the subsurface soil mass. Digital RI-CPT's density measurement can achieve much better precision than that of mechanical sampling of the undisturbed specimen, thus provides us with the high-quality density distribution profiles not only in the clay strata but also in the sand deposit. Further, Digital RI-CPT system has lower noise and a simpler system than conventional analog RI-CPT system, because entirely digital data is transferred by Control Area Network (CAN).

## Component of Digital RI-CPT system



## Sample of Digital RI-CPT results



## Specifications

Probe name	Electric CPTU cone					RI density probe
Model No.	SR-3EIP-DIG-DP1					SRD-1DP-DIG-DP1
Radiation source	---					Cesium137 <sup>137</sup> Cs 3.7MBq
Sensor	Cone resistance $q_c$	Sleeve friction $f_s$	Pore pressure $u$	Inclinometer (3-axis acceleration sensor)	Temperature	NaI(Tl) Scintillation counter
Range	30MPa	1,000kPa	1,000kPa	0 to 180° from Vertical	0 to 50°C	Bulk density $\rho_t$ 1.0 to 2.3g/cm <sup>3</sup>
Dimensions	dia. 35.7mm(Friction cutter : dia. 48.6mm) Length 750mm (with direct joint adapter), 1,200mm (with RI density probe)					dia. 48.6mm length 1,100mm
Operating temperature	0 to 50°C					
Waterproof	IP68 (Water resistant 1MPa)					
Power Supply	DC 12V					

●The content of this leaflet is as of May 2018. ●Product specifications may be subject to change. ●Colors may differ slightly for printing.