### Introduction

- Taiwan Photon Source (TPS) is a third-generation light source in NSRRC.
- It consists of a 150 MeV linac, linac to booster transfer line, 0.15–3 GeV booster ring, booster to storage ring transfer line, and 3 GeV storage ring.
- In the first initial phase for the beam-line commissioning, seven beam lines with ten inserting devices are installed in the storage ring. At the same time, two superconducting RF (SRF) cavities are also installed during this stage.
- To study the beam loss during the SRF and inserting device commissioning, several types of beam loss monitors (BLMs) are setup in the storage ring and booster ring.

#### PIN-diode Beam Loss Monitor

- Bergoz’s PIN-diode BLM is made of two diodes mounted face-to-face. For the coincidence readout of the signal of two channels, the dual PIN-diode BLM detects charge particle rather than synchrotron radiation and reduces the dart counts due to the noise.
- To simply the wiring, a custom designed version of Bergoz’s BLM was adopted in which the original 10 pin connector is replaced by a RJ-45 connector.
- Four pairs of twisted cables are used to connect BLM to the signal converter. This twisted cable provides power to a BLM and sends the coincident count pulse back.
- Data acquisition for BLMs is performed by a 16-channel scaler installed at the cPCI EPICS IOC on the equipment area. The configuration is shown in Fig. (a).
- Six PIN-diode BLMs in each cell are installed in the inside-wall chamber of the storage ring using cable ties or Kapton tapes as shown in Fig. (b).

#### Scintillation-type Beam Loss Monitor

- Several scintillation type BLMs are installed in the first cell below the injection straight.
- It is consistent of a photomultiplier tube (PMT) and a probe which are connected with a 1m-long light pipe.
- A piece of plastic scintillator which is sensitive to the charge particles is installed in the probe.
- The diameter of the plastic scintillator is 30 mm and the thickness is 10 mm.
- In the first stage, the signal is observed by an oscilloscope.
- Another type of signal convert would be designed for the scalar input.

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