

## Solution Comparison

### Embedded Interface Card vs External Gateway

	Embedded Network Interface Card	External Protocol Gateway
<b>Solution space</b>	Useful for enabling target device to integrate with external master/SCADA on multiple telemetry protocols without using any external hardware	Useful for applications where the downstream device to integrate with an external master/ SCADA on different protocols using external or retrofit device
<b>Scale</b>	Ideal for integration into vendors' products	Ideal as project specific solution
<b>Integration time</b>	Typical implementation and integration takes around 3-4weeks	Can be installed in less than 6 hours
<b>Upgradability</b>	Easy addition of new protocols and updating of existing protocols possible without any hardware change or implementation effort from customer end	The implementation process must be repeated for each protocol update and enhancement. The Gateway firmware can be remotely updated to include more protocols / updates, etc.
<b>Constraints</b>	Embedded board has to fit into the device enclosure	No change in hardware component or mechanical design of the target device
	Communication interface and protocol has to be common for target device and network interface card	The downstream device should have a protocol that is supported by the Gateway
	Only one device can be integrated with a module	Number of devices which can be integrated depends on number of datapoints, multi-dropping, protocols
<b>Kalkitech Solution</b>	SYNC 200: IED upgrade module	SYNC 2000: Protocol Gateway ASE spTsrv: Protocol Gateway