

# FREQUENTLY ASKED QUESTIONS

Integrated Protection Module (IPM)

What  
When  
Which  
Where  
How  
Who  
Why



**Date:** 8<sup>th</sup> April 2015

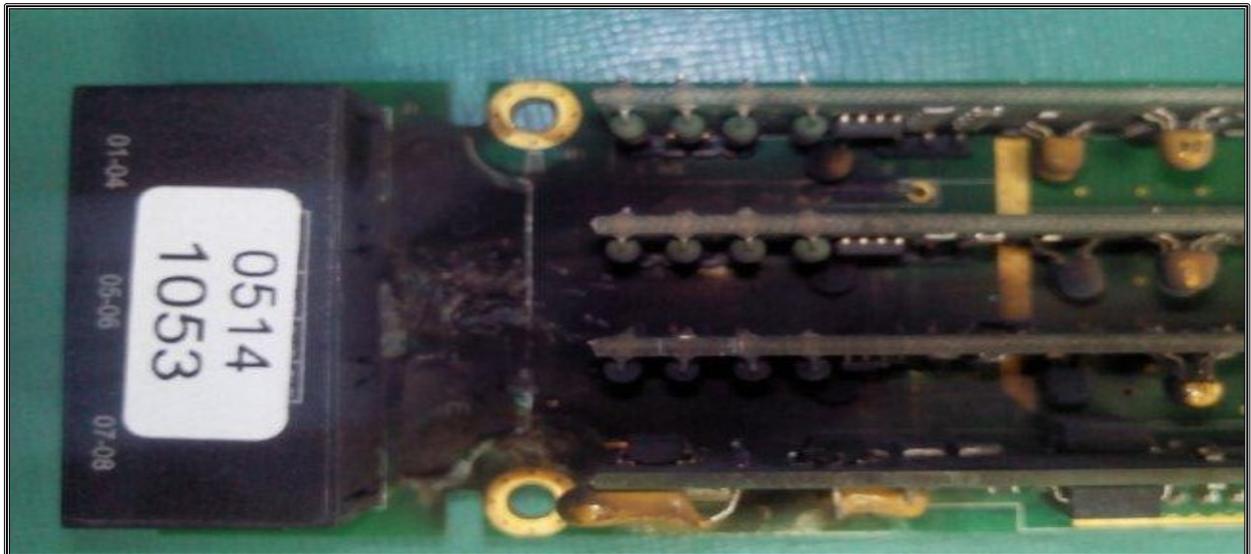
**Version:** V1R1

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## How Integrated Protection Module (IPM) safeguards your PBX?

Analog trunks (commonly known as CO/FXO/TWT) and analog extensions (commonly known as FXS/SLT) are widely used in telecom world. These trunk lines and cables connecting an analog phone to the PBX are generally two wire metal cables, which run over large distances covering different terrains and environments. Hence such cables exhibit vulnerability of coming in contact with power cables and lightning. Such situations will lead to passing of high voltage/current in the cables which may ultimately damage the terminal equipment. Further user will have to invest in repairing of the damaged PBX.

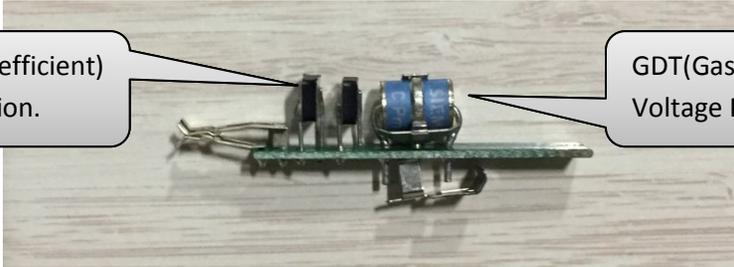
Below given photograph shows a card damaged due to lightning/surge.



To prevent such failure, it is advisable to install surge and lightning protectors. One of such device which can help to reduce the risk of damage due to the surge or lightning is IPM (Integrated Protection Module), also known as Subscriber Line Protector. IPM is inserted in the Krone module in the Main Distribution Frame (MDF).

## What is IPM made up of?

IPM is made up of GDT (Gas Discharge Tube) and PTC (Positive Temperature Coefficient) Resistors.

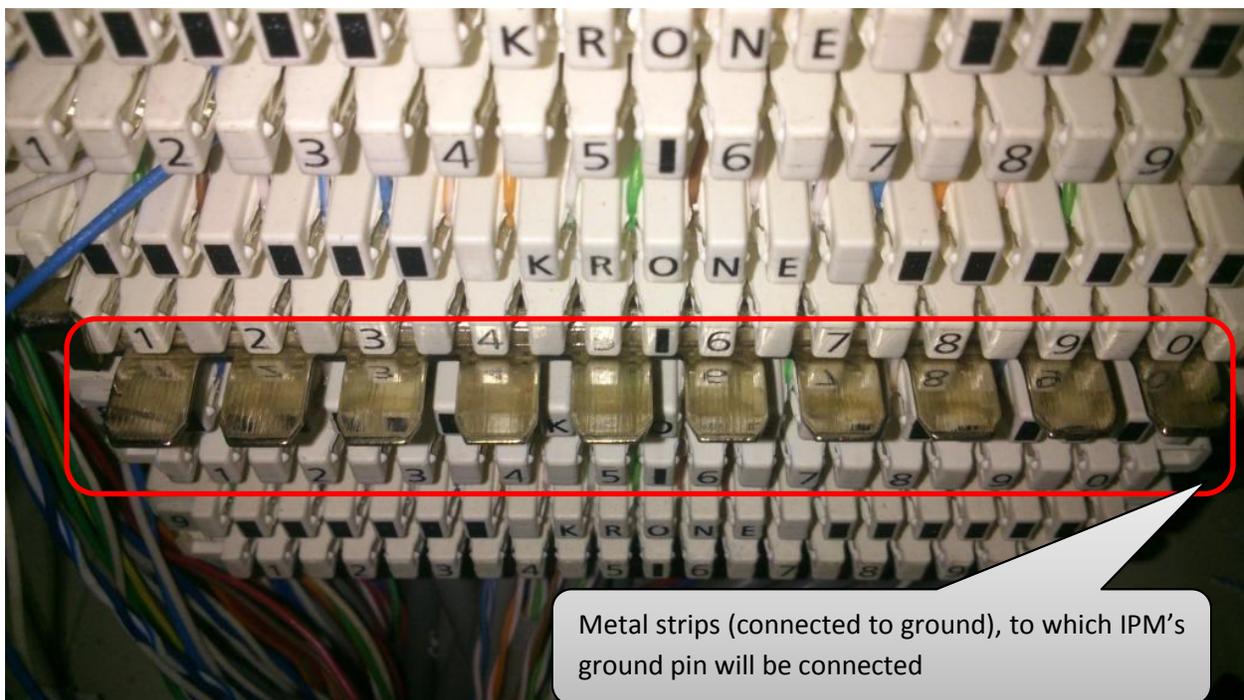


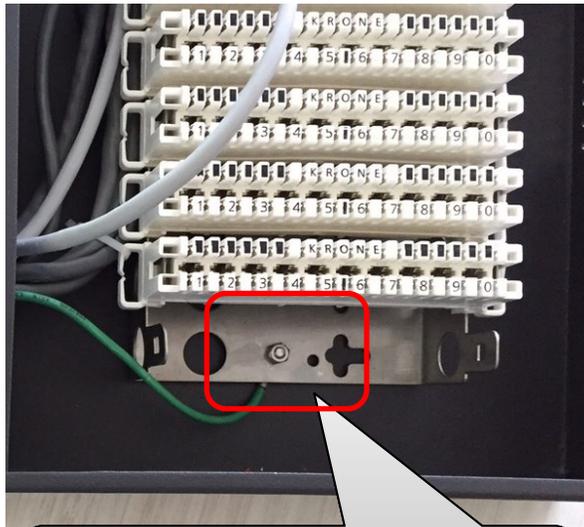
PTC (Positive Temperature Coefficient) Resistor for Over Current Protection.

GDT(Gas Discharge Tube) for Over Voltage Protection.

## How to install IPM?

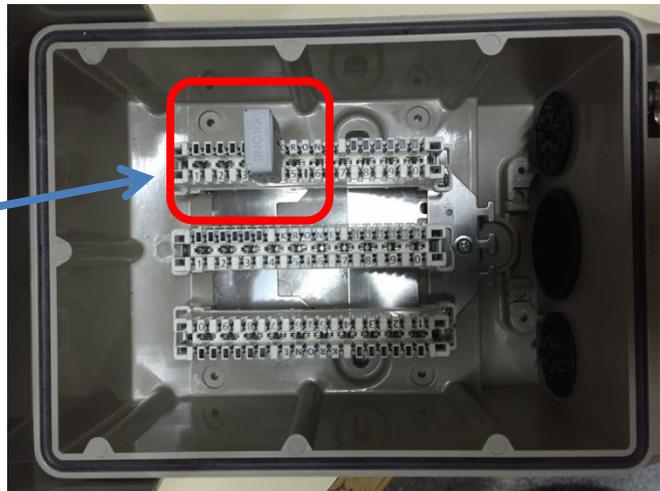
- The below given procedure must be followed to install IPM in MDF
1. The MDF box is provided with a grounded metal strip to which ground pin of IPM is connected.



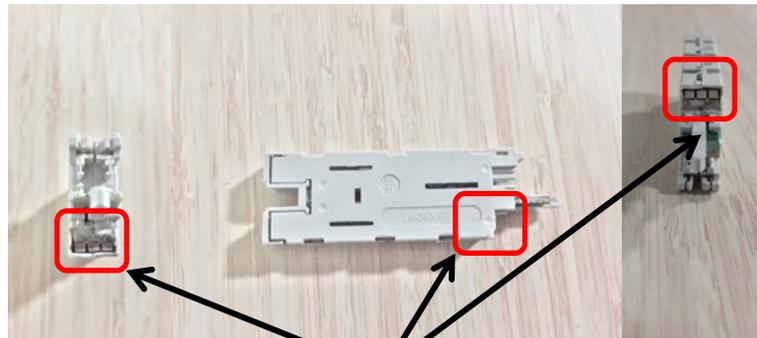


The MDF box along with metal strips is commonly grounded using a ground wire

2. Insert the IPM in the Krone Module.



- It is mandatory to ground the IPM from its ground pin using a metal strip in the MDF as indicated earlier.

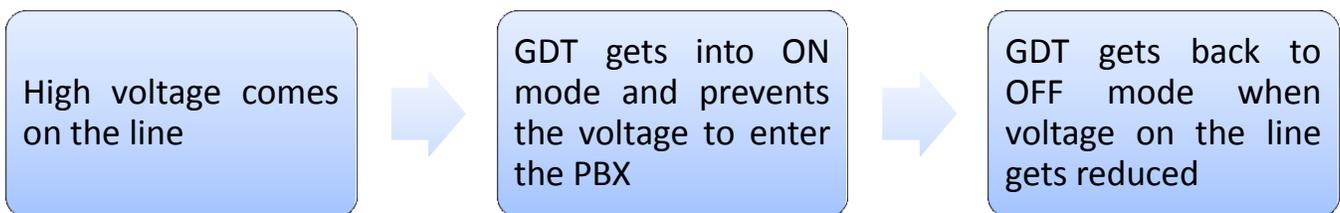


These pins will be in contact with the grounded metal strip in the MDF

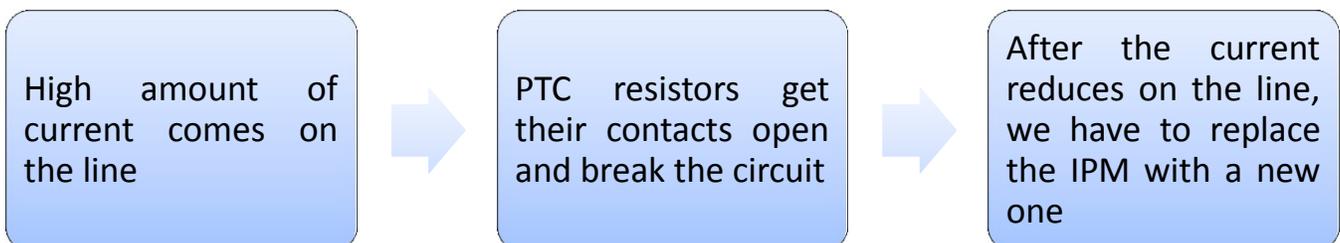
### How IPM safeguards your PBX?

There are two cases possible when IPM serves as a protection:

- Over Voltage Protection:



- Over Current Protection:



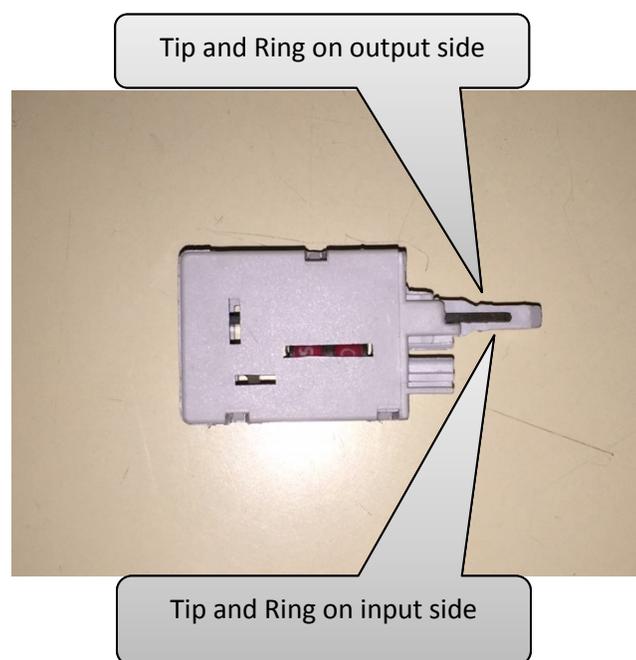
## How to verify if the IPM is working or not?

### a. How to verify if the Positive Temperature Coefficient (PTC) Resistor in the IPM is working perfect or not?

Once the PTC gets faulty you will not get dial tone on the port connected to the line because there will not be any connectivity between System & Field Cabling

By following these steps it can be identified that PTC is working or not.

- Remove the IPM from the krone module and check if there is any dirt accumulated on the connectors. If yes, remove the dirt
- Check for the continuity between the Tip and Ring on the input side and Tip and Ring on the output side



- If continuity is there, insert the IPM back into the Krone module else replace it with a new one

**b. How to verify if the Gas Discharge Tube (GDT) in the IPM is working perfect or not?**

- Certain third party equipments are available in the market to check if the GDT in IPM is working perfect or not. It is advisable that IPMs are **periodically checked** using such equipments.



**... Important**

- It is mandatory that, the MDF box must always be equipped with IPMs. Removing IPM does not ensure that your circuit is safe from surge. After removal of IPM the system does not become an open circuit and it is not safe from surge.

**“PREVENTION IS BETTER THAN CURE”**

**It is better to install IPMs and prevent your system from surge, then repairing it later on, which leads to loss of time and money.**

For more information, contact  
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